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## The Dialectic – Marxism As a Theory of Relations

*Hegel is not the giant on whose shoulders Marx thought he had to stand, but a monkey clinging to Marx's back.*

*(Harris, 1979:145)*

*The true fundamental function and significance of the dialectic can only be grasped if the philosophy of praxis [marxism] is conceived as an integral and original philosophy which opens up a new phase of history and a new phase in the development of world thought.*

*(Gramsci, 1971:435)*

Many archaeologists read Harris' characterization of the dialectic as the Hegelian monkey on Marx's back. Harris would have us believe that the dialectic is a metaphysical violation of the most basic laws of logic and rational thought. He would mislead us. The dialectic is not an irrationality, but instead it is a world view, a philosophy, a way of knowing the world. The positivism that Harris boosts is not simply native intelligence or pure reason, but rather, an opposing world view and way of knowing (Hesse 1980). As Gramsci suggests, we can never understand the dialectic unless we realize that it is a different way of thinking from the common analytical way of the western world.

Most people of the West find dialectical thinking arduous and difficult insofar as it may violate our sense of rationality (Ollman, 1976:5; Gramsci, 1971:419–425; Heilbroner, 1980:32). Our parents and teachers train us from childhood to think of the world in atomistic terms, in terms of distinct parts that work smoothly together in a functioning system. They tutor us to see change in that world as the result of a linear chain of cause and effect that propels us from one steady state to the next. The dialectic defies this view. It bids us to see the social world as a fluid whole, made up of relations that create the fleeting apparitions that appear to us as distinct parts. Odder still is the idea that these relations define parts in contradiction, so that the whole depends on conflict and opposi-

tion rather than on harmony and integration. So, no cause can exist apart from its effect, and change occurs in a spiral motion that springs from contradictions found within the whole.

Those of us trained as anthropologists should be aware that rationality is not given in nature but differs from culture. The Navajo, who views the world as a whole, so that even the action of the dung beetle disturbs the shifting of the clouds (Kluckhohn and Leighton, 1946:303–321), would have little trouble with the sense of dialectical thinking. The Chinese, Taoist, philosophy of yin and yang, the oneness of good and evil, male and female, also entails a logic like that of the dialectic (Legge, 1962). For both the Navajo and the Taoist, the atomistic view so comfortable to us violates reason.

Our rationality is codified in the rules of formal logic (Gramsci, 1971:435). Like an atomistic view of the world, these rules are not given in nature. Piaget (1954) points out that children must be taught these rules; they expend great effort to learn them, and they do not always learn them well. Everyone knows people who cannot *think logically*. What is interesting about logical thought “is that, once having been mastered, its rules master us” (Heilbroner, 1980:54). Our notion of rational discourse derives from the learned structures of common sense and formal logic. We need to set those structures aside to grasp the dialectic.

There is no simple, single, unambiguous definition of the dialectic. The logic of the approach, its own internal logic, does not allow for the reduction of complex ideas to facile, staid definitions. To grasp the dialectic, the student must examine it as a fluid whole, in the same way it bids us to look at the social world as an ever-changing totality. No universal agreement exists, either inside or outside marxism, about what the dialectic is. Some marxists, most notably Althusser (1969, 1971), have advocated a non-Hegelian reading of the dialectic that differs from the Hegelian view taken in this volume. Saitta (1987, 1988) discusses the value of the Althusserian dialectic for archaeology, and his work should be consulted for an alternative view to the one given here.

Marxists have taken three basic positions *vis à vis* a Hegelian dialectic (Bhaskar, 1983:126). A few, such as Bernstein (1909) have rejected it as nonsense and tried to put other ways of knowing in its place. Others have taken the path of Engels and the Second International and proclaimed the dialectic to be universal, applicable to both the social world and to nature (Norman and Sayer, 1980; Ollman, 1976:52–54; Levins and Lewontin, 1985). Finally, a third group of scholars, among them Lukács (1971), Gramsci (1971), the Frankfurt School, and Sayer (1979, 1987), kept the dialectic at the heart of their study of the social world, but put it aside for the study of nature.

As Levins and Lewontin (1985) argue, the dialectic does have considerable value for how archaeologists think about the natural world and for a critique of how we study that world. Their dialectical view of nature effectively reveals the fallacy of reductionism and the importance of seeing natural phenomena in

terms of dynamic wholes. The oppositions (contradictions) of nature are, however, fundamentally different from those of the human social world (Kosík 1976:135–140; Heilbroner, 1980:43). The contradictions that create social entities have their origins in human consciousness, and they are socially created between like entities, humans. The existence of one pole of the contradiction always depends on the existence of its opposite. Teacher and student are social opposites, but in the absence of teachers, there can be no students and vice versa. In nature, oppositions originate in different entities, cougar (predator) and deer (prey), or genes (information) and enzymes (repressors), that are in no sense reducible to a common entity. The relations of these entities can be described in a systems language of positive and negative feedback, such as Levins and Lewontin (1985:279–283) use. Deer still exist in the absence of cougars; they do not melt away like students without teachers.<sup>1</sup>

This volume takes a third view of the dialectic and draws its theory most heavily from those scholars who have argued that marxism constitutes a dialectical theory of internal relations (Ollman, 1976; Sayer, 1979; 1987; Kosík, 1976). In this theory, the dialectic is both a way of viewing the world, and a method of inquiry. The dialectic obliges us to put aside absolutes, both absolute truth and absolute relativism. As Heilbroner (1980:57) notes “Ambiguity, the bane of positivism, is the very essence of dialectics.” The ambiguities that exist in the oppositions between science and humanism, history and evolution, mentalism and materialism, and determinism and free will, that trouble modern archaeological theorists so much, make up the substance of the dialectic. To understand how they do this, I look at the dialectic as a way of viewing the world, as a philosophy. Such a dialectical view affects how archaeologists think about material culture and how we use it in our interpretations of the past. It also affects our epistemology, our way of knowing the world.

It is hard to express dialectical ideas in words, especially words scratched on paper. The logic of the dialectic is not linear. The physical requirements of, and modern conventions for, writing require us to string our words and thoughts in linear rows. They also require us to organize our thoughts *logically* so that questions and problems are set forth and resolved; authors are expected to reach closure. The reader should recognize that the pages of a book freeze a moment in a dialectic and, as such, can only crudely represent that dialectic.

## THE DIALECTIC

My discussion of the dialectic is drawn primarily from Bertell Ollman’s (1976) book *Alienation*. My goal here is not to make an original contribution to the philosophy of the dialectic, but rather, to give the reader a clear introduction to this theory of the dialectic. This introduction lays out the philosophical under-

pinning for the rest of this book. Unless otherwise cited, my discussions come from Ollman (1976).

The notion of the dialectic is so foreign to our idea of common sense that it is often easiest to start talking about it in terms of what it is not. It does not divide the world into clear, bounded, separate entities that scholars can define in terms of lucid, consistent, and exclusive definitions. It does not look for stability, homeostasis, or the functional integration of parts. It recognizes that these states may exist, but sees them as temporary and fleeting. It rejects the idea that the social world is inherently static, inert, or stable, thereby requiring us to invoke external causes to account for change.

