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classification will become entrenched and so limit our ability to ask new questions of lithic scatters.

Second, many archaeologists (including Chartkoff) view lithic scatters as having a poverty of attributes. By attribute, Chartkoff (1995:28) was referring to the number of data classes present at a lithic scatter (e.g., primarily debitage; a site containing a greater number of artifact classes would not be called a lithic scatter). What is critical to recognize (as Chartkoff did but did not emphasize) is that debitage is *attribute rich*, a view seemingly few archaeologists (and managers) comprehend. The problem lies in the lack of understanding and analysis of lithic attributes, not in their absence. As we understand more about lithic technology, a very considerable quantity of information will begin to emerge from the study of debitage, from both large and small sites. We have not even approached the potential for information in lithic scatters, and it is premature to define the data needed for present and future research. The identification of trade materials, the "dating" of obsidian flakes, spatial analysis, etc., are all important but say nothing of the technology of reduction or tool manufacture. Flake analysis could identify the types of tools being produced and so could be used as temporal markers (e.g., if a group of flakes was found to be the result of the manufacture of an Elko series point, we could "date" the scatter the same way as if we found an Elko point on its surface).

All in all, I like the general nested hierarchy approach as *one* method to examine lithic scatters (and other sites as well). It is worth pursuing, but I am concerned that if it is rigorously applied to evaluate a site as to its CRM significance, too many sites would be classified as nonsignificant and so be lost to archaeology.

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1995 A Nested Hierarchy of Contexts: An Approach to Defining Significance for Lithic Scatters. *Journal of California and Great Basin Anthropology* 17(1):28-40.



Reply to Sutton's Comments on A Nested Hierarchy of Contexts: An Approach to Defining Significance for Lithic Scatters

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Sutton's (1995) thoughtful comments on my paper (1995) raise several anthropological, philosophical, methodological, and managerial issues. These issues are of considerably broader significance than is the modest paper to which they refer. I appreciate the opportunity to respond to Sutton's comments and hope the dialogue will help cause these issues to be addressed more widely.

Sutton's central theme concerns the concepts of significance and uniqueness for archaeological sites, particularly with reference to cultural resource management (CRM). Sutton was quite correct in noting the importance of uniqueness within the context of CRM as a definition of site significance. He also was correct, I believe, in stressing that archaeologists generally have failed to appreciate the unique attributes possessed by lithic scatters. My paper certainly did not emphasize this point clearly enough, much

less examine its importance systematically. I also support his further thesis that every site, including every lithic scatter, has unique characteristics and therefore merits both conservation and study.

One aspect of this position concerns the perception of attributes and their significance. CRM applies a conceptually universal meaning of significance in its reliance on the site criterion of uniqueness. This use of the criterion can be understood anthropologically as an aspect of the value system of CRM as a cultural tradition. CRM has strong foundations in the discipline of history. Given the orientation of history in western societies, the value of historical uniqueness is a fundamental characteristic not found in anthropology, within which most North American archaeologists are professionally enculturated.

Research archaeologists (RAs), by contrast, tend to hold values of anthropology. Although anthropology has considerable links to the humanities, its ties to the social sciences are even more profound. The values of science therefore weigh upon the judgment and policy-making of RAs in ways quite different than is characteristic of CRM. From the position of the philosophy of science, the use of a universal criterion for significance such as uniqueness presents some serious logical problems. In science, significance depends on the applicability of data to the formation, testing, and resolution of propositions, as well as questions that arise from such propositions. Inherent significance does not exist from the scientific perspective. For example, significance of a type of archaeological site, or of individual sites, follows from the perception of questions or problems in the domain of anthropology, and the perceived utility of the sites and their data to reflect on those problems and their resolutions. Differences in the cultures of CRM and research archaeology seem profound enough that this difference in value cannot be resolved by policy or stance.

Sutton's point that archaeologists have not perceived the significance possessed by lithic scatters makes a good case for the larger dynamic. As will be discussed later, it may also suggest a workable strategy for achieving shared goals. If one surveys the literature of California archaeology, one will find very few cases of major research efforts devoted to the study of lithic scatters, a point suggested in my original paper. Archaeologists traditionally have seen little value in lithic scatters for their research. This is a result, I think, of the cultural tradition within California archaeology of focusing especially on local cultural sequences, which in turn put particular emphasis on site stratification and types of diagnostic artifacts. Lithic scatters are especially devoid of these attributes.

