The act of discovery : an ethnography of the subject-object relation in archaeological practice.

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An Ethnography of the Subject-Object Relation in *Archaeological Practice*

by

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Abstract

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All theory must ultimately be grounded in bodily action and perceptual experience. The purpose of this thesis is to sketch out the ontological ground of archaeological knowledge. Based mainly upon an ethnography of an excavation, the thesis focuses on the *act of discovery* - the (temporal) relation between an (embodied) subject and an (emerging) object, mediated through (the use of) tools. The cultural agency of the archaeologist, in giving form to material patterns, is taken into account. But so too is the 'resistance' of material evidence. It is in this subject-object transaction that knowledge of the past is ultimately produced and reproduced. However, we also have to consider why the act of discovery has remained hidden within conventional theoretical discourse, and how it is that - in bringing the ethno-archaeological perspective back to bear upon archaeology itself - it becomes possible to 're-discover the act of discovery'.

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Preface

A research project which started out under the title of "The Social Context of Ritual Monuments in Neolithic Europe" and finishes up under the present heading of "The Act of Discovery: an Ethnography of the Subject-Object Relation in Archaeological Practice", requires some explanation of its development through time. As originally conceived, the project was to consist of library-based research into parallels between archaeological data from Neolithic sites and ethnographic data from various sources (eg. Bloch 1971, 1986; Deacon and Wedgewood 1970). Whatever transformations and inversions the research may have gone through since then, this concern with analogy has provided a certain thread of continuity.

Disenchantment grew with the realisation that 'ethnographic analogies' work both ways; they have a 'hidden agenda', effecting our view of the present as well as our view of the past. Hodder (1982a:39) articulates the point well when he warns, "there is a possibility that, having overrun and pillaged Australian, African and American people militarily, economically and socially, we follow this up with an 'intellectual colonialism'... we assume that our own 'developed'society is less relevant in finding analogies for Neolithic Europe in 6000 BC than are 'undeveloped' Africans or Australians." But although ethnoarchaeology has recently extended its domain of study to cover the material culture of modern industrialised societies, including our own, it still concerns itself with the more or less distant Other. The material culture of archaeologists themselves remains exempt from ethnoarchaeological analysis.

The relation of *otherness* that pertains between ourselves and the object of study, connected with the belief that our own scientific culture is somehow 'above' or 'beyond' sociological or anthropological investigation, affects everything we do and see. Certainly in my first year of research I treated the ethnographic record as

literally a *record*, containing 'survivals' of past ways of life - and this may have led me to see similarities between ethnographic and archaeological data where in fact mainly differences prevail. Perhaps I made the mistake of equating distance in space - or in cultural understanding - with distance in time (Fabian 1983). But by linking European prehistory with contemporary cultures elsewhere there was definitely a sense in which I was characterising those other cultures as 'the past in the present' or 'the present in the past'. A deeper reading of ethnographic literature, of course, indicates that the evolutionary assumptions informing my approach were ill-founded. As Layton (1989:18) argues, "It is no longer possible to make the comfortable assumption that non-Western peoples live in a timeless present, that their cultures are inherently unchanging."

In any case, we clearly do draw from our own cultural experience in interpreting archaeological remains. Implicit analogies are embedded in the most 'objective' of data. Even to label a material item as a 'pottery sherd', for example, invokes and presupposes a great deal of knowledge about how pots might be made, the functions or purposes they might serve in the context of human action, and so on. How does this 'common-sense' meaning get into archaeological data? Are the very words we use to describe material objects the vehicles of tacit analogies? To what extent do we draw from our own practical experience - as human agents ourselves - in the perception, identification and description of artefacts?

All this led to a re-thinking of research strategy and a radical inversion of initial objectives. Instead of using analogy as a method for comparing ethnographic and archaeological data, I was now to carry out an ethnographic study of the role of analogy in the production of data in archaeological excavation.

Fieldwork changed my views further. Before going into the field I had tended to treat analogy as a mode of cognition - a mental process that takes place 'in the head'. But it now became apparent that such ideational processes were inseparable from the material practices of excavation. Analogies are enmeshed in the everyday discovery, manipulation and recording of material evidence. The whole focus of my research, then, shifted from theory to practice, and from analogy to agency. In so far as the topic of analogy figures in the fieldwork report it is as *practical analogy* or *analogy-in-action.*

This 'bringing down to earth' of theory necessarily involves a re-appraisal of the relationship between theory and practice - of how theory is 'grounded' in practice. In subsequent chapters it will be argued that the ontological ground of archaeological knowledge is neither the objective material evidence (as empiricists insist) nor subjective activity (as anti-empiricists imply) - but rather a practical transaction between the subject and the object. To characterize this transaction I have used the term "act of discovery" - which has a certain ring to it by virtue of the way in which it combines contradictory terms (discovery normally being understood as a passive rather than an active process). I take discovery to be a practical activity involving both manual and intellectual skills. It entails work with and upon material objects as well as cognitive objects. And it brings the theoretical domain into direct contact with an external reality which resists, constrains and forces modification of the ideational schemes brought to bear upon it.

By constituting archaeological excavation as a kind of 'craft', which involves the transformation of (natural) raw material into (cultural) product, it becomes possible to explicate the normally implicit analogy that pertains between the activity of archaeologists and the inferred activity of human agents in the distant past, which enables archaeological interpretation to take place in the first instance. Bringing to light the essential 'likeness' as well as 'difference' between ourselves and the distant Other is the first requisite for a humanistic archaeology.

Emphasis throughout the fieldwork report will be on what diggers actually *do* and *how* they do it. Whereas most theoretical accounts of archaeological practice are prescriptive, the assumption here is that theory can learn a great deal from those who make practical (as opposed to wholly written) contributions to the production of archaeological knowledge, as well as the other way round. And the reader is warned that little will be found in the following pages about the justification of archaeological inferences - the principal concern of conventional epistemology. This is not because validation is considered unimportant; it simply lies outside the range of what has been attempted here. As Wittgenstein (1967a:para 217) puts it, "If I have exhausted the justifications I have reached bedrock, and my spade is turned. Then I am inclined to say 'This is simply what I do' "...

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Chapter I

INTRODUCTION: ESCAPING FROM THE TEXT

1.1 Basic Analogies or Root Metaphors

All sciences are structured in part by 'basic analogies' or 'root-metaphors' (Pepper 1942:38-9, Nisbet 1969:3-6, Turner 1974:23-31). The understanding of the universe as a MACHINE - characteristic of Newtonian physics - is an example of a root-metaphor that structured an entire epoch of science and philosophy. Such metaphors are undoubtedly useful. They enable us to select, highlight and organise certain aspects of observable reality - to explain that reality from a particular point of view. But root-metaphors also exercise a constraining influence upon scientific thought and practice. In highlighting certain aspects of reality, other aspects may be neglected or hidden. Particular problems are identified and particular kinds of data are seen to be relevant to the solution of those problems. In the sense that root-metaphors are reinforced by the continued collection of 'relevant' data, they tend to be self-certifying and self-reproducing - tacitly upholding our explicit knowledge of the world. Following Kuhn (1962), Nisbet (1969:6) argued that scientific revolutions are often no more than replacements, at critical points in history, of one foundation-metaphor by another. New metaphors tend to open up whole new fields of research precisely because they draw attention to aspects of reality neglected by previous metaphors.

The question therefore arises - what is the root-metaphor that structures archaeological knowledge? In this chapter it will be argued, following Patrik (1985), that the central object and concept of archaeological knowledge - the archaeological record - is itself a root-metaphor. The understanding of material remains as RECORD underlies most theoretical discussion and provides the parameters within which methodological debate takes place (see Barrett 1987/8 for an attempted escape from the record-metaphor). While this metaphor has highlighted many important aspects of material evidence, it has simultaneously hidden equally important aspects of archaeological practice. It has, in effect, 'covered over' the

act of discovery, the subject of this thesis. In order to bring the act of discovery to light, a different root-metaphor or way of looking at things is required.

1.2 Material Remains as Material Record

The metaphor of material remains as RECORD is embedded in contemporary archaeological discourse. As any reading of the literature shows, material evidence is often spoken of as a MANUSCRIPT, a TEXT, a PALIMPSEST or a CODE. The landscape itself is an historical DOCUMENT - a TESTAMENT and a TESTIMONIAL to the past. We can find out about the past by READING, DECODING, DECIPHERING, TRANSLATING or TRANSCRIBING the record, for the record is something that can TELL, INFORM, COMMUNICATE, ILLUMINATE and REVEAL. It is a REPOSITORY OF FACTS, a STORE OF KNOWLEDGE and a MINE OF INFORMATION. Knowledge is PRESERVED in the record. Like a book, this record can be CONSULTED. When we excavate a site, there is a sense in which we are TURNING THE PAGES of the past, working our way back through the CHAPTERS, ANNALS and CHRONICLES of time.

Consider, for example, this passage in Barker's classic 'Techniques of Archaeological Excavation' (Barker 1987:11-12):- "The soil is an historical document which must be deciphered, translated and interpreted. The whole of our landscape, rural and urban, is a vast historical document. On its surface has accumulated a continuous accretion of hundreds of thousands of acts of change, both natural and human. Every archaeological site is itself a document. It can be read by a skilled excavator."

The metaphor is, however, much more than a fertile source of figures of speech. It implicates a certain common-sense way of thinking about the past. As Ayer (1956:67) puts it, "The past is thought of as being 'there', fixed, unalterable, indelibly recorded in the annals of time, whether we are able to decipher them or not." Whereas the future is thought to be open, the past is closed. But the metaphor of material remains as RECORD presents us with the possibility of opening up, like a book so to speak, the past that is dead and gone. The concept of the archaeological record refers not just to material remains alone; it emphasises the relation between unobservable cause and observable effect. The very use of the term 'record' implies a notion of the 'recording-relation' between the 'record' and 'that

which is recorded' (ie. the past). Constituted in terms of the RECORD-metaphor, the artefacts and ecofacts encountered during excavation are 'facts' in at least two senses - 1) they are observable phenomena or empirical facts 2) they record past events or meanings; that is, they are construed as facts about the unobservable past. To skilled excavators and other empirically-minded archaeologists, then, archaeological facts can be taken to speak not just for themselves, but also for the past events or meanings they record.

The New Archaeologists (eg. Binford and Binford 1968, Watson et al 1971) challenged the conventional empiricism but retained the record-metaphor, developing it into a methodological philosophy. The recording-relation between past cultural dynamics and the archaeological statics observable in the material record was conceived of as a causal link, governed by a complex set of laws. By specifying the supposedly universal laws which operate in mediating the transition from dynamic context to archaeological context, it was hoped that unambiguous links could be established between cause and effect, and that inferences about cause could be chained to a deductive form of argument. As Sabloff, Binford and Macanany (1987:203) recently stated, "the most promising methodological undertaking... is the strengthening of the procedures archaeologists employ to link inferentially the archaeological record with the past dynamics that produced it."

Hodder's (1982c, 1985, 1986, 1987a) formulation of a post-processual archaeology was developed as a response to the deficiencies of New Archaeology. He rightly pointed out that the emphasis on deterministic laws governing human behaviour, with cross-cultural applicability, leads to a disregard for socio-cultural variability. In any case, very few 'universal' laws had actually been specified by the processualists. But Hodder's alternative model also retains the record-metaphor - albeit in a slightly different form. The material record was now to be explicitly constituted as a TEXT, artefacts as material SYMBOLS or SIGNS, and material context as CONTEXTUAL MEANING, which becomes accessible to symbolic and structuralist analysis. By reading the text, the GRAMMAR, CODE and MEANING of past human action can be brought to light. Reading past meanings is therefore an interpretive endeavour rather than an objective science. (For a more detailed comparative analysis of the use of the record-metaphor in Binford's and Hodder's work, the reader is referred to Patrik 1985).

But if Hodder's contextual archaeology emphasises cultural relativism and the subjective task of 'reading' the record, while Binford's processual archaeology emphasises ecological determinism and scientific objectivity, there is nevertheless a common ground underlying the differences - an axis of polarity that unites them in their opposition to each other. Similarities in their respective approaches include a concern with ethnoarchaeological research, as a means of gathering information which can shed light on 'the formation processes of the archaeological record' (Binford 1967, 1976, 1978, 1980; Hodder 1982a, 1982b - see also Schiffer 1976, 1983). Both accept the root-metaphor of material remains as RECORD (or TEXT).

This metaphor has proved to be a fertile and adaptable model for understanding the way in which material remains can inform us about the past. From within its general structure particular organisational schemes have been selected to express a range of different - sometimes complementary, sometimes oppositional - points of view. But it is noticeable that (at least up to about 1985) the record-metaphor encompasses almost the entire domain of archaeological discourse. Implicit in the normative empiricism, it becomes more explicit as we move towards the two extremes of 'objectivity' (processualism) and 'subjectivity' (post-processualism). Methodological debate tends to be a dialectic between these two poles, circumscribed by the metaphor of the material record. As Patterson (1989:561-2) puts it, "The archaeologist and the archaeological record are gridded in to one another." It falls to Linda Patrik (1985:56-7) to ask the pertinent question: "Might there be a new model of archaeological evidence that does not borrow at all from the concept of a record?"

1.3 From Reading to Writing the Past

Since 1985, however, two books by Shanks and Tilley (1987a, 1987b) have taken and developed the post-processual model beyond its initial phase of structuralist analysis. As they put it, "structuralism opened the way to an understanding of material remains as being in some sense analogous to a text, a meaningful signifying system to be 'read' and interpreted" (Shanks and Tilley 1989:3). They incorporated into their 'post-structuralist' philosophy Hodder's insight that the reading of the material culture text is conditioned in part by the schemes of signification brought to bear upon the text by the reader, whose point of view is always

historically and culturally situated; different readers may read a given text in different ways - there is no one correct reading, and no single 'truth' to be discovered in the text (see Hodder 1987b). But Shanks and Tilley noted that archaeologists are engaged in writing as well as reading. "Archaeology," they argued, "is not so much a reading of the signs of the past, but a process in which these signs are written into the present" (Shanks and Tilley 1989:4).

Once writing has been identified as "the real material practice of archaeology" (ibid:49), the past becomes for Shanks and Tilley something that is inscribed and produced in the present day. "Any archaeological account involves the creation of a past in a present and its understanding. Archaeology in this sense is a performative and transformative endeavour, a transformation of the past in terms of the present" (1987a 103-4). The past is not so much 'that which is recorded' by the record, but rather 'that which is produced' in the writing of archaeological texts - the product of inscriptive practices in the present day, and therefore also the product of contemporary ideologies and relations of power, which are reproduced in and through archaeological discourse. And just as there are different ways of reading a text, so there are different ways of writing it. It follows that any writing of a past is a political act - and it is one of the virtues of Shanks and Tilley's work that they make their own political stance quite explicit. They conceive of their writing as a kind of revolutionary practice, challenging the supposed political neutrality of science - and the pasts that have been constructed under the name of 'objective science'.

Despite the radical nature of their critique, however, it is clear that Shanks and Tilley are still 'gridded in' to the metaphor of material remains as material record. Consider, for example, their formulation of the relationship between artefact and text (1989:5). The material culture encountered by archaeologists is defined as "a multi-dimensional 'text' with a plurality of meanings" (which, in some fundamental sense, is still understood to 'record' past human actions). The archaeological text is defined as "an argumentative structure with 'material' quotations". And the relationship between these two kinds of texts is mediated by the archaeologist in the activity of *writing*. Yet in essence this is nothing more than a transformation of the traditional concept of the archaeological record. The record is normally understood as 1. the material record (eg. "the remains of prehistoric or historic cultures that

are visible or uncovered by archaeologists today" Sabloff et al 1987:203-4), and 2. the textual or representative record (eg. "the data amassed from survey and excavation" Fagan 1980:6) - the second being understood as a more or less direct copy, transcription, translation or extract of the first, mediated by the archaeologist in the activity of *reading* (refer to quote from Barker, Section 1.2). Whether the role of the archaeologist is constituted as *reader* or *writer*, we are led towards the inevitable conclusion that "*There is nothing outside of the text* " (Derrida 1977:158 , quoted in Yates 1990:220).

Because the post-processual movement has explicitly stressed "questions of representation, style, textuality and writing" (Shanks and Tilley 1989:49), drawing its interpretive framework from Barthes, Derrida, Ricoeur and other textual theorists (see Bapty and Yates 1990, Tilley 1990), it has effectively situated itself inside the metaphor of the TEXT, which has been extended to cover all realms of human experience. There is, for them, literally no escape from the text. But it is important to make clear that no avenues of escape are provided by their critics either. Ironically, critiques of post-processualism tend to be framed in terms of the objectivist version of the metaphor of material remains as RECORD. Thus Renfrew (1989:39), in his comments on Shanks and Tilley's work, states that "The material record of the past, the actual remains, may indeed be claimed as 'value-free' and lacking in observer-induced bias. That record is available, readily available: that is the great strength of archaeology " (cf. the critique of Hodder in Binford 1987, where similar recourse is taken to the concept of the material record). It is as though the metaphor of RECORD/TEXT has become a valued commodity in its own right, to be battled and fought over by rival camps. Each camp lays claim to the metaphor that gave rise to both, and which at once unites and divides the protagonists in their opposition to each other.

1.4 The Derivation of the Record Metaphor

A metaphor so deeply embedded at the heart of a system of thought is likely to have a long history. Archaeology in its formative years borrowed many of its original concepts from other, established, disciplines - such as History and Geology - with both of which it still has strong conceptual links. In her penetrating comparative analysis of processual and contextual archaeologies, Patrik (1985:33-4)

suggests that the concept of the archaeological record is derived from the concepts of the historical record and the fossil record. She points out that New Archaeologists tend to draw from the notion of the fossil record (with its implications of ecological determinism, direct recording-connections between cause and effect, and the uniformitarian principle), while contextual archaeologists tend to draw from the notion of the historical record (with its implications of authorship, style, and hermeneutics). These two different kinds of record, moreover, are themselves historically linked: "palaeontology initially derived its concept of the fossil record from the metaphor of an historical record: the fossil record is like a book that holds in its strata, as a book holds in its pages, the story of the earth, ancient organisms, and their evolution. The metaphor originated with the belief that a divine creator was responsible for the formation processes of the fossil record: just as authors produce texts, the divine creator produced the earth and the creatures on it" (Patrik 1985:34).

The historical origin of the record-metaphor in a pre-Darwinian religious cosmology, however, does not explain its continuity through time, and its continued relevance to archaeologists in the present day. If we ask the question, 'in what ways is the record-metaphor grounded in and derived from ongoing cultural experience?', it is not difficult to locate that part of everyday experience from which the metaphor continues to emerge as the natural and common-sense frame for understanding archaeological evidence. As post-processualists have so cogently argued, *reading* and *writing* are the real material practices of (academic) archaeology - which consist more of the production of texts, the compilation of bibliographies, the reading of relevant literature and the citation of references, than it does of the actual digging of material remains. The field of textual discourse in which we as academics participate is more than just a field; it is a way of life. To situate oneself within this field is to internalise its conventions, skills and rationales - to acquire a practical mastery of words, style and rhetoric. Only then is it possible to be a name, cited in texts other than one's own. 'Homo Academicus' (Bourdieu 1988) is essentially a textual being, whose activity takes place in an environment where the book is the principal item of material culture. And books have a primary reference to other books, whether or not they refer to any external reality outside of the text; even excavation-reports are based mainly on a multiplicity of specialist reports,

context-sheets, plans, and other inscriptions. Texts provide the setting, the intentional product and the *raison d'etre* of the academic existence. And what could be more natural, in this world circumscribed on all sides by the written word, to characterise the world outside in terms of the metaphor of the RECORD or TEXT? In the last analysis we all seek to understand things within the frame of that which is most familiar. It is the achievement of the post-processualists that they have brought this root-metaphor to the surface of archaeological discourse, made it quite explicit, and turned it back to bear upon its source (much of the force of their critique deriving from this reflexive turn) - so that in their work the metaphor has reached its *apotheosis.* Only on the basis of their work is it possible to constitute the textual metaphor as something 'to be escaped from'.

If roughly the same metaphor can be used to support both objectivist and subjectivist claims, it is probably because real texts or records - from which the metaphor is ultimately derived - encapsulate the subject-object dichotomy in a particularly irresolveable form. A written record can be perceived either as a material object in its own right, or as the vehicle for subjective meanings, depending on the point of view of the perceiver. It is very difficult, however, to hold both points of view simultaneously. Focus attention on the objective shape of the printed letters and their meaning disappears. Shift attention back to the meaning of the words and their objective form becomes 'fuzzy', then recedes out of direct consciousness. Even the meaning apprehended by the reader can be regarded as objective fact or subjective fiction - again, depending on the reader's point of view. And different readers may read different meanings in the same text, whether or not those meanings were intended by the writer. As Hodder (1987b:87) says of a review of his book, *Reading the Past*; "My book is a real thing (in the same way that archaeological data are real). And yet in reading Bell's reading of my book I realise that he often did not see what I wrote or what I thought I wrote. The book is real but different readers give it different realities." In the light of such remarks, it is easy to see how the textual metaphor carries with it a whole (literary) metaphysics. Many of the problems and disagreements involved in understanding (reading) or producing (writing) the archaeological record may be nothing more and nothing less than transformations of the paradox of the text, metaphorically transposed on to material evidence.

1.5 The Archaeological Record: A Matter of 'Fact'

In conventional empiricism, the material record is understood to be comprised of various kinds of facts which record past events or meanings. A recording-relation between cause and effect is taken to be an objective property of the material record (so that, for example, the fact that this piece of worked flint or that sherd of pottery are the products and instruments of past human agency can be regarded as self-evident). Facts are simply uncovered and recorded by archaeologists in excavation. And the representative record that archaeologists make of material remains - comprised of plans, notes, photos, context-sheets, finds, samples, etc - is seen to be practically equivalent to the material record, as it was encountered during excavation. Since the latter is regarded as a translation or copy of the former, the enormous gap between these two kinds of record is closed to the extent that no distinction needs to be drawn in theoretical discourse. The term 'archaeological record' collapses these two entities into one, so that 'facts' can be read from excavation-reports in much the same way as they can be read from the material record itself. Indeed, since the material facts have for the most part been destroyed in the process of excavation, the corpus of facts which constitutes the archaeological record is largely comprised of textual objects. A fact is a textual object which can be taken to be equivalent to a material object. In some fundamental sense, such facts are understood to constitute the basic units of theoretical analysis. When we speak of theories about the past being 'based' upon the facts, what we actually mean is that our theories are based upon textual objects which we call facts, according to a particular notion of the correspondence between textual representations and their material object.

In their powerful critique of empiricist thought, the post-processualists (eg Shanks and Tilley 1987a, 1987b, 1989) take an entirely different view of facts. Facts are regarded as social - or, more specifically, textual - productions. They derive their concreteness not so much from any resemblance to a reality outside of the text, but rather from their context within an established field of textual discourse, the manner and style in which they have been written, the authority of their writers, and of course the point of view of the reader. Indeed, there is a sense in which (as many literary theorists have argued), the reader's point of view is constructed for the reader by the text. Through persuasion and rhetoric - most

effective when it seems neither persuasive nor rhetorical - the text constructs a reality and persuades the reader (and, for that matter, the writer) to accept this manufactured reality as objective 'fact' rather than fiction. As Shanks and Tilley (1989:7) put it, "Language use does not merely imitate reality; rather, it helps to constitute it." Hence they can argue that there is no such thing as a real past; the past is something that is continually being created and transformed, through the medium of texts, in the present day.

How do these two very different conceptions of fact arise? The etymology of the word can help us here. Although the standard dictionary definition, 'anything that comes to pass: truth: reality, or real state of things' corresponds roughly to the empiricist notion of fact as something which exists independently of any subjective interpretation of it, an etymological investigation suggests a different meaning. As Knorr-Cetina (1981:4) points out, 'fact' is derived from the Latin *factum-facere*, 'to make' or 'to do', hence we have the associated words 'manufacture', 'factory' and 'artefact'. This second underlying meaning of fact as 'something which is made' perhaps more closely corresponds to the post-processualist view. What is interesting is the way in which empiricists tend to highlight the first meaning while rejecting the second completely (along with any notion of cultural or subjective influence in the perception and recording of facts), and the post-processualists tend to highlight the second meaning while rejecting the first (along with any notion of an objective world 'out there' which might constrain our cultural and subjective construction of reality). In this way the debate between them, viewed as a dialectical totality, epitomizes and reproduces the subject-object dichotomy which is the inevitable product of a textual metaphor.

The two meanings of 'fact' are contradictory so long as we remain locked into (the polarised versions of) the textual metaphor. Shift metaphors, however, and the contradiction disappears. If we focus attention on archaeological practice as *work* or *labour*, for example, rather than as reading or writing, it makes sense to conceive of facts as being manufactured or made while at the same time *always being made out of something*. To say that facts are social constructions does not necessarily imply that there is no external reality; this reality can still be construed as the *raw material* out of which facts are made. Bhaskar (1989:77-8) therefore puts forward a very different conception of scientific activity, "the paradigm being that

of a sculptor at work, fashioning a product out of the material and with the tools available": this is what he calls the "transformational model of social activity". Work consists of a practical transaction between the subject and the object, and between culture and nature. Far from being a free-floating system of meanings, as post-processualists would have it, culture is always grounded, reproduced and transformed in its transactions with nature - which is likewise transformed - in the practical setting of work or labour.

In terms of this model, "Thought cannot now be viewed as a mechanical function of given objects (as in empiricism): nor can the activity of creative subjects be regarded as endowing the world with things (as in idealism)" (Bhaskar 1989:26). Facts have both material and cognitive dimensions. They are social products, fashioned out of the world-at-hand, but like all human artefacts - once made - they tend to stand as things in their own right, so that "we tend to read the world *as if* it were comprised of facts" (Bhaskar 1989:61). In this way Bhaskar not only counters empiricism, but also explains it. "Facts are real, but they are historically specific realities. The mystification attached to them derives from the condition that, in our spontaneous way of thinking and in empiricism, the philosophy which reflects this, the properties possessed by facts as *social objects* are transformed into qualities belonging to them as *natural things*" (Bhaskar 1989:9).

The metaphor of work or labour, then, has been extended to cover human perceptual processes. In Bhaskar's scheme, facts are the result rather than the cause of perception; the 'objective' meaning of things is constructed in perception in much the same way as a sculptor or artisan fashions an artefact from a raw material - so that the world increasingly comes to be comprised of objectifications of socio-cultural and subjective meanings. That perception can be viewed as an *active performance* (Ittelson and Cantril 1954, Neisser 1976, Gibson 1979), rather than merely the passive reception and processing of incoming sense-data (as conventional psychology would have it) has important implications for scientific epistemology. It is not just that perception is inter-meshed with bodily movement and action; it is itself a kind of praxis. What is perceived depends in part upon the cultural background, skill and experience of the perceiver, as well as what is 'actually there' to be perceived. Aquired cultural schemes draw our attention to some aspects of the world encountered and not to others; in this sense the facts perceived

to exist 'out there' are the products of cultural action. As Bhaskar (1989:60) puts it, facts must be conceived "as *potentialities* of the conceptual schemes that govern our enquiries, which when *actualised* constitute discoveries. A fact, then, is a potentiality actualized in discovery, sustained in practice... and objectified in sense-perception."

This kind of analysis does not question the post-processualists' assertion that facts are social constructions, but it does reject the notion that facts are wholly textual creations. It directs our attention to an earlier stage of the scientific process which precedes inscription. And in this it draws from the empiricists' insistence that all knowledge must ultimately be grounded in our perceptual experience of the world. The origin of the fact is sought neither in the creative activity of writing subjects nor in the objective properties of nature, but rather in *labour* or *perceptual labour*, in causal interchange with nature.

1.6 What the Record-Metaphor Hides

Bhaskar's paradigm of a 'sculptor at work' enables us to see what is neglected or hidden by the metaphor of material remains as RECORD or TEXT. In terms of the record-metaphor, empiricists tend to regard facts as things which are contained in, uncovered and transcribed from the material record, quite independently of any subjective or cultural contribution from the agents of discovery. It is of course well known to anyone who has worked out in the field that in practice it is impossible to separate subjective interpretation from objective fact; as Barker (1977:143) points out, "observation is not an automatic process. It depends entirely upon the particular knowledge of the observer." Nevertheless, the record-metaphor plays down the active role of the agents of discovery. The culturally-acquired skills, rationales and techniques possessed by these agents - which enable them to constitute material objects or patterns as 'facts' to be inscribed - are also played down. In so far as their skills are highlighted at all, they are characterised as more like those of a reader who passively 'takes' meaning from a text, than those of a sculptor who actively 'applies' meaning, both manually and cognitively, to the material being worked.

In Part I we will see how the agents of discovery (ie. the diggers who initially come into contact with material evidence, manipulate it, and transform it into

data) are effectively 'written out' of excavation-reports, and how their erasure is strategically linked to the presentation of facts in those texts as being somehow 'interpretation-free' and 'theoretically-neutral'. For the representative record is meant to be a literal transcription of the material record - the raw material for theoretical analysis rather than the end-product of practical interpretations. Only by excluding the agents of discovery from the text is it possible to preserve the apparent 'objectivity' of recorded facts. But this has led to a significant blind spot in archaeological epistemology. While there is a great deal of literature about the formation-processes of the material record up to the act of discovery, and a great deal of literature about the analytical procedures which follow on from the act of discovery, there is very little literature (apart from prescriptive manuals of excavation technique) about the act of discovery itself.

It is interesting that the same oversight has carried over into post-processualist thought, which sustains the same 'squeezing out' of the act of discovery and the agents of discovery. Although Shanks and Tilley (1989:2) explicitly set out to "break down the divide... between theory and practice", they are actually more concerned to "emphasize theory *as* a practice " rather than the other way round. In showing how writing is a kind of practice, they neglect to show how digging is likewise a kind of theory. Writing, not digging, is regarded as the real material practice of archaeology. Indeed, "It might be said that digging is a pathology of archaeology. A major problem that has always dogged archaeology is the notion that it is primarily about excavation" (Tilley 1989:275). In the post-processualist analysis of the construction of archaeological facts, then, attention is directed towards the academic structures within which the activity of writing takes place, rather than the non-academic setting of digging and practical labour. No mention is made of that most neglected and informal of archaeological institutions - the digging circuit. It seems to have escaped the notice of textual theorists that there are several hundred people involved in archaeological work in Britain who are not themselves primarily concerned with the writing of texts, are rarely cited in excavation-reports, and leave to work on other sites when the real (post-excavation) work of textual production begins.

It is true that circuit-diggers draw plans, plot finds, lay out grids, take photographs, write out context-sheets, etc - and indeed that most of the primary data for sub-

sequent research are produced by them in the inscriptive practices of excavation - but they also dig pits, postholes, ditches and other material features. They are engaged in a multitude of manual practices which precede inscription. These practices take place out in the open air rather then in the artificial environment of libraries and university departments - 'on the ground' rather then in the 'upper stratosphere' of academic discourse. The trowel and the spade, not the book and the pen, are the principal items of their material culture. And diggers do actually come into contact with something that is *not* text, some kind of external reality which - however much we may try to constitute it as a written record - has not been written at all.

In so far as the event of excavation is considered by post-processualists, it tends to be apprehended within the constraints of the textual metaphor. Thus in his paper, *Excavation as Theatre*, Tilley (1989:278-9) characterizes the relation between excavation and the site-report as "an interpretive production for which the analogy of the dramatic performance and its relation to a script seems peculiarly appropriate." And again, "The relationship between excavation and what gets written resembles that between an individual speech utterance and an underlying set of grammars. The excavation provides a set of grammars, often incoherent or contradictory, both enabling and constraining the production of a text." Discourse still holds sway over inarticulate practical labour. Yet the author acknowledges that "There exist a series of real and incomensurable transformations between the practices of digging a trench and the drawing, recording and interpretation of a section, a disjunction between two very different material realities... There is no clear passage from the activity of excavation to the activity of writing." In this way we reach the limits of the explanatory power of the textual metaphor. If we are to begin to understand the material reality of digging which precedes inscription, we would have to replace the textual model with a more appropriate metaphor.

The problem with the post-processualist account is that it tends to exclude the constraining role of the material object - the actual material remains which are uncovered and worked upon during excavation - from the activity of creative subjects (just as empiricists tend to exclude from their discourse the active role of the subject in the constitution of objects). It is not, then, that the textual metaphor

hides either the subject or the object, for both are separately stressed by post-processualist and empiricist versions of the metaphor. What the metaphor hides is *the transaction between the subject and the object*, as it takes place in the act of discovery. This is why the event of excavation, constituted as intersubjective work or labour upon material objects (rather than merely a process of transcription or inscription) rarely appears in theoretical discourse.

1.7 Material Remains as Raw Material

The metaphor of material remains as RAW MATERIAL throws a very different light upon archaeological practice. It plays down the recording-relation between observable archaeological effects and past human action that was highlighted by the empiricist version of the record-metaphor. Facts about the past are no longer seen as properties of the material record or text, which only have to be (passively) transcribed or read by archaeologists. Nor are facts regarded as wholly textual creations, fashioned out of nothing but the signs and grammar of textual discourse. On the contrary, facts about the past are (actively) produced in the present from the RAW MATERIAL of material remains.

This alternative metaphor implicates the subsidiary metaphors of PRODUCERS (archaeologists), PROCESSES OF PRODUCTION (archaeological practice) and PRODUCT (facts, data, theories, knowledge about the past). As the products or ARTEFACTS of excavation, facts can be said to be MADE, WROUGHT, CONSTRUCTED, MANUFACTURED, SHAPED, WORKED and FASHIONED by archaeologists. But like most human artefacts, they are the INSTRUMENTS and TOOLS as well as the products of labour. Established facts, theories and models can be used to shape further raw material, which means that knowledge is always REPRODUCED in practice. However, the raw material - at once PLIABLE and RESISTANT - constrains the form of the knowledge which is fashioned from it.

Importantly, the metaphor draws our attention to the SITE where the raw material is initially encountered, and where the work of transformation takes place. The site can be defined as the point of intersection between culture and nature - the locus at which culture comes into contact with nature and nature is transformed into culture. [The term 'nature' will be used in various ways in this thesis. For the sense in which I mean it here, see Section 12.2. In the fieldwork report,

'NATURE' in capital letters designates all those things which are situated outside the 'CULTURAL' domain of archaeological knowledge and practices in the *present* day, or the raw material which has yet to be assimilated into that domain - see Section 4.2. This should be regarded as quite distinct from the way in which archaeologists use the term to designate those things deemed not to be the effects of *past* cultural activity - see Section 7.2.]

The site can also be defined as a transaction between the subject (as agent) and the object (as patient) - in the context of which, as we shall see, the object can act back upon the subject, and nature can act back on culture. We are no longer concerned so much with the physical formation processes of the objective material record, nor with the textual production of the written archaeological record. What we are interested in are the formation processes, or processes of production and reproduction, of archaeological knowledge, as these are grounded in practice at the site of discovery.

This means taking our leave from those conventional epistemologies which construe archaeological inference as wholly a matter of mental operations - induction, deduction and the justification of propositions. And since we are no longer dealing with a text, the hermeneutical approach of Derrida and Barthes is inappropriate. The labour process theory of Marx (1973, 1976, Markus 1978), the existential philosophy of Heidegger (1962), Merleau-Ponty (1962) and Sartre (1957, 1976), the phenomenological orientation of Schutz (1964, 1973), the more recent practice theory of Bourdieu (1977, 1990), the structuration theory of Giddens (1976, 1984) and the realist ontology sketched out by Bhaskar (1975, 1989), fit much better into the internal structure of the metaphor and provide the philosophical background for this thesis. All these writers are concerned in different ways with human praxis; that is, with cultural activity grounded in some kind of practical transaction with nature - this transaction taking on what phenomenologists have called the "life-world" (Gurvitsch 1970, Schutz and Luckmann 1973) rather than within the structures of a text.

It is the explicit aim of this thesis to use the alternative metaphor of material remains as RAW MATERIAL to try and break down the oppositions that have arisen in archaeological discourse between subject and object, idealism and mate-

rialism. There is a very real danger, however, that in countering the precedence that is normally accorded to theory over practice and text over life-world, these dichotomies will merely be reproduced rather than overcome. In focusing upon the practical labour of excavation, then, it is important to examine the ways in which the text manifests itself in the life-world, and those ways in which practice is itself a kind of theory-in-action.

The alternative metaphor changes our view of the past as well as the present. Aspects of the 'constructivist' metaphor for understanding archaeological practice have of course already appeared in post-processualist thought. Thus the past is spoken of as a 'product', 'artefact', 'construction' or 'creation' of the present-day (eg. there is "no such thing as a real past" Shanks and Tilley 1989:3). But at the same time the post-processualists have never really escaped from the traditional textual metaphor, giving rise to contradictions that derive from the *mixing of metaphors.* As Bender (1989:12) and Hodder (1989:15) point out, there is considerable confusion about the relationship of the past to the present. Shanks and Tilley tend to regard the past as being created in the present, but they also imply the former existence of a real past that is somehow recorded (eg. "All traces of the past are important " Tilley 1989:227). An implicit ontology seems to underlie their anti-realist position, even if no explicit distinction is drawn between what are after all two very different kinds of pasts - the past which we create and the past which is presupposed to have really occurred. Since we are engaged in disentangling the constructivist metaphor from the textual metaphor, let us make this distinction quite explicit here. The past which is presupposed to have 'actually happened' irrespective of what archaeologists say about it, should be regarded as logically distinct from the knowledge of the past which archaeologists construct. The second is clearly a product of archaeological practice in the present-day and the recent past; the first (except in so far as it is presupposed) is not a product of the present in any way at all.

The distinction becomes clearer when framed in terms of Bhaskar's ontology. Bhaskar (1978, 1989:16-18, 26) distinguishes between 1. the *intransitive objects of knowledge*: those things which exist (or existed) independently of, but are presupposed by, scientific knowledge and practices. 2. the *transitive objects of knowledge*: the established facts, models, theories, techniques, cognitive and material tools of

scientific knowledge. Importantly, the intransitive objects can only be characterised by the same names as those of transitive objects. Thus the past - the real past which is presupposed to have actually happened and is therefore unalterable - is an intransitive object of knowledge. But it can only be characterised in terms of the facts or theories we have about the past, which are the transitive objects of knowledge. As science itself is a socially and historically situated activity, the transitive objects of scientific knowledge are also social and historical entities that change through time. Hence we find that our knowledge of the past is subject, as Shanks and Tilley have pointed out, to any number of transformations - depending on the cultural standpoint of those who inscribe this knowledge. But the past, the real past, cannot be changed.

Bhaskar's ontological scheme, which simply insists that existence must precede theory rather than the other way round, can be extended to resolve a further and not altogether unrelated confusion that has arisen in archaeological discourse. We are accustomed to thinking of material remains and data as synonymous terms, referring to the same reality. But the new metaphor forces us to draw a distinction here. As Sullivan (1978:189) points out, material remains are not data. Material remains (at least up to the moment of discovery) exist independently of archaeological practice; data, on the other hand, are the products of archaeological practice. Data are generated or produced from material remains *in* practice. Another way of putting it is that, prior to their discovery, material remains existed outside of the cultural domain of archaeology - even if, in the act of discovery, they are transformed into cultural objects. Data, however, are cultural through and through. Material remains are the raw material out of which data are fashioned.

By merging the concepts of material remains and data, conventional epistemology has effectively 'squeezed out' the need for a theory of archaeological practice. This is one of the ways in which the record-metaphor has 'covered over' the act of discovery - and the active role of the agents of discovery in the constitution of data or facts. But the metaphor of material remains as RAW MATERIAL separates the two concepts and opens up the theoretical space between them. It draws our attention to the "cluster of material and cognitive practices" (Harre 1986:6) through which data are produced in the event of excavation.

1.8 From Inside to Outside Perspective

Root-metaphors carry metaphysical implications. They not only provide ways of thinking about the world, but also ways of seeing it; that is, they constitute for us a cognitive standpoint or point of view, and hence a particular perspective for apprehending reality. Change root-metaphors and one's point of view changes accordingly. It is sometimes said that metaphysical questions should be left to one side, and that we should simply get on with the job of doing archaeology (see, for example, Watson 1973:209). But this is really just a strategy for defending an established and entrenched metaphysics. To those who adopt this strategy we could say, rather as William Blake said to the angel in *Marriage of Heaven and Hell* (plate 19), "All that we saw was owing to your metaphysics."

The conventional metaphor of material remains as RECORD or TEXT involves taking the perspective of an archaeologist observing or reading material remains. Material remains are, as it were, placed in the foreground. The archaeologist, as the one doing the observing or reading, is placed in the background. That is, whenever we think in terms of the record-metaphor we are conceptually situating ourselves inside the subject-object relation, constituting ourselves as subject in relation to the objective material record. The metaphor of material remains as RAW MATERIAL, on the other hand, constitutes as its object the processes of production through which a producer transforms a raw material into a product (ie. the practices of excavation through which the archaeologist transforms material remains into data). It is the subject-object relation itself that is objectified, and we find ourselves - as the true subject - conceptually situated outside of this relation. The idea of an ethnography of archaeology, which may seem practically incomprehensible and outrageous from the first point of view, flows quite naturally from the second.

The record-metaphor is perhaps the more appropriate cognitive framework to adopt for the task of actually doing archaeology, since this task - as we shall see - involves the objectification of material remains and a taking-for-granted of one's own subjective contribution to the constitution of the object. But it is not necessarily the most appropriate framework to use in giving an account of archaeological practice. An objective perspective on the workings of science cannot be

attained from a viewpoint situated *inside* the very activities that one seeks to describe. Indeed, the creed of scientific objectivity would seem to oblige us to take up an *outside* perspective on scientific practices. As Bourdieu (1988:7) puts it, "the principle virtue of the scientific work of objectification... consists in its allowing us to objectify objectification." The raw material metaphor, then, provides a more appropriate cognitive orientation for the study of archaeological practice. But it has the interesting effect of locating this study beyond the parameters of archaeological discourse. Circumscribed by the metaphor of the record or text and polarised by the subject-object dichotomy, the sphere of archaeological discourse contains no precedent for "an ethnography of the subject-object relation in archaeological practice." To find precedents for this type of work, we have to move into the separate disciplines of social anthropology and the sociology of science.

1.9 Recent Work in the Sociology of Scientific Knowledge

The sociology of knowledge has its roots in the writings of Marx and Durkheim, but only recently has it moved away from the Durkheimian view that science, and the knowledge it produces, is somehow exempt from sociological explanation. The paradox has come to light that, if science is truly to explain or describe the world, it ultimately has to explain itself as a (constitutive) part of that world. Bringing scientific explanation back to bear upon itself, with all the problems of reflexivity that this entails, is the explicit aim of the new field of sociology of scientific knowledge. As defined by Knorr-Cetina and Mulkay (1983:2), the field consists of "a vigorous and systematic attempt to subject natural and technological scientific knowledge to the same scrutiny which has long been brought to bear on other systems of beliefs, such as religious and philosophical knowledge or political thought."

For a general overview of this field the reader is referred to Mulkay (1979), Knorr-Cetina (1981:Ch.1), Barnes and Edge (1982) and Woolgar (1988a). Running throughout this work is an insistence that science is a historically and culturally situated phenomenon, and that scientific knowledge is not entirely determined by natural evidence or data. Social factors play a major role in the construction of knowledge. Indeed, the assertion that knowledge is a social construction is radically opposed to the conventional view of knowledge as being purely descriptive,

with a one-to-one correspondence with nature. "Accordingly, the study of scientific knowledge is primarily seen to involve an investigation of how scientific objects are *produced* in the laboratory rather than a study of how facts are *preserved* in scientific statements about nature" (Knorr-Cetina 1983:119, my italics).

Ethnography has emerged as the most important investigative method in this research programme. A number of ethnographies of laboratory science, in which the sociologist enters the laboratory as a 'naive' participant-observer, have produced accounts of scientific practice very different from those presented by conventional epistemologies. The emphasis tends to be on what scientists actually *do*, rather than what philosophers of science *say* about what they do - on *how* they do it, rather than *why*. A major achievement of these laboratory studies has been to bring to light the role of craft knowledge (sometimes referred to as 'tacit skills', 'practical competence', 'embodied expertise' or 'knowing-how') in scientific work. This non-verbal component, precisely because it cannot be verbalized, simply does not appear in conventional accounts of science (though see Polanyi 1958). Laboratory ethnographies carried out by Latour and Woolgar (1979), Knorr-Cetina (1981) and Lynch (1985) provide precedents for the ethnography of archaeological practice presented in Part II of this thesis.

It is important, however, to recognise the different settings of material practices in natural science and archaeology. In the natural sciences, the 'site' of knowledge production is the artificial environment of the laboratory itself. As Knorr-Cetina (1983:119) puts it, "In the laboratory scientists operate upon (and within) a highly preconstructed artifactual reality. It is clear that measurement instruments are the products of human effort, as are articles, books, and the graphs and print-outs produced. But the source materials with which scientists work are also preconstructed ... 'Raw' materials which enter the laboratory are carefully selected and 'prepared' before they are subjected to 'scientific' tests." Compare this with an archaeological site. Here the material evidence, far from being a speck on a microscope slide or a track in a bubble-chamber, comprises part of the landscape itself - the setting in which the archaeologist works. And the degree of instrumentation is correspondingly small, a relatively simple technology of spades, trowels, etc, being substituted for the vastly more complex array of instruments in a laboratory.

This has important implications for the research orientation of the ethnographer. To the ethnographer of laboratory work "the laboratory displays itself as a site of action from which 'nature' is as much as possible excluded rather than included" (Knorr-Cetina 1983:119). The perceived absence of 'nature', 'reality', or truly 'raw' material leads to the view that the knowledge produced in the laboratory is entirely a social product, unconstrained by any resistance from the natural world (see Woolgar 1988a:54-69 for an outline of this extreme relativist position). Indeed, it could be said that sociologists of science have failed to locate the point at which culture intersects with nature in scientific practice. And in so far as the subject-object relation is apprehended, the object appears always as the product or instrument rather than the raw material of human action.

An ethnographer of archaeological practice, on the other hand, is in a much better position to study the relation between culture and nature. While the intersubjective activity of excavation is clearly a cultural phenomenon, and the data produced in this activity are cultural products, the material evidence itself - the *natural object* or *raw material* of archaeological practice - is also open to view. Indeed, excavation appears quite plainly to the ethnographer as a transaction between culture and nature (this transaction consisting of multiple subject-object transactions) in which raw material is transformed into product. On this very different kind of 'site', then, there is an opportunity to look not just at the production and reproduction of knowledge, but also at the ways in which raw material might constrain or change the knowledge that is constructed and applied. The possibility therefore arises of overcoming the extreme relativist position that has come to characterise both post-processual archaeology and the sociology of science.

1.10 Text Versus Practice in Social Anthropology

Shanks and Tilley's observation that *writing* is the principal activity of academic archaeologists can be applied to ethnographers too (Clifford and Marcus 1986, Geertz 1988). Cushman and Marcus (1982) have pointed to the ways in which 'ethnographic realism' is constructed as well as represented by the report or monograph, and have drawn attention to the rhetorical aspects of ethnographic writing. In terms of literary theory, fieldwork itself can be seen as mainly an inscriptive practice, with notebooks and tape-recorders being the major items of material

culture, and the eventual production of a text providing the rationale for doing fieldwork in the first instance. There are signs, however, that anthropologists are beginning to counter some of the more extreme claims of the 'post-modern' literary theorists. As Spencer (1989:145) argues, "anthropology is as much a way of working - a kind of practical activity - as it is a way of writing."

Clifford Geertz was influential in introducing literary theory into ethnography, and he remains the most often-quoted anthropologist in post-processual archaeology. It is not just that his own ethnographic writing - see, for example, "Deep Play: Notes on the Balinese Cockfight" (Geertz 1973:412-53) - eschews the 'neutral' tone of conventional ethnographic reporting for a more highly-crafted literary style. Cultural action itself is constituted as a kind of text. Geertz (1973:452) defines culture as "an ensemble of texts, themselves ensembles, which the anthropologists strain to read over the shoulders of those to whom they properly belong." Cultural meanings come to be inscribed or stored in material symbols, which are "as public as marriage and as observable as agriculture" (Geertz 1973:91). These public meanings guide the actions, beliefs and attitudes of the members of a particular culture; they also render the cultural text meaningful or 'readable' to the anthropologist who studies them. Like a book, the cultural text is "a stratified hierarchy of meaningful structures" (Geertz 1973:7), making a 'thick' or 'deep' reading possible. In these ways Geertz uses a textual metaphor to constitute the anthropologist as both reader and writer - the translator of cultural meanings from one textual medium to another. This translation is never a direct copy or transcription, however; the ethnographer 'fashions' his own textual product, hence the claim that ethnography is a kind of 'fiction' (Geertz 1973:15).

Geertz played a major part in establishing ethnography as an interpretive endeavour, rather than straightforward description. This has had knock-on effects in archaeology. Hodder's 'reading the past' and Shanks and Tilley's 'writing the past' owe much to Geertz. But his textual metaphor leaves us with a static model of culture. It constitutes the cultural text as a structure in its own right, transcending individual actions. Social agents or subjects appear only as actors playing out a pre-given cultural script (compare with Tilley's conception of 'excavation as theatre' - summarized in section 1.6). There is no account of how subjects might create or re-create their own cultural meanings, or how the pre-given text might be

transformed through the everyday actions and interactions of individual subjects. Subjects are subordinated to text, like characters in a novel. As Scholte (1986:10) points out, Geertz fails to answer the questions "How is meaning constituted? By whom? For whom? At whose expense?" The textual metaphor hides the active role of the agents of production.

"Structuration theory" (Giddens 1976, 1984) and "theory of practice" (Bourdieu 1977, 1990) represents a very different approach to the problem of culture in current social theory. It accepts that human action or practice is conditioned by social structures, but it also sees social structures as the product of practices. This is what Giddens (1984:25) calls the "duality of structure". Duality of structure is also a duality of practice; practice is at once the product and (re)producer of structures. Thus the focus shifts from how cultural meanings condition human action to how those meanings are produced and re-produced in practice. Instead of a one way structuration principle we have a dialectic, and this dialectic is situated in human action itself. The crucial effect of this focus on practice is that it shifts the problem of culture out of the timeless world of the text and into the temporal process of bodily existence. Bourdieu's (1977:72) concept of 'habitus' as the mediating principle between structure and practice is similar in many respects to the concept of 'craft knowledge' or 'embodied expertise' that appears in the sociology of science. It places the body, and the practical knowledge acquired and applied by the body, at the very centre of theory of practice.

In so far as post-processual archaeology draws its theoretical framework from what is often called the 'postmodernist discourse', it is noticeable that much greater weight is given to the hermeneutical approach of the literary theorists (see Tilley 1990) - much less to practice theorists such as Bourdieu and Giddens. Emphasis on the body and practical action is to a certain extent incompatible with the textual metaphor. When practice theory is invoked at all (Shanks and Tilley 1982, Hodder 1986:70-74, Barrett 1987/8), it is applied only to interpretation of material remains and past human action. As Hodder (1986:73) argues, "Bourdieu's theory of practice presents an implicit invitation to archaeologists to come to an understanding of the principles lying behind *other cultural practices* through an examination of and involvement in objects arranged in space and in contexts of use" (my italics). Yet this is to miss the point. The point of theory of practice is that it

applies just as much to the practicioners of anthropology and archaeology - to our own practices - as it does to some distant Other. Indeed, to understand the Other we also have to understand the relationship that exists between ourselves and the object of our study, for as observers of the past we tend to "introduce into the object the principles of... [our]... relation to the object" (Bourdieu 1977:2). To apprehend the relation through which the object is constituted, moreover, we would have to step backwards, as it were, "to objectify the objectifying subject" (Bourdieu 1988: xii) and examine the social conditions of the production of objective knowledge. If this step is not taken, theory of practice loses much of its essential force.

Practice theory, then, provides the basic rationale for carrying out an ethnography of archaeological excavation. Importantly, the purpose of such an investigation is not to undermine or invalidate the knowledge that is produced in excavation practices. On the contrary, the purpose is to examine the social conditions that make the production of archaeological knowledge possible. And a shift in focus away from static structures onto practical action does not imply a lack of concern with cultural meanings: "the transcending issue... is not meaning or praxis, but the meaning of constitutive practices and the praxis of constituted meanings" (Scholte 1986:10). Many of the gains of Geertz's interpretive anthropology, in so far as they can be detached from the textual metaphor, can therefore be taken on board. The concept of 'material symbols' (Geertz 1973:91) is entirely compatible with theory of practice once we get away from the idea that the public meanings stored in the cultural text are always fixed and unchangeable. Silverman (1990:126) compares the concrete material symbols of Geertz with the more fluid ritual symbols of Turner, which are understood to emit "multivocality, complexity of associations, ambiguity, open-endedness" (Turner 1975:155), and which have different meanings for the various participants in the ritual drama, depending on their point of view. It is not that either Geertz or Turner are necessarily wrong, however. The crucial issue to be explored in an ethnography of archaeological practice is how it is that fluid, ambiguous meanings come to be fixed into concrete, unambiguous public realities.

Another point of difference between Turner and Geertz, which has important implications for theory of practice, is that while Geertz focuses on the 'textual' meaning of symbols, Turner insists that symbols have "an *operational* meaning as well as

an *interpretation*" (Turner 1968:17). That is, they are things to handle and manipulate as well as things to 'read'. In some fundamental sense, the meaning of a symbol is understood to be contained, not so much in the thing itself, but in its use. "For the symbol... is the product of interaction between human actors... In a real sense the meaning of the symbol is bound up with all these interactions.. for it would have no meaningful, cultural existence without this collaboration" (Turner 1968:3-4).

This idea was introduced into archaeology through Hodder's (1982b) important ethnoarchaeological study, *Symbols in Action.* But if we are interested in the ways in which people ascribe meaning to or extract meaning from material things in practice, we do not necessarily have to journey far in time or space. There are material symbols 'in action' on an archaeological site just as there are in the villages of the Baringo. Indeed, it could be said that, of all peoples, archaeologists are the manipulators of material symbols *par excellence.*

1.11 The Irony of an Ethnography of Archaeology

Ethnoarchaeology (Stiles 1975, Gould 1978, 1980, Gould and Schiffer 1981, Hodder 1982a:ch2) is the method normally associated with the study of material culture in present-day contexts. Initially conceived as a means of gathering comparative data which could be used to shed light on archaeological evidence, it has developed into a discipline in its own right, which Rathje (1981:51-2) defines as the study of "the interaction between material culture and human behaviour, regardless of time and space."

But let us turn this method inside-out and upside-down, and bring it back to bear upon its source. The fieldwork research presented in this thesis is a form of ethno-archaeology, but in an ironic sense. In so far as the focus is on material culture, it is on our own rather than that of a distant Other. For it is often forgotten that, in appropriating the material cultures of others for archaeological or ethnographic research, these become our material culture - and in the context of our research practices come to be invested with cultural meanings very different from the meanings they possessed in their original context of use. Ethnoarchaeological literature, though it extends to discussions of material culture in modern Western society, is curiously silent about the material symbols of (ethno-)archaeology itself.

Ethnography of archaeology, as the reflexive or ironic form of *ethnoarchaeology*, takes an outside perspective looking in rather than an inside perspective looking out. This reversal of the anthropological perspective has interesting effects and implications. For instead of travelling outwards to look at cultural activities which, from our point of view, seem exotic and strange - translating these into our own categories of thought - the journey takes an inwards direction, into our common-sense world, trying to penetrate into that which we normally take to be natural and self-evident. To an anthropologist who chooses to study his own world (and the digging-circuit is my world - since I worked for five years as a digger before coming to university), the aim is to "exoticise the domestic" rather than to "domesticate the exotic", through "a break with the initial relation of intimacy with modes of life and thought which remain opaque to him because they are too familiar" (Bourdieu 1988:xi).

Bourdieu (ibid) goes on to argue that "the movement towards the originary, and the ordinary, world, should be the culmination of a movement towards alien and extraordinary worlds." As Marcus and Fischer (1986:111) point out, ethnographers of other cultures have always had a "hidden agenda" of critique of their own culture. This critique is made quite explicit by turning the very methods and perspectives employed in scientific observation back to bear upon the culture of scientific observation itself. But this is not to deny the importance of conventional ethnographic work. 'Looking in' and 'looking out' are complementary perspectives in the anthropological project, broadly conceived. Marcus and Fischer (1986:x) put it like this: "Such exploration in anthropology lies in the move from a simple interest in the description of cultural others to a more balanced purpose of cultural critique which plays off other cultural realities against our own in order to gain a more adequate knowledge of them all."

In so far as this thesis attempts a 'cultural critique', however, it is directed at the theoretical and epistemological structures which represent (or conspicuously fail to represent) digging practices - rather than at the digging practices themselves. For one of the things which theory always takes for granted is the act of discovery - the context of practical labour in which data are initially produced and theory is ultimately grounded. As concrete human action, the act of discovery is as complex and mysterious and as difficult to understand as any other material practice in

which agents equipped with symbolic faculties are engaged. Yet theory tends to regard the act of discovery as literally just the un-covering of material evidence, as if the covers were merely pulled back to reveal the facts. Excavation is seen as mundane, ordinary, run-of-the mill, matter-of-fact, and of little theoretical interest. And as a corollary of this, the people who dig up the evidence from the ground - who actively recognise and select out relevant objects and patterns from a field of background 'noise', who manipulate and explore the unfolding evidence and transform it into meaningful data - are regarded, as far as theory is concerned, as little more than 'manual' (as opposed to 'intellectual') workers. In this way the act of discovery has itself been 'covered over' in theoretical discourse. An ethnography of archaeological practice, then, necessarily involves us in a *re-discovery* of the act of discovery.

The reader will find that the concept of the act of discovery (like the act of discovery itself) is elusive and 'slippery' - difficult to grasp and easy to lose hold of - simply because it refuses to respect traditional dichotomies of thought. As long as we think on terms of subject/object, ideas/material, theory/practice, mind/body and similar Cartesian oppositions, the act of discovery cannot be apprehended as such. It is possible to be immersed in the act of discovery without being able to grasp it objectively. And even by taking a step backwards to stand outside looking in, it is easy to lose sight of. Focus attention on a material object without a subject, or subjects removed from the object of their labour, and the act of discovery disappears. This is because the act of discovery is the transaction between the subject and the object - a practical activity of the embodied subject upon an emerging object in which theory is "brought down to earth", involving both manual and intellectual skills. My fieldwork represents a concentrated attempt to apprehend the act of discovery - at the expense, perhaps, of giving a full ethnographic account of life on the digging circuit. Political and social aspects of excavation are explored only in so far as they bear directly upon the actual discovery and manipulation of material evidence.

The problem for the ethnographer of the familiar world is precisely the inverse of that of the ethnographer of alien cultures. Characteristically, the latter spends many months or years learning the local language and immersing him- or her-self in cultural activity before a deep understanding of a society is gained. The problem

is to 'get into' a way of life different from one's own. But the ethnographer of the familiar, by way of contrast, has to make a conscious effort to suspend (or 'put into brackets', as Husserl would say) his own taken-for-granted concepts, in order to 'stand outside' of a system of cultural meanings that he normally inhabits. This effort to de-familiarise is difficult to sustain for long. My experience was that the most productive period of fieldwork occurred right at the start, rather than towards the end. No excuses are made, then, for the unusually short time (11 weeks) spent out in the field.

Irony is an essential 'tool of the trade' in the writing-kit of an ethnographer of the familiar. A sense of irony derives from the operation of turning the outward-looking gaze back in on itself. Thus this thesis could be described as a study in 'ethnoarchaeology', 'contextual archaeology', 'social archaeology', or 'processual archaeology', but only because (through a kind of ironic twist) it brings the *ethnographic* perspective to bear upon the cultural *context* or *social* setting of the *process* of archaeology itself - and in this way unites these disparate approaches into one by focusing precisely on that which they all take for granted. The intended effect of irony, of course, is surprise. As Marcus and Fischer (1986:111) point out, the "relativizing of taken-for-granted concepts... and the beliefs that lend certainty to everyday life" may have the effect of "disorientating the reader and altering perception." One of the many achievements of Geertz was to highlight the power of anthropology and archaeology to surprise: "It has been the office of others to reassure; ours to unsettle. Australopithicines, Tricksters, Clicks, Megaliths - we hawk the anomalous, peddle the strange. Merchants of astonishment" (Geertz 1984:274). But it is generally only the distant Other that amazes. If only we could suspend for a moment our own taken-for-granted concepts and beliefs, there is much to be found which is surprising, even astonishing, in our everyday practices also.

1.12 The Problem of Analogy

A movement away from abstract theory towards practice does not mean leaving behind the problems that have arisen in theoretical discourse. Indeed, the ethnographic method can be used to transport theoretical problems back into the practical domain, where they take on a different aspect. Conceptually re-locating

(and transforming) problems in this way has precedents in Marxist thought. According to Marx (1967:400-402), "The question whether human thinking can reach objective truth is not a question of theory but a practical question"... "All mysteries which lead theory to mysticism find their rational solution in human practice and the comprehension of this practice."

Archaeological inference is normally regarded as a wholly theoretical concern - a matter of argument, logic and the justification of propositions - with the data produced in excavation providing the 'raw material' for theoretical analysis. But inference is not just something that is written or argued; it is also something that people *do*. So I shall shift various questions of inference away from the world of texts and theories, and relocate them in the world of practical action and the everyday events of excavation.

One reason for this strategy of bringing theory down to earth, and grounding it in the practical events which occur 'on the ground', is the sheer intransigence of theoretical problems, when dealt with solely on a theoretical level. Take the problem of analogy as an example. It tends to be framed as 'how can we use ethnographic analogies to shed light on archaeological data?' or 'how can we interpret archaeological data without using analogy?' (for a comprehensive critical review of the considerable body of literature on analogy in archaeological interpretation, see Wylie 1984). But supposing, in the events of excavation, that the very act of perception is an analogical process, that analogue models - drawn from our own experience - are embedded in the observation, manipulation and recording of material remains. This would mean that the data which are the basic units of theoretical analysis are themselves the products of analogy (Hodder 1982a 11-12). To give an adequate account of the role of analogy, then, we would have to, as it were, move on to *the other side of data*. We would have to look at the processes of the production of data, in excavation practice.

The problem of analogy seems a particularly appropriate theoretical issue to transport out into the field, in the light of the growing body of literature which indicates that analogy and metaphor are embedded in human language, cognition and praxis (Lakoff and Johnson 1980, Arbib and Hesse 1986:147-70, Johnson 1987). Although the role of analogy in archaeological interpretation has in the past been a con-

tentious issue that has polarized the archaeological community - with some critics (eg. Freeman 1968, Gould 1980) arguing that the analogical method is unscientific and misleading and should therefore be eliminated - most of the leading figures in the current methodological debate recognise that analogy plays an important role in the interpretation of material remains. Thus Hodder (1982a:12) states that "the archaeologist has to draw on knowledge of his own or other contemporary societies in order to clothe the skeleton remains from the past in the flesh and blood of living , functioning and acting people. The drawing of analogies would thus seem to play a central role in archaeological reasoning." Sabloff, Binford and Macanany (1987:208) argue that "it is *how* analogies are derived, *how* they are used, and *how* they are integrated in broader research strategies that are among the critical questions to be faced by archaeologists today." And Shanks and Tilley (1987a:20) state that "The truth of the past is metaphorical."

None of these authors, however, make the step of grounding analogy in bodily action and perception. The body is the crucial term missing from their accounts. To Shanks and Tilley metaphor (and indeed 'the truth of the past' which is constructed through metaphor) is largely a linguistic and literary phenomenon. To most archaeologists, including Hodder and Sabloff et al., analogy is principally a form of theoretical reasoning and mode of argument - rather than a cognitive faculty embedded in human praxis (but see Hodder 1982a:11-12). In much of the philosophical work on analogy, too, analogy is regarded as a purely cognitive or ideational process. Thus Uemov (1970) defines analogy as "association by similarity, on the basis of which one notion evokes another" and goes on to outline the forms of argument which can be used to represent this cognitive function. Leatherdale (1974:32) comes much closer to an understanding of analogy as a practical process when he says that "The basis of progress in science is not an analogical *argument*... but an analogical *perception* which involves the importation of analogues from discrete areas of experience into the area of experience under investigation, so that hitherto unremarked analogies are seen and novel inferences suggested."

In Chapters 8 and 9 of the fieldwork report it will be argued that a kind of *practical analogy* lies at the heart of the inferences which archaeologists make in the practices of excavation. These analogies condition the perception, recognition,

selection, identification and manipulation of material evidence, and the transformation of that evidence into data. As creative practical operations, *analogies-in-action* facilitate the production of original knowledge about the past, as well as the reproduction of existing knowledge. They not only constrain archaeological interpretation; they also enable archaeological interpretation to take place in the first instance.

