

ON THE PARADIGMATIC INTEGRATION OF HISTORY AND ARCHAEOLOGY

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One view of the relationship between archaeology and history is that expressed by George Dalton only last year. In his opinion, anthropologists, archaeologists and historians interpret their observations, "in markedly different ways because they bring to the factual data markedly different theoretical frameworks, preconceptions, models and conceptual vocabularies". (1)

Granting these differences, a case can be made for significant mutual stimulation, complementation and benefit when the respective practitioners focus upon the similarities rather than the differences, be they real or apparent. By means of an explication and an example of the ethno-archaeological approach to prehistory, the interdependence and mutual benefit to each discipline shall be demonstrated. The articulation lies in the fact that anthropological and archaeological data and interpretations provide the historian with a more complete perception of the systemic functioning of a total society and with increased insight into the emic cognitions of the causality behind that system and the historically observed process of change. The historian can also utilize archaeological data for the confirmation or refutation of historically recorded observations and locations. On the other hand, the archaeologist can make use of written historical sources for the documentation, proof and chronology of continuity and discontinuity in the society which generated his archaeological remains. The archaeologist is largely dependent upon historical sources for the study of post-contact culture change. Furthermore, historical sources have often been instrumental in the location and identification of archaeologically defined sites. They are frequently the key to the establishment of the origin of long range contact and trading networks. With due care and attention to context and detail, such sources can contribute much to the in-filling of the bare bones of the archaeological data. (2) However, the clearest expression of the articulation and mutual dependence of both disciplines is to be found in the ethno-archaeological study of late prehistoric, protohistoric and early historic aboriginal societies.

ETHNO-ARCHAEOLOGY: STRATEGY AND TACTICS

Ethnoarchaeology is the study of the relationship between the functioning of Native societies and their manifestation in the archaeological record. In practice that study can be divided into four realms, i.e.

The relationships between human behaviour and material culture,
Theories of the survival and recovery of the evidence (disturbance, sampling, field strategies),
The detection and analysis of pattern and structure in the surviving and recorded data, and the relationships between patterns in the data and interpretations of those patterns.

Implicit in this approach is the fact that the archaeological record is a contemporary phenomenon. The observations which an archaeologist makes during an excavation or upon a group of artifacts are con-

temporary observations, i.e. observations of the present state of his site or group of artifacts. In order to relate these observations to past activities or behavioural patterns, the archaeologist must assign meaning to his facts. That process, the assignment of meaning, is an exercise in inference from the present remains to those past contexts and systems which generated those remains and led to their deposition. This linking argument has been expressed most elegantly by Binford;

"The archaeological record is at best a static pattern of associations and covariations among things distributed in space. Giving meaning to these contemporary patterns is dependent upon an understanding of the processes which operated to bring such patterning into existence. Thus, in order to carry out the task of the archaeologist, we must have a sophisticated knowledge and understanding of the dynamics of cultural adaptations, for it is from such dynamics that the statics which we observe arise. One cannot easily obtain such knowledge and understanding from the study of the archaeological remains themselves." (3)

"It has been my conviction that only through direct exposure to dynamics - the ethnoarchaeological study of living systems - does the archaeologist stand the best chance of gaining sufficient understanding to begin the task of giving meaning to the archaeological record, in short, of developing tools or methods for accurately diagnosing patterned variability." (4)

On a general (processural) level, the study of living societies increases the archaeologist's understanding of how those societies function and how their functioning generates archaeological remains in the form of land-use patterns, different types of activity areas, sites and artifacts. In practice, ethno-archaeological studies are conducted most frequently in the ethnographic present of the living descendants of the prehistoric progenitors of those archaeological remains. Such a study encompasses the identification of aboriginal practices, patterns and systems which continue to function, intact and unspoiled by contact. Once recognized, they are monitored for temporal direction, spatial extent and density, number and composition of participants, and, most importantly, for generated material remains. Such remains may take the form of specific types of shelters, structures, fixtures or features, e.g. a hunting blind, a fish wier, a mortuary scaffold, a chopping block, a fire hearth, etc. They may also manifest themselves in the composition and quantities of specific tools and/or waste products, which are or are not spatially distributed in a systemic fashion. From the foregoing potential variation, it is the task of the ethno-archaeologist to equate the behavioural patterns with discrete constellations of material remains. The equivalence of the discrete cluster of material remains with prehistoric behaviours is then dependent upon an argument of continuity from the ethnographic present into the past. The demonstration of that continuity involves the reconstruction of past behavioural patterns and adaptive systems

through 'memory culture' and the oral history, retained by the Native elders. It is in this half of the study that grateful use is made of historical documents, drawings, photographs, diaries, journals, ships logs, etc. These, plus the reports of early explorers, constitute the data base of the related field of ethno-history. The 'memory culture' and oral history provide insight into process (how, why, when, where) a particular society functioned, while the ethnohistoric data place those parameters into a firmer time-frame. Both contribute to and complement each other in the documentation of continuity or discontinuity. Once the temporal continuity of activities and patterns has been established, stages along that continuum serve as analytical and interpretative base-lines against which the observational patterning in the archaeological record can be tested. By means of that testing archaeology approximates the criteria of an experimental science, i.e. the phenomenological range of variation is known and the test conditions and results are predictable and replicable. Conclusions drawn on the basis of such repetitive experiments increase the power of the inference argument and increase the accuracy and completeness of the assignation of meaning to the observations made on the contemporary archaeological record. Having outlined the tenets and goals of ethnoarchaeology and the role which historical sources play in the realization of those goals, we will illustrate same by means of a description of the ethnoarchaeological work conducted by the Utkiavik Archaeology Project.

