

Middle-Range Theory, Behavioral Archaeology, and Postempiricist Philosophy of Science in Archaeology

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This paper examines middle-range theory (MRT) within processual and postprocessual archaeology. An analysis of the Binford–Schiffer dispute serves as a means of clarifying what MRT in processual archaeology is or is intended to be. Postprocessualists, despite their vigorous criticisms of MRT-based approaches, are found to rely on the same resources and types of reasoning to make their inferences. In their practice they tacitly turn to processualist middle-range principles, and so the justification of postprocessual interpretations is equivalent to that of MRT-based processualist models. If the middle range is functionally defined — a space within a research program occupied by varying theories that are taken from the body of general theory to which the program is committed and that function as background knowledge in the verification of theories — MRT bridges the epistemological gap between processual and postprocessual approaches.

KEY WORDS: archaeological theory; behavioral archaeology; postempiricist philosophy; postprocessualism.

INTRODUCTION

Present American theory is for the most part processual, seeing archaeology as a scientific study that works with the generalizing principles of culture processes. Within processual archaeology, two theoretical structures are offered, Binford's middle-range theory (MRT) and Schiffer's behavioral archaeology (BA). MRT, a key concept in Lewis Binford's view of archaeology, deals with the crucial step that can take us from the static contemporary archaeological record to the dynamics of past societies by

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generalizing analogies with what we can observe in the present. Explicitly introduced in his Nunamiut ethnoarchaeological work and foreshadowed earlier, Binford considers MRT to be archaeological theory proper. In Michael Schiffer's (1976a) view, MRT bridges the gap between systemic context and archaeological context by a transformation theory that uses law-like generalizations on the relationships between human behavior and material culture (correlates) and formation processes of the archaeological record (*c*-transforms and *n*-transforms). These generalizations derive from ethnoarchaeology, modern material culture studies, and experimental archaeology — studies in the present world, actualistic research. Binford and Schiffer have developed competing middle-range-theory constructs, with the same goals and very similar in approaches, each claimed to be archaeological theory proper.

Postprocessualists find the MRT approach in whatever variant unsatisfying because the essence of cultures as archaeologically visible does not reside only in what is revealed by universalizing laws. Instead of cross-cultural, predictive forms of inference, ruled out by the meaningful constitution of culture and the arbitrariness of meaning (Hodder, 1991c, p. 14), postprocessual archaeology calls for the study of the contexts of particular places and periods. While MRT treats data as objective and some — middle-range — theories as independent of high-level, a priori assumptions (Hodder, 1992, pp. 1–2, 89), even “descriptive” terms such as “wall” or “hearth” are actually interpretive, implying some purpose, and hence theoretical (Hodder, 1991c, p. 82). Perhaps more than any other discipline, archaeologists use theory “whether they like it or not” (Hodder, 1992, pp. 5–6). Thus, even though processualists have embraced much of postprocessual critique, method and verification is the one important area of difference that remains (Hodder, 1992, p. 147). The “major stumbling block” in current archaeology is methodological (Hodder, 1991c, p. 94; cf. 1982, pp. 5–6, 11; 1986, pp. 103, 116–117, *et passim*, 1988; Braithwaite, 1984, p. 94).

What is the essential character of processual archaeology manifest in MRT and BA? Do the vigorous debates between Binford and Schiffer reveal decisive differences between these variants of processual archaeology, or are their essentials much the same? Do postprocessualists actually follow different methods, or are they in fact processual workers under their rhetoric? These are the questions addressed by the present paper.

First, an analysis of the Binford–Schiffer dispute will serve as a means of clarifying just what MRT in processual archaeology is or is intended to be. This discussion argues that processualist MRT is both more and less diverse in form than its advocates, in internal disputes,

sometimes suggest. This is followed by an analysis of three case examples of postprocessual practice and its relationship with MRT: Braithwaite's (1984) study of ritual and prestige in prehistoric Wessex, Hodder's (1990) interpretation of the European Neolithic, and Hill's (1992) contrastive archaeology of prehistoric South Britain. It is demonstrated that in their practice postprocessualists tacitly turn to processualist middle-range principles and that the justification of postprocessual interpretations is equivalent to that of MRT-based processualist models. Consequently, postprocessualists rely on just the sorts of resources and types of reasoning to make their inferences as are advocated by proponents of MRT even though the inferences are about other aspects of the cultural past than those typically of concern to processualists. After establishing that in their practice all archaeologists make use of bridging principles, the final section examines bridging theory from a philosophical perspective, suggesting an alternative interpretation of MRT as a step toward postempiricist philosophy of science in the processualist research program. It argues that middle-range principles constitute observational theories indispensable to all interpretations of the archaeological record and that, from this perspective, MRT bridges the epistemological gap between processual and postprocessual approaches.

PROCESSUALIST MIDDLE-RANGE THEORY: BINFORD VS. SCHIFFER

Binford's Middle-Range Theory

Wylie's (1989b) detailed analysis of Binford's writings has discovered a theoretical tension, or contradiction, lying at the very core of the processualist research program. On the one hand, the original assessments of the research potential of the archaeological record by the "New Archaeology" were overly optimistic. Allegedly, the epistemic limits of archaeology were greatly expanded by means of a redefinition of the cultural subject in fully materialistic terms, bridging the gap between a material archaeological record and a non-material subject of research [explicitly addressed by Hill (1972, p. 65) and Binford (1983b, p. 5)]. On the other hand, there was the epistemological realization of the entirely and inevitably inferential nature of all statements about the past, which was the pivotal point of Binford's critique of traditional archaeology as a naively empiricist enterprise [for a graphic illustration of the two poles, compare Binford (1962) with Binford (1968c)].

MRT stems from the latter pole of this fundamental theoretical dichotomy. The term made its first appearance in print in 1975 (Binford, 1975 p. 255) and was explicitly defined 2 years later (Binford, 1977, p. 6, 1981b), but MRT was foreshadowed by the earlier “archaeological theory” in the 1960s (Binford and Binford, 1968, p. 2, cf. Binford, 1968a, p. 25, 1983b, p. 10, 1989b, pp. 50, 57; Raab and Goodyear, 1984, p. 259; Schiffer, 1985, p. 192). MRT is concerned with the formation of deposits of archaeological remains (Sullivan, 1978, p. 191), attempting to explain the genesis of the archaeological record and to discover its relevant attributes (Binford, 1989b, p. 60). Such MRT is quite different from Merton’s sociological concept of middle-range theory (cf. Raab and Goodyear, 1984) because its middle-range character is not a matter of scale or levels of abstraction.

