Chapter 6. Action Archaeology

Scientits studying the past do not always work with the dead; frequently archaeologists turn to living peoples for clues to the interpretation of prehistoric remains. Although these living people are not data, in the strict sense, the insight of an individual participating in a primitive culture can frequently open the eyes of a modern archaeologist, who is trying to discover the meanings of artifacts of the past. Richard Gould, an archaeologist now with the University of Hawaii, spent months with the aborigines of Australia and the Tolowa of northwestern California in the search for answers to questions arising from his excavations. Why, he quizzed them, did they make their arrowheads in such peculiar, yet regularized forms? How could they make a living without agriculture or industry? Who lived with whom, and what would their houses look like 100 or 1000 years from now? Gould asked his Tolowa informants to inspect his excavations, in order to get their ideas on puzzling artifact types. When he commenced his excavations, Gould looked for concentrations of broken artifacts and midden deposit. He was somewhat chagrined when, after repeated digging, he was unable to locate any prehistoric house remains, so he asked his informants about the problem. They were quite amused, telling him that "...them old-timers never put their houses in the garbage dump...they don't like to live in their garbage any more than you would!" (Gould 1966:43). They pointed to a steep slope on the edge of the "site". Although this hillside seemed to Gould an unlikely place to build a house, he followed their suggestions. After only 20 minutes of digging, he came upon a beautiful redwood plank house lying only 18 inches under the surface. Gould's Tolowa

just grinned knowingly.

This kind of fieldwork -- termed "action archaeology" by Kleindeinst and Watson (1956) -- has become an important aspect of modern archaeological research, especially as industrial societies encroach upon lands and customs of the few remaining primitive peoples.

Perhaps the earliest case of action archaeology can be traced back to the research of Dr. Saxton Pope, in a touching episode of early anthropology. In 1911, a beaten and defeated Indian, later to be named "Ishi", was found crouching in a slaughter house corral near Oroville, California. His family had either been murdered or had starved and Ishi himself no longer had the will to live; he was willing to succomb. Obligingly, the local sheriff locked him in the jail, since "wild" Indians were not to be allowed to roam about in those days. Through good fortune, Alfred Kroeber, a young anthropologist at the University of California, learned of Ishi's plight and arranged for Ishi's release. Kroeber brought Ishi to San Francisco, where he secured quarters in the University Museum. From that time until Ishi's death in 1916, Kroeber and his staff taught Ishi the ways of civilization, while the Indian exchanged his secrets for survival in the wilds of backland California; clearly Ishi had more to offer. During his stay, Ishi developed a hacking tubercular cough -- the malady which later cost him his life -- and he was treated daily by Dr. Pope, a surgeon from the nearby University of California Medical Center. Over their short association, Pope and Ishi found common ground in their interest in archery. What an odd combination they must have been: Pope, the urbane physician and scholar paired with the Yahi Indian, whose hair was singed in tribal custom, shooting arrows

through the downtown parks of San Francisco. Pope was a good student, learning rapidly everything Ishi would teach him. After Ishi's death, Pope wrote a book about his newly-found interest in archery, its techniques and strategy. This book, Hunting with the Bow and Arrow, was published in 1923 and quickly became the bible of the bow-hunting fraternity. Apparently many urbanites were intrigued by such an unusual avocation, for now, of course, archery is big business. This episode is but a single example of how primitive survival arts can be salvaged by students of culture.

Unfortunately, many prehistoric techniques have perished with their practioners, and archaeology has been forced to attempt to rediscover them. Often called "experimental archaeology", this branch of science is conducted by some of the better-coordinated anthropologist, many of whom have become highly competent at the primitive skills. Archaeology can boast no more complete example of rediscovering extinct technology than in the manufacture of stone tools. Fortunately for the archaeologist, flintknapping is a messy business and as a result, archaeological sites are often littered with broken stone artifacts and waste chippage. For constructing cultural chronologies, the superficial outline of the artifact is often enough to determine temporal types; side-notched point may for example, be later in one region than the corner-notched varieties. But in aspects other than chronology, it becomes imperative that the archaeologist understand every shred of evidence available. Most aboriginal stoneworkers are now dead and with them died the trade secrets which could tell us more about their tools. The study of stoneworking and its socioecological correlates is another example of action archaeology in the service of anthropology.

A few dedicated scientists have spent years experimenting with stone tools. Largely through trial-and-error efforts of men such as Francois Bordes of France and S. A. Semenov of the Soviet Union, a tremendous amount has been rediscovered about the process of manufacturing stone tools. In one example of this approach, Don Crabtree, now affiliated with the Idaho State University Museum in Pocatello, undertook a series of carefully documented studies to uncover the true nature of prehistoric stoneworking. One of Crabtree's projects was to discover what techniques were necessary to replicate the Folsom projectile points discovered at the Lindenmeier site in Colorado. Folsom points, surely some of the world's most exquisite stone artifacts, were originally made between 10,000 and 9000 years ago. Mounted on

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Figure 5 about here
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spearshafts, these artifacts were used for hunting extinct forms of American bison. Although the arrowheads are only about 2" long, Crabtree counted over 150 minute sharpening flakes removed from their surface (see Figure 5). The distinctive property of Folsom artifacts is the flute or channel flake removed from each side. The purpose of such grooves is unclear; some archaeologist suggest that flakes were removed to facilitate hafting to the spearshaft, while other scholars maintain the groove allowed for more rapid release of blood, like "blood grooves" on many modern daggers. At any rate, Crabtree insisted on finding exactly how such flutes could be duplicated.