To locate the role of analogy in the production (rather than in the justification) of knowledge is to take the question of analogy from theory to practice, from text to lifeworld, from abstract inference to inference-in-action, and from subjective thought to the transaction between the subject and the object. Another way of putting it is that analogy can be found at work in the mud and the rain and the reality of the material practices of excavation just as it can be found in academic discourse and analysis. And we find that these practical analogies are quite different from the analogies represented in archaeological texts (eg. Binford 1967; Hodder 1982a:72-92). It is only in texts, after all, that analogies and models are frozen into static schemes. In action, analogies have a temporal structure, in the sense that they are continually shifting and changing to take account of emerging evidence. They are part and parcel of the *temporal process* of excavation.

1.13 A Time for Experiment

In this introductory chapter I have tried to show how 'root-metaphors' may condition our theoretical stance within the world, our point of view upon it, and our approach towards it. This applies as much to my own research as to anyone else's - hence the effort to make explicit the metaphor which lies behind this research project, and gives rise to the idea of an ethnography of archaeological practice. That such a project is possible at all owes much to the questioning of established theory and the opening up of new spaces for experimental research accomplished by the post-modernists. "What is happening," say Marcus and Fischer (1986:ix), "seems to us to be a pregnant moment in which every individual project of ethnographic research and writing is potentially an experiment." Although the textual model of culture favoured by these authors is rejected here, many of their insights on writing have to be taken on board. In the sense that presenting a piece of academic research involves an act of writing and the subsequent production of a

book or thesis, there really is no escape from the text. So much a part of our lives, we tend to take the text - and the conventions of rhetoric and narrative that are reproduced in the writing of it - completely for granted. This makes it important for all of us, to some degree at least, to interrogate the ideology of representation in the very act of representing (Woolgar 1988b,14-34). And in doing so, as Sperber (1985:33) argues, "each ethnographer should re-think the ethnographic genre."

But ontological doubt should not necessarily lead us into the virtual reality of an all-encompassing textual metaphor. The post-modern sensibility, as Boyne (1988:527) points out, also involves "a shift of emphasis from epistemology to ontology... a de-privileging shift from knowledge to experience, from theory to practice, from mind to body". It is this underlying current of post-modernist thought that presents a possible means of 'escaping from the text'.

Part I

A Textual Analysis

Chapter II

THE ARCHAEOLOGY OF TEXTS: THE TEXTS OF ARCHAEOLOGY

2.1 The Other Side of Data

In Section 1.5 it was pointed out that, when archaeologists speak of theories about the past being 'based' upon the facts contained in the archaeological record, they are often referring not so much to the material record, but rather to the ~~the~~ (textual) record that has been made of material evidence. In an important sense this record - comprised of excavation reports, archives, etc - is regarded as the 'ground' of theoretical knowledge. Theories can be inducted from or tested against that record, which is seen to be practically equivalent to the material evidence it represents. Thousands of books, reports, theses, etc, have been written based almost entirely on the textual record, without recourse or reference to any reality or 'facts' outside of the text. Indeed there is a sense in which archaeological data do not aquire full factual status until they have been represented in textual form. As Colonel Pitt-Rivers (1898:28) put it long ago, "a discovery dates only from the time of the record of it, and not from the time of its being found in the soil."

Underlying this textual 'ground', however, is a constellation of practical activities through which the facts contained in the record have been meaningfully-constituted and processed (eg. the systematic excavation of a site; the production of plans, photos, context-sheets and other forms of textual data; the post-excavation work of sorting and classification; the laboratory analysis of materials; the writing of specialist reports; the synthesis of all this information into a comprehensive corpus of facts; the writing and publication of the excavation report). Most important of these is the 'act of discovery' - the initial encounter between archaeologists and material remains - as it occurs in the context of manual digging practices out on site.

Yet the text hides the practical origins of the facts it represents. In order to establish its equivalence to the material evidence 'out there', the text covers over the active role of the agents of discovery (the diggers themselves) in the formation of facts. Any reader of excavation reports who seeks to find out how its facts were brought to light, recognised, fashioned, transformed into data, etc, would be in a similar position to that of an archaeologist who - with only material form, style and context to go on - wants to know how an artefact was made in the distant past. The agents of discovery are not to be found in the text any more than the makers of artefacts are to be found in the material record. Their former existence and agency can only be inferred on the basis of traces which have survived the ravages of time, together with analogies drawn from our own experience. In this ironic sense an analysis of an excavation report can be characterised as an 'archaeology of text'. Our purpose is to dig down through the layers of textual meaning to uncover the origins of facts in the act of discovery, and to find out how the act of discovery came to be buried in the first instance.

2.2 The Excavation Report and Textual Conventions

The excavation report selected for analysis in this chapter "*Eight Ring-Ditches at Four Crosses, Llandysilio, Powys, 1981-85*" by Warrilow et al, published in PPS 52, 1986, pp 53-87. It has been chosen for critique not because of any faults or excesses, but rather because it corresponds to established conventions of archaeological report writing (as outlined, for example, in Grinsell, Rahtz and Price-Williams 1974) and can be taken as a standard example of the excavation-report genre. The temptation to draw examples from a number of different reports has been avoided. Such is the similarity in style and organisation across a whole range of reports, that it is possible to take one as fairly typical of most of the others. Almost any modern excavation report from Britain could have been selected for the critique which will be developed here.

2.3 Setting, Citation and Authority

The setting of the excavation report in a serious academic journal such as *The Proceedings of the Prehistoric Society* is not only an important indicator of the factual status claimed for the evidence; it also effectively encourages or directs

the reader to take what is written as authoritative fact. The journal itself lends authority to the report. The reader can be sure that the report has already passed through a series of rigorous vetting and editorial procedures. We know that all such articles are refereed and commented on by leading experts in the relevant fields, with any errors of fact corrected. The authority vested in the report by these invisible others predisposes us to accept the facticity of that which is presented.

Just as the journal is lent authority by citation of the names of prominent academic figures (for evidence of the high academic standing of this particular journal, see the list of members of the Council of the Prehistoric Society, opposite the table of contents), so the status of the report itself is heightened by the citation of names (see the list of contributors on *p.953* and acknowledgements on *p.87*). Most of the people cited in the report, it should be pointed out, were not involved in the actual excavation itself; their contribution involved analysis of data that were already given. They are the authors of specialist reports rather than the producers of original data. Their citation serves to instruct the reader further upon the legitimacy of the report, for many are well-known and respected 'experts', with letters and publications to their name. In effect, each brings to the report the stamp of approval from a particular institution or subdiscipline, informing the reader that the evidence presented in the report has already been integrated into the various specialized domains of archaeological knowledge that are personified by the contributors. (For a more general sociological account of the citation process, see Cronin, 1984).

By way of contrast, the workers who actually excavated the site - who achieved the transformation of material remains into data - are not cited (with the exception of directors, site supervisors and photographers). While specialists who did not take part in the excavation have been "written in" to the report, these have essentially been "written out". Few clues remain that could testify to the participation of Manpower Services Commission workers, for example. From the available evidence (two references to funding by MSC on *p53* and *p87*), the reader without direct experience of excavation practice is hardly likely to guess that such workers probably formed the larger part of the labour force, and indeed that much of the data dealt with by the experts was produced by them in the first instance.

Two main reasons can be identified to explain this omission. Firstly, the digging and description of material remains is normally regarded as unproblematical - ie. not the province of experts (in contrast to subsequent analysis and interpretation of data produced in excavation - which is the province of experts). Only expert knowledge is acknowledged by citation. In this way archaeological texts tend to draw attention away from the production/producers of data, reproducing the traditional dichotomy between theory and practice and the precedence usually accorded to theory over practice.

Secondly, MSC workers - and diggers in general - exist outside of the academic reward system that tends to operate in and through texts. For while citations clearly mobilise the authority and reputation of others in support of the text, enhancing the facticity of what is written, they simultaneously increase the academic standing of the individuals cited. As Bourdieu (1975) has shown, the academic world is caught up in cycles of mutual credit and counter-credit, where the capital at stake is not money but prestige. Not being a part of the academic world, and not being an author of texts, the average digger does not function in this reward system.

An important point to emerge from this discussion on setting and citation, then, is that the text is not only a vehicle for the presentation of facts; it is also a vehicle for the reproduction of the political structure of the archaeological establishment itself. These two functions, moreover, are inextricably connected. A fact needs to be supported and legitimated by authoritative individuals for it to come fully into being as a textual entity. But at the same time these individuals derive their authority, in part, from their association with facts. Thus it is by reference to the social and political dimension of facts that we can explain the presence or absence of agents in the excavation report (cf. Woolgar 1988a:69 - I am drawing heavily here from Woolgar's analysis of scientific texts).

2.4 Style as Persuasion

In any text, the style of writing adopted by the author(s) is a major factor in creating the degree of realism that is conveyed to the reader. Because style is not 'in' the words themselves, but rather in the choice of words and the manner of their delivery, it is a particularly useful device for persuading the reader of the

authenticity of what is said, while at the same time - as Latour and Woolgar (1979:240) point out - persuading the reader that (s)he has not been persuaded. Such rhetorical persuasion is perhaps more a matter of convention than intention. There may be no intent to persuade on the part of the author, whose mode of writing is pre-ordained by established textual conventions.

Excavation reports are characterised by a style which can only be described as 'matter-of-fact'. Although the reader is not actually told in so many words, (s)he is left in little doubt about the status of the information as 'hard fact'. The following extract will serve as an example:-

> "The ring-ditch was about 13m in diameter, 2.4-3.2m wide, and about 1m deep from the gravel surface, with eroded upper edges beginning at a height of about 0.5m above the base of the ditch. It contained three main layers of fill ... The primary layers of fill (4) were generally coarse in texture, leading to yellowish-grey or olive-grey sandy gravels of the primary fill, and including lenses of clean material weathered from the side of the ditch. The secondary filling of the ditch (3) was fairly uniform dark yellowish-brown (10 YR 5/8) sandy silt, to a yellowish-brown (10YR 5/4) very fine sandy silt...." (*p60, para 4*)

This extract can be compared with an almost identical passage from a different report cited by Hodder (1989:268): as Hodder points out (in an interesting historical analysis of changes of style in archaeological writing), any recent excavation report can provide similar examples. Both style and content of such accounts convey very well the idea that archaeological practice is simply a matter of measurement and description. The technical language employed carries the implication that quantitative techniques of measurement (eg. with tape-measure or Munsell Colour Chart) rather than qualitative methods of interpretation were used. This enables the textual voice to speak with assurance about the accuracy of the data - to imply 'this is exactly how things were'. The mass of fine detail strengthens this impression.

However, the impression of realism is achieved only at a cost. Let us consider what is left out from this kind of narrative. There is no account of:-

Agency	Agent
1. the writing of incipient facts into the text	writer
2. the processing of data prior to writing	post-x worker
3. selection of 'relevant' data for recording	recorder
4. manipulation of material prior to recording	digger

There seems to be something about the textual representation of facts that requires the removal of all but the barest reference to the role of the agent in the constitution of facts. "The writer and the excavator are absent, hidden within codes and institutions" (Hodder 1989;271). By erasing or covering over the four layers of agency listed above, the text reassures us that the facts are not the products of our own actions or inventions. The reality constructed for the reader by the text is made that much more real; the gap between the reader and the material evidence described is closed. Mention of the intermediary agents would widen this gap, and severely erode the cultivated impression that the text is practically equivalent to a reality 'out there'. As Woolgar (1988a:69) argues, the role of the agent is of considerable strategic importance in scientific discourse. But if we are going to bring to light these hidden layers of agency, we should not stop at level 1. To do so would be to fall into the post-processualist trap of believing that facts are wholly textual creations. There are further layers, more difficult to discern in the text because more deeply buried. And it is these hidden layers of agency that we are primarily concerned with uncovering here.

2.5 A Stylistic Device

A further, related, effect of heightened realism - and the comcommitant playing down of the active role of the agent in the constitution of facts - is achieved by the stylistic device of 'letting the facts speak for themselves'. This device is made possible by the metaphor of material remains as material record (see Chapter 1). Since material remains are understood to constitute a record of past human energy, all the archaeologist has to do is to 'read' the record. The record 'suggests' or 'indicates' information about the past to the archaeologist:-

"slight irregularities matched in the same segments of different circles... *suggest* that they were laid out simultaneously" (*p.56, para.8*).

"the evidence of fencing...*suggests* that the circles may have had several possible functions" (*p.57, para.5*).

"There were no *indications* of a burial accompanying the weapons" (*p.61, para.9*).

"the concentration [of charcoal] *suggests* some activity more or less contemporary with the construction of the pit" (*p.64, para.4*).

"there was a notable bias [in artefact distribution] towards the south-west side of the site, *suggesting* that this side was accorded some special significance" (*p.64, para.2*).

These inferences about human agency in the unobservable past (including, as in the last quote, inferences about past ideas) seem to follow or flow effortlessly from the facts. The reader is given the impression that there are no problems of inference in archaeological interpretation. We can learn about the past simply by the observation or reading of material remains, as if information about human behaviour is an objective property of the record. But to achieve this impression, all but the merest shadow of an agent of inference has been omitted from the text.

2.6 The Metaphor of Discovery

Woolgar (1988a:55) points out that the 'metaphor of discovery' is embedded in scientific discourse. Certainly the metaphor of archaeological practice as discovery (that is, as a passive rather than an active procedure) is embedded in archaeological texts, and is closely linked to the metaphor of material remains as record. Facts are regarded as a natural property of the material record, 'preserved' or 'contained' in the landscape. They only have to be 'un-covered' or 'dis-covered' by the archaeologist. In removing the covers, the facts are 'revealed':-

"Excavation of the ring-ditches...has *revealed* a long and complex pattern of development" (*p.53, abstract*).

"The excavation of the three stretches of pit alignment *revealed* details of morphology" (*p.55, para.5*).

"The single ring-ditch...was *found* upon excavation to be accompanied by a small 'satellite'." (*p.57, para.7*).

"the 'satellite'...was a purely fortuitous *discovery* made during the course of the excavation" (*p.61, para.10*).

Note the co-occurrence of verbs pertaining to the discovery of evidence and the term 'excavation'. The dictionary definition of 'excavate' is 'to hollow or scoop out: to dig out: to lay bare by digging'. The term implies the removal of something from something else. It highlights that aspect of archaeological practice which conforms to the metaphor of discovery - the removal of layers and the laying bare of the layers below. This aspect is graphically illustrated in *Photo (a), Plate 13 (opp.p56)* where diggers are shown peeling off a spit of soil as if removing the covers from a cricket pitch. The other photos, *Plates 13-16*, show the discovered objects and patterns which have been revealed through this process of 'excavation as revelation'.

The metaphor of discovery is not simply a matter of words; it is a conceptual scheme which organizes the writing of the whole text (for all the evidence in the text is presented as a discovered object which was merely 'un-covered' and 'revealed'). The discovered evidence is constituted by the metaphor as something that exists quite independently of any agent of discovery. As Woolgar (1988a:55) argues, "The image derives in part from the notion of geographical discovery. One travels to a distant place and finds (comes upon or otherwise stumbles over) what was already there... The rhetoric of this ontology portrays the objects of discovery as fixed, but the agents of discovery as merely transitory."

What the metaphor of discovery hides, of course, is the active role of the agent of discovery in looking or searching for relevant objects or patterns, and the close connection between the mode of exploration and the form of discovered evidence. It is not just a case of finding what is looked for - though it is certainly true that anticipatory schemes are involved in the recognition and identification of relevant object. Archaeological excavation is essentially an opening up of a domain that

was previously hidden, and this act of opening always entails physical manipulation of material evidence. Discovered objects brought to light are a product not only of human or natural agency in the past, but also of the agency of excavation itself (see Bhaskar 1989:15-17 for an account of the scientist as a causal agent in the constitution of empirical regularities observed in experimental science). The emergence of evidence is invariably accomplished through the application of a range of material and cognitive tools deployed by diggers in the act of discovery. Yet their active and skilled contribution to the constitution of discovered evidence is precisely what is played down and hidden by the metaphor of discovery.

2.7 De-temporalization

Closely related to the 'writing out' or erasure of the agent of discovery is the de-temporalization of the excavation process. De-temporalization is a function of the way events and evidence are ordered in the narrative (Woolgar 1988a:77, see also Hodder 1989:271). By obliterating the sequences or chains of events which actually occurred in excavation, the text cultivates an image of the site as it was before archaeological intervention - as something 'out there' which can be apprehended by the reader quite independently of any agent of discovery. Consider, for example, the order in which the text deals with discovered evidence:-

Site 1 *(p55-57)*	**Site 2** *(p57-61)*	**Site 3** *(p64-68)*
buried soil	earlier activity	Phase 1. Middle to Late Neolithic
central pit and p-h	barrow	Phase 2. Beaker to Early Bronze Age
central stake setting	later activity	Phase 3. Early Bronze Age
stake-circles 1-6		
surviving mound		
ring-ditch		
later activity		

This is, of course, almost exactly the reverse of the order in which the evidence was excavated. In post-excavation work and the writing of the text, then, a switch has been made from 'real time' to 'theoretical time'. Data from the excavation has been taken out of the temporal sequence in which it was recovered and fundamentally

re-organized to fit into the chronological schemes and categories of archaeological theory. This may be a necessary operation as far as theoretical analysis is concerned, but let us consider what is lost in the re-organization of data.

What is lost is an account of the ways in which the events of excavation are inextricably linked together through time and space in causal sequences - ie. how one intepretation/decision/action/observation leads on to another. Every moment in the sequence presents a range of possible interpretations and strategies for action; if a different step had been taken at one moment, then all subsequent events would have been different too. The inversion of sequence removes these connections between events. Items of evidence whose interpretations were contingent upon each other, and which were bound together in an unfolding-through-time digging experience, are split up and treated as separate objects - then recombined in different ways. This has the effect of negating the possibility of other paths the excavation could have followed - other evidence that might have been brought to light if a different decision had been taken here or a different course of action taken there, other interpretations that might have been made, other reports that might have been written. All the uncertainties and surprises of excavation have been ironed out by the text. It is implied that any team of archaeologists would have discovered exactly the same facts - that the complex series and sequences of events, and the cumulative interpretation of material remains encountered, would have been more or less the same no matter who excavated the site. In removing the agent and the act of discovery from the text, then, time and any sense of excavation as temporal process has also been erased.

2.8 Categories and Prototypes

A quality of timelessness is an attribute of any record or text. Words or facts are frozen or suspended in time, 'preserved' from the flux and change of everyday life. Since the metaphor of the archaeological record encompasses both the material record and the representative or textual record, and indeed makes out these two kinds of record to be practically equivalent to each other, we can explore the (usually implicit) analogy that pertains between them here. For just as objects are fixed within the static layers and stratigraphy of the material record, so they come to be fixed within the static categories and classifications of the representative

record. Once admitted into one of these categories, it would take a labour-intensive excavation of the text to dig them out again.

Examples of the assimilation of new facts into the existing body of knowledge include:-

> "the slack profile and the simple rim [of the round-bottomed bowl] *is broadly comparable to* vessels of the Ebbsfleet series (cf. a vessel from Capel Garman, Gwynedd; Lynch 1969, fig57,23)" (*p.71, para.3*)

> "The decorated bowl clearly *falls within* the Mortlake style of Peterborough Ware" (*p.71, para.3*)

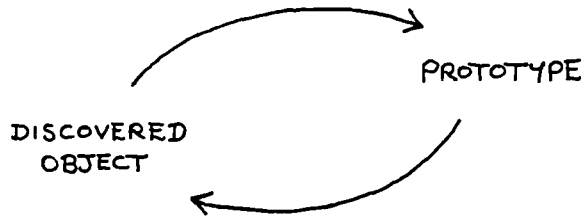
> "The sherds from Site 2 which show a combination of comb-shaped and incised decoration (p7) *are similar to* a sherd from a Beaker pit at Collfryn, Llansantffraid Deuddior, Powys (Britnell, forthcoming) associated with a radiocarbon date of 1835+85bc(CAR572)" (*p.72, para.2*).

> "The presence of finger-printed sherds and comb-stamped decoration with oblique motifs *suggests a general attribution to* a late stylistic Beaker phase (cf.sherds from Trelystan:Britnell 1982,165-66)" (*p.72, para.2*).

> "Other Welsh examples [of jet buttons] are known from Ysgwennant, Clwyd (Savoury 1972, fig.17,f-g; Savoury 1980, fig.50; associated with a Southern Beaker), Merthyr Mawr Warren, Glamorgan (Savoury 1980, 70) Peny Bone, Anglesey (Lynch 1970, fig40; associated with a jet necklace) and Merddyn Gwyn, Anglesey (Lynch 1970, Fig.34; associated with a long-necked Beaker)" (*p.79, para.2*).

Many such examples can be found in the section on 'Finds' and the concluding 'Discussion' (*p71-86*). In each case, the discovered object is admitted into a category of other, similar objects which are already documented. The category can be described as a network of associations and ideas about date, function, purpose, etc, of a particular kind of object. The documented object serves as a model or 'prototype' to which the discovered object has to conform in certain respects in order to be admitted to the category. Once admitted, the discovered object may

itself subsequently become a prototype, cited in other excavation-reports to legitimate and make sense of further new discoveries. In this way established categories are reproduced through the publication of new data.



Note how reference to previously published documents can support and legitimate the claim of the discovered object to be accorded full factual status, can lend credence to the text, and can add to the impression of 'realism' that the text conveys to the reader. Indeed, it might be said that the degree of realism achieved by the text is a measure of how successfully the data from Four Crosses have been integrated into the pre-existing (conventional) scheme of knowledge - of which the report is both product and reproducer. In this respect it is interesting to compare the accounts cited above - where discovered objects can be readily assimilated into established categories - with the following account of a 'stone object' for which no appropriate category seems to exist:

> "Whether the shape is natural or not, it seems likely that it had been deliberately deposited with the burial either as a talisman or even conceivably as a tool" (*p.79, para.3*).

Without an appropriate categorization - and therefore without even a name - the factual status of this object is insecure. Its meaning is fluid rather than fixed: its possible function can only be guessed at. There is no documented object or prototype to legitimate its inclusion in the text. Hence the textual voice shifts from a tone of certainty to a tone of uncertainty. As an opposite case, the example highlights the power of linkages with other textual objects in authorizing or 'lending credentials to' a new fact as it emerges into the textual domain. But it also provides a fleeting glimpse or suggestion of some pre-textual moment when all meanings

were fluid and uncertain.

The static structures of the text hide and cover over the act of discovery - where meanings are open-ended and unfold through time. As the moment in time when material evidence emerges from the timeless material record to be forged into the timeless representative record, the act of discovery is necessarily 'squeezed out' by the text. Only by excluding real time can the text purport to be broadly equivalent to the material record it represents. Time is the essence of the act of discovery. Timelessness is the essence of records and texts.

2.9 Inferential Meanings

The 'matter-of-fact' style of the excavation-report gives the impression that it consists simply of a description of material evidence. But this description is itself an interpretation of the evidence in terms of past human behaviour. References to human agency in the past are studded throughout the text - even if they only emerge when the reader specifically looks for them. The more we look, however, the more we find that the meaning of the evidence described has already been fixed for us in advance of our reading of it:-

> "The pit was orientated north-east to south-west, with steep sides and a flat base, and *had been cut down* through the subsoil into the underlying gravel. The pit was filled with an homogenous brown clayey loam (7.5 YR 5/8), containing numerous small pebbles and some scattered framents of charcoal, probably representing the backfill of material *originally dug* from the pit" (*p.56, para.2*).

> "The pipe lay at the centre of the overlying barrow-mound, the five outer stake settings and the ring-ditch, all of which may have been *set out* by reference to it. The *purpose* of the post may thus have been quite short-lived, but its substantial dimensions suggest that it was *retained as a marker* which projected above the top of the mound" (*p.56, para.5*).

> "The gravel was fairly compact; few stake-holes penetrated it for more than one or two centimetres, and although some of the points were slightly angled, it seemed they were *intended* to be vertical... The buried soil remained essentially intact between Stake Circles 2 and 5, and since the original stakes had almost

invariably been *driven down* through the soil horizon to the surface of the underlying gravel, the differences in depth... suggest that the barrow itself had been *sited* on a low natural mound having a slightly thicker depth of subsoil" (*p.57, para.1*).

Such extracts refer not just to human activities in the past (the digging of pits, the setting out of post-circles, the driving into the ground of stakes, the siting of mounds or barrows, etc), but also to the intentions and purposes entailed in those activities. A whole range of assumptions about the nature of human agency underlies the description of material evidence . These become more apparent when we consider that even to identify an object or pattern as artefact implies intentional human labour as the causal agency responsible for observable effects (see Chapter 8). Thus to identify a feature as a 'stake-hole' implies the former existence of an agent who drove in the stake; to identify a feature as a 'pit' implies the former existence of an agent who dug the pit; and so on. When this is taken into account, even the driest and most 'factual' of passages in the text are based upon multiple inferences about past human action:-

"The outer five *stake-circles* were concentric with the *ring-ditch* and the *post-setting* in the central *pit*. Some of the *stake-holes* of the outer circles were missing on the eastern side of the *barrow*, almost certainly due to the poor state of preservation of the *mound* and *burial* soil at this point" (*p.56, para.8*).

References to past human agency, then, do not just 'follow from' the evidence presented in the text; nor are they merely interspersed with the evidence; rather they are embedded in the very words that are used to describe material phenomena. Where do these inferential meanings originate? The textual voice seems to imply that such meanings were somehow contained or preserved in the material record itself, and have carried over into the representative record through a process of translation. Post-processualists would argue that meanings about the past are created in the writing of the text. But the active meaning-giving role of the agents of discovery, the diggers themselves, is never considered - simply because they have been 'written out' of excavation-reports and theoretical discourse. The idea that diggers - as practical reasoners, manipulators and explorers of material evidence

- meaningfully constitute the data they produce is completely foreign to theory, which appropriates all meaning-giving activity to itself.

2.10 A Return to the Lifeworld

In this chapter we have used archaeology as a metaphor for the deconstruction or 'excavation' of archaeological texts. It has been found, however, that there are limitations as to what such a deconstruction can accomplish. There are 'layers' of archaeological activity which are so deeply 'buried' or 'covered over' by the text that no textual analysis can bring them to light. The act of discovery, the agents of discovery, the temporality of discovery - and all the uncertainties, surprises, disappointments and anticipations of excavation practice - have been smoothed out by the text. The genesis of facts in the flux and process of perceptual experience does not figure in the excavation report. Instead a timeless reality has been constructed for the reader, in which meanings are fixed rather than fluid, closed rather than open-ended, and certain rather than uncertain. While the facts and meanings which are the products of the act of discovery have survived the writing process, all that remains of the act of discovery itself is its absence. Only a reader who has actually participated in an excavation at some time or other can 'fill in the gaps', drawing analogies from his or her own experience to infer the former activity of the agents of discovery.

Thus the text which purports to represent or describe the world has the effect of alienating the reader from that world, as it is encountered in perception. It takes for granted the cognitive and perceptual conditions that make knowledge of the world possible in the first instance. As Street (1989:367, paraphrasing Tylor 1987) puts it, "Writing is the 'culprit' since, through the double separation it effects between signs, the sounds they stand for and the 'things' these in turn represent, writing shifts the locus of reality away from the world itself and towards the system of signs through which we come to 'know' it. In a literate culture we know the world, then, not through our senses but through signs, which thus displace the subject from the world and alienate him of her from it." If this argument is accepted then there are basically two strategies open to us. The first is to constitute scientific discourse as a kind of 'poetics', forever removed from the lifeworld of bodily action and experience. The second is to attempt to break through the webs of textual

meaning in which we are suspended, and to re-discover the perceptual experience of the world that precedes writing. It is this latter strategy that will be adopted here.

This means extending the range of the archaeological metaphor beyond textual analysis and into the practical realm. As it happens, phenomenologists and existentialists have always made much use of the archaeological metaphor. Merleau-Ponty (1964:5), for example, argues that "we must rediscover the structure of the perceived world through a process similar to that of an archaeologist. For the structure of the perceived world is buried under the sedimentations of later knowledge" (see also Pickles 1985:29). This notion of the sedimentation of knowledge is derived from Husserl, whose phenomenological slogan "Back to the things themselves!" - has a peculiar ring to it when applied to archaeology, like the sound of spade on stone (because a phenomenology of archaeology necessarily involves bringing the archaeological metaphor back to bear upon its source). Husserl's pupil, Heidegger, used a kind of archaeological metaphor as a model for understanding perception itself. In *Being and Time* (1962) he characterises perception as an 'uncovering' or 'opening' of the world, in which entities that were 'hidden', 'buried' or 'covered over' are 'torn out of hidden-ness', 'struck by open-ness' and 'break into space'. A transaction or encounter occurs between the perceiver and the perceived, with a mixture of activity and passivity in each (Olafson 1987:56-9). It is this encounter that Heidegger calls 'Being-there' or 'Being-in-the-world'.

Heidegger's notion of the "clearing" - as the space opened up by the perceiver from which entities emerge to be encountered - reappears in this thesis as the 'material field'. The material field bears only a passing resemblance to material evidence that is represented in archaeological texts. It has a hardness and a coldness to it, a texture and a resistance to the touch. It includes the tools which are used to work material evidence, as well as the evidence itself. Far from being static, it unfolds through time as it is being cleared or opened by diggers in the act of discovery. Indeed, the temporal structure of the material field derives from the situation and actions of diggers within and upon it. This clearing is the 'site' of the act of discovery.

To set out to explore the ontological ground of archaeological knowledge, we have

first of all had to clear a space for such an enterprise within theoretical discourse itself, and to open up that part of the world which texts have closed for us. Prising apart the bars of our textual prison has been a major preoccupation of this chapter and the last. In so far as this has been accomplished, an 'escape from the text' implies nothing less than a bodily escape - albeit only a partial and temporary one. To my mind, ethnography and phenomenology go hand in hand, since both involve an immersion in the lifeworld. Both can be used as methods of exploration - means of opening up the social and familiar worlds - in the same way as excavation is a means of opening up and exploring the material domain.

Part II

Fieldwork Report

Chapter III

THE SITE

> *"It is possible to step down from the sovereign viewpoint from which objective idealism orders the world... To do this, one has to situate oneself within real activity as such... one has to return to practice, the site of the dialectic between the opus operatum and the modus operandi." (Bourdieu 1990:52)*

3.1 Some Background Information

This account of archaeological practice is based upon a field study of a particular excavation in Britain, and is written from notes taken out in the field. During the winter of 1989-90 I worked on the excavation as a 'participant-observer', for a total of 11 weeks over a three month period. Although I missed the first few weeks of the dig, I arrived just as the last of the topsoil was being removed, and (apart from a short break mid-way through) was therefore able to witness and take part in the excavation proper more or less from beginning to end.

The site was located on gravel terraces overlooking an estuary, in a rural setting. (It is important to make clear from the outset that by 'site' archaeologists do not mean merely 'situation of'. The site is the object as well as the locus of archaeological activity. It is that part of the landscape which, imbued with significance, is itself surrounded by the general environment.) The archaeological significance of the site was first recognised from aerial photographs, which showed a complex of crop-marks over a region of about 400 square metres; some of these were provisionally interpreted as pit-scatters, field enclosure ditches and trackways (of multi-period date). Of most interest, however, was a cluster of about 30 circular features or 'ring-ditches', varying from 6-12 metres in diameter, in one corner of the area.

These were thought likely to be of Bronze Age date, though there was a slight possibility that they could be of Anglo-Saxon origin.

The decision to excavate was prompted by the impending destruction of the site through mineral extraction, giving the dig a 'rescue' character. The cluster of ring-ditches was chosen for a programme of selective excavation, partly because of its archaeological interest, but also because this area was closest to the advancing quarry-edge. (No account is given here of the intensive negotiations - between the county archaeological unit and landowner, mineral extraction company, funding bodies, etc - which must have conditioned the location and size of the excavation trench.) A large area of about 120 x 60 metres was opened up, with one side of the trench running alongside the quarry.

The excavation team consisted of three staff members (**R**, **T**, and **W**) plus seven temporary diggers on short-term contracts (**A**, **B**, **D**, **E**, **G**, **H**, and **L**), most of whom had worked for some time on the 'digging circuit'. As experienced excavators, all possessed varying degrees of skill and competence in the everyday tasks of excavation; there were no novices on this site. I was fortunate to have the help and co-operation of all these archaeologists during my fieldwork. My arrival on the site brought the full complement of archaeologists to eleven. It is important to point out that I too was an experienced excavator (having once spent several years working on the digging-circuit); this experience both helped and hindered my research, in ways which will become clear in the course of this report. A very different report would have been written by an ethnographer coming to archaeological practice for the first time.

Upon my arrival, the site (which can henceforward be regarded as that area enclosed and bounded by the edges of the excavation-trench) had already been stripped of most of the modern plough-soil by mechanical means. The last vestiges of plough-soil were now being removed by an extensive hoeing operation; my first few days on site were spent joining the line of diggers engaged in this backbreaking labour. Many of the expected archaeological patterns which showed up on the aerial photographs were now visible on the surface or in the process of coming to light. In the north-eastern half of the site, the dark fills and outlines of features showed up quite clearly against the background of orange (natural) grav-

els. Towards the south-west, however, features tended to be obscured by spreads of brick-earth (peri-glacial deposits similar in colour and texture to archaeological fills, and difficult to tell apart from them).

Fig 1 shows a sketch of the site after general hoeing of the site had been completed, prior to the excavation of features. It is based partly upon the 1:50 plan of the site which archaeologists themselves completed over the next few weeks, though should not be taken by the reader to be equivalent to that plan. Like all the sketches in this fieldwork report, scales and directions given are approximate only.

To help the reader understand the sketch of the site, a brief description of the features depicted is necessary. It is important to point out, however, that even at this early stage of excavation it is impossible to separate the material evidence from the meaning or significance that it has for archaeologists. A description formed in the language of Munsell Colour Codes, for example, would simply not do justice to the ways in which archaeologists *perceive* the site. The following account reflects my general understanding of the site after my first few days of work, as it was conveyed to me in conversations with archaeologists. It is based mainly on talks with **T** (who explained the aerial photographs to me), **R** (who gave me a site tour) and **H** and **L** (who I worked alongside during general hoeing).

1. **identification of features**: The linear feature which crosses the site from SE-NW is known to be a 'modern trackway'. All other straight linear features are thought to be 'enclosure-ditches' of various periods. The ring-shaped features are obviously 'ring-ditches' - the ploughed down remains of 'burial mounds' or 'barrows'. The entire group of ring-ditches comprises a 'barrow-cemetery'. Features marked on the sketch as black dots are thought to be 'cremation-burials'; many of these have burnt material and broken outlines of pottery vessels visible on the ground surface. The irregular shaped features scattered across the site have not been identified yet; they could be 'inhumation-pits', 'rubbish pits' or natural features, though those enclosed by ring-ditches are thought likely to be burial pits. All identifications are of course provisional, and have yet to be tested by excavation.

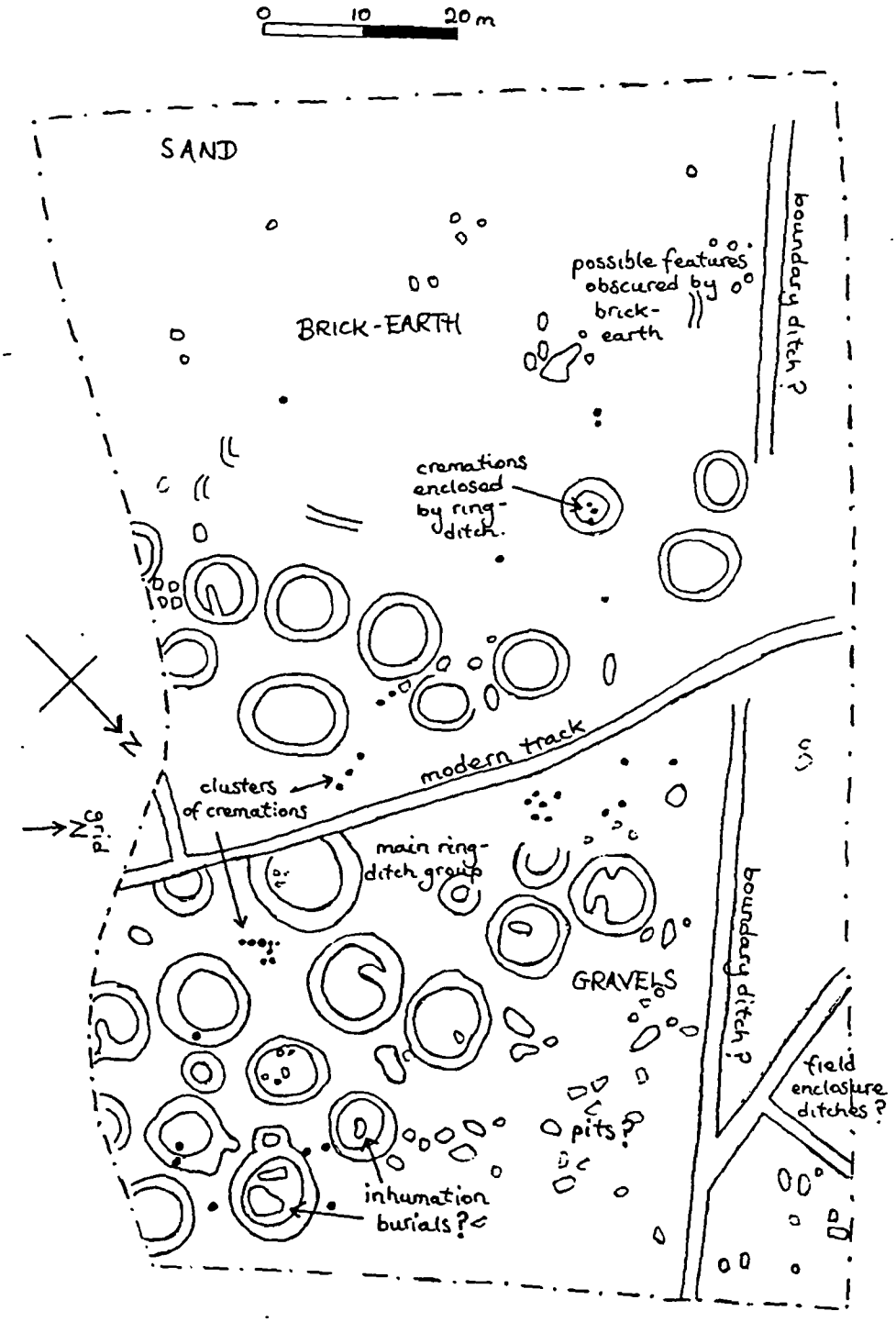


Figure 1: Rough Plan of the Site

2. **spatial and temporal ordering of features**: The ring-ditches are 'grouped together' into a cemetery; their distribution suggests that there was considerable continuity in the use of the cemetery. (No ring-ditch cuts or is cut by its neighbours; if there had been any overlapping, this would have suggested different periods of barrow building.) The 3 ring-ditches slightly 'set apart' from the others, however, could represent a different phase or tradition of burial. As well as 'respecting' each other, the ring-ditches also appear to respect (ie. are all situated on one side of) the straight linear feature or ditch which crosses the site from the SW-NE; this feature could be a 'boundary ditch' of the cemetery - or, alternatively, a ditch dug at a later date around an existing barrow field. Whether bounded or unbounded, however, the cemetery is understood to have been 'an area set apart for the burial of the dead', with the settlement situated elsewhere. Within and 'enclosed by' some of the ring-ditches are 'central' pit-like features which are thought likely to contain inhumation-burials (around which the ditches were dug and over which the barrows were constructed). Most of the cremation burials, on the other hand, are situated outside and between the ring-ditches - suggesting that they were deposited after the barrows had been built and that they represent a later form of burial rite. The exceptional case of two cremations enclosed by a ring-ditch might, it is supposed, represent a transitional form of burial, combining the earlier technique of ring-ditch building with the later technique of cremation (and indicating some continuity between them). Many of the cremations are 'grouped together into clusters', in much the same way as the ring-ditches are grouped together into a cemetery, suggesting that certain areas were the 'foci' of mortuary activity, with members of the same family or group buried in close proximity to each other.

That such an account is possible at all suggests that archaeologists do not experience the site solely in terms of its material form and properties. Nor do they experience it as simply the aggregate of individual items of evidence, unrelated to each other. The site is always experienced as a meaningful and interrelated set of phenomena. And since we cannot discuss the site at all without - implicity or explicity - taking into account its significance for us, let us briefly examine

the dimensions or layers of meaning that, inter-bedded with material phenomena, constitute *the site.*

3.2 The Meaning of the Site

First of all we should note that the archaeologists' perception and understanding of the site is already a description of it - in the sense that most of the material patterns have names which describe them more or less exactly (eg. 'features', 'cuts', 'ring-ditches', 'pits', 'barrow-cemetery', etc). This is not just a case of attaching a label to something that was initially perceived as a non-linguistic entity. As any excavator will testify, in their first encounter with a material pattern they often really do see the 'cut' of a 'ditch' emerge from the ground as it is being worked. They really do see 'postholes' and 'pits' rather than just discolourations or differential textural patterns in the soil. It is difficult to separate language from perception, or the act of *recognising* significant patterns from the act of *naming* (and in naming, *interpreting*) them. And when we reflect upon the names that are used, we find that a great deal more is known about the material evidence than is visible on the ground surface.

When archaeologists identify a soil configuration as an "archaeological feature", for example, it is assumed or implied that the (observable) pattern is the product or effect of human agency at some time in the distant (unobservable) past. If the feature is identified as a "ditch", a whole range of tacit assumptions are invoked concerning the nature of this causal agency - the kind of practical activity involved in digging a ditch, or the functions that a ditch might serve within a human community. And if a group of features is identified as a "cemetery" then an even more wide-ranging set of assumptions about human mortuary, ritual, and symbolic practices is brought into play. Each name has a semantic field of associations, concepts, values, resonances, beliefs connected with it; the object named is perceived within the context of this semantic field.

We should also note that material patterns as they appear to archaeologists are meaningfully-related to each other in space. The relations between features are as real as the features themselves. Cremations are 'grouped together' into clusters; ring-ditches are 'grouped together' into a cemetery. There are relations of inclusion/exclusion, inside/outside, centre/periphery, etc. Thus some ring-ditches

are seen to "enclose" possible inhumation-pits, and the cemetery as a whole is "bounded" by a possible boundary-ditch. The meaning of the site is intermeshed with these spatial relations (eg. a pit like feature enclosed by a ring-ditch is perceived quite differently from similar features situated outside; its situation or context is an important part of its meaning). From these spatial relations, moreover, archaeologists can discern relations of temporality or sequence. It is a well known archaeological principle that, where one feature can be seen to cut another feature (eg. a pit cut into a ring-ditch), the former is later than the latter. But archaeologists can also discern temporal relations from the evidence of features that do not cut each other (eg. the distribution of cremations outside and between the ring-ditches suggests that they are a later form of burial). Such observations do not always refer to a succession of different activities, separated in time; sometimes they refer to sequences of actions within a single activity (eg. in the case of burial pits enclosed by ring-ditches - the digging of the pit, the deposition of mortuary remains, the excavation of the ditch and the construction of the mound over the burial are all understood to have taken place within an ordered sequence of intentional human labour).

If an archaeological understanding of the site includes inferences about unobservable patterns of human behaviour in the past, and relations which cannot be grasped as things in themselves, it also refers to unobservable parts of the material site itself. L said to me, "we've really only scraped the surface so far." The huge bulk of the site lies under the surface, like a submerged presence, buried and hidden from view. All observable patterns seem to shade off into this invisible region. The surface of the site is scattered with objects which - embedded in the soil - are only partially visible, or partially occluded by intervening layers. In much the same way, the cuts (outlines) of features are also experienced as incomplete; that is, as two-dimensional manifestations of patterns which are known to have three-dimensional form. Cuts not only extend horizontally into the sides of the excavation-trench (eg. the 5 ring-ditches truncated by the SE edge); they also extend downwards, sloping out of sight or dipping under gravel spreads and the dark fills of features. In these ways, the site *reveals* itself to the skilled eye while at the same time *hiding* the greater part of itself.

Yet just as the human eye tends to complete the circle of a ring-ditch where only half or less of its circumpherence is open to view, anticipating the continuations of the inner and outer cuts beyond the realm of the visible, so the vertical extensions of cuts are also anticipated. All features marked in Fig 1 (ring-ditches, cremation pits, ditches, etc) are expected to have cuts which can be followed down to an anticipated base. Thus archaeologists can identify a "cremation-burial" (ie. a cremation-urn within a pit), pre-dicting and pre-figuring its three dimensional form from the slightest traces on the horizontal ground surface. For the most part, of course, the extensions of patterns into the invisible region are not known with any certainty; they are constituted as things 'to be looked for', 'to be tested', or 'to be discovered' rather than things that are already known.

These preliminary remarks will serve to introduce the reader to the complexity of archaeological perception and reasoning, and the multi-dimensional character of the site as it is experienced. Importantly, the site is characterized as much by the unobservable or the invisible as by the material patterns which can actually be seen on the ground surface. The relevance of this point will become clear when we come to examine the nature of the excavation itself - for excavation is essentially a changing of the relations between the visible and the invisible domains. It is a *making visible* or *bringing to light.* As such the activity of excavation has a fundamental orientation towards the invisible domain.

3.3 Excavation Strategy

Archaeologists evaluating a site are concerned not only with 'what things are' but also 'what to do with them'. If all the material patterns shown in Fig.1 can be described as *objects of significance*, they can also be described as *objects of intention*; indeed, the significance or meaning of these patterns is inextricably bound up with the intentions, projects and purposes of archaeologists themselves. Every significant pattern has a project associated with it (though there are patterns, such as animal burrows, modern ploughmarks, etc, which are not associated with a project; accordingly these have not been marked on the sketch, or indeed on any of the plans of the site). Objects appear to us as significant precisely because they can be incorporated into our projects. It is intended to explore by excavation just about all the patterns depicted in Fig.1.

The first task to be undertaken once hoeing is completed, T told me, is to excavate the cremation-pits and to remove the contents (the urns containing burial remains) as soon as possible. There are several reasons for this. Firstly, most of the cremations are known to be stratigraphically later than the ring-ditches (it is a fundamental principle of excavation that layers or features are excavated in the reverse order to that in which they were deposited or cut). Secondly, the excavation team has been granted a special licence empowering them to remove all human remains from the site; indeed, they have a legal responsibility to do so. Thirdly, many of the cremation-vessels and their contents are now partially exposed to the open-air and inevitable damage from frost, wind and rain. The plan is to remove the cremation-vessels to the more sheltered environment of a conservation laboratory, where their contents will be excavated, analysed and recorded by conservators in a quite separate, more delicate, excavation.

Once the cremations have been dealt with, the intention is to cut segments through all of the ditches, both circular and straight, with the primary aim of obtaining dating evidence (but also to record the profile and stratigraphy of the features, and to take samples of the fills). Some of the ring-ditches will be completely excavated. The areas enclosed by ring-ditches are to be examined closely for evidence of structures (eg. postholes, etc), and it is hoped that the pit-like features inside some of the ring-ditches will prove, on investigation, to contain inhumation burials and other grave contents (likely to provide firm dating evidence not just for the pits, but also for the ditches surrounding them, and the barrow-cemetery as a whole). It is also intended to excavate the many pit-like features, situated outside of the ring-ditches, whose status as 'archaeological' or 'natural' has yet to be ascertained. The south-western half of the site is especially problematical, as it is difficult to distinguish archaeological fills from their (natural) setting of brick-earth. T thinks it likely that many features in this area have not been identified as yet: it might be necessary to remove a much deeper spit of soil from those regions where the brick-earth is most prevalent, in order to be able to see these anticipated patterns.

At present the deadline set by the mineral extraction company for the end of the excavation is the last week of December (this will subsequently be extended to the beginning of February). The strategy for partial sampling of the site through

excavation has been designed to fit in with this deadline. It is a working strategy, not a programme fixed in advance, and as such is flexible and open-ended. Everyone recognizes that, as excavation proceeds, strategy may have to be considerably modified to take account of emerging, unexpected, evidence. [As it turned out, however, the excavation developed along a trajectory that was to a large extent prefigured by initial strategy at the start of the dig. A phase of intensive work upon cremation-burials was followed by a phase of digging segments through ditches and other features. This was followed by a final phase of activity directed mainly towards locating features which might have been missed first time round, by the digging of shallow trenches through brick-earth deposits. All these phases overlapped with each other, with preceding phases still in progress as each new phase was begun.]

3.4 The Setting of the Site

A major characteristic of any site is its setting - the background against which all activity on the site takes place. This site was situated in relatively flat, open countryside with a distant horizon visible on three sides. To the north-west and north-east were large fields, bordered by woodland. To the south-west, just beyond the edge of the site, was the sand-quarry - from which the noise of cranes and trucks at work continually reminded us of the impending destruction of the material evidence. Beyond the quarry, the land sloped gently down towards the estuary - and it was across the waters of the estuary that, on clear winter evenings, we occasionally witnessed the most spectacular of sunsets, which signalled the end of the working day. (Anyone who worked on the dig will remember these sunsets, together with the surrounding countryside and the general atmosphere of place, as an integral part of "the site".)

A band of woodland ran parallel to the south-eastern edge of the site. Here, in a clearing amongst the trees, the temporary huts of the excavation team (planning hut, finds hut, toolshed, tea-hut) had been constructed. In many ways this cluster of sheds provided the centre or focus of archaeological activity. Most tasks began and finished here, not just in the mundane sense that the tools with which to accomplish the task had to be collected and returned. Materials for the production of data also had to be collected (eg. draughting paper, context-sheets,

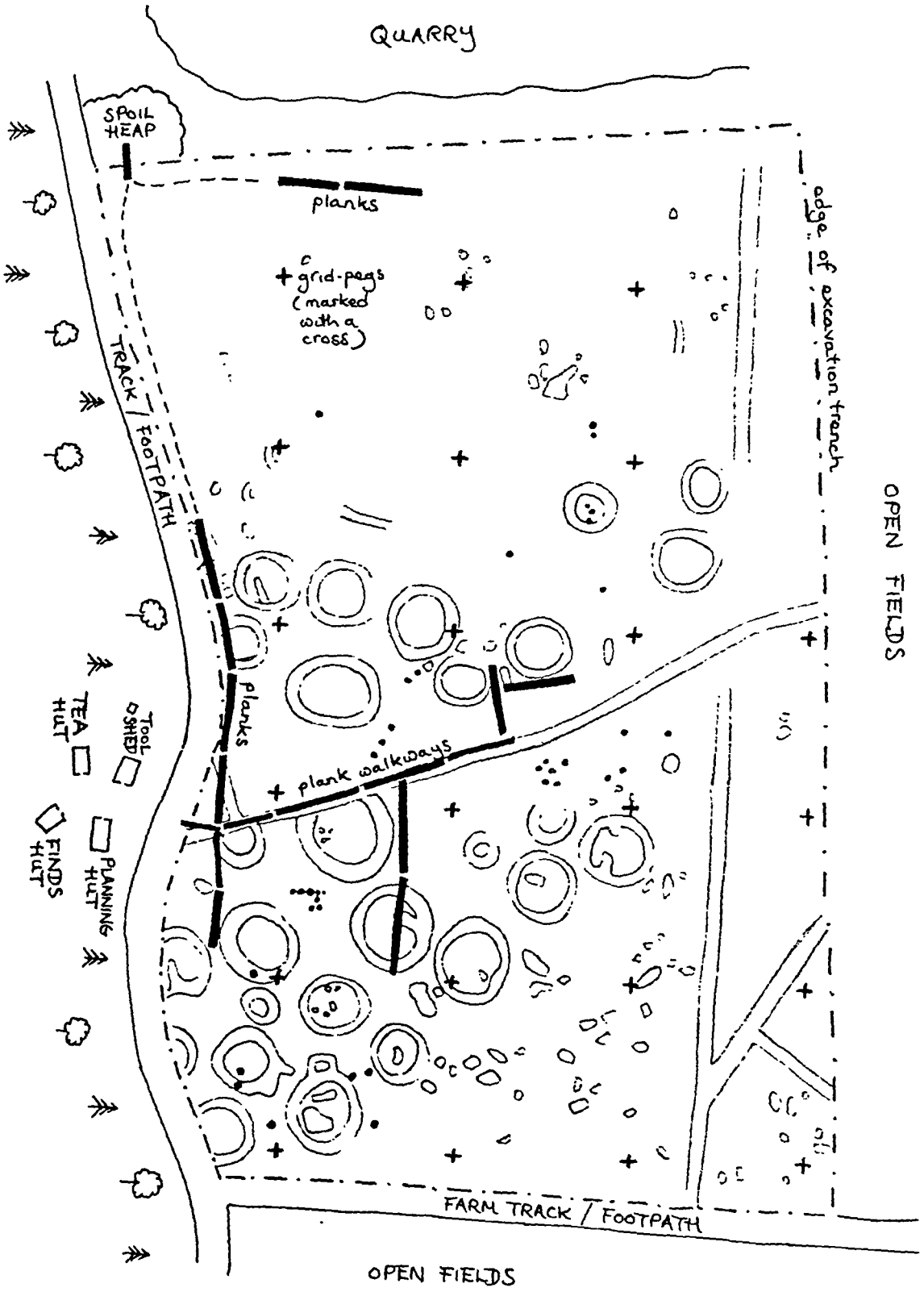


Figure 2: The Site in its Setting

finds-bags, etc), and all the finished products of excavation practice (plans, completed context-sheets, finds, soil-samples, etc) were brought back to the huts for temporary storage. Another way of putting it is that all paths converged and radiated out from here; workers set out from the huts at the start of the day to their various tasks on different parts of the site, returned at teabreak, set out again, returned at lunchtime, set out again, and so on - a pattern of comings and goings reflected, and given material form, by the network of planks or walkways laid out on the surface of the site, all ultimately leading to and from the huts in the clearing.

The network of planks (the configuration of which was constantly changing) also led to the spoil-heap, situated just outside the south-west corner of the site. If those parts of the material evidence which were extracted, packaged, labelled and taken to the huts for safekeeping (eg. finds, soil-samples, cremation-urns, etc) can be described as ordered and meaningfully-related items of data, then the spoil-heap was comprised of exactly the opposite. This was where unwanted material was brought, by means of bucket and wheel-barrow, to be dumped. Such material had generally been trowelled, hoed, shovelled or otherwise excavated away in the process of uncovering meaningful evidence - and can therefore be characterised negatively as having the quality of *non-meaning*. It was discarded precisely because it did not fit in with the projects of the archaeologists, or because no further project could be found for it. In this respect it is a kind of anti-data. As opposed to the material carried to the huts, which represents order, the spoil-heap is that neglected adjunct of the site which must be seen to represent chaos and disorder.

A footpath/farm track ran alongside the south-east and north-eastern sides of the excavation-trench, leading to the nearest village about two miles away. Local people using this footpath would often stop to ask us what we were doing, how we were getting on, whether we had found anything interesting, etc. Many of these became regular visitors, who followed the course of the excavation over several months. Of most interest, however, were our initial contacts with such visitors. Coming upon an archaeological excavation for the first time, their questions and comments (one man asked us what we were building) revealed a perception of the site quite different from our own. Material patterns which were obvious to us, such as the dark fills of ring-ditches that stood out from the background of natural

gravels, were not at all obvious to them. Sometimes it took a considerable effort on our part to get them to see such patterns. Indeed, it became apparent that they perceived the site as a more or less undifferentiated surface of mud and stones - with no outstanding features - and comprised neither of *objects of significance* nor *objects of intention.* The layman's perspective provides an important contrast to the archaeological perspective described earlier. To someone who is situated outside of the shared system of skills, projects, values and other taken-for-granted knowledge (that binds a group of individuals together into an excavation team), the site itself may be devoid of significance or meaning.

Conversations between archaeologists and laymen can be characterised as interactions between *insiders* and *outsiders*, not just in the sense that archaeologists possess inside knowledge whereas laymen do not, but also in the sense that these conversations generally took place with the archaeologists standing inside the excavation-trench, and the lay-man or lay-woman standing on the footpath outside it. These were two-way transactions. Through regular visits laymen became to some extent insiders - began to see the significant patterns, learn their *description*, and understand our purposes in excavating the site. Conversely, through being visited archaeologists became to some extent outsiders - to glimpse what the site might look like *in the absence of a description.* Questions such as "what are those bits of wood for?" - referring to the many wooden pegs driven into the ground, marking out the site grid (which, unless we were actually using them, did not normally figure prominently in our perception of the site) - had the startling effect, at least for me, of suddenly making opaque the otherwise quite transparent grid-like spaces within which our everyday activities were situated, orientated and organized.

Interactions between insiders and outsiders formed an important part of the background or setting of my own research. On the one hand the layman's perspective, or truly naive point of view, was something I was constantly striving to attain - though my past experience of working on the digging circuit made it impossible to achieve. On the other hand it was necessary to penetrate into the intersubjective meanings and activities of excavation in order to begin to understand them. This paradox or tension will reappear in various forms throughout the thesis; it char-

acterised the whole experience of conducting fieldwork research, and is inherent in the ethnographic method of 'participant-observation'.

3.5 The Presence of the Ethnographer on Site

Perhaps the most important period in any ethnographic project is the researcher's entry into the field. In order to study any kind of cultural activity at first hand the researcher first of all has to be accepted, or at least tolerated, by members of the group in question. Usually permission to conduct fieldwork has already been granted by the relevant authorities (in this case, the assistant county archaeological officer), but it is the agreement of people out in the field that is perhaps more important. For without their help and co-operation nothing is possible.

Accordingly, the first two weeks were devoted mainly to *becoming* a participant - working from nine to five as an ordinary digger, and suspending for the time being my prospective role as an observer (though a journal of the day's events was written up in the evenings). It was not until the tenth working day, several days after the excavation of features had begun, that I judged it appropriate to put my research strategy into action and start conducting interviews. During this initial period I had the opportunity to outline my research to the excavation-team, both collectively and individually. Their reactions and comments were a significant factor in shaping the manner in which I subsequently carried out the research. Some had reservations, for example, about the very idea of being constituted as the object of investigation, by "a spectator, sitting on the side of the trench". It was clear that, in order to gain their respect and secure their help I would have to - as one digger put it - "push as many wheelbarrows as anyone else".

Another significant factor in shaping fieldwork strategy was the character of the site itself. I had originally intended to focus attention on particular areas of the site, recording in detail the sequence of events as excavation proceeded down through the build-up of archaeological layers until natural was reached. However (apart from within the features themselves) there was no deep stratigraphy on this site. In removing the ploughsoil the 'natural' - gravel, sand and brick-earth deposits - had for the most part already been brought to light. The only archaeological layers visible were the fills of features cut into the natural. This effectively forced me to take a more geographical perspective upon the spatial organization of activity

across the site as a whole. A very different ethnography would have been written of a deep-stratigraphy excavation, such as those on urban sites.

The sheer expanse of the site was a problem; there was so much going on at any given time, and these activities were spread out over a surface area larger than a football-pitch. "How could human behaviour be described?" asks Wittgenstein (1967b: para 567); "Surely only by sketching the actions of a variety of humans, as they are all mixed up together... not what *one* man is doing *now*, an individual action, but the whole hurly-burly of human actions, the background against which we see any action." The problem is that the ethnographer, like anybody else, is an embodied and situated observer; wherever he is, there are many places where he is not, and a multitude of events which cannot be observed and recorded at first hand. The fieldwork strategy, conceived during the first two weeks, and subsequently put into practice, was designed to at least partially overcome these difficulties. It had three basic components:-

1. **Participation.** My active role as a more or less full-time digger clearly had to be retained. It was not only a condition (specified in my initial application to the county council) for my being on the site in the first instance; it was also a condition for any meaningful dialogue or understanding to develop between myself and other workers. Furthermore, it was only by working on archaeological material - hoeing, trowelling, or otherwise *digging* into it - that I was able to acquire a 'feel' for the site. On average I worked as a digger, on designated tasks, for about six hours a day. This had the effect of situating me right in the midst of the 'hurly-burly' of everyday activity, rather than looking in on it from the outside viewpoint of a detached observer.

2. **Interviews/Observation.** For up to two hours a day (usually between afternoon tea-break and sunset), I left the area I was working on and walked around the site, asking other diggers about their work. Doing 'the rounds' in this way soon became a matter of routine, not just for me but also for the workers visited. In visiting a particular part of the site, I would generally ask the digger(s) working there to tell me about the material field they were working upon, the nature of their task in excavating it, the way in which it had been tackled so far, the problems encountered, the plans for further excavation, and so on. Every interview

was different, since the questions and answers related specifically to the unique configuration of material evidence directly in view, but the general idea was to gather information about 1. *the history*, 2. *the present circumstances*, and 3. *the future orientation* of the excavation of that part of the site. An interview could last anything from ten minutes to half an hour, after which I drew a sketch of the material field - with particular emphasis on the features or patterns which had figured in our conversation. While I was drawing the sketch, the worker usually picked up his or her tools and returned to work; the position of the worker within the material field, the tools (s)he was using, etc, were recorded on the sketch, and this was often accompanied by a brief description of what the worker was doing at that time. Then I would leave to conduct another interview elsewhere. On a good day 4-6 such interviews might take place (though this number was frequently reduced through bad weather, pressing archaeological tasks of my own, and other factors). This process would be repeated the next day, when I would try to interview those diggers not visited the day before. Eventually I would come back to the first digger, and the cycle of interviews would begin all over again. In this way I was able to keep in touch with what each worker was doing, and the kind of evidence that was emerging across the site as a whole.

3. **Recording.** Rough notes and sketches taken during interviews were written up in the evenings onto 'recorded event' sheets, which were numbered according to the actual sequence in which they took place. These numbers were plotted on a rough plan of the site, to mark the location of the interviews. Over and above this system of recording I also kept a fieldwork journal; one to two hours were spent each evening writing down the events, impressions, experiences and ideas which had occurred during the day. Thus there are 3 basic layers or levels of recording - rough notes (RN), recorded events (RE) and fieldwork journal (FJ) - supplemented by miscellaneous items such as photographs and charts.

3.6 Methods of Recording and Analysis

Fig.3 shows those interviews or recorded events which were conducted during a period of one month (10.11.89 - 12.12.89). When marked on the plan, recorded events fall naturally into separate sequences for each task or part of the site excavated. Some of the sequences are quite short, or indeed consist of just one recorded

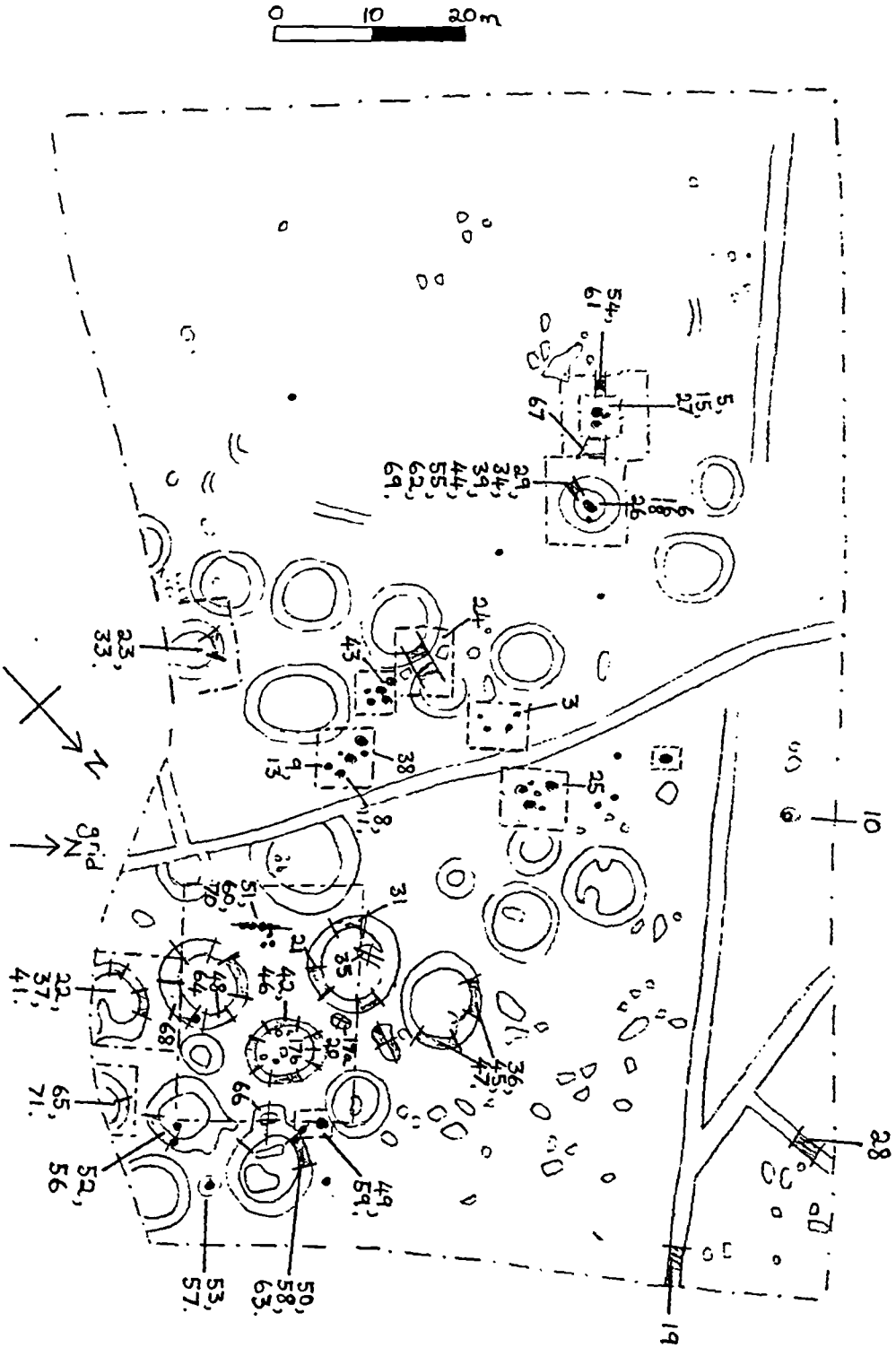


Figure 3: Interviews Conducted on Site (10.11.89 - 12.12.89)

event; in these cases the task was usually accomplished quite quickly. Longer sequences, on the other hand, tend to reflect tasks which dealt with more complex or problematic evidence, and hence took more time. These longer sequences were particularly illuminating to me. Because in each interview workers were effectively 'filling in the gaps' - relating what had happened before my arrival, and what was intended or expected to happen after I had gone - the sequences provided a more or less continuous account of the excavation of that part of the site through time. Once the system got going, the starting point for each conversation would usually be the developments which had taken place since my last visit. There would invariably be a displacement or lack of fit between what had actually happened, and what had been planned or anticipated to happen at the time of the previous interview. Unexpected evidence had almost always emerged in the meantime, changing the actual course of events from their planned trajectory. These 'zones of displacement' within sequences provided the means for apprehending the crucial part played by emerging evidence in the unfolding of archaeological practice.