For Binford (1977, p. 7), MRT and general theory have to be developed hand in hand in order for MRT to be relevant to the phenomena addressed by general theory, yet the linkage between statics and dynamics clearly is considered the major challenge of archaeology (Binford, 1968c, pp. 270–271, 273; 1983b, p. 16; 1989a, p. 3). Binford (1983a, pp. 19–20) pictures the archaeological record as an untranslated language in need of decoding and archaeology as the translation of this static and contemporary document into the dynamics of past cultural systems. MRT is the “Rosetta Stone” (Binford, 1982, p. 130, 1983a, p. 24) in the decoding process, and hence MRT and archaeology are almost equated with each other. MR research aims at “an established method . . . independently tested and rooted in physically founded arguments of necessity” (Binford, 1983a, p. 76), “unambiguous cause-and-effect relationships between the causal dynamics and the derivative statics” (1983b, p. 14). Using a medical metaphor, Binford (1981b, pp. 23–24) describes MRT as an observational language for diagnosing the archaeological record whose properties are regarded as “symptoms” of past dynamics analogous to the physiological symptoms of a disease. To decode these symptoms, we need an understanding of how living, contemporary cultural systems work, how they differ, and what factors condition the differences. Inferences about the past can be derived from such an understanding, making the uniformitarian assumption — and justifying its use — that the same principles were effective in the past (Binford, 1980, p. 5, 1981a, p. 197, 1981b, pp. 22–23, 1983a, p. 17). In other, more “mature” fields, Binford (1981b:23–24; 1982:129) points out, the relationship between statics and dynamics typically has paradigmatic character. Instruments of observation or measurement are developed, and once they are established and recognized as valid observational procedures, observations made with their help are taken for granted and treated as direct observations. It is the intention of MRT to allow the archaeologist, in some

future, advanced state, to observe past dynamics in the archaeological record as “directly” as a scientist “directly” observes phenomena invisible to the human eye using all kinds of specialized equipment.

Binford (1978, p. 5) proposes to seek “relevant experiences” in the contemporary world by studying living systems, from a nonparticipating viewpoint (Binford and Sabloff, 1982, p. 151), where both statics and dynamics can be observed “directly” — the archaeological record in the making. Causative agents and unambiguous “signature patterns” are to be isolated, i.e., criteria of identification of processes from material traces, under conditions of known and controlled relationships between agents and traces (cf. Binford, 1978, p. 12). These “correlates” (Binford, 1981b, p. 27) can then be applied to the past under uniformitarian assumptions: analogy is the “basic and fundamental tool” of MR research (Binford, 1989a, p. 261; but cf. Binford, 1968b, p. 269). If, and only if, we have laws regarding the dynamic conditions that brought into being the “symptoms” — dynamics explaining the “symptoms” — our inferences will be secure (Binford, 1983b, p. 12).

As exemplified by his work on hunter-gatherer mobility (1980), the initial step in Binford’s research process is a hypothetical — “archaeology-free,” so to speak — construction of a systems model from contemporary, often cross-cultural, ethnographic data; this is a classic example of “source-side work” in an analogical argument (Wylie, 1985, p. 104, 1988, pp. 136, 143, 1989a, pp. 13–14). Consequences for the properties of the archaeological record likely to be left by such a system are deduced from the model. Thus, formation processes of the archaeological record are an aspect of the organized dynamics of the system (Binford, 1976, p. 335); in short, formation processes and the dynamics, i.e., the normal operation of past cultural systems are essentially identical (Binford, 1981a, p. 200).

More recently, in the context of the processual/postprocessual debate, MRT has become the main pillar of Binford’s attempt to save objectivity from relativist attacks (see, especially, Binford, 1982, pp. 127–129, 136). Binford now has explicitly accepted what, as a facet of the aforementioned theoretical dichotomy, has always been implicit in his research program: paradigm relativism (Binford and Sabloff, 1982; for a detailed analysis, see Wylie, 1989b). In his recent retrospective essays, Binford (1983b, pp. 3, 6–7, 214) also stresses the second pole of this dichotomy, the wholly inferential construction of the past, as the most important element of early processual archaeology. If MR principles are intellectually independent of general theory, general theory can be tested using archaeological phenomena meaningfully operationalized through MR research (Binford, 1981b, pp. 29–30). Objectivity rests with “the status of logical or intellectual independence between the ideas being evaluated,

on the one hand, and the intellectual tools employed in the evaluated investigations, on the other" (Binford, 1982, p. 128). If our reconstructions are built on various mutually independent principles and all lines of reasoning support the same conclusions (cf. Binford, 1986, p. 472), our methods are robust and we can claim "objectivity," with the understanding that science uses conceptual tools to evaluate other conceptual tools (Binford, 1977, p. 3), i.e., that theories are tested against theories. Binford's philosophical position has shifted from empiricism to realism. Paradigms can grow objectively, however, by "skillful interaction with the world of experience, the external world" (Binford, 1987, p. 403), exposing and progressively eliminating the limiting effects of our culturally determined intellectual tools (Binford, 1986, pp. 471–472). Science is a strategy for learning by putting our ideas in jeopardy (Binford, 1986, p. 471). MR research is the experimental part in this program (see Binford, 1981b, p. 27), ultimately intended to make archaeology an experimental science and the process of "observing" the past via the archaeological record fully analogous to the study of "unobservable" phenomena in the natural sciences.

Schiffer's Transformation Theory

Defined as the study of the relationships between human behavior and material culture in all times and places (Reid *et al.*, 1975, p. 864; Rathje and Schiffer, 1982, p. 5; Schiffer, 1976a, p. 4, 1976b, 1987, p. 4), behavioral archaeology offers "a framework for partially integrating the disparate and diverse contributions of contemporary archaeologists" (Schiffer, 1979b, p. 15) and a synthetic model of archaeological inference and explanation composed of correlates, *c*-transforms, *n*-transforms, and stipulations (Schiffer, 1976a, p. 17). Even though this framework aims at a general model of behavioral change (Schiffer, 1979a, p. 1992; but cf. Schiffer, 1988, p. 464), it was BA's methodological transformation theory on which most of Schiffer's (1976a, 1983b, 1987) work has focused and which has had the greatest impact on mainstream archaeology.

BA began as a critique of the practice of some processual archaeologists, particularly Hill's and Longacre's pioneering work on prehistoric Pueblo social organization. Schiffer turns Binford's chief critique of traditional archaeology against the processualists themselves when he accuses them of introducing new general-theory principles while neglecting the problematic nature of the crucial link between archaeological facts and past events or behavior (Schiffer, 1976a, pp. 2, 12). Processual archaeology is denounced as an entirely general-theory movement.

Like Binford's statics-dynamics dichotomy, BA distinguishes between systemic and archaeological contexts, considering the archaeological record a transformed and distorted image of past cultural systems and the linking of the two contexts the central problem of archaeological inference. Despite his criticism of the early processualists' focus on general theory, Schiffer (1972a, pp. 156-157, 163, 1972b, pp. 148-149) explicitly traces his model back to some of Binford's writings (1968a, c), laying emphasis on the early precursors of MRT mentioned above. Several kinds of covering laws model the relationships between material culture and behavior: correlates link behavioral variables to variables of material objects or spatial relations — the only linking principles that, according to Schiffer (1987:5), the "New Archaeology" seemed to require; *c*- and *n*-transforms describe cultural and noncultural (trans-) formation processes of the archaeological record (see Schiffer, 1975, pp. 838-839, 1976a, pp. 13-17; but cf. 1985, p. 192). Both cultural and noncultural formation processes intervene between systemic and archaeological contexts, rendering the latter a distorted reflection of the former (1976a, p. 12, 1977, p. 13).

Cultural formation processes comprise both pre- and postdepositional processes. Formation processes are described by lawlike — occasionally quantitative — transforms [sometimes definitions or mathematical rather than empirical laws (Salmon, 1982, pp. 24-25, 29)]. Since each transform describes a specific formation process, on a much smaller scale than that of entire cultural systems, these systems are split up into individual behaviors and the processes described by transforms are widely generalizable cross-culturally if the relevant initial and boundary conditions are met. The laws of BA are furnished by actualistic research carried out from an etic perspective and applied to prehistoric contexts on the basis of uniformitarian assumptions (Schiffer, 1978, pp. 235, 239-240). If it can be shown that the relevant initial and boundary conditions are present, such ethnoarchaeological studies can be carried out in any society yielding laws valid for all kinds of sociocultural contexts (Schiffer, 1978, p. 241).