THE UTKIAVIK ARCHAEOLOGY PROJECT

The Kakligmiut Eskimo (Inuit) society was a tribe of ca. 650 Inupiaq speaking Natives inhabiting a territory of 3,812 km² between Nuwuk (Point Barrow) and Atanik (near Wainwright), Alaska. (5) At white contact, 1826, its main village, Utkiavik (pop. 250), was situated on the high bluffs overlooking the Chuckchi Sea, some 15 km southwest of Point Barrow. (Vide Figure 1) White contact, the growth of the foreign whaling industry, and expansion of white American facilities and administration caused a shift in settlement locus from the aboriginal village toward the location which was to become the modern city of Barrow (1980 population 3228). The discovery of North Slope oil and gas and the changes in international relations since World War II caused such a rapid expansion of the city that the integrity of the Utkiavik site became threatened. Federal and State agencies, concerned with the preservation of cultural heritage, recognized that threat and outlined a comprehensive contract project for its mitigation. With a proposal based on the following research domains and organization (Vide Figure 2), the contract was awarded to the Public Archaeology Facility of the State University of New York Binghamton, under the direction of Prof. A.A. Dekin jr.

The research strategy for the 1981 campaign consisted of the following points:

The primary objectives of this study are three-fold:

1. identify and evaluate the content, extent and spatial structure of the Utkiavik site;
2. identify the potential impact of proposed gas line construction; and
3. mitigate the potential impact of construction by a program of scientific data-recovery, analysis and interpretation.

The secondary objectives of this study are:

1. provide base-line information to support the long-term management of this important cultural resource;
2. recover ethnohistoric and ethnological information relevant to the site and to its relation to historic and recent land-use patterns;

UTKIAVIK
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PROJECT
1981

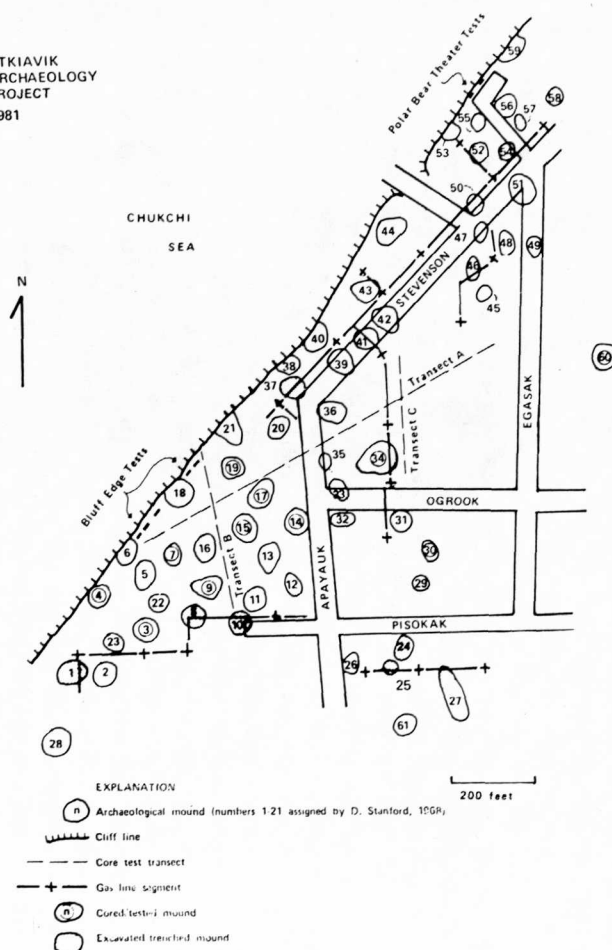


Figure 1 Site

3. contribute to our understanding of north Alaska cultural dynamics during the prehistoric and historic periods; and
4. evaluate the appropriateness of field and laboratory techniques for cultural resource management investigations of complex and frozen middens.

All of these objectives are to be accomplished with the sensitive application of methods and techniques appropriate to the expected archaeological and natural contents of the site and to the historic and contemporary social setting. (6)

At the close of the 1981 field season the following results had been obtained. Information on the spatial extent of the Utkiavik site was garnered from earlier investigations (7), 1962 U.S. Navy aerial photographs and our on-site investigations. Of these sources, the aerial photographs combined with on-site observations proved the most useful. Sixty-one mounds of potential archaeological significance (containing evidence of human activity) were identified and are indicated on Figure 1. Four additional mounds were present in 1962 but have since eroded into the sea. Furthermore, several mounds have been virtually destroyed by subsequent construction of dwellings and out-buildings (mounds 2, 26 and 54).

Between-mound deposits include a variagated distribution of artifacts indicative of patterned activity areas associated with the dwelling structures (house mounds). Distinct middens and sod pits were found to be related to those mounds and specialized activity areas were defined and mapped through our field analysis of the intermound transect test and

