

WILL THE REAL ARCHEOLOGY PLEASE STAND UP?

Comments on the Status of American Archeology, ca AD 1982

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This paper takes very seriously the central theme of The George Wright Society; the promotion of research, the synthesis of information, and the useful dissemination of the results of that process to the public. As a Park Service research archeologist, I wholeheartedly welcome the opportunity to discuss these issues in this strategy conference on the protection of cultural and natural resources.

My assigned topic is "Prehistoric Archeology." It is my feeling that prehistoric archeology in this country is in trouble, though I am not sure the trouble is too deep to be rescued. The main problem, as I see it, is a misunderstanding of archeology by others, and a misunderstanding of others by archeologists. I would like to begin by discussing what archeology is to archeologists. Please bear with me.

Not too long ago, the work of archeologists could best be described as collective and descriptive. Dig to collect artifacts, describe them in detail, and turn them over to museums for display to the wondering public. The emphasis of our profession was on the recovery and classification of things themselves, rather than on the behavior of the people who made them. I doubt that archeology is the only profession to have gone through a descriptive phase during its process of maturation. Some would even hold that such a phase is necessary.

However, archeology has changed. Within the past 20-30 years there has been increasing recognition of the potential of the archeological record as a useful tool for understanding human behavior. Though many modern social scientists study human behavior, few have access to the temporal perspective available to archeologists. Thus archeologists have become interested in what are termed "processural studies," that is, the study of culture change and the adaptive processes which condition the nature of culture at any given time and place.

To some (see Binford and Sabloff 1982), these changes in archeological inquiry have been almost revolutionary in scope, analogous to a major shift in scientific paradigm, such as that described by Thomas Kuhn (1970) in *The Structure of Scientific Revolutions*. To others, "there has been no revolution in archaeology" (Meltzer 1979:654). Regardless of the nature of the change, the fact is that today archeologists are interested in attempting to understand what factors condition and constrain the observed variability in human behavior through time and space. What components of the natural and social environments condition cultural adaptation? These questions are quite different from those asked

by archeologists in the past. More to the point in my view, they are quite different from those expected of us by non-archeologists. They most certainly are distinct from the emphasis on historical particularism (that is, the emphasis on specific events, places, people, etc.) common to inquiry within the discipline of history. I mention this now, because I view it as a major issue and will return to it later.

To investigate these questions of cultural process, modern archeologists follow research methods that are explicitly scientific in nature. Current research designs begin with the formation of specific questions of anthropological interest, from which "behavioral hypotheses" can be generated (Clark 1982). Such behavioral hypotheses may be based on processual models derived from other disciplines. A review of the recent archeological literature will reveal frequent reference to concepts from biological evolution, evolutionary ecology, locational geography, as well as economic and systems theories.

Once the model is developed, specific questions are derived which can be tested empirically. Only then does data acquisition (usually through archeological survey and/or excavation) take place. Almost certainly, some kind of non-judgmental, probabalistic sampling will take place during data acquisition. Sampling is one of archeology's most difficult and challenging problems—due primarily to the fact that the population parameters are often poorly understood—yet sampling is of utmost importance to successful research.

Following data acquisition, archeological research strategies normally proceed to some kind of quantitative confirmatory data analysis. Most frequently this takes the form of a statistical model in which null hypotheses are rejected, and alternatives supported. Statistical techniques employed include simple, yet powerful, parametric and non-parametric techniques, as well as complex multivariate methods. Virtually all archeologists now receive training in statistics (usually in lieu of a second language at the graduate level). Some would recommend that archeologists acquire a minimum of three courses in descriptive and inferential statistics, multivariate analysis, sampling, and finally, in exploratory data analysis as an alternative to the normal confirmatory model (Clark 1982). One must heartily agree with Clark that more training is necessary. Archeologists, it turns out, are fully as capable of abusing statistics as anyone, particularly with the advent of user-oriented computer packages such as SPSS or SAS. Some are consistently guilty of statistical overkill (e.g., do a factor analysis, then analyze the factors). More or less like putting a \$50 lock on a cardboard box.

Assuming the process is not too badly abused, the last step in the archeological research strategy is the restatement of analytical results in support or denial of the original behavioral hypothesis, and finally an interpretation of their relevance to the

general anthropological question of cultural process. Thus completes the explicitly scientific methodology now adhered to by the archeological community.