Only if the transformations wrought by formation processes on systemic materials to produce archaeological contexts are successfully modeled, Schiffer argues (1972a, p. 157, 1976a, p. 43), can archaeological and systemic contexts be related and genuinely intersubjective statements about the past be made. Much of the work carried out within the BA framework deals with disentangling such "intervening processes," and its impact on practical archaeology has been so significant that to some BA has become the epitome of MRT (Goodyear, 1977, p. 670).

The Binford-Schiffer Debate

At first glance, except for Binford's personal research emphasis on ethnoarchaeology and Schiffer's on experimentation and modern material culture studies, substantive differences between MRT and transformation theory are far from evident. Binford himself (1981b, p. 25 n1) deems Schiffer's approach "essentially identical" to his MRT whose precursor was a major source of inspiration of transformation theory. Not surprisingly, Binford's practice of formation process research does not always drastically differ from Schiffer's (see, e.g., a paragraph on discard processes in Binford, 1983a, p. 20). Schiffer's (1987, pp. 323–338, 1989) approach, on the other hand, clearly began as a critique of the practice of certain processualists and, to not a small extent, has always remained exactly that. Moreover, besides the similarity of their general processualist approaches and MRT constructs, the Binford-Schiffer debate only occasionally descends into outright polemics (e.g., Binford, 1981a; Schiffer, 1980; but cf. Schiffer, 1983a, 1985).

I discern three major differences between Binford and Schiffer. One disagreement is about the scale and, by implication, the (onto-) logical status of cultural formation processes. To Binford, formation processes are essentially identical to the operation of the ongoing cultural system. Binford's (e.g., 1979, 1980) research process therefore starts with the construction, usually from (cross-cultural) ethnographic data, of a hypothetical cultural system and deduces the consequences of its regular functioning for the archaeological record — "systemic expectations for properties of the archaeological record" (Binford, 1979, p. 271). Binford conceives of formation processes as the translation of the regular functioning of a sociocultural system into archaeological remains. The very structure of the system — plus, it goes without saying, postdepositional factors — determines the structure of its record. Binford's principles resemble Schiffer's "correlates" rather than "transforms" and, in fact, Schiffer (1985, p. 192, 1987, p. 462) has accused Binford of conflating transforms and correlates. As a consequence, Binford's formation processes are far more system specific than Schiffer's, involving a reconstruction of the primary adaptive processes, the basic structure, of a system.

In contrast to Binford's approach, Schiffer seeks to split up cultural systems into individual processes, including cultural formation processes. Thus, except for initial and boundary conditions, these processes have some degree of independence of a cultural system as a whole. Therefore they are widely generalizable cross-culturally and can be established by ethnoarchaeological research in a variety of sociocultural settings, provided the relevant initial and boundary conditions are met (Schiffer,

1978, p. 241). This is the reason why Binford (1983b, p. 162) attacks these processes as “absolute formation processes,” detached from the rest of a cultural system and thus intervening between the latter’s operation and archaeological recovery. Schiffer’s position seems more optimistic regarding the epistemic limits of archaeology than Binford’s, although the blame for the overly optimistic and simplistic “fossil image” stance, reading the past directly off the record, has been laid at Binford’s door (cf. Trigger, 1989, p. 361).

Binford’s more “holistic” approach appears more context sensitive than transformation theory, even though of course it also is dependent upon cross-cultural generalizations. On the other hand, the “holism” of MRT implies a degree of circularity, insofar as we need to have knowledge of a cultural system — to know, at least in general terms, what its structure and organization was like — in order to reconstruct that system. What is the contribution of MRT, one might ask, if it consists in building models of the very target of our inferences, if the borderline between MRT and systemic reconstruction is almost imperceptible? There is more to MRT than this rhetorical question indicates (see below), but this misjudging of the middle-range, linking- or bridging-argument status of Binford’s MRT, I believe, is the origin of Schiffer’s critique of Binford.

Second, the different grain or scale of Binford’s and Schiffer’s MRTs is related to disagreements on the general-theory level. While Binford’s (1983b, pp. 222–223, 292) focus is on systemic organization and basic adaptive properties of systems, Schiffer’s (1979a, p. 359) is on individual events from which systemic properties can be derived. For Schiffer (1979a, pp. 353–359), culture change is to be described as behavioral change in terms of rates of activity performance. Against this ethnographic microscale (Saitta, 1992, p. 888) Binford (1983b, pp. 215–216, 222–223) argues that the archaeological record is not a product of individual behaviors, but a precipitate of long-term institutions. Thus, inherent limitations of the record, which is believed to provide information about macro processes only [Schiffer (1979a, p. 367) interestingly agrees], are said to determine the epistemic limits of archaeology and influence a general-theory position, Binford’s systemic macroscale (Saitta, 1992, p. 889) and antiindividualist, neoevolutionist perspective (cf. Tschauner, 1994). Binford (1989a, p. 223) believes the reconstruction of systems from individual behaviors, as proposed by Schiffer, to be a “classic inductivist illusion.” Individual behavior to him is but “noise” to be dealt with (i.e., to be eliminated as a source of trouble) by MRT generalizations — laws of human behavior (1989a, p. 259). Evidently, it is concrete behaviors that create the record. Yet there is no real contradiction between Binford’s and Schiffer’s positions because it is (in part) the cultural system which is realized in those repetitive

concrete behaviors that leave interpretable traces in the archaeological record, and it is their systemic repetitiveness which is responsible for the patterns interpretable to us. It is hard to tell whether (and to what extent) MRT influences general theory here, or vice versa.

A third and final discrepancy between Binford and Schiffer is about the relation between MRT and general theory. MRT is designed as a testing device for general theory, and Binford (1977) stresses that MRT and general theory are to be developed hand in hand. From Binford's Spence-ran neoevolutionist perspective, Schiffer's (1979a, 1992) general model of behavioral change does not qualify as general theory and consequently BA is MRT as an end in itself. [Ironically, Schiffer (1980, p. 377) criticizes Binford's *For Theory Building in Archaeology* for its lack of theory.] Therefore, Binford charges Schiffer with reconstructionism and empiricism, in the latter's assumption that by understanding formation processes and reconstructing behavior, the archaeological record can be seen objectively and independently of any specific general theory (Binford, 1986, pp. 461-463; cf. Goodyear, 1977, p. 670).

POSTPROCESSUAL PRACTICE AND MIDDLE-RANGE THEORY

Covering Laws and Postprocessual Interpretation

Our first case example of postprocessual archaeology in practice is provided by Braithwaite's (1984) study of ritual and prestige in pre-historic Wessex. In Wessex, henges and individual burials are roughly contemporary, but their main periods of construction do not overlap. Braithwaite suggests that henges were communal-ritual sites constructed and used by large groups of people from the surrounding areas. The Beaker complex represents an individualist cult/ritual and an attempt to establish an alternative discourse with a radically different system of prestige first couched in terms drawn from the traditional discourse associated with the henge rituals. There was a gradual shift from a prestige system defined by genealogy to one based on material symbols.

How does Braithwaite draw these rather far-reaching conclusions? Her entire inferential edifice is in fact built on a number of generalizations which have the form of "laws," both general and statistical. In the following list "L" stands for "law"; "SL," for "statistical law."