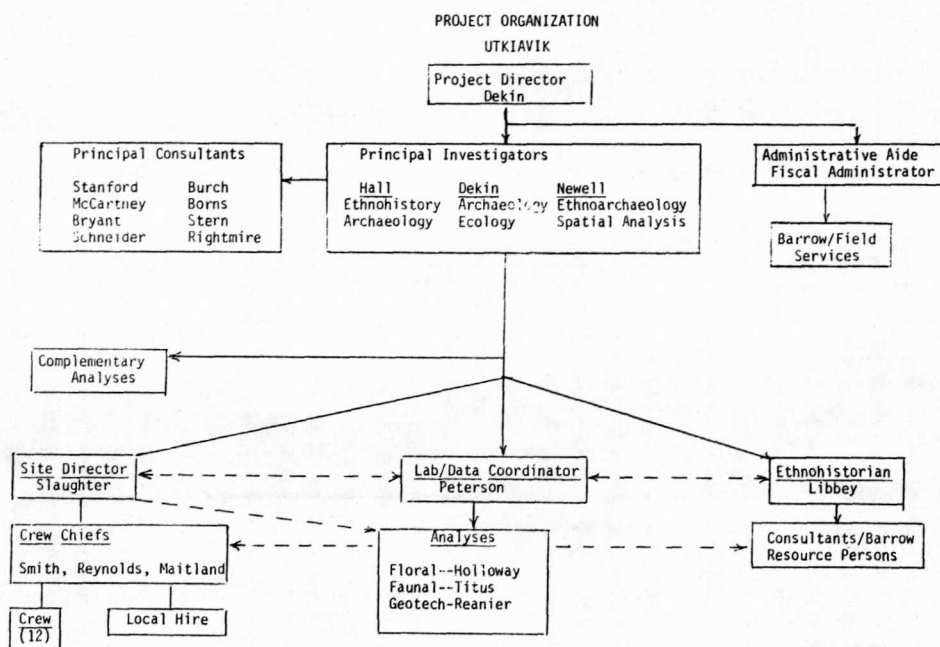


Figure 2 Project organization Utkiavik 1981

intensive sampling around Mound 8.

Thus, the present Utkiavik archaeological remains include mounds of several types (single house, multiple house and *karigi**), middens associated with these mounds, sod pits, special activity areas and general activity areas. The village has been occupied continuously since contact. While there have been changes in the nature of that occupation, the socio-cultural continuity from the original Utkiavik population to the present has been demonstrated. That demonstration of continuity made it possible to utilize the direct ethno-archaeological approach for the reconstruction of past life-ways and the inferential interpretation of the archaeological remains/record. The relevance and success of that approach, when supplemented by historical sources, will be illustrated by means of the Intermound and Extramound testing of the Utkiavik village.

ETHNO-HISTORY AND ETHNO-ARCHAEOLOGY OF UTKIAVIK

ethno-historical investigation

The lineal descendants of the Kakligmiut peoples who founded the Utkiavik village still live on that ancient ground. Their homes and outbuildings dot the surface of the site. Many of their activities replicate those of the past, display the same patterned behaviour and generate the same attendant artifact clustering, although the artifacts themselves may differ. Ties to the past remain strong, both in memory and in present action.

The role of this research in the Utkiavik project is to generate information for the interpretation of the archaeological data, to provide guidance for the long-term management of the Utkiavik site, to investigate ethnohistoric Inupiat patterns of spatial organization of settlements, and to record those oral traditions which are in danger of being lost forever.

While we succeeded in finding only three individuals who had lived in aboriginal style semi-subter-

anean houses with tunnel entrances, additional sources provided us with extensive information about the early twentieth century occupation of the site. The most important of these was the Elders Conference, which devoted a full day to discussing what was known of the Utkiavik village. Several knowledgeable and articulate individuals made exceptional contributions to our study. They visited the site during excavations and identified artifacts in our field laboratory. We were also able to extend the ethnohistoric time-frame by interviewing individuals who had lived at early twentieth century sites at Prudhoe Bay and Atanik. This aspect of the study of spatial organization proved extremely rewarding, as valuable data were collected from a number of elders which could be compared with our field investigations in preparation of a model of 'outside' activities.

The earliest historical accounts and ethnographies (8), later ethnographic accounts (9), and ethno-historic testimony collected by the Utkiavik Archaeology Project are all in agreement that the original inhabitants of the Utkiavik village came from Nuuk, out on Kalliquq (Point Barrow). Most of the same sources document the earlier use of the site as a temporary seasonal camp, traditionally for the exploitation of snowy owls, before its settlement as a permanent winter village. The antiquity of that exploitation and the date of the founding of the proto-historic village are still unclear. Nevertheless, the earliest settlement at Utkiavik appears to have been concentrated around the highest part of the bluff, southwest of Kugok Ravine, with the houses (now house mounds) arranged in a relatively tightly packed crescent, arcing back from the bluff edge and bordered to the northeast and south by three *karigit* (Figure 1). The house-mounds in this area of the site have the most irregular shapes (plans) of all the mounds. Our different cartographic sources provide us with clear indications that the house-mounds in this area of the site are higher in elevation above ground surface, greater in surface expansion (as measured by maximum

**Karigi* = Men's ceremonial / dance house. Historical evidence suggests that there were three *karigit*, which served as the focus of the lineage based whaling crews.