Given that lithic scatters have not been especially useful for traditional research foci, it is hardly surprising that they have not been seen as being of much value. I quite agree with Sutton that they *are* of considerable research value, and that they *do* possess numbers of significant attributes. I think it may be a bit much to argue that they are *rich* in attributes, especially when compared with any other site type. We are in an era, however, in which the kinds of attributes possessed by lithic scatters are useful for researching various kinds of questions which now interest RAs, so a climate should exist in which the protection, preservation, and analysis of lithic scatters can be championed. Such topics as exchange relationships, ethnic boundaries, and modes of tool manufacturing are among those that can be explored fruitfully with lithic scatters. The development of a literature in which this work is accomplished will be a powerful tool for the protective management of such sites.

This viewpoint raises again the cultural differences in values between RAs and CRM. Sutton emphasized that every flake scatter is unique, a position with which I agree but one which reflects RA values rather than CRM

values. I also support his position that many interpretations of lithic scatters as being poor in attributes (and my own discussion is an example) fail to distinguish between classes of attributes and attribute variation within classes. It remains, however, that lithic scatters are composed mainly or wholly of detritus. Even if attribute variation within a detritus set from a lithic scatter can be considerable, it is expectable that a relationship should exist between attribute variation and the diversity of activities for which the detritus is generated. This is not to say that attribute variation within a detritus assemblage cannot be considerable, nor that such variation cannot lead to important research contributions: both can be expected to occur. I think, though, that to express a concept of site significance in terms of a historically-oriented perception of uniqueness will take much more than assertions from RAs. Instead, it will take research results which shift the perception of lithic scatters as mere collections of flakes to entities possessing unique combinations of attributes which happen to reside in flakes—a shift in the level of perception, as suggested by the vocabulary of the article.

Such shifts in perception, I suggest, are fundamentally cultural in nature. They require reconstitutions of systems of values, attitudes, and beliefs. They are not simply consequences of new scientific demonstrations, although new research results are important triggering mechanisms. A particularly interesting aspect of this dynamic is that many archaeologists work in the traditions of both CRM and research archaeology. I would say that from an anthropological perspective, such individuals must be bicultural, and must shift back and forth from one system to another. They do not operate from a unified, synthetic position, nor is such a synthesis expectable. A useful analogy may be bilingualism. As long as research archaeology and CRM have different objectives or purposes for existing, they will maintain differing systems of

values, attitudes, and beliefs, differing definitions of external reality, and differing strategies of achievement.

The use of standards of significance such as uniqueness reflects this cultural division, I believe. Sutton argued that RAs tend to set the criteria and interpretations of significance which CRM uses, and I think there are a good many examples to illustrate his view. I do not think this relationship is inherently unidirectional, however, either in principle or in practice. Rather, I think there has evolved a significant amount of feedback and coevolution. If one looks at California, for example, even the very locations within the state where archaeological research has been done have been governed powerfully by state and federal control (even allowing for the unique impact of CEQA on private land ownership and development), the kinds of sites found on those lands, and the overwhelming proportion of CRM funding among all resources used to support archaeological investigations.

RAs are moved to do the kinds of research and to take into account the kinds of archaeological resources which did not attract their interests prior to the rise of CRM. One example is the wrestling that RAs do with the concept of uniqueness, a topic that is generally irrelevant to the scientific perspective. Another is the need to cope with a type of site, such as the lithic scatter, which occurs in great abundance but which has received little prior attention due to its characteristics, or lack thereof. One objective of my article was to find a translation of the values of CRM that would find meaning in the value system of RAs. Sutton stated that “the determination of significance is research-driven and then used in CRM situations by managers, not vice versa.” While I argue above that the relationship between RA and CRM perspectives may involve a bit more two-way feedback than that, I certainly support his perspective as a proper ethical orientation for archaeologists.