The dialectic views the social world as an elaborate structure of internal relations, within which the relation of any given entity to others governs what that entity will be. This social world is inherently dynamic and conflictual, because change in any part of that world alters the whole of the relations, placing all elements forever in flux. This change is not simply quantitative or qualitative in nature, but rather, it is a complex process whereby small quantitative changes in relations lead to qualitative shifts in the social whole. A specific process of change may appear very dissimilar, even reversed, when we gaze at it from a different viewpoint or for another purpose. The dialectic tells us to search for the contradictions that both form the social world and drive this process of motion. A theory of change as the normal order fits archaeology better than steady-state models that freeze change to look for causes instead of studying the process of change.

### The Language of the Dialectic

The language of the dialectic can be trying and hard to understand unless we recognize that the dialectic is a different way of thinking with its own, distinctive language. If, out of ignorance, people try to apply common-sense meanings to dialectical terms and use them in a common-sense way, the dialectic becomes nonsensical (Ollman, 1976:11). The dialectic seeks to give us a novel view of the social world that is not accessible via common sense or formal logic. Attempts to use casual terms or apply casual meanings to dialectical terms limits the reader to the common perspective.

Terms in the dialectic refer to relations in a context rather than to discrete bounded entities (Ollman, 1976:12–25). As the context of these relations changes, so can the meaning of the terms used to describe them. A thing, called by one term in one context, may be called by a different term in another, because the relation between the thing and others has changed. For example, wine sold in the supermarket is a commodity, but in the communion cup it becomes the sacred blood of Christ; sacredness is not an inherent quality of the wine but instead a characteristic it acquires from its social context of use.<sup>2</sup> In the common-sense view, social factors are logically independent variables, and the ties between them

are contingent; that is, the ties between variables can change without necessarily altering the variable. In the dialectic the ties, the relations, are internal to the factor; when the ties change in an important way, so too must the factor. We mark such a shift by using a different term to refer to the factor.

A simple example illustrates the relational use of terms. In neoclassical economics and even in common usage, a farm tractor can be called capital because it is an asset owned by the farmer. Its status as capital is an essential characteristic of the machine that derives from its usefulness or function. The price of the machine may vary, but it remains an asset as long as it is a functioning tractor. In marxism, capital comes from value produced by a specific relation between owner and worker, wage labor (Marx, 1906:633n). A tractor is therefore capital when the farmer hires a hand to drive it, but is not capital if he operates it himself. It remains a tractor and its use has not changed, but the social relations necessary for its use have changed (see Marx, 1847:211; Ollman, 1976:15; Sayer, 1987:133).

Furthermore, the concepts that scholars use to describe the social world cannot exist independent of that world, but are themselves products of the social relations that the scholar observes and enters into as a social being. The terms and ideas scholars use are part of the social reality that we seek to know. Consider an ox used by a twelfth-century manor serf. This ox cannot be capital because the relation of wage labor was not common or dominant. And, since this relation is uncommon and minor in the twelfth century, a contemporary scholar would not think to ask if the ox was capital and would view the social context of the ox in a very different way than would a modern scholar.

The dialectic views objects as components of the social relations that produce them and of the social relations necessary for their use (Ollman, 1976:26–27). Material things are more than just the reflection or outcome of action. They express the social relations that are the conditions for their existence. They are both the products of social relations and part of the structure of those relations.

### Contradiction

One of the most basic ideas in the dialectic is the notion of contradiction. Internal contradictions form unities within the totality of social forms, and the source of motion (change) within these forms derives from contradictions. “The dialectical contradiction is a concrete contradiction: it is a contradiction which exists not just between ideas or propositions, but in things” (Sayers, 1980a:7).

The contradictions referred to in the dialectic are relational contradictions and not formal logical contradictions (Heilbroner, 1980:35; Sayers, 1980a:11). Formal logic asserts that  $A = A$  and that a contradiction exists if  $A = \text{not } A$ . The dialectic accepts this trivial observation, but this is not what is meant by a contradiction in the dialectic. Here contradiction refers to relational contradic-

tions, the idea that all social categories are defined by and require the existence of their opposite. The classic example of this notion is the idea of master and slave. The existence of one of these social categories necessarily implies the existence of its opposite. You can have masters only if there are slaves and vice versa. The logical opposite of master is not-master, which may or may not be a slave; the relational opposite of master is slave (Heilbroner, 1980:41).

This logic shows two opposed social categories, master and slave, to form a unity. That is, they are the observable manifestations of a single underlying relation of slavery. The existence of one necessarily entails the existence of the other, yet they are opposites and, as such, potentially in conflict. Each has different and often contrary interests, and each experiences social life differently. Motion, that is, change in the social form, springs from the conflict inherent in the nature of social relations. The goal of dialectical inquiry is not to make broad generalizations about the universal nature of contradictions, but rather to study the particular contradictory processes of a given historical case (Heilbroner, 1980:39).

Such an inquiry is not easy and can never produce a single true, correct, or necessarily best account of history. If the unity of master and slave is viewed from the position of the slave, we gain one perspective of the totality of the social form of which the slave is a part. If we approach it from the perspective of the master, we obtain a different view. If we look at the totality of a given case for a different purpose, we will find different unities because every real social form consists of a mass of interconnected relations and opposites. The questions investigators ask will decide which of these unities we can or will observe. Some of these unities may relate directly to a specific goal or question, while others will not.

In a dialectic, each social actor in an opposition has a different standpoint on the relationship that creates the social space of the actor. This standpoint affects the perceptions that the actors will have, and the actions they will take. The same is true of the scholars who study these relationships. They also occupy specific social roles and standpoints in social contradictions. Some scholars may claim that a specific standpoint will influence social actors to have a truer or more useful view of the underlying relationship. In marxist scholarship, Lukács (1971) argued that workers occupy a unique standpoint that allows them to see through the false consciousness of capitalism and the contradictions upon which it is based are revealed. In a similar vein, a growing body of feminist theory, characterized by Harding's (1986) *The Science Question in Feminism*, has argued that female scholars have a special standpoint that gives them a privileged view of the gendered nature of society. Women experience the disadvantages of these relations, while men, who benefit from these disadvantages, deny or fail to see that any such constraints exist. Such standpoints are, however, considerably more complex than discussions of simple oppositions suggest, because each person exist in a social space defined by multiple social relations and contradic-

tions. Furthermore, each person does not experience these social relations one at a time but as a whole. A particular standpoint may give us a truer or more useful vision of one unity, but ambiguities necessarily creep into our perceptions because no standpoint can ever encompass the social whole or even the whole social space of the scholar (see also Wylie 1987). Thus, some standpoints maybe more or less useful for specific issues or questions, but no standpoint gives us a single true, correct, or best account of history.