In subsequent analysis, recorded event sheets could be re-arranged into other sequences and groupings. They could be ordered sequentially, for example, with regard to the workers who carried out the tasks in question:-

A	5	15	27	30	40	54	61	67				
B	6	16	18	26	29	34	39	44	55	62	69	
D	1	4	23	33	40	49	59					
E	7	22	37	41	47	53	57					
G	17	20	32	36	52	56	66					
H	3	25	38	43	50	58	63	65	71			
L	2	9	13	17	21	31	35	42	46	51	60	70
W	8	11	24									
*	10	12	14	19	28	45	48	64	68			

Figure 4: Workers Interviewed (10.11.89 - 12.12.89)

Arranged in this way (Fig.4), each sequence represents the continuing dialogue between myself and an individual worker as (s)he moved around the site from one task to another. [* marks a special category of recorded event, where I effectively tried to 'interview myself' - or at least to give an account of the material field I was working upon, the tools and techniques I was using, etc. One reason for attempting this self-interrogation was simply that, as an active participant for most of the time, I had to include my own activity as part of the activity I had come to study. To interview oneself is of course a contradiction in terms. But this 'subjective' exercise provided a useful counterbalance to the more 'objective' method of interviewing and observing others: it also opened up an unexpected avenue for exploring the 'inter-subjective' or social dimension of the material practices of excavation - see Section 6:4]

Recorded event sheets could also be grouped according to feature-type, which enabled a comparative analysis to be made of the kinds of practical inferences involved in the excavation of particular types of features:-

cremations	1	2	3	4	5	6	7	8	9	10	11	13
	15	16	18	25	26	27	38	43	48	51	53	57
	59	60	70									
ring-ditches	17	21	22	23	24	29	30	31	32	33	34	36
	37	39	40	41	42	44	45	46	47	48	52	54
	55	56	61	62	64	65	66	67	68	69	71	
fire-pits	12	14	49	50	52	58						
other pits	20	35	64									
ditches	19	28										
natural features	20	35	44	53	55	56	57	59	63	66	66	68

Figure 5: Types of Features

The sequences of recorded events/interviews (10.11.89 - 12.12.89), shown in Figs. 3, 4 and 5, represent the most productive period of fieldwork. Upon entering each interview situation I tried to suspend as far as possible my own practical and theoretical knowledge of excavation. The questions asked were designed to challenge common-sense, and from the point of view of workers or interviewees often seemed naive in the extreme (see, for example, the extracts of dialogue from RE23, Section 8.6, and RE40, Section 8:1). This approach gave rise to a certain tension between myself and the worker(s) being interviewed - a tension I found to be a creative one, in so far as workers' replies were illuminating and full of original insight. Most of the concrete examples used in the thesis will be drawn from this set of recorded events.

The radically naive stance recommended by Knorr-Cetina (1981:20), however, proved impossible to maintain. Subsequent interviews were increasingly matter-of-fact and lacking in tension. There was definitely a sense in which my participatory role (working on site, driving the minibus, living in the hostel, etc) was undermining my other role as impartial spectator and questioner. After several weeks I knew the other workers, and they knew me, too well to stand apart - even for the duration of an interview - as a naive outsider. Other circumstances compounded these problems. A break in fieldwork over the holiday period disrupted the continuity of the recording system. Several days were lost through bad weather. The tempo of the excavation increased as the deadline for completion got closer, making it difficult to keep up with events taking place across the site as a whole, or to be able to set aside two hours a day to visit other parts of the site. Such visits had to be made at irregular intervals, as and when the opportunity arose, and now tended to take the form of casual conversations rather than formal interviews. The practice of writing up recorded event sheets in the evenings was abandoned through lack of time, and the emphasis in recording shifted back to rough notes and fieldwork journal. The last few weeks of fieldwork, therefore, involved taking a much more partial and situated perspective upon excavation activity.

This brief account of fieldwork method illustrates some important points about the approach, purposes and objectives of the ethnographer himself. As in any form of investigation (there is no such thing as a 'total ethnography' any more than there can be a 'total excavation') certain kinds of events have been constituted

as the object of study while others have been left, as it were, in the background. The reader will notice, for example, that all the recorded events are located out on site, rather than in the planning-hut, tea-hut, hostel, or elsewhere (see Fig.3). They mostly represent interviews with ordinary diggers, rather than supervisors and director (see Fig.4). And such interviews invariably took place while the worker was actually involved in the excavation/recording of material evidence; indeed, the interviews always refer to a particular set of evidence or material field being worked at that time (see Fig.5). Thus there has been a deliberate focusing of attention upon what would normally be regarded as the mundane or routine events of excavation. And a great deal of emphasis has been placed on praxis or action - on what workers actually do - more so, perhaps, than on what they say about what they do (hence the reliance on notetaking and sketching rather than tape-recording).

The purpose of the investigation was to study the act of discovery. As a working definition, the 'act of discovery' can be said to be *the initial encounter, or trans-action, between a subject and a material object as it emerges from the ground in the context of archaeological practice.* By definition, the act of discovery always involves at least 1. an agent or subject (usually an ordinary digger) 2. an object (a 'find', feature or other archaeological pattern) 3. a material field (from which the object emerges) and 4. a context of work or labour (in which the subject, the object and the material field are bound together in some sort of relation to each other). The rest of this thesis will be concerned with sketching out the structure of the act of discovery. Fieldwork method was conceived, designed, bounded, applied and adapted with this purpose in mind.

Chapter IV

CRAFT ACTIVITIES AND 'TOOLS OF THE TRADE'

"The craft character of the production of data is of some philosophical significance, for it is on this phase that the scientist makes new contact with the external world, or achieves a new organization of his conceptual objects." (Ravetz 1971:81)

4.1 Excavation as a Craft Skill

Archaeological excavation bears a considerable likeness to traditional craft practices. In many respects, it *is* a craft. (For an approach to the sociology of knowledge based on the notion of craft, or occupational technique, see Bensman and Lilienfield 1973).

The dictionary definition of craft is "dexterity; art; skilled trade; occupation". It is a specialized kind of work that can only be carried out by a skilled practitioner. The craftsman - or craftswoman - generally works with a particular set of tools and a particular range of raw materials. (S)he has an intimate knowledge of both of these, and how to manipulate them in relation to each other - knowledge which was acquired largely through practical experience of working with *these* tools on *this* material. Excavation skills are just like this. Competence at everyday tasks has little to do with academic qualifications or formal training, but has everything to do with practical experience. For this reason we find that skilled excavators always have many months or years of experience of digging out in the field.

When excavation is conceived of as a craft, it is no longer possible to consider the skills of excavation in isolation from the tools through which those skills are applied. Indeed, the ontological ground of archaeological knowledge is precisely the practical interaction between archaeologists and material remains which tends to be mediated through the use of tools. The first part of this chapter, then, sets

out to give a basic typology of implements employed in excavation practice - in the *transformation* of material phenomena into data.

4.2 Two categories. Tools-for-NATURE: tools-for-CULTURE

A basic two-fold classification of tools (and of the activities in which they are used) can be made on the basis of the way archaeologists themselves order their equipment. Take, for example, the overnight storage of tools in the toolshed and the planning-hut:-

1. toolshed: spades, shovels, forks, hoes, mattocks, pick-axes, buckets, brushes, etc (wheelbarrows leaning against the outside).
2. planning-hut: pencils, pens, markers, rulers, erasers, compasses, tape-measures, scales, ranging rods, cameras, theodolite, tripods, staff, string, nails, plum-bobs, spirit-levels, planning-boards, etc (planning-frames leaning against the outside; grid-pegs stacked nearby).

Category 1 consists of tools for digging into the earth, and the associated tasks of cleaning surfaces and carrying spoil away; these activites can be called **material transactions** (this term, and also the term 'social transaction' which will be used later in the thesis, is borrowed from Bhaskar 1989:156). Category 2, on the other hand, is comprised of tools for measuring and recording - the representation of material evidence in the form of drawings, photos and numerical/linguistic signs. These activities can be called **acts of inscription**.

This mundane distinction has important ontological implications. The toolshed contains equipment for negotiating NATURE (by 'NATURE' I mean the material evidence which, at least up to the moment of discovery, existed independently of archaeological practice): the planning hut contains equipment for the production and reproduction of CULTURE (by 'CULTURE' I mean the system of signs, significations, representations, meanings, schemes, etc, which constitutes archaeological knowledge and is the product of practices).

This opposition of tools-for-NATURE: tools-for-CULTURE can be experienced by visiting both the toolshed and the planning hut in turn. The toolshed has the earthy smell and neglected air reminiscent of a gardener's shed. There are no win-

dows; it is dark and damp inside. Amidst the profusion of tools there is little room for more than one person to enter at the same time. Indeed, workers tend to enter the toolshed only to collect or deposit tools. The planning hut is quite different from this. It is well-lit, well organised, and the scene of constant activity. Usually one or two people (often the director and supervisor) are at work cross-referencing data or discussing some aspect of excavation strategy. Diggers continually come in to check context-sheets, set up planning-boards, write out labels, etc. A portable telephone links up with the central offices of the excavation unit. On the walls are various plans, notices, memos, safety instructions. The shelves are filled by excavation reports, technical manuals, files of completed context-sheets (repositories of established knowledge) as well as stacks of blank context-sheets, planning paper, empty notebooks (provisions for knowledge yet to be established).

4.3 Material Transactions: Acts of Inscription

During everyday excavation practice, material transactions (MT) and acts of inscription (I) are actually quite discrete activities. Consider, for example, the formalised procedure for dealing with small features, such as pits and postholes:-

1. cleaning over of feature to delineate outline of cut (MT)

2. pre-x photo taken (I)
3. pre-x plan drawn (I)

4. half-sectioning (or quadranting) of feature (MT)

5. photo taken (I)
6. section(s) drawn (I)

7. removal of remaining fill and cleaning of excavated feature (MT)

8. post-x photo taken (I)
9. post-x plan drawn (I)

[Here we consider only those acts of inscription which involve the pictorial representation of evidence. Other acts of inscription - the writing of descriptions on context-sheets, the bagging and labelling of samples and finds, etc - may occur during any of the stages outlined above].

Each type of activity has its own particular tool-kit. For material transactions (1,4,7) trowel, hoe, spade, shovel, metal leaf, bucket and wheelbarrow (tools-for-NATURE) may be used. Acts of inscription, on the other hand, always involve the use of drawing or writing equipment; this is supplemented in photography (2,5,8) by camera, scales, direction arrow, placard, plastic letters, etc, in planning (3,9) by frame and tape-measures, and in section-drawing (6) by plum-bob, spirit-level, datum-line, hand-tape and so on (tools-for-CULTURE).

Of particular interest is the transition from material transaction to an act of inscription; the following example illustrates stages 1 and 2 of the excavation procedure:-

> **A** is excavating a segment of a ring-ditch, trowelling down and removing the upper layer in spits, while following down the sides of the ditch at the same time.
>
> 1. During removal of the upper fill, as the last of it was peeled off onto what seemed like a separate layer, **A** discovered a smaller feature, which she thinks is a posthole, cut into the lower fill. In her own words:- "The top layer of the ditch was taken off, coming down onto the lighter lower fill, but the top layer seemed to go deeper here.... at first I thought it must be root-damage. As I cleaned down more onto the lower fill, though, the darker material was still there ... it had clear edges and was obviously a feature... it didn't run off in all directions like a root-disturbance would."
>
> **A** trowelled over the new feature to delineate the circular outline as far as possible, completed removal of the upper fill of the ditch, and cleaned over the whole of the ditch-segment and the immediate vicinity - in preparation for photography. In a cleaning operation which took about ten minutes to accomplish, all loose crumbs of earth, trowel-marks, footprints, etc, were removed or erased.
>
> 2. When the supervisor (**R**) arrived to take the photographs, all the tools which **A** had been using (trowel, hand-shovel, bucket, wheelbarrow, planks, kneeling mat, etc) were put out of the way, on **R**'s instructions. **R** gave the possible posthole a separate feature number; this number, together with the ditch segment number and the site code, was marked with plastic letters on a small placard. The placard, scale and direction arrow were carefully placed by **R** on, in and next to the newly discovered feature. The photographer took several pictures from various angles (some while standing on a chair),

moving the scale and placard around accordingly, and enlisting **A**'s help to do so. When **R** had finished, **A** went off to set up her planning equipment.

[RE 61]

4.4 The Primacy of Material Transactions

RE 61 demonstrates what can be regarded as a general principle - that acts of inscription are always preceded by material transactions. In this case the 'pre-x' photography and planning (of the newly discovered feature) is pre-figured by the exploratory manual operations in which the significant pattern emerged to be discovered, cleaned, delineated and highlighted. Indeed, it was in these initial encounters that the significance of the evidence was provisionally evaluated (ie. whether it really is a 'feature' with a 'cut', rather than a 'root disturbance'). The decision to take the pre-x photo, and thus to set in motion the full excavation procedure, is a product of this practical evaluation. All acts of inscription are secondary in this way. For evidence to be planned or photographed it first of all has to be brought to light, shaped and highlighted; for a section to be drawn it first of all has to be placed and cut. In each case, as in this one, the evidence *has already been practically constituted* as an object of archaeological knowledge, prior to and in preparation for the act of inscription.

The transition from material transaction to act of inscription is marked by a wholesale exchange of tools. In all photographic events, the tools-for-NATURE are placed to one side (so they do not figure in the photograph), to be replaced by various tools-for-CULTURE. This removal of a certain type of tool from the scene applies as much to the background as to the foreground. Workers engaged in excavating other features nearby may be asked to clear away their tools and stand aside for the duration of the photographic event. Generally speaking, only tools-for-CULTURE are meant to figure in the photograph itself.

Associated with the exchange of tools is a shift from an *engaged* to a *disengaged*, or detached, mode of observation. In the material transaction, when the feature emerged from the ditch-fill to be discovered and worked over by **A**, the worker was actively engaged in direct manipulation of the material field. In the act of inscription, by way of contrast, the photographer *stands back* (often on a chair) from the evidence being recorded. This standing back is also characteristic of

planning events. When **A** comes to plan this particular feature, for instance, she will look through a planning frame laid on the surface rather as the photographer looks through his camera, measuring by eye and representing by hand patterns which have already been constituted on the ground, in a material transaction.

[This is not to say that planning is always a straightforward matter. The planner often encounters evidence which is too incomplete or incomprehensible for an adequate representation to be made of it. But such problems are usually resolved by putting down the pencil and planning board, moving the planning frame out of the way, picking up a trowel, *shifting back in* to an engaged mode of observation, and making sense of the problematic evidence through the practical manipulation of it. In these instances, then, a return to material transactions facilitates the *re-constitution* of the object].

The crucial point here is that in material transactions the excavator is dealing with a *changing* field of phenomena. Because **A** is engaged in working upon the material field, patterns emerge, develop and disappear in kaleidoscope fashion. Her own interpretations of the unfolding evidence have a similar fluidity ("at first I thought it must be root-damage. *As I cleaned down more* onto the lower fill, though, the darker material was still there.. it had clear edges and was obviously a feature"). Indeed, interpretation and evidence seem to be bound together in a dialectical relation - a relation which unravels through time, and which is mediated by the very manipulation of the evidence in hand. Such a relation would appear to be integral to the process of 'making sense' of the material field.

In the act of inscription, on the other hand, the worker is dealing with a *static* field of phenomena. The material field is static precisely because the observer is not engaged in manipulating it, and is studying it in a detached manner, which places the object at a distance. The dialectical relation characteristic of material transactions has to some extent been suspended, or frozen, for the duration of the recording-event. Interpretation, however, is still open-ended. How deep is the feature? Does it really have a 'cut' or is it simply a layer within the ditch-fill? What kind of artefactual material might it contain? These and other questions will be resolved, one way or another, in subsequent material transactions.

The primacy of material transactions is also apparent in other everyday events and activities. Finds, for example, tend to emerge during the actual digging of the material field - in the context of an ongoing practical task upon a surface or feature. The act of inscription (the bagging and labelling of the find - and the subsequent plotting of its position by a planner and collection by the finds assistant) is entirely secondary to the emergence and practical recognition of the object, in a material transaction. What we have here is a double-transformation. In the material transaction the emergent (material) object becomes an *object of significance* (which has both material and cognitive dimensions). In the act of inscription a third (textual) dimension is added, so that the significance object is transformed again into an *item of data.*

In sampling events, too, the act of inscription (the writing of the site code, context number, date, etc. on the bag) is prefigured by the exploratory manual operations in which the layer to be sampled was discovered and delineated - constituted as a significant object in itself, distinct from other layers. Usually the significance of the layer derives from its context (eg within a feature), which has also been subject to numerous material transactions. The material transaction comes to an end when a selected portion of the layer is removed from the ground and deposited in the bag, the trowel and shovel are put down, a marker-pen picked up - and the act of inscription begins.

Similarly, the filling in of context-sheets (the writing of a general description of a layer or feature) always pre-supposes that the entity being described has already been clearly differentiated from other soil horizons: the bounding of the entity has generally been accomplished in a material transaction. In this activity, however, the act of inscription cannot be separated so neatly from material transactions - mainly because a description has to be given of the texture and consistency (ie. the 'feel') of soil, as well as its appearance. This means that the observer has to continually shift back into an engaged mode of observation (picking up the trowel or using the hands to manipulate the evidence, scraping the surface, gouging out pieces of soil on the tip of the trowel, breaking pieces open and rolling them between finger and thumb, and so on) then shifting back out again into the disengaged mode (putting down the trowel and picking up the pen) to achieve the act of inscription.

Even in these - what might be called the micro-processes of site-recording - the accomplishment of the act of inscription is causally dependent upon the prior undertaking of a material transaction. For it is impossible to write about the texture or consistency of soil without first entering into a direct encounter with the material (texture is "the feel of the soil to the fingers"; consistence is "the way in which a soil responds to handling" Limbrey 1975 : 259-268) - that is, a practical relation *between* the material and the observer. Indeed, acts of inscription usually involve the observer in a disengagement *from* this practical relation.

From the original category distinction between tools-for-NATURE and tools-for CULTURE, then, two quite discrete types of activity have been identified:-

	Material Transactions	**Acts of Inscription**
function	manipulation of evidence	production of data
observation	engaged, active	disengaged, passive
material state	unfolding, changing	static, unchanging
effect	constitution of evidence	representation of evidence

Both of these activities are processes of transformation. In each case, the *agent of transformation* stands as mediator on the threshold of two worlds. In the act of inscription, the recorder mediates between the practical and textual domains (the realms of action and representation respectively) and has to have a degree of mastery in both. The ability to plan, for example, presupposes not only a knowledge of the conventional forms of representation, and how to use them, but also the practical ability to 'see' the patterns of significance on the ground. However, such patterns have already been practically constituted (as meaningful entities) - in a material transaction. It is in material transactions, therefore, that the mediation of CULTURE:NATURE is accomplished.

4.5 Locating the Act of Discovery

The following pages will focus mainly on material transactions rather than acts of inscription. This is not because planning, photography, writing, etc are unimportant parts of excavation activity; it is simply because the act of discovery generally occurs prior to these inscriptive practices. Indeed, it will be argued in Chapter

11 that the tools-for-CULTURE employed in inscription invariably force a *closure* on the act of discovery. Bearing in mind the ontological primacy of tools-for-NATURE, then, let us take a closer look at the principal tool employed in material transactions.

Chapter V

THE BODY AND THE MATERIAL FIELD: AN ONTOLOGY OF THE TROWEL

"Before instrumental techniques there is the ensemble of techniques of the body." (Marcel Mauss 1979:104)

5.1 The Pointed Trowel

The pointed trowel (also known as the 'plasterer's trowel') is a special case of Category 1. Unlike other implements used for material transactions it is rarely stored in the tool-shed. On the contrary, it is a personal possession which tends to be carried on the person even when not is use, and is taken home after work.

Arriving on site as I did, unforgiveably, without a trowel of my own, I sometimes had to ask other diggers to lend me theirs for a short time, and I soon realised that to be lent a trowel is something of a honour. To ask to borrow one is often to be told of its history - the various sites on which it has been used, stories associated with it, and any previous owners the trowel may have had. To lose or damage somebody else's trowel, I gathered, would be worse than a crime. A well-worn trowel is taken to symbolize the experience and skill of the digger; no-one likes to start a dig with a new trowel. The more scarred and notched the handle, and the more worn the blade, the more prized the trowel seems to be. Clearly it is not just a functional implement - the instrument of a practical intention directed elsewhere - but also an object of significance in itself. There are other items of equipment (eg pocket knives, pencil cases, etc), it is true, which are also personal belongings, but none have quite the value accorded to the trowel.

In excavation, the trowel is the preferred tool for all material transactions which require particular care and skill. A metal leaf, teaspoon or small wooden stick may be used if especially delicate or difficult-to-get-at materials are being worked, but

this is an exception to the general rule. Spades, mattocks, hoes, etc, are employed for rough-and-ready tasks - but whenever a significant pattern or object begins to emerge from the material field in the course of this work, out comes the trowel for a more detailed investigation.

In skilled hands it is an extraordinarily versatile instrument. Depending on the nature of the material being worked, it can be used to smooth, scrape, shave, flick, cut, chop, incise, pick, gauge, lever, etc, in tasks as diverse as cleaning surfaces, taking off spits, delineating soil boundaries, following down the sides of features, emptying out fill, cutting sections, disembedding finds, and so on. It is a tool not just for the *dis-covering* of layers and the revelation of evidence, but also for the active *exploration* of the material field. A subtle investigation with the tip of the trowel can ascertain the angle of soil-boundaries that slope down out of sight, and therefore the relationship between layers or features that - from a disengaged point of view - seem to merge into each other. Such practical evaluations (as to which layer is stratigraphically above or below other layers, or which feature cuts another) always have important implications for unfolding excavation strategy (as to which layer or feature should be excavated next).

The trowel, then, is the tool most suited to practical excavation tasks, and to the nature of the raw material. In this sense it is equivalent to the blacksmith's hammer, the carpenter's saw, the tailor's scissors, or the leather-worker's needle. But even in terms of practical utility alone, leaving any sentimental value aside, each trowel has a quality which can only be described as *personal.* When I asked diggers what was so special about their trowels, characteristic replies were "You just get used to your own trowel... somebody else's just doesn't seem the same", "You get used to the shape and weight of it - I know it like the back of my hand", or "If I'm using my own trowel, I can concentrate better on what I'm doing".

It is certainly true that, whereas all new trowels tend to look alike, the well-worn trowels in use on this excavation differed markedly from each other in form. There were long thin blades with sharpened points, unsymmetrical blades with the wear all on one side, rounded blades, leaf-shaped blades, and blades which had been worn down to the size of a teaspoon. Clearly the form of the trowel is not just the product of how it was made (or any subsequent re-fashioning or sharpening of it

by its owner) but also the result of how it has been used, and for how long, and the kind of material on which it has been used. Certain types of material wear down a trowel more than others. Different techniques of trowelling are employed according to the nature of the material being worked, the nature of the task, and also according to the individual digging 'style' of the troweller: each technique put into practice tends to wear down the trowel in a particular way (see Fig 6).

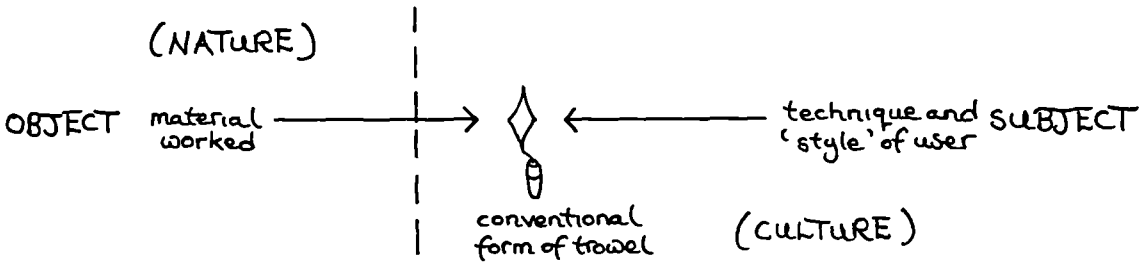


Figure 6: The Form of the Trowel 1

In this sense the trowel really does come to embody the personal style and history of its owner; its form expresses the sum total of the material transactions in which trowel and owner have jointly participated. As Marx would say, the tool *is* the worker's labour - his mode of production - in an objectified form. But of course the arrows in the diagram should point both ways. The material which shapes the tool can only do so when it is being *shaped* by the tool: the form of the tool adapts to the style and technique of the worker only as the worker *gets used to* handling the tool, in the practical context of a material transaction. Thus the very form of the trowel expresses the dialectical relation - the ontological relation of NATURE:CULTURE - which has been identified as characteristic of the troweller's mode of activity (see Fig 7).

Paradoxically, when the trowel is actually in use and mediates between the CULTURAL and NATURAL domains, it ceases to be an object-in-itself. It becomes, as it were, an extension of the body - a means of communication with the environment in the same way that the arm or the hand is. Most diggers are familiar

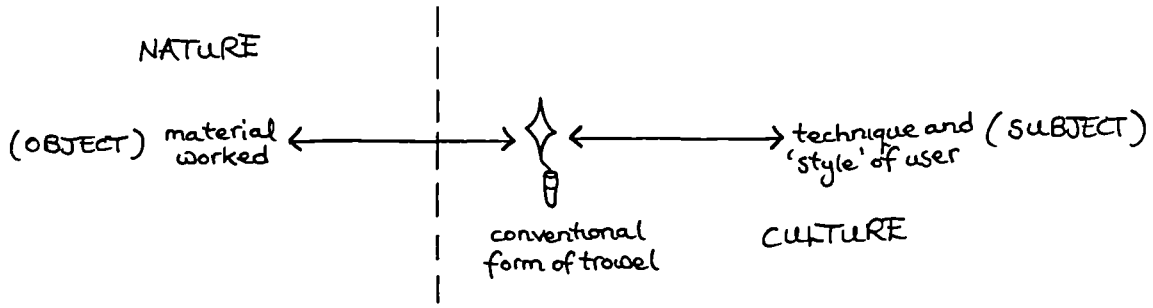


Figure 7: The Form of the Trowel 2

with the experience of perceiving with or through the trowel. The impact of the blade as it strikes the earth, the texture and consistency of the material being worked, the 'feel' of the material generally, are tactile impressions which seem - to the skilled troweller - to be located at the edge of the blade, rather than in the fingers or the palm of the hand. The skill of using the trowel has become *naturalized* through practice - integrated into repertoires of bodily action to the extent that it seems the *natural* way of doing things (whereas to a novice the unlearnt skill seems wholly *unnatural*). Thus we have the paradox of what seems to be the most *natural* actually being the most *cultural* (Douglas 1972). Incorporated into the subject's activity, the trowel is neither the object of *at*-tention nor the object of *in*-tention, but the means by which the subject uncovers, brings to light, shapes and constitutes the object. It points beyond itself to that part of the material field which, as it is being worked, *is* the (unfolding) object of the troweller's labour.

5.2 The Temporal Structure of the Material Field

Instead of speaking of the material field as an abstract entity, however, let us look at a concrete example of a material field actually encountered in excavation. The following example is drawn from RE 40, though almost any of the recorded events dealing with material transactions could have been used to illustrate the argument which will be developed here. (The reader is invited to search through the text for supplementary examples for most of the themes explored in this fieldwork report). Conversely, each example used tends to illustrate a number of different

themes, though only one may be drawn out at that particular place in the text. To demonstrate this, RE 40 has been more or less arbitrarily chosen as a 'core' event, to which we will return at various junctures, each time focusing attention on a particular aspect of the event. Here we are concerned specifically with the temporal structure of the material field, under the moving blade of the trowel.

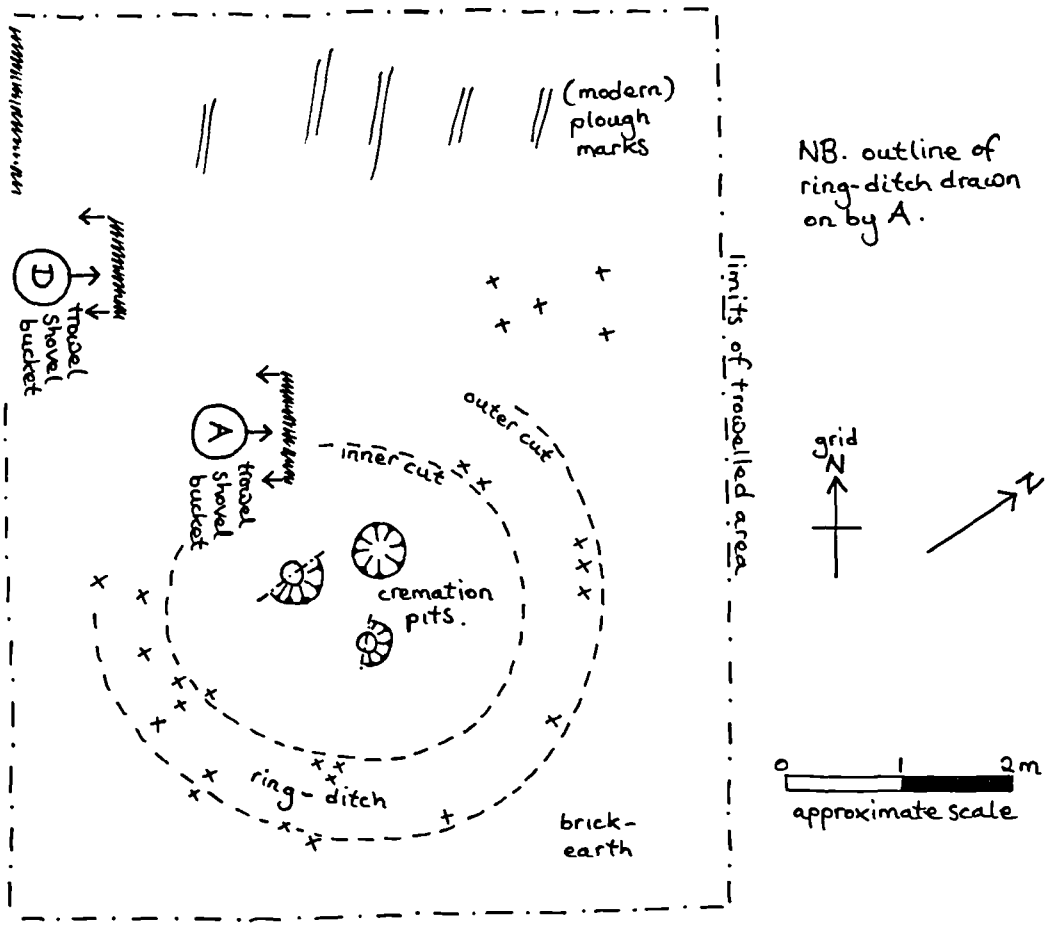


Figure 8: Sketch of RE 40

(For explanation of symbols used in this and other sketches, and a brief account of my reasons for including these rough drawings in the fieldwork report, the reader is referred to Notes on Sketches; Appendix I)

Commentary;- **A** and **D** are trowelling over a surface area of about 8 x 5 m, taking off a spit of 2-3 cms of soil, in order to locate and delineate the outline of a ring-ditch which has recently been discovered. Because of the similarity in colour and consistency betwen the ditch-fill and the surrounding brick-earth, this outline is very indistinct and difficult to see. In order to follow the cut along, **A** continually steps back from her work to look at the ring-ditch from a distance, then returns to detailed trowelling. In the centre of the area enclosed by the ring-ditch are 3 cremation-pits. One has been completely excavated, its contents removed; the other two have been half-sectioned and still contain cremation vessels. Excavation of these features will continue at a later date, when the more important task of delineating the enclosing ring-ditch has been accomplished.

[RE 40]

For our purposes, the material field can be divided up into 1) **pre-constituted objects**: that is, the various kinds of entities that have already been constitued as objects of significance. These include the three cremation-burials and the many artefacts which have been discovered, bagged and left in situ to await planning. 2) **emerging objects**, such as the ring-ditch, which is still being worked and has yet to be fully delineated 3) **objects yet to emerge**, which though hidden and not yet visible, are nevertheless present in an immanent sense, as objects of intention. These include those which are more or less expected, such as the continuation of the ring-ditch outline; those which are half-expected, such as the arrowhead that **A** will find when she comes to take out the upper fill of the ring-ditch (RE 67, Section 8.2), and those which are completely unexpected, which may never materialise, but always threaten to undermine the established interpretations of 1. 4) **the background**, against which significant objects emerge to stand out as 'figures'.

A told me that the purpose of the work was "to find and delineate the ring-ditch that encloses the central cremations". This statement of purpose refers to the four components of the material field outlined above. But it also refers to the corresponding components of the workers' knowledge of the material field:- 1) **established knowledge** (eg. of the fact that there is a ring-ditch enclosing the cremations). 2) **emerging knowledge** (eg. of the precise course and nature of the ring-ditch outline that **A** is uncovering at this moment. 3) **anticipatory knowledge** (eg. the expectation that a further continuation of the ring-ditch is

there to be located and delineated). 4) **background knowledge** (the acquired skills, rationales, etc, that enable anticipations to be made of objects yet-to-emerge, and recognitions or identifications to be made of emerging objects - and against which significant objects of all kinds stand out as 'figures').

If it is possible in theory to draw a clear distinction between the *objects of knowledge* on the one hand, and the *knowledge of objects* which subjects possess on the other hand, things are not so clear-cut in practice. For when the troweller is actively engaged in a material transaction the *intentum* - the entity intended - and the *intentio* - the act of intending in which the worker is engaged - are, as it were, two sides of the same coin. While it is actually being worked, the material field itself has an intentional structure, for it is imbued with meaning in relation to the very projects and tasks that are brought to bear upon it. The material background and the worker's background knowledge together form the horizon within which the object emerges, takes form and stands out as an object of significance.

One of the most important characteristics of [the worker's knowledge and perception of] the material field is its *changeability.* If we stood directly behind A and looked over her shoulder, for example, we would see that the focus of her attention is not the material field as a whole, but rather the small area of ground which is being worked over at that moment. Most of the material field uncovered so far has, as it were, receded into the background. In this small area, beneath the moving blade of the trowel, emerging objects (such as the continuation of the ring-ditch outline) are being transformed into pre-constituted objects, which can be left behind as A moves backwards, and objects yet-to-emerge are being simultaneously brought to light as emerging objects. Her attention is fixed, not so much on the part of the material field which is fully visible and already known, but rather on that part which is emerging, is in a state of incipience, and is actually in the process of becoming known.

This account of changeability, of course, presupposes a measure of *continuity* in [the worker's perceptual understanding of] the material field. The ring-ditch outline, for example, is along different parts of its length at once a pre-constituted object (1), an emerging object (2), and an object yet to emerge (3). (1) and (3) are either receding into or emerging out of the background (4); only (2) is in the zone of focal

attention. But on the basis of (1), **A**'s intention is directed towards (3) - that is, her purpose is to find the anticipated continuation of the ring-ditch outline which, at least up to the last movement of the trowel, has not yet been brought to light.

The troweller's labour is orientated, therefore, primarily towards the future - that is, towards anticipated objects yet to emerge. Each scraping action with the trowel is motivated by a set of *objectives*, or points to which the troweller aims and works, and is based upon a set of *predictions* as to what is likely to be found. In this sense trowelling is a kind of projection into the future; the strategies for action implemented now will have irrevocable consequences for subsequent experience. It follows from this that at any given moment strategies for action are to some extent *projected from the past.* The past is always present, like a kind of horizon, within which perceptions and actions are performed. The material field is itself an historical product, and it is the inside knowledge and experience of the unfolding of the material field accumulated by **A** and **D** - the historical agents in this case - that enables them to set objectives, make predictions and work out strategies.

The shifting zone of focal attention, then, far from being a succession of isolated 'now' moments, is a flow of awareness, directed from the past towards the future. But if every scraping action with the trowel is based upon predictions, every such action is also a testing of predictions. And the general character of objects-yet-to-emerge is that their precise form, the exact configuration they will take in actuality, can never be fully predicted in advance. Thus the ring-ditch outline being followed along by **A** does not always emerge as anticipated, but frequently veers away from its expected course, or disappears altogether. In these instances **A** has to modify ongoing strategy - to trowel deeper, to move to one side, to go back over work already done, etc - that is, to actively search for the recaltritant pattern. It is precisely this unexpectedness and recaltritance of the unfolding material field that gives the present moment its sense of immediacy; the present can be defined as the direct contact or encounter with a world which is not entirely shaped by past actions and anticipations of the future - and which therefore always has the capacity to *surprise.* The fact that the world as encountered presents a degree of resistance to the projects, purposes and plans that are brought to bear upon it will be crucial to our understanding of the act of discovery.

For the most part, however, emerging objects are at least half-expected; it is actually quite rare for wholly unexpected objects to emerge in excavation practice. Diggers can negotiate the twists and turns of emerging patterns, improvising strategy as they go along, almost as a matter of routine. Thus material transactions are generally experienced as smooth and continuous operations. Such continuity in perception and action is quite remarkable, given that attention has such a shifting character (given also that emerging objects have not been seen by human eye or touched by human hand within living memory, prior to their appearance in the moment of discovery). For the slightest manipulation of the material field with the trowel brings a host of possible objects of significance into view, over which the eye ranges, fixing on some for detailed examination and passing over others. To bring an object into focus (perhaps to trowel around it, follow it down or along, clean it over, or pick it up) is to send all the others receding into the background. The slightest movement of the eye, head or body changes the structure of the perceptual field radically, yet still - as patterns emerge, wax, wane, vanish - the field retains a significant degree of continuity through time. We are all familiar with the character of our everyday perception, even if it is so much a part of our lives that we tend to take it completely for granted.

The point is that all material transactions, all acts of discovery, take place within this zone of shifting attention, immediately in front of the body. The body - and any tools which have been assimilated to the body - is always there in the background, rarely attended to as an object in itself. It is only when the body gets in the way, as in cleaning the last bits of spoil out of a constricted space in which the worker is standing, or when it lacks the necessary skill to carry out the task-in-hand, that the body forces itself upon attention. Then it seems clumsy and inefficient, and the attention directed upon it makes it still more difficult to concentrate on the task being performed. (The novice using a trowel for the first time, or to a lesser extent the experienced digger using an unfamiliar trowel, may experience similar difficulties - only overcome through practice). But for the most part the body's perceptual and manipulatory skills can be taken for granted, and attention directed outwards onto the objective environment. When this *natural attitude* is adopted the body is, as it were, "the hither zone of corporeality... against which the object as the goal of our action stands out or the void in front of which it may come to light" (Merleau-Ponty 1962:102).

The temporal structure of the material field, then, derives from the action of this embodied subject (or subjects). This is what Marx (1973:361) meant when he said that "Labour is the living, form-giving fire; it is the transitoriness of things, their temporalily, as their formation by living time." Turning back to look at the sketch of the material field, we can now see that the most important elements in the depiction are **A** and **D** themselves. They are situated at the threshold between that part of the material field which is already known and that part which is hidden, yet-to-emerge, and still to be explored. The lines of spoil in front of them - which mark the temporal limits of the known world and the boundary of CULTURE:NATURE - are curtains of immanence, continually being pulled back to bring further patterns to light. In some fundamental sense, the way in which these patterns will manifest themselves depends upon what **A** and **D** actually do.

5.3 Rhythms of the Body

Note that, if by a kind of theoretical abstraction, we should remove these agents from their field of action, the material field immediately loses its temporal structure. Note too that this temporal structure is also lost the moment the worker disengages from the task-in-hand, as when **A** occasionally stands back to look at the ring-ditch as a whole and to reflect upon the work accomplished so far. This corresponds with a shift in the *attitude* or *stance* of the worker. From a kneeling position she steps back to adopt an upright posture, standing outside looking in, whereas formerly she was the very centre of the action-field and the very embodiment of action. Trowelling seems to involve multiple shifts from an engaged to a disengaged mode of observation and vice-versa, which means that material evidence tends to emerge in a stop:start fashion. It 'stops' when **A** disengages; it 'starts' again when she re-engages in the material transaction.

The unfolding of the material field is intimately bound up with the rhythms of everyday life and work. One of these rhythms is the interplay between material transactions and acts of inscription. Acts of inscription constitute more or less regular *breaks* or *intervals* in the routine of material transactions, while at the same time being a part of general routine themselves. But as soon as we 'stop' to record material evidence, the material field 'stops' also. An entire epistemology has been founded on the vision of the static material field, as seen from a disengaged

point of view (conveyed to the reader of excavation-reports through the medium of plans, photographs and other data, the production of which always involves a switch from material transaction to act of inscription and hence a disengagement from the material field).

Cycles of night/day, or tea-break/lunch-break/tea-break, also impose a regular pattern of *pauses*, of greater or shorter duration, upon excavation activity (though this pattern is frequently disrupted by bad weather and other unpredictable factors). In this sense rhythms of engagement:disengagement coincide with rhythms of work:rest. And when archaeologists are at rest, or absent from the site, the material field is at rest too. There is a direct relation between the activity or non-activity of workers and the state of the material field. It is not just that the material field is static when workers are not there; a process of increased disorder sets in. After only a short time patterns of significance begin to fade (due to the effects of rain, wind-blown dust, or drying out of the soil). At night surface layers are likely to freeze, and over longer periods sections may collapse or sides of features cave in. This process of increased disorder is reversed only when workers return to their material fields and re-engage in material transactions.

The more mundane or routine a working activity, the more important rhythm becomes. Material transactions such as trowelling have their own characteristic tempo. All trowelling is necessarily half work and half rest, or half engagement and half disengagement. The sweep of the trowel along the ground surface and towards the body is followed by a reverse sweep above the ground and away from the body - which is then followed by a sweep towards the body, and so on. It is a back and forth motion, a movement and a return. Watch a skilled troweller at work and observe the rhythm. The back and forth motion, performed at speed, constitutes a kind of metronome for the task in hand - and hence a metronome also for the material field being trowelled. Material patterns emerge, change and vanish in short intermittent bursts. The fact that the temporal structure of the material field is synchronized with the *rhythms of the body* has important implications for this analysis of excavation practice.

5.4 Technique

Rhythm is integral to the technique of trowelling (it is precisely a lack of rhythm

that characterises the work of a novice, who has not mastered technique). But there is more to technique than tempo. In his seminal work on techniques of the body, Marcel Mauss (1979:104) provides us with this definition: "I call technique an action which is *effective* and *traditional* (and you will see that in this it is no different from a magical, religous or symbolic action). It has to be *effective* and *traditional.* There is no technique and no transmission in the absence of tradition."

In some respects this is a very narrow definition of technique. Trowelling technique, for example, could be described as the application of a considered, controlled and directed force, adjusted in the very moment of action to take account of the particular characteristics (both visual and tactile) of the material being worked. Part habit, part improvisation, it is essentially a *dialectic* between the worker and the material, mediated through the use of the trowel. But Mauss's definition has the merit of drawing our attention to the conventional or traditional procedures embedded in technical actions, reminding us that mastery of technique is something which may be learnt from and passed on to others - belonging to the social group as well as to the individual. Every technical act, it might be said, is always a social act; social conventions come into play with every movement of the trowel. And these conventions are concerned just as much with not-doing (eg. not trowelling too deep) as with what is actually done. With Mauss's definition in mind, then, let us look at a particular example of skilled trowelling technique, in relation to a particular material field which is being worked by means of the trowel.

> At present **E** is trowelling a 1m wide strip within a larger area, taking off a spit of 2-3 cms, as he follows along the inner cut of a ring-ditch. The strip is continually being extended in length as further portions of the cut are delineated and **E** moves backwards to follow its expected course. The already trowelled strip in front of him has a smooth and polished finish, from which the 'cut' (the soil boundary between the darker ditch-fill and the natural gravels) stands out quite clearly. The area behind him and beneath him, however, is covered with 'tread', footprints and vestiges of plough-soil; it is this area which is being continually brought under the trowel as **E** moves backwards, and from which the cut of the ring-ditch emerges. (For sketch of material field, see Fig 9, Section 5.5)
>
> But each scraping action with the trowel not only opens up a new part of the material

> field, bringing new patterns to light (while at the same time leaving a ridge and a thin line of spoil in the wake of the point of the trowel); it also erases or 'trowels out' the ridge and line created by the previous trowel-stroke. Nearly every trowel-stroke seems to have this double-function. The total operation, performed at speed, *has the effect of erasing the principal traces of the trowelling operation itself.*
>
> [RE 22]

The work of a skilled troweller can be compared with that of a novice - new to the tool and the art of using it, unfamiliar with archaeological materials and practices. (There were no such novices on this site; in talking of the the novice I am drawing from experience of working on other excavations). The novice invariably obscures and smudges rather than highlights significant patterns; the material field shows instead a pattern of trowel-marks and ridges, as well as loose crumbs of dislodged soil, where every action with the trowel has left its trace. The ridges catch the light and cast shadows over the surface, obscuring significant patterns further. On the other hand, the mark of a skilled troweller is a surface which shows no mark or trace of having been worked - except that all significant patterns are highlighted, all soil boundaries sharpened, so that they stand out as figures from the general background.

The task of highlighting significant patterns, then, is inextricably bound up with the task of removing the traces of the agency that highlighted it. In this sense each trowel-stroke has a double-effect, at once revealing and hiding aspects of the world. What is revealed is the evidence for human agency in the distant past; what is hidden is the evidence of our own agency in bringing those patterns to light in the present day. The troweller proceeds with his work like a fugitive crossing a terrain of sand or snow, brushing away his tracks as he goes. By subtle sleight of hand, he erases all trace of his own subjective activity from the objective material field.

'It is art to conceal art', as the saying goes, expressing in common-sense wisdom a paradox that lies at the heart of scientific as well as artistic production. Our own skill or artistry in manipulating the world causes that skill to become objectively hidden to us, so that the product we fashion from a raw material appears to us as the raw material itself, independent of any apprehending subject. This *effect* is possible only by means of a *traditional* act, in which all the acquired and practised

skill of the worker is brought to bear upon the material being worked - even if the act is performed as a matter of routine, and even if the effect of the act is to make the material appear as though it is not the effect of any agency or artisanship in the present day at all. It is in this regard that a technique is equivalent to a magical, religious or symbolic action.

5.5 Practical Reasoning

Mauss's definition of technique suggests that technical acts have an ideational content: they are cognitive as well as material practices. In the last analysis it is impossible to separate the cognitive and material acts of excavation, since every active manipulation of material evidence is part of the process of 'making sense' of that evidence. It is important, however, to draw a clear distinction between practical problem-solving or practical reasoning, and the kind of analytical problem-solving that is more characteristic of the academic and textual domains. To do this, let us stay with RE 22 and consider E's activity in the context of the problem he is trying to solve:-

> Commentary:- **E** told me that the purpose of the task was to delineate precisely the edges of the ring-ditch, so it could be decided where the best places would be to cut segments through the ditch. He had started work in the north corner of the area, as this was where the ditch-outline stood out most clearly. Taking off a spit of 1-2cms, he had followed the inner and outer cuts along until they disappeared in a spread of brick-earth, whereupon the removal of a much deeper spit of soil became necessary. It had taken about half an hour of hard work, **E** said, to make some sense of this part of the area, and to find what he thought might be the outer cut of the ditch as it turned towards the south-east. In doing so he also discovered what could be the cut of an as yet unidentified feature, which he thinks is probably natural. **E** stressed, however, that he was not certain about any of these patterns. The soil boundary between the brick-earth and the gravel was fairly clear, but he was not sure yet if this really was a feature in the brick-earth; nor was he sure about the division or cut between the possible feature and the ring-ditch fill. What worried him most was that, if the inner and outer cuts of the ring-ditch (as he had delineated them) were correct, then this would mean that the ring-ditch made almost a right-angled turn. As he put it "this is not what you'd

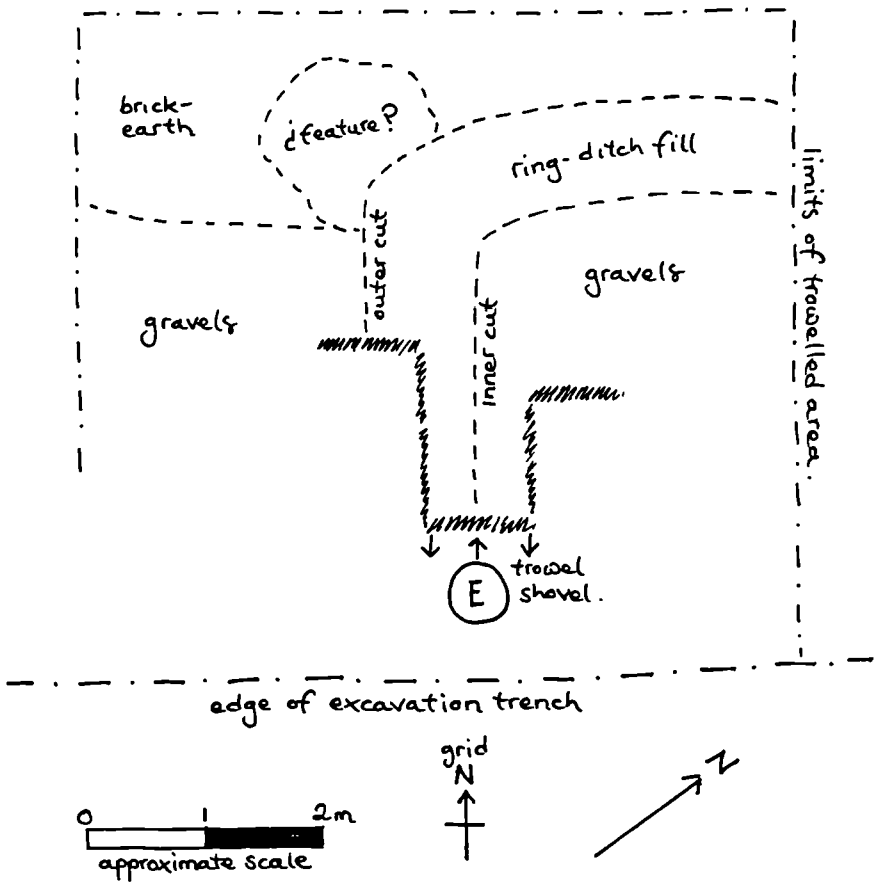


Figure 9: Sketch of RE 22

normally expect" (most ring-ditchs in our experience, on this and other sites, are more or less circular in form).

In order to clarify the situation, **E** is now trying to delineate the cuts of the ditch in the other half of the area (at present he is working on the inner cut). Once this is done he will be able to follow these cuts back into the problematic region, which will have to be re-trowelled - in the opposite direction to before - until questions about the shape of the ring ditch and its relationships to adjacent soil contexts are resolved. Because **E** plans to take another spit off the area as a whole, he is now trowelling to a slightly deeper level, removing at least an extra centimetre of soil.

[RE 22]

As Aristotle argued, practical reasoning differs from theoretical reasoning in that it leads up to an act, or an intention to act; that is, its conclusion is an action. Practical reasons provide the grounds for action. To this we can add that practical reasoning often starts in action too, and that the whole reasoning process may be embedded in action. Without in any way implying that practical reasoning is somehow a-theoretical - for all human reasoning has both practical and theoretical dimensions - we can say that reasoning only becomes 'theoretical' (in the sense in which we normally understand the word) when it is abstracted out of the temporal context of bodily action and experience, to be framed in the form of explicit propositions or arguments in analytical space.

In the above example we are dealing with a practical space rather than an analytical one. The problem to be solved manifests itself in a concrete situation or field of action in which the agent is located. As in RE 40, this field is comprised of pre-constituted objects, emerging objects, objects-yet-to-emerge, and a background against which the objects stand out - and all of these have both material and cognitive dimensions. The material field, and the problem which the material field presents, has a temporal structure. It changes through time, and subsidiary problems arise in the course of time. Each action performed - every scrape with the trowel - alters the structure of the material field by bringing hitherto unseen patterns to light, and therefore alters the structure of the problem also. (For what began as a fairly simple task of cleaning over and delineating a feature has now become a complex problem, involving unforeseen variables - such as the possible feature that E discovered next to the ring-ditch - and a lack of fit between expectations as to what a ring-ditch should look like and its actual shape at the present moment). This means that the strategy for solving the problem has to be continually modified *in the course of action* to take account of these changes (eg. E's plan to follow the cuts back into the problematic brick-earth region, working in the opposite direction and re-trowelling an already worked area, is at once a continuation of previous strategy and a response to aspects of the problem which have emerged through time, and could not have been envisaged when work began).

Importantly, the problem involves not just 'what things are' but also 'what to do with them'. Objects within the action field have "action-meanings" (Ittelson and Cantril 1954:21, Kwant 1965:169). That is, the field is comprised of things

to work with, to work upon, to grasp, to manipulate, to explore, or to transform. These include the tools (the trowel, shovel and bucket) which E is using, as well as the material he is using them upon. Tools are obvious examples of things which have meanings that are only fully actualised in use; archaeological materials have action-meanings related to those of tools. In this particular instance we have 'a ring-ditch to be delineated', 'a cut to be followed along', 'a surface to be scraped clean', 'a feature to be trowelled over', 'a relationship to be defined', etc. And it is not just significant objects that have action-meanings. Because most of the objects of intention are hidden from view by intervening layers of plough-soil and tread, or are obscured by brick-earth, these layers are constituted negatively as 'objects to be removed'. Thus we have 'spits to be taken off', 'regions to be explored', 'areas to be opened', etc. The objects-yet-to-emerge which are hidden by intervening layers - the principal intentional objects of excavation practice - are anticipated as 'objects to be discovered'. It is this last category of action-meanings that provides the rationale for excavation in the first instance.

Another way of putting it is that the practical space of the action-field is full of possibilities - not just material possibilites, or ways in which the material evidence might manifest itself if explored further, but also *possibilities for action.* These two kinds of possibility, moreover, are inextricably interconnected. At any given moment there are any number of possible strategies, or courses of action, that E could take, and each one will lead inexorably to a different manifestation of the material evidence, a different future. It is a mark of the skilled troweller that he can recognise the appropriate course of action, can 'see what has to be done' (a common phrase amongst diggers). Action-meanings, like other kinds of objective meaning, are not merely mental phenomena in the head; they are out there in the world, and can actually be *seen* by the skilled agent.

Note then that action meanings, though objectified in the material field, are properly speaking relationships between the subject and the object (or rather the agent and the patient). They have a referential structure that includes the abilities, skills, knowledge and projects of the subject, as well as material objects on the ground. A novice without the necessary know-how, or indeed a layman coming upon an archaeological excavation for the first time, would simply not be able to understand

- or see - the material field in these practical terms. And a material field without a subject would be completely devoid of action-meanings.

Note also that as excavation proceeds and E's purposes and projects change to take account of emerging evidence, action-meanings change too (eg. 'the surface to be scraped clean' in the problematic region has now become 'a feature to be investigated' and 'a relationship to be defined'. If the possible feature is found to be of archaeological significance, this part of the material field and its action-meanings are likely to undergo a series of transformations in the future, when the feature is excavated - eg. 'a fill to be emptied out', 'a cut to be followed down', 'a section to be cut', 'a section to be cleaned', 'a section to be recorded', 'a section to be removed', 'a sample to be taken', etc). Finally we should note that action-meanings refer to each other through time and space, since they are held together by the overall project of the worker. Each action-meaning makes sense only in relation to other action-meanings which preceded it, are contemporary with it, or are projected into the future on the basis of it. It is the total referential structure of action-meanings that binds the material, the tools and the worker into an encompassing 'action-field'.

In practical situations, then, the problem-solver proceeds by means of action - through *exploration* and *transformation* of his environment. What distinguishes his activity from that of analytical problem-solving is his direct engagement with the problem in its material form - shaping it through the use of tools, removing this and revealing that, following some patterns along and leaving others behind. Accordingly the problem (even if it started out as a theoretical problem) takes shape in instrumental terms, and is solved through instrumental means. Practical solutions are therefore always transformations of the material field, which can only be accomplished through work or labour. (For the partial resolution and transformation of this particular problem, see RE 37-41, Section 9.6)

5.6 The Referential Structure of the Trowel-in-Use

This chapter has focused on the principal tool of excavation, not so much as an object in its own right, but rather in its *context of use.* No attempt has been made, therefore, to describe in detail the objective form and properties of the tool - eg. its measurements, the materials of which it is made, etc - for in this respect

the archaeologist's trowel is little different from the plasterer's trowel. To try and quantify the trowel in this way would be to miss the point. The meaning of a tool is not contained in the object itself, but in its *use*, and to understand it is to understand the work to which it contributes. Only when we have ourselves acquired the 'knack' of using the trowel for the tasks for which it is intended, can we say that we truly understand it. The meaning is literally something we have to 'grasp', in the most practical sense of the word.

The trowel-in-use has a referential structure that relates it to many other kinds of entities-in-use; its meaning points beyond itself in all directions. It points, first of all, to the objective material field; that is, the material being worked - not just the emerging patterns of significance directly in view, but also the anticipated patterns which the trowel is about to uncover. In this respect the meaning of the trowel consists of the way it is used (has been used, will be used) in relation to this material.

Secondly, the trowel-in-use points towards other items of equipment - what Heidegger (1962:97) calls the "totality of equipment". Diggers rarely use the trowel on its own; it is used in conjunction with a shovel, a finds tray, a bucket, a wheelbarrow, the network of planks or walkways that leads to the huts in the clearing and to the spoil-heap. Each kind of activity (trowelling, photography, planning, etc) has its own particular tool-kit, and the meaning of any one tool is inextricably bound up with the meaning of all the others. The tool-kits in turn are also related to each other; thus a surface may be trowelled so that it can be planned and photographed, or planned and photographed so that it can be trowelled away. Abstract a tool out of this context of total equipment and it loses part of its meaning.

But if the trowel can be said to point *towards* other entities within the action-field, so that (to use the famous Heideggerian example) it refers to them in the same way as a hammer to a nail and a nail to a board, it must also point *away* from something. What does it point away from? It points away from the subject whose very presence and intentional labour upon the object holds the action-field together. Sartre (1957) developed an entire existential philosophy around this notion of pointing or deixis, by conceiving of the subject as the indicator and the object as indicated. Polanyi (1967:10) also argued that consciousness has a "from

- to" structure. Whatever the merits of the pointing metaphor, it is certainly the case that, *from the point of view* of the worker engaged in a material transaction, the body is always and necessarily situated on the background.

Since the trowel-in-use points away *from* the body, the skills of the body are also placed in the background - as are the traditional (ie social and historical) procedures, rationales, beliefs, ways of thinking, ways of seeing and ways of doing that are part and parcel of any skill. The meaning of the trowel is actualised only in the hands of an experienced worker who has the 'knack' or 'know-how' of trowelling. Place a trowel in the hands of a novice and much of its instrumental value disappears, existing *in potentia* only. Nevertheless, every novice has the capacity to learn how to use the trowel, to acquire the skill through practice and training - by getting the body *used* to handling the trowel in relation to archaeological materials. The meaning of the trowel has a fundamental orientation towards (or rather away from) the hand and the capabilities of the human body generally. Take the trowel out of the practical space of the body and it becomes a mere thing) no longer an instrument to be grasped and used, devoid of action-meanings.

The trowel-in-use also points away from the intentions, purposes and projects of the worker (and, through the worker, those of the excavation-team as a whole). It makes no sense to speak of the function or meaning of the trowel outside of the context of intentional labour, for the trowel-in-use is the *instrument* and *conductor* of intentions; it is through the medium of the tool that intentions are *put into practice.* There is therefore no necessity for us to regard intentions as purely mental phenomena; as Marx (1976:508) argued, "the labour process unites the labour of the hand with that of the head." In a very real sense the skilled worker 'thinks ' with the hands and the trowel - until he detaches himself from the task-in-hand to consider the material field from a distance. In practice it is difficult to separate cognition from perception and action. Indeed, when we look at a troweller's activity we are observing thoughts, perceptions and intentions *in* action.

It is not so much, then, that the troweller's actions are somehow a-theoretical, existing outside of the theoretical domain. It is rather that, in the context of the troweller's practical activity, theory is *grounded* - is literally brought *down to earth.* This is where theory is 'lived' with the body - theory transposed into an

exploratory mode. For every scraping action with the trowel opens up a new region of the world and constitutes our "original contact" (Merleau-Ponty 1962:xvi) with the objects of our knowledge, as these emerge from the ground in the context of practical labour. Indeed, objects emerge and *take* form in our perception only (in a dialectical fashion) as we *give* form to them, by acting upon the material field in particular ways, through the application of material and cognitive tools, and the performance of a range of practical skills.

When we study this ontological ground, we find that there is no moment in our experience when the world can be said to be comprised of neutral facts or theory-free data. As Gurvitsh (1970:50) argues, "the perception of a thing... is not to be understood as though a sense or meaning were superveniently bestowed or imposed upon a mere corporal object which, prior to that imposition, was devoid of all sense." Significant objects are anticipated, at least half-expected, even before they arrive. When they emerge from hiddenness they are to a certain extent already known, already understood, and in a meaningful relationship to other entities. They take their palace as CULTURAL objects in a CULTURAL world where a place has already been assigned to them. But if it is rare, in perception, for wholly unexpected or unfamiliar objects to be encountered, there is nevertheless always something strange, unique or different about any object we encounter for the first time - some kind of *resistance* in the emergent object that challenges our preconceived notions about it, disrupts our projects, and declines to let us shape it as we please (eg. the ring-ditch that refuses to be round, RE 22). A situation arises where either the problematic evidence has to be shaped, manually and cognitively, to fit accepted schemes, or those schemes themselves have to be re-shaped to accommodate the object - or, more usually perhaps, a mutual transformation of both sides of the practical equation takes place. It is this existential moment, and only this moment - when, through the medium of the trowel or some other tool, CULTURE encounters that which is not-CULTURE (and both NATURE and CULTURE are transformed in the transaction between them) - that can properly be called *the act of discovery.*

5.7 The Trowel as Material Symbol

At the start of the chapter it was noted that the trowel can be an object of

significance in itself, can have a personal value for its owner, even when not in use. This would seem to contradict the assertion (Section 5.6) that the meaning of the trowel is its use. A closer examination, however, will show that the personal significance accorded to the trowel *is* its use-value, but seen from a disengaged (rather than engaged) perspective. What has changed is the situation and point of view of the owner. When not in use the trowel is no longer an extension of the body or the instrument of its intentions, but an object in its own right, detachable from the body. Its temporality is gone, or rather has been solidified into the form of a *material symbol.*

The trowel symbolises the owner's acquired skill, her accumulated experience, her history of working on archaeological sites, and the close working relationship forged between owner and trowel in past material transactions (which explains why a well-worn trowel is likely to be highly prized, and a new trowel not at all). This is the 'model of' (Geertz 1973:91) aspect of the trowel as material symbol. But the trowel also symbolises the power that such skill and experience confers on the owner - power to open up and explore a part of the world which would otherwise have remained hidden, to make sense of and to understand that world. In some fundamental sense, the owner's causal potency as an active source of meaningful effects has come to be objectified in the material form of the trowel, which therefore has an orientation towards future material transactions, on this and other sites. This is the 'model for' (Geertz:ibid) aspect of the trowel as material symbol. In this respect a personal trowel is an object of power, a fact always intuitively grasped by diggers themselves. Even when not in use, then, the trowel refers us back to the ontological ground of the action-field.