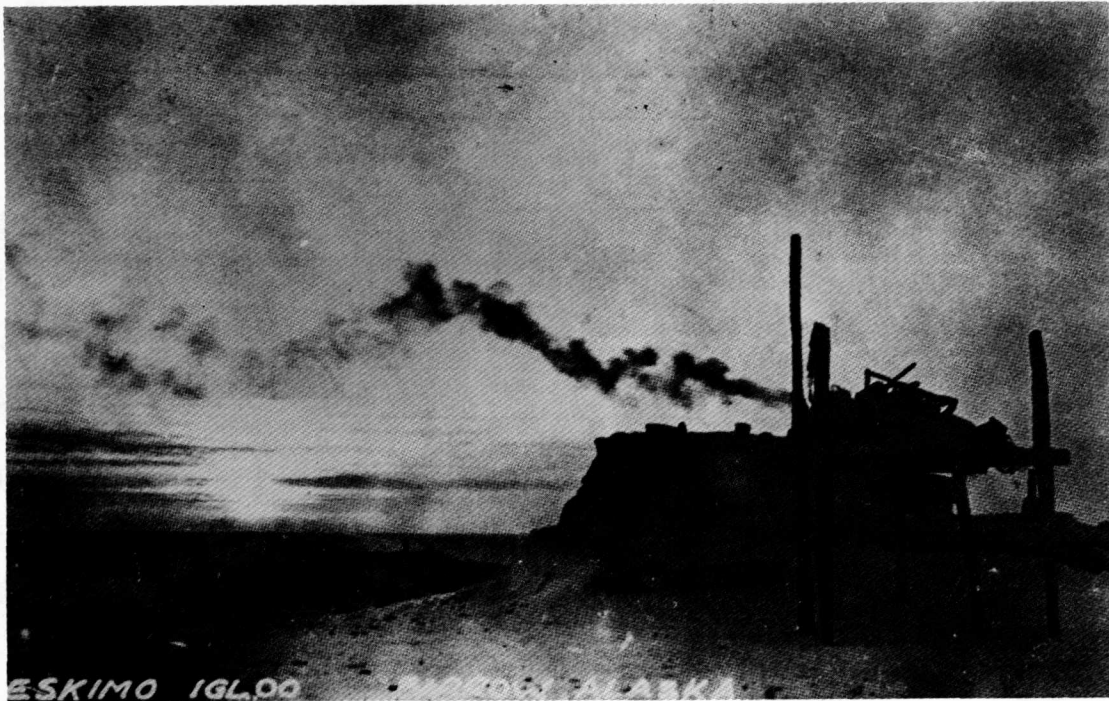


Figure 3 Utkiavik house on a photo of Old Barrow

length) and more densely packed (as measured by first nearest neighbour distance), than in that part of the site situated across the ravine. Corroborative ethnographic data, obtained from two Barrow Elders, indicated that whalebone construction antedated pure wooden construction and that it went out of style before the turn of the twentieth century. John Simpson (10) described whalebone constructed houses at the original village of Nuwuk while Murdoch (11) mentioned both derelict and unoccupied houses made of whalebone in the southwest part of Utkiavik and the inhabited semi-subterranean houses as being entirely of wood. (Figure 3-5) Therefore, the foregoing analytical results, the contemporary ethnographic testimony, and the original ethnographic sources are in agreement that the forementioned crescentic cluster of house-mounds on the highest part of the bluff represents the remains of the original settlement. Subsequent ethnographies, e.g. Stefansson (12) and Spencer (13), together with ethnographic testimony collected this past summer by the Utkiavik Archaeology Project have provided data whereby the main architectural trends can be followed and, with varying degrees of precision, dated. From these sources, and supplemental data, the continuities and innovations in architecture and constructional materials will be documented. Taking the winter houses at Nuwuk as a base-line, the Utkiavik houses described by Murdoch display the following changes:

1. whalebone is absent and has been replaced by wood; in part derived from ship wrecks;
2. the kitchen has moved from half-way down the entrance passage to a position nearer the house itself;
3. the storage alcoves display the same positional alteration, perhaps indicating a correlation with or association of function between the kitchen and storage areas;
4. Murdoch's mention of 'various' storage areas may also contrast with J. Simpson's report of one storage room in the Nuwuk tunnel entrance-ways;
5. the two drying racks on the left-hand side of

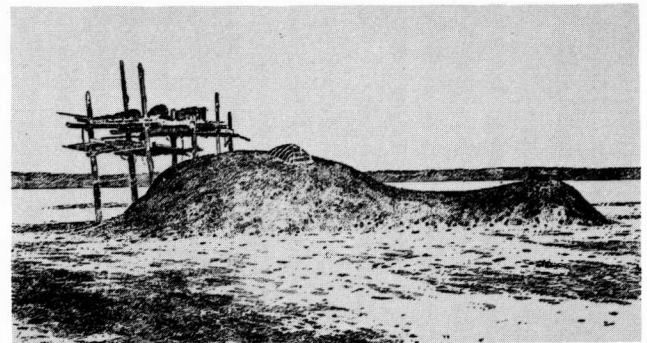


Figure 4 House in Utkiavik (Murdoch 1892)

the Utkiavik houses (as one enters) differ from the pattern of one on each side, as reported from Nuwuk. This may be the beginning of a shift in the internal partitioning of space and the recognition of a formal storage or pantry area. Murdoch also reports that this is the area where tubs made of baleen, dishes of cooked meat, tanning vessels and the chamber pot ('honey bucket') are kept;

6. the Utkiavik oil lamps are placed on the floor, rather than on wooden supports, as at Nuwuk.

The oldest houses at Utkiavik, which could be recalled by living informants, were made entirely of wood, covered by sod, and still had the traditional underground passageway, opposing kitchen and storage alcoves off the tunnel, *katak* entrances, and were heated and lighted by two seal oil and/or blubber lamps, situated on opposite walls. Clearly differentiated from the oldest, whalebone constructed houses at Utkiavik (= *kataligaaq*), at least three informants could identify and locate their familial home sites and testify as to their construction and interior partitioning and organization of space. Such houses were