As an aside, I should point out that the modern archeologist has at his or her command a plethora of highly sophisticated ancillary techniques, techniques which usually capture audiences with ooh's and aah's but which, I emphasize, remain ancillary to the basic research methodology of the working archeologist. Some of these include trace element studies (neutron activation, X-ray fluorescence), dating methods (radiocarbon, archeomagnetism, thermoluminescence), remote sensing (imagery analysis, radar, resistivity, magnetic anomalies) and dendroclimatology. The latter has seen recent developments which must serve to impress even those hardened archeologists who consider themselves quite comfortable with life in the fast lane of modern technology. I give as an example a recent report by Martin Rose (Rose, et. al. 1982), an archeologist with the Laboratory of Tree-Ring research in Tucson, who has retrodicted for us the annual, spring, summer, and winter precipitation in northwestern New Mexico for the period from AD 900 to 1970. An archeologist doing research in that area can now pick any year of interest, say AD 1140, and determine what the annual, spring, summer, or winter precipitation was. To my knowledge, such information is simply unavailable elsewhere. The research potential of this information is incredible, particularly when one learns that the summer rainfall of that time is not accurately reflected by the annual precipitation data. Thus a summer drought period of considerable magnitude between AD 1130 and 1180 does not show in the annual record. Yet as we know, it was summer moisture that made the difference to prehistoric southwestern farmers.

The point of this rather abbreviated discussion of archeological theory and method—neither of which I have done any justice to—is that our discipline is quite distinct from those with which we are most closely allied (history and historical architecture), and more closely allied to those from which we are, administratively at least, distinguished (the natural sciences).

"But wait," you say, "don't try to tell us that archeology is a science!" All right, I won't. Too many words have been wasted on that futile exercise elsewhere. But I will say that although the domain of archeological inquiry may not be considered scientific, at least in the strict sense that the domain of physics is, nevertheless the techniques of archeological research are indeed just as scientific as those of the natural sciences, and should be recognized as such. Furthermore, archeologists are currently being trained as scientists and thus merit recognition as such. Most certainly, the questions we as archeologists ask of our data, that is, the questions of cultural variability, cultural change, and cultural process alluded to above, are not characteristic of the approach that historians and historical architects have toward their data. Please understand that I am not commenting on the

relative importance of processual vs. particularistic studies, I am simply pointing out that they are qualitatively distinct, a distinction which, in my estimation, has not been fully appreciated by non-archeologists.

There is a purpose to my rather biased discussion thus far, and that is to prepare you for a brief digression on things that really bother archeologists today. I should perhaps title this subsection the "Rodney Dangerfield Syndrome in Archeology," since it deals with how we are continually made to feel inferior by our colleagues, as well as by the policies, directives, etc., with which we work daily in attempting to conserve our data base. To paraphrase Mr. Dangerfield, when an archeologist walks up to the elevator, the operator looks him over and asks "Basement?" This cannot help bolster one's confidence. We simply get no respect. We feel like bugs on the windshield of life.

For instance, it is painful for us as archeologists to have to accept the fact that we do not qualify for federal research grade evaluation along with the "real" scientists. In other words, we are advanced in grade on the basis of the number of people we supervise, rather than on our abilities, or lack thereof, as professional researchers. Granted, we do qualify along with other social scientists as sort of second rate researchers, but somehow this doesn't quite cut it when we know that our approach to research is just as methodologically pure and objective as that of the "real" scientists. I am not sure, incidentally, that we really want research grade evaluation. I am sure, however, that we want the recognition that goes with eligibility for it.

It is painful to be continually reminded that archeology as a discipline is not considered scientific in any real sense by the Federal government. For instance, in my own agency—the National Park Service—the dichotomy between "science" (read "natural science") and archeology is not only real, but virtually insurmountable. This does not foster communication between us as scientists, nor does it foster the benefits of interdisciplinary research. Meetings such as this, and others in the past such as the Science in the Parks conferences, attempt to bridge the gap, yet here we find again that we are divided into two groups, cultural and natural, each talking largely to our own kind.

As long as you have become conditioned to my complaints, let me continue in this vein for a moment. It is painful to one who considers himself a scientist to read the Spring 1982 issue of The George Wright FORUM, devoted almost entirely to computers, and find no mention of an extremely sophisticated interactive computer system, one we developed to aid in the management of archeological and natural resources in Chaco Canyon. This program, termed PARKMAN, permits the unsophisticated user (it was developed, after all, by archeologists) (now Rodney!) to display the park area, select any sub-area of interest therein, plot soil, vegetative, geomorphological or administrative zones, and then plot the cultural

resources (archeological sites) that lie in those zones, selected, if one wishes, as to prehistoric time period or site function.

