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Lambda Alpha will consider manuscripts for publication in any field of Anthropology from faculty to students. Papers submitted for publication should be typed double-spaced on noncorrasable paper following the pattern established in American Anthropologist. All references to literature must be correctly documented with the author's name, date of publication, and the page number, e.g. (Smith 1969:340). Manuscripts should be sent to:

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From the Editors

With this issue, we conclude our tenure as student editors of the Lambda Alpha Journal of Man. This time has been enjoyable, a fine educational and working experience. We believe that the papers received during this term have been among the best submissions to this journal over its fifteen year history.

We repeat our previously expressed opinion that we would like to see increased variety in the types of papers submitted. Since this is a student, mainly "non-professional" publication, we do not feel a mission to orient ourselves only to a cultural, archaeological, physical, or linguistic approach. However, we do believe sincerely that students need to read papers which involve all these aspects of anthropology. Our policy of accepting papers from students and professional anthropologists remains unchanged: we will publish well-written, thoroughly researched papers from persons writing in any of the fields of anthropology. Dr. Wayne Parris continues as editor-in-chief, and owing to the increasing number of papers which have been submitted from "pros" his role is expanding.

We still do not have a new cover design. The contest for a new cover is continued. Dr. Jenkins has also conveyed to us his willingness to award the winner a small monetary award. The winning design shall be selected by Dr. Wayne Parris, Editor-in-Chief. Send entrees to the Wichita address.

We wish to thank Mrs. Georgia Ellis, secretary for the Department of Anthropology, for her hard work, skilled eye, and helpfulness in putting together this journal. Thanks, Georgia!

The Student Co-Editors
Lambda Alpha Journal of Man

CALL FOR PAPERS

Manuscripts are now being accepted for the JOURNAL OF MAN, Volume 16 published by Lambda Alpha, the national Anthropological Honor Society. Professional, avocational and student manuscripts are welcome. The deadline for acceptance of articles for this issue is ~~April~~^{Oct} 1, 1984. Papers should range from five to twenty-five pages in length and should be typewritten following the format accepted by American Anthropologist.

Manuscripts should be sent to:

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AN ANALYSIS OF VOIDS IN CERAMICS

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Archaeological analysis of ceramics has, in the past, mainly concerned itself with the temporal and spatial distribution of different ceramic types. These types are defined on the basis of decoration and temper. Little attention has been paid to the processes that went into forming the ceramic vessels from which those types are derived.

Pottery manufacturing techniques have been, for the most part, inferred from the recovery of potters' tool kits from archaeological contexts. From the southwestern United States, pottery scraping tools used in the smoothing of coil constructed vessels are well known (Guernsey, 1931:110-111; Kidder, 1934:154-155). Pottery anvils which functioned to help thin a vessel's walls by squeezing have been found throughout the southeast (Holmes 1903:35-36), western Illinois (Cole and Deuel 1937:123), and northern Arizona (Bartlett, 1937). Unfortunately, many ceramic-making archaeological cultures lack this sort of evidence for their respective methods of ceramic manufacture.

One of the characteristics of clay is its plasticity. This property allows clay to be shaped by pressure and retain that shape when that pressure is released. This plasticity is due to the absorption of water by the clay particles. Water is ionically bonded to the surface of the platy clay particles and acts as a lubricant, allowing the particles to slide over one another. The firing process and the mineralogical changes that accompany it stabilize the ceramic form, yet, they do not modify the form into which it was molded. By using this property of retention of molding stress, it should be possible to describe the forming process of a ceramic vessel.

Studies of the edges of broken vessels occasionally show independent coils laid one on top of the next (Stevenson 1939: 239; 1953:65-68). This type of feature is unfortunately rare in ceramic products. If clay bodies do remember the form placed on them prior to firing, such strains such as coil joins should be visible.

It was decided to look for evidence of this and other types of strains in a collection of sherds spanning the prehistoric ceramic making period from the lower Illinois River Valley. Prehistoric and historic sherds from Arizona, Colorado,

New Mexico, Kansas, Nebraska, and Mexico were also used in the analysis for comparative purposes. The features under consideration were likely to be small, the best way to view them would be as petrographic thin sections. In this way not only could the structure imposed on the clay be observed but other attributes of the ceramic such as temper and paste be monitored as well.

