ing a set of rules or guidelines, the paper is a philosophical background for some undefined future changes.

Shrewd and reasoning people do not give up a certainty for an uncertainty; there will probably be widespread and stubborn arguments with the message here. Yet by ignoring it we guarantee that we will continue overinterpreting, trying to tell better stories than the competition. Although dissatisfied now, I am looking forward to a demonstration of what we can say about hominin evolution.

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This paper makes a valuable contribution by calling to the attention of archaeologists an issue of which many appear to be blissfully unaware. This is the problem of time resolution, a topic that has received fairly extensive treatment in the geological and paleontological literature (e.g., Anders, Kruger, and Sadler 1987; Badgeley, Tauke, and Bookstein 1986; Behrensmeyer 1982; Dingus 1984; Dingus and Sadler 1982; Sadler 1981; Sadler and Dingus 1982; Schindel 1980, 1982a, b; Van Andell 1981). A second, related issue is the distinction between site and nonsite in the Paleolithic sedimentary record.

Any honest field geologist will acknowledge that it is often impossible to establish contemporaneity between sedimentary events. The problem of precise lateral correlation between exposures is particularly acute in fluvial contexts and increases with geographic distance. Stern points out that the problem does not disappear even in a well-calibrated sequence such as the Koobi Fora Formation.

Paleoanthropologists differ from most of their paleontological and geological colleagues in their preoccupation with behavior. They attempt to reconstruct past behavior from archaeological residues and details of their preservational contexts. Stern is correct to emphasize the serious mismatch between the interpretive time scales used by paleoanthropologists who may wish to reconstruct yearly, seasonal, or even daily hominin rounds and the 10,000- or 100,000-year increments that may be the smallest temporal units that can be resolved geologically. In the flush of critical enthusiasm that was the “New Archaeology,” archaeologists appeared to believe that behavior itself was fossilized and that if they were clever enough to devise the correct models or methods of observation the behavior would yield itself up. This attitude overlooks the uniqueness of the archaeological record, which not only subtracts and alters information about past behavior but also adds information peculiar to itself. In fact, past events are rendered even more opaque by the action of postdepositional processes, which may include the actions of humans (Gifford-Gonzalez et al. 1985, Matthews 1965, Villa and Courtin 1983) or of soil flora and fauna (Darwin 1881, Stein 1983, Bocck 1986, Erlandson 1984, Crossley 1986, Johnson 1989, McBrearty 1990) or the effects of the physical properties of the sediments themselves (Cahen and Moeyersons 1977, Moeyersons 1978, Rolfsen 1980, Wood and Johnson 1978).

Stern seems to suggest that we are asking the wrong questions about the past, and I could not agree more that we must tailor our inquiries to the nature of the record. However, I believe that her criticism of the actualistic approach is misplaced. Since the days of Steno and Hutton, our knowledge of geologic process is derived from our observation of the modern world. Without actualistic studies such as those by Gifford (1978, 1980), Gifford and Behrensmeyer (1975, 1977), Behrensmeyer (1975, 1978), and Schick (1986), we would know little about the effects of geologic processes upon cultural debris, and without the work of Brain (1981), Hill (1984), Marcano et al. (1992), and others, we would be ignorant of the action of carnivores upon bone residues. Direct observation of predation (Mills 1984; Kruuk 1972, Schaller 1972, Teleki 1973, Boesch and Boesch 1983, 1984) by modern mammals or of carcass or plant resource availability (Blumenenschine 1986, 1987; Vincent 1985, Sept 1986) informs us of some of the probable limits and possibilities of early hominid subsistence. Problems arise with our attempts to predict how these factors may affect behavior, how traces of such behavior may be incorporated into the fabric of the geologic record, and how such traces may persist or be transformed by time.

Anyone who has spent any time looking for them knows that early Pleistocene sites are rare and that the distinction between site and nonsite is often arbitrary. That line is often difficult to draw, and Foley (1981a) has specifically examined the site vs. nonsite aspects of the modern semi-arid African landscape. Stern suggests that sites do not differ qualitatively from the sparser portions of the record but are distinct only in their density. She seems to imply that the nonsite portion of the record is a valuable resource, but I would suggest that the low density of objects for study and our inability to place them in time are among the reasons archaeologists have rather sensibly ignored it.

Stern also suggests that an appreciation of the problem of time resolution necessitates an entirely new theoretical approach, but it is not clear what research questions she intends this new agenda to address. In fact, though she criticizes what she calls the pursuit of “snapshot images” of the past, this paper serves to emphasize the preciousness of circumstances that preserve short-term early-hominid behavior. Conjoinable artifacts provide one such example. We must be able to recognize such evidence when it presents itself but also to acknowledge the substantial transformations wrought by geologic processes acting over long periods of time. We must be willing to ask our questions of the record as it is, not as we wish it to be.

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Stern has raised a number of important issues regarding the interpretive framework with which archaeologists