Sutton expressed an understandable concern that the development of systems of classification, such as the levels of context approach I suggested, can lead to a reification or institutionalization of such a system by the CRM bureaucracy. In turn, he feared, it could lead to a fossilization of possible research strategies or, even worse, management criteria for the definition of some sites as nonsignificant and therefore expendable. I think his points are well-taken, and I support his view that significance can be found for all sites, including each lithic scatter. I feel that the classification scheme proposed in my original paper is not one that contrasts sites according to degrees of significance, but instead provides a vocabulary for defining different kinds of significance for lithic scatters. In this way, I feel that this method supports Sutton's perspective, rather than posing a risk.

My position has implications for his concern that any scheme, no matter how useful it might prove, could evolve into an orthodoxy which retards the pursuit of new research interests rather than facilitating them. Of course, it could happen, and the danger is hardly limited to CRM. The history of archaeological research itself provides many cases in which existing perspectives have inhibited the development of newer ones. One could even call it a normal process, from the perspective of Thomas Kuhn's *Structure of Scientific Revolutions* (1962). The appropriate response, I think, is also shown in the history of archaeology. In spite of a dynamic in which the existence of an entrenched perspective at times may have affected the abilities of scholars to pursue new questions, new questions nevertheless have emerged and the field has made progress. The solution is not to avoid adopting new models on the grounds that they might become entrenched. Instead, it is to keep the intellectual climate diverse so that no model becomes a ruling orthodoxy. Can bureaucracies be kept from reifying a new methodology? If,

as Sutton has suggested, the determination of significance is research-driven and management responds to research-based perspectives, there should be nothing to fear. If such is not the case, and management reifies certain perspectives regardless of newer research perspectives, the failure of researchers to adopt newer perspectives is not going to prevent reification from taking place. Researchers then should have nothing to lose from adopting advances.

The nature of scientific knowledge is such that no contribution is eternal. A useful contribution can be adopted for a time and can influence further investigation, leading eventually to its continuing modification by others and eventual replacement by a better one. A less useful model is abandoned more quickly or never adopted at all. The scheme proposed in the original article was developed to help make some progress toward a research advance. The community of researchers will decide if it is useful or not, as well as how soon it needs to be left behind. If this approach is not used, however, certainly other ones will be, separate from the concerns of CRM, though with some influence from them.

A final issue concerns the political nature of CRM policy. This comment is not made at all as a criticism. All fields of human endeavor, including research archaeology, have their political dimensions; it is an aspect of reality that should be understood or decisions will be made which are contextually inappropriate or ineffective. For example, the current state of archaeological practice in California is profoundly influenced by the California Environmental Quality Act of 1970 (CEQA). If one were to consider present-day trends nationwide in state and federal politics, one would find that many efforts are being made in a number of venues to roll back or eliminate environmental protection policies and laws. Should these trends result in the curtailment or elimination of CEQA, the effects in California on both the practice of archaeology

and the preservation of the archaeological record would be phenomenal.

California archaeology exists as it does within a larger political context. Archaeological policy decisions which do not take these political dimensions into consideration are apt to suffer from contextual inappropriateness, in Darwinian terms, leading to negative results from the perspective of natural selection. Under such circumstances, the issue concerns of RAs are apt to be pretty inconsequential in terms of affecting decision-making. I say this *not* to suggest that any such threat looms overhead, but rather to urge archaeologists in both research archaeology and CRM to keep internal and external political dynamics in mind when crafting policy strategies.

As far as lithic scatters are concerned, I do not think the danger lies in what (if any) classification scheme may be used to deal with them, but rather in the continued treatment of lithic scatters as inconsequential. Cultural resource managers will not regard lithic scatters as significant unless researchers give them a strong basis for doing so. Whether my scheme of layered contexts helps in this effort remains to be seen. What will help more than anything else,

I believe, is the use of lithic scatters to do research, as well as the publication of reports on such research in which new things about past cultures are revealed. If so, the best possible situation will be created for the further recognition of this type of site during land use planning, Phase 1 and 2 assessments, and budgeting. The kinds of things that are learned, like the models of classification used to organize them, should prove to be of little ultimate concern compared to the gaining and dissemination of new knowledge itself.

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