Each sample was first prepared by cutting a slab perpendicular to the vessel lip. The face to be prepared for thin sections was ground smooth using 600 grit abrasive. Then the sample was dried in an electric oven. After the samples had dried for several hours they were placed in aluminum troughs partly filled with salt, the surface to be analyzed facing upwards. These samples were then placed in a vacuum chamber and a layer of blue-dyed epoxy spread across the surface of each sherd. The vacuum was then activated. This was done to replace the air within the voids present so that they might be more easily observed. The process of epoxy impregnation also added durability to the samples to help them withstand the later cutting and polishing. Applying epoxy and vacuum impregnation was continued until no more air bubbles broke the surface of the epoxy. The samples were then put into an electric oven at 120 c and the epoxy allowed to harden. After the epoxy had hardened, the excess epoxy was ground off on 250 grip emory paper to the level of the surface to be observed. Many of the Illinois ceramics required three or four impregnations of epoxy and subsequent removal of excess epoxy before most of the visible voids could be filled. When the surface was flat and all voids appeared to be filled, the sherd was attached to a petrographic slide on a hot plate with a surface temperature of 120° using undyed epoxy. Just prior to the setting of the epoxy on the slide surface, the sherd was removed and the face to be observed was re-epoxyed and placed on another slide to harden. This was done to seal the surface of the sherd to keep heated air from escaping from unfilled voids and causing bubbles to form on the thin sections. After the attachment of the sherd to the slide surface, the excess sherd was cut away and the surface ground to the proper thickness using 1000 grit abrasive. The resulting thin sections were then observed under both petrographic and binocular microscopes.

The voids obscured during this analysis were divisible into three groups depending on their origin. Voids may be formed by air trapped in the plastic clay during the kneading and construction process. Voids also form during the firing process due to the uneven shrinkage of the ceramic paste and expansion of the temper particles. Leaching of the tempering agent as a result of burial in an acidic environment also serves to create voids.

Initially, the aboriginal vessels were constructed by successive coils or a continuous rope of clay, possibly to a handmolded base (Griffin 1952:96). The joins between coils are an area of structural weakness, and every attempt was made on the part of the potter to create a solid bond between coils (figure 1). Coils may be stacked vertically or partly overlapped to create a broader area of attachment. When coil joins are found, they may be seen as an area of structural weakness between coils. This weakness is characterized by a void caused by air trapped between the two coils (Figure 2). Such voids have fairly smooth sides and have an orientation at least partly perpendicular but never parallel to the vessel walls. This depends on the amount of overlap between coils.

After the vessel had been constructed by coiling, the walls were then thinned and smoothed. If this was not done, several problems might occur. Coils might not be bonded as well, causing areas of structural weakness. If the walls were of uneven thickness, the vessel could not support its own weight. During firing, the vessel might break due to uneven drying of the clay and varying rates of shrinkage in different parts of the vessel.

Within the United States, there are two aboriginal methods of assuring even thickness of vessel walls and more complete joining of coils. One method is by scraping the surface of a vessel with a tool which conforms to the vessel's curvature during the coiling of the pot. This method is practiced by the Puebloan peoples of Arizona and New Mexico (Gifford 1928: 356-361) and the Cherokees of the Carolinas and Tennessee (Fewkes 1944). Scraping affects only the vessel's surface and leaves no structure within the vessel. Occasional parallel striations left by temper particles adhering to the scraping tool are occasionally found on vessel surfaces.

The other method involves the use of a wooden paddle and the potters' hand, a stone or mushroom-shaped pottery anvil. The hand or anvil is held against the inside wall of the vessel to receive the squeezing force of a blow from the paddle. This method was widely practiced by aboriginals living throughout the eastern and central United States and southern Arizona and California. As this thinning method directly affects the vessel body, it leaves characteristic voids. These voids are thin, smooth-sided units which have a preferred orientation paralleling the vessel walls which results from the compression of air trapped in the clay during kneading. Kneading is a process which takes place prior to vessel construction. Water is added to the pottery clay in order to turn it into a useable

plastic paste. The clay is mixed by hand in order to evenly wet all the clay particles. It is at this time that temper was added to alleviate the problem of shrinkage when the water of mixing and structurally bonded water of the clay minerals are driven off by firing. The kneading process, if done by hand, will also include a lot of air that becomes trapped in the clay body as voids. These airpockets, trapped in the coils of the vessel, take up a characteristic orientation of paralleling the vessel walls as a result of the squeezing process (Figures 3 and 4). Voids vary in length and width depending on the amount of air present and the force applied to the clay body. If the paste has little air or the coil being squeezed is small, this will result in smaller voids than if the coils were larger or the force of compression stronger. This process of compressing the clay will cause the individual temper particles to take up a preferred orientation paralleling that of the voids. Experimentally produced paddle and anvil thinned ceramics display this preferred orientation of temper particles with the grains' long axis paralleling the vessel walls (Hodges 1964: 59-60). This orientation of temper particles and air pockets has been indirectly observed by Rye (1976:205-211) in x-ray photographs of whole ceramic vessels from Papua, New Guinea. His x-ray photographs show fairly circular resulting from voids present in the vessel. These photographs represent the actual geometry of the air pockets in the vessel in plane view rather than profile.