Crabtree, who had been interested in flintknapping for most of his life, began his work on the Folsom problem shortly after the Folsom complex was initially documented in 1926. The technical

quality and intrinsic beauty of the Folsom point intrigued Crabtree; while most arrowheads can be fashioned in a matter of a few minutes, the Folsoms required hours, assuming that one understood the elusive technique in the first place. In the experimental period, which lated over 40 years, Crabtree tried every conceivable method of making the Folsom points. In his final report on his experiments, Crabtree (1966) described eleven different methods of trying to remove such flakes. Most method proved unsuccessful, for either the technique was impossible with primitive tools or the flute removed was too dissimilar to those on the Folsoms. One method in fact only succeeded in driving a copper punch through Crabtree's left hand! The conclusion was that there were only two realistic methods of removing such a flake from an artifact. The first way was to place an antler shaft on the bottom of the unfinished artifact and then strike this punch with a sharp hammer blow. Because of the critical placement of the antler punch, this technique requires two workers. Further investigation led Crabtree to an historic source which described aborginal American Indian flintworking techniques. Particularly interesting were the observations of a Spanish Franciscan Friar, Juan de Torquemada, who travelled among the central American jungles in 1615.

> "They take a stick with both hands, and set well home against the edge of the front of the stone, which also is cut smooth in that part; and they press it against their brest (sic), and with the force of the pressure there flies off a knife...Then they sharpen it [the tip of the crutch] on a stone using a hone to give it a very fine edge; and in a very short time these workmen will make more than twenty knives in the aforesaid manner" (quoted in Crabtree 1968:449).

Although Torquemada was describing removal of flakes from a polyhedral core, Crabtree thought the method might possibly produce similar results to those evident on the Folsom artifacts. Following Torquemada's descriptions, Crabtree manufacture a chest crutch, padding one end to avoid painful chest injuries and equipping the other end with a sharp antler flaker. An unfinished Folsom point was tied tightly in a vise of wood and thong, and then gripped between the feet of the flintknapper. Using this crutch braced against the chest, fluting flakes were driven off between the feet. The resulting artifacts were almost identical to the Lindenmeier Folsom points. Figure 5 illustrates several of the Folsom specimens recreated by Don Crabtree in this manner.

Although the archaeologist can never be certain that this was the precise method employed over 10,000 years ago, Crabtree's experiments plus the 250 old description by a Spanish friar give the archaeologist a much firmer foundation upon which to base further hypotheses. Scientists such as Crabtree have contributed a great deal to our knowledge of the tools of the past. Since tools are all that we have from many vanished cultures, it is important to learn all that they have to tell us.

The experimental approach is but a single facet of action archaeology. Although enlightening about physical techniques, such experiments leave unanswered our questions about social and idiosyncratic implications of artifacts and lithic debris. Do distinctive social groupings, such as villages or bands, manufacture their tools in characteristic ways? How do group norms condition the finished artifact? Do primitive artisans tend to think -- like archaeologists -- in terms of artifact types?

Are individual preferences expressed in stone tool assemblages? Questions such as these can never be answered by the experimental approach discussed above, since the answers require informants who have learned the techniques of stone working within their native cultural matrix. No amount of experimentation can tell us how primitive people think and plan their artifacts.

To be sure, native stoneworkers are rare in this modern world. Yet such groups do exist, and archaeologists are beginning to recognize the potential contribution to knowledge. We shall disregard for the moment the fine line separating archaeological research and that of cultural anthropology to consider how action archaeology investigates the social correlates of stone tool manufacture.

It was in 1964, as a graduate student at the Australian National University that J. Peter White first visited the Highlands of New Guinea. Although he worked primarily as a field archaeologist -- his doctoral dissertation was the first ever written on the prehistory of New Guinea -- White was delighted to find that the local residents still manufactured tools of stone. Realizing the scientific potential of this discovery, White carefully framed a research strategy and returned to New Guinea in 1967 to study this vanishing craft, its social implications and correlates (for more details on this project, the reader is referred to White and Thomas 1972).

The informants in his study, the Duna-speakers of the western Highlands of New Guinea, subsist primarily upon sweet potatoes which they cultivate in small, well tended gardens, and domestic pigs. The Duna live in social groups called phratries, villages numbering between 100 and 1000; they experiences initial contact with European