Chapter VI

SOCIAL TRANSACTIONS

"The goal is to penetrate the obscurity of everyday practices, or ways of operating or doing things... This does not imply a return to individuality. Analysis shows that a relation (always social) determines its terms, and not the reverse, and that each individual is a locus in which a plurality of such relational determinations abound." (Certeau 1984:xi)

6.1 Work as Socially-Mediated Activity

The last chapter was concerned with sketching out the basic structure of the act of discovery - in terms of the (temporal) relation between the (embodied and situated) subject and the (emerging) object, mediated through (the use of) tools. Such material transactions, however, always take place within the wider context of a network of social interactions or *inter-subjective* activity (which also unfolds through time); the object emerges and takes form within this social milieu. The observation that human transactions with NATURE are socially mediated as well as materially mediated adds a whole new dimension to this analysis of the subject-object relation.

Interpretations and identifications of material evidence are never solely the product of the practical reasoning of one individual or subject. Unfolding interpretations of emerging objects and strategies for dealing with them are continually discussed, and re-formulated in discussion, by co-members of the excavation team. Such exchanges will be called **social transactions** - that is, interactions between two or more workers, mediated principally (but not exclusively) by spoken language. Social transactions always involve reference to some aspect of the objective world; the objective world referred to, however, is by no means a fixed and concrete

entity. Indeed, discussions often bring about a clash of opinions on the meaning or relevance of discovered objects and the best way to excavate them further, represent them on plan, etc. These discussions generally proceed dialectically towards some kind of compromise or consensus.

6.2 Co-operative Labour

Social transactions cannot be reduced entirely to linguistic exchanges, however. There is a non-linguistic matrix of action (Bloor 1983:32) upon which all social transactions are founded. When we looked at RE40 in Section 5.2, we concentrated mainly on **A**'s activity - but there were of course two diggers at work on the one material field. Although **A** and **D** were working on different parts of the field, and their individual tasks varied accordingly, there is definitely a sense in which both were engaged in the same task and shared a common intent - ie. to clean over a certain area of ground surface in order to locate the ring-ditch outline. To this end they were clearly *co-operating* with each other (eg. both trowelling in the same direction, to the same depth, to the same limits of the trowelled area, etc). All collective working seems to have this character of causing subjects to relate to co-subjects in their joint activity - and it is through these co-operative relations (as they unfold in the actual material practice of excavation) that an *inter-subjective* or CULTURAL understanding of the emerging NATURAL object of their labour is constructed.

Co-operative relations are complex, having both spatial and temporal dimensions, linking person to person and person to environment through time. It is not simply a case of **A** and **D** having been given the same set of instructions by the supervisor; many things have happened, many modifications have had to be made to excavation strategy to take account of emerging evidence, since the last supervisory visit. Partners working in close proximity to each other on the same material field share:-

1) **a common spatial environment** ["a certain sector of the outer world is equally accessible... The same things are within reach, within sight... Within this common horizon there are objects of common interest and common relevance; things to work with or upon, actually or potentially." Schutz 1964:109]

2) **an unfolding present**, which means that the perceptions, actions, intentions and expectations of one partner are synchronised with those of the other, at any given moment during the flow of experience.

3) **a common purpose**, or orientation towards the future, bound up with anticipations as to what will happen, or what is likely to be found, as well as common strategies for finding expected evidence.

4) **common assumptions and skills**, derived from past cultural experience, about the nature of the objective world and ways of acting within and upon it. Co-operation is only possible when partners can to some extent take the same things for granted (as 'common-sense'). In this case, for instance, **A** and **D** can take it as given that the patterns being brought to light are of an archaeological character - indicative of human activity in the past - a point which would not be at all obvious to a layman or outsider.

To these four dimensions of co-operative relations (which correspond broadly to the four components of the material field outlined in Section 5.2) a fifth should be added:-

5) **experience of the other.** Each partner experiences the other as an intentional agent embodied within a mutually intelligible environment. The relative smoothness of joint operations owes much to the way in which, in ongoing practice, both participants are to some extent aware of what the other is doing, thinking, seeing, intending, and about to do. When **A** suddenly stops trowelling and picks up a stone, for example, both **D** and I know that she has noticed an object of potential archaeological significance, that she is looking at it closely to see if it really is a worked flint, and accordingly whether she should keep it as a recorded find or throw it away. **A**, moreover, knows that we know, and does not feel it necessary to explain the purpose behind her actions. This is a simple example of the way we routinely attribute intentional and perceptual 'inner' states to other people on the basis of what they do (see Heider 1958, Tagiuri and Petrullo 1958). It is difficult to overestimate the importance of this inter-personal understanding (Weber's *vestehen*) in contributing to an implicit consensus about the relative objectivity of patterns in the material environment ["even when we see only the glance of the other person directed towards an object, we get the impression that he perceives

it. This pre-supposes that we experience the other as living in the same world as ourselves and as perceiving approximately the same things as we would from that position." Heider 1958:60].

In a complex process of joint labour - such as trowelling - an interplay develops, where the perceptions of each partner are continually modified to take account of the perceptions the other is perceived to have, and their actions and intentions are likewise orientated in relation to each other's actions and intentions, as well as in relation to the material field:-

> During trowelling, **A** uncovered what looked like the cut of an as yet unidentified feature. **D** saw this, and went back to an already trowelled region alongside her to try and find the continuation of the cut. He couldn't find it. **A** seemed to decide on the basis of this that what she thought was a cut was in fact nothing of the kind; she stopped trying to delineate it and went back to routine trowelling again. **D** returned to his former position.
>
> [RE40]

This fairly matter-of-fact description of a mundane event, which lasted little more than a minute, contains an implicit network of inter-personal relations. Because no word was spoken, co-operation was made possible by a constant exchange of attributional perceptions. To give some examples of these:- **D** *observed* from **A**'s actions that **A** perceived a pattern of significance, and he could *see* what **A**'s intention was in trying to delineate it. When he went to help, **A** *observed* that **D** could not find the continuation of the cut, which both partners - on the basis of past experience - would have expected to find if the pattern really was the edge of a feature. **D** *observed* that **A** could not *see* it either. Both partners, exchanging glances, could *see* that the other's original perception of the pattern as indicative of an archaeological feature had now changed. By mutual and silent consent, the objectivity of this particular pattern of material evidence was diminished. The pattern faded away into the background, to be forgotten, as the partners returned to their previous tasks.

[Not all co-operative labour is silent, of course. Partners usually talk to each other while they work - using language to direct each other's attention to aspects of the unfolding evidence, to discuss the meaning of discovered objects, to formulate or

re-formulate strategies, or perhaps to talk and joke about other things entirely. Language (as signifier) undoubtedly play a major role in the inter-subjective construction of objective meaning (as signified), and in co-ordinating activites in relation to the objective material field. But linguistic communication is always founded upon the inter-personal understanding or 'common-sense' described above. This does not mean both partners have exactly the same perceptions and intentions. As embodied and situated agents occupying different positions in space, each with their own individual history or background, they necessarily see things from different points of view. Divisions of meaning and purpose often arise in the context of joint labour - as when one partner perceives the other to be trowelling down to the wrong depth, or failing to spot a significant object. Such divisions of meaning are usually resolved through dialogue. Intentions and perceptions that were implicit in action can be made explicit in words, and some kind of compromise between divergent projects arrived at. Nevertheless, there is still much practical truth in the proverb, *actions speak louder than words.*]

Also implicit in the description, we should remember, are the perceptions of the ethnographer, who was able to make sense of the performance only by attributing intentions and perceptions to the workers involved. Without these attributions the performance would have been practically incomprehensible, and more or less indescribable except as a mere sequence of bodily movements. It should be remembered, too, that the presence of an observer standing in the backgound - particularly one with a notebook (which might make the *subjects* feel as though they are the *object* of the note-taker's gaze: see Sartre 1957:252ff on 'the Look') - has some effect upon the intentions, perceptions and actions of those who are being observed.

Our perceptual experience, then, can be described as a complex and shifting network of meaningful relationships - between persons, between persons and environment, and between other entities within the environment. The perceiver (whether archaeologist observing material remains, or ethnographer observing archaeologists observing material remains) is an active participant within this field. As Merleau-Ponty (1962:xx) puts it, "we witness every minute the miracle of related experiences, and yet nobody knows better than we do how this miracle is worked, for we are ourselves this network of relationships."

6.3 The Ethnographic Interview

If we turn our attention now away from the component events of RE40, which took place within particular sectors of the trowelled area, and stand back as **A** so often does to look at the material field as a whole (refer to Fig 8, Section 5.2), we can compare the diggers' perception of their field of action with that of a relative outsider, coming to the scene from a different part of the site. Perhaps the most significant pattern within this field is the ring-ditch, the uncovering of which provides the *raison d'etre* and the *intentional object* of their activity. Yet when I first approached, I could not see the ring-ditch at all, and had to ask **A** and **D** *whether it was really there.*

They admitted that the cut of the ditch was difficult to see at first, 'until you get your eye in' - because of the similarity in colour and texture between the ditch-fill and the surrounding brick-earth. They told me that, even to them, the ditch appeared and disappeared according to the light and the moisture in the soil. It was best seen, they said, in the bright sun of early morning, but it never stood out well enough to photograph or plot precisely on a plan. Despite its ephemeral nature, however, they both insisted it was 'definitely there'. **A** said that sometimes she could see the edge of the ditch clearly as she was trowelling it, but then it quickly became obscured by wind-blown dust and the drying out of the soil. Even so, she added that the differentiation between fill and surrounding earth was more a case of 'something you could feel', while working on it, rather than something you could see. **A** drew the approximate course of the cut on my sketch for me. Then she pointed to a place on the ground where she could see the cut, following the known course along with her finger. I looked closely but still could not see it. **A** suggested that I stand back and look at the distribution of finds across the area as a whole. I followed this advice. The finds formed a roughly circular band around the central cremations - as soon as I noticed this *I saw the inner and outer cuts of the ring-ditch emerge from the general background.*

The ethnographic interview itself, then, is an example of a social transaction, and was one of the many ways in which I was able to gain entry into the inter-subjective understanding and common perception of the site. To arrive at a certain part of the site, and to listen to archaeologists explaining their work to me, while simultane-

ously watching the patterns of significance emerge from formerly undifferentiated surfaces of mud and stones, was a frequent experience during fieldwork. This particular case illustrates the power of speech in directing another's attention to relevant aspects of the material field, facilitating a kind of mutual perception, and increasing the sense in which we all share a common world, a common reality.

If the interview was, for me, a form of cultural immersion in miniature - where I was made a party to the knowledge of the material field which **A** and **D** had acquired through their joint practice and discussion - it is also the case that they had to orientate themselves towards my perspective, as in the following exchange:-

> I asked **D** to tell me about the north of the area, which he had just trowelled. "There's nothing there", he told me. "But what about those black lines?" I asked him. "Which black lines?" was his response. I walked over and pointed directly at one of the plough-marks [refer to Fig 8, Section 5.2]. He suddenly realised what I meant, and looked surprised that I should ask about these patterns at all. "They're just ploughmarks, that's all".
>
> [RE 40]

These (modern) plough-marks were the only patterns - apart from the excavated cremation pits - which stood out quite clearly from the ground surface when I first arrived to speak to **A** and **D**. Yet they had not figured in the diggers' account of the material field. They belong to the many and various kinds of patterns which, once identified, are not perceived to be relevant to archaeological enquiry - ie. which do not need to be planned, photographed, sampled, half-sectioned, recorded on context-sheets, or explored further. It was possible to tell that they had once been cleaned over carefully by trowel, and that **D** had checked to make sure they really were traces of modern ploughing activity rather than indications of an archaeological feature. But in so far as they had been the object of attention at all, they had since receded into the background. It was my deliberately naive question that brought these patterns to the digger's attention once again.

The interview, then, is a dialectical process (and any sketches or notes taken by the ethnographer are a product of this dialectic) - a mixing of perspectives into some kind of 'mutual sight', the original and now obsolete meaning of the word *inter-view*. All social transactions have this dialectical character, this mingling of

outlooks - tending always towards a consensus about the nature or meaning of the objective world.

6.4 Visits

As it happened, the ethnographic interview fitted quite well into normal patterns of social interaction. Although individual tasks were usually place-specific, there was considerable movement of workers from one material field to another. Periods of concentrated work in small bounded regions [each worker's material field was effectively bounded by the 'limits of trowelling' - see sketches] tended to be punctuated by occasional visits from or to other workers on different parts of the site. Sometimes the purpose of these *casual visits* was to borrow a tool, or pick up some item for recording, but they were usually motivated by an interest in what was happening and what was being discovered in other areas; they provided the opportunity for discussion about emerging evidence, problems encountered in excavation, and so on.

A distinctive kind of visit is that made by the supervisor or director: *supervisory visits* differ from casual visits in certain important respects. In casual visits the visitor usually travels from one familiar material field (his or her place of work) to another field which is less well known, but the social transaction is essentially an egalitarian one; the participants in the transaction are equals. In supervisory visits, on the other hand, the ultimate point of departure is the planning-hut. The planning hut is the organizational centre for the excavation as a whole. Situated just outside the excavation trench, with a window overlooking the site, it is linked by phone to the outside world and the unit offices (see Section 4.2). This is where overall strategy is devised, modified and coordinated. The purpose of the supervisory visit is to implement this strategy in events on the ground - by dispensing tasks, monitoring their progress, and guiding ongoing work according to general policy. Supervisory visits are therefore characterised to a certain extent by relations of authority and subordination - that is, by relations of power. (This does not mean, however, that such visits are wholly prescriptive; it is partly through supervisor-worker transactions that happenings on the ground feed back into the planning-hut and the general scheme of things, so that overall strategy is continually adjusted to take account of emerging evidence.)

This network of visits provided an interesting opportunity for my own research. As well as walking around the site asking other archaeologists about their work, I could also stay where I was and let others come to me. This method had several advantages. To some extent it reversed the respective roles of ethnographer and ethnographised; I was the one being observed; they were the ones doing the observing and commenting upon my work. This time it was mainly through their volition, not mine, that the meetings took place at all. They decided what to talk about, and for how long, according to the aspects of the material field that interested them. Unlike the ethnographic interview proper, such meetings did not impose an 'ethnographic' structure upon everyday interactions, but took place as if I was an ordinary digger (participant) rather than an ethnographer (observer). In order to retain the spontaneity of conversations, I never took notes during these visits, but tried to write down what was said or done as soon as possible after the event. Each recorded event of this kind, then, was actually a sequence of visits by various people, occurring at irregular intervals during my work upon a particular material field. In order to appreciate something of the character of visits, and the contribution that each worker makes to the constitution of the object, let us follow one of these sequences through. (Supervisory visits are marked by an asterisk.)

> [Commentary: An irregular patch of dark soil with charcoal flecks, roughly oval in shape and about 35 x 65cms, had earlier been uncovered during the general hoeing of the site. It had been cleaned over by trowel, provisionally interpreted as a *cremation-burial*, and plotted on the 1:50 plan. Some days later, I was given the task of excavating the feature. I cleaned over the feature and surrounding gravel in order to delineate the cut or outline more precisely, then drew it onto the pre-x plan. I also drew a sketch in my notebook at this stage of excavation for future reference (Fig.10).]
>
> 1.* (Thurs 1.30pm) **R** came over to take the pre-x photograph, after which he took a close look at the feature, picking up a trowel and scraping the surface (as he searched for indications of a pottery vessel). He pointed out to me that, because no pottery outline was visible (most of the cremations encountered so far had been truncated by modern ploughing, so that the pottery vessel usually showed in section on the ground surface), this was likely to be an *un-urned cremation*. He asked if I had dug an un-urned cremation before. When I said no, he said there was quite a different excavation procedure for this kind of cremation. In his own words:- "If they dug the pit and placed

the cremation straight in it, without putting it into a vessel, there may not be any difference between cremation material and fill at this depth...the cremation might go right up to the edge of the pit... so you should start digging from the section rather than from the pottery outline as you usually do."

[I put a section-line across the feature and began to remove one half of the fill, taking off a spit at a time. There was still no sign of a pottery vessel. Nor were any fragments of burnt bone encountered, as might have been expected if indeed this was a cremation. However, the dark fill soon peeled off onto a solid mass of charcoal or burnt wood. This object appeared to be contained within the dark fill (the fill in turn being contained by the side or cut of the feature which - as I followed it down by trowel - was found to slope gently down underneath the burnt object). As more fill was removed and the object began to take form, I wondered whether the object itself, as well as the pit, was man-made. It had an irregular form, but the probability that it had been intentionally burnt, and also the likelihood that it had been deliberately deposited in the pit, seemed to argue against it being a wholly natural object. I drew a sketch of it (Fig.11), and went back to the toolshed to pick up a finer instrument with which to clean the object.]

2.* (Thurs 4.00pm). In passing the planning-hut I called in and told **R** that the feature was not a cremation after all; he came back with me to see for himself. After asking various questions about the layer of dark soil I had partially removed ('did the layer go right up to the side of the feature?', 'did you find any pottery or bone?', etc), he picked up the trowel, scraped carefully over the surface of the wooden object, then stood back and looked at the feature as a whole. He said that he didn't think that the object was an artefact in its own right, as it was much too irregular in shape, but that it could be the remains (truncated by later ploughing) of a *funeral-pyre*. He pointed out that, in a cremation-cemetery, "they must have burnt their dead somewhere". He told me to clean over the object gently with a metal-leaf, and to make sure to take a radio-carbon sample if the object itself was not to be kept intact.

3. (Thurs 4.25pm) Shortly after **R** left, **D** passed by while taking back his tools to the toolshed for the night. Upon first glance at the object within the feature, he asked me if it was an *un-urned cremation* (that is, a cremation which has been placed in a skin-vessel or bag which has since decayed away, leaving the cremation as a discrete deposit seperate from the surrounding fill; this sense of the term 'un-urned' differs slightly from

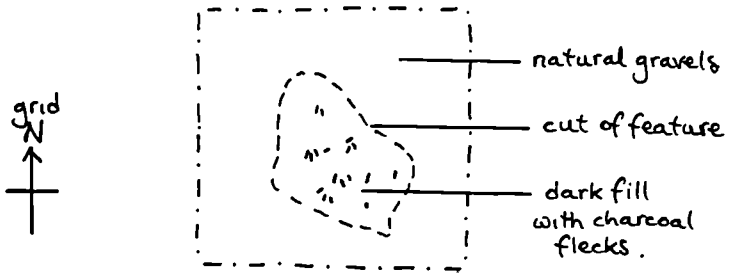


Figure 10: Sketch A, RE12/14

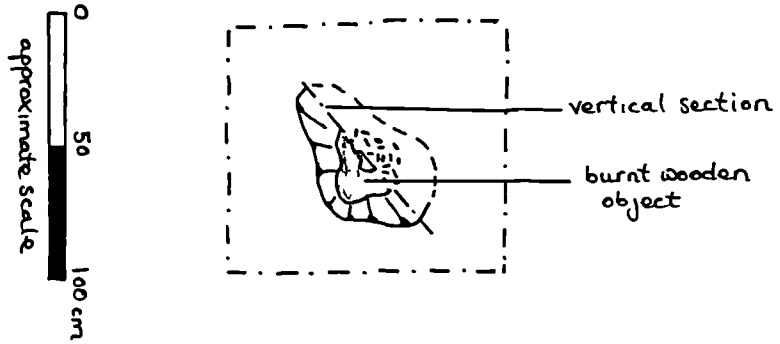


Figure 11: Sketch B, RE12/14

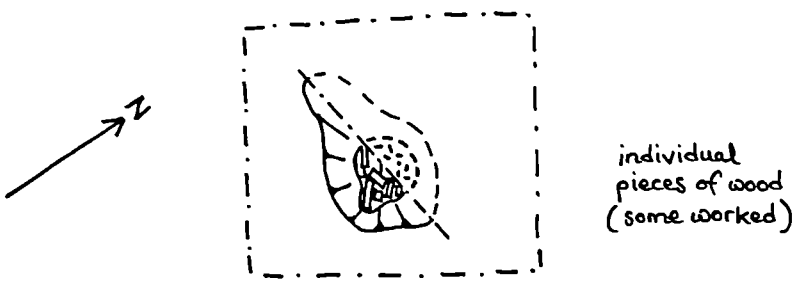


Figure 12: Sketch C, RE12/14

the sense in which **R** used it in 1). I pointed out to **D** that this could not be the case, as the object was clearly a piece of burnt wood; I tapped it lightly with the trowel to demonstrate this. When I told **D** that it could be the remains of a funeral-pyre, however, he disagreeed. He said it was much more likely that it was "just a *burnt tree-stump*". Slightly taken aback by this suggestion, I argued that the sides of the feature were regular and cleanly-cut, as if man-made. But **D** pointed out that the shape of the feature in horizontal section was in fact quite irregular, as if a natural tree-root hole. At this juncture **W** arrived. Listening to our respective points of view, he attempted to mediate between them, suggesting that both explanations could be partially correct. He said men could have dug a pit around a tree and set a fire at the base of the stump, in order to remove it (perhaps for agricultural reasons).

[Further cleaning of the wooden object, however, showed that what had seemed to be a single object was in fact comprised of many smaller pieces of wood, which had stuck together into a charcoal mass as the result of some past burning event (see Fig.12) Some of these pieces, moreover, were square in section and had obviously been worked]

4.* (Fri 9.00am) Early the next morning **T** - who had been told by **R** in the planning hut about the possibility of the feature being the remains of a funeral pyre - came over to have a look. I gave him a quick account of excavation so far, as well as of the various explanations of the evidence that had been put forward. He picked up a trowel and scraped over some of the surfaces. He said that at least the cleaning of the object had shown that it was not a tree-stump, and that it looked as though it was "the remains of a *fire*, scooped into a hollow" with some worked wood having been used as fuel: the important question was whether it was ancient or modern, especially as there was a similar feature cut into (and therefore later than) a trackway known to be modern in another part of the site. But there was still a possibility, he said, that it was contemporary with the cremations, and was in some way related to the mortuary activity associated with the cemetery. He surmised that there could have been "an area set aside for the burning of bodies within the cemetery" and said that, when excavation and recording of this feature was completed, it might be worth trowelling a spit off the surrounding area of gravel, to see if there might be other similar features in the vicinity which had not been noticed during general hoeing.

[RE 12/14]

6.5 The Merging of Perspectives

This sequence of visits took place within a period of about three hours working time, during the half-sectioning of the feature (the fourth stage of excavation procedure outlined in Section 4.3). All the conversations related specifically to the material field bounded by the limits of trowelling, as marked on the accompanying sketches; indeed, the conversations were held on the spot, with the evidence referred to being within sight and within reach, so that there was a direct connection between the spoken word, its meaning, and our perceptual experience of the evidence in question.

The boundaries of the event, or sequence of visits, are however partly the result of an artificial closure imposed by the ethnographer. The sequence has been abstracted out of an ongoing process of interaction, and was in reality open-ended. Note that the feature was already constituted as a significant object (in previous material and social transactions - such as the general hoeing of the site) before the sequence began. Note also that the nature of this (inter-subjective) significance is extremely fluid, and has by no means been fixed by the time the sequence ends. Even during the sequence itself, many conversations took place - in the tea-hut, the planning hut, or on other parts of the site - which referred to this particular pattern of evidence, either directly or obliquely. Here we have considered only those conversations that occurred *in situ*; we must not forget that language also provides the means for detaching significances from the material field, so that it can be talked about at second-hand, and even someone who has never seen the evidence in question can comprehend and contribute towards its inter-subjective meaning.

Every social transaction is also open-ended in so far as the conversations, while referring specifically to the bounded material field directly in view, may refer as well (implicitly or explicitly) to other parts of the site. When **D** identifies the object as a burnt tree-stump (3), for example, he implicitly refers to other features which have already been identified as natural tree-holes. Similarly, the interpretation of the feature as the remains of a funeral-pyre (2,4) only makes sense when the evidence is viewed in relation to other features - that is, within the overall context of a ring-ditch/cremation cemetery. In fact archaeologists always perceive objects in

terms of their relationships with other objects in the temporal and spatial vicinity. **T** makes such a relationship quite explicit when, in considering the possibility of the feature being a modern fire (4), he draws a comparison with a similar feature, which itself is understood in relation to the larger feature (a modern trackway), into which it is cut.

Conversations also refer to knowledge and skills acquired from working on different sites, or to basic archaeological rationales that can be taken-for-granted by all the parties concerned. For example, when **R** gives his initial set of instructions for digging the feature, which he then took to be an un-urned cremation (1), he was drawing from years of experience of dealing with such features, and was engaged in *imparting* this practical knowledge to me, who had never dug an un-urned cremation before. In order to do so, however, he assumed that I already possessed basic excavation skills (ie. the ability to locate and follow down sides of features, to recognize and deal appropriately with any stratigraphy encountered, to modify strategy if need be to take account of emerging evidence, etc). If I had been a newcomer to excavation, **R** would have had to give a much more detailed set of instructions, explaining the meaning of terms and physically demonstrating how certain skills are put into practice. But such knowledge can to most intents and purposes be taken for granted by experienced practitioners, as a kind of 'common sense', and literally 'goes without saying' in conversations which take place on site.

If there is always a fund of shared or mutual knowledge tacitly present in any conversation, it is also the case that there are variations in the knowledge that people take for granted. Each visitor's personal background and excavation experience is to some extent unique, so that they have an individual 'style' of acting upon and perceiving the world. The way in which the interpretation of the evidence shifts during the sequence of visits illustrates this variation, for each visitor brings to the evidence a slightly different set of rationales, a slightly different perspective, constituting the evidence according to their particular point of view. In this sense too, then, the phenomenal field is kaleidoscopic in its shifts and changes (see discussion, Section 4.4.) - even when the material field is not being worked. For although the arrival of the visitor usually prompts the worker to disengage from the task-in-hand, so that the material field loses its temporal structure for the duration of the visit, the visitor nevertheless brings new ways of looking at

the object, and in conversation directs the worker's attention to aspects of the evidence that were previously unnoticed or neglected. The material field referred to by discussion becomes, as it were, *a field of competing meanings.*

These meanings, however, are not fixed and dogmatic, but fluid and negotiable. As in the ethnographic interview, the conversations held during visits facilitate a merging of perspectives into some kind of 'mutual sight', tending always towards a consensus about the objectivity of the evidence in question, if not the exact nature of its significance. This is a two-way process. The initial impressions of the visitor (coming to the scene as a relative outsider from a different part of the site) challenge the worker's assumptions, but on the other hand the experience of the worker (who speaks as an insider, perhaps after many hours in direct physical contact with the material) can give the visitor some idea of the 'feel' of the evidence, as well as an account of the emergence of the object up to that time. The conversation with **D** (3) illlustrates this dialectic. **D**'s suggestion that the charcoal mass was just a burnt tree-stump constituted the object for me in a wholly new and unexpected way, challenging the very status of the evidence as an 'archaeological' feature, which I had previously taken for granted. This was not simply a new way of interpreting the material field, but a new way of looking at it; the appearance of the material field changed radically at that moment. It was not, however, the only way of looking at it, for it was possible to shift back in to old ways of seeing in order to justify the work I had done so far. In this instance the arrival of a third party, **W**, brought about a merging of the two alternative perspectives.

[The only conversation in which this dialectic was not present was 1. The initial supervisory visit is often wholly prescriptive, with a set of instructions being given to the worker by the supervisor. But in subsequent supervisory visits (2,4), a dialectic progressively develops. As the worker engages in direct manipulation of the evidence, a great deal of (practical) knowledge about the 'feel' of the material is accumulated, and the supervisor generally takes more and more notice of what the worker has to say. For it is well-known on site that the person who has actually dealt with the evidence at first-hand, has witnessed the emergence of it through time, and indeed has brought about its emergence through his own actions upon the material field, knows more about that particular pattern of evidence - in a practical sense - than anyone else. The importance of touching and manipulating

the evidence, as opposed to merely visually observing it, is illustrated by the way in which supervisors visiting a field invariably pick up a trowel and engage in a brief material transaction (1,2,4), in order to get some additional idea of the all-important 'feel' of the material.]

Each visitor, then, contributes to the worker's perceptual experience of the object of his labour, bringing knowledge to bear upon it from other parts of the site, while at the same time acquiring new knowledge about the site from the worker visited, and at the end of the social transaction taking this knowledge away to bear upon his or her own work elsewhere. In this dialectical fashion, through a multitude of visits and other social interactions, the experiences of individual workers in bounded regions of the site come to be shared by the community of archaeologists across the site as a whole. The site is experienced as a single material field, within which all the members of the excavation share (in a way that admits division of labour, divisions of meaning, and variations in approach) a common purpose, a common set of values, common techniques and strategies, and a common way of looking at things. Engaged in the same overall task, we are all bound together by a system of co-operative relations in much the same way as **A** and **D** are in RE40 (Section 6.2).

If the work of any one member of the excavation team is a product of this co-operative endeavour, with all other members making direct or indirect contributions, and if the objective meaning of the particular material field being worked is an inter-subjective construction, we should not forget the central role played by the worker himself. For the worker stands, like a kind of *axis mundi*, at the centre of a field of competing meanings. It is his task, in the last analysis, to negotiate these meanings through the practical exploration of the material evidence on the ground - by actually putting the various interpretations into practice and testing them against the material evidence. Every intepretation generates anticipations concerning evidence which is yet to emerge, and strategies for finding the continuations of patterns that can confirm or refute that interpretation. In other words, the worker himself sorts through the conflicting meanings by re-engaging in the exploratory mode of observations characteristic of material transactions.

This practical exploration is *veridical*, involving the displacement of some interpre-

tive schemes, their modification and even replacement by others, to take account of emerging evidence. The inital identification of the feature as a cremation-burial (1,3), for example, was soon shown to be mistaken, for none of the anticipated burnt bone or other cremated material was forthcoming (it was correct, however, in so far as it predicted a man-made feature containing a large object, a 'cut' which could be followed down and a fill which could be emptied out). The radical re-interpretation of the feature as a tree-hole with burnt stump (3) was also shown to be wrong, for the burnt object was subsequently found to be comprised of many smaller objects, some of which had been worked. At present the most likely explanation is that the pattern of evidence is the result of a man-made fire within a man-made pit (although whether ancient or modern remains uncertain). This is very different to what we expected to find when excavation of the feature was begun.

In this way it can be seen that the object itself has not passively submitted to the inter-subjective meanings brought to bear upon it, but on the contrary has continually confounded or surprised those interpretations, forcing re-interpretation. Problems have arisen because of a lack of fit between our anticipations of evidence about-to-emerge and the emerging evidence itself: thus we find that the conversations in 2, 3 and 4 have a problem-solving character, and each problem solved involves a re-organisation of the schemes that previously constituted our perceptual experience of the object. This in turn effects changes in the way we approach and *act* upon the material world, the way we *look* for meaning within it, and therefore also what we actually *see* in future acts of discovery. For already T is talking about opening up a much wider area (4), on the basis of the evidence which has emerged in the last three hours, in order to see whether there might be similar features (funeral pyres) in the vicinity. (As it happened, no further features of this kind were found nearby, but other "fire-pits" were later discovered elsewhere on the site; these discoveries were to some extent pre-figured by the act of discovery described here.)

The object itself, then, both takes and gives meaning; it acts back and restructures the very inter-subjective schemes and strategies for action that gave it form in our perception in the first instance. The example illustrates an important point - the

act of discovery not only *reproduces* existing knowledge, it also provides the setting for the *production* of original knowledge about the nature of the objective world.

6.6 Individual Action as Social Action

Two types of social relations have been identified in this chapter - 1) the 'horizontal' or egalitarian relations that characterise transactions between fellow-diggers (and the network of which, due to the movement of workers from site to site, extends outwards across the digging-circuit as a whole). 2) the 'vertical' relations that characterize transactions between these ordinary diggers and supervisor or director (the hierarchy of which extends upwards through the unit offices and into the higher echelons of the archaeological establishment). The social dimension of material transactions - and the material dimension of social transactions - makes it impossible to treat everyday tasks performed by individuals as interactions between just one person and the environment. In some ways the individual worker acts as an *instrument* of the social group (not just the excavation team, but the entire cultural system of archaeology in this country) - performing its tasks, on its objects, for its purposes - which means that every material transaction is always a *social encounter* with the material world.

Even when the act of discovery is considered in this light, however, it is the troweller (not the planner, photographer, supervisor, director, analyst, or reader of the excavation report) who initially *encounters* the material evidence as it emerges from a state of hiddenness - comes into direct *bodily contact* with it, *manipulates*, *shapes* and *constitutes* it, and through this manipulation brings further evidence to light. It is the troweller, for all his lowly status, who transforms the emerging evidence from a NATURAL to a CULTURAL object. That is, it is upon the shoulder of the troweller that falls the principal burden of *making sense* of emerging evidence *for* the social group. "We must never forget," writes Bhaskar (1989:156), "the immense effort... designed precisely to create or induce the conditions under which ground for a theoretical judgement will become available. Such practical activity, comprising social transactions between human beings and their material transactions with nature, constitutes the woof and warp of getting into 'the logical space of reasons', of justifying and being able to justify what one says."

Chapter VII

A MOMENT FOR REFLECTION

"Knowledge does not only depend, as an elementary relativism suggests, on the particular viewpoint that a 'situated and dated' observer takes up vis-a-vis the object. A much more fundamental alteration - and a much more pernicious one, because, being constitutive of the operation of knowing, it tends to go unnoticed - is performed on practice by the sheer fact of taking up a viewpoint on it and so constituting it as an object." (Bourdieu 1990:27)

7.1 Subject-Object and Culture-Nature Relations

A common practice amongst the diggers on this site was - when engaged in a difficult or routine practical task - to occasionally disengage from the task-in-hand, to take a few steps back beyond the limits of the material field being worked, to look at the material field from a distance, and from this perspective to take stock of the problems encountered so far and the best way of dealing with them from then on, before re-engaging in the material transaction with a clearer sense of purpose. As we are now almost half way through this fieldwork report, it seems an opportune moment to take a similar break. The reader is invited, so to speak, to lean upon his or her spade for the time being, and consider the ground we have uncovered so far.

One of the difficulties we have encountered in speaking of the subject-object relation has clearly been the ambiguity of the words themselves. The subject of an investigation, for example, can be 1) the investigator, or 2) the investigated, which can also be called the object. Such ambiguity is compounded when the object of the investigation is comprised of human subjects and their inter-subjective activity upon an object of their own - especially when, as in the last chapter, they turn

their gaze upon the investigator himself and his activity, which then becomes the object of their critical attention. Existentialists would argue, of course, that this paradox - far from being a linguistic flaw - is a fundamental feature of human existence in the world which is merely reflected in language.

A similar ambiguity came to light in our analysis of the trowel. The trowel-in-use is to all intents and purposes a part or extension of the body, but when not in use can be detached from the body to become just another thing in the external environment. This suggests, as Gibson (1979:41) points out, that the boundary between the body and the environment "is not fixed at the surface of the skin but can shift." It does not take a philosopher to see that the paradox of the tool - dealt with extensively by other authors (Ingold 1986:1-78, Polanyi 1959:30-1, 1967:16-19) - is a transformation of the subject-object paradox, deriving from the tool's mediating role in that relation.

Three further paradoxes have been brought to light, all concerning the relation between nature and culture. The first has its locus in the body itself; what seems to come most *naturally* to the body is in fact the most *cultural*, comprised of skills that have been instilled into bodily habit and routine through training and practice. This paradox arises from the basic anthropological fact that a man or a woman is at once both a natural and a cultural being. The second has its locus in the activity through which humans interact with their environment. In Chapter 4 we drew a fundamental distinction between CULTURE - the knowledge which archaeologists have acquired of material evidence - and NATURE - the material evidence yet-to-be-discovered which is the intentional object of archaeological practice, but which at present exists quite independently of that knowledge and those practices. The paradox here is that the moment a NATURAL object emerges it is transformed - in the very act of discovery (a transaction which Marx characterised at the 'humanisation of nature' and the 'naturalization of man') - into a CULTURAL object. We cannot apprehend NATURE independently of our CULTURAL schemes or tools. The third paradox has its locus in the objective material field. Significant patterns perceived by archaeologists may not be perceived at all by laymen or outsiders. Contrast with the layman's perspective highlights the social character of archaeological perception. As Douglas (1973:15) argues, "Each person confronted with a system of ends and means (not necessarily a tidy or coherent system) seems to face

the order of nature, objective and independent of human wishes. But the moral order and the knowledge which sustains it are created by social conventions. If their man-made origins were not hidden, they would be stripped of some of their authority." In other words, the very facts of the objective world which seem the most *natural* and self-evident (in the light of embodied knowledge and skills which are always and necessarily placed in the background) are in fact the most *cultural.*

Thus we have three culture-nature paradoxes - one for each term of the subject-object relation and one for the relation itself. The subject-object relation is the culture-nature relation, or rather the same relation transposed into a different key:-

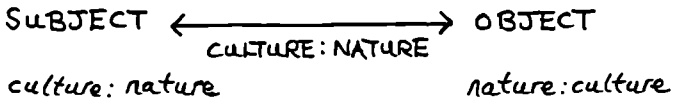


Figure 13: Three Paradoxes

Perhaps it would be more accurate to say that the relation between the subject and the object (as it manifests itself, for example, in the act of discovery) is the locus for the transaction between culture and nature, a much larger relation which encompasses all the material and social transactions of the social group. It has been the mistake of philosophers (eg. Ben-Zeev 1990) to abstract the first relation out of the context of the second, for the subject-object relation is always historically and culturally situated. And it has been the mistake of anthropologists (of the structuralist and functionalist schools) to abstract the second relation out of the context of the first, for it is in the practical setting of the transaction between the subject and the object - and the multiplicity of such transactions - that the culture: nature relation is *transformed.*

This we now find ourselves in a position similar to that of **E** in RE22 (Section 5.5). What began as a straightforward task of scraping over the surface to highlight the

relevant patterns has gradually turned into a complex problem. The evidence we have brought to light has twisted and turned in unexpected ways, and now seems to shoot off in all directions, so that if ever we thought the act of discovery would be a simple thing to describe, we have had something of an empirical shock. In fact the one thing we can now say with any certainty about the act of discovery is that it is profoundly paradoxical, and nothing is certain any more.

7.2 From the Point of View of the Archaeologist

These paradoxes, far from levelling out, are likely to deepen in subsequent pages. So far we have reflected upon only those aspects of the subject-object and culture-nature relations that, in one form or another, are characteristic of human existence generally. But when we consider archaeological practice as a specific mode of cultural existence, from the point of view of an archaeologist, we find that the natural object of labour consists of the remains or traces of *other cultures* - which presupposes a further (objectifed) nature-culture relation. This takes the form of a distinction, made quite explicit by archaeologists, between 'natural' evidence on the one hand and 'archaeological' or 'artefactual' evidence on the other hand.

We first encountered this distinction in Chapter 3, while considering the patterns shown on the rough plan (Fig 1). Generally speaking, only 'archaeological' patterns have been marked on the sketch; the 'natural' is the background against which these patterns stand out. (The same applies to those plans which archaeologists themselves draw of the site). In RE22 (Section 5.5) and RE40 (Section 5.2) diggers were engaged in effecting the emergence of such patterns so that they stood out against the background of 'natural' brick-earth and gravels. The distinction appears in a temporal as well as a spatial form. In RE61 (Section 4.3), for example, **A** discovered what she initially took to be a 'natural' root-disturbance within the fill of an 'archaeological' feature, but as she explored further and the pattern began to take form it achieved the transition from 'natural' to 'archaeological' status. The reverse happened in RE12/14.3 (Section 6.4), when the 'archaeological' status of a feature was challenged by **D**, who put forward a 'natural' explanation for the same evidence - although subsequent excavation proved it to be 'archaeological' after all. In these cases the transition from 'natural' to 'archaeological', or vice-versa, has something of the character of a gestalt-switch for the perceiver(s).

As we come to look at further concrete examples of excavation practice, we will see that this distinction between culture and nature, objectified in the material field, is fundamental to all archaeological perception and reasoning.

The term 'archaeological' - as it is used by excavators in the field and applied to material evidence - means something like 'the product or effect of human/cultural agency at some time in the distant past.' (Its antonym, 'natural', means 'the product or effect of non-human or natural agency.') The very identification of an object or pattern as 'archaeological',then, presupposes yet another subject-object relation and yet another culture-nature relation - and, as it were, projects these into the past. That is, it presupposes the former existence of a subject or agent who made the object, with the (cultural) tools and resources at his/her disposal, out of the (natural) materials available. Practical reasoning involves a constant shifting to and from this deep level of inference. In RE12/14 (Section 6.4), for instance, **R** based his instructions for how the feature should be excavated on an assessment of how the feature, then thought to be a cremation burial, was originally formed ("If they dug the pit and put the cremation straight in it, without putting it into a vessel..." RE12/14:1). Later on in the same sequence, **R** re-interpreted the half-excavated feature as possibly the remains of a funeral-pyre ("they must have burnt their dead somewhere" RE12/14:2), and this prompted a slight change in excavation strategy. Shortly after this (RE12/14:3) **W** invoked a scenario wherein men dug a pit around a tree and set fire to the base of stump, in order to remove it. Finally, towards the end of the sequence (RE12/14:4) **T** returned to the possibility of the feature being a funeral-pyre, surmising that there could have been "an area set aside for the burning of bodies within the cemetery", and on the basis of this devising a strategy for opening up more of the site. All of these examples invoke or imply the former existence of embodied subjects (bound together in some sort of cultural relation to each other) who dug pits, removed trees, burnt bodies and performed other kinds of intentional labour upon their objective (natural) environment - and who are held to be the causal agents responsible for observable 'archaeological' effects. Whenever this kind of practical inference surfaces in subsequent examples it will be referred to by the writer as *deep inference.*

Deep inference always involves 1. a subject (or a group of subjects) who makes the inference 2. a material object (or pattern of objects) which serves as the

vehicle for the inference 3. a subject (or group of subjects) who the inference is about. The inferred subject is usually credited with a mastery of the basic skills of the body normally associated with human agency, as well as the causal powers these skills confer to effect changes in his or her natural and cultural environment. In an important, if paradoxical, sense the inferred subject (or group of subjects) constitutes the real object of archaeological interpretation. The real subject, the archaeologist, is always in the background.

7.3 From the Point of View of the Ethnographer

The ability to engage in deep inference on an 'archaeological' object (or even to see the object as being of 'archaeological' significance in the first instance - for this act of perception itself involves the ability to constitute the object as the product or effect of past human agency) is of course a skill which has to be learnt and practised. But like any skill, to perform it properly one has to take the skill for granted - to put it into the background as it were - in order to focus attention on the task-on-hand. In this way the archaeologist is able to objectify the object itself, the significance of the object, and the inference about the object, as a single common-sense fact about the world; that is, as self-evident or *natural.*

As a participant for most of the time, deeply immersed in the *cultural* activity of excavation, the ethnographer, too, experienced 'archaeological' facts as *natural* and common-sense. It takes a kind of stepping back, or a conceptual re-location of one's point of view outside of the bounds of common-sense, to see these *natural* facts as the accomplishment of *cultural* skills - and to be able to apply to archaeological activity the same fundamental distinction (CULTURE:NATURE) that archaeologists apply to their material object ('archaeological':'natural'). In this report such a distancing, or stepping back, takes the form of a further subject-object relation - set up by the very presence of an ethnographic observer on site. The object now is the (subject-object) relation between archaeologists and 'archaeological' material, and the subject is the ethnographer himself. For it is only by taking up this kind of perspective, symbolized by Photo 1 below, that one can bring to light the most common-sense fact of all - that every subject necessarily takes a point of view upon its objects, that these objects are constituted as such from that point of view, and that the body (with all the cultural skills it has acquired and any instruments

or tools it has temporarily assimilated) is always placed in the background. This applies as much to the ethnographer as it does to archaeologists. It goes without saying that the ethnographer's shadow, though rarely glimpsed, is cast over all the events described in this fieldwork report.

Photo 1: The Shadow of the Ethnographer

This photograph was taken from the top of the scaffolding tower (then situated just in front of the planning hut), facing north. It depicts a part of the site as it was after general hoeing, before the excavation of features had begun. Many of the 'archaeological' patterns, especially ring-ditches, show up clearly on the ground surface. Two archaeologists are to work surveying these patterns - the object of their labour. But constituting their activity as the object of his investigation is the ethnographer (together with another archaeologist) - whose shadow falls on the site and impairs the objective scene ahead. There is also the shadow of the scaffolding

tower itself, which at the moment provides the ethnographer's vantage-point, or *point of view.*

7.4 From The Point Of View Of The Writer

In the writing up of the report a further distancing has taken place - not just in the sense that the 'I' or subject who carried out the fieldwork has now been constituted by the writer as one of the objects of critical attention. A major threshold has been crossed, a transition made, from the world of everyday practice and experience to the world of writing, reading and analytical thought - a wholly different kind of practice which involves the taking of a 'disembodied' or 'transcendental' perspective. From this (**cultural**) perspective it is all too easy to constitute the everyday practical domain as the **natural** world where one may conduct fieldwork, carry out investigations, test theories, and collect facts or data, before returning to the **cultural** realm to present these facts in a report. But just as practice is a kind of theory-in-action, so theorising is itself a kind of practice. Contrary to the illusion cultivated by the text that this report is a direct (**cultural**) representation of its **natural** object (a sense of immediacy and proximity that is easy to convey by means of such literary devices as the 'ethnographic present') it is actually an account based principally on other texts - the rough notes, recorded events, sketches, photos, charts, etc, that together comprise the sole material remains of the fieldwork experience. All these are arrayed on the desk before me, along with pens, paper, scissors, tipp-ex, staplers and other instruments and materials of the writer's craft. Also on the desk, of course, is the text itself - half-written and continually being re-written, its final form and structure uncertain. And behind these, needless to say, is the writer himself.

7.5 From the Point of View of the Reader

It is a mark of the skill of the reader that (s)he can routinely negotiate the edifice of subject-object (and culture-nature) relations constructed by any text without even thinking about how (s)he does it - so that in reading this fieldwork report, for example, (s)he occasionally seems to be standing on the site itself, seeing things through the ethnographer's eyes or engaging with the material evidence via an archaeologist's trowel. To a skilled reader the text is quite transparent, and the

vast gulf which separates the text from its object is narrowed to the extent that the one seems the equivalent of the other. Indeed, the meaning of the events described seems to reside in the text itself, independently of the reader. It is only when the *cultural* skills that make such a deep reading possible, and that come so *naturally* to the reader, are brought to critical attention - when the reader stops, for a moment's reflection, to try and work out how it is that (s)he manages to make sense of these black squiggles on a piece of paper - that the text can suddenly become opaque and momentarily impenetrable, rather as it might be to someone who has not learnt to read or who does not speak the language in which it is written.

But if the reader needs to place herself or himself in the background in order to be able to read, so does the writer in order to be able to write, the ethnographer in order to conduct fieldwork, and the archaeologist in order to interpret material remains. For this reason, the first three of these will henceforward be banished into the background from whence they came, and only referred to in (conventionally acceptable) ways that do not deflect our attention from the principal object of the investigation.

The next two chapters, then, will be pre-occupied with the problem of how archaeologists recognise 'archaeological' objects - the products or effects of the agency of past human subjects - and distinguish these from 'natural' objects. This is clearly something that archaeologists are highly skilled at doing - so much so, in fact, that any readers who are themselves practising archaeologists might find the very asking of the question incredibly naive. It is, one might say (and diggers did indeed say to me), simply a matter of common-sense. Such readers are reminded, however, that the philosophical question of how to define the difference between artefactual and natural objects has exercised the minds of Aristotle, Leibniz and Marx, and continues to puzzle philosophers today (eg. Monod 1972:15-31, Losonsky 1990). Thus we have a situation where what comes quite *naturally*, as a common-sense practical skill, to experienced archaeologists digging out in the field, is more or less unfathomable to analytical thought and linguistic expression - itself an interesting variant of the culture-nature paradox described earlier. As Bourdieu (1990:86) puts it, "Practice has a logic which is not that of a logician." With this paradox in mind, let us return to the site and re-engage with the task-in-hand.

Chapter VIII

DISCOVERED ARTEFACTS AND THE AGENTS OF DISCOVERY

> *"A man's interests are the selective agents and these are to a great extent socially determined, for it is generally the value attached to an object by all members of the social group that directs the attention of an individual towards it." (Evans-Pritchard, quoted in Douglas 1980:29)*

8.1 'Finds'

If the planning-hut can be said to have a principle orientation towards CULTURE, and the tool-shed a principal orientation towards NATURE (see Section 4.2), then the finds-hut has an orientation towards both the CULTURAL and the NATURAL domains.

The finds-hut is dimly-lit; it has the same earthy smell, reminiscent of a gardener's shed, that the tool-shed has. But it also has a table and a chair, where one person (the finds assistant, who also worked as an ordinary digger) could occasionally be found at work sorting objects, marking bags, writing out labels, etc. On the table are numerous marker-pens, notebooks, labels and transparent plastic bags of various sizes - all these are CULTURAL provisions for NATURAL objects yet-to-be-discovered. Also on the table is a cardboard box, containing all the 'recorded finds' or 'small finds' (potsherds, worked flints, fragments of bone, etc) which have been recovered from excavation so far, each individually bagged and labelled. Under the table and stacked just behind the door are a number of soil-samples, and next to these are three or four cremation-vessels encased in their protective packing. All these formerly belonged to the NATURAL domain - were buried and hidden from view, and existed quite independently of archaeological knowledge and practice - but have recently been transformed, in the act of discovery, into CULTURAL objects.

That these objects have already been assimilated into the CULTURAL domain can be demonstrated in the following way. Each recorded-find or soil-sample is accompanied by a label, marked on the bag, detailing site-code, date of excavation, layer or feature in which the object was found or from which the sample was taken, grid co-ordinates, levels, etc. These signs and symbols refer on the one hand to the object itself and its archaeological context, and on the other hand to the recording system which includes all the plans, descriptions, notes, section-drawings, photographs and other representations of the site - which itself ultimately links up to the larger corpus of archaeological knowledge covering many excavated sites. The point is that the meaning or significance of a recorded find or sample has come to be inextricably bound up with the written label that accompanies it. Take the label away and the find - though perhaps still of some archaeological interest - becomes an unprovenanced object, of no further usefulness for research purposes. The soil sample becomes simply a bag of earth.

The transformation of discovered artefacts into textual objects has generally been accomplished, in a series of acts of inscription, by the finds assistant. It is her task to walk around the site at least once a day in order to label, triangulate, plot, level and collect all those finds which diggers have uncovered during excavation and left on the spot where they were found. However, the very fact that they have been left for collection pre-supposes that they have already been constituted as significant (ie. CULTURAL) objects. The transition of the object from the NATURAL to the CULTURAL domain - its transformation into an object of significance - has always taken place in the act of discovery itself.

When I asked diggers how they recognized 'finds' they would often point to the objective properties of the find itself - this sherd of pottery or that worked flint - explaining the material features that had attracted their attention to it, and which distinguished it from other, natural, objects. But if I pressed the question by pointing out that a layman or a novice might not be able to tell the difference their answers were less assured. Characteristic replies were "Its just something I've learned how to do", "I've been told what to look for on other sites I've worked on before", or "I really can't say how I do it - I just know, that's all". The following extract of dialogue is taken from RE40, and the reader is referred back to the sketch of the material field and the accompanying commentary for that event (Section

5.2). Twenty to thirty finds, marked on the sketch by a cross, are scattered over the trowelled surface. These are mostly worked flints or small fragments of pot which have been placed in a finds bag, with the bag nailed to the spot where the object was found. The total distribution pattern of the finds is quite important in this case, because most of them come from the ring-ditch fill which is so difficult to distinguish from the surrounding brick-earth: by occasionally standing back and looking at the pattern of finds from a distance **A** is able to 'pick out' the ring-ditch outline, making it much easier to follow along by trowel. I asked **A** and **D** how they recognized the tiny fragments of pot in the first instance:-

1. **D.** "... you probably look at ten, twelve, maybe fifteen possible finds, before finding a definite one... On this bit, there are many red stones that look like pot... you're always picking them up only to throw them away again."

2. Q. "But how do you actually recognize something for what it is?"

3. **D.** "Its just something you can do, like riding a bike..."

4. **A.** "...or breathing - but unlike breathing, you have to learn how to do it".

5. Q. "Don't you have to concentrate to be able to do it?"

6. **A.** "You're on auto-pilot for most of the time - then a find comes along which forces you to concentrate for however long it takes, then you go back on auto-pilot again... When I'm trowelling, I tend to think of other things, like what to have for dinner tonight... I only stop to concentrate when a find comes along... then I go back to thinking about other things again."

7. Q. "Is it like driving a car, say, where you can talk and daydream while driving at the same time?"

8. **A.** "A bit like that... the only thing I can't do at the same time as trowelling is talk, because I like to look at someone while I'm talking to them."

9. Q. "So you need to use your eyes for trowelling then?"

10. **A.** "Yes, obviously."

11. Q. "But some skills, like playing a guitar for instance, can be performed blindfold. Why can't trowelling?"

12. **A.** "Because the guitar is always there...it doesn't change while you're playing it..."

13. Q. "... but the ground you're trowelling does?"

14. **A.** "Yes."

[RE40]

This conversation illustrates some important points. First of all, a certain tension is evident if one reads between the words, and this tension arises from the fact that **A** and **D** consider the questions to be naive. Indeed, the questions are concerned with what the workers and myself *already know*, and thus seem to be anti-common sense, almost absurd. Nevertheless, the workers' replies can shed considerable light on the character of everyday discovery.

Perhaps the main point to emerge is that the discovery of artefacts always occurs in a *context of action* - in this case, the trowelling over of a surface. Usually this activity is directed towards the resolution of a particular set of practical problems (eg. locating and following the cut of the ring-ditch): finds "come along" in the course of this problem-solving activity. This means that we cannot separate the discovery of artefacts from the digging operation in which the discovery occurs, any more than we can separate it from the material field in which artefacts are discovered. Most of the artefacts found are very small; it is unlikely that they would have been noticed at all if the area had been worked over with spade or mattock. Trowelling requires the excavator to kneel and bend forward, with eyes close to the ground, and moreover limits the speed with which earth can be shifted. It is detailed work, condusive to the finding of small artefacts. In this interview, I made the mistake of trying to talk about discovery in the abstract (1-6), but this was soon corrected by the diggers themselves, so that we ended up talking about discovery in relation to trowelling (6-14).

It is also apparent that much of the work is regarded by diggers as routine:- "its just something you can do - like riding a bike" (3). As with any skill, once mastered, it can be performed to some extent "on auto-pilot" (6). It seems to come *naturally* in the same way as breathing does, "but unlike breathing, you have to learn how

to do it" (4). Routine aspects of the work seem to include the trowelling operation itself, the monitoring of the many thousands of objects which pass through the troweller's visual field during trowelling, and the picking up and examination of the "many red stones that look like pot" (1).

Another important point to emerge concerns the nature of the material being worked. Because it is being worked, the ground is always "changing" (12-14). Part of the skill of trowelling is continuously monitoring this changing field for artefacts. Finds, then, are not usually picked out from a static field of phenomena; the act of discovery always occurs in time. Characteristically, the significant object is recognised or apprehended *en passant*, as it emerges from the material field, and shortly before (in the absence of an act of recognition) it would have disappeared into the troweller's shovel, bucket, or wheelbarrow.

Lastly it is clear that - at least according to the digger's own account of her cognitive processes (6) - the act of recognition involves a shift in attention, or change in cognitive state. Attention is directed away from whatever was being thought about at the time, like "what to have for dinner tonight", and focused on to the object itself. The emergence of the object precipitates a shift from a routine mode of operation to another mode entirely, where full powers of concentration are brought to bear upon this one particular component of the phenomenal field.

8.2 The Act of Recognition

Because literally hundreds of small stones and other objects momentarily come under routine scrutiny, as they appear and disappear in a cascade of earth scraped up and swept back by the moving trowel, the act of recognizing or 'picking out' a particular object seemed to me to be a crucial kind of event. In the midst of routine work, upon routine things, some aspect of the world suddenly emerges - always with a degree of unexpectedness - to engage attention and to disrupt routine. An *encounter* occurs, which is qualitatively different from normal encounters with material evidence.

Diggers often described this encounter as a kind of 'leaping out' or 'falling out' of the relevant object from the soil being worked; "it just seemed to pop out of the ground", "it leapt out at me", "it was just suddenly there" or "it seemed to fall

out of the earth nicely". Most diggers, I think, are familiar with the occasional experience of relevant objects seeming to 'jump out' at them - instantly recognising these as artefacts. How can we account for this common experience?

In a sense, of course, objects really do jump or fall out of the soil on occasions. As Limbrey (1975:271) remarks, the soil naturally breaks away from any archaeological objects contained within it if it is made - by subtle action with the trowel - to part along its structural planes. When the cascade of earth swept back by the trowel comes to rest, the artefact is often just sitting there - 'staring us in the face' as it were - on top of the pile of spoil. It is also the case that artefacts frequently lie upon the boundaries between layers, or on the base or sides of features (the gradual descent of the object over time, through worm-action and other natural forces, having been brought to a halt by a more compact surface of soil). In following along these soil-boundaries, as archaeologists do, taking off the layer above to come down onto the layer below, the moving blade of the trowel sometimes catches the underside of the object - sending it spinning through the air to land near the archaeologist's boot. Not all significant objects emerge in this fashion (some are still partially embedded in the soil or layer below when initially uncovered), but the emergence of many is quite dramatic and sudden, and this goes some way towards explaining the sensation that diggers have of artefacts 'jumping out' at them.

It is not a total explanation, however - for all sorts of objects could be said to jump out at archaeologists in this sense. Why should artefacts leap out and not the many thousands of similar-looking stones? To help answer the question, consider the following anecdote:-

> For six weeks a major topic of conversation on site was the absence or non-appearance of arrowheads - exactly the kind of artefact one would expect to find on a Bronze Age ring-ditch cemetery. It became a standing joke amongst the diggers that a giant arrowhead would have to fall out of the sky and hit us on the head before we actually discovered one. Eventually, however, a small leaf-arrowhead was found while **A** was taking out the upper fill of a ring-ditch. It was an occasion for some celebration. The object was passed from hand to hand, as we all came over to admire its highly-wrought workmanship. When I asked **A** what had drawn her attention to it, she said "There was something about the

sheen of it... it seemed to fall out of the earth nicely." She told me that she immediately recognised it as a worked flint, and on picking it up realised it was an arrowhead.

[RE67]

Although the emergence of the arrowhead in this particular place and at this particular time was quite unexpected, the anecdote shows that everyone expected that arrowheads would emerge at some time and some place - it was only a question of when and where. Indeed, we were all actively searching for arrowheads as we went about our everyday activities. The arrowhead, it might be said, was a *cognitive object* or object of intention even before it was found - in the sense that a schema for arrowheads (what they look like, what they were for, where they are likely to be found, how to go about finding them, etc) pre-existed and pre-figured the emergence of the actual object itself. In quite a different sense, of course, we could say that up until the moment of discovery the arrowhead was simply a material object, buried and hidden from view, existing quite independently of the archaeological knowledge and practices. These two kinds of object (CULTURAL and NATURAL respectively) were quite separate and distinct, but were both brought together in the act of discovery. The act of discovery can be described, at least in this instance, as a meeting-ground of an *expectation* and its *material conditions of satisfaction.* It is an encounter between the CULTURAL and NATURAL domains, in which the arrowhead as cognitive object is suddenly given material form, and the arrowhead as material object is transformed into a material symbol, with both material and cognitive dimensions.

This perhaps helps us to explain more completely why significant objects sometimes seem to 'jump out' of the ground being worked. For it is not just that the object itself may suddenly emerge to catch the digger's attention - pulling her attention towards it as it were. It is just as much the case that the digger's anticipatory schemes leap out to grasp or 'apprehend' (lay hold of, catch the meaning of, arrest) the object, imbueing her experience of it with a particular intensity. If for the most part our cognitive processes can be taken-for-granted and placed in the background, so that we can focus our attention upon the objective world and the task-in-hand, this is one of the few practical instances when we can actually apprehend our cognitive processes in action.

This does not imply, however, that anticipatory schemes are wholly subjective phenomena. Although A has clearly internalised the CULTURAL schemes for recognising and interpreting archaeological objects, these schemes are present - brought out into the open as it were - in the many conversations about the absence of arrowheads that preceded the act of discovery. It is in social transactions that cognitive schemes come to be shared by the social group - the community of archaeologists as a whole - or are passed on from the social group to individual workers. Thus there was a general air of expectancy (that arrowheads would be found), a sense of impending discovery, shared by all the archaeologists on site. Anticipatory schemes, then, are *inter-subjective* phenomena.

It is not just a case of these inter-subjective schemes conditioning the act of discovery. It is also a case of the act of discovery re-inforcing the inter-subjective schemes that gave it meaning in the first instance. Note how the finding of the arrowhead (which ranks as a relatively spectacular find) was itself a social event, in which our expectations of finding arrowheads in ring-ditch fills were strengthened. We all went away with the experience of actually seeing and handling a real arrowhead fresh in our minds - to re-double our efforts to find similar objects on other parts of the site. In this sense the discovered artefact as material symbol is not just a *model of* (ie. of archaeologists' cumulative experience of previous arrowheads encountered) but also a *model for* (ie. for further acts of discovery of the same kind). Another way of putting it is that the act of discovery, itself partly the product of existing knowledge, reproduces and re-affirms that knowledge in practice. Several more arrowheads were to be found in subsequent weeks.

8.3 Material Context

Part of the *model of* aspect of the arrowhead is derived from its material context. One expects to find arrowheads in Bronze Age ring-ditch fills (because many have been found in such contexts before) - whereas one would not, for example, expect to find them in natural brick-earth deposits. When digging a ring-ditch, therefore, one is 'on the lookout' for arrowheads (this is part of the *model for* aspect of ring-ditches); if an arrowhead is found, its discovery is partly the product of this active searching. However, the discovered object may also have implications for the interpretation of the material context in which it was found, and the strategy for

dealing with that evidence. This is part of the *model for* aspect of the discovered object (and the *model of* aspect of the material context), as illustrated by the following sequence of events:-

1. Towards the end of the dig, **B** was given the task of cutting a segment through a ring-ditch. The ditch, however, was almost impossible to distinguish from the surrounding brick-earth, into which it had been cut. In order to locate the ring-ditch, then, **B** had to dig a box-section through the brick-earth, in an area where part of the ditch was expected to be found, to a depth of about 10cms. Even at this depth, however, the cuts of the ditch were difficult to locate, and **B** had to dig a second box-section inside the first one. This showed up the sides and base of the ditch in vertical section, on the basis of which **B** was able to follow the sides along, empty out the fill and complete the excavation of the segment. When I arrived, **B** was engaged in cleaning up the area for planning and photography (see Fig.14).

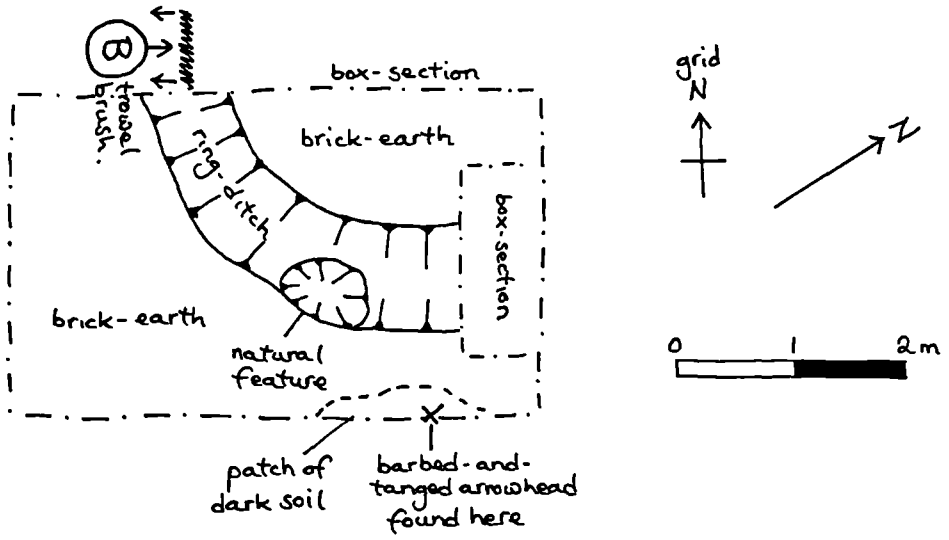


Figure 14: Sketch of RE76

The reason for my visit to this part of the site was that I had just been to the planning-hut, where **T** showed myself and other workers a recently discovered barbed-and-tanged arrowhead. As the arrowhead was found by **B**, I wanted to ask him how he recognised

it, where it came from, etc. **B** said that the arrowhead had actually been around for several days without being noticed. He had been absorbed in the difficult task of trying to work out first of all whether the ring-ditch was really there, then - once he had located it - following the sides along and distinguishing between the ditch-fill and the fill of a natural feature that (as it turned out) proved to be cut by the ditch. All this time, working within the constricted space of the box-section, there had been a sharp stone, sticking out of one of the vertical sections. **B** said he had not really thought about it or looked at it closely, but after he had scratched himself on it a few times he decided to pull it out and "get rid of it once and for all". As soon as he pulled the object out, however, he realised straight away that it was an arrowhead.