- L1a: In small-scale societies ritual is important to leadership, and the institutionalization of power in ritual an effective means of protecting and legitimating power.
- SL1b: "Major ceremonial rituals in small-scale societies are frequently associated with the establishment and reiteration of particular relationships between people, and between people, objects and images" (Braithwaite, 1984, p. 101).
- L2a: Where "there are spheres of conveyance, food is always found in the category characterized by altruistic generalized reciprocity" (Braithwaite, 1984, p. 101).
- SL2b: In precapitalist societies food is frequently not a means of acquiring prestige through its direct conversion into other goods.
- L3: In hierarchical societies the status of an individual is primarily based on birth within a particular social unit rather than on gender, achievement, or occupation.
- L4: Ritual devices attempt to protect and legitimate the discourse of the rituals.

These "laws" and operational definitions contain etic observational categories. Accordingly, Braithwaite argues for the applicability or relevance of a particular generalization to a particular case by linking the theoretical concepts of a "law" to the archaeological evidence as perceived within the framework of her approach. Many of her "interpretations" thus take the form of covering-law explanations.

- L1a The early Beaker culture continues to use items and sites of and the henge complex. Hence the early Beaker complex tried to
- SL1b: achieve legitimation by reference to past traditions.
- L3: From the burial practices it follows that, in the earlier Beaker period, genealogy was the dominant source of prestige; from the distribution of grave goods it follows that gender and age were only secondary sources of prestige. Hence early Beaker society was a hierarchical society of unknown specific form.

This is but a small sample that could easily be enlarged. Other arguments advanced by Braithwaite take the form of simple logical deductions. For instance, from the stylistic homogeneity of material culture in the early Neolithic it is deduced that material culture was not used to symbolize status inequalities. Still others are based on covert generalizing assumptions. For instance, in the early Beaker complex male burials have some exclusive grave goods in addition to those found in both female and male graves. Therefore, to some extent men had more prestige than women; the

underlying generalization evidently is the association between the number (or value) of grave goods and the amount of prestige that a person had during his/her lifetime.

Being essentially identical to processualist, MRT-based procedures, the form of Braithwaite's arguments stands in bold contradiction to post-processual rhetoric. The source of her generalizations is typically ethnographic analogy (cf. Hodder, 1985, p. 11, 1986, pp. 103–105). MRT-like, cross-cultural generalizations (cf. Binford, 1987, p. 401) and analogical reasoning form the backbone of Braithwaite's reconstruction. What distinguishes her work from most of processual archaeology is her interest in ideological, superstructural phenomena, only covertly involved in some processual explanations (cf. Deetz, 1968, p. 47).

Contextual Archaeology

The first edition of *Reading the Past* (Hodder, 1986, pp. 90–98) proposed an empathic approach to archaeological interpretation based upon Collingwood's (1939, 1946) writings on historical method. Since empathy is open to manipulation (Hodder, 1991c, p. 187), Hodder (1991c, p. 156) now favors an empirical contextual approach to develop archaeological method further. Insofar as a "contextual" analysis is one which attempts to interpret the evidence primarily in terms of its internal relations rather than in terms of outside knowledge or externally derived concepts of rationality (Hodder, 1990, pp. 20–21), Hodder's critique of MRT forms the essence of this approach. A long-term contextual analysis of the European Neolithic is Hodder's goal (1990) in *The Domestication of Europe*. It suggests that the domestication of plants and animals was part of a much wider process of domestication of the wild and became thinkable and plausible within existing but changing cultural principles (Hodder, 1990, pp. 279, 294). One of the "few substantive postprocessual interpretations of the past available as yet" (Hodder, 1991c, p. XIII), *The Domestication of Europe* was chosen here for a detailed examination of Hodder's contextual archaeology in practice.

The above definition of the contextual method, as well as the main thesis of the book, is quite abstract. On a more practical level, Hodder (1992, p. 172) himself finds that postprocessual critique has not affected the field and laboratory procedures of modern archaeology, largely shaped by processual archaeology. This finding points to a relative autonomy of theory and data and to a gap between high-level postprocessual interpretations and lower-level theories — observational theories, which may be grounded in universal, objective relations (Hodder, 1992, p. 173) and recording standards

(Hodder, 1990, pp. 220, 230). Both the separation of high- and low-level, observational theories and their relative autonomy are evident in Hodder's use of field and published primary data.

The Domestication of Europe abounds in formation-process reasoning. Some of its fundamental interpretive concepts are directly dependent on formation theory. For instance, Hodder (1990, p. 71) points out that one of the book's central concepts, the *domus*, is defined in relation to archaeologically visible remains and hence — given the vagaries of preservation — potentially misdefined. On the other hand, the "inscription" of events in durable materials may be culturally meaningful because the decoration of nonperishables places an emphasis on durability, objectivity, and unit-ness in the making of a material statement. Both noncultural and cultural formation processes are addressed in the book. When adult burials found in storage pits next to longhouses at a Polish site do not fit the association of the *domus* with women and children as postulated on the basis of evidence from other Neolithic sites, Hodder answers with a classic *n-trans*-form: "Bone does not survive well in many decalcified loess situations" (1990, p. 107). Other interpretations depend upon the reconstruction of cultural formation processes: Do mixed bone deposits in Brittany result from multiple interments at one point in time or from adding in later bodies and pushing aside earlier ones (1990, p. 237)? Hodder remains consistent to his theoretical principles insofar as the use of general, law-like principles is limited to noncultural processes.

In many other instances, reconstructions of past behavior taken from published sources form the basis of Hodder's interpretations without discussion of the formation processes underlying them. Such a discussion may have been omitted because the formation processes of the archaeological record were not regarded as problematic and worthy of discussion in those instances. Hodder's careful examinations of problematic formation processes leave no doubt that he recognizes the general need for a consideration of formation processes. That Hodder may take formation theories offered in the (often processual) literature for granted does not imply that they have ceased to be theories but, rather, underscores their MR character.

In a syncretical work such as *The Domestication of Europe*, most of the evidence inevitably comes from published sources. Consequently, even though Hodder argues that data and method are theory-dependent and most of the published information was not collected under a postprocessual paradigm, its use cannot be held against him. However, the information he obtains from his sources includes numerous highly charged and theory-laden concepts and processes, such as agricultural intensification; more selective and organized procurement patterns; more intensive, organized, and specialized production (1990, pp. 87–89); archaeological cultures as defined

by stylistic complexes (1990, pp. 101, 143, 148); and settlement hierarchies (1990, pp. 165–167). With a few exceptions (1990, pp. 21–24, 117, 152–153), such theory-laden published reconstructions are summarized as quasi-facts, and Hodder's interpretative models rest on these. For instance, a more dispersed settlement pattern, as reconstructed for the fourth/third millennia B.C., is interpreted as a concern with action in the *agrios* and individual decision making, countering the centripetal tendencies of the *domus* (1990, pp. 165–167). Thus, results of other archaeologists' research, which themselves depend on a host of theories, become the evidence for Hodder's interpretations. Functioning as unproblematic, confirmed background knowledge or "pragmatically uncontroversial empirical knowledge" (Wylie, 1989b, p. 101) and intellectual tools logically or intellectually independent of the ideas being evaluated (Binford, 1982, p. 128), these published research results play precisely the role of MRT in the processualist research program. Judging from the way Hodder uses mostly processualist published "evidence," MRT would seem to have accomplished rather successfully its goal of making observations of the past as direct as those of "unobservable" phenomena in the sciences.