### The Laws of the Dialectic

Engels (1954) drew a series of laws from Marx's reading of Hegel's dialectic. These laws give guidance on how to look for contradictions in real social forms; they suggest how some of these relations will be connected and how change will proceed (Ollman, 1976:54). The specific laws of the dialectic are less important than the general framework that they imply. I present them here in a formal manner and follow them with an archaeological example to aid the reader in grasping this overall framework, not to advocate such formality in the study of specific cases. The laws are reducible to three main ideas:

1. The transformation of quantity into quality, and vice versa;
2. The unity of opposites; and
3. The negation of the negation.

The first law suggests to us that the nature of social change is never simply quantitative or qualitative. Quantitative change can lead to a qualitative transformation, and qualitative change necessarily implies a quantitative change. The change in the quantity of one or more member relations in the totality of relations leads to the whole having characteristics that it did not have before (Ollman, 1976:55). If the temperature of water is lowered, a quantitative change, to below 0°C, the water will turn into ice, a qualitative change. The unity of opposites refers to the idea of contradiction discussed above. Opposites, such as master and slave, good and evil, war and peace, husband and wife, and teacher and student, which appear distinct and separate, are in fact joined by a common relation that defines each pole of the opposition.

The negation of the negation refers to the process of change that results from contradiction. Not all conflicts within social forms result from contradictions. Conflict can result from the clash of wills or any one of a number of other sources beyond relational contradictions. But only those conflicts that spring from relational contradictions, that are necessary for the existence of particular processes and entities, will lead to a transformation of the social form. Such relations hold within them their own negation, the contradiction that will remake the relation into something else; likewise, these relations are themselves the negation of a prior relation or set of relations. The negation of the negation thus refers to the process whereby the negation inherent within a relational

contradiction transforms the relation or set of relations into another form—something different.

So it is that every social form has within it the seeds of its own transformation. These seeds will not totally destroy the old form, but rather will change it into something that is both new and old. In this mix of the new and old are the contradictions that will, in the end, transform the new social form. Because development grows from contradiction, the motion of social change is spiral rather than straight or circular (Ollman, 1976:57). Each successive form of an entity can be seen as a reaction to the form that came before. Although ensuing forms of an entity may look like forms that it has taken in the past, such forms never exactly replicate their earlier selves.

I will use a simplified version of Gilman's (1981) sketch of the shift from the Neolithic to the Bronze Age in Western Europe as an example of dialectical change by making explicit the dialectical logic that underlies it. Gilman posits that neolithic society was generally egalitarian and that it was, for the most part, based on self-sustaining households that were the loci of both production and reproduction. These households used simple technologies to build economic works of long-term utility that enhanced the security of the household. Among the works were plow agriculture, orchards, irrigation, and off-shore fishing. Households added to these works slowly over the years and bit-by-bit, became more and more dependent on them for their economic security (quantitative change). The works became necessary to the survival of the households as entities and were incorporated into the social relations that created the household.

These works gave rise to a contradiction that became the means for transforming the social order of the Neolithic to the social order of the Bronze Age (a qualitative change). The continuation of a household-based, egalitarian, social order depended on the productive security provided by these works. But the works themselves were not secure. Because the works could be seized by force and the household could not abandon them and survive, they imperiled the household to predation by other, more militarily powerful households. The works that guaranteed the economic security of the household exposed the household to social domination; they were both the necessary conditions for the egalitarian social organization and the seeds of change in that organization. Those households that could muster the military force to seize such works became a warrior class with specialized training and equipment. They could extract produce from producing households as payment for protection from raids by other warrior households. The security of a household now depended on paying tribute to these protectors to protect their works. The contradiction in the egalitarian social order was negated and gave rise to a ranked social order and the new unity of warrior (protector) households and subservient protected households.

Many people have been tempted to use the dialectic as a method for proving and predicting things; witness the work of the Second International (Chapter 2

of this volume). As Ollman (1976) notes, this is an error. The laws of the dialectic are not laws in the positivist sense. The laws of the dialectic do not predict how variables will change, but rather create terms of reference people can use to study the world (Levins and Lewontin, 1985:268). The dialectic gives us a lens through which to see the world but it does not divine what the scholar will see there. Nor does it provide us with a method for proving or disproving our theories about the world. It suggests how and where to look, in specific historical cases, to understand change, but it does not predict the path that change will take. The value of our theories about particular historical cases lies in the entities and relations that can be observed in those cases and not in the abstraction of the dialectic (see Thompson, 1978; Sayer, 1987). Efforts to use the dialectic as a tool of prediction or proof often leads to the hoary triad of thesis, antithesis, and synthesis (Ollman, 1976:59). In undergraduate classes and in critiques of marxism, scholars present the dialectic as entailing a thesis that gives rise to an antithesis with synthesis resulting from the resolution of the contradiction between thesis and antithesis (for an example, see Wenke, 1981:95–96). This triad has no basis in Marx, Engels, or Hegel's writings (Ollman, 1976:60, 288n; Heilbroner, 1980:42).

It is fairly easy to show that the triad is inadequate either for prediction before the facts have been gleaned or proof after the facts are obtained. Ollman (1976:59) argues that using the triad for prediction:

*Degrades the dialectic to a guessing game: starting from a recognized thesis and antithesis, how do we decide which of two or more suggested syntheses is the correct one? Before the synthesis has occurred, how can we be sure that what has been labelled "antithesis" is really such?*

Like problems crop up when the dialectic is used to prove something. There is no method to gain consensus on what is the thesis, antithesis, and synthesis in any given case. Marx did not rest proof on the notion that an entity was the negation of the negation or that some change was necessary, given spiral development (Ollman, 1976:59–60).

The triad violates the logic of the dialectic (Ollman, 1976:59) because it freezes change in three parts and makes these parts the object of interest. It blunders by failing to consider the relation that creates the unity of thesis and antithesis. It, furthermore, implies a resolution to the contradiction of thesis and antithesis rather than a transformation of that unity. A critique of the thesis–antithesis–synthesis trinity thus cannot refute the use of a dialectics of internal relations in archaeology or in any other study of the social world.

### Limitations of the Dialectic

The dialectic bids us to study the whole in order to understand its parts and shows that we can have no valid understanding of any part without reference to the whole. Yet it is not always practical or possible to study the whole. Also,

unless we approach the whole at a most simplistic level, we are overwhelmed by the complexity that it presents. Both practical concerns and the desire for a rich and detailed study of history require us to carve out some piece of the whole for study. The dialectic does direct us to the study of contradictions, and this gives us some guidance on how to partition our study of the whole.

The decision of how, pragmatically, to bound our studies should be based and judged on the specifics of the case that we approach. The dialectic does direct us to reject the systems approach to the world that has dominated U.S. archaeology. This systems approach suggests that scientists can divide the whole up into distinct but articulated subsystems. As in the case of burial studies, in which mortuary data is treated as a subsystem that passively reflects the whole of the social system (Binford, 1971; Saxe, 1970; Tainter, 1978; O'Shea, 1984; Bartel, 1982), the dialectic tells us that contradictions can exist between mortuary ritual and other aspects of the social structure, contradictions that are essential to understanding that structure and how it changes (Hodder, 1982a; Pearson, 1982; Shanks and Tilley, 1982; Miller and Tilley, 1984; Kristiansen, 1984; McGuire, 1988). Whatever part of the whole scholars carve out, therefore, should include a broad range of relations and entities. It must include multiple phenomena that cross-cut the subsystems of a systems approach. It is in the contrast between these entities and relations that we will find the internal dynamics of the social structure.