[RE76]

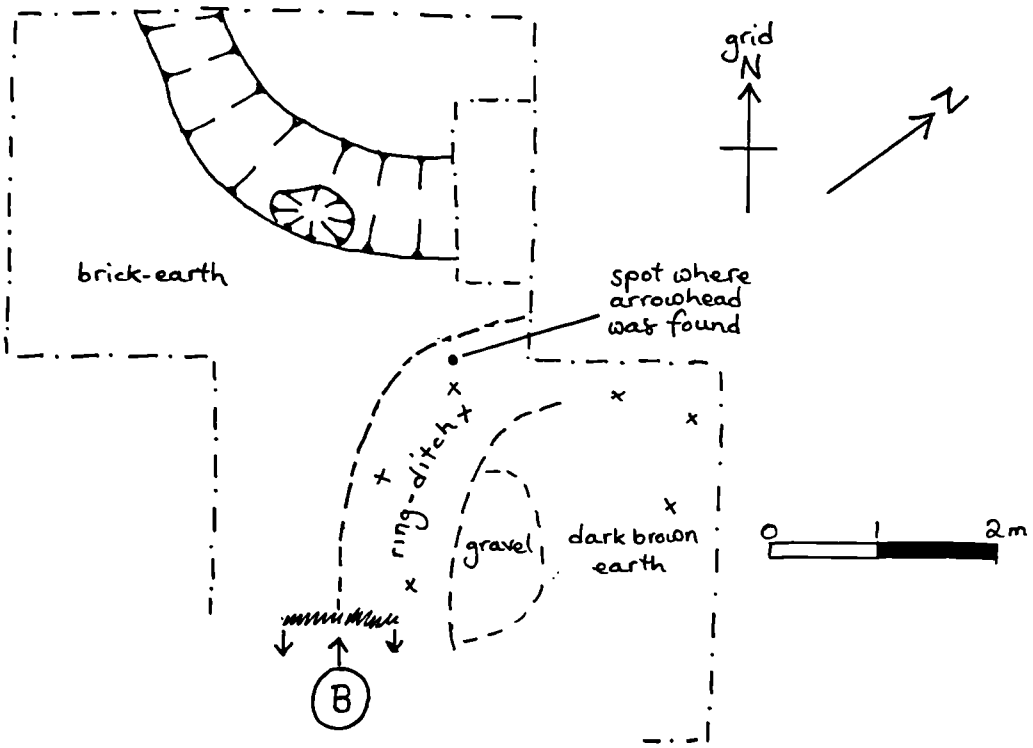


Figure 15: Sketch of RE90

2. Two days later I returned to this part of the site. **B** had completed the recording of the ring-ditch segment and, after consultation with **T**, had turned his attention to the possible feature in the area where the arrowhead was found. **B** said he had originally taken this patch of dark soil to be a root-disturbance within the brick-earth - but the discovery of the arrowhead changed all that. The dark soil had no clear outline or cut; however, the presence of the arrowhead within it suggested to **B** that it was an archaeological rather than a natural feature. **B** was now trowelling over this area to delineate the anticipated cut. The plan was to open up another box-section, as an extension of this one, to try and pick up the continuation of the feature.

[RE84]

3. The next working day I made a further visit. **B** had opened up another box-section as planned, and was still in the process of following along the cuts of what had turned out to be a second ring-ditch (in a place where no ring-ditch was expected to be). Several more finds, mostly burnt flints, had come to light. It was now quite clear that the arrowhead had come from the fill of this second ring-ditch (see Fig.15)

[RE90]

This example might at first seem to represent an opposite case. Far from jumping out, the object in question was partially visible for several days - embedded in the vertical section with the tip protruding - and only emerged fully when it was actually pulled out by **B**. It does show us, however, how a potentially significant object might be experienced in the absence of an act of recognition. All of **B**'s attention (and intention) was directed towards the ring-ditch and associated patterns, which can be described as the unfolding objects of his labour. The sharp stone sticking out of the section was for the most part confined to the background as more or less irrelevant to his projects and purposes; the object remained a NATURAL one, unassimilated into the CULTURAL domain. **B** had several encounters with the object (when he scratched himself on it) before the act of discovery proper, but if the object could be said to have emerged out of the background on these occasions, it was only to be constituted negatively as a hindrance and a nuisance - an object of *non-significance.* And it was this property of *getting in the way* that eventually prompted **B** to pull the object out, with every intention of throwing it into the bucket of spoil and "getting rid of it once and for all". Thus the example illustrates the point that the emergence of a material object on its own, in the

absence of a recognition, does not constitute an act of discovery. (The reverse also holds true, of course; a recognition in the absence of an appropriate material object would not constitute an act of discovey either). The act of discovery is always an *encounter* between the material and cognitive domains, mediated by the body in practice. In this instance it occurred when B pulled the object out of the section and suddenly saw it as an arrowhead for the first time. In a flash, so to speak, the object achieved the transition from NATURAL to CULTURAL, from 'natural' to 'archaeological', and from an object of non-significance to a *material symbol* (with both material and cognitive dimensions).

What is especially interesting in this example in the way in which the emergence of the arrowhead was not expected in the particular material context (the patch of dark soil, thought to be a root-disturbance within the natural brick-earth). This perhaps explains why the object was not immediately recognized as significant by B. One does not look for relevant objects in material contexts which are themselves more or less irrelevant to one's projects and purposes. But when the arrowhead did emerge to be recognized in the act of discovery (as a genuine surprise), its transformation from 'natural' to 'archaeological' brought about a corresponding transformation in the status of its material context. Suddenly the patch of dark soil (formerly in the background, now constituted as an object of attention) was being considered as a possible 'archaeological' feature. Strategies for testing out this interpretation were put into practice, and B started actively searching for the (now anticipated) cut of the feature. A whole new area was opened up to enable B to follow this cut along, and in the course of his practical activity the feature gradually took form as a second ring-ditch, from which further artefactual material was discovered. The finding of the arrowhead can be regarded as a pivotal event, shaping a whole series of subsequent events.

Whereas in the former example (RE67) the excavation of a ring-ditch led to the discovery of an arrowhead (showing how the *model for* aspect of ring-ditches is inextricably bound up with the *model of* aspect of arrowheads), in this instance the discovery of an arrowhead led to the identification and excavation of a ring-ditch (showing how the *model for* aspect of arrowheads is inextricably bound up with the *model of* aspect of ring-ditches). All material symbols are related to other material symbols in this (spatial and temporal) fashion. Material symbols are never

just self-contained units of meaning, or individual things quite separate from other things. They derive their meaning partly from their context - and from other material symbols encountered before in that context, in the sequence of practical events leading up to the moment of discovery. They also give meaning back to the context, and to objects-yet-to-be encountered in subsequent events. (And by 'giving meaning' I do not mean that they are merely *models for* interpretation; they are *models for* action - generating predictions about what is likely to be found and strategies for bringing these anticipated objects to light. We do not just observe a field of material symbols; we actively manipulate that field). In these ways every discovered object either reproduces or transforms existing knowledge.

8.4 Use-Values

Not all the meaning of discovered objects is enmeshed with their context, of course. The fact that they are discrete entities with bounded surfaces which are detacheable from the material field - and can sometimes 'jump out' of the ground in our first perception of them - means that they stand to a certain extent as things in their own right. Their meaning is still context-dependent, but dependent upon an *inferred* or *attributed* context rather than an actual one.

An arrowhead, for example, is always understood in terms of a whole field of assumptions about human agency, and the functions that an arrowhead might serve in the context of human action. As the name itself implies, an arrowhead is conceived of as being attacheable to an arrow-shaft; this arrow (comprised of shaft, head, flights, etc) is taken to be a missile which can be shot from a bow at a target. Holding the bow and aiming the arrow, one might say, is a hypothetical human agent - for it is a matter of common-sense that only human-beings are capable of the motor-movements, intentions-in-action, and reflexive monitoring of actions required to make and operate a bow and arrow. Underlying the identification of the arrowhead, then, is a conception of the object-in-use; not just the arrowhead by itself, but the arrowhead as part of a total instrumental complex related to an objective environment (ie. bow-and-arrow used in relation to a target). And this instrumental complex, far from being conceived of as a collection of dead things, is conceived of in terms of action-meanings, within the practical space of the body; that is, it is comprised of things to grasp, to manipulate, to hold and use

in particular ways, as the instruments and conductors of human intentions. For it is only when one understands roughly what it is like, or must be like, to perform the practical sequence of bodily actions constitutive of the activity of archery - holding the bow, fixing the arrow, selecting the target, pulling back the string, taking aim, and releasing the arrow at exactly the right moment along its planned trajectory - that it is possible to fully grasp the *meaning* of an arrowhead.

It is not just arrowheads, of course, that are conceived of and perceived in terms of action-meanings. Most discovered artefacts have "affordances" (Gibson 1979:127-43) which relate the action-possibilities of the object to the action-possibilities of the human body. Just as an arrowhead is something 'to be shot from a bow at a target' (implying a particular stance of the body and sequence of actions), so a pottery vessel is understood as something 'to put things in', 'to pour things out of', 'to cook things with', etc. Some of the cremation-urns found on this site had handles or lugs 'for picking up and carrying the vessel'. Handles are obvious examples of things which "afford" possibilities for action to the perceiver. As Rosch (1978:33) explains, "Inseparable from the perceived attributes of objects are the ways in which humans habitually use or interact with those objects... For example, when performing the action of sitting down on a chair, a sequence of body and muscular movements are made that are inseperable from the nature of the attributes of chairs - legs, seat, back, etc." This kind of perception, then, is not confined to archaeological discovery; it is integral to everyday life.

Perceived affordances of objects are 'objective' in the sense that they are observed to be 'out there' in the environment. But they also carry an implicit reference to the perceiving subject ("An affordance... points both ways, to the environment and to the observer" Gibson 1979:141). In particular, they implicitly refer to the action-possibilities of the body of the observer and, as Heidegger (1962) would argue, to the *projects* of that being. Different life-forms are likely to perceive different affordances in the same object because their bodies afford different possibilities for action and therefore different projects within which the object could be put to use. It is unlikely, for example, that a non-human life-form could perceive the affordances (action-meanings, use-values) of arrowheads that have been identified in this chapter. This is an important point, because it means that the percep-

tion of the quality of artefactuality (in this case the *instrumental* character of an arrowhead) is to some extent species-specific.

The question arises as to whether the perception of affordances is conditioned by cultural factors, given that the projects and purposes of observers vary from culture to culture. In this thesis it is argued that it is; archaeologists are much more skilled at perceiving the affordances of the objects they dig up than novices or laymen. Indeed, Daniel (1950:26) and Hodder (1982a:32) point out that until the advent of archaeology, arrowheads and other stone tools tended to be perceived as *natural* or *supernatural* objects (eg. 'thunderbolts') rather than human artefacts. The apparent paradox of *natural artefacts* is taken up and examined in Appendix B, which compares the perception of artefacts by archaeologists today with historical accounts of the discovery of similar objects by rural people in former times. Although the latter interpreted such objects within a very different system of cultural meanings, there is nevertheless a common basis of understanding underlying the differences - since objects were still perceived in relation to the action-possibilities of the human body. The reader is referred to the appendices for a more detailed comparative analysis.

8.5 Design

Whenever an arrowhead was discovered on this site, workers tended to come in from all sides to take a look at it. The arrowhead became the objective focus of a social transaction (and many subsequent social transactions), in which the object was passed from hand to hand, its meaning discussed. Each worker would hold it, turn it over with the fingers, feel the sharpness of the point and edges, occasionally bringing it closer to the eye for a more detailed examination, then pass it on to someone else. Comments would be made about its efficacy as a weapon or hunting implement, how it could have been attached to an arrow-shaft, how it was made, even why it was thrown away (eg. because it had been broken in use, and had lost its instrumental value for the user) - each worker building upon or disagreeing with the comments made so far. They were able to work out, through this discussion and inspection, not only the method employed by the maker of the artefact in dislodging individual flakes (eg. hammering or percussion-flaking - both methods implying a particular instrumental complex and stance of the body), but also the

angle of blow, and roughly the sequence in which the knapping operation as a whole was performed. They were also able to distinguish between the marks of this initial manufacture, any subsequent re-touching, wear deriving from use, and (in the case of the barbed-and-tangled arrowhead) the breaking of the artefact which put it out of action and caused it to be thrown away. That is, conversations referred to the object in an inferred causal context of human agency - a *context of manufacture* and a *context of deposition* as well as a *context of use* - always in terms of action-meanings and in relation to the action-possibilities of the human body. Indeed, it is only possible to 'make sense' of an arrowhead in these practical terms. This is *deep inference* at work.

That deep inference is possible at all suggests that the perceived affordances of objects are not static and fixed, but shift as the object is manipulated and examined in more and more detail. The perception of the arrowhead's efficacy as a projectile for piercing and wounding, for example, changes as soon as we notice that the artefact has been 'broken'. There are some affordances, moreover, which attract our attention more than others; the arrowhead actually affords all sorts of things (eg. incising, scraping, pricking, etc), but it is its *shootability* that somehow defines its very being as an arrowhead. That is the function for which it seems so perfectly suited that it must have been *designed* for that purpose.

Thus it is that perhaps the most outstanding quality displayed by the arrowhead - the quality we most admire - is its *craftsmanship* (the skill and care with which it was fashioned, the intentions-in-action of which it is a product, the beauty of its design). If its function and purpose (or affordance) is immediately obvious to us, so too is the fact that it has been made; its status as an artefact - the product as well as the instrument of human labour - is self-evident. The highly wrought surfaces seem to speak to us of human handiwork (not just the physical activity of tool-making but also the cognitive work that is intermeshed with manual labour). When we look at a dressed stone tool, Bachelard (1964:31) reminds us, "it is impossible to resist the idea that each well-placed facet was obtained by a reduction in force, by an inhibited, restrained, directed force, in short, by a psycho-analysed force" (ie. by the controlled technique of a purposeful and reflexive agent, practised in the art, adjusting each blow to take account of the particular features encountered in the material being worked). It is equally impossible to resist the

idea that the maker of the artefact enacted a pre-conceived plan of what (s)he was going to produce - not merely a mental template of what it would look like, but especially a conception of what it would be used for - and that this plan, or set of intentions, was the motive force behind the selection and fashioning of the raw material. In other words, the discoverer always tacitly understands that the artefact was a cognitive as well as a material object - a material symbol - for agents in the past (just as it is, within a very different system of cultural meanings, for archaeologists in the present). The artefact, after all, is the artisan's labour, or intentions-in-action, in an objectified form. It is an antecedent cognitive object (the 'model of' other artefacts of the same kind, put into practice as a 'model for') projected onto the world and fashioned out of the material at hand.

All this is implicitly assumed when we speak of the 'design' of the artefact. Design can be taken to mean 1) an objective property of the artefact, 2) the subject-object transaction through which the artefact was fashioned, or 3) the subjective plan or model of the artefact, which pre-figured its existence. Like affordances, design is not merely inferred; it can actually be *observed* in the material by a human perceiver. All kinds of archaeological objects exhibit design. Take for example the many cremation-urns found on this site. Their functional shape shows an intention to make and use them as 'containers' and the handles or lugs affixed to some of them show they were designed for 'picking up and carrying in the hands'. We can actually *see* that the vessels were made with these and other purposes in mind. (The perception of design, then, is often linked with the perception of affordances - but not necessarily so. The function and symbolic significance of the fingernail decoration encircling some of the urns, for example, can only be guessed at: the decoration does not 'afford' anything as such. Yet its design is self-evident.)

Neisser (1976:9) argues that the perception of affordances must involve some active contribution to the constitution of the object on the part of the perceiving subject. The same is true for the perception of design. The subject draws from his or her own practical experience to interpretively constitute the object in perception. As Rosch (1978:33) suggests, we perceive the *sit-on-ability* of chairs only because we are used to using chairs in this way. This applies also to the affordances of many of the objects encountered on an archaeological dig. Pots, handles, knives, etc, are mundane items of everyday social life; we are so used to using them (to contain,

to hold, to cut) that we take our knowledge of how to use them completely for granted. And our mastery of *instruments* means that we are also masters of *design* All human beings are designers and creators; even such a mundane activity as cooking involves the transformation of a natural raw material into a cultural product (Levi-Strauss 1969). We may not make the same things as people in the past, but we are all skilled at using the hands to manipulate and fashion materials, through the use of tools, in such a way as to realise our intentions in material form. It is precisely this 'common-sense' knowledge, or 'knowing how' - *analogically-derived* from our own practical experience - that enables us to perceive the qualities of instrumentality and design in discovered objects.

If it is by implicit reference to our own activity (as users and makers of artefacts ourselves) that we recognise the traces of human agency in the material form of objects from different cultures, different times, then the analogy also works the other way. It is not just the pathos of some other's existence that we perceive in the discovered artefact (the perceived fact that the relation of *belonging* that once pertained between maker and artefact, or user and instrument, has been broken) - but also the pathos of our own. The artefact confronts us with our own mortality, the impermanence of human life, the certainty of death. It reminds us that the many relations of belonging that link us to our work, tools, material possessions, family, friends and culture will likewise be broken - and shows that our own artefacts are likely not only to outlast us, but to outlast also the system of meanings and values that sustains our activity. Archaeological interpretation is ultimately founded upon this common humanity, underlying cultural differences, between ourselves and people in the past.

8.6 Practical Analogy: the Anatomy of Deep Inference

In the case of artefacts such as arrowheads, deep inference is concerned with 1. the context of manufacture (ie. the transformation of a natural raw material into a cultural object). 2. the context of use, and 3. the context of deposition (ie. the transition of the cultural object back into nature). This is the 'life' of the artefact, so to speak, beginning with 1 and ending with 3. The arrowhead is conceived of in 1 as the *product* (and intended instrument) of human labour and in 2 as the *instrument* of such labour (while in 3 it is understood to have taken on,

by the very fact of being lost, broken or discarded, an anti-instrumental value). Not all artefacts, however, can be said to be both the product and instrument of human labour. It is possible to recognize an object as an artefact - by the traces of human agency discerned upon it - without being certain of its instrumental value. Also, many of the by-products of human labour clearly had no instrumental value whatsoever. Thus a considerable number of stone artefacts found on this site were labelled simply as 'worked flints' - a label which implies human workmanship but does not (as the name 'arrowhead' does) specify the function or purpose of the artefact.

The category of 'worked flints' is a broad one which includes arrowheads and other tools such as scrapers, blades, etc. - but it also includes flint tools or fragments of tools of unknown purpose and function, as well as the waste-products of tool-making activity. Fig 16 shows how flints tended to be classified (in general conversation) on this site:-

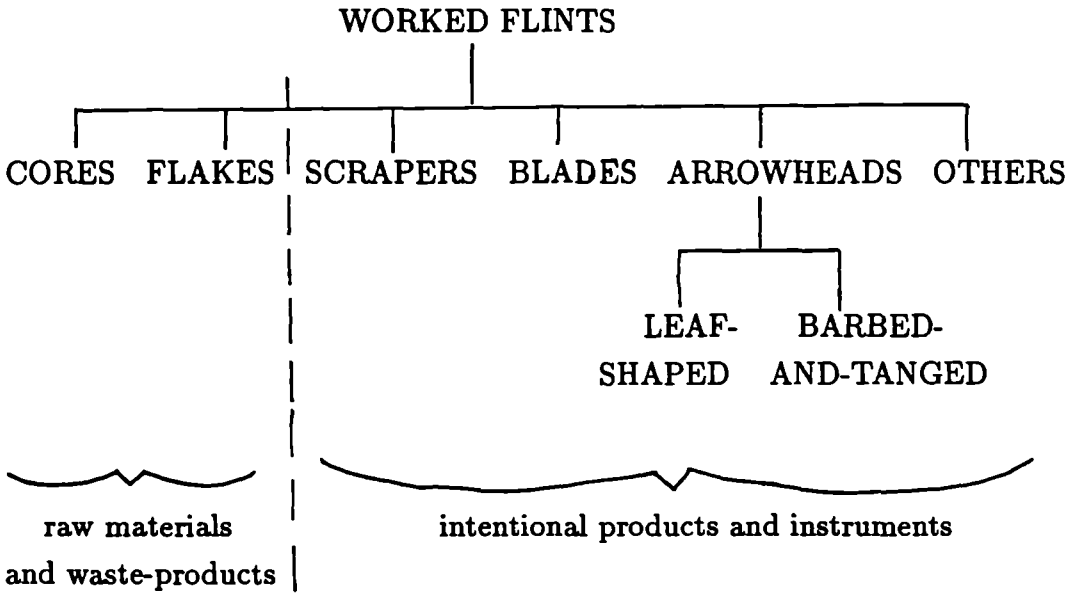


Figure 16: The Category of Worked Flints

Usually discovered flint artefacts were identified and labelled on the second of these levels; that is, in terms of their function (eg. 'scrapers', 'blades', 'arrowheads', etc). Sometimes a more specialised identification was given based on shape (eg. 'leaf-arrowhead'). But an arrowhead or blade would only occasionally be referred to as a 'worked flint', simply because its status as an artefact that had been worked was self-evident and obvious. The second level, then, consists of what Rosch (1978:32) calls "basic level" concepts and objects. However, objects which had no apparent function yet had clearly been intentionally worked, such as flakes and cores, were often referred to as 'worked flints'. The following example illustrates the kind of practical analogy that underlies the identification of a discovered object as having been 'worked':-

> During the trowelling of an area to delineate the cut of a ring-ditch, a task which had taken **D** several hours, the only find had been a flint-flake. I pointed out to **D** that many similar flints must have passed before his eyes in this time: why has he kept this flint and not the others?
>
> 1. **D** replied that this flint had been "worked" - that it had been "struck off" from a flint core in the making of an implement. (As he told me this he demonstrated the relevant hammering actions, holding an imaginary hammerstone in one hand and an imaginary core in the other).
>
> 2. I asked him how he differentiated between a worked and an unworked flint.
>
> 3. **D** (searched on the ground for an unworked flint to use as a comparison, found one, handed both flints to me and) said that, if I looked closely, I would see a percussion-mark on one of the stones "where it has been hammered". He pointed out the absence of any such features on the other stone.
>
> 4. I asked whether he had to look hard in order to find a worked flint.
>
> 5. **D** said that, in this case, no. As soon as he saw it he knew it had been worked. In fact the flint seemed to "jump out" of the soil as he was trowelling it, and he 'couldn't miss it".
>
> [RE23]

Perhaps what is most apparent in this exchange is just how much **D** knows about the discovered object. This knowledge extends not only to the identification of the object as an artefact, but also how it was produced, and the kind of agency responsible for its production. His account invoked the former existence of a raw material (the flint core), a tool for working the raw material (the hammerstone) and an intentional product (the implement), from which the flint flake itself was a waste product. It also invokes the former existence of a wielder of the hammerstone, a striker of the core, a maker of the implement - and this agent is credited with the ability to *intend* a product, as well as with the basic manipulatory skills required to carry out those intentions. Indeed, while **D** is talking (1), his own body is re-creating some of the motor-movements which would be necessary in order to strike a flake from a core.

There was definitely a sense in which this gestural drama, and the explanation it supported, did not depend upon the presence of the flint-flake any more than it did upon presence of the core or the hammerstone. It was something **D** *already knew*, before the object was discovered - a practical performance of a pre-existing conceptual scheme. Even though **D** may have no personal experience of knapping flints, he has clearly internalized the conventional archaeological wisdom (which is based ultimately on numerous experimental and ethnographic studies - see Hodder 1982a:11-12) about how flint artefacts are manufactured. Indeed, so much a part of 'common-sense' has this knowledge become that it is integrated into body schema as a kind of 'knowing how' as well as a 'knowing that' (Ryle 1949), and can be demonstrated naturally, as it were, without **D** really having to focus attention on what he was articulating by means of gesture. The example illustrates the way in which theoretical knowledge is 'lived' by the body and 'grounded' in the bodily practices and perceptions involved in the act of discovery. The discovered object seemed to "jump out" precisely because it was apprehended and recognised in terms of this embodied scheme of past human action.

In the act of discovery, then, we can observe knowledge-in-action; not knowledge as a corpus of facts and static schemes, but knowledge as a *process*. The flint core, the hammerstone, the implement being fashioned, the flint flake and even the inferred subject - whose intentional activity is understood to give the action-field its cohesion and temporality - are all cognitive objects (cognitive tools might

be a better way of putting it) at **D**'s disposal in making sense of material evidence encountered. **D** assimilates these cognitive objects to the body, constitutes them in terms of bodily powers and capabilities, sets them into motion according to some temporal scheme of bodily action (showing, incidentally, that cognitive objects can be 'manipulated' in much the same way as material objects can). He recreates the sequence of actions of some past human agent, the inferred subject, by reference to his own body.

This bodily reference is present in all archaeological interpretation, but is not usually made explicit; certainly the intimate connection between our understanding of human agency in the past and our practical common-sense knowledge of how we use our own bodies rarely surfaces in theoretical discourse. But just as theory is tacitly present in bodily action and perceptual experience, effecting everything that we do and see, so the body is tacitly present in analytical thought (see Johnson 1987). Indeed, if it were not for the underlying concept of the body - derived from practice - archaeological interpretation of any kind would not be possible. One of the purposes of this thesis, then, is to bring this buried concept to light.

Note how, in the scenario invoked by **D**, the instrumental values of the hammerstone, the flint core and the intended implement are all understood in relation to each other. The hammerstone is used to strike the core in such a way that the finished product will be suitable for a particular purpose or function of its own. Thus the *context of use* of the hammerstone is inextricably bound up with the *context of manufacture* of the intended implement, the *context of use* of which is already present, as an intention and a guiding scheme of action, in its own manufacture. The flint flake itself derives its anti-instrumental value (ie as something to be chipped away) in relation to these other tools and their action-meanings. The hammerstone's *context of use* and the intended implement's *context of manufacture* is very probably the waste-product's *context of deposition.*

Importantly, if the referential structure of tools-in-use always point towards the purposes to which they can be put (eg. the hammerstone points towards the striking of the core, the fashioning of the implement and ultimately to the intended function of this implement) they always point away from the body - the user of instruments, the maker of artefacts, the enactor of intentions. There must be an

embodied subject to wield the hammerstone, to grasp the core and to intend the finished product. Take away the inferred subject and the whole scenario invoked by **D** collapses back into this one material object - the flint flake - which sparked off the process of deep inference in the first instance. Not even this, for without the cognitive tools and schemes at his disposal for interpreting material evidence, **D** would perhaps never have recognised the object as significant and picked it out from a shifting field of similar-looking stones to begin with.

To recognize an object as an artefact (the instrument/product of human agency) is to situate it conceptually or actually within the practical space of the body. Artefactuality is not a quantifiable property of an object; it is the relation between an object and a subject, or inferred subject, who has some kind of project (or, in the case of waste-products, some kind of anti-project) for it. Archaeologists, of course, are not only concerned with working out the projects of past human agents; they also have their own wider projects for discovered objects, quite different from those of the inferred subject. In a very real sense material evidence appropriated for archaeological purposes become the artefacts of the present-day, whether or not they were the artefacts of previous cultures. Such objects as arrowheads and worked flint flakes are, as it were, *double-artefacts*. This two-fold artefactuality, and the irony implied, should be borne in mind by the reader in making sense of this fieldwork report.

8.7 Deep Inference in Action

If it is possible for an object to be the product without being the instrument of human labour (as in the case of the flint flake), it is also possible for an object to be the instrument without being the intentional product of any manufacturing process. Some hammerstones, for example, are recognized as artefacts not because they show traces of having been 'worked' (though some do), but rather because they show traces of having been used to 'work' other material. In these instances deep inference refers to the context of use rather than any context of manufacture (though it does refer to the context of manufacture of those raw materials and intentional products which are presupposed to have been worked by means of the hammerstone). But again, the body is the fundamental datum against which the quality of artefactuality is assessed.

Consider, for example, what happens when a digger encounters an object that could be a 'hammerstone' or could be 'natural'. It may be unclear whether the shape and features of the stone are the result of human or natural agency. How does the archaeologist evaluate such an object? Generally speaking, (s)he picks it up, (s)he tries out the various ways of holding the object, (s)he judges the centre of gravity, (s)he sees how the object would feel and perform in the hand if it was a striking implement. In other words, the apprehending subject brings his or her own practical experience to to bear upon the object, constitutes and evaluates it in terms of that experience. (S)he sees how (s)he would use the object, in order to judge how an agent in the past might have used it. It is a kind of practical experiment, and the results of that experiment determine whether the object will be retained as a recorded find, to achieve the transition into data, or whether it will be consigned to the spoil-heap. (In the particular example I am thinking of, the potentially significant object emerged in a context of joint labour. It temporarily became the subject of discussion, was inspected by several diggers, evaluated as natural by mutual consent, and accordingly thrown into the wheelbarrow and forgotten).

All discovered artefacts, if they are indeed to achieve the transition into data, have to pass such practical examinations - and for every one that passes there are many that fail. One has to remember that in the course of their everyday activity diggers are constantly 'on the look out' for artefacts; they encounter, pick up and scrutinise literally scores of possible finds, perhaps only retaining one or two. This means that many objects make only a very brief appearance inside the CULTURAL domain. One might say that their 'life' as artefacts - their passage from context of manufacture through context of use to context of deposition - is very short. Or one might say that such discarded objects are analogous to the flint-flake chipped away from the raw material to make the intended implement. For they take on an anti-instrumental character - as more or less irrelevant to our projects - that shows up the instrumental value (in terms of present-day purposes) of those finds that are actually retained. This active process of selection clearly involves the application of some criteria of relevance. And while diggers may judge relevance in various ways (eg. by comparing the material form and properties of discovered objects with others encountered before, or read about in texts), the principle standard or criterion is the body itself. The central role of the body

can be analysed in terms of four logically distinct (but practically inseparable) functions:-

1. The object emerges and takes form in perception within the context of bodily action. It is the embodied subject, after all, who uncovers and encounters the object, recognises it, picks it up, manipulates and explores it. Archaeologists generally make much use of the sense of touch, alongside vision, to evaluate material evidence. Observation is active (rather than passive), engaged (rather than disengaged) - a dialectic of exploration and discovery that unfolds through time, and is mediated through direct bodily contact with the object in question. In these senses the body can be described as the *vehicle* of practical analogies.

2. Embodied perceptual schemes, cognitive tools and practical skills enable the subject to recognize the object as an artefact. The subject draws from personal experience, as an embodied agent himself or herself, to interpretively constitute the object in terms of past human agency. (S)he brings the body's action-field to the object, and assimilates the object into this action-field. Imbued with action-meanings, the object is assessed and evaluated by reference to the action-possibilities of the body itself. In these senses the body can be described as the *source* of practical analogies.

3. The inferring subject conceives of the artefact not in relation to his or her own body, but in relation to that of the inferred subject, or past human agent, who is thought or presupposed to have manufactured and used the artefact. This agent is credited with basic perceptual-motor and symbolic powers normally associated with the human body. The intentional activity of this agent, in making or using the artefact, is held to be the causal context in which the artefact - as the effect of this activity - originated. In these senses the body (inferred) can be described as the *target* of practical analogies

4. In so far as an analogy takes place between the source and the target, the body itself is the datum without which no analogy (and no deep inference) could occur. As RE23 shows, the body may be the locus of the analogy. Because the analogy is situated in the body (or rather in the transaction

between the embodied subject and the object) - which is always and necessarily placed in the background - the whole process may be largely tacit, underlying language and explicit problem-solving. Any amount of theoretical knowledge may be grounded, reproduced and transformed in this process. In these senses the body can be described as the *basis* of practical analogies.

Vehicle, source, target and basis are of course analytical abstractions which in practice collapse back into a unified action-complex - the transaction between the embodied subject and the object. The analogical reconstruction of past human action is part of this transaction. It takes place in the here and now; there is no 'message' or 'meaning' received from the past via the object; nor does the object in any way retain past cultural meanings. If the object as encountered is intrinsically meaningful, it is because it is constituted, in perception, in terms of the (embodied) theoretical and practical knowledge brought to bear upon it by the perceiving subject. In this way it is transformed into a CULTURAL object - appropriated into our own system of meanings and projects.

In the process of exploration, however, the object itself may surprise or contradict the practical schemes applied to it, so that these schemes are modified in practice to take account of the object, redirecting further exploration of it. Ideas and object mutually fashion each other, and both emerge from the transaction in some way transformed. Importantly, even an unfamiliar or unexpected object - unparalleled in our experience - can be practically constituted in terms of the potentialities and possibilities of the human body. For the unfamiliar object can be manipulated and explored in the light of a whole range of anticipations, questions and strategies for action that our practical analogies generate. Every time we pick up an object, turning it over in our hands and directing our attention first to this aspect and then to that (its overall form and 'feel', a well as its particular details) - in order to see whether it has been worked, and if so how it could have been made, the manner in which it might have been used or held, the kind of material on which it could have been used, the function it could have performed, etc - we are exploring the possibilities of the object by reference to our own body. As Monod (1972:15) argues. "It is by reference to our own activity, conscious and projective, intentional

and purposive - it is as makers of artefacts - that we judge of a given object's 'naturalness' or 'artificialness'."

Chapter IX

"ARCHAEOLOGICAL" VERSUS "NATURAL"

> *"The first and the most fundamental distinction accomplished by human-activity-in-the-world is the one between the realm shaped by human praxis and all the rest" (Bauman 1973:122).*

9.1 The 'Natural'

The "natural" is one of the most important categories of evidence encountered in excavation practice, yet is rarely constituted as an object of attention in itself (though 'natural' evidence such as pollen or carbon 14 extracted from 'archaeological' contexts may be the object of subsequent analysis). It usually appears as the negative form or antonym of "archaeological", "artificial" or "artefactual" evidence. Archaeological patterns of significance are 'set in', 'surrounded by' and 'excavated from' the natural. The natural is the background from which archaeological objects emerge and stand out. It is the surface that is excavated down to in the digging of archaeological features. It can also be the description applied to objects and patterns for which no positive identification or significance can be found in terms of schemes of past human agency. Turning back to look at the rough plan of the site (Fig. 1), we see that the natural is the whiteness of the page, highlighted only negatively by the inked-in archaeological patterns. And its meaning is inextricably bound up with that of its opposite; "natural" means '*non*-archaeological', '*non*-artefactual' and '*not* the effect of past cultural action'.

9.2 Natural Counterparts of Discovered Artefacts

For every artefact discovered, as D points out in RE40 (Section 8.1), there are a considerable number of objects picked up and examined, only to be discarded as natural. And for every object picked up, there are countless other objects -

constituted negatively as non-artefacts by the very absence of an act of recognition. It is in this sense that the term "natural", as it is used by archaeologists out in the field, overlaps in meaning with the term 'NATURAL' which I have used in this thesis. Objects which are neither recognised nor accorded significance because they show no traces of past cultural action are not assimilated into the CULTURAL domain of archaeological knowledge and practices. As Bauman (1973:124) puts it, "It is true that 'picking up' through naming ... leaves substantial parts of reality in its 'pristine', pre-cultural state, unnamed and culturally irrelevant and neglected...these conceptual unbeings cannot possibly jeopardise the orderliness of the culturally tamed and assimilated part of the universe."

Some of these 'conceptual unbeings' may actually be the effects of past human action. It is the fact that they are not recognised as such that renders them as 'natural' or 'NATURAL'. I experienced (the *absence* of) these conceptual unbeings during my first few days on site. Joining the line of diggers hoeing away the last of the ploughsoil down onto the gravel surface beneath, I was told to look out for worked flints and small fragments of pottery (which might indicate the location of as yet unseen archaeological features). No matter how hard I looked, however, not a single artefact emerged from the strip of ground I was working. The strips either side of me gradually came to be scattered with labels pinpointing the provenance of finds discovered by other workers. My strip, by comparison to theirs, remained embarrassingly devoid of labels.

This experience made me acutely aware that the fact that there was 'nothing there' was due, at least in part, to my own lack of skill in recognising significant objects. Being somewhat out of practice, and new to this particular site, I had temporarily lost the 'knack' of picking out artefacts by eye from a field of natural objects. As other workers reassuringly pointed out, it takes time to 'get your eye in'. Sure enough, after several days I was finding as many artefacts as anyone else. But the anecdote illustrates an important point. What we perceive is always relative to our (culturally acquired and practised) *skill* of perceiving. Once mastered, the skill tends to be taken for granted and performed as a matter of routine; it is only when we do not have the skill, or are engaged in the difficult process of acquiring it, that the skilled character of perception becomes at all apparent to us. And no matter what our level of skill may be, there will always be 'conceptual unbeings' -

potentially significant objects that fail to make the transition from the NATURAL to CULTURAL domains and simply do not figure in our experience.

An 'out of practice' worker is liable not just to overlook or fail to recognise artefacts, but also to mistake natural objects for artefactual ones. During the excavation of segments through the ditches in the northern corner of the site (RE19, RE28), for example, I picked out from the ditch-fills a number of objects which I took to be worked flint flakes and cores. But periodic supervisory visits, and inspections of the contents of the finds-tray by **R** and **T**, showed that I was mistaken. On several occasions they picked up and examined my 'finds' one by one, only to discard them almost immediately as 'natural'. It took some time before my eye became adept at distinguishing 'real' worked flints from the many similar-looking natural stones. In this example, as in the last, the skill of others is the fundamental datum against one's own level of skill can be measured and improved.

Exactly how the eye tells the difference between natural objects and artefacts is difficult to put into words. For almost every objective property of material evidence that might be said to indicate past human action can also be caused by natural agencies. The characteristic flaking or multi-faceted appearance of worked flints is similar to flaking caused by frost-shattering. So called 'bulbs of percussion' can be produced by sea or glacial action as well as by the purposeful blows of a human agent. And the edges of flint flakes can be chipped through geological processes as well as through deliberate fashioning. It is true that a practised eye can use such clues as the degree of weathering to distinguish between archaeological and geological patterning. But in the last analysis it is not the objective properties of material evidence that characterise either 'archaeological' or 'natural'. What characterises an artefact is 1. its perceived *use-value* and/or 2. its perceived *craftsmanship* or *design*, or the perception that an intelligent and intentional force was responsible for observed patterning (see discussion in Section 8.5). And it is precisely the *absence* of these qualities that characterises natural objects. Hence (if we take for granted the skill of perceiving the quality of design in material evidence) it can be said that "As a general rule naturally chipped flints are easily distinguished from the works of man, for they *lack logical design*, flake-scars occur in uneconomical profusion, the edges have a bruised appearance, and the flake surfaces are usually scratched" (Oakley 1963:10, my italics).

It is not, however, simply a matter of human artefacts exhibiting design whereas natural objects do not. For nature does consistently produce patterns that might seem to indicate some form of design. Observations of design in nature have led philosophers (eg. Monod 1972:30-1) to argue for a teleonomic principle at work in the natural order of things, and theologians to argue for the existence of a God or 'Designer' (see the 'argument from design' summarized in Hudson 1974:55-66). Natural objects encountered in excavation that might be taken to exhibit design - and might therefore be mistaken by an untrained eye to be artificial - include spherical pebbles, quartz crystals, belemnites, ammonites, etc. But practised archaeologists rarely make this kind of mistake. As a matter of practical skill, they can easily distinguish between *intentional* (cultural) design and *unintentional* (natural) design.

So far we have considered the archaeological/natural opposition in regard to 'finds' and non-finds'. It has been difficult for us to apprehend the important category distinction between archaeological and natural. For the natural only appears momentarily as the discovered object which is briefly mistaken for an artefact and then, upon the mistake being realised, thrown away. Artefacts often seem to 'jump out' or 'stand out' from the natural background - their artefactual status immediately obvious to the discoverer in the first perception of them - so that they are just 'suddenly there' in fully fledged being as named and meaningful entities, prior to any conscious justification of the initial recognition.

Not all material evidence encountered in excavation, however, consists of discrete objects with bounded surfaces which are detacheable from the material field. The principle objects of archaeological investigation are "features" rather than "finds". Indeed, finds usually emerge more or less incidentally during the excavation of features or other material contexts. Unlike finds, features such as ditches, pits and postholes emerge only gradually through time as they are being worked, and the manner and form of their emergence is inextricably bound up with the strategies, methods and techniques of excavation used in bringing them to light. Features can never be apprehended in their entirety at any given moment, since every exploratory movement of the trowel at once opens up some new aspect and destroys some previous aspect. Hence the task of distinguishing archaeological features from natural features - such as glacial hollows, tree root holes, animal burrows, etc

- also unfolds through time. This makes it somewhat easier for the ethnographer to study not only the objectified relation between archaeological and natural evidence, but also the dialectic between the subject and the emerging object. The whole perceptual process is 'spread out' over the course of hours or days rather than encapsulated in the single moment of an instantaneous recognition. It is to the excavation of features, then, that we now turn.

9.3 Archaeological and Natural Features

Let us consider first of all the interpretation of features as they appear - for example, on the rough plan of the site (Fig.1) - after the removal of the overlying ploughsoil but before excavation proper. Only the surface manifestations, or horizontal outlines, of features are visible; their three-dimensional form is hidden from view. But already archaeological features 'stand out' from the natural. The many circular features or 'ring-ditches', for instance, are instantly recognisable as archaeological rather than natural patterns. One reason for this familiarity is that they originally manifested themselves as crop-marks and are therefore already known; indeed, their identification from aerial photographs provided the rationale for the excavation in the first instance. A second reason is that ring-ditches and ring-ditch cemeteries are established objects of archaeological knowledge - encountered on previous excavations elsewhere and heavily documented in archaeological literature. New objects of the same kind are assimilated into the established category.

A third reason why these patterns should appear as familiar to us is that their form and distribution has a 'regularity' and 'design' which might seem to indicate that they are the intentional effects of past human action. But as soon as we constitute material evidence in terms of past cultural agency we find that we are implicitly referring to nature - the negative counterpart of culture. For the fourth (and most easily overlooked) reason why we instantly recognise these forms as cultural products is that there is no known natural cause in our experience which could be held to have given rise to these material effects.

Much the same could be said of the straight ditches (and the modern trackway). The very 'straightness' of these patterns - like the 'roundness' of the ring-ditches - leads us to perceive them as the products of intentional human labour. Their artefactual status is self-evident to us, but only because we know from experience

that straight parallel lines and right-angled junctures are 'unnatural' forms in this context.

There are also material forms (which, for the most part, have not been planned and recorded) whose status as 'natural' or 'non-archaeological' is equally obvious. Known tree root holes and animal burrows, for example, show an irregularity of shape and a certain lack of definition which contrasts with the (relatively) well-defined and regular outlines of archaeological features. Amorphous patches of gravel and brick earth do not even have a 'shape' as such. Some of these patterns have been temporarily constituted as possible objects of significance, cleaned over by trowel, but not recorded on any plan because their status as 'natural' rather than 'archaeological' has been positively ascertained. Others have simply not figured in our experience. Showing no trace or sign of past human action, exhibiting no intelligent or regular design, such patterns are constituted negatively as objects of non-significance by the very fact of never attracting our attention, or emerging out of the background into the foreground of the perceptual field.

In this way it can be seen that 'archaeological' and 'natural' are mutually opposed and complementary categories of material evidence - two poles on the same axis of objective meaning. If 'natural' means 'non-archaeological' then 'archaeological' means 'unnatural'. To identify what something is in these terms is to identify what it is not, and every identification of material evidence as one or the other reproduces this most fundamental of category distinctions.

9.4 ¿Archaeological?→Natural

One way to apprehend the (cognitive and material) boundary between 'archaeological' and 'natural', of course, is to look at those patterns whose status as one or the other is uncertain, or those occasions when a particular item of evidence makes the transition form 'natural' to 'archaeological' or vice-versa. Consider, for example, the many 'pit-like' features marked on the plan. At the start of the excavation these were thought likely to be inhumation-burials, pits, or some other kind of archaeological feature - especially those which were more or less regular in shape with clearly defined outlines or cuts. But digging subsequently showed most of these 'archaeological' patterns to be 'natural' configurations. It is worth looking more closely at how this change in interpretation came about.

The first of the 'pit-like' features to be investigated was situated in the midst of the cemetery area between two ring-ditches. It was excavated by G, and visited twice by the ethnographer during the course of its excavation (RE17, RE20):-

> The feature was sub-rectangular in horizontal outline, and measured about 2.5 x 1.5 m. When I first approached, G had already cleaned over the feature by trowel to delineate the 'cut', then divided the feature into quadrants with string; she had just started taking out the fill of the first quadrant. G told me she thought the feature was "very likely an inhumation-grave", given its shape and size. The sides of the feature were easy to find - the grey silt fill peeling off onto bright orange (natural) gravels - which led G to believe that they had been "deliberately cut" rather than caused by any natural agency. No finds had emerged so far, but a few charcoal flecks within the fill seemed to indicate that this was indeed an archaeological feature.
>
> [RE17]

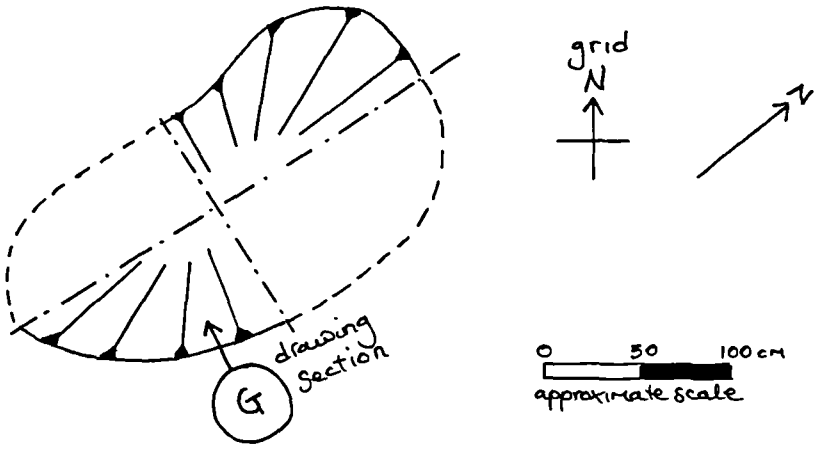


Figure 17: Sketch of RE20

Upon my return two working days later, G had completed the excavation of two quadrants - to reveal a steep-sided feature, about 50cms deep, perhaps the most important characteristic of which was the absence of the anticipated burial remains (see Fig.17).

G told me that everyone was disappointed this feature had not turned out to be an inhumation grave. After consultation with R and T, moreover, it had been decided that the feature was "natural" - and not "archaeological" at all. The fill consisted of just one layer of homogenous grey silt, very clean and compacted, with no finds. Only a few flecks of charcoal had been found within the layer just below the ground surface, but G now thought these had infiltrated into the fill through tree-root disturbance. The feature itself, however, was of "peri-glacial origin".

After recording, excavation of the remaining two quadrants is not intended.

[RE20]

I later asked T about how such features were formed, and how they came to have such well-defined outlines and sides if they were not man-made. He explained that in the last glaciation permafrost opened up fissures or cracks in the gravel surface, which then filled up naturally with silt and clay deposits. The sides of these natural fissures; he said, could easily be mistaken for man-made 'cuts'; it is the character of the fill that indicates its natural origin [FJ329]. T's remarks demonstrate that archaeologists routinely infer non-human or natural causes for observable effects, and that these 'natural inferences' provide a counterpart to inferences about past human agency.

Shortly after RE20, L began to excavate a similar feature, which had also initially been thought to be an inhumation burial - especially as it was situated within the interior of a ring-ditch. But events recorded in RE17/RE20 had already changed this view. Similarities in the character of the fills indicated that this feature was likely to be natural too - almost certainly glacial in origin. L told me that the purpose of excavating it was to "test" and "make sure" of the revised interpretation. I visited L again when she had just completed the excavation of two quadrants and was engaged in cleaning the surrounds of the feature with a trowel in preparation for photography (RE35):-

As expected, the feature had turned out to be remarkably similar to the feature excavated by G in RE20. Although more irregular in shape, the feature had steep gravel sides and a homogenous fill of clean and compact grey silt. It too was about 50 cms deep. And no artefactual material had been found within the fill. L said she was now completely certain that the feature was natural, "like G's feature".

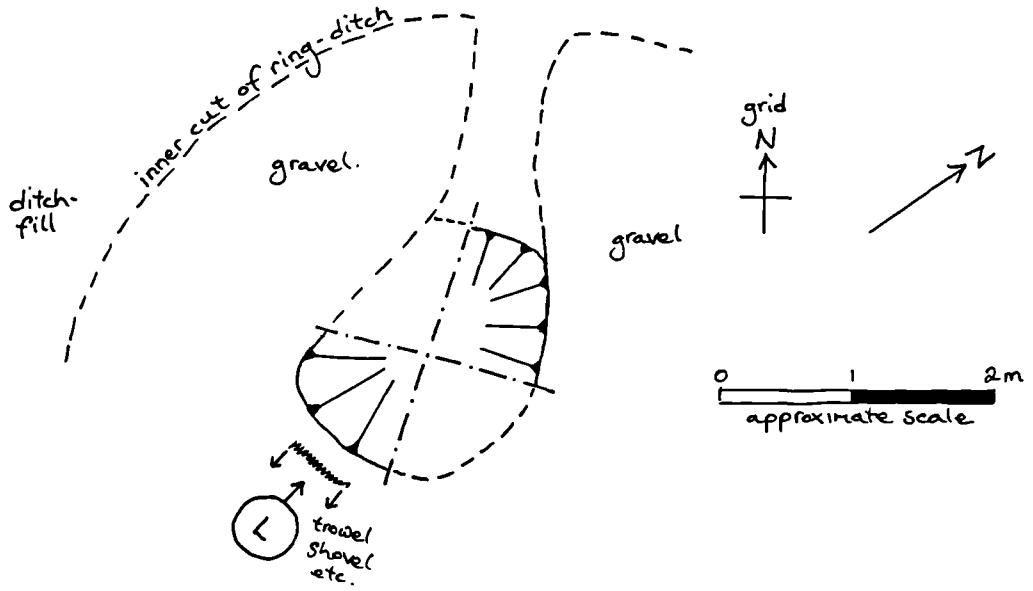


Figure 18: Sketch of RE35

I asked **L** when she decided it was natural rather than archaeological. She said that "It did look at one point as if it was getting suspiciously regular, but then it became more irregular again. If it had become square, it would have been less likely to be natural." She was unable to pinpoint an exact moment when the natural status of the feature became clear; the interpretation, she said, was not made suddenly but developed gradually as digging progressed. She also said that there was no single reason for considering the feature to be natural, but rather a multiplicity of reasons which, taken together, proved fairly conclusive (she cited the irregularity of its shape, the homogenuity of the fill, and the lack of finds).

[RE35]

Of course, a feature may have all the characteristics cited by **L** and still be 'archaeological' rather than 'natural'. Exactly how we tell the difference is difficult to articulate in words. The difficulty became apparent on a further occasion, while I was talking to **T** and **W** about this issue in the planning-hut. **T** argued that the statigraphy of the fill and the inclusions within it had much to do with the identification of a feature as 'archaeological'. If the fill is packed with charcoal and pottery, for example, one can be fairly certain that the feature is man-made. He said that the texture or 'feel" of the material was also important. However,

he pointed out that there was a danger in judging a feature by its fill; clearly a glacial hollow which was already there could have been used by people for various purposes and thus acquired an archaeological fill. And many archaeological features can be filled entirely by natural processes, such as silting or accumulation of wind-blown dust. W, on the other hand, argued that the 'regularity of the cut' was the most important indicator of human workmanship - especially if the feature was square, rectangular, circular, or some other geometric shape. But he stressed that a feature still has to "look right" and "feel right" for it to be taken as archaeological; it can look right even if the cut is irregular and look wrong even if the cut is regular. He concluded by saying that "some of us probably knew once how we do it, but not any more...it's just something we can do." [FJ327-8].

W's insight - that telling the difference between archaeological and natural features is something that we *do*, even if we may not be able to articulate *how* we do it - is at odds with the usual strategy of defining the difference in terms of the objective properties of material evidence. Material evidence not only has to conform to certain objective criteria before it can be identified as 'archaeological'; it also has to "look right"; and "feel right" to the apprehending subject. The object, in other words, appears as 'archaeological' or 'natural' only in relation to the discerning skill of the perceiver. And like all skills, once mastered, this skill can essentially be taken for granted. Asking how such a skill is performed is a bit like asking cyclists how they retain their balance on a moving bicycle; they know very well how it is done in a practical sense, but explaining how it is done is another matter entirely.

If skills can be characterised as structured abilities, then these structures are not static and fixed but rather develop through time. As they are being practised they are continually *honed* or *sharpened* (against the material upon which they are brought to bear). Thus the ability to distinguish between archaeological and natural patterns, though initially learnt elsewhere on other sites, has been improved through working here on this site, on this material, on these features. For after several of the pit-like features had been excavated, and most of us had gained first-hand experience of digging them, we ceased to see them as archaeological patterns and learned to recognise them as natural at first glance, from surface appearances alone. This had important implications for excavation strategy. As the deadline for the end of the excavation approached, it became increasingly necessary to select for

investigation those features which were thought most likely to be of archaeological significance. Known archaeological features such as ring-ditches, cremations, post-holes, etc, were given priority. Natural features, or features almost certain to be natural, were low on the list. Many of the remaining 'peri-glacial' features, then, were not excavated.

A few were, however, and it is interesting to consider why these were chosen for special attention. Towards the end of the dig, for example, I was given the task of excavating a feature which everybody on the site knew to be natural. But although it looked natural to us, it would probably look like a "grave" to someone who did not have the actual experience of digging this type of feature - for it was situated inside (ie. enclosed by) a ring-ditch, and was roughly rectangular in shape. **T** explained that the significant location of the feature meant that it was essential to test out our assumption that it was natural, if only for the sake of the reader of the excavation-report. Anyone looking at the plan of the site in the report, he added, would ask questions about why a feature in the interior of a ring-ditch had not been investigated and sampled [FJ329-31]. Thus we have a disjunction between the acquired expertise or 'knowing how' of workers out in the field, and the 'knowing that' requirements of the reader of the subsequent report. 'For the sake of the reader' the feature was duly excavated, recorded and sampled. But this only told us what we already knew - that the feature was natural.

Another feature easily taken to be of archaeological significance because of its situation (relative to other features) and its (geometric) form, was a sub-circular 'appendage' to a ring-ditch. This feature had fascinated us since it first appeared during hoeing. I visited it during the early stage of its excavation by **G**:-

> At present **G** is cutting a segment through the ring-ditch, and has just started taking out the fill. She plans to extend the segment backwards and to her left so that the section will show the stratigraphic relationship between the ring-ditch and the 'appendage'.
>
> **G** tells me that the feature "looks archaeological because of its circular form." Whether it really is an 'appendage', an intrinsic part of or addition to the larger feature, she is not sure. It could be something to do with the mortuary ritual associated with the ring-ditch, she says, but it could also be a small ring-ditch in its own right. On the other hand, as she points out, it could be natural. "It is just to early to say."

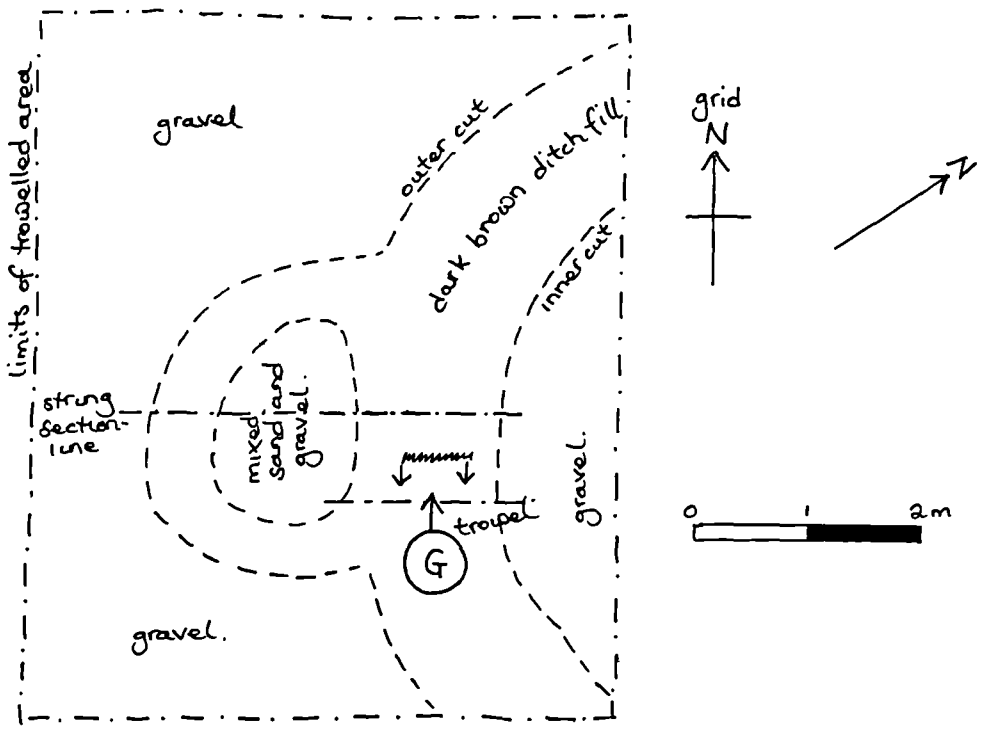


Figure 19: Sketch of RE66

[RE66]

The situation described in this recorded event, then, is a kind of practical conundrum, which can only be resolved through further exploration of the material field. The status of the feature as archaeological or natural is uncertain, as is the stratigraphic relationship between the 'appendage' and the ring-ditch. Unfortunately I missed the further developments on this part of the site, but T later told me what happened (FJ327). He said that the section was extended through the appendage, the outer edge of which was found to slope down sharply, heading under the ring-ditch, forming what appeared to be one side of a large bowl-shaped depression. This established that the feature was cut by (earlier than) the ring-ditch. It was filled, moreover, by the same compacted grey silt that we had come to associate with natural peri-glacial features; like those other features, there were no finds. The sand and gravel which, in effect, formed the inner circle of the appendage, was shown to be simply a shallow patch or spread lying on top of the grey silt. The feature, therefore - much to everyone's disappointment - had turned out to be natural.

These periglacial features were unusual for natural features in the sense that they had fairly well-defined sides and edges. Usually when a suspected archaeological feature turns out to be natural in the course of digging it, the 'cut' being followed along by trowel may not only fail to bottom out, but also veer away in erratic and unpredictable directions, disappear completely, or become impossible to distinguish from other soil boundaries. There is a general progression from *form* to *formlessness* - and it is precisely this gradual dissipation of form that leads the worker to suppose that (s)he is dealing with natural, rather than archaeological, patterns (see the account of the animal burrow in RE11, Section 9.8).

The opposite occurs when archaeological patterns emerge from what was previously taken to be natural. In these instances, *formlessness* gives way to *form* - or, to put it another way, a figure takes shape where before there was only an indifferentiated background. Let us now turn our attention away from archaeological→natural transitions and towards natural→ archaeological transitions.

9.5 ¿Natural?→Archaeological

In Chapter 5 it was stated that RE40 would be used as a kind of 'core' event, to which we would return again and again to illustrate various themes. It has been cited in discussions of temporality (Section 5.2), changing perspectives (Sections 6.2 and 6.3) and the discovery of finds in time (Section 8.1). But it might be said that, in using RE40 in this way, the event itself has been abstracted out of the flux and flow of ongoing practice. It has been reified by the text into a thing in its own right - a concretized moment divorced from temporal process. There is little the writer can do about this de-temporalization, since it is a function of textual representation itself. But here an attempt will be made to at least partially remedy the situation, as we consider the *history* of RE40.

As already noted, the most significant aspect of the material field being worked by **A** and **D** is the ring-ditch (see sketch and commentary, Section 5.2). The ring-ditch, however, has not always been visible; it is in fact a fairly recent discovery. Indeed, **A** initially arrived on this part of the site to excavate some cremation-burials, with no idea that there was a ring-ditch enclosing these burials. How was the ring-ditch discovered? To answer this question, we have to refer back to previous events in the recorded event sequence. RE 5, 15, 27, 30, 40, 54, 61, 67

together comprise the sequence for the excavation of this area. We pick up the sequence at RE27:-

> A has been working on this area for some time. Three cremation-burials were located here, all of which A has half-sectioned, and recorded at this stage of excavation. One of them (F1027) has been completely excavated, though the cremation vessel itself awaits 'lifting' by the conservators. This group of cremations, situated away from the main group of ring ditches (like those situated between the ring ditches) is thought to represent a later form of burial rite (see Fig.20).

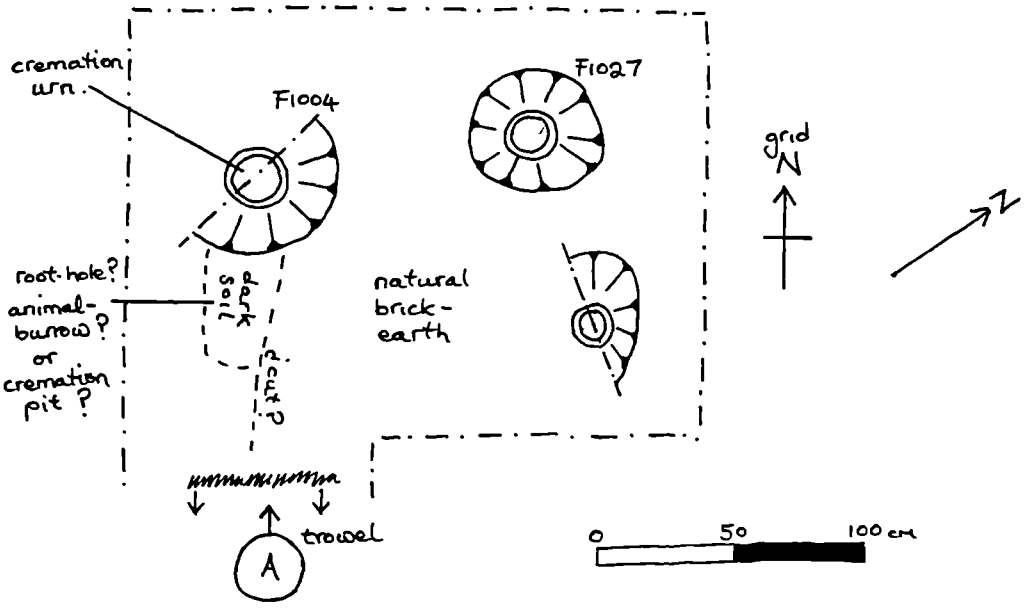


Figure 20: Sketch of RE27

A problem had arisen during the half-sectioning of F1004, however. The feature appeared to cut through, or be cut by, a layer of black material, which made it difficult to find the sides of the feature at that point. A thinks that this black material originates from a tree root hole or some other natural disturbance, but there is a slight possibility that it is an un-urned cremation. It has no precise edges or outline yet, so the immediate task is to trowel the area around F1004, find the true extent of the possible feature, and clarify its 'cut' if it has one.

[RE27]

When I returned to this part of the site a few days later, **A** was no longer concerned with the black material, which had been shown to have no precise edges and seemed to be just a spread of natural organic material from animal or tree-root disturbance. In extending the area to find the extent of this material however, she had come across what appeared to be the cut of a linear feature, whose existence was not known or suspected before. It was this that now occupied her attention. Though barely distinguishable from the background of natural brick-earth, and more a matter of 'feel' than vision, the cut seems to be curving around the cremation-pits. **A** thinks it is the inner cut of a ring-ditch enclosing the burials; a conviction strengthened by the many finds that have already emerged from what she takes to be the ditch-fill. The plan now is to follow the cuts of the ditch along, which means extending the area far beyond its present limits (**D** has been detailed by **T** to come and help **A** with this task).

[RE30]

See RE40 (Section 5.2), RE61 (Section 4.3) and RE67 (Section 8.2) for further developments.

Note how one thing has led on to another. It was the excavation of known archaeological features (the cremation pits) that brought to light a possible archaeological feature (the black material) which, as it happened, turned out to be natural. And it was in following along this natural layer, when its status as archaeological or natural was uncertain, that a further and very important archaeological feature (the ring-ditch enclosing the cremations) began to emerge from what was hitherto taken to be a wholly natural background of brick-earth.