This discussion touches upon another important aspect of the contextual method. Hodder typically interprets behavior reconstructed from the archaeological record rather than the record itself. In fact, the bulk of *The Domestication of Europe* is dedicated to the demonstration of behavioral patterns as a basis for interpretation and in most cases Hodder's interpretation is a two-step process. Scientific and statistical methods are applied to detect patterns of association in the archaeological record against which interpretive claims may be evaluated (Hodder, 1991c, p. 185, 1990, pp. 60–61, 170–171, 238). Hodder's (1990, p. 86) interpretive concepts thus have an external statistical basis. However, they are not meant to be merely statistical associations, but their attributes are linked together by conceptual schemes (Hodder, 1990, p. 83). Therefore, certain things found in Neolithic houses, for example, were excluded from the definition of the *domus*. Yet archaeological support for the definition of conceptual schemes comes from recurrent patterns in the material record; the reason why certain artifacts were excluded from the definition of the *domus* is that they are rarely found in the houses (Hodder, 1990, p. 84) — once again, a statistical argument.

From statistical patterns in the record patterned behavior or activities are inferred, e.g., the activities going on in different parts of Neolithic long-houses from the spatial distribution of artifacts or a concentration of ritual activities in the entrance area of tombs (Hodder, 1990, pp. 106, 150). Hodder (1990, pp. 159–161, 168–169, 204, 267) apparently regards the reconstruction of the actual usage of artifacts, activities, and behavior as the most

desirable evidence. In archaeological practice, interpretation amounts to the identification of an act as well as the conditions which made and make the act understandable (Hodder, 1990, p. 205). Both the act and the conditions are behavioral patterns inferred from patterns in the material record they left behind.

Such contextual interpretation comes close to a behavioral archaeology of ideology and structure, virtually indistinguishable from a recent approach to ritual by a Behavioral Archaeologist (Szuter, 1991, pp. 217–220). Hodder's (1990, pp. 246–248; for a similar example, see 1990, pp. 189–194) discussion of the reordering of bones in nonmegalithic linear barrows is a case in point. The barrows commonly contain disarticulated bones from multiple individuals. Hodder first establishes that the pattern observed in the record is behaviorally significant by showing that there are clear patterns of opposition of articulated and disarticulated individuals as well as fake individuals made up of bones of different individuals articulated together. This behavioral pattern is then interpreted: "The restructuring of the individual into a social order within the tomb is the major social theme of the domus — dominating individuals through the metaphor and practice of domesticating the wild, the agrios, including death." The "reanalysis of the detailed process of deposition" is said to support the interpretation (Hodder, 1990, p. 248), but what it actually supports is the reconstruction of the behavioral pattern which is interpreted.

The interpreted behavioral patterns are often such complex phenomena — for instance, substantial economic changes during the later SE European Neolithic, such as intensification, more organized, and specialized production (Hodder, 1990, pp. 89–90) — that they might well satisfy processualists as final research results. Hodder's interpretations, on the other hand, move on to a higher level of abstraction beyond the material sphere, asking how such changes were conceived and how they became thinkable.

The central role that activities and behavioral patterns play in Hodder's practice of archaeological interpretation follows logically from his view of archaeological data whose materiality he (1992:211) regards — in opposition to poststructuralists — as their most important aspect. Material culture is not only abstract structure, but also action and practice in the world (Hodder, 1990, p. 310, 1991c, p. 127). Ideas are reproduced in practices of daily life, and these routines and repetitions result in patterns visible to the archaeologist (Hodder, 1991c, p. 128). In archaeology all inferences are via material culture (Hodder, 1991c, p. 3), i.e., from the real, coherent, structured, and systematic effects of historical meanings in the material world (Hodder, 1991c, p. 164) produced by the practices of daily life — that is, activities or behavior.

This analysis challenges Hodder's (1992, pp. 17–18) proposition that some interpretation of what prehistoric people were thinking is part of any archaeological argument because material culture is meaningfully constituted and ideas embedded in social life influence the way material culture is made, used, and discarded (Hodder, 1991c, p. 3, 1992, p. 161), i.e., behavior. "When I call some remains on a site a house or a dwelling I must mean that 'they' used it and recognized it in a house-like way," Hodder (1992, p. 17) argues. However, all that is implied in the use of the term "house" is that traces in the material record suggest prehistoric people used the structure in a way we would call house-like. That they thought of the "house" as a "house" is not a necessary part of the argument. We may infer from its use — i.e., behavior — that they had a similar concept of "house" as we do, and this is precisely the structure of Hodder's interpretative arguments. Hodder's interpretations of individual contexts build on general principles — his "observational theory" — implicit in establishing the behavior to be interpreted. Yet this low-level theory seems so completely unproblematic to him that, in the report on his Haddenham fieldwork (1992, p. 238), in best MRT parlance, he speaks of "the activities observed" in the excavation. What he "observed" is of course, in Binfordian terms, the statics of the record and the background knowledge that would allow an unproblematic "observation" of the past activities is MRT. For Hodder the problematical part of archaeological inference does not seem to begin until the second step of contextual analysis, that of interpreting the "activities observed" in terms of historical meaning and structure.

Additional generalizing elements may be found in the interpretive step of Hodder's method. Many of his interpretations are clearly inspired by anthropological models, particularly of competitive display, feasting, and gift-giving (Hodder, 1990, pp. 129, 155, 250). Hodder is not strictly opposed to the use of analogies. Involving an assessment of the similarities and differences between contexts, analogies are equivalent to comparing sites or cultures. However, whether or not an analogy is relevant to a prehistoric context is a decision on the general-theory level (Hodder, 1991c, pp. 148–149).

Hodder further assumes certain universal principles of meaning. Modern language, which was partly constructed in the past (possibly as far back as the Neolithic), constructs our present thoughts about the past, and thus "[w]e reconstruct the past as much as we construct it" (Hodder, 1991c, p. 46). Some simple rules underlie all human languages, including material culture which is a form of text (Hodder, 1991c, p. 126). Even though Hodder no longer endorses Collingwood's empathic method, he (1991c, p. 181) still postulates "a human mental ability to conceive of more than one subjective context and critically to examine the relationship between varied perspectives," allowing

unique events to be appreciated by all people at all times (Thomas, 1991, pp. 3–4). The postulate of such a universal mental ability is bridging theory derived from different high-level theory, but functionally fully equivalent to processualist MRT.

Such universal principles translate into specific covering laws from which some of Hodder's interpretations are derived. For example, "[o]ne of the most important ways in which human groups conceive of the relationship between themselves and others is through attitudes toward dirt and impurity . . . The 'other' is often thought to be dirty and unclean, whereas 'we' define 'ourselves' as pure" (Hodder, 1990, p. 127). This "statistical law" has its material correlate: "Distributions of refuse on settlement sites thus give an insight into the locations of the principal boundaries between 'self' and 'other'" (Hodder, 1990, p. 127). On Linear *Bandkeramik* sites, refuse is deposited immediately outside the house, in pits along the walls and particularly toward the front of the house, while the inside is kept relatively clean. The interpretation of this evidence follows from the statistical law and the correlate: "in Linear Pottery society, the *domus* itself was the principal unit of social life. The relatively isolated houses formed loose agglomerations of self-defining productive units" (Hodder, 1990, p. 127).