If such programs are operative elsewhere in the Service, I am not aware of them, but then I find we do not meet regularly with the folks in natural science, thus I may be mistaken. Please don't misunderstand me. I am not faulting the editor of the FORUM for this oversight, the fault must lie with a system that actively discourages proper communication, and with archeologists (myself included) who do not communicate their accomplishments effectively.

Perhaps what bothers research archeologists most, however, is being placed by the Federal government under the general category of "History and Historic Preservation." Now I say this at the risk of again being misinterpreted as not liking historians. Nothing could be further from the truth (some of my best friends are historians and I often have them over for dinner). We simply insist that archeologists be distinguished from historians. Though you may find it hard to believe, it is easy to tell the difference. I am reminded of the story about the preacher who traveled the country preaching the evils of drinking, smoking, and carousing. Accompanying him was a young fellow named Clyde, much too old for his real years, who sat on the stage in unkempt clothing, eyes horribly bloodshot, a cigarette hanging from his lips, reeking of booze, serving his time as a bad example for the audience to behold. In the story, the listener is informed that Clyde passed away suddenly, and is asked whether he or she would like to serve in Clyde's place.

Now I have been told that some consider this an accurate description of archeologists. They are totally misinformed. We archeologists may preach a lot, but we would never treat an historian like that in public. In fact, we feel genuine compassion for the poor devils, misguided though they may be in their futile pursuit of Truth before retirement.

I return to the issue of archeology as a subdivision of history. If you doubt that it is so considered, I bring to your attention such terms as historic themes, historic landmarks, historic structures, historic districts, historic fabric, the Advisory Council on Historic Preservation, and the National Register of Historic Places, to name a few, all of which are supposed to include archeological sites, materials and other data. One wonders what the reaction of historians would be if we substituted the term "post-archeological" for each of the "historics" above?

This may not bother most people, and may be considered nit-picking by some, but it does bother archeologists because it simply reiterates a lack of appreciation of the differences which exist between the disciplines. To draw an analogy, it is not unlike seeing all biological studies, research, policies, directives, etc., subsumed under the generic category of the study of plants, totally ignoring the theoretical and empirical distinctiveness of the

study of animal behavior. When the zoologist complains that his data do not fit the categories designed by botanists, he might be asked to think of them as movable plants. When an archeologist complains that there is a difference between an historic structure and an Archaic lithic scatter, he is told that the concept of the latter is included under the concept of the former. Thus we see attempts in the National Park Service to use the List of Classified Structures to manage non-structural archeological sites.

I appreciate your patience in allowing me to belabor this point far beyond its usefulness. Suffice it to say that archeologists and historians should be distinguished (everyone can agree on that—picture them both in tuxedos). Archeologists ask only that their profession be recognized as a distinct, scientific discipline with approaches and methods very different from those of history and historic architecture, yet equally important over the long run in contributing to the satisfaction of human scientific inquiry.

Now that I have emphasized that archeology's problems are different from those of others, I turn to a more detailed examination of those problems. To understand fully the problems facing modern archeology, one must understand the relationship between archeology and cultural resource management, as it has developed in this country. In the following discussion of this rather stormy marriage, I owe much to the recent overview of the subject of CRM, as it is called, by my colleague and friend, Don Fowler of the University of Nevada. As he views it, "cultural resource management has developed in response to federally mandated programs to inventory, to assess the significance of, and to manage cultural resources on public lands" (1982:1). I would like to examine the evolution of this phenomenon now, from the archeological perspective. Again, please bear with me.

Though the Federal government became involved in historic preservation as early as 1864 with the purchase of the Custis Lee mansion, archeological sites (or "properties," as we are supposed to call them) did not receive attention until 1889 when Congress set aside Casa Grande, a Classic Hohokam site in Arizona, as the Casa Grande Ruin Reservation. However, the landmark action came in 1906 with the passage of the Antiquities Act, helped considerably by the efforts of one Edgar Hewitt, a leading archeologist in New Mexico at the time.

Among other things, the Antiquities Act established the permit system which is still required for controlling excavation on public lands, and authorized the President to establish as National Monuments "historic and prehistoric structures, and other objects of historic or scientific interest" located on public lands. Note that the Act distinguished historic and prehistoric structures. It later behoved archeologists to interpret the Act as including non-structural sites under the category of "other objects of historic interest."

In 1916 and 1933, the National Park Service's responsibility for the management of federal archeological sites was formalized, and in 1935 the Historic Sites Act was passed, making it national policy to preserve "historic sites, buildings and objects of national significance" for public use. As we shall see shortly, the concept of "national significance" creates a whole new set of problems for archeologists.