A similar dilemma confronts us when scholars try to bound our studies in terms of time. If the social world is always in flux, and all social forms encompass both their past and future forms (what came before them and what they will become), we have no clear markers for where to begin or to complete our study. Once again, the pragmatic judgement should be made in terms of specific cases. We cannot, however, simply search for origins and make the explanation of those origins the point of research. To understand a qualitative transformation, we should initiate our study at a point prior to that transformation and carry through past the transformation.

## THE DIALECTICS OF MATERIAL CULTURE

Adopting the dialectic affects how archaeologists look at material culture and interpret it in our theories about the past. It gives us an alternative to the two contrasting views of material culture that have been set out in current theory. The New Archaeology argued that human behavior was patterned, and that archaeologists could reconstruct this behavior by studying the patterning in material culture (Binford, 1972:136; Schiffer, 1976). More recently, postprocessualists have argued that material culture incorporates meaning and thus, is an active agent affecting behavior and culture (Hodder, 1982a; Pearson, 1982; Shanks and Tilley, 1987a, 1989).

### Material Culture—Passive or Active

The processualist view of material culture is aptly summarized by Binford (1972:136):

*The loss, breakage, and abandonment of implements and facilities at different locations, where groups of variable structure performed different tasks, leaves a "fossil" record of the actual operation of an extinct society. This fossil record may be read in the quantitatively variable spatial clustering of formal classes of artifacts.*

Considerable debate about how to read this record followed this statement. The critiques did not so much question the basic assumption that human behavior created patterning in material culture, but rather, they differed over how to reconstruct that pattern from the archaeological record (Binford, 1983; Schiffer, 1988). The basic premise that the patterning of material culture reflects past behavior, albeit modified by intervening processes, was widely accepted. The use of things in the material world leaves patterns to be read as distorted mirrors that reflect back to us the human behavior that created them.

The counter-position comes primarily from the work of Ian Hodder. Hodder (1982a, 1982b, 1986) argues that material culture carries meaning, so that its creation, use, and even disposal, has symbolic significance for the people involved in these activities. He argues that, for this reason, material culture is an active force in culture change.

*Material culture does not just exist. It is made by someone. It is produced to do something. Therefore it does not passively reflect society—rather, it creates society through the actions of individuals (Hodder, 1986:6).*

He further argues that the meaning in material culture derives from culture and that this meaning is irreducible to anything but culture. The task of the archaeologist is to interpret this irreducible component of culture so that the society behind the material evidence can be "read" (Hodder, 1986:4). He asks us to read material culture as if it were a text left to us by the people of the past (Hodder, 1989). This idea of material culture being meaningful and of this meaning being irreducible from culture, seemingly sets meaning in a closed-off, mental sphere, separate from the practical use of these items in the material world.

In two books, Shanks and Tilley (1987a, 1987b) express a dialectical notion of material culture. "Inert matter is transformed by social practices or productive labour into a cultural object, be it a product for immediate consumption, a tool or a work of art" (Shanks and Tilley, 1987a:130). They note that material culture may operate in a number of social fields. It may have a use in the natural and social world as technology, serve as a symbolic means of communication and express power and ideology to serve as a means of domination (Shanks and Tilley, 1987a:131). Despite this explicitly broad view, the role of material culture as technology plays little part in the actual case studies they present, and their dialectical view is seemingly lost in a mentalist analysis of cases.

Kristian Kristiansen (1988:480), in a review of the books by Shanks and Tilley, points to the basic flaw in the current debate about the nature of material culture:

*One can discuss how far the dichotomy between passive representation (functional, information-theory approaches) and active presentation (strategies) should be taken. The social and the cultural mediate each other in a dialectical way and are thus related to material conditions and to function. The implications of this latter perspective, however, still need to be developed. It should also be noted that the concept of material culture, as presented by S & T, is a rather narrow one, mainly linked to style. Also here an extension to include the wider social and material conditions of existence is much needed.*

Archaeologists might start to forge Kristiansen's later perspective by thinking about two observations made by V. Gordon Childe. First, his comment that tools reflect the social and economic conditions that produce them and that we learn, therefore, about these conditions from the tools (Childe, 1944:1). Second, his point that we should treat artifacts "always and exclusively as concrete expressions and embodiments of human thoughts and ideas—in a word, knowledge" (Childe, 1956:1). In these comments, Childe confronts us with two complex axioms that force us to think about material culture as technology, as a social product, and as a carrier of meaning and knowledge. He also expresses an optimism that archaeologists can learn more about material culture than just its use. We should note, however, that he felt our ability to reconstruct thoughts and ideas was greatly limited once archaeologists moved beyond the realm of technical knowledge (Trigger, 1980b:142).

### Material Culture as Objectification

Neither the processualist view of material culture as a "fossil" record nor the postprocessualist notion of material culture as text captures the complexity implied in Childe's two axioms. Material culture may well be a "fossil record of the operation of extinct societies" and if it is, it must reflect the contradictions that existed in those societies. Thus, archaeologists distort that reflection when they try to read that pattern as a "systematic and understandable picture of the total extinct cultural system" (Binford, 1972:23). Material culture may also help create society, but it does so both through the actions of individuals and by structuring those actions in ways individuals may not be aware of.

Material culture entails the social relations that are the conditions for its existence. It is both a product of these relations and part of the structure of these relations. As a product of social relations, it bears the stamp of those relations and in some sense reflects them. Because it is part of the structure of those relations, it affects human action, and people can wield it as a tool to affect the action of others and the structure of relations. Thus, material culture both permits and enables action, and therein lies the key to its interpretation.

Marx (1959:69) called the process by which things become components of social relations, objectification:

*The object of labour is, therefore, the objectification of man's species life: for he duplicates himself not only, as in consciousness, intellectually, but also actively, in reality, and therefore he sees himself in a world that he has created.*

Marx used the term object in the sense of the object of a sentence, rather than just material things. His objects do, however, include material objects and most of the time he is referring to material objects (Ollman, 1976:78). It is important to realize that an object of labor, is something that people apply labor to. This is a relational idea that includes things like air and light as well as material things. Through objectification, people transform matter into material culture. This act of transformation both creates the objects and is necessary for the reproduction of humans and the social order. In objectification, humans transform objects of nature through social labor to create material culture. The position taken by the processual archaeologist on material culture tends to equate such labor with work. Work refers to the motion of a person using energy to create energy (Marx, 1973:104; Wolf, 1982:74). In this sense, all animals perform work, and the ability of people to do so is given in nature. Human labor entails work, but it is a more complex act than work and not universal to all creatures because it is social, conscious, and meaningful (MacKenzie, 1984:477; Shanks and Tilley, 1987a:131). As Marx (1906:198) noted:

*A spider conducts operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in imagination before he erects it in reality.*

Human labor presupposes a web of social relations and meanings that structure work. Humans do not use or create energy outside of this web, even the act of being a hermit is a social and meaningful act. Human labor is solidified in material culture so that these objects serve as an "indicator of the social conditions under which that labour is carried on" (Marx, 1906:200).