Most of the generalizing elements found in Hodder's arguments pertain to the context of discovery rather than the context of justification. They suggest an interpretation which subsequently is contrasted with additional archaeological evidence through contextual analysis, i.e., a "comparison between different data sets (such as bones, seeds, pottery) within a site or region" (Hodder, 1992, p. 171), deriving an object's meaning from the totality of its similarities and differences, associations and contrasts (Hodder, 1991c, pp. 141, 143). Coherence — a reconstruction that makes sense (Collingwood, 1946, p. 243) — and correspondence in relation to the data as perceived are the principal criteria that establish the validity of an interpretation. Not certainty, but valid knowledge of the past will be achieved through a critical application of contextual analysis (Hodder, 1991c, p. 100; cf. 185; 1992, p. 233; 1986, p. 95). Hodder's (1990, pp. 130–133) interpretation of some Neolithic houses illustrates this method. An emphasis on the *foris* (boundaries and doors) is a conspicuous feature of these houses. Checking other spheres of material culture from the same area and time period for emphasis on the *foris*, Hodder finds it in settlement distributions (linearity reinforced by linear scatters of houses along the first terraces of river valleys) and pottery (linear bands becoming increasingly differentiated and contrastive; the categorical boundaries between pottery functions or shapes becoming increasingly marked as the boundaries of houses become increasingly marked). These findings corroborate the original interpretation.

Multiple dimensions of variation may validate interpretations of underlying themes insofar as they are “not obviously linked” to one another (Hodder, 1991c, p. 137) and, thus, supply independent lines of evidence for the verification process. This condition is Binford’s definition of the middle range, “the status of logical or intellectual independence between the ideas being evaluated, on the one hand, and the intellectual tools employed in the evaluated investigations, on the other” (Binford, 1982, p. 128). Thus, when Hodder (1991c, p. 186) rejects MRT because only theories of universal, non-cultural processes may be unrelated to the theories being evaluated, he questions the validity of his own contextual method which is entirely dependent upon the unrelatedness of theories (interpretations). What distinguished Hodder’s independent theories from processualist ones is that they are not external to culture, but inferences of cultural themes from which Hodder seeks to abstract underlying structures, “something not visible at the surface — some organizational scheme or principle, not necessarily rigid or determining, that is immanent, visible only in its effects” (1991c, p. 16).

Coherence serves as the criterion of verification because underlying structures are themselves believed to be coherent (Hodder, 1991c, p. 164) and meanings — even though arbitrary and not intrinsic to the objects — are bounded within contexts, i.e., the meanings of artifacts at time t are dependent on those at time $t - 1$ (Hodder, 1992, p. 14). Since structures are as much social, economic, and practical as they are symbolic (cf. Hodder, 1991c, p. 12), events that follow the logic of an underlying structure will necessitate a rewriting of the structures of signification (Hodder, 1990, p. 99). It is the high-level-theory assumption of this positive feedback relation between structure and events which justifies the coherence criterion for inferences of underlying structures from convergent interpretations of behavioral patterns or events through which the underlying structures manifest themselves in the real world. This method is hermeneutic (Hodder, 1992, p. 214) inasmuch as it attaches meaning to a particular piece of data by embedding it more and more fully in the surrounding data, searching for a theory that makes all the data “fit” and makes sense of the whole in terms of the parts and the parts in terms of the whole (Hodder, 1992, p. 227). Yet at the same time it is a hypothesis-testing or hypothesis-fitting procedure (cf. Kosso, 1991, p. 625) in that the hypothesis of an underlying structure or cultural interpretation, as suggested by some dimension of variation of material culture, is verified by testing against other, independent dimensions of variation.

Contrastive Archaeology

Hodder's method, at least as presented in the first edition of *Reading the Past* (Hodder, 1986), has been criticized by other postprocessual authors (Thomas, 1991, p. 3) as yet another — however sophisticated — approach that employs some form of universalism in order to make sense of the evidence. More radical, contrastive, self-reflexive approaches have been proposed which search for a fundamentally different past whose otherness lay in the structures and practice of everyday life (Hill, 1992, pp. 59–60) and where actions were organized according to a “non-functional” rationality that is not our own (Hill, 1992, p. 68). Our final postprocessual case example is such a radical approach, Hill's (1992) contrastive reanalysis of South British prehistory.

Hill's (1992, pp. 63–64) first argument for such a different rationality in South British prehistoric societies has to do with some alleged “refuse pits” at Neolithic settlements which contain bones, broken pottery, and other small finds and which he reinterprets as a “pit ritual tradition” of deposited offerings and refuse from feasting. This new interpretation does not stem from an alternative reconstruction of prehistoric behavior; where Hill reconstructs actual behavior from stratigraphic evidence, his inferences do not differ from the mainstream ones and are based on “standard” formation theory. Hill's novel perspective concerns the intentions, rules, and structures that guided prehistoric behavior, i.e., the deposition of bones, pot sherds, etc., in those pits. The rules and structures are inferred from systematic, patterned relationships between the contents of some pits (Hill, 1992, Fig. 1) which clearly distinguish these pits from other pits and which were overlooked by previous researchers. The implicit justification of this interpretation is its coherence: Hill has discovered patterns and structures in the alleged “rubbish” that make sense, both relative to one another and to the entire context of the time period, in light of anthropological models of ritual feasting, rites of passage, etc. This procedure does not differ from processualist research practice. In fact, the development of pattern-recognition methods and the explanation of patterns by constructing coherent interpretations consistent with models either derived from actualistic research or borrowed from anthropology is a hallmark of processual archaeology. Most importantly for the present discussion, it is fully MRT-based.

A nonfunctional rationality radically different from our own also manifests itself in the boundaries of South British Iron Age settlements that Hill (1992, pp. 64–67) proposes are as much symbolic as practical. A defensive function of these walls and ditches is ruled out because they are larger than required to keep animals confined and there is no

evidence of violent behavior. Moreover, the ditches sometimes show long sequences of recutting and backfilling with deposition of artifacts that display the same patterning as the artifact assemblage at a nearby, contemporary “shrine.” Finally, entrances of most enclosures and houses show a rigid easterly orientation that would not have avoided the prevailing winds at all sites and often leads to a striking lack of integration between different houses and communal spaces. This reasoning is remarkably similar to Schiffer’s (Schiffer and Skibo, 1987; McGuire and Schiffer, 1983; Schiffer, 1992) model of technical choices in prehistoric artifact design. It amounts to a successive elimination of a series of “functional” performance characteristics conceivably intended by prehistoric builders, finally leaving Hill with a symbolic function — symbolic demarcation of settled space and orientation toward the rising sun — as the only coherent explanation of all of his evidence. Such an argument is clearly based on general principles that account for how and why artifacts perform certain functions (Schiffer, 1992, p. 136) — MR principles. Which are the relevant performance characteristics of defensive earthworks? What size of fence or wall is required to keep different species of domestic animals confined? Although many of these generalizations themselves are strictly about artifacts, their use in the eliminatory reasoning process described above implies generalizing assumptions about actors’ intentions, minimally the principle of least effort.

A POST-EMPIRICIST REJOINDER TO THE POSTPROCESSUAL CHALLENGE

Postprocessualists attack MRT as the hard core of positivist processual method, yet the role of MRT in the processualist research program is ambiguous and has shifted over time. On the one hand, MRT is built on generalizing assumptions about human behavior and on the paradigm by which these generalizing assumptions are justified, i.e., in Binford’s case, the neoevolutionist ecosystems paradigm. MR research is intended to produce a body of unproblematic, confirmed background knowledge as an “observational language” (Amsterdamski, 1975, p. 86, quoted by Binford, 1981b, p. 24) so established that it has paradigmatic status and allows one to observe the past “directly.”