A recognized need for public funding to recover data from threatened archeological sites resulted in the Reservoir Salvage Act of 1960, enacted primarily through action on the part of archeologists. Note the use of the term "salvage" in conjunction with the recovery of archeological data, a term archeologists today try consciously to avoid.

In contrast to the 1960 act, the Historic Preservation Act of 1966 was brought about primarily by historians and historic architects, with little involvement by archeologists. This act expanded the concept of a National Register of "districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, and culture." It also created the Advisory Council on Historic Preservation, and the State Historic Preservation Offices. The key provision of the Act, however, is Section 106 which mandates that federal agencies take into consideration the effects of proposed undertakings on properties "included in or eligible for inclusion in" the National Register.

At the time this wording was developed, it is unlikely that the effect it would create on archeology was anticipated. First, I doubt anyone suspected that intensive (and expensive) archeological survey would be required in the areas of proposed undertaking to locate the archeological sites that were there, and second, that analysis would determine that many of these sites would be deemed eligible for inclusion in the Register. It is more likely that the drafters of the legislation felt that archeologists already knew where most of the significant archeological sites were (presumably the Chaco Canyons, Mesa Verdes, etc.). Again, I would point to a misunderstanding of archeological research methods, goals, and priorities by non-archeologists.

This misunderstanding was not alleviated at all by Executive Order 11593 issued by President Nixon in 1971, which directed the heads of federal agencies to "locate, inventory and nominate" all sites that appeared to qualify for listing in the National Register, within three years. Again, it would seem, there was an assumption that archeologists knew where all the undiscovered ruins were.

Most certainly, the banner year for archeology was 1974, the year marking the beginning of cultural resource management as understood by most archeologists today. That year saw the passage of the Archeological and Historic Preservation Act (known also as the Moss-Bennett Bill and/or the 1974 amendment to the 1960 Act), the second major piece of legislation passed primarily through the

actions of archeologists. Basically, this act established a firm funding base (up to one percent of project costs) for the recovery of archeological data from those sites adversely affected by federal undertakings.

The effect of this was almost revolutionary. Due to the rules of federal procurement, all the procedures of competitive bidding were suddenly introduced into scientific archeological research. "'Contract archaeology' was born, much to the horror and doom-day predictions of the traditional archeologists" (McGimsey and Davis 1982:19).

Further events in 1974 included a meeting in Denver of a number of professional archeologists from both academic and agency positions, at which the magnitude of the changes that were occurring began to be fully appreciated. It was clear that academic archeology was not prepared to train students for the emerging world of contract archeology, nor was it prepared to accept the impositions the federal government would levy on the past academic freedom involved in exploiting the resource base. Bill Lipe (1974) argued eloquently for the establishment of a conservation ethic on the part of all archeologists. The American Society for Conservation Archeology was formed as a result of the Denver meeting, and in the summer of 1974 the National Park Service sponsored the Airlie House seminars, resulting in the formalization of archeological thought on the concept of cultural resources management.

Another event with far-reaching implications took place in 1974. On appeal of United States v. Diaz, the Ninth Circuit Court held that the penalty provisions of the Antiquities Act were unconstitutionally vague, violating the 5th Amendment's due process clause (Northey 1982:71-72). This, of course, created quite a stir among archeologists, particularly those in the Southwest attempting to curtail pothunting through prosecution under the terms of the Act. Since then, the Act's constitutionality has been upheld, but now each enforcement proceeding under the Act faces constitutional challenge. Thus, the Diaz decision weakened the Act considerably. Furthermore, the penalties under the Act were outdated (\$500 or 90 days). As Ernest Connally testified later, to a pothunter a \$500 fine is a mere business expense (Northey 1982:71).

All of this led to the passage in 1979 of the Archaeological Resources Protection Act (ARPA), in effect, a supplement to the Antiquities Act. To the archeologist, ARPA has both advantages and disadvantages. Among the former are (1) sites on Indian lands are now protected, (2) penalties are modernized (\$10,000 or one year for the first offense, \$100,000 or five years for the second offense), and (3) archeological resources are defined as "any material remains of past human life or activities which are of archaeological interest." Finally, it seems, an understanding of modern archeological inquiry is being achieved.

However, with legislation comes compromise, and with advantages come disadvantages. First, for protection under ARPA, material remains must be at least 100 years old. "Why is this a problem?" you ask. "Why can't archeologists be satisfied with the really old things?" Well, for one thing, many sites less than 100 years old exist for which there are no written records, particularly in the western United States (e.g., Navajo Indian sites). Further, many archeologists do not distinguish an historical boundary, noting that a vast amount of information

"goes unrecorded and will vanish from man's record unless it is recovered by a future archaeologist...Thus archaeology can contribute to knowledge of the whole of man's past; it need not stop where history begins" (Hole and Heizer 1973:9).