Material culture is, however, more than a simple outcome of labor; once it comes to be, it is part and parcel of the labor process. It enters into social relations, becomes a component of them, and thereby enables and limits action. Some labor is possible without material culture, but as Marx (1906:199) observed "No sooner does labour undergo the least development, than it requires specially prepared instruments." Material culture also structures human action as it shapes the social ties that link individuals and groups. This power to shape social structure springs both from the way material culture physically organizes space and action, and from its ability to carry meaning.

Humans use material culture to transform the natural world for their social use, and archaeologists commonly refer to this aspect of material culture as

technology. For the last two decades, archaeologists have been wont to see technology as a component in an adaptive system, the tools used to extract energy from nature (Binford, 1972:22). This view treats technology as though it had an existence apart from the relations it enters into and, potentially, as an autonomous force in social change. Marx (1906:ch. 7) referred to the characteristics of material culture that allow people to extract energy from nature as the instruments of labor. His notion does not equate well with the common-sense idea of technology or tools.

Instruments of labor change the form of nature's material to satisfy the wants of people; they create use value. Such instruments are themselves nature transformed, so that instruments of labor are both the subjects of labor, tools used to extract energy, and the objects of labor, the consequences of energy extraction. "Labour consumes products in order to produce products" (Marx, 1906:204). Objects can be instruments of labor or the raw materials for production. A tractor is an instrument of labor when it is used to plow a field but becomes raw material when it joins the scrap metal at a steel plant.

Things become instruments of labor only when they enter into the social relations of labor; their functions are not given in their substance or origin (Sayer, 1987:26). These factors may limit the functions of an object in labor, but they do not determine them. Each object possesses different attributes so that its use is not in any simple way inherent in the object, but is derived from the way people deploy it in labor. A screwdriver may be used to drive screws, open paint cans, or scrape paint. Nature itself is an instrument of labor, as is evident if the reader thinks about domesticated plants and animals or the use of natural waterways for transportation. A train that does not carry passengers is not an instrument of labor; a tractor rusting in a field is merely a rusty tractor.

Archaeologists should always remember that labor is a conscious action and that the architect must first imagine his structure before he can build it. V. Gordon Childe (1956) built this view into his theory of technology, which he defined as a social product rather than as a component in a system of adaptation. He always recognized that consciousness came between humans and their environment. He noted that humans do not adapt to their environment, but adapt to their ideas about that environment (Trigger, 1980b:137). Thus, to understand both the environment and the technology used on it, archaeologists should also understand the social structure and ideas of the societies we study (Kus, 1984:103–104).

Material culture not only exists in a context, but it also helps form that context. It is not just backdrop; it is, instead, the stage and props for human action. As such, it both structures human action and gives reality to the social ties that bind people together. It serves both as a model of and a model for social action. The realities that it creates may not accurately reflect the social relations it is embedded in and may instead misrepresent them. In this way, it becomes a medium for domination and the exercise of power over people.

Material culture forms the physical space that structures human interaction. Rooms, buildings, roads, and bridges channel movement, and thereby affect patterns of interaction. Rohn (1971:31–41), in his study of the Anasazi P-III (AD 1100–1280) cliff dwelling of Mug House noted a clear structure to the architecture of the site based on the patterns of movement it allowed. Suites of three to nine contiguous rooms opened up onto small courtyards that usually contained a ceremonial room, or kiva, and a row of rooms in the center of the site split these courtyards into two groups. Rohn (1971:40–41) argues that this organization reveals the social organization of the village into households, lineages, and moieties, it gives reality to this structure. Once in place, it also channels interactions within the pueblo in such a way as to help reproduce this social structure in everyday life. Thus, the architecture of Mug House is more than a passive manifestation of social organization, but instead is part and parcel of that organization.

The nature of the instruments of production can affect the overall form of social organization in a society. Turnbull (1967) observed that among the Mbuti pygmies of the Congo in the 1960s, some groups hunted primarily with nets. These nets belonged to married men, who would hold their nets in the underbrush, while the women and children drove game to it. The Mbuti felt that such hunts required at least eight nets and no more than thirty. These constraints affected the number of families brought together in a band, usually eight to thirty, and the annual cycle of activities; bands break into subgroups in the honey season. Other Mbuti used bows and arrows to hunt, and this was a solitary activity. Bow-hunting bands are smaller, groups of three to four families, and these bands come together during the honey season. These differences are not reducible to environmental factors, nor does the choice of hunting methods arise from technical knowledge. Each type of group lives in a similar jungle environment and all male Mbuti know how to make nets and bows and arrows. Each type of group has also adapted to its jungle home and reproduced itself and its culture.

The patterning of material culture gives reality to social structure, but that reality may, in fact, misrepresent the social structure. It may serve to reinforce and reproduce beliefs that mask power and domination from the people of a society. In this way, material culture becomes a vehicle for domination.

Susan Kus' (1982) work on the Imerina Kingdom of Madagascar shows how the placement of cities, and the design of these cities, legitimated state formation in the early nineteenth century. This was done by creating an image of the relation between the social order of the state and nature, which denied the social origin and character of the state. This image presented the state as something given in nature. In Imerina cosmology, the year was divided into 12 months and space into four cardinal directions. The 12 months of the year were vested with astrological import, as each had a specific destiny associated with it. The four directions were thought of in terms of opposing qualities that were united at the



center. For example, north was the noble direction and south, the humble. The spatial organization of the capital was based on the twelve-part astrological system and the four cardinal directions, united at the center. Important governmental structures were located in symbolically exalted spaces as defined by this grid. In this way, the social order of the state was equated with the natural order of the cosmos and thus, the state's social origin was denied as it was made part of that natural order.

Meanings such as this are formed in a social context and reflect this context. "Consciousness is, therefore, from the very beginning a social product and remains so as long as men exist at all" (Marx and Engels, 1970:51). Not all individuals and groups occupy the same social position in a social structure and thus, different groups will read the meaning encoded in material culture in different ways (Abercrombie *et al.*, 1980). Elizabeth Cohen (1980) writes about immigrant working-class families in the turn-of-the-century United States that furnished their homes with plush drapes, overstuffed chairs and couches, thick carpets, and shawl-draped tables and bureaus. They felt that these furnishings were symbolic of their success and acculturation to the new land. On the other hand, middle-class reformers saw these furnishings as unsanitary, tasteless and un-American. They prodded workers to adopt a middle-class aesthetic with bare wood floors, wood chairs, iron beds, and simple cloth curtains. Each group read a different meaning into the furnishing of homes, and this mundane context became a locus of ideological struggle between the classes.

The process of objectification is a complex one. Material culture enables and limits human action because this process simultaneously entails social realms that are commonly split apart in archaeological theory—technology, social structure, and meaning. Dialectical relations spring from the concurrent existence and mutual interdependence of these realms, and such relations cannot be detected when scholars artificially tear these realms one from the other.