The sequence illustrates the transition from *form* to *formlessness* (of the possible feature which turned out to be natural) and the transition from *formlessness* to *form* (of the ring-ditch outline). Indeed, in the case of the ring-ditch we are witnessing the *forming* of an archaeological pattern of significance. Only a tiny proportion of its surface outline is perceptible, and even this is difficult to see; to apprehend it at all demands something of a skilled perceptual accomplishment on the part of the perceiver. But the provisional recognition of it as a significant pattern serves as the basis or rationale for further exploration. And as exploration proceeds, the unfolding evidence (the discovery of finds in the fill, the continuation

of the cut that emerges as **A** trowels along its anticipated course) is tending to confirm rather than refute the initial hypothesis.

Just as each discovery is contingent upon the sequence of previous discoveries that led up to that moment, so each discovery prepares the ground for further discoveries. The continuation of the ring-ditch cuts that **A** and **D** will have uncovered in RE40, the small feature that **A** will find (RE61), and the arrowhead she will discover (RE67) within the fill of the ditch - are all future events that would never 'happen' if it were not for the events described in RE 27/30. The discovery of the ring-ditch was a pivotal event, shaping all subsequent events on this part of the site.

9.6 Global Archaeological↔Natural Transitions

Discoveries linked together in causal sequences on bounded parts of the site are also linked, both spatially and temporally, to discoveries taking place across the site as a whole. Supervisory visits and other social transactions ensure a constant cross-fertilization of interpretations of emerging evidence on different parts of the site. It is through these channels that, occasionally, the finding of one worker in one bounded region comes to effect the findings of all other workers in other regions. When the perception and understanding of a commonly encountered type of material evidence by all members of the excavation-team undergoes a radical change, I call this a 'global' change - simply because it involves a modification or shift in world-view of the social group as a whole.

To give a concrete example of the cross-site linkages that come about, and an archaeological↔natural transition that (though it originated with one worker on one part of the site) had 'global' effects and implications, let us leave the *history* of RE40 to one side. We turn now to the *future* of the other recorded event that was cited in Chapter 5 - RE22. This event was used as an instance of practical problem-solving or practical reasoning (Section 5.5). We left **E** in an open-ended and unresolved situation, trying to 'work out' an unfolding practical problem that had arisen in the course of cleaning over (the surface manifestations of) a ring ditch. RE22, 37 and 41 form the recorded sequence for this part of the site. We pick up the sequence at RE37, with **E** engaged in the digging of segments through the ditch:-

One segment has already been excavated, sampled and recorded. The ditch was shown to be round-bottomed, about 30 cms deep, with the fill consisting of just a single layer of brown silt. The gravel sides of the ditch, **E** tells me, were easy to find and to follow down; digging the segment was 'no problem at all'.

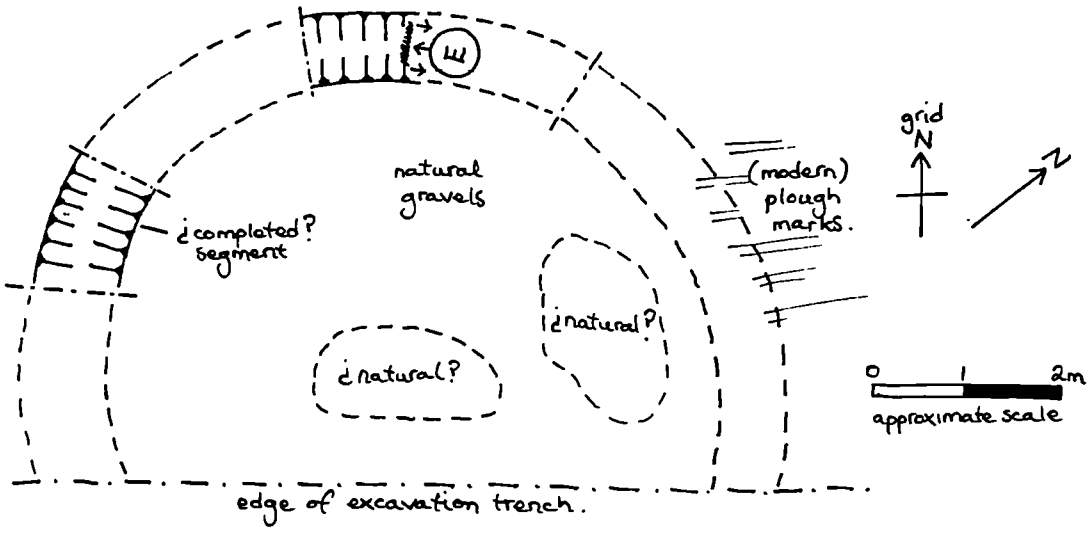


Figure 21: Sketch of RE37

E is now digging a second segment through the ditch, working backwards from the section. He tells me he thinks he has found the sides, but is worried about them because they are 'unsymmetrical' - with one side much steeper than the other. Why is he worried about a lack of symmetry? "Because you expect a ditch to be more or less symmetrical... it doesn't look right how it is... If you're cutting a ditch you generally cut it in a certain way... not like this." Nevertheless, the brown fill seems to peel off cleanly onto these gravel sides, so **E** will continue to follow them down and along. It looks as though this segment will have roughly the same shape and dimensions as the first segment.

[RE37]

Comparing Fig.21 with Fig.9 (Section 5.5) we see that the material field has been extended and transformed since we last encountered it in RE22. Perhaps the main point to note is that the ring-ditch no longer exhibits a right-angled turn. Detailed trowelling by **E** had shown the right-angle to have been caused by recent

ploughing activity disturbing the upper ditch-fill; he found the true (circular) outline by taking off deeper spits of soil in this region. The possible archaeological feature which figured in E's problem-solving activity at that time was found to be a natural configuration within the brick-earth, and has long since faded away into the background. Since then other possible features have emerged to engage E's attention, such as the four pit-like outlines marked on the sketch (similar in many respects to the 'peri-glacial' features encountered elsewhere on site and therefore thought likely to be natural, though this interpretation will need checking out). What has happened since our last visit, then, is that the action-field and its action-meanings - which comprised the practical 'problem' to be solved - has been transfigured through E's work or labour within and upon it. It is not just that new material factors have emerged to be taken into consideration; their emergence was facilitated only by the removal of evidence that was visible before. The mode of excavation has also changed - from 'cleaning over' to 'digging segments through' the ring ditch. It is the same problem, but the problem *at a different moment in time.*

All practical problems unfold through time in this way. Unlike analytical problems they can never be grasped in their entirety at one moment, since many of the variables are hidden from view and, though anticipated, not known with any certainty. The material field therefore always presents the possibility of confounding expectations as to what is likely to emerge, bringing about a shift in strategy for further excavation, as well as a revision of established interpretations. Consider for example, the next recorded event in the sequence:-

> Returning to this part of the site I found the second segment completed, with E engaged in cleaning the last of the spoil from the bottom of the feature. The shape of the ditch-segment had changed completely, however. It was now V-shaped rather than bowl-shaped, and about 20 cms deeper. I asked E what had happened since my last visit.
>
> E said that he had thought he had finished the segment yesterday. It was similar to the first segment, with only one fill and gravel sides but he was still unsatisfied with it; it 'didn't look right' and was 'unsymmetrical'. Then he noticed that the gravel on one side was dirtier than the gravel on the other side. In an experiment with the tip of the trowel, he tried taking off some of the dirty gravel, finding that it came off onto

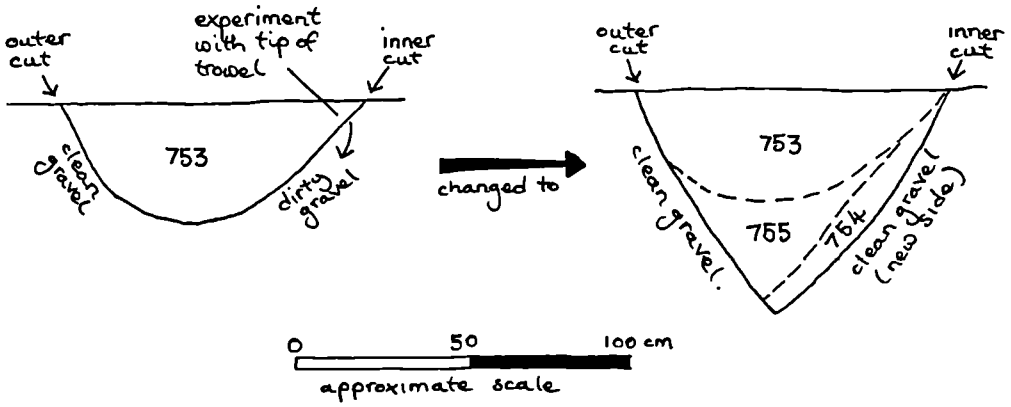


Figure 22: Sketches of Vertical Section, RE41

cleaner gravel. Further trowelling convinced him that this cleaner gravel was in fact the true side of the ditch. He followed this side down and then, once it had bottomed out, followed the other side up. The resulting V-shaped ditch now 'looked much better'. Not only was symmetry restored; the segment now 'felt right'. Both sides consisted of clean gravel surfaces which contrasted markedly with the dirty gravel fill (754/755 - see Fig.22) visible in the section.

E said that "One of the things that confuses you is you start off with a preconceived notion... the shape of the other segment... and expect this one to be the same." Now he has to go back to the first segment to check that it really has been fully excavated, in the light of developments in the second segment. It seems highly probable that this will prove to have a V-shaped cut too - though as **E** points out, it may be just that the ditch is changing shape along its course.

[RE41]

During supervisory visits, **R** and **E** together interpreted layers 754 and 755 as primary erosion and silting deposits respectively, which had accumulated shortly after the ditch had originally been excavated in the distant past. What has happened, then, is that the soil boundary between 753 and the two dirty gravel layers has made the transition from 'archaeological' (ie. a man-made cut) to 'natural' (ie. the effect of natural silting processes). The new cut or side uncovered by E's

experiment with the tip of the trowel, on the other hand, has made the transition from 'natural' to 'archaeological'.

Two points emerge very clearly from the example. The first is that previous experience of digging ring-ditch segments - not only on this feature, but also on other parts of the site (and by other workers as well as E) - provides a certain set of preconceptions as to what they look like, how they should be excavated, etc. This experience clearly *helps* the worker to locate and follow down the sides or cut of the ditch (a task which a novice might find very difficult). But in this instance it also *hindered* the operation. By E's own admission, he failed to locate the true sides because of expectations engendered in the digging of a previous segment. The way in which past events or events that have taken place elsewhere condition the act of discovery can be represented schematically as in Fig 23.

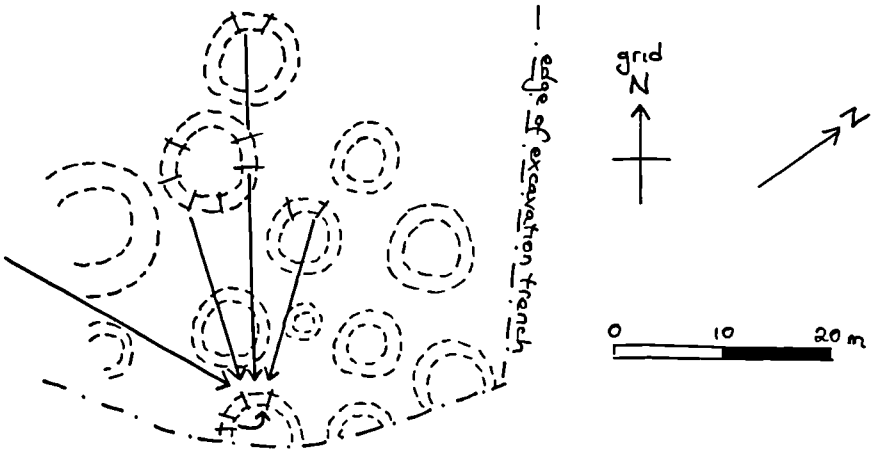


Figure 23: Structuration of RE37/41

The second point is that the unfolding material field has in some sense challenged or surprised those preconceptions. It has 'acted back' on the cognitive and practical schemes that gave it form in the first instance. That E is now prepared to revise his preconceived notions on the basis of what has emerged is indicated by the fact

that he is going back to the first segment to re-check the sides and base of the ditch there. To appreciate to full ramifications of E's findings, however, we have to consider the chain of events across the site as a whole that was set in motion by his practical re-evaluation of the ring-ditch sides.

In supervisory visits to E's material field, T and R were concerned not just with the excavation of this particular ring-ditch, but also with the implications of discoveries here for the excavation of other ring-ditches on other parts of the site. Given that layers 754 and 755 were comprised of gravel material, the surface of which could easily be mistaken for the sides of the ditch, they wondered whether similar primary layers might have remained unnoticed and undiscovered in other excavated ditch-segments. Several workers, including myself, were therefore given the task of re-examining segments that had already been excavated and recorded. Such re-examinations involved carrying out the same kind of 'experiment' with the tip of the trowel that E had performed in his segment. Sure enough, many (though not all) of these ditch segments were shown to have hitherto unnoticed primary layers. Some had V-shaped cuts, and most turned out to be much deeper than previously supposed. Further samples had to be taken; section drawings had to be partially erased and re-drawn; additions and revisions had to be made to context-sheets. (The first segment excavated by E was one of the many 'finished' segments to require further excavation and recording. As half-anticipated, it turned out to have a V-shaped cut just like the second segment).

It was not just 'established' interpretations and 'finished' material fields that were re-structured by RE37/41. Needless to say, the experience of re-digging already excavated features made all of us acutely aware of the possibility of mistaking primary layers for sides. From then on we were 'on the look-out' for erosion and silting deposits of this kind when excavating further segments through ring-ditches. Telling the difference between primary layers and sides of features, through subtle exploration with the trowel, became an aspect of everyday routine which came 'naturally' to us after a while. RE37/41, then, had major consequences for subsequent excavation strategy, our perception and understanding of unfolding material evidence, and our skill in digging and recording it accurately. The 'global' effects of E's findings can be represented in the following way:-

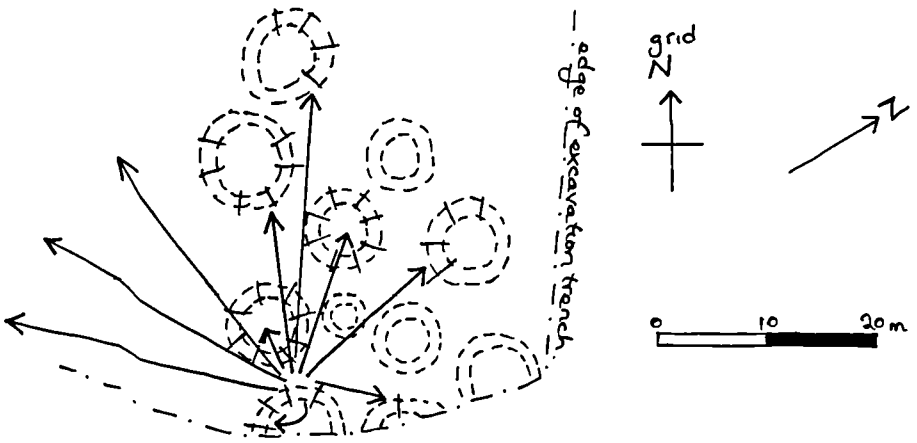


Figure 24: Structuration of Other Events by RE37/41

I have used RE37/41 as an example of a pivotal event, where a perceptual change in the archaeological/natural status of material evidence in one part of the site brought about corresponding archaeological↔natural transitions in other parts of the site. But it is important to point out that RE37/40 is by no means unusual in this respect. Any number of recorded events could have been used to illustrate this feedback and cross-fertilization effect. Experience of material evidence gained by individual workers in material transactions 'feeds back' into the "stock of knowledge at hand" (Schutz 1971:208) of the excavation team as a whole - through numerous supervisory visits and other social transactions. This in turn effects the way we act upon the material field, and thus the form of material evidence actually encountered. In this way the craft skills of excavation are bound together with emerging evidence in a practical dialectic which itself unfolds through time. Transformations of the material field bring about corresponding transformations or honing of craft skills themselves.

9.7 Negative Practical Analogies

It is interesting to trace back the origin of the 'global' archaeological↔natural transitions described in Section 9.6 to a particular stage of the practical reasoning

process in which E was engaged. In RE37, before the actual discovery of the new sides or cut of the ditch, E was already expressing doubt about the shape of the excavated segment. The ditch was 'unsymmetrical'; there was something not quite right about it. When I asked him why a lack of symmetry should bother him, E had said "Because you expect a ditch to be more or less symmetrical...it doesn't look right how it is...*If you're cutting a ditch you generally cut it in a certain way*...not like this."

This might be described as a *negative practical analogy*, made partially explicit here. If archaeologists recognize artefactual objects or patterns by reference to their own causal powers as makers of artifacts themselves (Section 8.5, 8.6, 8.7), then they recognize the effects of non-human or natural agencies - negatively, as it were - by the same means. E 'puts himself in the position of' the agent who originally dug the ditch, sees how *he* would dig it in order to see how an agent in the past might have dug it. Consider the vast range of unspoken assumptions that he is making here. All the taken-for-granted knowledge of how he uses his own body to move through space, to grasp and manipulate things, to effect changes in the material environment through the use of tools, is invoked to help him understand material evidence in terms of past human agency and to know how best to deal with it. Causal powers of the body are routinely attributed to the inferred agent held to be causally responsible for originally excavating the ring-ditch that E is re-excavating today. And the upshot of this process of deep inference is that (in terms of analogically-derived schemes of past human action) the soil boundary that supposedly represents the 'cut' of the ditch "doesn't look right how it is."

It was this nagging doubt - this slight disjunction between material evidence and cognitive schemes for apprehending material evidence - that led E (somewhere between RE37 and RE41) to carry out his 'experiment' with the tip of the trowel. In other words, it was a negative practical analogy that sparked off the exploratory process that resulted in the discovery of the V-shaped cut, which in turn gave rise to 'global' changes across the site as a whole. And when the V-shaped cut was brought to light by the trowel, it was not completely unexpected; it had in fact been anticipated before it emerged, and was an object of intention prior to its manifestation in material form. The negative practical analogy gave rise to this anticipation in the first instance, and provided the rationale for digging away some

of the dirty gravel to look for the 'true' sides. This is what I mean when I say that analogies are embedded in action. They are caught up in the dialectic of exploration and discovery that Neisser (1976:21) has called "the perceptual cycle".

It is also clear from this example that analogies-in-action can be profoundly creative operations, producing new meanings, new ways of seeing things and new ways of doing things - not just for the individual but for the excavation team as a whole. At the same time, of course, it has to be acknowledged that the new 'ways of seeing' and 'ways of doing' that resulted from E's discovery soon became conventionalized, to be performed by all of us as a matter of routine. The negative practical analogy was still there, but had been incorporated in 'common-sense' and craft skills generally, so that it was reproduced every time someone routinely identified the top surface of primary fills as 'natural' rather than 'archaeological'. Most practical analogies have this double aspect, at first produced and then reproduced in ongoing labour, at once producing original knowledge and reproducing established knowledge. They allow experience of unfamiliar evidence to be assimilated into the stock of knowledge at hand, and for that knowledge to be transformed accordingly. But they also come to be incorporated into conventional strategies and perceptual schemes, effecting all subsequent manifestations of material evidence. In this sense our cognitive schemes, like the material field, can be said to have a temporal structure - bound up in an unfolding dialectic with emerging material evidence.

9.8 A Question of Time

Most of the 'natural' evidence we have discussed in this chapter has consisted of glacial features or, as in the last example, primary erosion and silting deposits within archaeological features. And in so far as we have referred to the natural forces held to be causally responsible for observable material effects, we have been concerned largely with geological processes. But the category of 'natural evidence' also includes the material effects of the activity of (non-human) life-forms. Tree root holes and animal burrows are obvious examples. Like geological features, these are not of immediate concern or significance to archaeologists and for the most part are consigned to the background. But they do emerge into the sphere of

archaeological interpretation when they are temporarily mistaken for archaeological patterns, or when archaeological features have been disturbed by tree-root or animal activity. In the following example, W had been given the task of excavating a cremation-pit, which from surface indications appeared to be cut by another feature; the status of this later feature as archaeological or natural was not known. We arrive on the scene when excavation has just been completed:-

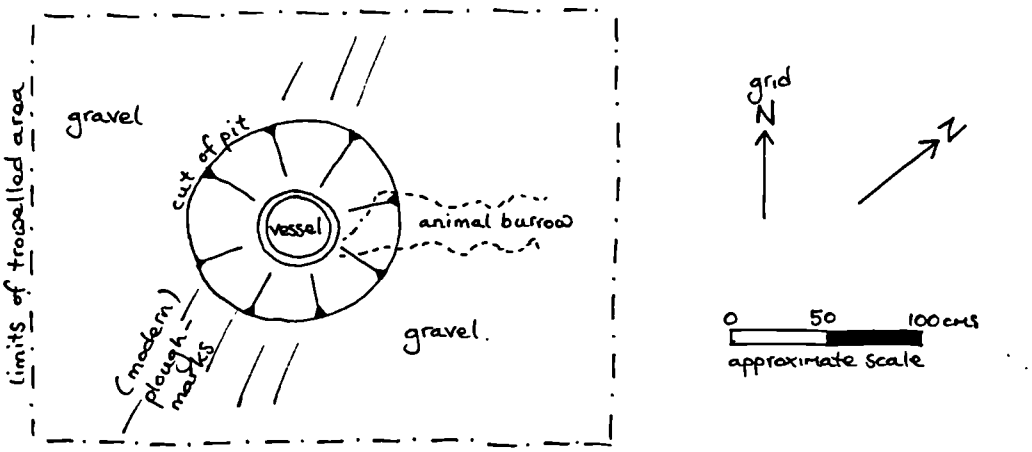


Figure 25: Sketch of RE11

The excavated pit is circular in horizontal section and basin-shaped in profile, about 1m in diameter at the surface with sides sloping in to a base, 30 cms deep. Standing on the base of the pit is a pottery vessel containing black burnt material; this will be lifted by the conservators once the excavated feature has been planned and photographed.

1. W told me that the feature had been very badly disturbed through truncating and scoring by later ploughing activity, shattering the vessel within (he pointed to one of the "ploughmarks" on the surface; it appeared to have ripped through the feature, taking some of the cremation material with it).

2. I asked him what had happened to the possible feature which, prior to excavation, had seemed to cut the cremation-pit.

3. W said that this had turned out to be an "animal burrow", not an archaeological feature...An animal had burrowed into the side of the pit and underneath the vessel,

probably contributing to its shattered state (he pointed to a dark area on the gravel sides of the pit, where the animal had entered).

4. I asked him how he tells the difference between animal and man-made features - how does he know it is an animal burrow?

5. W said that this was established by cleaning over the ground surface next to the pit... "it seemed to curve off.. it didn't seem like a dug feature...The best way of putting it is that it was irregular, but roughly linear...you'd expect a man-made feature to be more regular." In following the possible feature along by trowel, he went on, no clear edges of cut could be found; as soon as an edge appeared it disappeared again, "as you might expect if it was an animal burrow".

6. I asked if the animal disturbance made it difficult to find the edges of the cremation-pit.

7. W replied that, once he had established that the disturbance was an animal burrow, it wasn't too difficult. In emptying out the fill and following the sides of the pit down by trowel, it was fairly easy to estimate where the sides should be in the area of disturbance, and to stop digging there.

8. Upon further questioning, W (slightly exasperated) added that "One of the problems you will face is that some of us just don't know how we interpret or recognise objects or features...we just do it...its difficult to explain afterwards exactly how we've done it."

[RE11]

It is common for diggers, when asked to articulate the difference between archaeological and natural evidence, to refer to the 'regularity', 'pattern', 'design', 'symmetry', etc, of archaeological objects and the 'irregularity', 'absence of pattern', 'lack of design' and 'asymmetry' of natural objects. W is no exception. He points to the 'irregularity' of the animal burrows, as compared with the 'regularity' of archaeological features (5). By looking at the sketch of the material field in Fig.25 we can see what he means. The cut of the cremation-pit is more or less circular in horizontal section. Except for the area where it had been disturbed by animal activity, the side of the pit is quite distinct, and was easy to find during the emptying out of the fill. The cremation vessel is placed in an upright position in the very centre of the pit. The whole arrangement has a geometry and symmetry to

it that seems to speak to us of human handiwork. And this regularity of form has a temporal as well as a spatial dimension. This particular arrangement (upright vessel placed in the centre of a circular pit) has been encountered before, on this and other sites, and will be encountered many times again - a recurring pattern that itself indicates some kind of past cultural agency at work.

Compare this with the natural 'animal burrow'. Its edges are fuzzy and imprecise. In so far as its overall shape can be made out at all, it is irregular, unsymmetrical and seems to lack any purposeful design. It bears a rough similarily to other animal burrows that have been encountered before and will be encountered again, but is actually quite unique in its twists and turns. There is no discernible 'pattern' to animal burrows either in space or in time. (Note that the *formlessness* of the animal burrow not only contrasts with, but also adversely effects, the *form* of the archaeological feature).

A simple equation of regular=archaeological and irregular=natural, however, does not survive the test of experience. Many of the periglacial features discussed earlier in this chapter, for example, were near-circular or near-rectangular in horizontal section, with clearly-defined sides that could be followed down to a base. Some of these were situated in the very centre of ring-ditch circles, and thus seemed highly likely to be burial-pits. As more and more of these features were excavated, certain characteristics (eg. the steepness of the sides, the homogenuity of the fill, etc) recurred again and again. But despite this regularity, all these features were shown to be natural. And just as there can be regular natural features, so there can be irregular and indistinct archaeological features. W himself had summed up this paradox well (Section 9.4) when he said that although regularity was a major pointer to the 'archaeological' status of a feature, a feature can 'look right' even if the cut is irregular and 'look wrong' even if the cut is regular.

We will always have difficulty defining the difference between artificial and natural objects so long as we insist (as our *natural* common-sense attitude compels us to) on objectifying the qualities of artefactuality or non-artefactuality onto the material evidence itself, as though these are objective properties existing quite independently of our apprehension of them. As I tried to show in Sections 8.5, 8.6 and 8.7, the quality of artefactuality is not in the object itself but in our

perception of it; that is, in the subject-object transaction which *is* perception. The subject makes an active contribution to the constitution of the object as an artefact. Without any practical knowledge of human agency, the subject would not be able to perceive the quality of artefactuality in the object. Or to put it another way, it is the subject's practical knowledge that enables the object to be constituted, in perception, in terms of human agency.

To locate the quality of artefactuality in the transaction between the subject and the object, rather than in the object itself, is to transform the whole question of how we tell the difference between artificial and natural evidence. It is no longer a question about inert things, but a question about *time.* For if there is one thing we can say with certainty about perception it is that it is a *temporal process* - a dialectic of exploration and discovery that unfolds through time (Neisser 1976:14). When W told me how he ascertained that the possible feature cutting the cremation-pit was an 'animal burrow' rather than an 'archaeological' feature (5), for example, he was not referring to a static item of evidence - but to an unfolding material field, under the moving blade of the trowel. The edges appeared and disappeared as he followed them along by trowel, and it was during this operation that "it seemed to curve off.. it didn't seem to like a dug feature." The evidence was made sense of not by standing back and looking on from a disengaged perspective, but by actively engaging in a material transaction. And as we have seen (Section 5.2), material evidence engaged in this way always has a temporal structure.

This perhaps explains why it is so hard to articulate how we tell the difference between 'archaeological' and 'natural' evidence. When W said to me that "some of us just don't know how we interpret or recognise objects or features...we just do it...its difficult to explain afterwards exactly how we've done it" (8), he finds himself in a similar quandary to that of St Augustine, who - upon being asked 'what is time?' - answered "If nobody asks me, I know; but if I wished to explain it to one who should ask me, I do not know." (*S.Augustini Confessium Liber XI, Cap XIV*, quoted in translation in Stern 1967:33). The fact that our practical understanding of time and temporal process is so difficult to explicate suggests that there is some fundamental link between time as experienced and our own taken-for-granted agency.

9.9 Kinds of Agency

Turning back to look at the sketch of the material field in RE11, now ready for planning and photography (Fig 25), we see that traces of three different kinds of agency have manifested themselves in the objective material field and have figured in W's practical reasoning. The first and most important is the agency of humans in the distant past - the (inferred) subjects who are understood to have made the pottery vessel, dug the pit, burnt the body, placed the remains in the vessel and the vessel in the pit, etc. The second is the (natural) agency of the animal that, at some later date, burrowed into the pit and disturbed the burial remains. The third is the modern ploughing activity which truncated the top of the archaeological feature, taking some of the vessel and its contents with it, and which has scored the gravel surface with plough-marks. In his work W has routinely differentiated between the three types of evidence, and has built up a picture of the cultural and natural forces responsible for these observable material effects.

These patterns have come to light, however, only through W's intentional and directed labour upon the material field - removing layers, cleaning surfaces, following cuts along, emptying out fill, etc. To the three kinds of agency listed above, then, we should add a fourth. The worker himself has played a major part in bringing the material field to its present state. Yet traces of this fourth kind of agency are not to be seen on the sketch; nor will they be seen on the plans and photographs which might be used to represent the evidence in the excavation report. Indeed, the material field itself bears only the *negative imprint* of W's activities (a magical effect brought about through the application of 'technique' - see Section 5.4). To understand how archaeologists make sense of those other kinds of agency (the traces of which are visible in the objective material field), however, we have to bring to light the active role of the working subject as a causal agent in the constitution of material evidence. It is to this fourth kind of agency, then, that we turn in the next chapter.

Chapter X

GIVING FORM: MATERIAL AND COGNITIVE TOOLS IN ACTION

"Man not only effects a change of form in the materials of nature, he also realizes his own purposes in those materials." (Marx 1976:286)

"When we use symbols (either verbal or non-verbal) to distinguish one class of things or actions from another we are creating artificial boundaries in a field which is 'naturally' continuous. This notion of boundary needs to be thought about." (Leach 1976:33)

10.1 Traditional Aspects of Excavation

In Section 4.1 we looked at excavation as a kind of *trade*; that is, a skilled occupation associated with a particular range of raw materials, tools and products. But like all crafts, excavation is not just a trade; it is also a *tradition*. Skills are passed on from one worker to another, and from generation to generation, largely through personal contacts. The 'knack' or 'know-how' of digging cannot be taught in a classroom or adequately conveyed in a technical manual. It can only be learnt by actually *doing* excavation out in the field - by participating in the multiplicity of material and social transactions that make up any archaeological dig. As Polanyi (1958:53) points out, "An art which cannot be specified in detail cannot be transmitted by prescription, since no prescription for it exists. It can be passed on only by example from master to apprentice. This restricts the range of diffusion to that of personal contacts, and we find accordingly that craftsmanship tends to survive in closely circumscribed local traditions."

Of course the many 'local traditions' of excavation practice - the various digging units across the country - are linked together within an overall organisational structure which ensures a certain uniformity of method. Texts also provide standard points of reference. But since they cannot be prescribed, craft skills of excavation are not themselves transmitted through these channels. The 'digging circuit' - that most informal and underestimated of social institutions - is in fact the principal channel of transmission on a broad scale today. It consists at any one moment of a few hundred workers scattered on sites across the country, but movement of workers through time from one site to another means that they are bound together in a close-knit network of social relations. Novices entering the circuit always receive guidance in the art of trowelling and other excavation skills from more experienced workers. Acquistion of craft-skills, however, depends not just on guidance and demonstration but also on extended practice of working on a variety of sites, a variety of soil conditions, a variety of features. A true circuit digger is someone who has this experience, and who accordingly has become a member of the social circle that is the digging circuit. The craft skills of excavation, therefore, have a fundamental orientation to both the social organization of the circuit and to archaeological materials.

10.2 The Historical Dimension of Craft Skills

In a short but important paper, Evans (1988) points out that many of the perceptual and interpretive skills that excavators take for granted today have not always come so 'naturally' to archaeologists. As he put it, "we assume a functional understanding, or at least a recognition, of basic archaeological phenomena such as pits, ditches and houses ... Yet it was precisely these concepts which were assimilated during the first half of this century, and their recognition and operation (eg. weathering and recutting) were arrived at through a synthesis of direct observation (experience), 'logic' and analogy. This gradual process of basic entity cognition is interesting as it questions the premise of the self-definition of 'contexts' / entities which underlies the modern concept of 'analytical' excavation" (Evans 1988:65).

The idea that archaeologists have developed and sharpened a range of cognitive tools, as well as practical techniques, for understanding and dealing with archaeological evidence - through a gradual (historical) process of trial-and-error in a

multiplicity of material transactions linked together through time - fits in well with the general argument of this thesis. A 'cognitive tool' can be defined as a conceptual bundle of practical analogies, deep inferences, schemes of past human action, strategies for dealing with material evidence, etc, the use of which has become established and taken for granted. Cognitive tools, it will be argued, form as important a part of the general 'toolkit' as material tools do.

The association between cognitive tools and material practices of excavation is crucial. It was in past material transactions that cognitive tools were fashioned and honed to their present state. It is in material transactions that novices acquire the cognitive tools that are embedded in archaeological methods and techniques. And it is in material transactions that cognitive tools are 'put into practice', applied to new configurations of evidence, adjusted *in* practice to take account of that evidence, and thereby *transformed.* In this sense cognitive tools are similar to material tools (see the discussion of the 'wearing down' of the trowel in Section 5.1); both have been shaped to some extent by the material onto which the tool has been applied in past material transactions. It might also be pointed out that, in practice, cognitive tools and material tools are actually inseparable, since they are used together in conjunction with each other to 'make sense' of the material evidence being worked.

As any historical analysis of digging techniques shows (see Daniel 1950, Barker 1977:13-26), the craft skills of excavation have always been - and by extrapolation, still are - in a constant state of transformation. It seems reasonable to suppose that excavation skills will never be 'perfected' as such, but will be subject to further adaptations and modifications according to the nature of materials encountered (as well as changing social and political conditions, which after all provide the rationale for doing archaeology in the first instance). The idea that the worker's skills, like the material being worked upon, are always in a process of *becoming* and are continually being adapted in practice to take account of unique characteristics of emerging evidence, is close to the notion of 'perfectibilité' outlined by Rousseau in his *Discourse on the Origin of Inequality* (1755). As Dent (1988:86) explains, "Rousseau intends nothing sublime or edifying by this notion, only the human power to learn from experience, to modify objectives and patterns of behaviour to suit changing circumstances, and so on." It applies not just to the practising

individual but also (since his or her skills are, in part, socially derived, and will subsequently be passed on to others) to the social group as a whole.

While an ethnography of excavation, which is necessarily context-specific, is neither the time nor the place for an historical analysis of 'basic entity cognition' in archaeological practice, what we can do is try and apprehend the (traditional) cognitive tools used and transformed at this particular time and at this particular site. For the material and social transactions which take place here must be part of the wider historical process. Let us take a closer look, then, at one of the principal cognitive tools employed in identifying, understanding and exploring material evidence.

10.3 The 'Feature': Object and Concept

The concept of 'feature' is absolutely central to archaeological interpretation and digging strategy. Many other important cognitive tools, such as the notions of 'cut', 're-cut', 'fill', 'weathering', etc, are all subsidiary to, and only make sense in terms of, the basic concept of 'feature'. Most of the archaeological patterns shown in Fig.1 - ring-ditches, cremation-burials, pits, postholes, ditches, etc - are referred to as 'features' by archaeologists. And there can be natural as well as archaeological features; animal burrows, tree root holes and glacial hollows are examples of features understood to have been formed by natural agencies (Section 9.3).

Fig 26 shows how features tended to be classified on this site. Those in the central column were regarded as objects of significance, to be excavated and recorded. Those in the left-hand and right-hand columns were only seen to be significant in so far as they were associated with, or could be mistaken for, features listed in the central column. Once a feature was shown conclusively to be either 'natural' or 'modern', rather than 'archaeological', all interest in it as an object in its own right tended to cease.

An '**archaeological feature**' can be described as a partially bounded three-dimensional configuration in the soil (though it usually manifests itself initially as a two-dimensional pattern visible on the horizontal ground surface). Archaeologists sometimes refer to structures such as hearths and walls as features, but

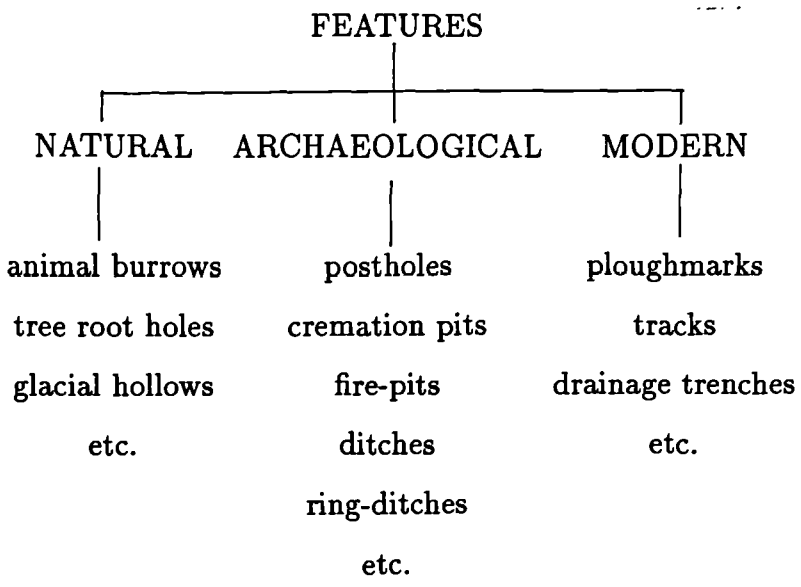


Figure 26: Classification of Features

for the most part the term refers to features which have been 'dug', 'excavated' or 'cut' by agents in the past. Indeed, the edges or sides of the feature consist of a soil-boundary known as a '**cut**', which separates the '**fill**' of the feature from the surrounding soil. The fill may be comprised of several layers, related to each other in more or less complex stratigraphical sequences, but all these (since they are inside and enclosed by the cut of the feature) are referred to as 'archaeological' rather than 'natural'. This applies even to those layers which have been formed by natural processes, such as weathering, as well as those which have been formed by deliberate backfilling or deposition on the part of past human agents.

The cut, then, can be regarded as the most important component of an archaeological feature. It is not just that the very 'cut' we see there on the ground, and the very term we use to describe it (as already noted, the two are practically inseparable), imply intentional human labour as the causal agency responsible for forming the observable material effect. The cut *is* the perceived form of the feature - its outline, its circumference, its compass, its delineation - which makes the feature stand out as a figure from the general background. Above all else the cut is the

boundary between the 'archaeological' and the 'natural'. For the cut not only encloses the archaeological fill of the feature; it also excludes - as 'non-archaeological' or 'natural' - the surrounding soil. (Of course, a feature often 'cuts' archaeological layers, but these are defined as such by further cuts, or by artefactual material and other inclusions found within layers).

As Douglas (1966) has shown, material and cognitive boundaries often give rise to paradox and ambiguity. As the boundary between the 'natural' and the 'archaeological', the cut is no exception. It is difficult to say whether the cut falls into either of these two categories. On the one hand the cut of the feature is understood to be literally the edge or side 'cut' or 'dug' by some agent in the past (which may or may not have been subjected to subsequent weathering or re-cutting): in this sense it is clearly an archaeological pattern. But on the other hand the form of the feature - the total extent of the surviving cut - only becomes fully apparent when all the archaeological fill has been removed through excavation. In this sense the cut is the surface of the natural, which carries only the negative imprint of the actual material feature. Thus diggers engaged in excavating features often speak of 'coming down onto the natural' or 'finding the natural sides of the feature'.

We encountered this paradox in Section 9.6, during a discussion of RE41 (see Fig. 22). I referred to the soil boundary between layers 753 and 754/5 as 'archaeological' when it was interpreted by **E** as the man-made cut of the ring-ditch, and I referred to the same soil-boundary as 'natural' when it was re-interpreted by **E** as a layer formed within the feature by natural weathering. This was then used as an example of an archaeological→natural transition. But in the sense that cuts appear to us as the surface of the natural, and in the sense that any layer within an archeaological feature is part of the archaeological fill, I could just as easily have used this as an example of a transition from natural→archaeological.

In the last analysis, however, the meaning of all these terms/concepts ('feature', 'cut', 'fill', 'archaeological', 'natural', etc) is not in the words themselves, but in their use. Cognitive tools, like material tools, derive their meaning from *how they are applied* in practice. A cut is something to be followed along by trowel; a fill is something to be emptied out and sampled. Abstract them out of this practical context and they lose much of their sense. In the following sections, we will try

to apprehend some of the cognitive tools that are applied in the excavation of cremation-burials, a particular type of archaeological feature. As we shall see, meaning is not something that exists solely 'in the head'; on the contrary, it is inextricably bound up with the emergence of the material patterns themselves. It is located neither in the subjective mind nor the objective environment, but rather in the practical relation or transaction between the subject and the object.

10.4 The Excavation of Cremations: A Photographic Essay

(a) Emergence

Unlike most of the features marked on the rough plan of the site (Fig 1), cremation-burials did not show up on the aerial photographs. They first appeared - as small charcoal patches on the ground surface - during removal of the ploughsoil. In some cases the broken rim of a pottery vessel was visible within the blackened soil, but the 'cut' of the feature was not usually apparent. Whenever such a feature emerged during the hoeing down of the site, it was cleaned over briskly with a trowel and marked with a label ("CREMATION") nailed to the ground. Only when general hoeing was completed did we return to the cremations and subject them to the full excavation and recording procedure outlined in Section 4.3.

The fact that cremation burials could be so readily identified, from rough surface manifestations alone, shows that their emergence was not unexpected. Cremation-burials are common in Bronze Age ring-ditch cemeteries; some of us had encountered them before on similar sites. This previous experience means that we already know (or rather anticipate) a great deal more about the feature than is visible on the ground surface. We expect, for example, the feature to have a clearly defined 'cut', which can be followed down to the 'base' of the cremation-pit. The pit will contain an archaeological 'fill', comprised of layers quite separate from those outside of the cut. And this fill will itself surround the pottery vessel containing the burial remains.

(b) Finding the Cut

Returning to the feature, with general hoeing completed, the first task of excavation is to find and delineate the cut of the cremation-pit. Photo 2 shows **H** engaged

Photo 2: 'Finding the Cut'

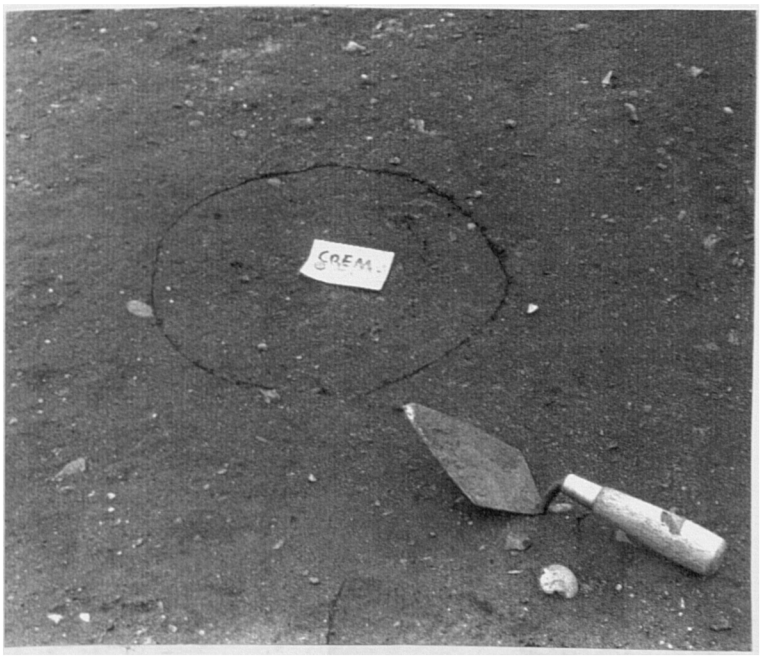


Photo 3: 'The Delineated Cut'

in this operation. At present the cut is not yet visible; in order to find it, **H** is trowelling a shallow spit of soil off the area around the cremation vessel (the broken outline of which can be seen protruding from the ground surface). The cut, consisting of a soil boundary between the fill and the natural surround, may be easy or difficult to find. **H** may have to trowel deeper in certain places in order to locate it; once located, she will follow it around until it forms a complete circle or oval enclosing the pottery vessel.

Photo 3 shows a different feature which has already undergone the trowelling operation described above. I have incised a line with the tip of the trowel to mark the cut, which would not otherwise have shown up in the photograph. The fragmented outline of the pottery vessel can just be picked out inside the cut. This feature is now ready for pre-x planning and (once the incised line has been erased) pre-x photography.

The purpose of defining the cut is not just to facilitate the pre-x recording of the feature, however. The delineated cut provides the parameters within which subsequent excavation of the feature will take place. Without a cut there would be no specified boundary where digging should stop, no side to follow down - a state of affairs which would make further exploration that much more difficult. If it were not for the cremation-vessel embedded in the ground (implicating the existence of a 'pit' into which the vessel was placed by some agent in the past, and therefore the existence of a 'cut' yet to be found), the status of the evidence as a 'feature' would become wholly uncertain.

(c) Following Down the Cut

After pre-x planning and photography, the exploration of the feature begins in earnest. Half-sectioning of the cremation-pit involves emptying out the fill, layer by layer, on one side of the feature only, to facilitate the subsequent drawing of the pit in vertical section. Usually the troweller proceeds by taking off a spit at a time, working back from the pottery vessel to the cut or side of the feature, then following this side down while emptying out the fill. Photo 4 depicts this process at an early stage. **L** is using a metal leaf to dislodge soil from the outer face of the vessel, occasionally switching to using a trowel in order to remove a spit up to

Photo 4: 'Working back from the Pottery Vessel'

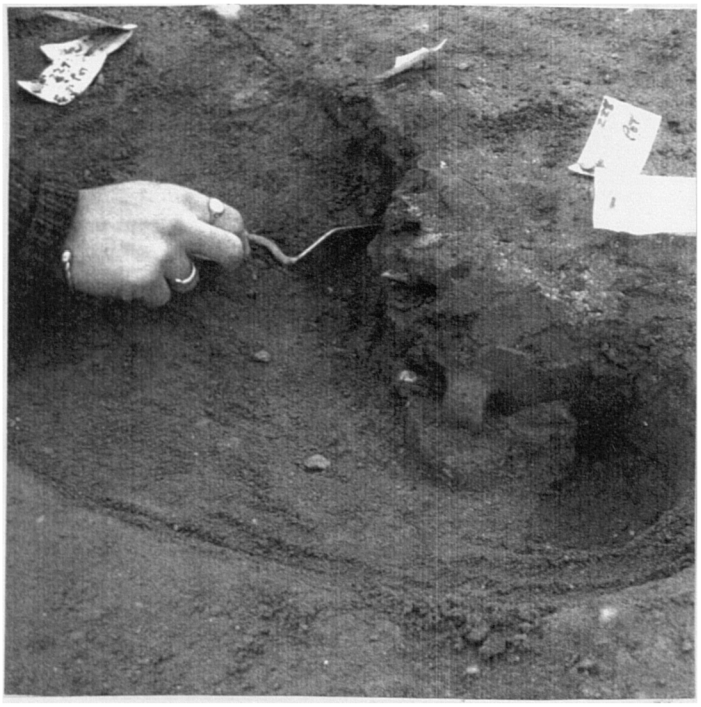


Photo 5: 'Following down the Cut'

the side of the feature. Note the 'roughness' of the material field while it is being worked - characteristic of material transactions.

Normally the sides would be expected to slope inwards to form a base directly underneath the bottom of the pottery vessel (the vessel being understood to have been 'placed' on the base of the pit before backfilling of the feature). Photos 5 and 6 show two separate cases of the half-sectioning process nearing completion. In both instances the cuts or sides of the feature have been relatively easy to follow down. A slight levering motion with the tip of the trowel pushed into the earth along the anticipated course of the cut causes the dark fill to 'peel away' from the orange gravel sides. All kinds of problems can arise, however. The feature may be disturbed by ploughing, tree root holes or animal activity, which makes the finding of the cut difficult (see RE 11, Section 9.8). If the feature is cut into another feature, or brick-earth deposits, the fill may be hard to distinguish visually from the surrounding soil, making the finding of the soil boundary between them more a matter of 'feel' than visual discrimination. It is possible to 'over-cut' a feature - so that the resulting form of the feature is entirely the product of one's own agency - rather than the agency of humans in the distant past.

Overcutting is essentially a mistake - an anticipation as to where to cut will be that is 'put into practice' but does not meet its material conditions of satisfaction. The feature being excavated suddenly 'looks wrong'; it no longer looks like a feature one has merely discovered, but a feature one has partially created. Our own agency, normally taken for granted, suddenly takes objective form in the realisation of the mistake. But mistakes are an important part of any scientific practice for precisely this reason. In bringing our own agency to light, mistakes facilitate the re-orientation and adjustment of strategies to take account of the material evidence being worked. Historically, all the principal cognitive tools of excavation have been acquired and sharpened through processes of trial-and-error.

Even such a mundane activity as finding and following along the cut of a feature with a trowel involves multiple inferences about the human agency held to be responsible for 'cutting' the feature in the distant past. Accordingly, deep inferences come to be embedded in cognitive tools. One of the cognitive tools that helps a digger to find an elusive cut is the notion of the *economy* of past human action.

Photo 6: 'Following down the Cut 2'

Photo 7: Toolkit for digging Cremations

Whenever a cremation-pit was overcut, for example, diggers would often remark that the pit was 'far too big' for a cremation-vessel that size. Indeed, usually the cut is found only a short distance, perhaps 6-12cms, from the outer face of the pottery vessel contained in the pit. Large urns tend to be set within large pits; small urns tend to be set within small pits. This gives rise to the view that human beings in the past were rational agents who, given a simple task to perform (eg. to bury a cremation vessel in the ground) would accomplish it with the minimum of effort (eg. by digging a pit no larger than required). **D** articulated this notion of *economy of effort* more fully when, while he was working back from the pottery vessel to find the cut of a cremation-pit, I asked him how he knew that the cut would actually be there. He replied that "it's just common-sense... to bury a pot in the ground you have to dig a pit, and a pit always has a cut... You can also predict the size of the pit by the size of the pot... If you were burying a pot that size (indicates a width of about 20 cms with his hands), you wouldn't dig a pit that big (indicates a size of 1m or so), would you?" Note that **D** is drawing from his own 'common-sense' ideas about human agency here, by practical analogy as it were. But the inference about past human action is not simply the *application* of analogies drawn from our own practical experience, as human agents ourselves. It is also based upon observations of, or rather engagements with, actual material evidence. The concept of economy of effort, so useful in the task of predicting and locating cuts, is a product of some kind of dialectic between applied conceptual schemes and emerging material patterns.

A similar dialectic comes into being every time we pick up a trowel to follow a cut down or along, for the cut rarely goes entirely where you expect it to. Deep inferences - and the cognitive tools and practical analogies mobilised in deep inference - are part and parcel of the manual labour of digging itself. To follow a cut with a trowel is to anticipate where the cut is heading (eg. sloping inwards towards the anticipated base of the pit on which the pot is standing). The anticipation is founded upon a range of assumptions about past human action and intentions-in-action (the way the pit was dug, why and how the vessel was placed in the pit, etc), which may be contradicted by the material evidence. If the cut veers away from its expected course then it raises a host of questions (eg. why did they dig it like this? for what purpose?) which may lead on to further, revised, anticipations about where the cut will go next. And these changing anticipations, bound up in

a dialectic with emerging material evidence, condition ongoing excavation strategy from moment to moment - guiding every scrape, probe or levering motion of the trowel.

Photo 7 shows the material toolkit for this kind of task. (The scene depicted is not as contrived as it appears. A had actually laid out her tools in this manner so they were 'to hand' when she needed them). It is comprised of spoons, trowel, brush, metal leaf, shovel and bucket (containing sample-bag) - each tool having its own particular use. Not included in the photograph, however, are those most important tools for manipulating material evidence - the hand and the fingers. It is not just that the hand holds the tool that works the material. Fingers come into their own during the later stages of half-sectioning cremation-pits, since they can work where other tools cannot reach, and perform tasks (such as 'feeling for' the base of the cremation vessel so as to judge where the pit is likely to bottom out) that other tools simply cannot do. No technical instrument - for sheer dexterity, control, versatility, and sensitivity to materials - compares with the human hand.

When all the archaeological fill from one half of the feature has been removed, an extensive cleaning operation takes place. The most important part of the material evidence to be cleaned is the vertical section itself (which still has the cremation-vessel protruding from it). Slicing the section with the edge of the blade of a trowel shows up the soil-boundaries within the fill, in readiness for the section-drawing and the photographing of the section.

(d) Following the Cut Around

After the section has been drawn and the photographs taken, the remaining half of the feature is excavated. This is usually a relatively easy task. The cuts or sides of the pit have already been located; the digger only has to follow the existing sides around while emptying out the rest of the fill (nine times out of ten the second half to be excavated 'mirrors' the shape of the first half, since symmetry is frequently a characteristic of cremation-pits). The sampling of layers and the writing of descriptions onto context-sheets takes place at this stage; the layers or contexts to be sampled and described (given context numbers during the drawing of the section), and the stratigraphic relationships between them, have already been identified in preceding material transactions.

Photo 8: The Excavated Feature

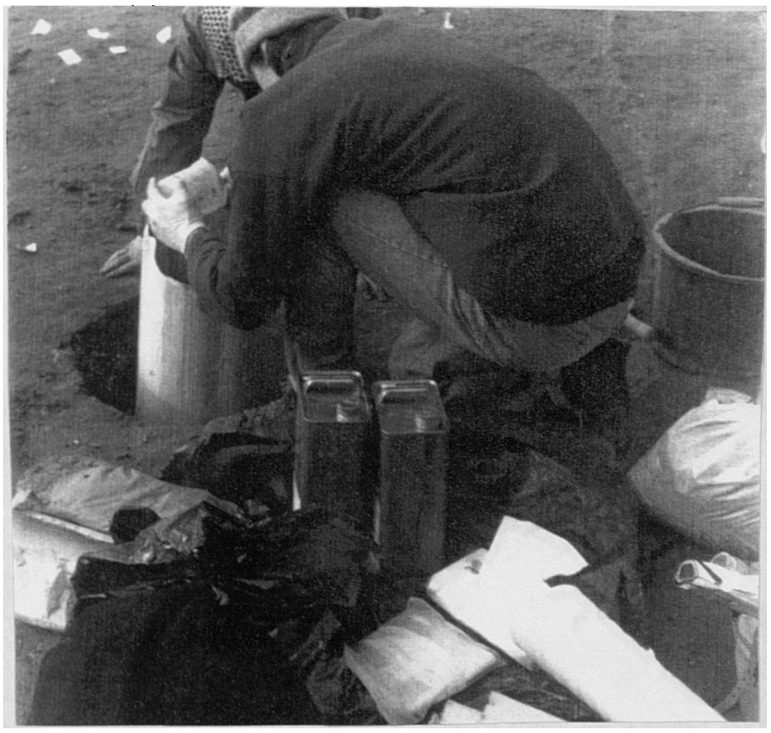


Photo 9: Lifting the Cremation Vessel

Two important transformations occur in this operation. The first is the 'trowelling away' of the section, which, once drawn, has ceased to be an object of significance. The second is brought about through the removal of the remaining fill. Because of this removal, the 'cut' of the feature is no longer a soil-boundary between the 'archaeological' and the 'natural'; it is now the surface of the natural. Paradoxically, the full shape or form of the 'archaeological' feature only becomes apparent when all archaeological evidence (apart from the cremation vessel) has been taken away.

Photo 8 depicts a completely excavated feature, now ready for post-x photography and planning. It has been rigorously cleaned, with all ridges, footprints, trowel-marks, spoil and loose crumbs of earth removed or erased. The toolkit shown in Photo 7 has also been removed, and the placement of the scale and placard indicate that the feature is once again about to make the transition into a textual object.

(e) Lifting the Cremation-Vessel

When post-x photography and planning is over, the cremation-vessel (inclusive of its contents) is 'lifted' as soon as possible. This is normally the task of a specialist conservator, visiting the site for this purpose, but - given the time-consuming nature of the task and the large number of vessels to be lifted - the finds assistant, H, has been specially trained in the necessary techniques. While she was engaged in preparing a vessel for lifting, she explained what she was doing to me. Upon arriving on the scene, she said, the cremation-pit has already been excavated as far as possible, leaving the vessel on a small pedestal of unexcavated fill. The first job is to expose the pot, making it accessible for lifting, and this involves cutting back the sides of the feature. Then she wraps the fragile vessel in cling-film, silver-foil and cardboard to protect it. Undercutting the vessel gradually, largely with her fingers, she injects foam into each undercut area. Eventually, when the vessel has been undercut all the way round, it is effectively resting on a bed of solidified foam. Several workers come over to help lift the pot, together with foam and wrappings, into a wheelbarrow. It is taken to the finds-hut for temporary storage, and will subsequently be excavated further, its contents examined, in a museum or a laboratory (see Section 12.6).

Photo 9 shows a cremation-vessel being prepared for lifting, plus the array of materials employed in this preparation. Note that all the attention and care that

was formerly directed to (the excavation of) the feature has now shifted onto the pottery vessel contained within it. The feature itself has ceased to be an object of significance. Indeed the cut of the feature that was first identified in (a), delineated in horizontal section in (b), followed down in (c) and followed around in (d) - thus bringing to light the overall form or shape of the cremation-pit - has now been 'trowelled away' to make the lifting of the vessel possible. Where once there was a feature (an object of CULTURAL significance) there is now only a hole in the ground, which will be left open to processes of weathering and subsidence, and so will gradually undergo the transition back into the NATURAL domain.

In this brief account of the excavation of cremations we have focused on the material transactions in which the evidence on the ground is actually manipulated and transformed through the use of material and cognitive tools. Acts of inscription, which involve a disengagement from this direct contact, have been left out from the account (but see Chapter 11). The point that I have tried to make is that the evidence to be recorded in acts of inscription has already been extensively 'worked' by archaeologists. A cut, for example, is on the one hand a pattern that was 'cut by' some human agent in the distant past. But on the other hand, crucially, it has also been 're-cut', followed down and around with a trowel, by archaeologists in the present day. The form of the feature as it appears to us is therefore always a *double-artefact*, though our own agency in giving form to the feature may be objectively hidden to us. We 'take form from' only as we 'give form to' the objects of our labour.

10.5 Schemes of Past Human Action

We are now in a position to say something more about the cognitive tools that (together with material tools) are employed in the excavation of cremation-burials. The concept of a 'cremation-burial' consists of a particular combination of the concepts of 'feature', 'cut' and 'fill', and entails a particular range of deep inferences about the kind of human action involved in the activity of cremation-burial. Schemes of past human agency are invoked every time we speak of or think about a cremation-burial. When applied to an actual material feature these schemes give rise to anticipations as to what is likely to be found and to strategies for finding or bringing to light these expected patterns. Thus diggers will always search for

the 'cut' surrounding a cremation vessel even when it is not visible at that moment in time. (As **D** pointed out, "Its just common-sense... to bury a pot in the ground you have to dig a pit, and a pit *always has a cut.*") Usually exploratory action with the trowel will succeed in locating the expected cut; the digger knows in advance it is there to be found and roughly where it will be located. In much the same way, while following down the cut, diggers anticipate where the base of the pit will be. They know from past experience that the base of the pit is usually directly underneath the bottom of the pot, and this knowledge definitely helps in the practical task of searching for and locating the base of the pit.

Let us now try to list some of the assumptions about past human agency that are implicated in the perception, identification and excavation of cremation-burials. Deep inferences refer (explicitly or implicitly) to:-

1. the burning of the body (the making of a pyre, the placing of the body on the fire, the lighting of the fire, the removal of the cremated remains from the fire, etc.

2. the placing of the remains in the funerary vessel (the scooping or picking up of the remains, the putting of the ashes into the container).

3. the digging of the pit (the assimilation of digging tools to the hands of the worker, the putting into action of those tools, the shaping or forming of a suitably-sized pit to accommodate the vessel).

4. the placing of the vessel in the pit (the picking up of the vessel, the carrying of the vessel to the pit, the stooping down involved in placing the vessel so it stands upright on the base of the pit).

5. the backfilling of the pit (the further use of digging tools, etc)

It is characteristic of schemes of past human agency applied to material phenomena that they are open-ended systems of meaning. Thus the above model is not at all comprehensive. Any number of further sequences of actions are implicated (eg. the collection of fuel for the pyre in 1, the manufacture of the funerary vessel used in 2, the making of the digging tools used in 3, etc). Associated with this conception of human activity in the past are ideas about bodily stance, posture and gait - the

way humans stand, walk, hold tools, pick things up, manipulate things, interact with each other. And inferences about actions are also inferences about intentions-in-action. All the activities listed above are understood as intentional activities, directed towards the principal objective of burying a deceased person, with all the intermediary objectives that this entails.

In fact the more we reflect upon what we already know (assume, postulate, take for granted) about the causal agency responsible for the observable material effects out there on the ground which we call a 'cremation-burial', the more astounded we can be by the depth of our common sense or taken for granted knowledge. A whole field of assumptions about the nature of human agency is embedded in the very perception of the material pattern, the cremation-burial, itself. For these are not just inferences that are obtained by deduction or induction *from* the evidence; they can actually be perceived as inherent properties *of* the evidence - that is, as the perceived qualities of *affordance* and *design* (see Sections 8.4 and 8.5). It is self-evident, for example, that the cremation-pit affords 'containment' of the pottery vessel and indeed that it was dug or cut with this affordance in mind. This gives rise to the notion of economy of effort that D articulated in Section 10.4(c). In the same way it is self-evident that the funerary vessel affords 'containment' of the cremated remains, and that this too was probably designed specificially for that purpose. Handles or lugs on the sides of vessel (see Photo 5) so obviously afford 'picking up' and 'carrying' that we can see they were designed to facilitate exactly those bodily actions.

10.6 The Resistance of the Material Field

Applied cognitive tools or schemes of past human action, then, are inextricably bound up with the material evidence onto which they are applied. This means they are fluid rather than fixed, and change to take account of the particular characteristics of emerging material patterns. Although they condition the perception and understanding of material evidence, they can also be surprised, contradicted or even refuted entirely by that evidence. They are bound up in a dialectic with the unfolding material field. The meaning of cognitive tools, like that of material tools (Section 5.6) is not so much in the tools themselves but in their *use*.

It should be clear from the many examples given in the last three chapters that material evidence encountered does not always conform neatly to expectations engendered by pre-exisiting conceptual schemes. Archaeological patterns turn out to be natural, natural patterns turn out to be archaeological. Significant objects emerge from insignificant contexts. Ring-ditches appear where no ring-ditch was meant to be. Anticipated cuts may not emerge, or may veer away from their expected course, and so on. The internal structure of applied schemes (of causal explanation) shifts to take account of the unexpected.

This applies as much to the excavation of cremation-burials as to any other kind of feature. In RE 12/14 (Sections 6.4 and 6.5), for example, I was given the task of excavating an un-urned cremation. Un-urned cremations involve a slightly different conception of past human action (the cremation material having been placed straight into the pit without being contained in a pottery vessel, though some other form of degradable vessel may have been used), and a slightly different method of excavation, but generally speaking the deep inferences entailed are more or less the same as in the excavation of urned cremations. In this particular case, however, the anticipated human remains did not emerge. A deposit of burnt wood came to light instead. The feature was subject to several competing interpretations before a provisional interpretation of the evidence as the remains of a 'funeral pyre' was arrived at. This involved a shift in the perception of the *affordances* and *design* of the feature. The pit was no longer seen to afford the 'containment' and 'internment' of human remains, but rather to afford a suitable place for a fire to be made and lit - the implication being that the pit was intended or designed for this latter purpose rather than the former.

Most of the 'fire-pits' found on this site were initially perceived as (un-urned) cremation-burials. Consider the following example:-

> 1. H was given the task of excavating an un-urned cremation burial, situated just outside of a ring-ditch. From surface appearances (a small sub-circular patch of burnt soil and charcoal) it had all the characteristics of other un-urned cremations encountered on the site. She had no difficulty in finding and delineating the expected cut of the feature.
>
> As she began half-sectioning the feature, however, a number of burnt flint nodules were found in the fill, which she put in the finds tray. But in trowelling deeper more and more

of them came to light. She realised that they were "deliberate inclusions rather than incidental ones", and accordingly decided to leave then in situ. Cleaning over the surface of the stones with a metal leaf and a small brush, it became apparent that the sides and base of the pit (which had turned out to be much shallower than expected) were covered with these burnt flint nodules. There was no sign of the expected cremation material.