Second, there is the arrowhead problem with ARPA, that is, there are no sanctions against the removal of arrowheads located on the surface of sites. Although arrowhead collecting has always been considered a relatively innocent Sunday pastime (and still is, I guess), the removal of projectile points from sites creates problems for archeologists since frequently these artifacts are temporally sensitive. For example, in the San Juan Basin, the presence of an arrowhead on a surface site might permit the survey archeologist to tell whether an artifact assemblage is 5,000 years or 1,000 years old, a distinction of no small significance to a researcher. Put another way, permitting removal of arrowheads is sort of like allowing an historian access to archival documents, from which the dates have been removed.

Finally, ARPA does not deal specifically with underwater archaeology, or submerged cultural resources, as they are now known. Again, political compromise takes its toll.

Another event of far-reaching importance took place in 1979. This was establishment of the Archaeological Conservancy, now located in Santa Fe, NM. The Conservancy is modelled after the Nature Conservancy and, though still in its infancy, has a credible record of purchasing and protecting significant archeological sites threatened with destruction, for which no alternative means of protection can be achieved.

To summarize this discussion of the evolution of cultural resources management, CRM is now an integral part of the discipline of archeology. As a result, two separate professional societies have been formed (ASCA, SOPA). Our major professional journals now have CRM sections, and at least one new journal (Contract Abstracts and CRM Archeology) and one bulletin (CRM Bulletin) have been formed. By 1981, at least 35 universities were providing graduate training of some sort in cultural resources management. The impact, therefore, has been substantial, if not revolutionary.

Obviously these changes have not all been bad, many have been very healthy for the profession. Why then have I discussed the evolution of CRM and its integration with academic archeology under the general topic of "problems?" Primarily because it is my belief that the advent of CRM has brought a number of serious issues to bear on our discipline — issues which would not have materialized as problems if CRM had not developed.

On the one hand, as I pointed out earlier, academic archeology has grown further and further away from the historical particularism which characterizes disciplines such as history and historical architecture. Now as a theoretical discipline, archeology is much more closely aligned with the natural sciences, particularly biology. For example, a review of the table of contents of an ongoing series of syntheses of theory and method in archeology reveals titles on "Carrying Capacity and Cultural Process," "Recent Ecological Approaches in Archeology," "Quantification of Vertebrate Archaeofaunas," "Paleobotany in Archeology," "Evolutionary Theory and Archeology," "General Ecological Principles in Archeology," and "Taphonomy and Paleoecology," to name a few (see Schiffer 1982:xi-xiii).

On the other hand, the emergence of CRM as an integral component of archeology has brought us into increasingly close alignment with history and historical architecture, particularly with regard to the legal, managerial, and policy bases necessary to the preservation of archeological data. Pity the poor archeologist then, pulled in one direction by advances in theory and method, and in the opposite direction by lawmakers and managers. Little wonder that he finds himself unable to answer the question: "Will the real archeology please make itself known?" I would like to turn now to a brief examination of some of these CRM-related issues.

First, there is the problem of what is happening to basic research in archeology? As Fowler asks, "what contribution to general archaeological knowledge is made by an intensive survey of a 1.2 ha drill pad site?" (1982:21). The legal requirements of the 1966 Act are met, but can we say the same of scholarly requirements? Many concerned archeologists have addressed this issue, among them Fred Wendorf, past president of the SAA. Wendorf (1979:642) notes that in 1974, 18 percent of the proposals submitted to the Anthropology section of the National Science Foundation were for North American archeology. In the fall of 1977, this had dropped to 3 percent. His concern about stifling our profession merits quoting at length:

I can foresee a time when archaeology may come to be regarded, even by archaeologists, as nothing more than a service industry, when archaeologists regard themselves as the peers of beauticians and plumbers, who have no obligation whatsoever beyond the simple repair jobs they are called in to do. They may fulfill a contract in the

very strictest sense, but will go on from there to the next contract rather than to the assimilation and synthesis of the data, which is what cultural preservation is all about (1979:642-643).

Harsh words for our profession, especially coming from one who was a leader in cultural resource management long before the phrase was coined (Wendorf et. al. 1956). The answer, he feels, lies in a renewed emphasis on the basic research ethic in archeology. Fowler would agree, noting that even small, isolated surveys can make scholarly sense given an appropriate research design.