### A DIALECTICAL EPISTEMOLOGY FOR ARCHAEOLOGY

The dialectic gives an interpretive approach to the study of the social world that is neither purely empirical nor purely speculative. As Ollman's (1976) analysis of alienation shows, this approach can give us new and telling visions of that world, visions often contrary to our common sense or formal logic. It does not, however, give us dialectical tests for these visions. When archaeologists try to evaluate these visions in history, we take up the tools of empirical science (Heilbroner, 1980:50–51). The dialectic does suggest that we cannot reduce our evaluations to these tools, rather that this process of evaluation is also a dialectic—a dialectic that resolves the impasses between objectivity and subjectivity,

science and humanism, that plague current archaeological debate over epistemology.

At an overly simplistic level, the debate over epistemology in archaeology has recently split between an objective, processualist, scientific approach and a subjective, postprocessualist, humanistic approach. As Rowlands (1984b: 112) notes, archaeology seems to be firmly in the grip of two intellectual positions: "Either archaeology must be explanatory, empirical and capable of obtaining objective truth or it is intuitive and particularistic and a matter of personal interpretation." The processualists assume that scientists can gain objective knowledge of the past through the use of a scientific method. The postprocessualists argue that all knowledge is relative and that our understandings of the past are constructed in the present to be statements about the present. "There is no way of choosing between alternative pasts except on essentially political grounds, in terms of a definite value system, a morality" (Shanks and Tilley, 1987a:195).<sup>3</sup>

Schiffer (1988:462) recently stated the processualist position. He directs us to search for "a series of basic premises, postulates, or assumptions that specify certain fundamental entities, processes, or mechanisms, often implicating phenomena that themselves are unobservable (at the time of theory formulation)." He argues that such theory is hierarchical with a small number of "high level principles logically subsuming more abundant principles at lower levels" (Schiffer, 1988:462). He also divides theory into three realms: (1) Social Theory, (2) Reconstruction Theory, and (3) Methodological Theory. These realms differ in terms of their function, but all entail the same logic and a cross-cutting hierarchy of levels from low to high. Schiffer's view of theory is, like the theory itself, atomistic and systemic. He sees theory in terms of entities that are linked within subsystems.

Hodder (1984) gives us one of the clearest and boldest statements of the relativist position in his *Antiquity* article "Archaeology in 1984." It should be noted that more recently, he has backed away from the extreme relativism of this article (Hodder, 1986:16).<sup>4</sup> In 1984, he argued that the statements that archaeologists wished to make about the past were unobservable and that hypothesis testing in archaeology rests on consensus rather than on the confrontation of theories with data. He notes that all data are theory-laden, and that people cannot observe the world except through consciousness. This leads him to the relativist conclusion that our consciousness determines the stories archaeologists will tell about the past. Since this consciousness develops within specific socioeconomic contexts, the stories we write about the past are specifically related to the social interests of the present.

Wylie (1985b) gives us an insightful discussion about the opposition between subjectivity and objectivity in her study of the critical theory of Leone (1981) and Handsman (1980). In this article, she rejects the positions advanced by both

Schiffer and Hodder. She notes that a recognition of the fact that interests may distort knowledge claims does not necessarily presuppose that such claims are impervious to empirical examination. She also argues that once archaeologists acknowledge such interests, we cannot accept the neat hypothetic–deductive model put forth by the New Archaeology (see also Hesse, 1980).

A number of marxist archaeologists have pointed out that the debate over subjectivity and objectivity is a false one that serves only to obscure the dialectic between reality and consciousness, past and present (Kohl, 1985; Rowlands, 1984b; Patterson, 1989a). Kohl's (1985) *Dialectical Anthropology* article "Symbolic Cognitive Archaeology: A New Loss of Innocence" clearly summarizes this position.

Kohl (1985) takes both sides in the debate to task. He notes that the processualist approach has failed to produce the results that it promised and that the goal of absolute objectivity is both elusive and false. He praises Hodder and Leone for having "fled the sterile scientific captivity of Binfordian naturalism," but deplores a relativism "which threatens to introduce chaos into that painstakingly assembled record of cultural evolution" (Kohl, 1985:111). Kohl advocates, instead, a dialectical approach, a dialogue:

*A real past, although blurred, can be glimpsed through archaeological materials. Prehistory's logic essentially is the same as history's: active engagement in a continual dialogue with oneself and one's sources. Perfect knowledge is never attained but understanding of the past "as a rational and intelligible process" is indirectly arrived at through a nonending series of successive approximations (Kohl, 1985:115).*

### Archaeology as a Social and Natural Science

Much of the debate in archaeology does not explicitly recognize that the practice of archaeology requires both dialectical and empiricist methods. Archaeology involves the study of both the social and the natural–physical world, and dialectical and empiricist methods do not fit equally to each undertaking. In the end, the goal of archaeology is to understand the social world of the past; archaeology is itself part of the social world of the present. Empiricist methods can give us a description of the physical world, but archaeologists enter a web of social relations when we try to make sense of, explain, and give meaning to, this world and how it changes.

Engels (1954) made the dialectic a universal topic for the study of humans and nature by transforming it into an analytical tool, his "dialectics of nature." He hoped that through such a dialectic of nature he could account for both human and biological evolution with a common set of dialectical laws. Lukács (1971) revealed the fallacy of this logic, and in doing so, split the dialectic from the study of nature.

The distinction that the Frankfurt School (see Chapter 2 of this volume) drew

between scientific and critical theories becomes important here. Scientific theories assume a separation of subject and object. Such a separation cannot exist in the social world because scholars are part of what they study, and the objects of study, people, can reflect, alter, arrive at different understandings, or come to the same type of understandings as the scholar. This is not the case in nature. The scholar is not (in the same sense) both subject and object in this world because the objects of study lack human consciousness. They are objects (see also Hesse 1980:170–171).

To expand on this point, we can ponder the subject–object relationship as it pertains to geologists and cultural anthropologists. Geologists are defined by what they study (rocks), but the objects of their study exist independent of that study; the study of geology creates geologists, but it does not create rocks. There is no unity formed between the geologist and rocks. Without geology, a geologist (the subject) and a specimen (the object) are different entities, one is a person and the other, a rock. The relationship of the cultural anthropologist (the subject) to an informant (the object) depends on the fact that both are people. There is unity between subject and object. To be an anthropologist, one must have an informant, and to be an informant, one must have an anthropologist. Furthermore, even as the informant is the object of the anthropologist's interest, the anthropologist is the object of the informant's interest; the informant studies the anthropologist even as the anthropologist studies the informant. Thus, both are active participants in the relationship, and both are transformed by it. A geologist can never be a rock. A rock can never study a geologist.

Scientific theories are also instrumental; they are tools for solving problems. They become a form of domination only when applied to social phenomena because the split between subject and object is a false one in this situation. The social scientist conceptualizes both the problem and the solution, yet the human objects of his interest may deem the problem a benefit and find the social scientist's solution detrimental to their own interests. Indeed, they may even see the social scientist as the problem (Deloria, 1968). For all parties in this relationship, these perceptions spring from a complex dialectic between social context and confrontation with the reality of the world. The relation of domination does not exist when there is not a unity that links subject and object. Rocks do not have interests in where or how a geologist finds oil, nor do they value the quest for oil differently from the geologist.