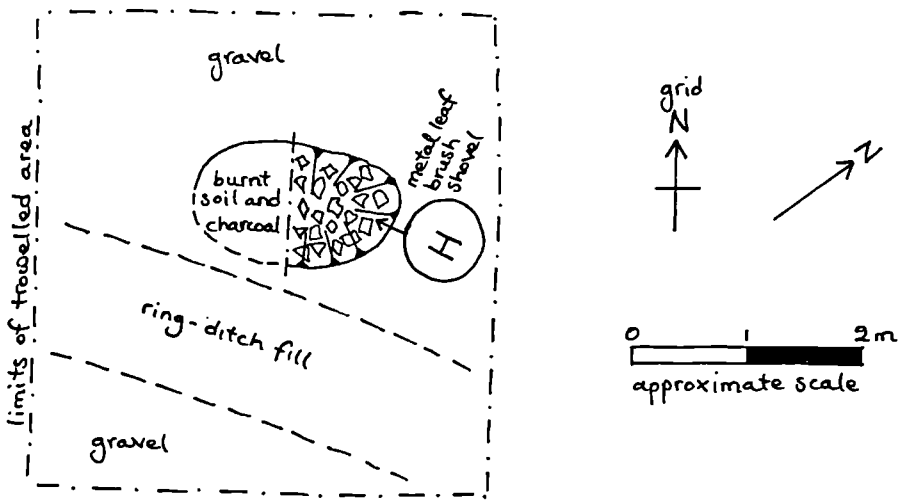


Figure 27: Sketch of RE50

She now calls the feature a "fire-pit" rather than a cremation burial. The pit could have been used as the base of a funeral pyre, she said, which was then truncated by modern ploughing, but she found it difficult to imagine what purpose the stones would have served. She thought it much more likely that the pit was used for cooking or boiling something (the stones being used to retain the heat of the fire).

[RE 50]

2. I returned to this part of the site the next day. Excavation of the feature had now been completed, and **H** was engaged in planning and otherwise recording it. She told me that 217 burnt flints and 132 unburnt flints and pebbles (which has been planned in situ, then removed) were found in this one small pit. There were two principal layers in the fill - a layer of dark burnt soil and charcoal at the top and a layer of sand at the bottom, with the flints situated on the interface between them (and not, as previously thought, lying on the base of the pit). Slightly deeper than formerly supposed, the pit is about

20cms in depth. H said she had no doubt that the feature had been "deliberately dug" (rather than being a natural hollow), and that the burnt flint nodules and pebbles had been "deliberately placed" in the pit. But she did not think that a fire had actually been lit inside the feature; if this had happened, she said, then you would expect the sides of the feature and the surrounding soil to show traces of burning. Having specifically looked for these traces, and having failed to find them, she thought the actual fire must have taken place elsewhere, with the material from the fire scooped up and deposited in the pit. Whether this was a ritual deposit or whether it really was connected with the activity of cooking, she was not sure.

[RE58]

The example RE 50/58 illustrates the point that deep inferences (ie. about past human agency) are embedded in the routine manual tasks of excavation. In the context of practical reasoning (see Section 5.5), the material field is constituted in terms of *action-meanings* - not only the action-meanings that relate the material to the digger's own purposeful activity, but also action-meanings that relate the material to the inferred activity of agents in the past. These two kinds of action-meanings, moreover, are inter-connected. How H interprets the material in terms of past human action (eg. the realisation that the flint nodules had been deliberately placed in the pit) conditions her ongoing strategy for excavating the feature (eg. leaving the stones in situ and cleaning their surfaces for planning rather than removing them with the rest of the fill).

It also illustrates the point that deep inferences are concerned just as much with past intentions as with past actions. Again, the two are practically inseparable, for what we are dealing with here are inferences about intentions-in-action. To say that material items were associated with such tasks as interring cremated remains, lighting a fire or cooking is automatically to imply that past human agents were putting into practice the projects and purposes entailed in these activities. Indeed, H makes this quite explicit when she speaks of the pit having been "deliberately dug" or the stones having been "deliberately placed" in the pit. The fact that the stones were deliberate inclusions rather than incidental ones had important implications for excavation strategy. In fact it is clear that inferences about past intentions-in-action are inextricably bound up with the intentions-in-action of H herself.

Most important, the example illustrates how action-meanings (the perceived *affordances* and *design* of material patterns) shift and change through time, and how our conception of the past human agency responsible for producing the material patterns changes accordingly. What started out as an un-urned cremation burial suddenly made the transition to a fire-pit, involving a radical shift from one scheme of human action to another. But in so far as the labelling of the feature as a 'fire-pit' invokes a whole field of assumptions about the sequences of actions involved in making a fire in a pit (the digging of the pit, the collection of the fuel, the lighting of the fire, etc), this scheme also had to be adjusted and modified to take account of emerging evidence. Lack of burnt material on the sides of the pit indicated that it did not seem to have been the actual site of the fire. In the light of the absence of this confirmatory evidence, **H** worked out a possible scenario to explain the situation. The fire itself must have been situated elsewhere, and the material from the fire scooped up and carried to this spot. Note how these inferences are based upon a further set of assumptions about human locomotory and manipulatory powers. Note also that the perception of the flint nodules as *affording* 'the retainment of heat for cooking purposes' changes the *affordances* and *design* of the pit also. If the stones were used for cooking then it is highly likely that the pit was conceived of and dug (ie. *designed*) with this purpose in mind. Ongoing excavation involves multiple shifts of this kind in the perception of the *affordances* and *design* of material evidence.

10.7 A Cognitive Toolkit

Just as the meaning of one material tool relates to the meaning of all the other (Section 5.6), so cognitive tools 'make sense' only when taken in conjunction with other cognitive tools. A 'feature' would be meaningless without a 'cut' and a 'fill', and vice-versa, for all these concepts are inter-connected. So too are the conceptual schemes associated with different kinds of features. In this section we look briefly at concrete examples of the conjunction of the meaning of cremation-burials and the meaning of ring-ditches, as these coincide in the context of practical excavation tasks.

As noted in Chapter 3, most of the cremation-pits were situated outside and between the ring-ditches (see Fig.1). A few were actually cut into the ditch-fills.

Thus for the most part they could be regarded as a separate form of burial rite, later than the ring-ditches but deposited while the burial mounds of the ring-ditch cemetery were still standing. Those cremation-burials found to be situated inside and enclosed by ring-ditches were a different matter, however. To be 'enclosed by' a ring-ditch entails not just the spatial enclosure of one material pattern by another, but also the enclosure of one concept by another concept. Our schemes of past human agency associated with cremation-burials are subsumed into schemes associated with ring-ditches - and both are transfigured as a result.

Consider, for instance, the cluster of 3 cremation-burials shown in Fig.21 (RE27, Section 9.5). They represent an isolated group of cremations, situated a considerable distance away from the main group of ring-ditches. Indeed, the digger concerned is treating them as an isolated cluster, unrelated to any other feature nearby. The area of ground that **A** has opened is small; she is extending the area only to follow along a vague patch of dark soil whose status as archaeological or natural is uncertain. Now turn to Fig.8 (RE40, Section 5.2). This shows the same cluster of cremations at a different scale, after the recent discovery of a ring-ditch. At least, I say they are the same features - but actually they have been transformed. They are no longer isolated but *enclosed*, and their new setting means that we perceive them in a completely different light.

These cremation-burials are now understood to have been covered over by a burial mound shortly after their deposition. The sequence of past human action implied is something like this: the cremation-pit was dug, the cremated remains were deposited in the pit, the pit was backfilled, a ring-ditch was dug around the central cremations and the spoil from the excavated ditch was heaped over the top to form a burial-mound. Note how the *affordances* and *design* of the two kinds of features relate the one to the other. The cremations *afford* a central cluster of points around which the ring ditch can be orientated and over which the burial mound can be heaped. The ring-ditch *affords* a boundary with which to enclose the cremations and a source of material for the covering mound. What **A** and **D** are dealing with, then, is not a collection or aggregate of individual patterns of evidence, but inter-related parts of the same pattern. This is why the diggers have extended the area being trowelled - so they can see the pattern as a whole.

A's discovery of a ring-ditch enclosing the cremations in this area meant that there were now two cremation-enclosing ring-ditches in near proximity to each other, set apart from the main group (which were thought to have enclosed inhumation-burials). These were regarded as a kind of hybrid, a transitional form of burial rite which incorporated the main elements of both the earlier phase of ring-ditches and the later phase of cremations. The question now arose as to whether other cremations nearby might also be enclosed by as yet undiscovered ring ditches. The following two examples illustrate both the anticipation that encircling ditches would be found and the searching for these anticipated patterns. In the first case a further ring-ditch is indeed discovered; in the second a ring-ditch seems to emerge but is subsequently shown to be a natural, rather than archaeological, pattern.

> Towards the end of the dig **E** was given the task of finding out whether a ring-ditch was visible on the ground surface, which had formerly been taken to consist of wholly natural brick-earth. He proceeded by digging four shallow trenches through the brick-earth in the form of a cross, with the cremation at its centre. At a distance of about 2m from the central cremation, he thought he could see the 'shadow' of a ring-ditch in one of the arms of the cross, but was not certain about it. He then opened up two areas between the arms of the cross to try and follow this possible ring-ditch along. Although the fill of the ditch was very similar to the surrounding brick-earth, he succeeded in locating the inner and outer cuts - which, as half-expected, curved round in two partial circles around the central cremation. The existence of the ring-ditch was confirmed when, in digging a segment through the possible feature he was able to follow the cuts down to a base. The ditch had a V-shaped cut characteristic of ring-ditches on this site.
>
> [RN 158]

In this case, then, the anticipation that a ring-ditch would be found (engendered by former discoveries elsewhere on the site) met with its *material conditions of satisfaction.* Now consider an opposite case. The same strategy for finding the anticipated ring-ditch is deployed, but no actual ring-ditch is forthcoming.

> **G** was given a practically identical task. Again the cremation-burial in question had already been excavated, and was situated within what had formerly been taken to be natural brick-earth. No ring-ditch was visible on the ground surface. Like **E**, she proceeded by digging four shallow trenches outwards from the cremation-pit in the form

> of a cross. In one of the arms of the cross, about 3m from the central cremation, she found what appeared to be a portion of a ring-ditch, with what seemed to be very clear inner and outer cuts. The areas between the arms of the cross were opened up so that G could follow these cuts along. But instead of a ring-ditch, trowelling brought to light a labyrinthine pattern of tunnels and galleries, almost certainly those of a former badger's set. Despite further exploration and the opening up of more adjoining areas, no ring-ditch could be found. The cremation-vessel remained an isolated feature, situated outside of the ring-ditches rather than enclosed by one.
>
> [RN 176-7, 181]

This serves as yet another example of the *resistance* of the material field, one of the main themes of this chapter and the last. Pre-existing schemes may lead us to anticipate the emergence of material patterns before they actually appear, and even to see the anticipated pattern where it does not in fact exist (eg. the initial perception of the dark fill of the animal burrow as a ring-ditch). But in the context of further exploration the material field always has the capacity to thwart our projects and purposes, to surprise our preconceived ideas and to force modification of our strategies and interpretations to take account of what is 'actually there' (or, as in this case, 'not-there').

Most importantly for the present argument, though, the two examples show how the concepts of 'ring-ditch' and 'cremation-burial' come to be combined in what archaeologists actually *do*. Relations of inclusion/exclusion, inside/outside and centre/periphery not only characterize the material pattern we may see out there on the ground, or the pattern as we conceive of it in our heads, but also the way we approach, search for, manipulate and explore the material field.

10.8 Inferences about Past Human Cognition

In so far as a ring-ditch is understood to form a *boundary* around cremation-burials or some other feature, it is always understood as a cognitive as well as a material boundary, for people in the past just as it is for ourselves. Practical reasoning, unlike analytical reasoning (see, for example, the well-known 'ladder of inference' model. Hawkes 1954; 161-2), does not draw any strict dividing line between inferences about material function and inferences about cognitive significance. Indeed,

material patterns such as ring-ditches have a significance for archaeologists precisely because they are understood to have had a significance for people in the past.

We have already seen how 'natural' features enclosed by ring-ditches are imbued with a significance that they would not have if they were unenclosed; they are likely to be subject to excavation and sampling whereas similar features situated outside are not (see Section 9.4 for T's reasons for this). In the last section, too, we saw how cremation-burials enclosed by ring-ditches are perceived quite differently from isolated cremations, especially if situated in the centre of the circle formed by the ring-ditch. The enclosed cremation is seen as providing the reason or rationale for the digging of the ring-ditch and the construction of the burial mound in the distant past. The ring-ditch was *designed*, so the speak, to enclose the burial. The mound was *designed* to cover the burial. When we have this conception of past human intentions in mind, it is almost impossible to perceive the cremation as a pattern in its own right separate from the enclosing ring-ditch.

Just as archaeologists sometimes anticipate that an isolated cremation-burial might be enclosed by a ring-ditch, devising strategies of excavation to test this prediction, so they sometimes anticipate a burial yet-to-be discovered in the interior of a ring-ditch and set out to actively search for it. Towards the end of the dig, a great deal of effort was directed towards the examination of ring-ditch interiors. In several cases the 'natural' gravel surfaces inside ring-ditches were trowelled down a considerable depth in an unsuccessful search for burials. None of the expected inhumation-burials were found, and it was concluded that the bodies must have been laid down on the ground surface rather than buried in pits, and all trace of them removed by subsequent ploughing activity. That is, ring-ditches are understood to *afford* the enclosure of burials, to have been *designed* for this purpose, even when no actual burials are apparent.

Such preconceptions (about the significance that these enclosed areas had for people in the past) clearly owe their origin to experience acquired on the other Bronze Age sites, where ring-ditches do normally enclose burials of one kind or another. They must also draw from wider cultural experience of divisions between the 'sacred' and the 'profane'. A whole range of standardised deep inferences (accumu-

lated through years of excavation and generations of archaeologists working on a variety of sites) and analogies (drawn from all aspects of life) are embedded in the repertoire of cognitive tools available for use on this site. Essentially taken-for-granted, such cognitive tools and the deep inferences they contain are for the most part implicit in our actions and perceptions rather then explicity formulated. It is only when the material encountered in some way contradicts or surprises pre-existing schemes that they are brought to critical attention and revised to take account of that evidence (see, for example, E's revision of ideas about how past human agents would have dug a ditch, in the light of unfolding evidence which "didn't look right" RE 37/41, Sections 9.6 and 9.7). This is really all that verbally-formulated deep inferences are - a making explicit and adjustment of tacit schemes of past human agency to make sense of unique characteristics of material uncovered. These schemes are not conjured up out of thin air. They are there all the time; it is just that we have become so *used* to *using* them that we do not notice them any more.

There is nothing special about deep inference. In our everyday social existence we routinely infer other people's intentions-in-action, and the significances that things have for them, from the material effects of their actions. (see Tagiuri and Petrullo 1958, Jaspars et al 1983, and other work on attribution theory and person-perception in psychology). As Heider puts it, "Of great importance for our picture of the social environment is the attribution of events to causal sources. It makes a real difference, for example, whether a person discovers that the stick which struck him fell from a rotting tree or was hurled by an enemy. Attribution in terms of impersonal and personal causes, and with the latter, in terms of intent, are everyday occurrences that determine much of our understanding of and reaction to our surroundings" (Heider 1958:16).

10.9 Symbols of the Body

It is not just ring-ditches, of course, that are understood to have formed a boundary, of symbolic significance, for people in the past. The whole group of ring-ditches and cremations is 'bounded' by the ditch that runs across the site from SW - NE. As it happened, the status of the ditch as an integral part of the cemetery was not proven, and may have been a much later feature, but the notion of the cemetery

as a bounded area, set apart for the burial of bodies, remained. The existence of this boundary (real or conceptualised), separating as it were the sacred from the profane, effects our perception and understanding of all the material features within it, binding them together into a single pattern or set of patterns related to each other. On a conceptual level, too (in so far as cognition can be seperated from perception and action) the concepts of 'ring-ditch', 'cremation-burial', 'fire-pit', etc are organized within the single encompassing concept of 'cemetery'.

One of the interesting paradoxes of this research project is that while the ethnographer has been primarily concerned with the active role of the body in bringing about the transformation of NATURAL objects into CULTURAL objects (that is, the transition of hitherto unseen and untouched objects into the realm of archaeological knowledge in the present day), the archaeologists under study have been primarily concerned with the ways in which people in the past dealt with the transition of the human body from the cultural domain back to nature again. All burial practices, despite their cross-cultural diversity (Ucko 1969) involve this culture-nature transition. And while the ethnographer has been interested in the subject-object transaction through which the NATURE-CULTURE transition is accomplished, the archaeologists have been interested in those past cultural activities which, in dealing with the transition of the body from culture back to nature, also dealt with the transition of a subject (that is, a person, a social being, an active source of intentional effects) into an object (that is, something which can be cremated, placed in a funerary urn and buried in the ground).

Archaeologists excavating burial sites always implicitly understand that the social mediations of life-death transitions which once took place there were charged with symbolic significance, whatever the nature of that significance may have been. They know that the ring-ditches, burial mounds, cremation-pits, etc., were once material symbols, with a cognitive as well as a material dimension. And they know also that the meaning of these material symbols centred on that most potent symbol of all - the human body. The centrality of the body is evident wherever the funerary urn and its contents is found to be placed upright at the very centre of a circular pit, or the burial pit is found to be situated in the centre of a ring-ditch circle. Whatever else these material patterns may have represented, whatever other cultural meanings they may have carried, they are first and foremost *symbols*

of the body. The paradox is that in objectively apprehending this symbolically-centred 'body as object' or 'body as material thing', archaeologists necessarily and routinely place their own (subjective) bodies - the source of all their understanding - in the background.

To bring the living, acting, perceiving, thinking, knowing, moving and exploring body to the centre of archaeological discourse is the principal task of this thesis. In order to accomplish this, however, we first of all have to show how the objects of archaeological discourse come to be abstracted out of the context of bodily action in which they are initially encountered and constituted. This is the task of Chapter 11.

Chapter XI

ACTS OF INSCRIPTION AND THE CLOSURE OF THE ACT OF DISCOVERY

> *"An image is a sight which has been recreated or reproduced. It is an appearance, or a set of appearances, which has been detached from the place and time in which it first made its appearance and preserved ... Every image embodies a way of seeing" (Berger 1972: 9-10).*

11.1 The Act of Inscription as Boundary or Threshold

It was stated right at the start of the fieldwork-report that a full ethnographic account of excavation practices would not be attempted; some aspects would be highlighted and others neglected, according to the interests and *point of view* of the ethnographer. Thus Chapters 5-10 have been concerned largely with the actual digging, exploration and manipulation of material evidence - the material transactions which precede inscription - rather than the act of inscription itself. Little has been said about the activities of planning, section-drawing, writing context-sheets, sampling, labelling, photography, etc, which are no less important parts of archaeological practice. Such neglect naturally arises from the attempt to apprehend the 'initial encounter' or 'original contact' between archaeologists and the object of their labour - transactions which are not to be found in acts of inscription, where material remains have already been meaningfully-constituted and 'prepared' in previous operations. Nevertheless it is important now to turn our attention onto these inscriptive practices. For in forcing a closure on the act of discovery, acts of inscription form its boundaries or limits. By sketching out the nature of these boundaries we will be better able to *delineate* and *define* the act of discovery.

Boundaries occur in social time as well as in social space. It is well known in anthropology that the passage of an individual through social life is generally marked by

'rites of transition' (Van Gennep 1960, Leach 1976). As Leach (1976:34) explains, "He (she) moves from one social status to another in a series of discontinuous jumps - child to adult, unmarried to married, living to dead, sick to healthy. The occupancy of each status constitutes a period of social time of social duration, but the ritual which marks the transition - puberty rite, wedding, funeral, healing ritual - is an interval of social timelessness." What is not so well known, however, is that objects appropriated from the natural world to be assimilated into the social realm may also have to undergo formalized transitions. In this sense the act of inscription can be regarded as a kind of threshold, through which material remains must pass if they are to achieve the transition into (textual) data and thereby gain entry into the theoretical or analytical domain.

On the one hand (when we adopt the *natural attitude*, or common-sense perspective), this transition may be seen as a straightforward matter of measuring, describing and copying - the copy being seen as more or less equivalent to the object copied. But on the other hand (if we suspend as far as possible our common-sense, to try and look at these practices as if for the first time), the transition - far from being mundane - can be perceived to be more of an alchemic process, in which a base raw material is literally transmuted into something else entirely. For what was once a concrete entity 'out there' on the ground - an entity that could be touched, grasped, manipulated, explored - now becomes a configuration of written signs on a page, or a two-dimensional image on a piece of planning paper. The textual symbol that is the product of acts of inscription not only *stands for* the object; in a very real sense it *becomes* the object, albeit in a symbolic rather than a material form. And once the production of the textual symbol is accomplished, the actual material object itself becomes to all intents and purposes *immaterial*, as if its essential value has been extracted and taken away. That is, the material evidence which was so carefully brought to light, fashioned, scrutinised so closely, can now be trowelled away to reveal further patterns (or backfilled, as no longer relevant to our projects).

11.2 Imposition of the Textual Grid

By abstracting an object out of the flux and open-endedness of everyday experience, and re-constituting it into the relatively static domain of textual symbols, the

act of inscription brings to a close the temporal processes which characterised the act of discovery. It is a de-temporalising process, and all the tools-for-CULTURE used to effect the transformation are essentially *instruments of de-temporalisation*, or instruments of closure. In this sense they are quite different from tools-for-NATURE, which are *instruments of temporality*; that is, tools for opening up, manipulating and exploring the material field. This is the fundamental difference between the two categories of implements identified in Chapter 4.

There are other differences. As outlined in Section 5.6, tools-for-NATURE have a referential structure orientated towards the material upon which they are used - the objects to be discovered, the features to be excavated, the cuts to be followed down and along, the layers to be removed. Tools-for-CULTURE do not. Their principal orientation is towards the text, or the excavation report yet to be written and produced. They point, in other words, not so much to the *raw material* of archaeological practice, but rather to the *end-product.*

To this end, all tools-for-CULTURE embody what might be called the 'textual grid'. The textual grid can take various forms. Perhaps its most obvious manifestation is the planning-frame - a 1m square wooden frame supporting an internal lattice-work of strings in a pattern of 10cm or 20cm squares, which correspond to the graph squares marked on the planning paper. In planning-events (stages 3 and 9 of the excavation procedure outlined in section 4.3), the planning-frame is placed over the horizontal surface to be drawn, the patterns visible on the ground are measured by eye *through* the frame and marked on the plan. The frame has the effect of super-imposing the textual grid over the patterns to be recorded, organizing those patterns within the structure of the grid. Every pattern represented on the planning-paper is a product of the 'way of seeing' entailed in the use of the planning-frame. The observer is disengaged, detached, distanced. A whole stance of the body is implicated. With a planning board in one hand (or lodged on the upper arm) and a pencil in the other, the planner stoops down over the frame to draw each part of the patterns as seen from directly above, taking a square at a time. When all the squares have been drawn the planning-frame itself is shifted to an adjacent position and the process begins again.

To know how to use the planning-grid is to know how to perform - in Heideggerian

terms - a *de-worlding operation*, whereby "certain characters of the world are discounted or 'levelled off'... in such a way that what remains satisfies a criterion of pure objectivity" (Olafson 1987: 36-7). What remains is simply the objective measurement itself - the judgement of distance made by eye through the squares of the grid. It is this measurement that is marked on the plan, and the aggregate of such measurements that comprises the finished drawing. [But that which is measured has already been constituted as a meaningful object prior to the act of inscription; this, indeed, is why the object is being measured. Its *meaning* or *relevance*, then, always finds its way into the drawing, as a kind of implicit qualitative presence, underlying or permeating the explicit objective measurements. As Merleau-Ponty (1968:215) puts it, "Meaning is *invisible*... the invisible is the secret counterpart of the visible, it appears only within it... one cannot see it there and every effort to *see it there* makes it disappear, but it is *in the line* of the visible, it is its virtual focus, it is inscribed within it"].

One of the characters of the world that is discounted or levelled off, however, is the *perspective* of the perceiving subject (her *position, point of view, standpoint, stance, posture* - note how all these terms imply a cognitive as well as a physical orientation towards the world). This is a consequence of the conventional two-dimensional mode of representation employed. In contrast to other forms of realist depiction, archaeological drawings do not make use of the method of perspective developed by Brunelleschi and Alberti during the Renaissance (Kubovy 1989). Whereas perspective creates an impression of realism precisely by specifying information about the position of the viewer or subject - so that when we look at a painting its perspective, so to speak, draws us into the scene and places us in a spatial relationship with the objects depicted (Mey 1982: 222-6) - the archaeological method of drawing creates an impression of realism precisely by not specifying any information about the position of the viewer or subject. The planner effectively draws himself or herself out of the picture, which means that any subsequent viewer is also forced to take a transcendental, disembodied and uncoordinated perspective upon the evidence depicted. The evidence can be considered to be 'objective' in the sense that it now stands on its own, and can be taken to exist independently of individual or subjective point of view.

It is not that archaeological drawings are unrealistic because they do not have perspective; it is simply that they re-construct reality for us in a different way, according to a scientific rather than an artistic set of conventions. In the light of these conventions, any explicit subjective influence in the drawing would detract from its 'scientific' realism. As Goodman (1968:37-9) argues, realism in depiction is culturally relative, "determined by the system of representation standard for a given culture or person at a given time", and therefore as much a matter of habit (the symbolic forms we are used to using) as one of imitation or copying.

[This applies just as much to the forms of representation used by the ethnographer (refer to the many sketches of material fields in this fieldwork report). Although the position of archaeologists working the material field is usually marked in sketches, the position or point of view of the ethnographer is not. Where is the ethnographer in these pictures? He is at once everywhere and nowhere, apparently seeing everything at once from some point high in the sky. His situated, partial and embodied perspective within the material field has been erased, and this has been replaced with the perspective of a transcendental or disembodied observer. The ethnographer *haunts* the pictures, in the same way as the subjective presence of archaeological practicioners underlies and permeates all objective representations of material evidence].

11.3 Measuring Devices

The tool kit of the archaeological recorder contains many measuring devices - cloth tapes, hand-tapes, plumb-bob, etc - which also provide the means for detaching objective properties or measurements from the material field, while at the same time 'levelling off' any connection between the object measured and the measuring subject. Indeed, the principle of objective measurement embodied in these instruments (and exemplified in the theodolite - always set up on its tripod somewhere near the centre of the site) could be said to provide the basic rational of archaeological recording. That such instruments are used to implement the textual grid is demonstrated by the ease with which they can be converted into the equivalent of a planning-frame. In section-drawing - the planning of vertical surfaces - one line of a vertical grid is formed by a string above the section with a tape-measure running alongside it. This datum-line, held in place with nails and pegs, is carefully

aligned with the aid of spirit-level or theodolite so as to be precisely horizontal. The vertical lines of the grid are formed as they are needed by the use of plumb-bob and hand-tape in measuring distances from the vertical datum.

In section-drawing, as in planning, each part of the material pattern is to be drawn as if viewed from directly in front; that is, with the line of view perpendicular to the surface being depicted. The object of the exercise is not to capture an impression of movement or a fleeting glimpse of a passing moment (as in, say, watercolour painting); indeed, the material field being drawn is characterized by a lack of movement, at least for the duration of the recording-event. Lines can be measured and re-measured, rubbed out and re-drawn several times. On the other hand (whereas a painter would tend to take up a fixed viewpoint on a scene) the recorder, with his or her more portable toolkit, constantly changes position. The finished drawing will have a concreteness or solidity expressive of the immobility of the object depicted, relative to the mobility of the observing subject.

Archaeological practitioners not only view the world *through* grids of measurement (in acts of inscription); they also organize their activity (in material transactions as well as acts of inscription) *within* a grid of 20m squares - marked out by wooden grid-pegs driven into the ground. Looking back through the various sketches of material fields, the reader will see that most of the areas opened up are square or rectangular in shape, with their edges or 'limits of trowelling' running parallel to the lines of the site grid. In many cases the direction in which workers are trowelling, the direction they are facing, their stance and point of view, are orientated accordingly. In other words, the textual grid constitutes for us a kind of *working space*; the workers are situated, their activity organized, within this space.

The textual grid takes a slightly different form in the measurement of soil colour. By comparing a moistened sample of a layer with the colour samples provided in the Munsell Colour Chart, the recorder is able to fix the colour of the layer (which, in reality, varies from time to time according to the light, and from person to person according to who is perceiving it) into a single number and description, such as '10 yr 5/8 yellowish-brown'. The same applies to measurement of soil texture and consistence. Although no tools apart from the human hand are used to measure such properties, a standardised terminology serves to 'quantify' or

'objectify' the measurement. Thus the description 'sandy silt loam', for example, actually conveys quite specific information about the size of soil particles and the structure of the soil. What is levelled off by the use of this kind of language, of course, is the subjective 'feel' of the material to the touch, as it varies from one person to another.

Soil descriptions and measurements are written onto context-sheets, which also embody the textual grid (although not in the form of graph squares). Context-sheets provide a standard format for the description of all layers and features. Each sheet is divided into over 40 compartments, with headings and spaces for the description of length, breadth, depth, colour, texture, consistence, inclusions, stratigraphic relationships to other contexts, method of excavation, interpretation, and so on. In this way a material entity that was previously experienced as a unity or whole is 'split up' into a multiplicity of separate properties (of which its 'method of excavation' and 'interpretation', formerly bound up in an unfolding practical dialectic, are only two). The context-sheet also provides spaces for the listing of other forms of data (eg. photos, sections, plans, samples, finds, etc) relating to that particular context - testifying to a further 'splitting up' of the entity into myriad textual forms. All this information, together with site code, grid reference, levels, etc, comes under a single 'context number'. The layer or feature which has been described on a context-sheet henceforward becomes that number, and will be referred to as such in any subsequent social transactions.

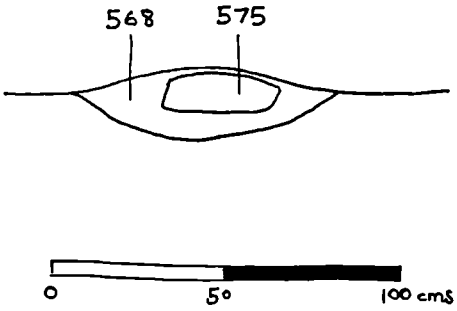
Even pencils, pens, rulers, erasers and other drawing and working implements, if they do not exactly embody the textual grid themselves, have a basic orientation towards it. They are used to draw in the patterns on the graph squares of the planning paper, or to write in the descriptions and measurements in the boxes provided on context-sheets. In fact all the tools-for-CULTURE, taken together, embody and comprise the textual grid, while implementing it at the same time - transforming material remains into data and rendering that data accessible to subsequent sorting, cross-reference and analysis.

11.4 Social Transactions and the Merging of Perspectives II

In Sections 6.4 and 6.5 the social dimension of material transactions was pointed out. In relation to a particular (unfolding) pattern of material evidence, it was

shown how different points of view are brought to bear upon the emerging object, and how these various perspectives come to merge through time into a common understanding and perception of that object. Acts of inscription, of course, also take place within a network of social relations and social transactions. In order to demonstrate the social dimension of acts of inscription, let us take up the story of that particular pattern of evidence once again (the reader is referred back to RE 12/14, Section 6.4, for the necessary background information). The sequence of events described below follows on directly from where we left off, as the 'fire-pit' enters one of the many inscriptive phases of excavation (the fifth and sixth stages of excavation procedure outlined in Section 4.3). Again, supervisory visits are marked with an asterisk.

> [I cleaned up the half-excavated feature and the immediate surroundings by scraping gently over all the surfaces with a trowel, and removed the various tools from the vicinity, in preparation for photography]
>
> 5.* **R** came over to take photographs of the section. [After **R** had finished and left, I set up the tapes, datum-line, etc, and drew the section, filling in the context-sheets at the same time. The relationship between the charcoal mass (575) and the outer fill (568), as these appeared in the section, seemed quite clear. 575 was contained by 568. This, at least, is how I drew the relationship on the plan and described it on the context-sheets (see Fig 28)].
>
> 6.* (i) **R** came back to check the recording. After studying the drawing and then (picking up a trowel) closely examining the section itself, he pointed out that, although the drawing was technically correct, it did not "make sense" in terms of our interpretation of 575 as the remains of a fire, truncated by later ploughing. Nor did he agree with the description of the relationship between the two contexts ('568 contains/ is contemporary with 575'). He said that if 575 had been an un-urned cremation - deposited during the backfilling of the pit - it would make sense for it to be contained by the outerfill. But if 575 was a fire, resting on 568, how can 568 also cover the fire after it had burnt out?
>
> (ii). There followed a discussion about whether 575 could have been burnt elsewhere, to be deposited in the pit at a later date in the manner of an un-urned cremation. But we decided this was unlikely to have been the case, since (an investigation with the tip

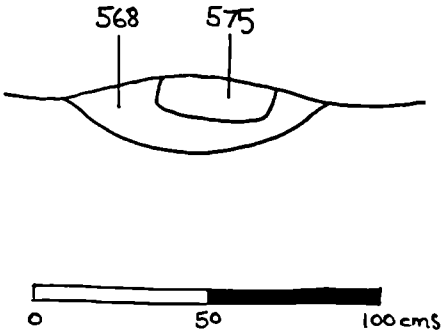


extract from description :-

568 contains (contemporary with) 575

575 contained by (contemporary with) 568

Figure 28: Sketch of Section, RE14



extract from description :-

568 below (earlier than) 575

575 above (later than) 568

Figure 29: Revised Sketch of Section, RE14

of a trowel showed that) the gravel sides of the feature contained specks of carbonised material, indicating that 575 had been burnt in situ.

(iii) **R** resolved the problem by pointing out that it was only at the section that 568 was covering 575; in the unexcavated half of the feature 575 was showing through the weathered surface of 568 (trowelling affirmed this point). It was as though the tip of a plough had cut a narrow groove into 575, dragging material from 568 into the groove (indeed, we then looked for and found the continuation of this plough-cut either side of the feature). The placement of the section along the line of the groove was in this sense rather unfortunate, he said, since it depicted an untypical aspect of the evidence as a whole.

(iv) Looking at the section-drawing again, **R** said that it gave the impression that 575 was a complete deposit contained within 568 whereas, on the contary, all the evidence pointed to the fact that 575 was above 568, and, far from being complete, had been truncated by later ploughing activity. This meant that the drawing and description were wrong and had to be changed.

(v) The first thing to do, **R** told me, was to alter the description of relationship on the context sheet. Instead of 568 containing (and therefore contemporary with) 575, 568 should be described as below (and therefore earlier than) 575. The next task was to alter the section-drawing so that it correlated with the description. The best way to do this, we decided, was to measure and draw the average height of 575 away from the section, rather than the points on its upper surface where it actually met the section; this would show 575 coming right up to ground level, above 568. We both agreed that the correction would result in a more accurate portrayal of the evidence. **R** added that "it's very important to make sense of the evidence at the recording-stage, while the evidence itself is still around... otherwise the records will be meaningless for post-excavation people." He went away to check other section-drawings in progress elsewhere on the site.

[following **R**'s instructions, I re-described the relationship between the two contexts, and re-drew the section (see Fig. 29)].

[RE14]

The general practice on this site was for workers to plan, draw and describe the features which they themselves were involved in excavating. Recording was sel-

dom a solitary task, however. All drawings and context-sheets completed had to be 'checked' by a supervisor, which meant that the act of inscription was usually punctuated by supervisory visits. Such visits often developed into a detailed discussion about the nature and meaning of the evidence and how best to represent it. In effect, instructions given by supervisors ensured that the mode of representation employed - and the way of seeing associated with this mode - was standard practice across the site as a whole, in line with broader archaeological conventions. It was by no means unusual for these exchanges between supervisor and worker to result in a radical alteration of the plans and descriptions being produced, as in this example.

Because everyone knows that the material evidence itself is something transient (the section being drawn here, for example, will be excavated away once recording is completed), considerable care is devoted to, as R puts it (6.v) 'making sense' of the evidence while it is still around. There is a general feeling that the evidence has to be made sense of before it can be depicted properly. The chain of material transactions (that led up to the act of inscription) and the detailed discussions, re-working of the evidence and re-drawing of the section (that constitute the act of inscription) are all part of this process of 'making sense' that R refers to.

One of the difficulties in producing a faithful representation of the object is that in reality its meaning is fluid and uncertain; there are a variety of ways in which its 'sense' can be constituted, depending on point of view. It is well-known out in the field that, while experienced excavators to some extent share a common way of looking at things, they may see quite different relationships and significances in the same archaeological surface. Even just one worker can switch or shift between alternative points of view. Different points of view can lead to different measurements being taken, and therefore to depictions that radically contradict each other. (Compare, for example, Figs 28 and 29. Although superficially similar, they carry very different implications concerning the meaning of the evidence; these are articulated by R in 6:ii). This does not mean, however, that depictions produced are entirely relative to individual points of view. Alternative perspectives are brought together and merged during the social transactions that are inter-bedded with acts of inscription; fluid meanings are, so to speak, *solidified* or *crystalized* into a social consensus, of which the depiction itself is a product.

It is also the case that the meaning of the evidence to be represented is not self-contained, but is context-dependant (by 'context' I mean the wider context of environment and practices, rather than the narrow archaeological sense). Thus the section itself is made sense of in terms of (our knowledge of) the feature as a whole, and the site in general. Indeed, the main criticism **R** levelled against the original drawing was that it did not take enough account of the understanding we had reached of the feature as a 'fire' (6:i); this involved implicit reference to many previous interpretive events and to aspects of the evidence outside of the section itself. Also, when we were considering whether or not the carbonised material was burnt in situ (6:ii), we transferred our attention to the sides of the feature (re-engaging in a material transaction) to resolve the problem. And again, the final decision to favour one possible depiction over another was based upon an exploration of the area adjacent to the feature, where an anticipated plough-mark was found to confirm **R**'s interpretation of the section (6.iii); the very idea that the feature could have been truncated by later ploughing referred to, amongst other things, the plough soil encountered across the site as a whole when the excavation trench was first opened up.

All this goes to show that a great deal more goes into the representation of the object than simply a measurement/depiction of material form and properties. The representation is *meaningful* because it contains information about perceived *relationships* (both within the object, and between the object and others in its spatial-temporal context). If these relationships had been left out, the representation - as **R** argues (6:v) - would be "meaningless", or at least very misleading, for post-excavation workers.

However, those relationships which are perceived to exist 'out there' in the environment, and which are represented on plan as objective properties of the material field, are in an important sense also relationships between the perceiver(s) and the object(s) perceived. Indeed, perception itself *is* the subject-object relation, and it is the general character of perception that the objective environment always specifies information about the situation of the subject within that environment. As Gibson (1979-:126) argues, "Information about the self accompanies information about the environment, and the two are inseparable... Perception has two poles,

the subjective and the objective, and information is available to specify both. One perceives the environment and co-perceives oneself."

Gibson identifies three ways in which the environment informs the perceiver about his or her own changing position from moment to moment - "the sweeping of the field of view via the ambient array in the case of head turning, the protrusion of special shapes into the field of view in the case of limb-movement (especially manipulation), and the flow of the ambient array in the case of locomotion." (Gibson 1979:126; see also Lee and Aranson 1974, Lee and Lishman 1975). To these kinds of 'visual kinesthesis' we can also add the, perhaps more important, tactile kinesthesis. To touch something, as Merleau-Ponty (1962: 100) and Berger (972: 8-9) point out, is to situate oneself in relation to the object touched (the tool one is holding, the material field one is working, the ground one is standing upon, etc). Yet it is precisely these subject-object relations that are left out or erased from the representation of the object in the act of inscription.

Whenever archaeologists are engaged in perceiving an object - whether manipulating it through the use of hands or tools, standing back to observe it in a detached manner, walking around it or get different points of view, discussing it with others, or measuring and drawing it - information about their own point of view and situation generally is always present in the objective material field. But archaeological drawings and descriptions tend to give the opposite impression. The object is represented as if it was perceived by a disembodied observer, as if it existed independently of a perceiving subject. And this severing of any explicit relations between the subject and the object somehow makes the representation seem more 'concrete' and more 'real'.

The purpose of archaeological recording (which also supplies its rationale) could be said to produce an *objective* representation of material evidence. And once we understand objectivity as an *inter-subjective* construction, it is easy to see why the perspective method of drawing is inappropriate for archaeological purposes. For if the perspective method achieves its effect of realism by drawing the viewer into the scene, it can necessarily only give us one point of view upon a field of objects, from only one angle, in only one light, at only one moment in time. Yet, as we have seen, the non-perspective drawing produced in the act of inscription is

actually the distillation of many points of view. It is not just that the recorder has moved around, scanning and measuring each part of the pattern in turn, rather than observing the pattern in its totality from a fixed viewpoint [One is reminded of Cezanne's experiments with non-perspective methods in some of his landscape paintings - in order to show "the more complete object in the mind" rather than the object as seen from one particular vantage-point (quoted in Dubery and Willats 1983:24)]. The object has been studied from all angles, in all lights, at many moments in time, *by more than one worker.* Alternative perspectives upon the object have been merged and shared in a chain of social transactions, forged into a social consensus about the meaning of the object, then fixed into a single, static image. "The concrete is concrete", as Marx (1973:101) says, "because it is the summation of many determinations, hence unity of the diverse."

In this way the depiction comes to represent, not so much an individual's subjective point of view, but rather the inter-subjective perspective attained by the social group, the excavation team, as a whole (through the medium of conventional technologies, exemplified by the textual grid). Such a perspective is necessarily a *transcendental* one, since it exists, so to speak, over and above the heads of individual workers. It is a perspective, moreover, that belongs as much to the community of readers and researchers (the consumers of data) as it does to the excavation team (the producers of data) - for we all share a common system of representation, a common language and code of textual conventions. The objectivity of data is produced in accordance with the requirements of the archaeological community as a whole; the very solidity and concreteness of recorded evidence, then, is product and reproducer of the *solidarity* of the archaeological community.

In RE14 we saw the transition of layers into numbers, soil boundaries into lines on a piece of planning paper, perceived relationships into written descriptions on context-sheets, and so on. The plans, photos, notes, samples, etc that are produced in the act of inscription are the end-products of the excavation process. What is truly extraordinary is that, in subsequent analysis, these will come to be regarded as the pristine, theoretically-neutral raw material for archaeological interpretation. And no kind of data is seen to be more 'objective', or more free from subjective point of view, than the *photograph* (which, paradoxically, does incorporate the perspective method of representation). As one handbook on archaeological

photography puts it, "The camera is unselective, recording everything that it can distinguish in the field of view, whether the photographer can understand what he sees before him or not"; photographs, therefore, "provide a completely objective and unbiased view of things, as they actually were" (Conlon 1973:55). It is to the phenomenon of the camera, then, that we now turn.

11.5 The Camera

Just as the trowel was identified in Chapter 5 as a special case of tools-for-NATURE, so the camera can be identified as a special case of tools-for-CULTURE. Of all the instruments used in acts of inscription, the camera is generally considered to be the instrument *par excellence* for depicting the material field 'realistically'. The privileged status of the camera is of course not restricted to archaeology. Photographs are used as evidence in courts of law, as records or documents in hospitals, schools, prisons, scientific establishments, museums and other institutions; they figure prominently, as representative of facts, in newspapers, books, passports, licences, etc (Tagg 1988). Certainly they are an important component of the record that archaeologists make of material remains encountered in excavation.

Whereas the trowel is commonly used by all members of the excavation team, however, the use of the site camera is restricted to just two or three workers. Only the director and supervisor took photographs as a general rule (one other worker was being trained to use the camera, but was always being supervised and instructed when he did so). Given that most workers participated fully in all other on-site recording activites, this restriction of usage to senior personnel suggests that there is something quite special about the art of taking photographs on an archaeological site.

It would be wrong to suppose, however, that the skill of archaeological photography consists merely of a technical competence in the handling and use of the camera; the photographer has to have some experience of using a camera *in relation to* archaeological materials. Indeed, the task of making significant patterns on the ground stand out in the photograph involves not just the taking of the picture itself, but also a certain amount of preparation of the material field.

Much of this preparation has generally already been accomplished prior to the

arrival of the photographer on the scene - that is, the evidence has been constituted as a significant object in a chain of material and social transactions leading up to the photographic event. This, after all, is why the photographer is there - because there is a significant object to be photographed. It is also the case that the material field has already been constituted specifically *for* photography. A considerable amount of labour has gone into the cleaning operation that always precedes the act of inscription (scraping surfaces smooth, sharpening soil boundaries, removing soil and any loose crumbs of earth, erasing foot-prints and trowel-marks, and the moving of any tools-for-NATURE out of the way - see RE61, Section 4.3).

11.5.1 The Placard

The arrival of the photographer/supervisor initially takes the form of an *inspection* of the evidence to be depicted. Sometimes instructions are given as to how to clean the evidence further, so that the worker re-engages in a material transaction to re-constitute the object, and the photographer goes away to come back and take the pictures later. Once satisfied, however, the photographer completes preparations by setting out the placard (detailing site code, feature number, etc.), scales, direction arrow and other tools-for-CULTURE on the material field. The setting up of the placard is particularly interesting. The photographer carries with him a small plastic case containing a large number of plastic letters and numbers. He sorts through these until the required signs are located; these are then affixed onto the placard, the total arrangement of words being moved this way and that to achieve the desired spacing - the placard then being carefully placed and propped up next to the feature.

This manipulation and placement of plastic letters is such a mundane, everyday occurrence that somehow in order to focus our attention upon it at all - in order to perceive the activity as interesting and worthy of comment - we have to perform an active operation of our own upon the spectacle. That is, we have to make a conscious shift in mental gear and achieve, to borrow the title of Arthur Danto's book, a 'transfiguration of the commonplace' (Danto 1981).

At a stroke, the placement of the placard onto the material field transforms that field into a textual object. Letters and numbers are placed upon it as if they were being written onto a parchment - and indeed with this action the field *becomes*

a text. Already constituted as a significant object in prior material transactions, the material evidence now becomes a field of signs and significations. The signs, moreover, do not just refer to the material evidence directly in view; they also serve to subsume the evidence into a much larger system of signs and significations that includes, on a local level, the many plans, notes, labels, descriptions, etc of site recording - and ultimately the entire network of archaeological information stored in books, archives, libraries and museums. This transformation, importantly, occurs *before* the photograph is taken; the photograph itself serves only to reproduce a pre-existent text. In this sense the photograph can indeed be regarded as 'documentary' - a straightforward copy, literally a photo-copy, of the prepared and inscribed material field.

11.5.2 The Scales

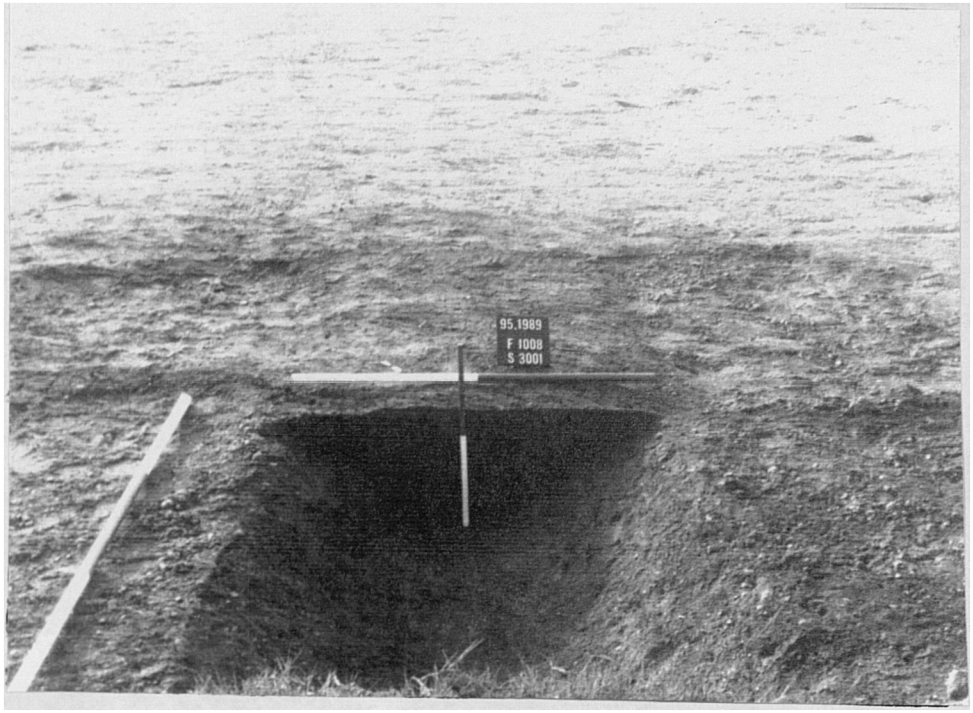
Another important aspect of the preparation of the material field that the photographer has to attend to is the setting out of scales or ranging poles. When the photograph is taken from directly above a horizontal surface, or directly in front of a vertical surface, this operation is a fairly straightforward one. Scales are generally placed on the ground parallel to the sides of the viewfinder/borders of the picture, so that even if only one scale is used the picture is given a grid-like structure, similar to the grids printed on planning-paper. Any subsequent viewer of the photograph (henceforward referred to as the Reader) will therefore find herself or himself looking at the evidence from directly above or directly in front - through an interposed (invisible but nevertheless present) grid, which provides an objective guide to the size of the objects depicted - in much the same way as (s)he looks at a plan. That is, a *transcendental perspective* has been constructed for the Reader by the photographer.

Many surfaces are too large to be photographed in this way. Often the photographer would try to attain a viewpoint as near as possible to the perpendicular by standing on a chair or a stepladder, or even on the scaffolding tower. When the picture plane was not quite parallel to the surface being photographed, the setting out of scales no longer conformed to an easily identified rule. Indeed, the more oblique the angle of shot, the more complex the procedure of positioning the scales

seems to become. As the following example demonstrates, the setting out of scales may take considerable time, effort and skill:-

> [The feature to be photographed is the ditch which runs straight across the entire length of the site from NE-SW. I have just completed the excavation of a segment of the ditch. The segment is 2m long, 1m wide and 30cms deep, situated next to the NE edge of the excavation-trench. This segment has been extensively cleaned, in preparation for photography]
>
> **R** arrived to take the photos, bringing with him a camera case, chair, a number of scales and ranging poles, etc. The placard was set up. Three sets of black and white/colour photos were taken from three different positions - from the SW, from the NW (some while standing on the chair to achieve the required angle) and from the NE baulk. Each time **R** took up a new position it was necessary to re-position the placard and scales relative to the camera. Here we look at the positioning of scales only in relation to the last of these vantage-points.
>
> **R** told me to place a horizontal scale (A) along the top of the section, with the placard behind it, and a vertical scale (B) set against the section. Looking through the viewfinder - adjusting the aperture and focus and shifting his own position - he gave me instructions as to how to move scale B (by moving the top to the left or the right) and scale A (by swinging one end towards or away from him) in order that they should appear to be precisely vertical and horizontal. The placard then had to be re-positioned so it was not obscured by the vertical scale. Once satisfied with this arrangement, he asked me to place a ranging-pole (C) along one edge of the ditch; this also required some adjustment, as I then had to swing the further end of the ranging-pole towards the ditch, in order that it should appear to be perpendicular to scale A, as seen through the camera. All the scales then had to be finely adjusted. Only upon completion of this joint task, which took at least two minutes to accomplish, did **R** actually begin to take the photographs.
>
> When **R** had finished, I took a photograph of my own from approximately the same position and angle - see Photo 10.
>
> [RE19]

The example shows that scales or ranging-poles are not placed haphazardly upon the material field; their exact positioning is clearly important. But on the other



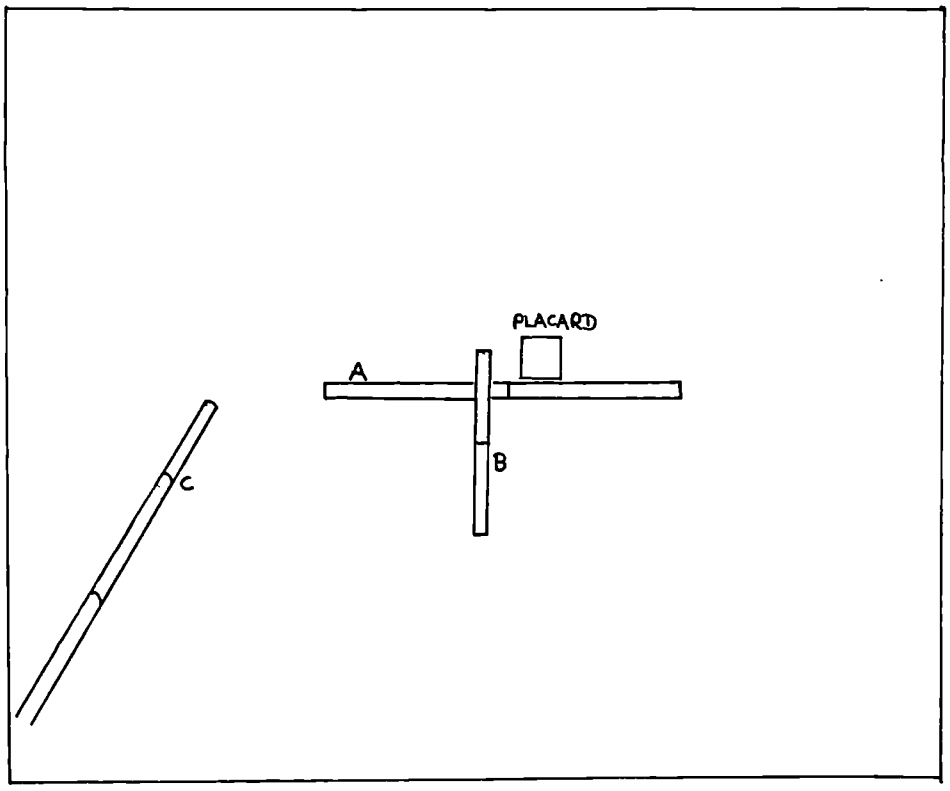


Photo 10: Scales and Placard (RE19)

hand, the arrangement of scales in Photo 10 is not the same as that in other photographs of other material fields. Each material field to be photographed seems to present a more or less unique situation and task, and to lead to a more or less unique arrangement of scales being set out. Indeed, it is apparent from the description of the activity of arranging that scales are positioned according to a complex and inter-related set of variables:-

1. **the material field**, its topographical character, the shape and proportions of the feature (eg. scales *A* and *C* are placed parallel to the side and section respectively of the excavated ditch segment; scale *B* is placed vertically on the base of the ditch at the very centre of the section), as well as the 'meaning' of the evidence - see 4.

2. **the horizon**, and other objects or surfaces in the environment, by reference to which the photographer judges the horizontal and vertical (eg. scales *A* and *C* are horizontal; scale *B* is vertical; the camera/picture plane, though pitched at an angle away from the vertical, has a horizontal axis).

3. **the viewpoint** taken up by the photographer/camera. (eg. scale *A* is positioned so that it is parallel to the picture plane, and perpendicular to the vertical axis of the photographer's body; the other two scales are also orientated in relation to his point of view).

4. **the cognitive stance** adopted by the photographer; his intentions, purposes and understanding of the evidence (eg. the total arrangement of scales effectively frames the significant object, so that it stands out in the picture, leaving those objects which are not perceived to be significant - such as the two ploughmarks behind scale *B* - very definately in the background).

5. **the system of scales** as a whole; each scale is orientated relative to all the others (eg. scale *A* is perpendicular to scale *B*, which is perpendicular to scale *C*).

Perhaps the most important variables are 3 and 4; that is, the physical and cognitive standpoint adopted by the photographer. If the photographer shifts his position only slightly the whole arrangement (5) will be skewed; the scales will have to be re-adjusted with reference to a new horizon (2), which of course is

also relative to the photographer's point of view. Because 3 and 4 are not static but changeable (at least until the picture is taken), 2 and 5 are also of a shifting character; this explains why the scales have to be continually re-positioned or re-orientated by a co-worker, while the photographer moves this way and that to find the best vantage-point and angle. [The only variable which could be said to be independent of his point of view is 1; this has been brought to light and shaped in a chain of material transactions preceding the act of inscription. But since the practical constitution of the object was directed and monitored by the photographer, in his role as supervisor, we find that even this variable is inextricably bound up with his cognitive standpoint, at least in a historical sense.] To find a constant in this type of situation we should look not so much at the photographer or the material environment, but rather at the instrument through which the subject-object relation is mediated; that is, the camera itself.

6. **the mode of representation** that is embodied in the camera. It is well known that the camera embodies in its very design geometrical principals similar to those of the perspective method of drawing. As Tagg (1983:3) puts it, the camera "owes its structure not to the model of the eye, but to a particular theoretical conception of the problems of representing space in two dimensions." This means that, unless a transcendental perspective is specifically constructed as an artifice of the photographer - eg. by taking a picture of a flat surface from directly above - a point of view is always specified in the scene depicted. The viewer (Reader) of a photograph can usually judge her own virtual position, which coincides with the real position of the photographer when the picture was taken, from various perspectual cues in the scene (the location of the horizon, the relative size of objects, the varying texture of the ground surface as it recedes into the distance, etc). Oblique photography is therefore quite different from vertical photography or planning; scales and other tools-for-CULTURE have to be set out in accordance with the rules of perspective.

Despite the perspectivism (or perspecti-vision) that is inherent in the camera, many archaeological photographs would still be characterized by a certain 'flatness' or lack of depth if it were not for the use of scales. This is because detailed shots of ground surfaces do not usually show the horizon in the background, or familiar objects such as trees or people, by reference to which the Reader can situate

herself in relation to the material field. In the absence of any supplementary cues, a material object depicted may be of indeterminate size, an indeterminate distance away, of indeterminate dimensions, and even of indeterminate orientation relative to the Reader. The principal function of the scales is to supply the missing information that would enable the camera to construct a representation of three-dimensional space; they are used (as the term 'ranging pole' suggests) to *arrange* space or to set out a range, and this always has the effect of specifying a perspective or point of view for the Reader.

Let us consider what Photo 10 would look like if the scales were not there. Because of the oblique angle of the shot there are enough perspectival cues in the scene to specify which way up the picture is meant to be viewed - or, to put it in different words, which way up the Reader is meant to orientate herself in relation to the picture. The Reader can situate herself upon the grass baulk, looking down the centre of the base of the ditch as it extends away from her. But although the Reader can tell that the grass is raised above the level of the trowelled surface, she cannot tell by how much; nor can she tell how far away from her viewpoint the various parts of that surface are. She cannot tell, therefore, the size of the ditch-segment. It is also difficult for her to ascertain whether she is looking down at a horizontal ground surface, or straight ahead at a surface which slopes uphill. This makes it hard for her to judge the *shape* of the ditch-segment; ie. whether the sides of the ditch are parallel, whether the ditch is wider at one end than the other, how deep the ditch is, etc.

Within the perspective system of representation, then, the size and shape of objects, and the distance between objects, is always relative to a point of view. What has happened here is that the camera has constructed a *partial* perspective or point of view for the Reader. Let us now see how the scales are set out in order to complete the task that the camera on its own would have left unfinished.

- In providing an objective guide to the size of the object, the scales inform the Reader how near or far her virtual point of view is in relation to the object; that is, in fixing the size of the object, the scales necessarily fix the distance between the object and the observer. In this case, for example, the Reader

can tacitly situate herself (ie. without any overt calculation) approximately 3m away from the section facing her.

- Scales *A* and *C* set out a *horizontal plane*; the section, together with scale *B*, sets out a *vertical plane.* These provide the Reader with information not just about the material field (eg. that the ground surface is more or less horizontal) but also about her own position and posture (eg. that she is looking down, rather than straight ahead). It enables her to orientate the vertical axis of her body relative to the ground surface on which she is standing and the section which is facing her.

- Scale *A* provides a *transversal line.* Scale *C* provides an *orthogonal line.* Scale *B*, situated at the very centre of the section of a symmetrical feature, and forming an axis of symmetry both for the feature and the photograph as a whole, provides - if a line is extended from it in both directions - the *principal ray* that links the *spectator point* with the *central vanishing point* (for clarification of all these terms, see Kubovy 1989). The central vanishing point - where principal ray and orthogonals converge (note that lines drawn through scale *C*, scale *B*, and the two sides of the ditch segment all converge on a single point) is situated on the horizon. Thus the scales, together with other cues, specify the approximate position of the horizon, which is not itself in the picture. The horizon, in turn, enables the Reader to orientate herself further in relation to the scene (ie. it tells her the level of her eyes if she raises her head to look straight in front of her).

[Note that the Reader does not require a knowledge of the *theory* of perspective in order to see three-dimensional space in two-dimensions, any more than the photographer requires such a knowledge in order to construct a representation of this space. Both Reader and photographer can tacitly comprehend their position relative to the horizon without having to work it out explicity in geometrical terms. What is required, however, is a familiarity with the conventional mode of representation employed. As Herskovits (1948:381) points out, people in other cultures who are innocent of the method of perspective and the art of photography may see a photographic image as merely "a meaningless arrangement of varying shades

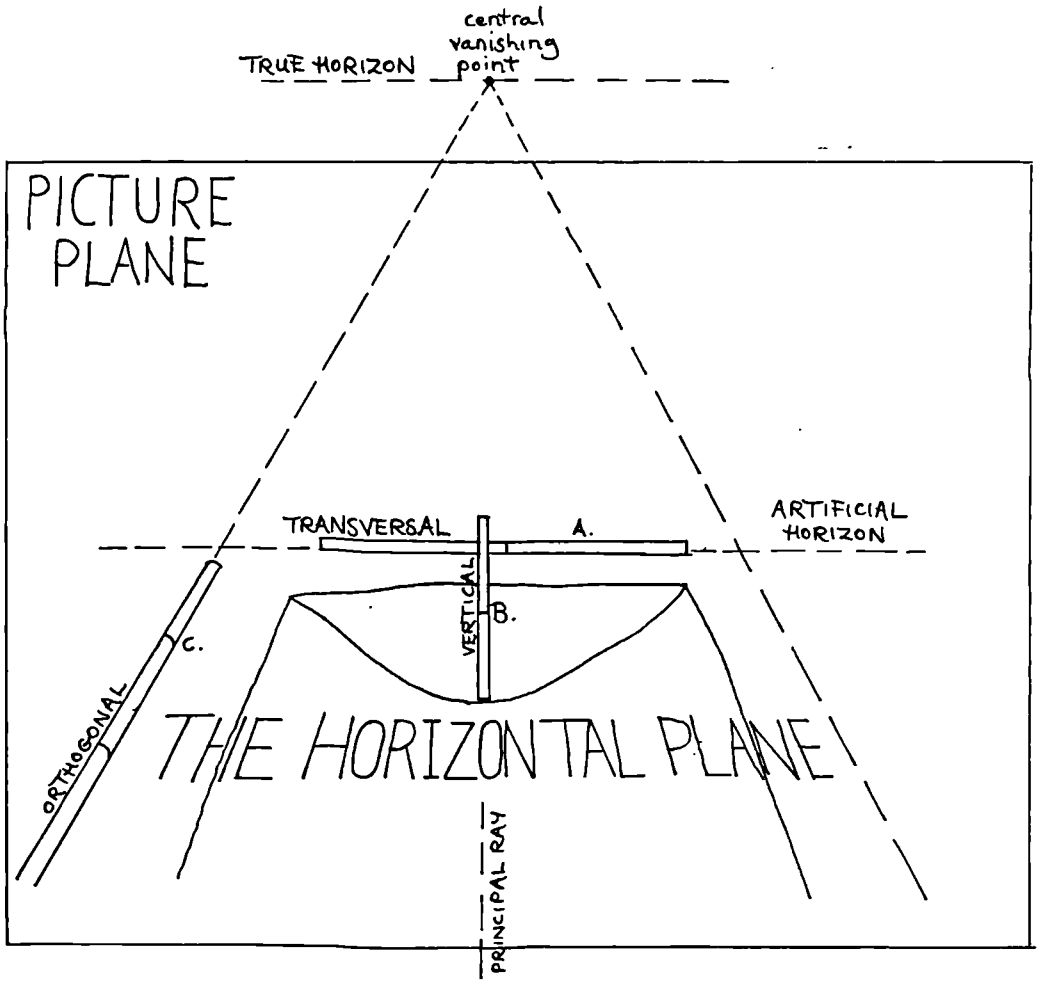


Figure 30: A Matter of Perspective

of grey on a piece of paper." (see also Hudson 1960, Cole and Scribner 1974:64-80, Layton 1977)].