Yet another problem is the issue of "national significance" alluded to earlier. For compliance purposes, archeologists have to determine which sites are of sufficient significance to be eligible for inclusion in the Register. Basically, the problem is that the concept of national significance was not generated with archeological sites or methods in mind, and the criteria available, though applicable to historical structures, are difficult to apply to the archeological record. If I may be permitted another analogy, it is more or less like a biologist who completes a population study of an elk herd, then, wishing to re-examine the herd in more detail, finds to his dismay that only the trophy class bulls have been preserved.

The only National Register criterion that seems appropriate for archeology is that for sites which "have yielded, or may be likely to yield, information important in prehistory or history." Obviously, however, this could be (and has been) interpreted that all sites are significant, until excavated at least. Further, "important information" becomes a function of the nature of the research questions being asked, and what archeologist can predict the character of the research questions to be asked in the future, and thus the character of the evidence to be preserved now? Another quote from Hole and Heizer is in order:

What is archaeological evidence to one excavator, or at one time, may not be considered such for another. Thus carbonized wood was not usually saved as data for dating until the radiocarbon process was invented. Similarly, until techniques of flotation were developed, archaeologists overlooked the seeds that might occur in the soil (1973:87).

The dilemma of archeological significance is one with which archeologists have struggled for the past decade, and though much has been written on the issue (see Schiffer and Gumerman 1977: Part VI), no definitive answers have emerged. In drafting ARPA, however, specific wording was adopted to address the issue, using the term "archeological interest" instead of "archeological significance," to define an archeological resource. As Northey points out:

This choice is consistent with the Act's purpose to conserve the nation's archaeological resource base... Resources

of no particular significance now may become significant as technology improves and knowledge increases. Therefore, conservation requires preservation now of resources that will be significant only in the future (1982:fn. 340).

Perhaps as the rules of ARPA are implemented then, the issue of significance will become less of a problem than it has in the past, assuming, of course, that National Register eligibility or listing not be relied on as the primary tool for the management of archeological sites.

Finally, under this discussion of CRM-related problems, we come to the issue of money. Does archeology merit the next Golden Fleece award? Is archeological research important enough to warrant the current level of public support? If not, then what does constitute an appropriate level?

Almost everyone, except perhaps the archeologists themselves, feel that much too much is being spent on archeology these days. This is not surprising; I personally feel that both auto workers and heart surgeons are paid too much, yet I don't imagine they would agree. The issue of what portion of the GNP of a society should be devoted to preserving and interpreting its archeological heritage is of fundamental importance. I do not know if there is, or even should be, a set formula for determining this, yet I do know that our profession should be more concerned about what the public is actually getting in return for the money spent on archeology.

It turns out that I am not the only one concerned. In 1981 the General Accounting Office completed a report which took the Department of Interior to task for inadequate attention to what has been going on in archeology since 1974. Noting that the National Archeology Program currently costs about \$100 million a year, the GAO pointed out that without better guidance from Interior:

some Federal agencies could spend billions of dollars over the next 10 to 30 years for archeological surveys, many of which may not be necessary, while other agencies may not do enough to identify and protect archeological sites (Comptroller General 1981:i).

The GAO also estimated that strict adherence to Executive Order 11593, discussed above, requiring agencies to survey all federal lands to identify archeological resources, could cost anywhere from \$388 million to \$3.9 billion, depending on how it was accomplished. The GAO's recommendation, incidentally, is that agencies be required to conduct surveys only when land-disturbing activities are planned, when existing projects threaten sites, or on a sampling basis for planning purposes (Comptroller General 1981:22).

In defense of archeology for a moment, I would point out that our methods are by nature expensive. Archeological field and lab-

oratory work is labor-intensive and requires trained personnel (who tend to feel slighted if not paid something for their work). Further, I cannot help but note that the \$100 million currently spent on archeology is but a drop in the bucket compared to expenditure levels common in other segments of both the private and public sectors. The Defense Department, as usual, comes quickly to mind, but what about the amount spent on cigarettes annually, or, for that matter, on those stimulating commercials for detergents? Isn't it ultimately a question of priorities? I do agree that archeologists could be more efficient in how they spend the public's money, though.

Perhaps the real problem with the money issue lies in the public's perception of the validity of what we as archeologists do. This should concern us much more than the amount of money spent annually. It seems to me that the public would be willing to support things like archeology as long as they felt they were getting their money's worth in return. If what we do is not credible in the eyes of the public, then indeed we are in trouble. The question is how to enhance this credibility?

Some archeologists claim that information derived from the archeological record will help us adapt to conditions of modern and future life:

When we say that archaeology is relevant, we mean that it produces cultural laws and that this knowledge may be used operationally in dealing with problems extant in today's world (Martin and Plog 1973:362).