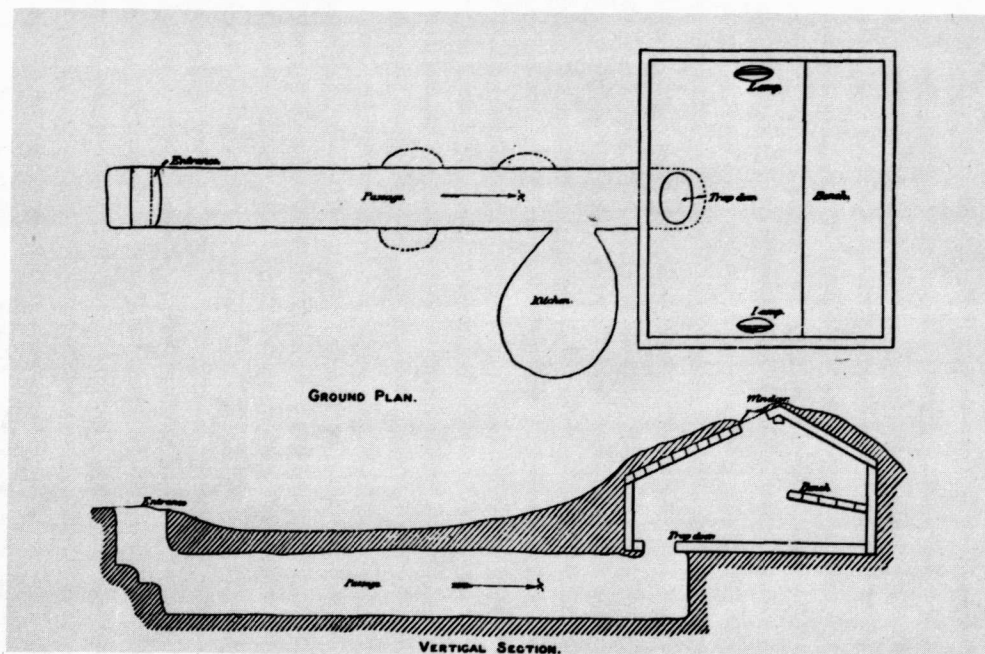


Figure 5 Utkiavik house plan (Murdoch 1892)

still inhabited in 1913 while the first frame houses on the Euro-American model were introduced in Barrow ca. 1881. Under pressure from the Presbyterian missionaries, the adoption of this latter form of housing increased while the use of traditional housing declined. (14) Despite, or perhaps because of, the limitations of this radical and dubiously adaptive change in architectural style, some traditional elements were retained and/or incorporated into the foreign house model. Those alterations and adaptations are presented below:

1. reduction in the length of the tunnel or entranceway;
2. elevation of the entranceway or tunnel from a subterranean position to above ground;
3. further contraction of the kitchen and storage areas toward and finally into the house;
4. reduction of the sod covering of the roof and walls to a single insulating layer only, terminating in the abandonment of sod construction altogether;
5. introduction of the sheet metal stove (fueled by wood, blubber or seal oil, 'clinker', 'pitch', or coal);
6. movement of the ceiling window from the center of the roof to above the stove area;
7. change in the orientation of the central ridge pole and slope of the roof perpendicular to the tunnel or entranceway, usually east-west, to on-line with the shortened or absent entranceway;
8. use of dimension lumber and metal nails and screws.

Many elements are still traditional and indicate strong continuities with the Utkiavik houses as described by Murdoch and excavated by the Utkiavik Archaeology Project, while innovations and deviation from that pattern can be related to the forces of outside impact and acculturation. For the purposes of our study, it is fortunate that the former prevailed.

ethno-archaeological investigation

The initial goals of this investigation were the identification and quantitative assessment of 'activity areas', defined in terms of the number, relative density, and composition of artifact clusters and in terms of the relative amounts of space utilized for each within the settlement and/or dwelling locus. The former goal is primarily functional and structural. The second goal is primarily demographic and is seen as providing a more reliable indicator of settlement and/or dwelling unit population and/or duration of occupation than the current estimations based upon total size. (15) On another level, we wished to inquire whether our analyses of these mechanisms are consistent with the real world. The question which must be posed is simply whether or not the results of inductive statistical analysis can reliably model those behavioral patterns which are apparent in a functioning Native dwelling, camp, or settlement. On a theoretical level, this inquiry is one approach to the study of the basic nature and process of creation of an archaeological site (16) and, by implication, to the validity of studying same as composed of behaviorally meaningful archaeological units. At all levels the archaeologist is dependent upon inference and that is, in turn, dependent upon the power of his ethnographic analogies. This relationship will be demonstrated by the Utkiavik Intermound and Extramound testing program.

The need to execute a sampling strategy in the areas between and outside the house mounds required that tool and refuse artifact frequencies, distributions and inventories be predicted in a reliable and replicable manner. The testing program consisted of three parts:

- I. Mounds 6-18 Intermound Test (Bluff Edge Tests) and,
- II. Intermound Transects Coring Test, (Core Test Transect) and
- III. Mound 8 Extramound Sampling Test (Vide Figure 1 & 7).

These tests were conducted sequentially and as the results of each contributed to the formulation and interpretation of the following test, their results

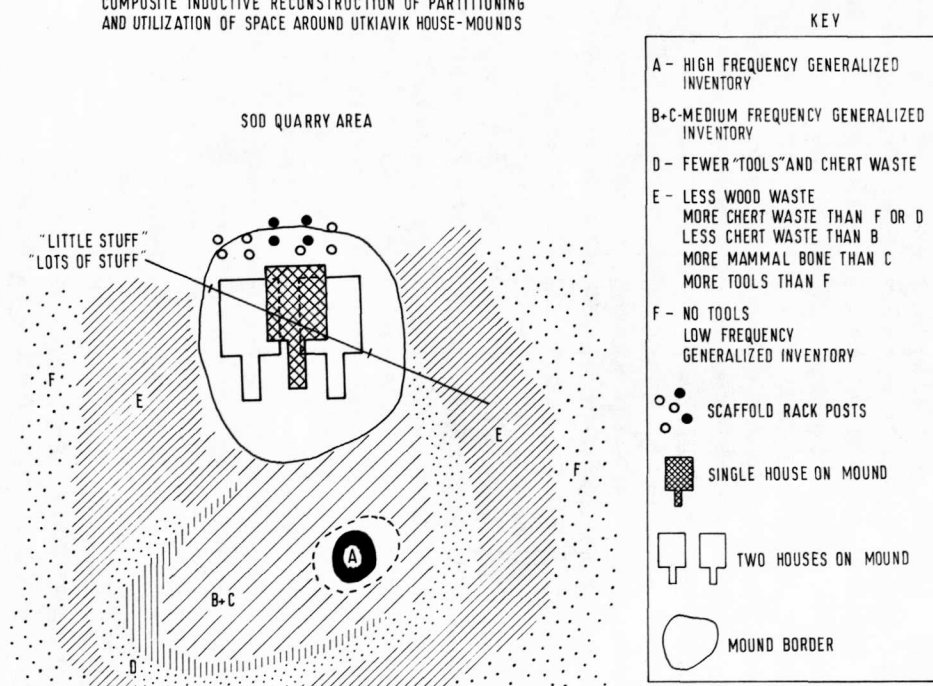


Figure 6 Composite inductive reconstruction of partitioning and utilization of space around Utkiavik house-mounds.
(Drawing: W.J. Dijkema BAI)

will be presented briefly in that order.