The problem with applying the dialectic to nature rests in the notion of relational contradictions. As Heilbroner (1980:43) argues, the existence of objects in nature does not depend on such contradictions. In nature, if fleas are removed from dogs, we still have fleas and dogs. If the unity of master and slave is broken, if the slave is freed, we are left with neither slaves nor masters. But these actors are changed as a result of their historic relations. We can think of the dog as a host and the flea as a parasite, but the relational contradiction of

host and parasite is created in our mind and not inherent in fleas and dogs. "Dialectics thereby has a natural application to the social world that it lacks in the physical one." (Heilbroner, 1980:43).

At this point the reader would do well to recognize that archaeology studies both nature and society. The processualist position argues that archaeologists can use the theories and methods of natural science to explain culture (Salmon, 1982; Binford, 1983; Watson, 1986; Schiffer, 1988). It errs by ignoring that the nature of the subject-object distinction is fundamentally different in the study of nature and the study of society. The postprocessualists have argued for a dialectical approach to the study of the social world (Hodder, 1984, 1986; Miller and Tilley, 1984; Shanks and Tilley, 1987a, 1987b). They seemingly either do not recognize that much of archaeology is about the study of the natural-physical world or take this aspect of archaeology as trivial or given (see Hodder, 1982a:5).

Most of the traditional field and laboratory work of archaeology studies the physical world. This is clear in the case of techniques as archaomagnetic dating, trace element analysis, faunal analysis, and palynology. It is also the case in most excavation and survey. These are questions about the distribution of objects in space: how many levels are there in a site, what is the distribution of ceramic sherds in a site, and what is the distribution of sites in a given valley? I would further argue that questions about events and practices should also be seen as questions about the physical world. Did the people of this valley grow wheat? When was the first beam put in place in Pueblo Bonito? Did twelfth-century English farmers use oxen to plow their fields? What were Acheulean hand axes used for?

Most of the work of archaeology lies in answering these types of questions. Some form of the hypoductive model may work well in answering such questions, and archaeologists recognized this fact long before the New Archaeology of the 1960s. A good example of such an approach were the efforts to construct a dendrochronology master curve for the U.S. Southwest in the late 1920s (Haury, 1962). Archaeologists had two curves, one extending back from the present and a second floating in the past. They needed to find wood beams that would link the two curves and create one master curve. They noted that the early curve came from sites with black-on-white pottery and the later from sites with polychrome pottery (black and white on red). They hypothesized that they would find the specimens they needed in sites with transitional pottery types between the black-and-white and polychrome types (black-on-red pottery). They dug in such a site, and connected the curves.

I am reluctant, however, to assume that the study of the physical world and the study of the social world are distinct undertakings in archaeology with clearly marked boundaries between them. It is not, as Schiffer (1988) would have us believe, a matter of lower or higher levels of theory or different functional realms of theory. Leone (1981:12) noted that artifacts do not speak; scholars have to give them meaning, and the same observation applies to artifact dis-

tributions and  $^{14}\text{C}$  dates. Furthermore, the physical world does not exist apart from the social world either in the past archaeologists wish to study or the present within which we study it. The human presence dominates the natural world, and human consciousness mediates all of our perceptions of that world. People constitute the natural world through lenses that refract rather than mirror or reflect.

Once archaeologists make an observation about an artifact distribution, a historic event, or a cultural practice in the past, we usually assign it meaning in terms of a relational contradiction. For example Hole *et al.* (1971:272) interpret the absence of horns on female sheep in the Bus Mordeh phase (7500 to 6750 bc) on the Deh Luran Plain of Iran as evidence of domestication. The idea of domestication is not part of the physical world in the way that the presence or absence of sheep horns is. Domestication forms a unity with wild; one concept necessarily implies the other. The idea of degrees of domestication quantifies this unity, but still rests on the underlying opposition. The female sheep skeletons that Hole, Flannery, and Neely found on the Deh Luran plain either had horns or they did not, but to say they were domesticated stems from research interests and questions formulated in the present. To understand *domestication* on the Deh Luran plain, archaeologists need to engage in the dialogue that Kohl (1985:115) calls for between ourselves and what we observe in the ground.

Only in the absence of humans do objects of the natural world exist independent of the social world; once humans are present, all of nature exists in both the social and natural worlds. The ox that is used to plow the field is simultaneously of the social and natural worlds. Humans created the ox through a millennium of breeding and by castrating a bull calf. The ox also figures in social relations beyond his use as a beast of burden and gains meaning in the social world. He may be an object of wealth, bride price, a ritual sacrifice, or a blue ribbon animal at the county fair. In this way, the ox becomes a component of one social relation or another (Ollman, 1976:26).

Gilman (1981:5-6) discusses such oxen in his paper on the transition from the Neolithic to the Bronze Age in Western Europe. He marshals empirical evidence to show that cattle were present, that they were castrated, and were put to pulling a plow. Having made these observations on the physical world, he then moves into a dialectical web of relations. He notes that plow agriculture stores labor in land and oxen. Because of this relation, the ox becomes a valuable social object, subject to both theft and protection. It becomes a component in the contradiction that leads to the transformation from an egalitarian Neolithic social world to a ranked Bronze Age social world.

### Realism

I began this section by noting that the dialectic gives us an approach to studying the world that is neither purely empirical nor purely speculative, not purely objective or purely subjective. Rowlands (1984b:113) argues that archaeology needs to achieve the integration of objectivity and subjectivity in a single field

of inquiry. The dialectic offers a starting point for moving toward this goal. Archaeologists have not achieved this goal, and I offer here only a few simple suggestions on where the path to this end might lead.

A number of scholars, most notably Roy Bhaskar (1986) and Russell Keat and John Urry (1982), have argued that Marx used a realist philosophy of science in his work. Derek Sayer (1979, 1987) explicitly links this philosophy to a theory of internal relations and Ollman's (1976) notion of the dialectic (see also Bhaskar 1986:109). Alison Wylie (1981) has argued that such a philosophy underlies most of the useful research done in archaeology over the last 20 years, despite the positivist rhetoric of the New Archaeology. These works should be read for a detailed consideration of realism. Keat and Urry (1982) is the most readily available and accessible of these discussions. Bhaskar (1986:102) notes that:

*For realism, it is the nature of the world that determines its cognitive possibilities for us; it is humankind that is the contingent phenomena [sic] in nature and human knowledge which is, on a cosmic scale, accidental. In science (wo)man comes to know (wo)man-independent nature, fallibly and variously. This cognitive relation is both the theme of philosophy and a topic for science. But only transcendental realism by setting (wo)man in nature is consistent with the historical emergence and the causal investigation of the sciences and philosophies themselves.*

Let me repeat these ideas in different words. Realism accepts that there is a real world independent of our senses and consciousness. It also accepts that scholars can gain empirical knowledge of that world (Keat and Urry, 1982:5). Our knowledge of that world is, however, faulty and diverse because it is conditioned by human thought. So knowledge is neither a true image of reality nor simply created in our consciousness. To understand knowledge scholars should look at both reality and the context and processes of human thought.