While the clay of the vessels is still moist, the potter may modify that vessel and, consequently, the air pockets or compaction voids by different decorative processes. The flattening or smoothing of a vessel lip may be accomplished by several methods which have different effects on the compression voids. A potter may simply smooth down a vessel's lip by moving a wet piece of soft material or a wet hand along the lip. This process truncates or loops the rim back onto itself, deforming the voids (Figures 5 and 6). The other method is to cut or pinch off the excess clay in order to leave a smooth lip. This process flexes the clay and deforms the compression voids to the point of making them parallel to the lip (Figure 7). It is possible to tell the direction from which the force was applied since compression voids will be deformed from their original orientation and bent parallel to the angle of the force. Such deformation of the compression voids will also occur when the vessel is decorated by punctation, flaring of the rim or other manipulation done to the vessel while the clay is still in a plastic state (Figure 8).

When ceramic vessels are fired, the clay minerals shrink slightly. This is caused by the loss of the water added to the clay during kneading and the loss of the hydroxal which were part of the original clay minerals. This shrinkage, is not

corrected for by the right percentage of temper, will cause a vessel to break during firing. Even with the addition of temper, the loss of water by the clay body will often cause a vessel to break during firing. Even with the addition of temper, the loss of water by the clay body will often cause small fractures, usually along planes of structural weakness. (Figure 9). These drying cracks are rough-sided, sometimes having a temper grain on one side and an impression of that grain on the other. Drying cracks may also be observed to border temper particles. They may originate at compression voids and, following the plane of weakness, orient themselves parallel to the vessel walls. Drying may greatly enlarge compression voids. Such openness would make for a porous vessel which would sweat and keep water inside cool. Another zone of weakness, traced by drying cracks, are poor coil joins.

The key to identification of drying cracks from other types of voids is their rough-sidedness and their association with areas of structural weakness such as coil joins or compression voids. Some types of clay have a tendency toward excessive shrinkage and if not well-controlled by the temper may have unoriented drying cracks anywhere throughout the paste.

The final type of void-forming process takes place after the vessel or sherds have been introduced into the context from which the archaeologist recovers them. These voids are small, compact, and have fairly smooth sides. Many of these voids display the same orientation as do the compression voids and temper particles. Occasionally, a small piece of limestone is located inside the void (Figure 11). This type of void, first noted by Griffin (1952:115), is caused by the conversion of limestone (CaCO_3) to calcium oxide (CaO) as a result of firing the vessel between 600° and 900°C (Shepard 1976:22), well within the firing range reported for modern aboriginal potters. The calcium oxide readily takes up water, in this case from the soil where the sherds were buried. If the clay is strong enough, it will contain the expansion of the calcium hydroxide $\text{Ca}(\text{OH})_2$ which in time recombines with atmospheric carbon dioxide to recrystallize as calcium carbonate. However, not all limestone recrystallizes with voids as a result. Limestone tempering would also leach out in acidic soils. Similar voids have been observed in shell-tempered ceramics again caused by the leaching of the temper particles.

Ceramic-making archaeological cultures have existed in the lower Illinois River Valley for nearly fifteen hundred years. Each of these cultures produced its own distinctive

styles of ceramics. These different styles are divided into wares, a term used here to describe ceramics with similar decorative treatments and products of the same cultures. More than one ware may have been produced contemporary with or only partially overlapping another in time. The pottery wares produced during the Early Woodland Period (600 B.C. to A.D. 1) include Peisker and Black Sand ware. The Middle Woodland Period (A.D. 1 to A.D. 450) includes the Havana, Hopewell and Baehr/Pike wares. Late Woodland (A.D. 450 to A.D. 900) potters produced the White Hall, Maples Mills and Jersey Bluff wares. The Mississippian Period (A.D. 900 to A.D. 1500) has its own ceramic ware, Mississippian (Fowler 1952:150, Chapman 1980).

It is this long temporal span of pottery manufacturing in the lower Illinois River Valley which makes its ceramics attractive for an analysis of their voids. Such an analysis would add to our knowledge of how the different ceramic wares were formed and decorated and how the different techniques have changed or remained stable over time.

In the following section, the ceramics are divided into their respective wares and the voids in each sample described first as individuals, then as a group within that ware. These sections are arranged in chronological order, beginning with the earliest ceramics and ending with the latest.

Peisker Ware

PSK Submound 2'62: Peisker Pinched: Sherd or clay temper

The paste is very homogeneous. The only voids present are those caused by the clay body drawing back slightly from the temper particles, that is, poorly developed drying cracks.