I : Intermound Test

Once the house-mound excavations of mounds 8, 10, and 37 were initiated, it was decided to dig a few sample squares along the bluff edge, between two mounds, in an area which would be destroyed by the next season's storms.

Excavation consisted of laying out a transect 77 meters long and .50 meters wide. Sample squares of 1 m. x .50 m. were considered to provide sufficient data resolution and were selected for their relation to the surface features and their avoidance of such biases as the one large midden associated with a washed-out house and the severe surface and gully erosion on the southwestern part of the transect. The statistical analyses indicated significant variation and patterning of tools and refuse in the between-the-house area. Such potential extra-house patterning is consistent with that observed by D. Derry at Prudhoe Bay (SAG-3) (17) and has been confirmed by subsequent ethnographic testimony, gathered by the Utkiavik Archaeology Project staff, and earlier ethnographic reports. These conclusions indicated the need for an extensive stratified sampling strategy in the between-the-Mounds areas.

II : Intermound Transects Coring Test

Proceeding on the foregoing results, the project director outlined a sampling strategy whereby three transects, A-C, were laid out with sample holes at 10 m. intervals (Vide Figure 1). The testing consisted of shovel test-pits from the surface down to the permafrost level or the sterile gravel. Where permafrost was encountered, sampling continued by means of a Permafrost Corer. The shovel-width, rectangular squares of sod were trowelled and all finds catalogued and counted. The cores were analyzed pedologically, then trowelled for cultural materials. The thickness of the culture-bearing sediment was also measured. Because of the danger of bias being intro-

duced by coring damage on artifacts, the total number of pieces of cultural debris was not recorded. Instead, the different types of raw materials, e.g. chert, slate, stone sp., bone, antler, baleen, wood, etc. were recorded on the core data sheets.

The subsequent analyses yielded a series of mutually homogeneous quantitative sub-sets of core-holes. The content of each combination of sub-sets was analyzed, yielding a pattern which was readily interpretable in both spatial and behavioural (inferences from ethno-archaeology) terms. The proxemics of these regularities, relative to the position(s) of the house(s) on the mounds, provided a firm basis for the partitioning of the site into quantitative stratigraphic sampling units. These parameters of units A-F were then projected onto a composite model of a 'typical' Utkiavik house mound (Figure 6). The resulting predicted locations and areas of spatial dispersion of each group are presented as the best fit Composite Inductive Reconstruction of the Partitioning and Utilization of Space around Utkiavik house-mounds. It was designed to serve as a predictive model for the final sampling strategy of the intermound area. That choice of strategy was a major policy decision: satisfaction of the detailed and specific, relative to known entities (one house-mound), or the elucidation of the broad and the general relative to the total sampling universe (the village). In the event, we adopted the former strategy, using the above preliminary results as the basis for locating our sample squares. As the sampling was done in the immediate area surrounding our best known unit (Mound 8), it became known as Mound 8 Extramound Sampling Test.

III : Extramound Sampling Test

Proceeding from the six-fold stratification (A-F) of the intermound area, as derived from the foregoing core transect test, the Mound 8 Extramound Sampling Test will demonstrate that the patterning of artifact distributions around the houses is a dimension of the settlement pattern, but on a different scale than that which obtains within the houses. From that difference