On the other hand, MRT clearly plays the role of a theory of observation [(cf. Salmon, 1975, p. 460) for an example of MR research that makes this point abundantly clear, see Binford (1981b, p. 290)]. Therefore, the very existence of MRT is a recognition of the theory-ladenness

of data because, in testing archaeological theories, it is (at least) with MRT that evidence is laden. Thus, MRT constitutes an element of a postempiricist model of observation in the processualist research program. According to such models, undescribed phenomena do not play a role in scientific knowledge and the resolution of scientific debates; scientists always argue about described, “theory-laden” percepts (Hanson, 1958). The knowledge, beliefs, and theories we already hold play a fundamental role in what we perceive. This is because in order to derive information from perception, we have to identify what we perceive, and identification requires a relevant body of information (Brown, 1977, pp. 81–82). Brown (1972) therefore argues that all perceptions involve a body of learned expectations and there are no theory-free sense data at all (1977, p. 81 n5). Scientific observation can be construed as a generalization of perception, potentially involving all types of information that can be transmitted from an observed object to the observer (see Shapere, 1982, p. 506). Theories play the role of previous knowledge and beliefs in scientific observation.

Building on the postempiricist pole of MRT, Binford now has explicitly acknowledged paradigm relativism [but not irrational paradigm shifts (Binford and Sabloff, 1982)] and stresses the importance of conceptual growth to the development of a science of archaeology (Binford, 1986, pp. 461–463). In a process of learning from ambiguities (Binford, 1986, pp. 471–472), we create a past by studying the record (Binford, 1986, p. 473, 1987, p. 393, 1989a, p. 88). Binford (1982, pp. 138–139) suggests a “relative objectivity,”

using alleged knowledge warranted with one set of theory-based arguments as a basis for assessing knowledge that has been warranted or justified in terms of an intellectually independent argument. In short, we seek to set up an interactive usage of our knowledge, or of what we think we understand, in order to gain a different perspective on both sets of knowledge. This procedure maximizes the opportunity for recognizing ambiguity. In turn, we then conduct research to reduce or eliminate such ambiguity and, if successful, learn of new and organizationally indicative facts (Binford, 1989a, p. 230).

Binford no longer stresses the paradigmatic status of MRT, but presents it as a body of theory-based arguments or knowledge — things we think we understand — whose crucial feature is their intellectual independence of the theories being evaluated. The procedure for testing theories is designed to expose ambiguities, that is, a theory is accepted when no contradiction is found between it and those independent theory-based arguments. This is an entirely intellectual process, and the relative objectivity Binford posits rests on the correspondence and coherence of separate, independent bodies of theory-based, intellectual arguments.

In sharp contrast to their rhetoric against MRT, all three postprocessual approaches examined in the previous section were found to depend on generalizing principles. This dependence results from the nature of the archaeological record, which by itself is not a text that can as readily be interpreted as a linguistic utterance. Interpreting the archaeological record is, as Hodder (1991b, p. 37) concedes, not equal to interpreting prehistoric people. Since the record *qua* material record is a by-product of behavior (as well as nonhuman factors), there is an intermediate step involved, (re-)constructing the “utterances” that can subsequently be interpreted in terms of underlying structures or the prehistoric actors’ intentions, motives, etc.

Consequently, postprocessual interpretation is built on a processualist, MRT foundation. Hodder (1991c, p. 104) acknowledges the “great methodological contribution of the New Archaeology,” while he finds postprocessual archaeology “weak on method” (1991a, p. 8, 1991b, pp. 38–39). He posits a complementarity between processual and postprocessual approaches, in that processual archaeology can provide the methodological basis for “the higher level of interpretation engendered by postprocessual archaeology” (Hodder, 1992, p. 172, cf. Hodder, 1991b, p. 38; Preucel, 1991, p. 28). This “higher level of interpretation” is based on a “lower-level” of reconstruction of behavior and events. According to Hodder’s (1991c, p. 3) theoretical rhetoric, “lower-level” reconstructions should be contentious because ideas, beliefs, and meanings interpose themselves between people and material culture. However, postprocessual practice on this level is no different from its processual counterpart. Uniformities are assumed, which on the surface often appear to be of a noncultural nature, but have some inevitable implications for human cognitive processes (cf. Trigger, 1989, p. 395). Even explicitly “contrastive” approaches, concerned with truly unique historical sequences, apparently require a frame of reference with which a radically different past may be contrasted. In fact, Saitta (1992, p. 891) suggests that providing such a frame of reference for a “contrastive” archaeology is the principal function of MRT.

On the “higher level” of postprocessual interpretation, the coherence criterion of justification is just as based on the independence of different (theory-laden) lines of evidence as is processualist MRT. Therefore, now that Binford (Binford and Sabloff, 1982, p. 138) concedes that theories are tested against theories, there is no logical difference between processual and postprocessual verification procedures, and Hodder’s independent lines of evidence — interpretations of various spheres of material culture supporting the same underlying structure or cultural theme — fulfill the same middle-range function as processualist MRT. By the same token, postprocessual verification also is a hypothesis-testing procedure, testing

interpretations against other interpretations. Evidently postprocessual interpretations are not intended to become the established, unproblematic background knowledge, which is the goal of MRT in its positivist interpretation and which postprocessualists criticize as “an edifice of auxiliary theories that archaeologists have simply agreed not to question” (Hodder, 1983, p. 6; cf. Shanks and Tilley, 1987, p. 111). However, since Binford concedes that theories are tested against theories and strives for intellectual consistency or coherence rather than truth, this is a difference of emphasis rather than of substance.

As similar as postprocessual practice appears to the postempiricist interpretation of the MRT-approach, Hodder (1992, pp. 5, 89) emphatically denies the independent status of MRT. He critiques MRT as the ontologically separate class of theories which it looks like in Binford’s early and in Schiffer’s writings. However, observational theories, and hence MRT, are not a special category of theories (Kosso, 1991, p. 623); they are not detached, but taken right from the general theory to which one is committed. For example, the theory of electron microscopy is ordinary physical theory which becomes observational — middle-range — only when implied in observations of other physical or nonphysical phenomena. Moreover, independence is not absolute, but relative to the specific theories under investigation. Hodder’s independence criterion is too stringent and sweeping when he attacks MRT because it is dependent on the same general theory as the theories under scrutiny. He almost seems to ask for observational theories informed by a different paradigm if they are to qualify as independent. Independence of theories, however, merely means that the acceptance of one theory does not force us to accept the other (Kosso, 1988, p. 463). As Kosso (1989, p. 246) succinctly puts it, objective evidence is “evidence that is verified independently of what it is evidence for.” Hodder’s own contextual, hermeneutic method makes no sense unless the various lines of evidence are believed to be independent of one another. Yet it is only under Hodder’s structuralist paradigm that interpretations of various material culture spheres provide checks for one another and thus may support the inference of an underlying structure or cultural theme. Hence Hodder’s criticism is an overinterpretation of postempiricist models of observation, and their general-theory dependence makes neither the MRT approach nor Hodder’s contextual method immanently and inextricably circular.

Processualist, MRT-based method and Hodder’s contextual method are in fact remarkably similar (cf. Kosso, 1991, p. 621). On the one hand, as Hodder (1992, pp. 151, 213) points out, MRT-based method as well as science in general are hermeneutic in that they use the criteria of correspondence and coherence in evaluating theories and “individual

observations [are] interpreted by their appeal to theories that are themselves put together and supported by observations" [(Kosso, 1991, p. 625); compare this with Hodder's (1992, p. 214) definition of his contextual method]. On the other hand, Hodder's contextual analysis clearly is a hypothesis-testing or -fitting procedure. Moreover, the relative autonomy of theory and data, which often results in unexpected research results, leads Hodder (1992, p. 164) to reject relativist positions such as Shanks and Tilley's (1987, p. 104).