If archaeological photography necessarily makes use of the method of perspective embodied in the camera, however, it does so according to a specific set of conventions or customs. As we have seen (Section 11.2), it is conventional practice *not* to specify individual perspective in other forms of depiction, and to a certain extent this applies to photography as well. That is, scales can be manipulated in such a way as to not only draw the Reader into the scene - providing her with a particular point of view - but also to simultaneously cancel out that point of view by providing her with the means to adopt a transcendental perspective, looking down upon the evidence from directly above:-

- Whereas the vertical scale *B* forms an axis of symmetry, the transversal scale *A* forms an *artificial horizon*, separating neatly the foreground from the background. This artificial horizon marks the end of the *depth of field* that has been constructed with the scales. (Scale *C* places scales *A* and *B*, and the section itself, a certain distance away from the picture plane; scale *B* places the base of the ditch a certain distance away from the horizontal plane defined by scales *A* and *C*; the background, as a result, is noticeably 'flat' compared to the foreground).

- In *framing* the significant object, the scales not only set out a space for the Reader; they also tell her where to focus her attentive gaze within that space. (A subtle framing of the object has already been achieved in the cleaning operation which preceded the act of inscription. Only the ditch segment and a small area of the surrounding gravel has been trowelled, making it stand out from the background. A more diffuse framing is achieved by focusing the camera upon the significant object, so that irrelevant details will be out of focus).

- In so far as scales *A* and *C* constitute a *frame*, this frame is positioned so as to provide the maximum facility for objective measurement of the significant object. The 50cm subdivisions of the scales enable the Reader to construct a conceptual grid over the segment - see Fig.31. Note that the part of the segment which is visible is neatly and inclusively covered by just six squares of the grid.

In this way it can be seen that the scales, set out according to the rules of perspective, provide the Reader with the equivalent of a *planning-frame* or *planning-grid*. As already noted, planning grids should be looked through from above rather than from an oblique angle - otherwise measurements taken by eye with reference to the grid will be distorted. The Reader is invited, so to speak, to *transcend* her embodied situation upon the grass baulk (to forget that it was the photographer's presence in exactly the same spot that provided her with this perspective and vantage-point) and to measure each part of the evidence as if she was floating freely above it, looking down through the grid from a perpendicular angle. In other words, she is invited to take a *transcendental* perspective upon the scene.

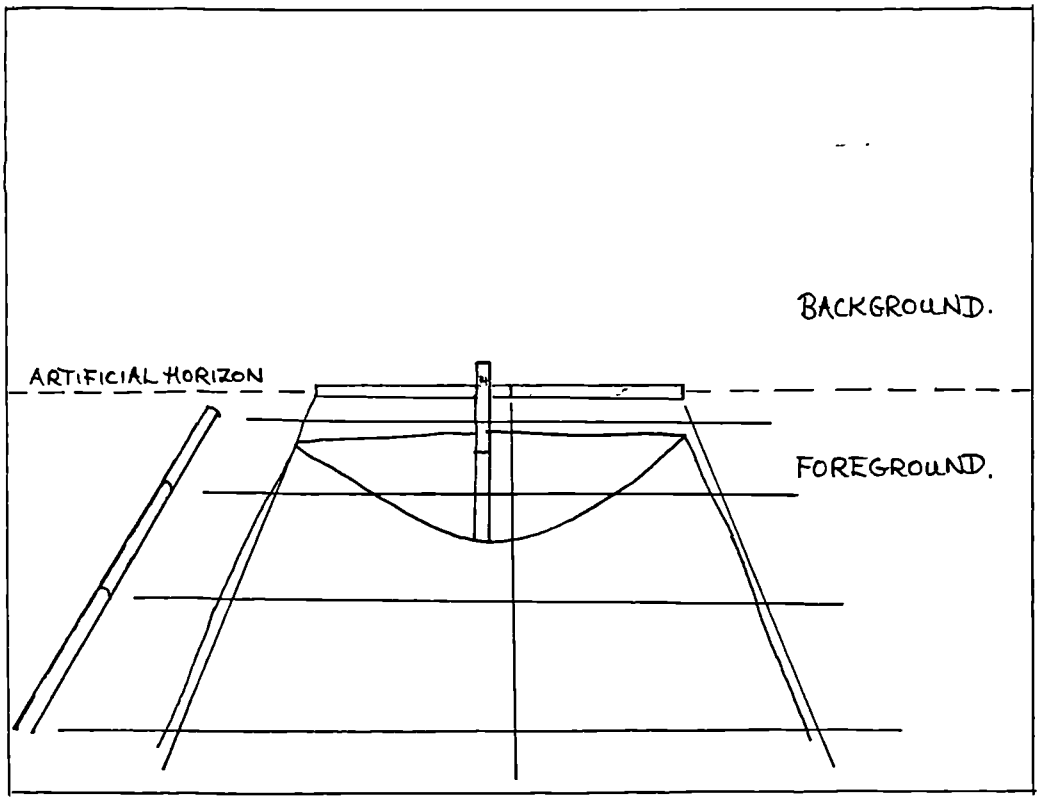


Figure 31: The Horizontal Grid

Even when the photograph is taken from an oblique angle, then, the method of setting out the scales is orientated towards the *ideal* of vertical photography and photogrammetry. As the physicist, Ziman (1978:87) remarks, "The ideal of scientific photography... is to approach as closely as possible to a 'diagram' where the underlying conceptual structure is emphasised, stripped of all inessential detail. Indeed, the marvellous LANDSAT photographs of the surface of the earth taken from a satellite [compare with aerial photographs of archaeological sites] ... are almost perfect maps whose 'subjective' characteristics have been eliminated by putting the point of observation high in the sky, far above any human eye."

A vertical grid, of course, is also created by the positioning of scales *A* and *B*. The Reader can view the section through the grid as if she was standing directly in front of the section instead of looking down at it. The horizontal and vertical grids, taken together, provide the Reader with multiple perspectives upon the scene.

11.6 The Virtual Presence of the Reader on Site

During the discussion on the setting out of the scales for photography, we made something of an excursion away from the practical events of excavation to consider the position of the Reader. This excursion from real space into textual space was necessary because, in a very real sense, the Reader was virtually present - as the consumer for whom the product was intended - in the photographic event. Indeed, the object was constituted, fashioned and framed according to the requirements of the Reader. This is true to a certain extent of all material transactions and acts of inscription, but is especially noticeable in the taking of photographs. Perhaps the main reason why the usage of cameras is restricted to senior personnel is that the ability to construct a transcendental perspective for the Reader (with an instrument that, by its very design and construction, embodies a mode of representation specifying individual point of view) comprises a large part of the skill of archaeological photography. The photographer has to be familiar with conventional modes of representation employed in archaeological texts - has to know what would 'look right' and 'look wrong' to the Reader in the light of those conventions. Ordinary diggers, who live and work mainly outside the academic world of textual production, may not have this familiarity.

Most of the practices we have looked at that are associated with site photography are oriented by and towards textual conventions. The cleaning of the material field, the removal of tools-for-NATURE, the placement of tools-for-CULTURE, the use of the perpendicular angle, the setting out of a grid, etc. - even the way the photographer ensures that his own shadow is not cast over the evidence to be depicted - are all activities which are oriented towards the Reader, constituting that evidence as a textual object for the activity of *reading*. It is significant that, when a photograph is taken for working purposes only (ie. not for textual reproduction) such conventions are considerably relaxed. The material field may not be cleaned so rigorously, tools-for-NATURE may be left lying on the ground, scales are set down quickly rather than methodically, and the photographer is likely to take the picture from the most convenient angle instead of spending several minutes finding the 'right' vantage-point.

The close relationship between the photographer and the Reader is evident in

the photograph itself. The Reader's point of view is the photographer's point of view, and vice-versa. It is as if two bodies had merged into one, to occupy the same position within the same horizon - to bring about, in Gadamer's (1975) well-known phrase, a "fusion of horizons". In this sense the actual taking of the photograph (and the subsequent viewing of it) can be characterised as an *intersection* or *conjunction* of practical space and textual space - a concrete moment when the photographer infiltrates the text, and the Reader, so to speak, steps into practical situations.

The Reader referred to, of course, is not an individual person but a composite personage, encompassing all expected readers, embodying the conventions, customs, modes and styles of representation prevalent in a particular field of textual production at a particular time. It is this virtual Reader who occupies, as it were, the seat of *authority* - who directs, prescribes and instructs the proceedings - and for whom all practitioners are essentially *instruments.* There is definitely a sense in which, during the everyday events of excavation, the Reader is looking over all our shoulders. Far from the Reader being held captive and imprisoned within the forms of representation produced by practitioners, the opposite is nearer to the truth. It is as much a case of the practitoners orientating their activity towards the Reader as the other way round.

The requirements of the Reader are, as we have seen, somewhat paradoxical. On the one hand the Reader requires the evidence to be constituted for *reading* in particular ways (brought to light, shaped, cleaned, measured, represented in textual form). But on the other hand the Reader requires the evidence to be constituted in such a way that it should appear not to have been constituted, by removing all traces of the fashioning processes (footprints, trowel-marks, tools-for-NATURE, the skilled workers themselves, individual viewpoints, etc.) in the very process of fashioning it. The paradox is that the object which can be taken by the Reader to be independent of subjective point of view has actually been shaped to fit many such perspectives, merged and brought to bear upon the object during intensive subject-subject and subject-object activity. And a great deal of work or labour has gone into the shaping and framing of the object so that it should seem as though it is not the product of work or labour (cf. Latour and Woolgar 1979:240). This, after all, is how objectivity is *constructed.* "There is no escape from the work of

constructing an object", Bourdieu (1988:6) argues; "There is no object that does not imply a viewpoint, even if it is an object produced with the intention of abolishing one's viewpoint - the intention of overcoming the partial perspective that is associated with holding a position within the space being studied."

Part III

Conclusion

Chapter XII

TIME, AGENCY AND REFLEXIVITY

12.1 The Material Culture of Material Culture

As the reflexive or ironic form of *ethno-archaeology*, the preceding *ethnography of archaeology* has retained the general ethno-archaeological interest in the study of material culture. The focus, however, is on the material culture of archaeologists themselves - not just the material culture of past societies which, by virtue of being appropriated by archaeologists in the act of discovery, becomes their material culture too, but also and especially *the material culture through which archaeologists apprehend the material culture of others.*

Turning the outward-looking gaze back on the treasure-house of material items of equipment stored in the toolshed and the planning-hut is a strategy that is likely to cause surprise. Such implements are rarely if ever constituted as the objects of attention in themselves; they are used to work upon other objects, and it is those objects being worked that occupy attention. Tools such as trowels, spades, brushes, cameras, scales, theodolites and planning-frames are the mundane things of everyday life for archaeologists working out in the field. Yet these are the implements through which the objects of knowledge are brought to light, manipulated, meaningfully-constituted and transformed into textual data. It is precisely these mundane articles that mediate the subject-object and culture-nature transactions that characterise excavation activity. Any general (ie. reflexive) theory of material culture should start here.

The paradox has come to light that we know the least about that which we know the most; the familiar and the close-to home are more estranged from us than the unfamiliar and the culturally distant. In studying the material culture of the distant Other, the role of our own material culture has become objectively hidden to us.

Hidden also is the role of our own agency (associated with the use of tools) in the constitution of objective meanings. This agency is at once *conventional* and *creative.* Tools-for-CULTURE deployed in acts of inscription (Chapter 11), for example, are particularly powerful vehicles for the reproduction of established 'ways of seeing' - modes of perception and representation which derive their authority from texts and textual conventions. It is through the imposition of the 'textual grid' that theory maintains its hegemony over the practical domain, removing all trace of the active contribution of the agents of discovery from its objective 'data'. The tools-for-NATURE used in material transactions (Chapter 4), on the other hand, are vehicles for the reproduction of tried and trusted 'ways of doing' (cf. Woolgar 1988:85 on the role of pipettes and other utensils in laboratory science:- "even such mundane objects encapsulate and sustain the culture of the laboratory, its beliefs, results and decisions from the past embodied in material artefacts."). The craft skills of excavation are inseparable from the tools through which they are applied; to aquire those skills one has learn how to use the appropriate digging tools. In this sense our material culture is not just the medium or conductor of our intentions in shaping other objects; it is also a medium through which the accumulated experience of generations of practitioners shapes the actions and perceptions of the tool-using subject.

This is not to deny the creative role of the agent or subject who uses the tool. The "habitus" (Bourdieu 1977) that comes to be objectified in material culture is both product and reproducer of praxis; although it *structures* the actions of the working subject it is also *structured* by those actions - cf. Sartre's (1976) concept of the "practico-inert", or matter in which past praxis is embedded . In Chapters 9 and 10 many examples were given of workers improvising conventional strategies from moment to moment to take account of emerging evidence. It is through the practical dialectic that unfolds between (the cultural skills of) the working subject and the (natural) object of labour that craft skills (and the action-meanings of 'tools of the trade') are *transformed.* Like human action itself, then, the action-meanings of tools have a "duality of structure" (Giddens 1984:297-304).

Tools derive their meaning from their mediating role in the relation between the subject and the object, and between culture and nature. Ingold (1986:28) points out the absurdity of treating the 'forces of production' of a given society as simply

an inventory of tools, considered as things in themselves. Tools derive their 'force' from the intentional cultural agents who make and use them, in relation to the 'resistance' of the objective material environment. Without a force there would be no resistance, and without resistance there would be no conception of force. As the means by which the subject acts upon the object, and one of the channels through which the object acts back upon the subject, the tool *is* the subject-object relation, in an objectified form.

If an analysis of the tool is absolutely central to our understanding of the transaction between the subject and the object, the opposite also holds true. We cannot apprehend the meaning of a tool independently of the subject-object relation. Even artefacts which are discovered in the ground - the artefacts of other cultures - have a referential structure which relates them to the capabilities and powers of the human body (how they can be held, manipulated, put to use - see especially RE23, Section 8.6). Archaeologists routinely perceive and interpret the artefacts they discover in terms of the action-possibilities of their own bodies, attributing their own taken-for-granted powers of agency to the (inferred) subject held to be causally responsible for making/using those artefacts. A theory of material culture, then, is nothing if not linked to a theory of the body (see Blacking 1977, Douglas 1970, Turner 1984).

The paradox is that the objects and patterns which archaeologists discover in excavation are not only the products or artefacts of past human action. Worked upon and brought to light through the use of material and cognitive tools in the act of discovery, these become our products or artefacts too. Inevitably and unavoidably they are *double-artefacts* - a point that has enormous implications for archaeological epistemology, which tends to exclude the very idea of the causal agency of the archaeologist in the production of data. To bring this agency to critical attention, this thesis has had to adopt the kind of strict reflexivity recommended by Bourdieu (1991); ie. that sociologists (and, by extrapolation, archaeologists) should treat their own activity in the same way as they treat the activity of the subjects/objects of their research. As cultural beings ourselves, our own work, material culture and products should not be exempt from sociological and ethno-archaeological explanation.

12.2 A Question of Reflexivity

Reflexivity implies a kind of 'turning', or 'springing back'. In order to show how the findings of the fieldwork report can be integrated into archaeological knowledge it is necessary to make full use of the reflexive turn. For many of the arguments put forward here are already well known to archaeological theory; it is just that they are normally applied to the study of the distant Other, rarely to the activity of archaeologists themselves. Bringing archaeological explanation back to bear upon itself is an operation that, by virtue of rarely being performed, may lead to surprising results. Here we draw from an excellent paper entitled "Context, structure and efficacy in palaeolithic art and design" by Margaret Conkey (1980).

> "The process of artefact manufacture, a transformation of nature into culture (which then is most often used to mediate between nature and culture), creates a form from raw materials." (Conkey 1980:233)

This definition serves us well, because it is as applicable to archaeological practice as it is to the practices of Palaeolithic artists. Archaeologists create a **form** (data, explanation, knowledge about the past) from a **raw material** (material remains). This raw material is **natural** in the sense that, prior to its emergence and manipulation by archaeologists in the act of discovery, it existed independently of archaeological knowledge and practices. Data, however, are indisputably **cultural**, in the sense that they depend for their existence on archaeological practice; they are generated from material remains in practice. Any archaeological excavation simultaneously destroys material remains and creates data, and can therefore be regarded as a **transformation** of nature into culture. Knowledge produced in this way is subsequently utilised on other excavations to **mediate** between nature and culture.

> "The transformation of a piece of raw material, whether bone, antler or cave wall, into an artefact or cultural product is a form of communication. In Palaeolithic art not just any bone, antler or cave wall was selected ... the selection of raw material and morphology plays a great role in the design process. It is this that constrains decorative choice and generates structural principles." (Conkey 1980:243)

Here too we find a direct parallel in archaeological practice. The transformation of material remains into data is also, of course, a form of **communication** - precisely because these data have to be meaningful within the system of signs, models, theories, etc, that constitutes archaeological knowledge. As in Upper Palaeolithic art, not just any raw materials are selected. Material remains are selected only if they are perceived to be relevant to the existing system of knowledge, while others are perceived to be irrelevant, or simply not perceived at all. The **selection** of material remains thus plays an important part in the **design process** of knowledge construction: it **constrains** the range of possible interpretation and generates (reproduces) **structural principals** of archaeological thought.

> "Studies of eskimo carvers suggest that the artists do not conceive that they are applying or adding a pattern or form to the raw material. Rather, the form or pattern exists *in* the raw material, and they view their work as being about releasing those forms from the material." (Conkey 1980:234)

Like the eskimo carvers, many archaeologists do not conceive they are **applying** or **adding** a pattern or form to their raw material. Facts about the past are considered to be an inherent property of the material record. Archaeologists tend to view their work as being about **releasing** (discovering) those facts.

> In common with other archaeologists dealing with Upper Palaeolithic material, Conkey identifies analogy as a crucial principle involved in the artistic process. "(The artistic process) is not one of merely seeing appropriate shapes and bosses, of projecting images onto, or 'seeing' images in, any cave formation or piece of antler. Rather, an extension of class through analogy takes place. The class of bison-rumps, for example, is extended to include certain cave wall shapes that, with a certain amount of treatment (eg. painting) and in a certain context of action, can stand for a bison-rump... In this sense the artistic process depends on additives; one must add not only aspects of form... but also a context in which to release the image, to effect the extension of class" (Conkey 1980:242).

The ability to use analogy is deeply embedded in human cognitive processes and in human praxis. As human beings themselves, archaeologists are also analogical practitioners. When an archaeologist interprets a configuration of material

evidence as a 'burial-pit' for example, an **extension of class** through analogy occurs. The class of burial-pits is extended to include certain material phenomena which, with a certain amount of **treatment** (eg. the manipulation of the material field through the use of tools) and in a certain **context of action** (notions of human agency analogically transposed from the archaeologist's own practical experience to his or her concept of the past) can stand for a burial-pit. It is only by **adding** form and context in this way that the **image** (fact) of a burial-pit can be **released from** (discovered in) material remains.

> "Perhaps it could be argued that engravers or painters were often not so much applying culture to nature...as extracting culture *from* nature, for the image and part of its meaning is in the raw material that is selected for modification. The paradox of the artistic process is that, at least on one level, the artist is trying to leave culture behind and move toward nature, to create natural forms and depictions...However, the created object is inevitably cultural, and the natural component is transformed from an object to a sign." (Conkey 1980:234)

In this and other passages Conkey draws attention to the dialectic between the artist and raw material, (or - by analogy - between the archaeologist and the material field being worked in the act of discovery). Like engravers and painters, the archaeologist tries to leave cultural preconceptions behind in order to produce 'natural' representations of material evidence. But since archaeological practice is itself a cultural phenomenon, the **created object** (data, knowledge of the past) is inevitably **cultural** too, and the **natural component** (material remains) is **transformed** from an **object** to a **sign.**

Of course there are vast differences between archaeological practices in the present day and the practices of Upper Palaeolithic artists (just as there are between prehistoric cave-painters and contemporary Eskimo carvers). Perhaps the main difference is that the natural object or raw material selected and worked by archaeologists has already been fashioned or effected in some way through human activity in the past. There are also different objectives and rationales entailed in 'art', however utilitarian, and 'science'. And the historical and cultural contexts of these practices are completely different. Nevertheless there is a common ground

underlying the differences, for both Palaeolithic artist and present-day archaeologist are engaged in a *process of production* - the fashioning of a product from a raw material, through the use of material and cognitive tools. If a kind of 'labour process' theory is applicable to the one, then it is applicable to the other too.

12.3 Analogies-in-Action: Analogies-of-Action

In the last section I used an archaeological account of the process of artefact manufacture in the past, by analogy as it were, to shed light on the production of a very different kind of artefactual product (archaeological data) in the present day. Normally, however, the analogy works the other way. Archaeologists draw from their own practical experience, as the users and makers of artefacts themselves, to constitute the objects they discover in terms of past human agency. By turning the analogy back in on itself, I have tried to highlight the analogical structure of archaeological interpretation.

This fits in with the account of the metaphorical structure of cognition and perception developed by Lakoff and Johnson (1980), who argue that we understand actions, objects and events in terms of "experiential gestalts" - multidimensional structures of meaning (themselves derived from past experience) that organize ongoing experience into structured and meaningful wholes. Whenever we interpret a discovered object as a hammerstone, for example, we draw from our own experience of the kinds of motor-movements and intentions-in-action associated with the activity of hammering. And these bodily analogies inevitably carry a cultural overload (see Section 12.4). In this sense "*every* experience takes place within a vast network of cultural presuppositions...Cultural assumptions, values and attitudes are not a conceptual overlay which we may or may not place on an experience as we choose...we experience our 'world' in such a way that our culture is already present in the very experience itself" (Lakoff and Johnson 1980:57).

It also fits with Leatherdale's (1974:1-32) account of the role of analogy and metaphor in science. Leatherdale distinguishes between 'manifest analogy' (based on similarity of properties) and 'imported analogy' (based on inferred similarity of underlying or causal relational structures). He argues that the British empiricist tradition has tended to concentrate on the former at the expense of the latter, leading to a view of analogy as a linear transfer of ideas in a step-by-step,

quasi-deductive process. It is easy to find the emphasis on manifest analogy in archaeological theory. As Stiles (1977) explains, "A specific set of ethnographic data is compared to an analogous set of archaeological data. First one formally describes the physical characteristics of the archaeological material in question. A potential ethnographic analogy is then recognized, of which the analogous physical properties are examined. The degree to which the two set of properties agree determines the probability of the activity which gave rise to the archaeological data being analogous with the ethnographically observed data." (For a critique of this method of reasoning, see Hodder 1982a:16-27).

Imported analogy, on the other hand, is more a matter of 'perception', 'noticing', 'recognition' or 'discovering' than formal logical reasoning (Leatherdale 1974:140). It is an act, which involves the importation of past experience into the perceptual domain, to make sense of present experience. Unlike manifest analogy, it does not depend upon properties and attributes being shared by source and target sides of the analogy. As an example of imported analogy we could perhaps cite Rutherford's planetary model of the structure of the atom. There are no obvious or manifest properties shared by the solar system and the atom, but the importation of a set of relations *out* of the concept of the solar-system and *into* the concept of the atom enables the sub-atomic system to be meaningfully-constituted in terms of that relational field (Uemov 1970). The practical analogies which take place in excavation are of this relational kind, except that the relational field within which discovered objects are interpreted - far from being an abstract concept - is the practical space of the body itself. The manifest properties of a discovered artefact may or may not have parallels in our own cultural experience, but archaeologists can still perceive its *artefactuality* and *design* - can still meaningfully-constitute the object in terms of past human agency - by reference to the action-possibilities and action-limitations of the body, with which we are all so familiar.

Crucially, such analogies are not only *about* action; they also occur *in* action. This has important implications for our understanding of the analogical constitution of material evidence. It would be quite wrong to argue, like Dalton (1981), that analogy restricts the range of archaeological interpretation to the explanation of cultural forms that are paralleled in present-day societies. This applies only to the use of manifest analogy or analogical *arguments* - not to the use of imported analogy

or *analogies-in-action.* In action, the analogical practicioner is never dealing with a static set of data, but always with a changing field of phenomena. It is true that cultural presuppositions lead us to interpret material evidence in particular ways, and therefore to particular strategies for digging and manipulating that evidence. But it is also the case that, as the configurations of evidence continue to emerge from the unfolding material field, they frequently 'contradict', 'surprise' or 'resist' the applied analogical schemes. Schemes have to be modified or changed in practice to take account of emerging evidence, leading to different anticipations as to what is likely to emerge, and therefore to modifications of strategies for further excavation. Thus the object acts back upon the subject, and nature acts back upon culture. Instead of a one-way projection of culture onto nature there is a dialectic - a dialectic that unravels through time in the context of practical labour. In this context analogy can be a profoundly creative operation (see the account of RE 37/41 in Sections 9.6 and 9.7). As Leatherdale (1974:22) argues, "what imported analogy and the 'analogical act' lead to is not a limited inference to such-and-such a property or properties, but a multi-dimensional gestalt-like insight into new ways of looking at phenomena."

Imported analogies (analogies-in-action: analogies-about-action) are embedded in the data or facts which are the products of the act of discovery, and underly the manifest analogies which are explicitly drawn between archaeological and ethnographic data in theoretical discourse. Largely tacit and taken-for-granted, they are at once "trangressions of the symbolic order and the limits it sets" (Certeau 1984:54), enabling the production of original knowledge as well as the reproduction of existing structures of meaning. In the act of discovery, knowledge is not only reproduced; it is also *transformed.*

12.4 The Paradox of the Body

The practical analogies embedded in the perception of material remains are based upon and drawn from experience of the body - not so much the body as an analytical concept, but rather the 'body-as-lived'. We are all familiar with what it is like to be embodied in the world, capable of moving around and exploring the environment - being able, as an active source of causal powers, to effect changes in that environment, to manipulate, displace, order and transform the material

things encountered in everyday life. It is because we experience ourselves as intentional, purposeful agents that we impute the same powers of foresight and intent to other human agents - attributing to them the basic abilities of the body to put intentions into action and achieve objective results. Thus we find that whenever archaeologists engage in deep inference they always constitute the inferred subjects (the people in the past held to be causally responsible for producing observable material effects) as human beings, very much like ourselves.

In this sense the body serves as the *basis* of practical analogies. Archaeologists tacitly draw from knowledge of the body to make inferences that cut across cultural differences between ourselves and people in the past, the assumption being that the body is a universal or 'natural' feature of human existence. All human beings are embodied in the world, and this embodiment takes a characteristic form because it is genetically prescribed. So although human action may be subject to an infinite range of socio-cultural transformations, cultural action has a natural foundation and operates within natural limits. An implicit understanding of this 'natural' body and its 'natural' forms of action *enables* the interpretation of the material effects of human agency (though it may constrain the interpretation of the material remains of pre-sapien hominids - see Binford 1981 for an account of how our taken for granted assumptions about 'human' action may condition our understanding of hominid behaviour).

But the body is not only the most *natural* feature of human existence; it is also the most *cultural.* All culture-nature paradoxes (including the central anthropological problem of squaring the diversity of cultural forms with the unity of the human species) have their origin here. For the body is saturated with social symbolism, skills, habits, rationales, attitudes, conventional ways of seeing and doing things, as well as being the primary vehicle for the reproduction of those social values in practice - which means that the body is not only culturally and historically situated, but also the vehicle through which socio-cultural change is brought about. For these reasons practical analogies, which have the body as basis and source, always carry with them cultural values and presuppositions - transposed from the (setting of) the present into (the concept of) the past. This cultural 'baggage' inevitably *constrains* archaeological interpretation, in ways that are never easy for us to discern.

Recent work in feminist archaeology, for example, has brought to light the intimate connection between gender-relations in the present day and gender-relations that are manifested in explanations of the past (Conkey and Spector 1984; Gero and Conkey 1991; see also the various contributions in Archaeological Review from Cambridge 1988, vol 7:1). Exactly how contemporary power-structures related to gender 'get into' our knowledge of the past is a contentious issue, but it seems likely that analogy, or a process akin to analogy, plays a major part. It seems likely too that, since gender relations are impressed upon and 'lived' by the body, such processes are embedded in perception and bodily action as well as in texts and theoretical discourse. Simone de Beauvoir (1952) argued that women tend to be constituted more as 'other' than as true subjects, and it is certainly the case that, when archaeologists engage in deep inference - which involves the (analogical) constitution of an (inferred) subject held to be causally responsible for producing archaeological patterns - the constituted subject is predominantly male. Hence we have the concepts of 'man the hunter' and 'man the toolmaker', with women seen to play only a marginal role in human evolution and historical process (Dobres 1988:33-4). A whole prehistory has yet to be written that incorporates women, alongside men, as active agents (Gero 1991).

Gender theorists have also pointed out that women tend to be metaphorically identified with nature rather than culture (Ortner 1974:72). Only recently has it become clear just how deeply the symbolism of "natural women, cultured men" (Sydie 1987) is embedded in archaeological explanation of the past. In excavation practice, of course, archaeologists set up a very powerful nature/culture dichotomy which is enmeshed in the actual perception and manipulation of the material evidence itself. The 'natural' is the background against which archaeological patterns stand out, or the vast remainder of material evidence which is thrown away or not excavated. Is it possible that the role of women as active producers in the past remains largely hidden because it is in some way associated with this 'natural'?

No doubt there are myriad other ways in which practical analogies constrain archaeological interpretation. In this thesis, however, I have been more concerned to highlight the ways in which analogy *enables* archaeological interpretation to take place in the first instance. It is through a kind of analogy, after all, that the changing conceptions of agency, subjectivity and gender in the present day

are beginning to change our perception of material remains and lead to a fuller 'engendered' understanding of the human past (Conkey 1991).

12.5 The Body and Time

One of the problems in bringing the concept of the body to the surface of archaeological discourse is that the body itself defies analysis. In everyday practice the body is normally experienced as the 'I' or *subject* from which a point of view is taken upon the objective world, or as the *instrument* of our intentions in acting upon that world. To constitute the body as the subject or object of analysis is literally to transform it from a subject to an *object*, and involves conceptually situating ourselves outside of the body in order to take a point of view upon it. The Cartesian dualisms of mind/body, thought/action, theory/practice, etc, are the inevitable products of this operation, whereby a 'disembodied' or 'transcendental' perspective is taken up upon the body and its practices. The moment we try to analyse the body-as-lived we find that we have a corpse on our hands, and that we are engaged in a process of dissection. Analysis tends to de-temporalise the body, the very essence of which is temporality.

It is not just that the body's activity takes place in time, but that time itself is inscribed in this activity; "Any action, as an intended bringing about of an effect, has a certain trajectory, a relation of before and after within it" (Hampshire 1965:72). In excavation practice, the actions of the embodied subject imbue material culture (the tools he or she is using) and the material field (the evidence he or she is working upon) with a temporal structure. When in the context of this practical labour the embodied subject engages in deep inference to make sense of the unfolding material field, the activity of the (inferred) subject who is assumed to be causally responsible for producing archaeological patterns is imbued with a temporal structure too. Inferences about past human activity always involves inferences about the temporal sequence of bodily actions and intentions-in-action entailed in that activity. *It is through our own experience of time, as agents of temporality ourselves, that we are able to conceptualise the temporality of past human action.*

The very notions of time and causality that are transposed into our concept of the past, and enable us to meaningfully-constitute material evidence in terms of past human action, are derived from our own practical transactions with the world. As

Hampshire (1965:73) puts it, " 'with a view to' and 'in order to' are unavoidable idioms in giving the sense of an action, the arrow of agency passing through the present and pointing forward in time. We are always looking at the present situation as arising from the immediate past through some agency, and as passing into some other situation by some force or agency which is operative now. The categories of causal explanation have in this way their roots within our own experience of ourselves as agents." Lakoff and Johnson also argue that the metaphorical structure of cognition is grounded in practical experience (see especially their account of how direct manipulation gives rise to a prototypical 'gestalt' of causation, which is elaborated upon metaphorically and is fundamental to our general understanding of the world. Lakoff and Johnson 1980; 69-76).

Paradoxically, then, the body is both agent and patient, both the giver and taker of meaning. Skills are acquired, knowledge is 'embodied', only so far as the embodied subject has explored and acted upon the environment. For it is in the practical context of such transactions that the world presents itself as a kind of *resistance* to applied *force*. Projects fail, tools break down, unexpected circumstances arise, etc - in this sense too nature imposes limits on cultural action. In overcoming such resistance we are engaged in the dialectic of nature-culture; by transforming nature we transform ourselves. Practical skills are at once the result of this dialectic and the means by which it is carried on. Thus 'embodiment' refers not just to the body but also to the environment in which it is situated; the environment (including the unfolding material field and the emergent object) is a crucial aspect of the act of discovery. In fact it is only by reference to the surrounding environment, as well as the embodied subject, that the act of discovery can be apprehended, its structure outlined, its range delineated. It is to the limits of the act of discovery that we now turn.

12.6 The Limits of the Act of Discovery

The act of discovery has been defined as an original encounter with the world, or transaction between the subject and the object. It cannot be clearly distinguished from that which is not the act of discovery, simply because most waking human life is a form of exploration - an active perceiving of the world - which is also a form of discovery. Nevertheless, it is possible to show that any kind of scientific

analysis (from the Greek *analuein*; to unloose, to detach), while it may increase our theoretical understanding, involves a progressive distancing of ourselves from direct 'lived' experience of the object in question. Consider, for example, the following sequence of events:-

1. A small circular feature is uncovered, recognized as significant, excavated, and found to contain a cremation-vessel, which reveals to the archaeologist the original purpose of the feature as a whole (ie. a cremation burial pit).

2. The cremation vessel, which has been removed intact from the feature and site where it was discovered, is excavated in a museum or laboratory. The contents of the vessel (charred human bone, artefactual material, seeds, etc) may reveal something about the nature of the burial rite, the status of the cremated person, and so on.

3. Seeds and other botanical material found in the vessel may be sent to a specialized laboratory for detailed examination under a microscope. Identification of ecofactual material may provide information about the ancient landscape, agricultural system, diet, etc.

Each stage of analysis is an act of discovery - an original contact with some aspect of the world, producing new knowledge about that world. But as our focus narrows and we dissect the original entity into ever smaller pieces, there is definitely a sense in which the totality of our experience of the object diminishes. The act of discovery is still there, but seems to contract or recede into the distance, in a series of step-like regressions.

Note for example, that as we move from 1 to 3, there is a progressive constriction of the horizon. 1 takes place out in the open air, in the sun and the rain, under the dome of the sky. 2 occurs in a building, or more precisely in a room, closed in by four walls and a ceiling. 3 is carried out under a microscope, the horizon in this case being the borders of the slide.

The contraction of the horizon is linked exponentially to a progressive increase in the degree of instrumentation. 1 involves the use of relatively crude implements (trowel, spade, shovel, wheelbarrow, etc) as well as direct manipulation of the material with the hands. In 2 natural sunlight is replaced by electric light;

the environment of the room is artificially controlled by central heating and air conditioning; the ground is replaced by a table as a working surface; much finer implements are used in the excavation of cremation-vessel contents than those employed by archaeologists out in the field. In 3 the examination of botanical evidence takes place with the aid of highly complex scientific instruments, in the wholly artificial environment of a laboratory. At this stage the *seeing* of the object is mediated by the microscope, and *touching* is also mediated by the use of intermediary devices. Direct bodily experience of the object, then, decreases as the degree of instrumentation increases.

Because each step, in dissecting the object further, leaves behind more and more of the total context, there is an increasing reliance on text. Text supplies the missing context. Take the textual dimension away from the object in 2 and you are still left with an object of archaeological significance, but an unprovenanced one. Take the textual dimension away from the object in 3 and you are just left with a handful of seeds.

As our attention narrows to explore the object in more and more detail, then, there is more and more reliance upon text and instrumentation, less and less direct bodily experience of the object and its original context - a progressive distancing of the observer from the observed. Paradoxically, however, the horizon or scope of our understanding seems to expand outwards as the physical horizon closes in on us. While in 1 the horizon of understanding encompasses only the context of practical human action in which the object was initially formed (eg. the digging of the pit, the depositing of the vessel in the pit, etc), in 2 a great deal more can potentially be discovered about the wider context of past social organization, ritual practices, etc, and in 3 the horizon encompasses a conception of the ancient environment as a whole. This appears to be a characteristic of scientific analysis in general: *increased theoretical understanding is gained at the cost of placing a distance between ourselves and the object of analysis.*

In subsequent stages of knowledge-production (the writing of theses, textbooks, theoretical works, etc) we reach the limits of the act of discovery. In so far as we come to rely solely on other texts - the reports written, for example, by the observers in 1, 2 and 3 - we tend to lose sight of the act of discovery and all

contact with the actual material object itself. Language presents us with the means of detaching 'lived' meanings completely from their experiential context. It is possible to build edifice upon edifice of texts, each grounded in previous texts. Analysis of texts or (textual) data is still a form of discovery, of course, involving a subject (reader) and object (text), but it is discovery of quite a different order. That is, it is the discovery of hidden or buried meanings amongst an accumulation of signs and signification; these meanings may or may not bear any relation to the things in the outside world to which they are understood to refer. Indeed, the ideology of representation - the notion (in empiricism) that the text exactly *corresponds* to reality, or (in post-modernism and literary theory) that the text *creates* reality - leads inevitably to an alienation from the act of discovery proper and the world-as-experienced. The act of discovery ends as soon as we complete the transition from lifeworld to text.

It could be argued, of course, that the act of discovery does not begin with the uncovering and recognition of an object or feature, that this event is itself pre-figured by and causally dependent upon a sequence of preceding events. For example:-

> 3. The site is recognized as an area of archaeological significance from crop-mark patterns on aerial photographs.
>
> 2. The plough-soil is removed to reveal the archaeological surface underneath, during the opening of the excavation trench.
>
> 1. The feature is uncovered, recognised and excavated.

In fact we find the same step-like regression in the approach to the act of discovery as we did in the departure from it. Each event entails a different scale of observation. As we move from 1 back to 3, there is an increasing degree of instrumentation (eg. 'digging' tools in 1, mechanical earth-moving machinery in 2, aeroplane and camera in 3), an increasing reliance on text (or, in this case, photographs; the siting of the excavation trench in 2 is informed by the aerial photographs taken in 3) and a progressive distancing of the observer from the observed. In step 3, direct bodily contact with the object, even contact mediated through the use of tools, has been lost entirely.

There is also a progressive constriction of the horizon. The open horizon of 1 is replaced by a partial or truncated horizon in 2 (since the operator of the earth-moving machine, sitting in the driver's cab, is compelled by the seating arrangement to face in one direction; surveying the whole sweep of the horizon would entail turning the machine a complete revolution). In 3 the horizon is provided by the viewfinder of the camera, or the borders of the aerial photograph. Anyone looking at the aerial photograph - which is a representation or sign of the object rather than the object itself - is entirely removed from the act of discovery.

Of course, it is possible to discover in an aerial photograph patterns of archaeological evidence which have never been noticed before, either from the air or from the ground. But in so far as this constitutes an act of discovery, it is a transaction between the viewer as subject and the photograph as object. The real objects, the material patterns themselves, do not figure in the transaction. This is what I mean when I say that discoveries in texts (or photographs) are of an entirely different order. They may provide the rationale and purpose for engaging in an act of discovery proper, just as the act of discovery provides the raw material or data for further theoretical analysis. There is constant feedback and cross-fertilization between the practical and theoretical domains. But generally speaking the act of discovery occurs in the lifeworld, not in the text.

While accepting that the act of discovery can occur in progressively more diffuse forms (2 and 3), then, we can now say something more about the act of discovery proper (1). It takes place in the zone of focal attention, immediately in front of the body. The emerging object is within sight, within reach; it can be directly touched and manipulated with the hands, or with tools assimilated to the hands. There is a minimum of distance, a minimum of intervening technology, between the subject and the object. And there is no artificial horizon - such as the borders of a photograph or the borders of a microscope slide - seperating the object under investigation from the material and social environment in which the research takes place. In the act of discovery, the meaning of an object is derived not so much from accompanying inscriptions, but from its immediate material context (Section 8.3), and in relation to the total configuration of evidence across the site as a whole (Section 3.2). An archaeological feature is a part of the site, which is a part of the

general landscape, which is circumscribed only by the natural horizon, where the earth meets the sky.

Perception has to be understood in this environmental context (Ittelson 1973, Gibson 1979). The way in which material evidence is encountered on excavation is conditioned by such factors as the weather. Frost may freeze the uppermost layers of features (making archaeological patterns stand out a brilliant white against the natural gravels, but rendering excavation difficult). Rain brings hitherto unseen patterns to light or washes away the material results of a whole day's work. The sun dries out the soil, causing clearly delineated soil-boundaries to vanish into thin air. It casts shadows over the ground surface, obscuring significant patterns further. But it also provides the light (far superior to electric light) that enables us to see these patterns in the first instance. And a cold wind blowing off the estuary not only sheds a thin film of dust from the quarry over the site; it also (or at least it did on one occasion) brought the photography tower crashing to the ground, and blew away our tea-hut. All this is part of the act of discovery. There are many differences between scientific work which takes place outside in natural light and open air, and scientific work which takes place in the artificial environment of a museum or a laboratory.

But the site is not comprised of material patterns alone: in an important sense it is comprised of workers and their working activity as well as the material which is being worked upon. The material environment *is* the social environment. When workers move around the site (on the network of planks laid out on the ground surface), for example, they travel not just from place to place but from person to person (Section 6.4). And these social transactions or 'visits' play a crucial role in the constitution of objective meanings (Section 6.5). As Ittelson (1973:15) points out, "environments are almost without exception encountered as part of a social activity: other people are always part of the situation and environment perception is largely a social phenomenon."

The individual subject is a participant in the environment, and the environment perceived is always relative to the *point of view* of this participant. If we look out across the site as it stretches towards the horizon, for instance, the horizon itself specifies our own position at the very centre of its circle, and our vertical stance or

Photo 11: The Horizon

posture relative to its horizontal, eye-level plane. Properly speaking, the horizon is neither purely objective nor purely subjective, but rather a mixture of both. In one sense the horizon is something we carry about with us wherever we go: it frames the terrestrial environment in such a way that the objects within it, and the spatial relationships between these objects, are perceived in relation (eg. near/far, right/left, up/down) to our own central position and posture. In another sense we retain our vertical stance - our *balance* - by continual reference to a horizon which is very definitely 'out there'.

Normally it is the things within the horizon, not the horizon itself, that occupy our attention. For the most part the horizon, like the body, is in the background - rarely attended to as an object in itself. Only occasionally, at sunrise or sunset for example (see Photo 11) does the horizon attract our interest. Focusing attention on the horizon is always a reflective moment, simply because it specifies our own body, as a kind of *axis mundi*, at the centre of the world perceived.

12.7 Reconstituting the Subject and the Object

In attempting to 'escape from the text', this research project has been to some extent opposed to the principal trend in post-modernist thought. Emphasis on the text and other forms of discourse as the means by which knowledge is constituted has led post-modernists to disregard the role of practical or non-discursive agency in the production of knowledge. Indeed, it has been necessary to "reclaim reality" - to use Bhaskar's (1989) phrase - from the textual theorists. I have tried to counter their 'de-centreing' of the subject with a 're-centreing' of the subject. But this does not imply a return to the Cartesian transcendental subject, divorced from the world of objects. The subjects or 'knowers' of the fieldwork report are real subjects - causal agents in the production of knowledge. They are *embodied* within the objective environment, which means that they are always historically, socially and materially *situated*. Far from taking up a transcendental perspective upon the world of things, they themselves occupy a space - a point of view - within the world. They have hands to touch and transform as well as eyes to see, and their feet are firmly planted on the surface of the earth. It is only in the act of inscription that, through the imposition of the textual grid, they construct a transcendental perspective upon the object of their labour, and thereby transform those objects into the 'raw material' for subsequent theoretical analysis.

To reconstitute the subject in this way is also to reconstitute the object. We are accustomed to conceiving of the object as a static and concrete entity - a plan in an excavation report or an artefact in a museum. But in the act of discovery the object has not yet been de-temporalised through the imposition of the textual grid. As it emerges from the unfolding material field in the context of practical labour - as it *takes form* in our perception and manipulation of it - the object has a temporal structure. Bound up in a dialectic with the explorations of the subject, its form is incomplete, its meaning uncertain. On the one hand it has a certain pliability to it, so that it can be shaped (both manually and cognitively) to fit our preconceived ideas. But on the other hand it has a hardness and resistance that refuses to let us shape it as we please; it re-shapes our ideas about it even as it is shaped by them. The dialectic that unfolds from moment to moment between the subject and the object can be characterised as the *ontological ground* of archaeological knowledge.

The reconstitution of the subject and the object (as a dialectical totality) is as opposed to the 'objectivism' of traditional epistemologies as it is to the 'subjectivism' of post-structuralism. Clearly objectivist schools have to take on board a recognition of the active contribution of the subject in the production of objective knowledge, and to recognise also that this knowledge is shaped in part by the social and historical conditions of its production. But this does not necessarily imply a shift to outright relativism. In the context of practical labour, the object acts back upon the subject, and nature acts back upon culture - and it is precisely an account of this 'recalcitrant' object that is missing from post-structuralist and other relativist schools of thought. A focus on practice, then, presents the means of overcoming the so-called 'problem of relativism', and transcending the subject-object dichotomy that is so deeply entrenched in modern thought.

Thus the principal intention of carrying out an ethnography of excavation has been to explore the nature of subject-object transactions on one of the 'sites' of the production of archaeological knowledge - and thereby to open up a field which has hitherto remained hidden and unexplored within the sphere of archaeological discourse.

12.8 New Perspectives: Avenues for Further Research

An ethnographic perspective upon archaeological practice leads to a view of knowledge production very different from that put forward by standard epistemologies. As Barnes and Edge (1982:3-4) point out, philosophies of science are often heavily idealized accounts which may bear little relation to what actually happens in practice: "the present need is for a general description which treats the beliefs and practices of scientists in a completely down-to-earth, matter-of-fact way... The real difficulty is the daunting extent of our ignorance of the basic features of scientific activity and scientific inference, but in truth this is no greater than that routinely faced by sociologists and anthropologists when they study other forms of culture."

Of particular importance, then, is the need for other ethnographies of archaeological practice to be undertaken. The fieldwork results reported here are site-specific, and specific also to the idiosyncratic point of view of the ethnographer. Apart from the fact that a comparative base needs to be established, subsequent field-

work reports will no doubt show up the weaknesses of this thesis, and contribute insights into archaeological practice that have not occurred to the present writer.

The idea of an ethnography of archaeology is emerging spontaneously and independently in various parts of the world. Of especial interest is a project which seeks to use the ethnographic perspective to explore issues of gender in archaeological practice (Joan Gero: personal communication). Failure to grasp excavation as an 'engendered' praxis was a feature of my own fieldwork. Indeed, the very gender-neutrality of the fieldwork report serves as a good example of how one's own point of view, in bringing some issues to the foreground, inevitably places others in the background. Nevertheless there is a common ground that links the research presented here with the feminist project. Both are concerned with, as Bhaskar (1989) puts it, "reclaiming reality" for sections of the community whose subjectivity and agency tends to be played down or denied within conventional theoretical discourse. And this project of reconstituting (the idea of) the subject in the present day is inextricably bound up with the project of reconstituting (the idea of) the archaeological subject in the (inferred) distant past - see Gero (1991) on women's roles in the production of stone tools in prehistory.

An archaeological excavation can provide the setting for many different research projects and methodologies. Almost any major problem that has arisen in theoretical discourse can be 'brought down to earth' and 'grounded' in practice. I hope I have sketched out the lines upon which such an 'existential archaeology' or 'archaeology of experience' might proceed. (There are of course many stages of knowledge-production which precede and follow on from the act of discovery - eg. management decisions, negotiations with landowners, post-excavation sorting, laboratory testing, cross-referencing and dating of finds, etc, right up to the writing and production of the text itself. An ethnography can be pitched on any of these levels).

This is not to recommend that an army of ethnographers should descend upon practitioners - only that a fraction of the consideration we give to the study of the distant Other should be devoted to the study of our own material culture and practices (through which we produce and reproduce our knowledge of the Other). It is, after all, by taking up a perspective on others which we never take up on

ourselves that the myth of the 'primitive' has been constructed and maintained (Kuper 1988). Laurens van der Post (1955) warned that the western world has become a kind of "one-eyed giant", which has forgotten how to "balance the fixed outward stare with a questioning inner glance." A reflexive archaeology must seek to re-open that closed inward-looking eye.

This thesis, then, has not just been about practice. It has attempted to tackle the issues of analogy and perspective on a theoretical level too. Indeed, the idea of an ethnography of archaeological practice arose in the first instance out of a questioning of established 'root-metaphors' or 'basic analogies', and the general perspectives upon the world that these give rise to. By shifting from the metaphor of material remain as MATERIAL RECORD or TEXT (an ancient metaphor based ultimately on the theological idea of the *liber mundi* - see Dalferth 1988:67-70) to the metaphor of material remains as RAW MATERIAL, it has been possible to construct not so much a *replacement* but an *alternative* theoretical standpoint. There are other possible root-metaphors; some may prove to be fertile and appropriate, others not. Further exploration of the metaphors that lie at the heart of scientific thinking and practice is likely to lead to very different research projects, new ways of looking at things, and the opening up of new fields.

12.9 The Ironic Twist

Irony has figured prominently in this thesis; the bringing back of the archaeological perspective to bear upon archaeologists themselves is itself a kind of 'ironic twist'. It is time, then, that the ethnographer too should be subjected to the same treatment.

The irony of a text that claims to 'escape from the text' will not have escaped the reader. In the last analysis it has to be acknowledged that, since all the findings of fieldwork have been translated into textual form, any escape from the text has only been a partial and temporary one. Acts of inscription (note-taking, sketching, taking photographs) formed a large part of the actual fieldwork experience. The textual data thus produced have been subject to further processing and analysis, leading up to the writing of the thesis itself. Events have been de-temporalised, re-ordered, artificially-bounded, abstracted out of the flux of experience in which they took place. In accordance with standard conventions of ethnographic writing,

whole areas or dimensions of human action have been 'written out' (eg. the personalities of diggers, which are manifested in everything they dō and say). On the other hand, the names and utterances of numerous well-known academic figures have been 'written in' - partly for the purpose of lending 'authority' to the text. In sum, just about all the general criticisms made of excavation-reports in Chapter 2 apply to this text also. And in trying to bring to light what is lost through the imposition of the 'textual grid' (Chapter 11), the ethnographer has imposed a textual grid of his own.

A further irony lies in the claim that the thesis has somehow apprehended the elusive subject-object relation. It is certainly true that the taking up of an ethnographic perspective has facilitated the constitution of the act of discovery (the subject-object transactions which characterise excavation practice) as the object of study. But the real subject - the ethnographer, or indeed the reader - has for the most part remained in the background. It could therefore be argued, quite rightly, that the subject-object relation has not been apprehended at all. This is the central paradox that I have been most concerned to bring to light. As J.W.Dunne (1956:13) so cogently puts it:-

> "It is impossible for you, who are part of the universe, to achieve the viewpoint of an observer standing outside that universe that includes you. You can only see one end of the stick; for the other end is you."

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Appendix A

Notes on Sketches

Sketches were drawn out on site, during interviews. They attempt to capture something of the present state of emerging patterns of significance, the position of workers within the material field, the direction they are facing and the tools they are using, and the direction in which the material field is unfolding as it is being worked. Originally intended for personal reference only, it was found necessary in writing the text to provide the reader with some pictorial representations as a supplement to the written descriptions of material evidence encountered. I have modified sketches slightly to make them suitable for inclusion in the text.

In putting them into the text, however, I have taken care to retain something of their character *as* sketches, rather than reify them into concrete facts by the use of heavy inked-in lines or printed letters. The sketches represent a fleeting glimpse of a field that was always changing - a moment captured and abstracted out of the flux of ongoing experience. They were drawn hurriedly, often in windy or wet conditions, sometimes with freezing hands. The reader is reminded that they are neither wholly accurate nor comprehensive representations of material evidence. Scales given are approximate. And I have included only those material patterns directly in view which were relevant to my discussions with workers on the scene.

As the archaeological reader will observe, I have adapted the forms of depiction that archaeologists use in planning material evidence to my own ends. Like plans, the sketches are two-dimensional - except where hashers indicate sloping ground or sides of features. Other symbols are:-

- - - - or ———— edges, outlines or cuts of features, depending on their degree of clarity.

— · — · — · — · limits of trowelled area, section-lines, or any pattern imposed upon the material field by archaeologists themselves.

location of finds, usually marked with a label or a finds-bag nailed to the ground.

the worker, the direction he or she is facing, and the tools being used.

the line of spoil in front of the worker, and the direction in which the material field is unfolding as it is being worked.

Appendix B

'Natural Artefacts': Postscript to Chapter 8

By definition, artefacts are the products and instruments of human (cultural) agency. It is of some comparative interest, then, that in the not-too-distant past prehistoric artefacts were interpreted as the effects of *natural* or *supernatural* agency. The folklore literature of Britain, Ireland and Scandinavia contains many references to the discovery of 'thunderbolts' and 'elf-arrows' - objects which today would be seen to be stone axes or arrowheads of cultural rather than (super) natural origin (Daniel 1950:26, Hodder 1982a:32). This does not mean, however, that rural people of former times, without the benefit of recent advances in archaeological and ethnographic knowledge, were unable to perceive the qualities of artefactuality and design in material objects; it is simply that their concept of nature was different from ours. Nature, to some extent at least, was 'peopled' by spirits, elves, gods, etc; it was, in short, an *anthropomorphized nature.* Discovered artefacts were perceived and interpreted within such supernatural schemes, giving rise to the apparent contradiction of 'natural artefacts'.

Elf-arrows - otherwise known as elf-shot, elf-darts, elf-bolts, etc - are a recurring motif in country lore. In the Icelandic *Bandamanna Saga* a Viking named Hermund is said to have died from the wound of an invisible elf-arrow after hearing the chime of a bow-string while out riding on the open fell (elves were believed to inhabit Alfheim, one of the nine realms of Norse cosmology). Even as late as 1884 there was a man still living in Orkney who was "lame from the effects of an arrow which was shot into his back when he was ploughing by a hill-trow" (quoted in Marwick 1975:44). In these stories, and many others like them, there is a very clear conception of how arrowheads were used, the kind of tools they were used with, the function and purpose of this total instrumental complex in the context of an intentional activity. Indeed, the *context of use* of these artefacts is implied by the very name 'elf-arrow'. If the necessary skills, purposes, intentions-in-action and sequence of motor-movements associated with archery have been ascribed to a supernatural being, there is nevertheless a basic understanding of human agency - analogically transposed into the supernatural domain.

Writing in 1816, Wilkie records that "... a few years ago a ploughman in Eltrick Forest obtained an elf-stone thus. While ploughing a field he heard a whizzing sound...and looking up perceived a stone aimed at one of his horses...it fell by the animal's side. He stopped and picked up the stone but found its angles so sharp that they cut his hand"(quoted in Henderson 1866:185-6). Although in this instance the object is labelled as an 'elf-stone' rather than an 'elf-arrow', the function of the stone as a projectile was self-evident to the ploughman. Exactly how he understood the missile to have been sent forth - thrown perhaps? - is not clear. But the perceived fact that the stone had been 'aimed' implies an act of intent, a purpose and a carrying out of that purpose, on the part of some invisible agent. In this way he attributes cognitive powers of foresight and intent to the supernatural being, in much the same way as archaeologists do to past human agents.

The structure of the act of discovery in this case is broadly similar to that of archaeological acts of discovery. The encounter occurs in the context of an ongoing practical task, in which the ground is being worked by means of tools. Because it is being worked, the material field has a temporal structure; it unfolds through time, with new objects - previously hidden - continually being brought to light. Probably the ploughman treated his work as a matter of routine. But suddenly an object emerged which disrupted routine, and prompted him to pick it up and examine it more closely. This is a good example of the 'jumping out' of a significant object. Almost certainly the object seemed to fly through the air because it had been dislodged by the plough, along with many other stones; though it is also apparent that the ploughman's selective attention immediately 'jumped out' and alighted on this particular object, passing over all the others. One might say that there was something about this object which engaged his active attention, or one could say that there was something about his active attention which engaged the object. The ploughman had perhaps seen or heard about elf-stones before; at any rate he evidently had some pre-existing conceptual scheme for recognising and interpreting such things. The moment it emerged from the (super)natural domain it was transformed into an object of cultural significance - a *material symbol*, with both material and cognitive dimensions.

Elf-stones and elf-arrows were clearly part of much wider sets of beliefs concerned with the everyday routines of rural life. Although these must have varied considerably from place to place, common themes recur in the literature. One of these is 'elf-shot' - a generic term for a range of ailments that afflicted farm animals, thought to have been caused by wounding from elf-arrows. There are spells against elf-shot in the Anglo-Saxon Charm-books, and up until recent times many districts had their own favoured remedy or cure. Sometimes the cure would involve the application of another arrowhead to the wound (Rowling 1976:29). Thus elf-arrows were regarded as valuable objects, to be retained and prized rather than thrown away. Writing in his diary for 27 June, 1712, Bishop Nicholson noted "By Cardonac to Bowness (on Solway) where we saw several Elf-Arrows, too precious (for the cure of Cattle Elf-Shot) to be parted with" (quoted in Rowling 1976:29). Given the existence of this widespread set of beliefs it is easy to see how elf-arrows were actively searched for as well as merely chanced upon. And each discovered arrowhead would tend to confirm and reproduce the belief in the supernatural being thought to have been responsible for shooting the object.

Underlying conceptions of how arrowheads were used was the perceived fact that they had been *made*. The *craftmanship* and *design* of an intricately-wrought arrowhead, discovered in the earth, was a source of interest to them just as it is to ourselves - even if their historical and cultural backgrounds led them to draw different conclusions about its origin. Accordingly, people speculated about the *context of manufacture* as well as the context of use. In the confessions of a 17th century Scottish witch, for example, it is stated that "As for elf arrow-heids, the Divell shapes them with his own hand, and syne delivers them to elf-boys, who whittle and dights them with a sharp thing like a paking needle" (Isobel Gowdie, quoted in Pitcairn 1833:602-16). Gowdie invokes two basic stages of artefact-production in this extract - first, the rough shaping and, second, the finishing or fine chipping - which means that she also has to infer the existence of tools (eg. the paking needle) for working the artefact, as well as a designer to intend the product and to carry out those intentions through the use of tools. This instrumental complex is placed squarely within the practical space of the body - that is, being held, manipulated and fashioned in the hands, albeit those of a super-natural artificer. It is no coincidence that such supernatural beings have hands and arms and creative powers very much the same as those of human agents, for a *practical analogy*

underlies their very existence as objects, or rather subjects, of belief. The artefact is constituted as the material effect of their (inferred) intentional activity. Within a very different set of cultural meanings, then, Gowdie actually comes quite close to the form of archaeological interpretation.

If discovered objects which seemed to exhibit design have always attracted attention and demanded some sort of explanation from their discoverers, however, the function and purpose (or context of use) of these objects was not always correctly identified. Arrowheads have been perceived as 'elf-spurs' or 'breast-pins' (Rowling 1976:29). These alternative interpretations nevertheless reveal the body as the implicit common denominator in all identifications of the function of artefacts. For the artefact is constituted as such in terms of the action possibilities of the body - how the artefact can be put to use in action. Probably in these cases the inferring subjects were used to using and wearing spurs (in the activity of riding) and breast-pins (in the activity of dressing), but relatively unfamiliar with the use of arrowheads (in the activity of archery). It may even be that these are male and female interpretations of the same kind of object. At any rate it is easy to see how the analogical transposition of bodily skills, whereby the inferring subject sees how (s)he would use the object in order to judge how an agent in the supernatural domain might have used it, at once *enables* and *constrains* the interpretation of artefacts. The range of deep inference is circumscribed to a certain extent by the limits of the subject's own knowledge and experience. Thus an object "about as large as a penny piece, with a hole in the middle for the handle to go through", discovered during ploughing, could be interpreted as a "fairy-grindstone", though we would probably recognise it today as a spindle-whorl (Burne and Jackson 1883-6:369). This example illustrates the point that an object can be constituted as an artefact even when its function is not immediately obvious; a familiar function may be ascribed to it to account for the presence of *design* in the object, which attracted the finder's attention to it in the first instance.

'Thunderbolts' seem to represent a different class of discovered object in the sense that, unlike elf-arrows, no particular function or use seems to have been attributed to them. Indeed, a superficial analysis might conclude that the worked stone tools (and natural objects such as belemnites and rock-crystals) interpreted as thunderbolts were not seen as artefacts at all, but rather as wholly the effects

of natural agency. Once again, however, we have to remember that nature was conceived of in anthropomorphized terms. When this is appreciated it becomes clear that thunderbolts were constituted as objects of significance precisely because of their perceived artefactual character.

In classical times thunderbolts were associated with Zeus, the father of the Greek gods, and the equivalent Roman deity, Jupiter. Jupiter was usually depicted carrying a thunderbolt and a double-headed axe, and indeed was sometimes known as Fulgur - god of the thunderbolt. Kept in his temple on the Capitoline Hill were the *lapides silices*, or stones (probably prehistoric artefacts) believed to be thunderbolts, of which Jupiter was regarded as the *numen* or resident-spirit. Pliny explicitly states that thunderbolts are darted by Jupiter. (My source for all this information is the Encyclopaedia Britannica). The equivalent sky-god worshipped by the Germanic peoples was Thor, whose name - meaning thunder - still survives as one of our days of the week. The thunderbolt was believed to be a missile thrown by Thor, which explains why such objects were often valued and prized as things of great power - not just as the material effects of thunder and lightning, but also as protection against it. In Orkney and Shetland it was common practice until recent times for thunderbolts to be placed in chimneys for this protective purpose. Marwick (1975:65) records the finding of a stone axe in the chimney cheek of an old cottage in Lerwick, Orkney, in 1974.

Consider Jupiter with his double-headed axe, or Thor with his hammer Mjollnir - and we find that we have in mind the image of an intentional and embodied agent, modelled on the human body (look at the many ancient depictions of these deities to confirm this view). Tools are assimilated to the body and activated by intentions-in-action in much the same way as they would be by any human agent. Human powers and capabilities have been analogically-transposed onto the supernatural plane, to be constituted as the causal agency responsible for observable natural events (the striking of the hammer or axe upon a raw material being seen as synonymous, or symbolically equivalent to, the flashing of lighting and the sound of thunder), as well as for the material effect, the thunderbolt, itself. As Sartre (1947:28) argued, "When we think of God as the creator, we are thinking of him, most of the time, as a supernal artisan."

The ability to recognize and interpret the artefacts of other cultures and other times, then, is not specific to archaeologists. Prehistoric arrowheads and other stone tools, discovered in the earth, have been constituted as objects of cultural significance long before archaeologists introduced the concept of a prehistory to provide a rational explanation for their origin. If such objects have been subject to a range of socio-cultural and mythical transformations - so that arrowheads were thought to have been shot by elves in the immediate past rather than by human agents in the distant past, and stones axes were thought to have been wrought and hurled by a supernatural deity - there is nevertheless a common basis of understanding underlying the differences. This common basis lies in the fact that discovered artefacts - whether seen to be of archaeological or supernatural origin - are apprehended, evaluated and interpreted in terms of the action-possibilites of the human body. That is, the common basis lies not so much in the objects perceived (which provide the same raw material for different cultural interpretations), or for that matter in the perceiving subjects (who bring different cultural meanings to bear upon the object) but rather in the perceiving-relation or transaction between the subject and the object.

What happens when an artefact is perceived as a thing-in-itself, divorced from the practical space of the body? The seventeenth century botanist, Ulisses Aldrovandi, described stone tools as "due to an admixture of a certain exhalation of thunder and lightning with metallic matter, chiefly in dark clouds, which is coagulated by the circumfused moisture and conglutinated into a mass (like flour with water) and subsequently indurated by heat, like a brick." At roughly the same time Tollius claimed chipped flints to be "generated in the sky by a fulgurous exhalation conglobed in a cloud by the circumposed humour" (Both these are quoted in Daniel 1950:26 and Hodder 1982a:32).

Such early scientific explanations clearly retain the folk-identification of stone artefacts as thunderbolts, yet reject any notion of supernatural origin. The possibility of human workmanship being responsible for producing the objects does not seem to have been considered - probably because there was no concept of a human prehistory around at that time. Aldrovandi and Tollius therefore had to resort to a 'natural' explanation (showing, incidentally, that artefacts can be mistaken for natural objects in much the same way as natural objects can sometimes be

mistaken for artefacts). The curious mixture of mythic and rational explanation, deriving from a clash between an anthropomorphised nature and an objectivised nature, is remarkably reminiscent of the conversation concerning thunderstorms in Aristophenes' satirical play 'Clouds' 364-384. Note how any concept of the object's function in a *context of use* or intended purpose in a *context of manufacture*, plus any notion of *design*, has been lost completely. This is because it has been conceptually placed at a distance and removed from the practical space of the body (cf. the criticism of those modern archaeological methods of classification and analysis that "engage in a kind of 'artefact-physics', in which the form and distribution of behavioural by-products are measured in a behavioural vacuum" De Boer and Lathrap 1979:103). Accordingly, the instrumental value of the object disappears.