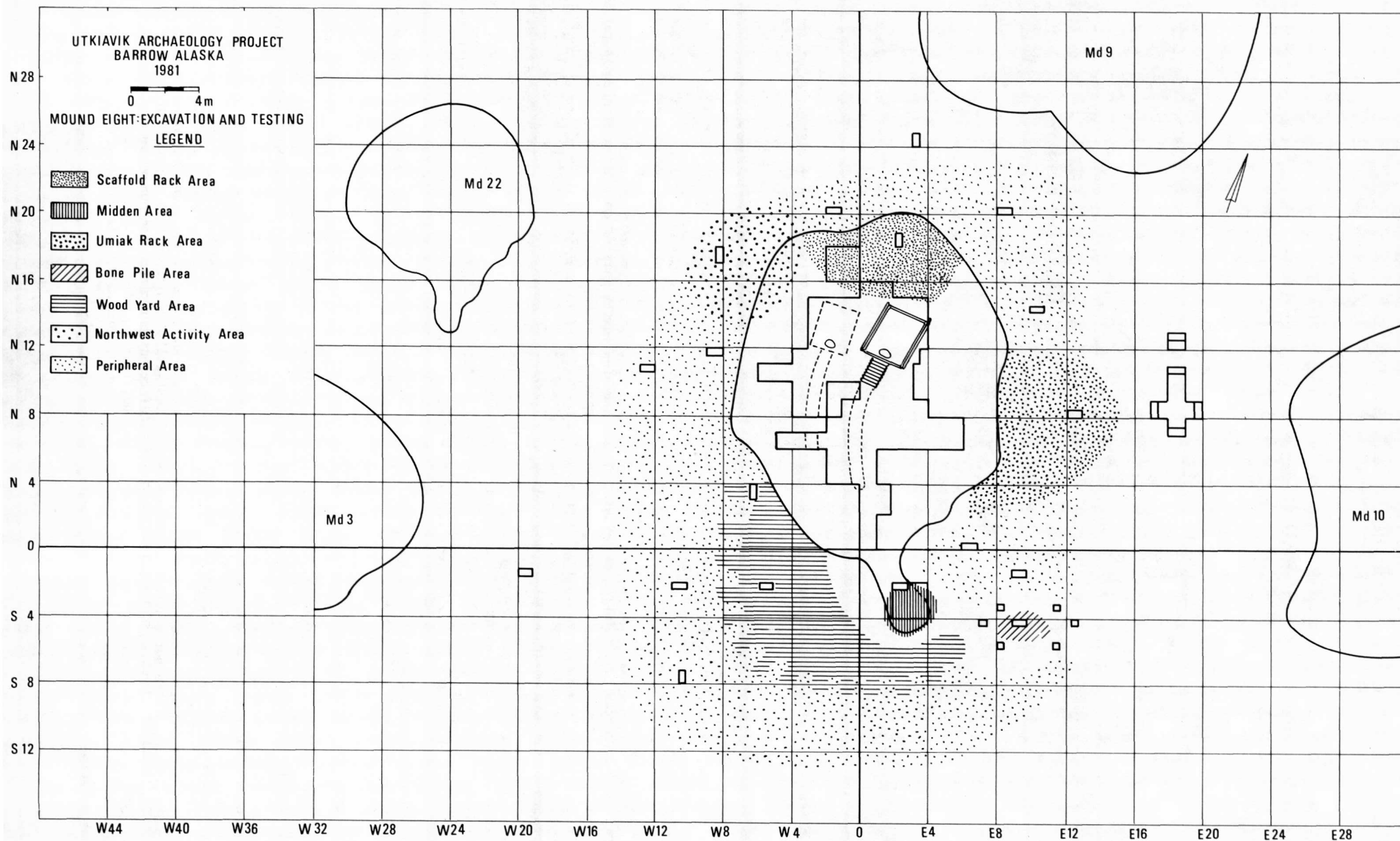


Figure 7. Partitioning and Utilization of Space around Mound 8. (Drawing: W.J. Dijkema, BAI)

we will propose that the extramound artifacts are part of a different activity sub-system as well as different storage and disposal modes. These sub-systems and modes will be identified by means of the quantitative assessment of the numbers, relative densities, composition, and locational covariation of artifact clusters, fixtures, and features. These analyses will also provide additional insight into the integration and mutual dependence of archaeological, ethnohistorical, and historical sources.

In order to meet the above goals, the selection and excavation of the sampling squares of 100 x 50 cm were to have been executed in two sequential stages. As it happened, one square selected in the second stage led to the discovery of a new feature, necessitating a third sampling stage of 50 x 50 cm or 75 x 50 cm squares.

By way of data screening, the peripheral squares of our extramound sample of 24 squares were examined for dependence and provenience affinities. This evaluation resulted in the retention of 22 squares and the rejection of two. Having defined our sampling universe of 22 squares, which provide a mutually consistent reflection of spatial behaviours around Mound 8, it was incumbent upon us to define their progenitive patterning. Identification of the source(s) of that patterning is in the first instance dependent upon reliable knowledge of the patterns and significance level of covariation between the different classes of artifacts.

The first step in the analysis of spatial patterning in the Mound 8 Extramound area consisted of an attempt to identify broad patterns of spatial covariation between two or more artifact types. In the event, contingency analysis did not reveal significant patterning. Therefore, we approached the problem from a spatial perspective, and tested square against square. The final analyses of the Intermound and Extramound testing programs have indicated that there is a clear system and plan behind the partitioning and utilization of space around the house-mounds at the Utkiavik village. That pattern is manifest in the form of seven positive and negative concentrations of co-varying classes of artifacts. Two of these are related to recognizable features and fixtures, i.e. the scaffold rack area to the rear of the house and the midden to the southeast of the house. The remaining five are defined by their artifact composition and density. The respective partitions are as follows:

Concentration A; The scaffold rack area was sampled by square N18-20/E2-4. When related to the general fall-off trend observed in the frequency contours by type or by total classes (Total Tool, Total Waste, Total Inventory), it is clear that the frequencies of this square are eccentric. They do not follow the predicted distance-decay fall-off curve. Instead, they are characterized by marked negative concentrations for the following types: Wood Tools, Bone/Antler Tool, Wood Waste, Stone, Feathers, Fire-Cracked Rock, and Baleen Waste.

Concentration B; Contrasting sharply with the artifact patterning observed above, the midden feature, sampled by square S2-4/E2-4, is characterized by exceptionally high frequencies for nine of our 22 types. The characteristic types are as follows: Stone Tool, Pottery, Chert Flake, Slate Flake, Baleen Waste, Mammal Bone, Fish Bone and Diverse Stone.

Concentration C; As stated above, the two-stage Extramound Sampling Test was expanded when the unexpected feature was encountered in square S4-6/E9-11. The concentration is defined by anomalously high frequencies for the following artifact types: Bone/Antler Tool, Stone Tool, Metal, Wood Tool, Baleen Tool and low frequencies for Wood Waste. Not only were the Bone/Antler Tool frequencies high, but their size

was significantly greater than in the other concentrations.