Frankly, I cannot agree with that statement. It seems to have been generated from the feeling that unless we as archeologists can help the poor, we are not justified in continuing our research. I must agree with Fowler, who notes, "archaeology generates information, but the case has yet to be made as to how such information helps the gross national product or lowers the cost of energy" (1982:39).

I would simply ask, why should we as archeologists be singled out from other scientific endeavors in this respect? Why should archeology be any more or any less esoteric than research of others? A recent issue of *Science News* contained a report on the sexual habits of the bowerbird. (It was entitled "Avian Enigmas," which I misread as "Avian Enemas"—I guess that's what got my attention.) I am sure many readers found it as interesting as I did, yet I doubt whether anyone expected the results of the research to lower the crime rate in our large cities. Let's not sell the public short. Based on my experience in giving tours to Park visitors, I would say that the public readily accepts archeology for what it is, as long as our goals, methods and findings are explained in an understandable, non-jargonistic fashion. I do not see the need to claim that archeological research will do something for people it cannot do, in a misguided attempt to "legitimize" our profession.

On the other hand, perhaps we are not being singled out. Perhaps I am over-reacting from the paranoia instilled by the GAO report. But there still is a fundamental problem which underlies all the issues raised so far in this paper, and this seems to be that we archeologists are simply not communicating effectively... not to our peers, nor to our colleagues in the social and natural sciences, not to the policy-makers and managers, nor to the public. We are a profession in a state of rapid transition. We do not agree among ourselves as to what our goals are or what our methods should be. Our colleagues do not understand what it is we do or wish to do. Laws and policies are created for us that are virtually impossible to implement. Managers expect us to accomplish things which to us are unreasonable, if not impossible. Meanwhile the public is being led to believe that the results of our research will cure real social problems in the modern world. [Visitor to Archeologist—on his knees, digging: "What are you finding down there?" Archeologist: "Lots of arrowheads and burials." Visitor: "What does it mean?" Archeologist: "I think this means we should reduce defense spending and put more money into social security."]

Let me turn briefly to the status of archeology within the National Parks themselves. Here the problem is of a different magnitude. Rarely are cultural resources threatened by industry within Park boundaries. Instead the threats are from natural causes, over-use by the public, or park managers and planners.

Many natural threats (erosion, earthquakes, etc.) may be unavoidable or simply too expensive to deal with (how and when do you interrupt natural geological processes?). On the other hand, threats from the public and management can be avoided, yet we must be careful where we lay the blame. What does one blame the interested public for, too much interest? Too much enthusiasm? How can we blame management for making honest and difficult decisions between use and conservation, based on the information at their command? No, one must blame us archeologists and cultural resource specialists for not doing our job well enough. We have failed to communicate archeological goals, methods, relevance, and the conservation ethic to those directly entrusted with the care of the resource. "We have met the enemy and they is us."

The challenge to us is to work within the system, frustrating though that may be. [If indeed Stephen Mather did blow up the sawmill, as the story goes, the fact is that today he probably would have lost his job and thus the effectiveness of his actions.] No, we must learn how the system works, and then work hard toward manipulating the system to the best advantage of the RESOURCE. That, in the case of archeology in the National Parks, is conservation first, any other action second.

This may seem to be a fairly dismal picture of the status of archeology. If I have mis-represented my profession, I apologize to my peers. I do feel, though, that this statement of affairs may help

explain the reaction to developments in archeology on the part of both the Federal government and the private sector in recent years. There is some fear on the part of archeologists, for example, that legislation which now serves to protect sites and data may simply be ignored as an expensive luxury (Fowler 1982:39). Almost every archeologist has a horror story of someone in industry or management either consciously or inadvertently sidestepping legal requirements or subverting them altogether.

There is, further, evidence of the federal government itself consciously and purposely easing up on archeological survey and mitigation requirements — requirements we have fought hard to maintain in the past. An example is the Office of Surface Mining's newly proposed Programmatic Memo of Agreement with the Advisory Council, and the latter's agreement with it. Though still in draft form, an actual survey/mitigation plan modeled after the PMOA is now being put into effect in western New Mexico. For the first time, less than complete areal survey for archeological sites is being required for an area which will be strip-mined. Sampling and predictive modelling of significant sites are proposed instead.

Another reaction has been to suggest the pursuit of national archeological research topics, or "NARTS" (King 1981), in order to insure our research is "relevant." Archeologists have not been overwhelmingly enthusiastic about this suggestion, probably for several reasons (Adams 1982, Judge 1982). Few like to have their research questions defined by Washington, perhaps feeling that a large enough portion of their lives has been defined by Washington already. Also, such national questions may be inadequate to explain archeological variability occurring locally, and, further, would tend to suppress creativity. The quest for instant relevance may not be worth the expense, in the long run.