In light of the strong similarities between postprocessual and processual methodologies, postprocessualists' pessimistic evaluations of the stability of processualist archaeological observations constitute an overinterpretation of postempiricist philosophy of science, invalidating their own accounts of the past. The theory-ladenness of evidence does not imply relativism unless implicitly an empiricist position is taken by assuming that only the observation of theory-free data would give reason to accept one theory rather than another. In fact, perceptions have greater epistemic value if there is more knowledge included in them (Bernstein, 1983, p. 19; Brown, 1977, p. 94). Shapere (1985, pp. 30–31, 35) points out that the rationality of science rests in its autonomous arguments, i.e., its ability to rely solely on its subject matter and relevant background information without appeal to outside considerations. This "contingent empiricism" (Shapere, 1985, p. 43) is a goal rather than a description of actual scientific practice. While Binford (1982, pp. 138–139) now speaks of a "relative objectivity" and Hodder (1991c, p. 52, 1992, p. 233) of "plausible accommodative arguments" as the goal of archaeological interpretations, it has been a fundamental error in most discussions of archaeological epistemology to accept only absolutely certain knowledge as the criterion for the acceptance or rejection of theories and paradigms. Clearly, as Shapere (1985, p. 21) concedes, positivism and empiricism collapse under the theory-ladenness of observation. But the background knowledge involved in scientific observations, its very theory-ladenness, i.e., the results of previous research which have been found to be successful and free of compelling specific doubt, allows more observations of the world than simple sense perception. If we base our statements about the past on several independent lines of evidence, and if our theories of observation are independent of the theories of the observed objects that we pretend to test, we can claim objectivity on a case-by-case basis. Significantly, this conclusion, which is essentially Binford's position (cf. above and Wylie, 1990, p. 4) has also been reached by post-positivist philosophers of science (Bernstein, 1983, p. 74; Kosso, 1988, pp. 463–464, 1989, p. 246; Wylie, 1989a, pp. 15–16, 1990, pp. 3–4) — and by Hodder.

CONCLUSIONS

I embarked upon writing this paper from a processualist standpoint. However, as I compared processual and postprocessual methodologies, I found so much agreement that writing from a postprocessual perspective would not substantially alter the analysis, but merely result in a shift of emphasis and terminology. Even the version I did write from a processualist viewpoint in some ways is more postprocessual than processual. Remarkably, it is MRT, condemned by postprocessualists as the hard core of positivist archaeological method, which bridges the gap between the two factions.

From its beginnings in Binford's early writings, but most clearly in later exchanges with postprocessualists, processual archaeology and its offshoots have not been quite as naively empiricist as some — even processualist (Gándara Vázquez, 1981, p. 1) — critics want to have us believe. MRT, interpreted as postempiricist theory of observation, may be construed as a postempiricist element in processualist epistemology, acknowledging its own general-theory dependence and the theory-ladenness of evidence and regarding science as an entirely intellectual enterprise with coherence rather than truth as its ultimate goal. MRT does strive for an established "observational language," but since the unproblematic, background character of middle-range principles is determined by the scientific community, as well as by practical success, and both of these are not independent of paradigmatic presuppositions, MRT is not quite the rock-hard objectivist program of postprocessual rhetoric.

On the other hand, an analysis of postprocessual practice revealed that postprocessual interpretation depends on bridging, middle-range principles because any archaeological record — as a material trace — is not itself an utterance or text by some (unknown) prehistoric authors, but we have to construct the text to be interpreted from the material remains of the past before we can proceed to interpreting it. Consequently, postprocessual interpretation of the past is a two-step or two-level process: an initial reconstruction of behavior from material traces in the record, followed by an interpretation of the patterns established in the first step (cf. Schiffer, 1976a, pp. 2–3). On the first level of inference postprocessualists routinely borrow middle-range principles from processual archaeology, implicitly recognizing the heuristic value of middle-range research, much of which is in the mainstream of modern archaeology (cf. Trigger, 1989, pp. 367, 389–391, 400). On the higher level of interpretation, the coherence of interpretations of various realms of material culture justifies inferences of underlying structures and cultural meanings. This use of multiple, independent lines of evidence again is equivalent to the MRT approach, now that Binford acknowledges

that theories are tested against theories and data are theory laden. Interpretations of other realms of material culture fulfill the same function as MRT: they serve as independently verified intellectual tools and observational theories in the process of understanding the cultural past, as frames of reference with which observations of the archaeological record may be contrasted to gain an understanding of their meanings (Saitta, 1992, pp. 887, 890–891). It is this function which defines the middle range: a space within a research program occupied by varying theories that are taken from the body of general theory to which the program is committed and that function as background knowledge in the verification of theories.

Both processual and postprocessual approaches are hermeneutic if hermeneutics means understanding parts in terms of a whole which is assumed to make sense, and the whole in terms of its parts (cf. Kosso, 1991; Saitta, 1992, p. 888). If you will, the processualists have been postprocessualists ever since they made one crucial concession: the postempiricist recognition of the theory-ladenness of data. In spite of much heated philosophical debate, what differs between processualists and postprocessualists, rather than the methodological resources and types of reasoning employed, is the contents of statements on, or the aspects of, the cultural past about which these approaches are mainly concerned. In other words, the wholes in terms of which individual propositions must make sense are different — “the world as an object of human thought and action” (Hodder, 1991c, p. 150) for the postprocessualists, cultures as physical systems for Binford, activities for Schiffer. Therefore, despite their formally similar methodological structures, what counts as evidence for or against a hypothesis divides the two approaches, and in the postprocessual case it may not even always be empirical evidence.

An intermediate epistemological position — though not explicit yet — is emerging. Most postprocessualists are settling on a realist position, which has long been implicit in Binford’s writings, while Binford now explicitly maintains what has also been implicit in his earlier publications, that we create the/a past from its material remains. Archaeological practice, if at all concerned about its epistemological foundations, has always been based on such a position and a melange of explanation and interpretation. Both positivist and postempiricist philosophers of science and, in spite of belligerent polemics, processual and postprocessual archaeologists seem to agree that in principle, some degree of objectivity or plausibility can be achieved on a case-by-case basis if our MRTs of observation are independent of the substantive theories about the past tested by archaeological observations and knowledge claims are supported by several independent lines of evidence.

MR research may be construed as an elaborate form of “source-side work” (Wylie, 1985, p. 104) for analogical arguments whose function in a historical discipline is similar to that of a theory of observation in the sciences. Binford and Schiffer regard middle-range, bridging theory as the central problem of archaeological inference because the archaeological record is made up of static material traces. Hodder (1992, p. 211) also lays emphasis on the materiality of archaeological data as their single most important aspect. Consistent with this view of archaeological data, the practice of postprocessual interpretation confirms that, just as no science can manage without theories of observation, historical disciplines depend upon analogies and generalizing assumptions (Gould, 1977, p. 150; Trigger, 1989, p. 366; Wylie, 1985, pp. 64, 84; but Salmon, 1982, pp. 171–173; Watson, 1986, pp. 447–448). Whether modeled after the sciences or after history, the nature of their data forces all archaeological approaches to make use of middle-range principles.

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