Concentration D; Characterized by square N8-10/E12-14, this concentration is located to the east of the tunnel area of the house mound. This square displays the highest frequency intervals for the following types: Wood Tool, Diverse Tool, Metal, Baleen Waste and Wood Waste. The following types occur at the second highest frequency intervals: Stone Tool, Chert Flake, Stone sp., Bird Bone, while Mammal Bone occurs at the third highest interval. All of the foregoing types have frequencies in excess of the fall-off curve and cluster tightly around square N8-10/E12-14. By way of contrast, Baleen Tool seems to be under-represented.

Concentration E; Moving from the northeast of the mound to the southwest, we find an elliptical concentration of the highest interval frequency of Wood-Waste. Extending from square N2-4/W6-8, through S2-4/W4-6, the ellipse skirts around the midden square to terminate at square S4-6/E6-8. This concentration is paralleled by a low interval of Wood Tools and one or possibly both of the southerly lobes of Baleen Waste. This distribution contrasts sharply with Fur, Chert Flake, Slate Flake, Seal Oil and most significantly, Feathers and Fire Cracked Rock.

Concentration F; The highest frequency interval of Feathers and Baleen Waste defines a cluster to the northwest of the mound, adjacent to the scaffold rack (N16-18/W8-10). That square also has higher Mammal Bone and Wood Waste frequencies than one would predict from a distance decay fall-off curve. All of these factors contribute to the peak rendered on the Total Waste map. It is not observable in the Total Tools map, which may give some indication as to the interpretation of this cluster, which lacks Pottery, Metal and Slate Flakes.

Finally, the tails of the distance-decay curves of all the foregoing concentrations flatten and flow into one another, forming a background 'noise' of homogeneity at regular distances from the center of the house mounds. These observations lead one to suspect the existence of an emic perception of space which 'belonged' to each house mound and that all associated activities were executed within that delimited area.

interpretation

When it comes to the interpretation of these concentrations, the Utkiavik Archaeology Project may consider itself fortunate in the level of data resolution obtained from ethnographic, ethno-historical, and ethno-archaeological sources. In fact we have been able to combine early historical data, original ethnographies, and excellent information from Barrow Elders at the artifact level, at the house level, and at the level of the site as a whole.

Scaffold Rack Area

We have ethnographic and ethno-archaeological data which corroborates the construction and function of the scaffold rack as a storage facility for large, bulky items and meat. It was approached from the roof of the house because the first tier had to be above the reach of the dogs. (18) Therefore, we would suggest that the construction of this fixture demarked a certain amount of space, which had no other function and which was essentially inaccessible for all but the most expedient disposal behaviours, as the artifact inventory suggests.

Midden Area

The composition and frequencies of the artifacts occurring in this square are in primary agreement with the ethnographic, ethno-archaeological, and archaeological identification of this feature as a midden, i.e. the site of intentional secondary disposal. (19) The feature is recognizable in the field and is clearly extant in the 1962 U.S. Navy air photos.

Bone Pile Area

In addition to the frequency data, this cluster was primarily defined by the large size of the pieces of worked and unworked antler as well as the proportionally large amount of antler waste products. These observations plus the relatively high frequencies for Wood Tool, Metal, Stone Tool, and Baleen Tool in the peripheral squares (S3/E8 and S4-6/E6-8) lead one to equate this feature with the 'bone piles' and associated craft areas found in early historic and contemporary Inuit settlements. Situated in close proximity to the midden, this feature may represent the continuous rather than discrete nature of the disposal and storage behaviours.

Boat Rack/Craft Area

The contouring of the highest interval frequencies would indicate that this concentration of artifacts, largely defined by Tools rather than Waste, is a rectangular node, whose measurements range from 33.79 m to 68.58 m ($\bar{X}=47.33$ m). Because of the high numbers and broad range of tools, we suspect that this concentration represents the craft area to the east of the house mound which has been reported ethnographically and ethno-historically. Barrow Elders have specifically identified this area as the site of the manufacture and/or maintenance of umiaks (whaling boats). They also reported that low racks were placed to the lee of the house mounds for storage. Unfortunately, no signs of such racks were located in the 1981 campaign, but this lacuna is being filled in the 1982 season.

Wood Yard Area

The elliptical concentration of Wood Waste to the southwest of the mound and opposite the entrance tunnels is consistent with analogous observations made by the Project staff at an, as yet, unnamed abandoned village on the west coast of Barter Island, at the Prudhoe Bay site (Kaniqluq), and at Atanik. Ethnographic testimony of Barrow Elders has confirmed the identification of this area as the wood yard. Earlier ethnographic accounts of outside hearths (20) have not yet been confirmed in the field, but we would suspect that this wood-working is related to these features.

North West Activity Area

The roughly circular deposit to the northwest of the house-mound shows many points of agreement with the midden feature to the southwest. Proportional similarities are manifest in the Wood Waste, Mammal Bone, Stone sp. and Feather classes of artifacts. However, significant differences such as the number of tools, Bird Bone, Fish Bone, Baleen Waste, and Feathers indicate that this concentration is a separate functional and/or depositional entity. The available ethnographic, historical, and ethno-historical sources do not provide us with an identification nor a description of this concentration. Based on an argument of analogy, its ethno-archaeological interpretation is that of a primary disposal area. During the 1982 field season, increased resolution will be pursued.

CONCLUSION

By means of a judicious application of ethnohistorical sampling, excavation, and analysis, and an ethno-archaeological combination of both approaches, an analytically satisfactory and emically relevant reconstruction of the partitioning and utilization of space around the house-mounds can be formulated (Vide Figure 7). Once recognized and defined, we can return to the source, the Barrow Elders, for an explanation of that pattern. More importantly, that demonstration of clear spatial parameters surrounding the house-mounds can be used to model patterning at the next level of social and analytical integration: the village. That investigation will form the focus of the second year of the Utkiavik Archaeological Project and, at the same time, add to the complementation of the history of Inupiat societies on the North Slope of Alaska.

notes

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