The result of all this, I fear, is that we are not only in danger of losing our credibility, but also of compromising the conservation ethic in archeology — that obligation we have to future archeologists to preserve archeological data, and to future citizens to preserve that component of the country's heritage written in the archeological record.

To summarize this paper thus far, let me rephrase my view of the current dilemma in North American archeology today. First, like it or not, our profession is attached to the coattails of the HISTORIC preservation effort in this country, which involves methods not entirely appropriate to the conservation of our own unique resource base.

Second, the academic segment of our profession is moving us closer to the natural sciences, which do not have the same preservation problems that we do (they deal generally with renewable resources).

Third, our resource base is non-renewable and, therefore, is constantly dwindling. National Park areas are one of the few types of areas which will hold these resources "in perpetuity" (however defined), assuming that the conservation ethic is firmly upheld in that agency.

Fourth, as professional archeologists, we seem to be unable to communicate our goals and interests adequately to others. Our profession is, therefore, misunderstood by many others, perhaps even by most of those who are in a position to make decisions about conservation of our archeological resources.

Finally, while archeologists are debating whether or not a dilemma exists and if so, what its nature is, the federal government and private industry are reacting to their perception of the problem by easing and/or avoiding conservation requirements now in effect.

If this is an accurate portrayal of the dilemma, and if the problems I have outlined are real, how then do we remedy the situation?

Most certainly we can do without the intellectual arrogance which all too frequently inhabits our ranks. There are numerous archeologists who genuinely feel that the public simply does not have the intellectual capacity to grasp the meaning and relevance of our research. That this same public provides funding for the pursuit of their own research interests seems to escape them. As Dave Thomas points out, the issue is not one of relevance, but of our ability to communicate our deeds beyond the ivory towers; "there is no shortage of public interest in archeology, there is merely a shortage of interesting archeologists" (1982:33).

Compromise of the conservation ethic may take a more subtle form. In my view, professional archeologists in all levels of federal agencies are obligated to represent the conservation position in their recommendations to management, planners, and policy-makers. Yet it seems to me that some may have compromised their positions to start with, under the pretext that "management will not buy off on anything else," or "it will never fly if we take that stand." Such statements may be true, but the firm conservationist posture must be taken anyway. Compromise is the job of politicians and managers, not of professional archeologists—it is expected of the former, not of the latter. We need to foster the development of uncompromising conservationists in archeology, equipped with the ability to convince management of the need to establish resource conservation as the first and as the preferred management alternative. The burden should then rest with others to prove to management that the value of the undertaking offsets the value of resource conservation. Let me give you one example of where we failed along these lines:

Chaco Canyon, in northwestern New Mexico, exists in an extremely fragile environment, protected in large part from over-use by its very isolation and lack of paved-road access. Today we are witnessing the construction of a new, paved highway within the Park itself, at a rumored cost of up to a million dollars a mile. Such a road can only serve as a magnet to draw further paved access to Chaco. Visitation will undoubtedly double or triple when that happens. Such development is costly in more than one sense, because ultimately it is taken at the expense of resource conservation. Yet I do not fault the planners or managers for this ...they all are doing their jobs with the best of intentions. We archeologists and cultural resource specialists, however, are NOT doing ours. At some point in the planning process we did not argue strongly or effectively enough on behalf of the resource itself.

Nor should we create false goals or false impressions of relevance of our work in order to sell archeology to the public. We cannot do so and maintain our professional integrity in the long run. The public does not look to archeology to measurably improve their lives or solve their social problems. There is no need to compromise our integrity in the construction of false rationales. If nothing else, archeology is valuable simply because it can bring to the public a more complete understanding, and thus a deeper appreciation, of the tremendous variability in human expression.

What we must do is work diligently to train highly ethical, conservation-minded, professional archeologists, who have a deep commitment to the integrity of their discipline and of the data base. We must constantly seek reliable, yet effective, measures to increase the efficiency of our work without reducing the quality of the results. Finally, we must make an all-out effort to insure that the results of our work are transmitted to the public in an intelligent and comprehensible, yet in no way condescending, fashion. We cannot blame others for what we have failed and are failing to do. The burden lies solely with us, and we are not being fully professional until we accept this and work to do something about it.

Let me reiterate my opening comments. I take the goals of The George Wright Society to heart (dedication, research, education, conservation). Effective pursuit of these goals would go a long way toward curing the ills of modern archeology. It is an important challenge for all of us.

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