Realists reject the positivist model of explanation (Wylie, 1981; Keat and Urry, 1982; Bhaskar, 1986). They argue that positivism equates explanation with prediction and thus, equates cause with correlation. This error springs from the positivist dictum that hypotheses should be accepted or rejected according to how well they fit empirical observation. Such testing fails to get at the underlying mechanisms and processes that create the phenomenon that is being explained.

Keat and Urry (1982:5) state that in realism, the goal of explanation is not prediction, but rather the discovery of the necessary connections between phenomena. This is done by acquiring knowledge of the underlying relations and processes that constitute these phenomena. Realists argue that to answer a why question, scholars must answer the how and what questions (Keat and Urry, 1982:31).

*Thus, if asked why something occurs, we must show how some event or change brings about a new state of affairs, by describing the way in which the structures and mechanisms that are present respond to the initial change. To do this it is necessary to discover what the entities involved are: to discover their natures and essences.*

Theories and models in realism do not attempt to reduce the unknown to the known, but rather try to use what we already know to learn about the potentially knowable (Bhaskar, 1986:60). Realist theories give us conceptual tools with which we can look at specific contexts. They do not give us general explanations of abstract phenomena. Such theories are always imperfect. They are in the words of Keat and Urry (1982:36) "attempted descriptions of structures and mechanisms."

Sayer (1979:115–117) has followed Hanson (1969) in arguing that scientific thinking is arrived at from actual observation or experimentation, that theories do not exist in the mind before, or independent of, experience. They both refer to this process of reasoning as retroduction (Sayer, 1979:116). The process of retroduction is dialectical. It involves neither induction from a series of empirical observations to a law-like empirical generalization nor deduction from major or minor premises to an outcome (Jessop, 1982:217). Instead, it rationally moves from observations of the world that do not fit existing theory, to posit one or more processes that could account for the observed anomaly (Sayer, 1979:116; Jessop, 1982:217).

It perhaps goes without saying that our theories about the past must be coherent. They should not be tautological or filled with *logical* contradictions. They also need to account for all aspects of the phenomena that the investigator wishes to understand (Sayer, 1979:117).

As Wylie (1985b:143) points out, these theories may not adhere to the neat hypothetic-deductive model originally laid out by the New Archaeology. They should not be limited only to those things that people can empirically observe, for they also need to deal with the underlying relations and ties that create the observable reality (Jessop, 1982:219).

Our theories need to fit the facts we derive from the physical world. They should be congruous with the artifact distributions, dates, events, and practices that we can infer from the archaeological record through empirical methods. Bhaskar (1986:281) argues that these facts are not reality. They are the results of both a reality that existed before their discovery and of the conceptual schemes and paradigms that governed the enquiry that found them. As such, they are both real and social. The knowledge that scholars gain will always be the complex result of theory, methods, and reality itself.

As Leone (1981) has said, archaeologists have to give meaning to facts; they do not simply speak for themselves. These meanings are made in the present and reflect social interests. Trigger (1984:292) has observed that in archaeology "much of what is accepted as true tends to be what each generation of archaeologists finds reasonable." A full evaluation of a theory should include a critical look at how social interests interact with theory, method, and reality, at how these interests shape our research, even as that research forms interests. Sayer (1979:117) notes that "the history of science indicates that as a matter of fact choices have been made on grounds which included, amongst others, the meta-

physical and the aesthetic, though we would hardly wish to build these into requirements of scientific adequacy.”

Realism does not lead us to one best or true theory about a phenomenon (Sayer, 1979:135; Bhaskar, 1986:60–63). Realist theories necessarily refer to underlying relations or ties that create the phenomena that we observe. I have argued that, in studies of the social world, these underlying processes are dialectical (see also Sayer, 1979, 1986). Dialectical contradictions cannot be directly observed but must be inferred from their consequences (Ollman, 1976:15). Historians can discern through documents that Afro-Americans were being bought and sold in Alabama of the 1850s, but they cannot observe the relation of master and slave. Scholars cannot test for such underlying relations, but they can secure empirical evidence that bears on the truth or falseness of the inferred relation (Sayer, 1979:141). This process of evaluation is always imperfect and can never be conclusive. Furthermore, if scholars alter their perspective on the social whole that they observe, they will find different unities that inform them in different ways.

When theories are found to be inconsistent with empirical observation, it raises the problem of how to modify the theory to resolve these inadequacies (Bhaskar, 1986:61–62). If such modification is not possible, an alternative theory should be proposed to replace the initial one. Thus, theoretical analysis is a constant process of renewing existing theories, ideas, methods, and facts. This process is much more complex than the notion that new theories can be simply tested against old ones like so many ducks in a row. All theories arise as complex amalgams of the new and the old.

A realist approach to the study of archaeology is neither purely speculative nor purely empirical, neither purely objective nor purely subjective. It allows an empirical basis for judging theories about the past. But it holds that all knowledge ensues from a complex dialectic, so that it is difficult or impossible to assess how much interest, theory, method, or reality contribute to this knowledge. Using a realist approach, some theories will be rejected, but a best theory will not, necessarily, be chosen. It provides the bases for the active dialogue with a dimly perceived real past and ourselves that Kohl (1984) has called for.

In this chapter, I have tried to present the dialectic as a world view and explore how it relates to an epistemology for studying the real world. The dialectic also affects how archaeologists account for that world, how we deal with the ambiguities that lie within agency and structure, determinism and relativism. In the next chapter I shall discuss how it gives us a way around the impasses that these oppositions have presented for archaeological theory.

2. I have chosen a material example here and stress material examples throughout my discussions because archaeologists study material objects. The relational quality of terms in the dialectic applies equally well to all social phenomena. For example, a Hopi man may be a priest and leader of a kiva, but in his wife's house he is a husband and an outsider. These social roles are not inherent in his maleness (not all men are priests or husbands), and neither is his social being reducible to one of these social roles.

3. Shanks and Tilley make many such statements in their writings to be provocative, to trouble us with the limitations in archaeology we would often prefer to ignore. They have claimed that such statements should be read as provocations and not as theoretical tenets (Shanks and Tilley, 1989). Their provocation has been successful in goading archaeologists to debate and ponder the nature of archaeological knowledge. In the spirit of this provocation I have taken them at their word in this statement, even though I know they do not advocate the extreme relativism that it asserts.

4. Ian Hodder's frequent shifts of position and changes of mind have bedeviled many archaeologists who wish to pigeon-hole him and then reject the pigeon hole. Hodder's frequent shifts of position, however, reflect a consistent philosophical approach to knowledge. It is an anarchistic philosophy that questions authority, including the authority of the anarchist, and the freezing of inquiry in any single method or theory.

## ENDNOTES

1. See also Allen (1980) and Braun and Talkington (1989) for further discussions of the dialectics of nature.