PSK II SE Quad 62-3: Peisker Pinched: Sherd or clay temper

The paste is very homogeneous. Drying cracks again partially surround the temper particles. One dendritic drying crack originates at the vessel exterior and extends about half-way into the sherd before stopping. This sherd is very similar to PSK II Submound 2'62.

PSK I 13A-7: Peisker Pinched: Crushed Granite temper

Compression voids have expanded due to drying.

PSK 33c-5: Peisker Pinched: Crushed limestone temper

Good orientation of compression voids parallel to the vessel walls. Some of these compression voids have been lengthened as a result of drying of the clay so that the ends of the compression voids may be described as drying cracks. Some leaching of the limestone temper has occurred.

Black Sand Wares

PSK II 30A-5: Black Sand Incised: Crushed limestone temper

Good compression voids oriented parallel to the vessel walls. Those closest to the exterior walls have been slightly deformed by the incising of the vessel. Leaching voids are present.

PSK II 8A-1: Black Sand Incised: Crushed limestone temper

Compression voids present. These voids are deformed at the rim in the same way as those in Figure 6. One possible coil join exists and may also be described as a fine drying crack which begins at the vessel interior and extends perpendicular to the compression voids occasionally bordering temper particles. At approximately 4/5ths of the way across the section, the crack turns toward the rim and ends at a small compression void. Some leaching voids are present.

PSK II 19A-3: Black Sand Incised: Crushed limestone temper

Compression and leaching voids are present. One group of leaching voids is bisected by a compression void. A few drying cracks are also evident.

PSK G.P.E. S.R.75: Black Sand Incised: Crushed limestone temper

Some compression voids but poorly defined perhaps due to a well-mixed paste with little air. There are several leaching voids present. A few drying cracks paralleling the compression voids.

PSK G.P.E. S.R. 77: Black Sand Incised: Crushed limestone temper

Compression voids are present. Some drying has occurred to the point which the clay body has drawn

itself away from some of the temper particles along the compressions voids. Some leaching has taken place leaving voids with some limestone remaining as well.

All of the samples of Black Sand Incised seemed to have been made using the same clay and manufactured by the same technique which left distinctive compression voids parallel to the vessel walls. All possess leaching voids. Drying cracks are well-defined and often originate as compression voids by expanding out from their edges.

The samples PSK II 19A-3, PSK II 8A-1, PSK II 30A-5, and PSK G.P.E. S.R. 75 resemble each other in great detail. They are both a light brown color and limestone tempered with what appears to be about the same type of voids in the same amounts. Compression voids are uniform throughout, and the paste has contracted, causing a similar pattern of drying cracks.

Havana Ware

Ap 74-3: Havana Cord Wrapped Stick Impressed: Crushed limestone temper

Good compression voids with some dendritic drying cracks originating at them. Some drying cracks branch off at right angles to the compression voids. The compression voids are deformed around a punctation originating at the vessel's interior, forming a boss on the exterior of the sherd.

Ap. 112B '66 Havana Cord Wrapped Stick: Crushed limestone temper

Good compression voids deformed by a punctation and some drying at the ends of the voids.

Ap. 804-11: Havana Cord Wrapped Stick: Crushed limestone temper

Good compression voids deformed by a punctation. Drying cracks surround temper particles and iron oxide concretions which may have been a natural occurrence in the clay (Brewer 1964).

Ap. 895-8: Havana Cord Wrapped Stick: Crushed limestone temper

Compression voids are present, the ends of which are slightly rough, as they were formed by the drying paste. Compression voids are rounded at the lip from the operation which smoothed and rounded it.

Md-15: Havana Straight Dentate Stamped: Crushed limestone temper

Compression voids are present. These voids are interconnected by a web of drying cracks. Voids do not reach the lip.

Md-9(1): Havana Neteler Dentate: Sand temper

Compression voids are present which do not reach the lip.

Md-9(2) Havana Zoned Straight Dentate: Crushed limestone temper

Compression voids are present which do not reach the lip. One leaching void is observable with some limestone still present. As can be seen in the samples of Havana Cord Wrapped Stick, impressed compression voids occur earlier in the formation of a vessel than does decoration. It is uncommon to see how rims are formed except in the case of Ap 895-8. This is due to compression voids not reaching to the lip. The potter may have thinned the upper-rim area by hand rather than using a paddle and anvil.

Hopewell Ware

PSK Test Pit 1-1: Montezuma Puntate: Sand temper

Some compression voids. Small irregular void at widest part of the sherd with several drying cracks radiating out from it. This void may represent a coil join with an pocket left in it. Compression voids extend to both sides of this air pocket and stop.

PSK 144: Hopewell Zoned Rocker Dentate: Temper unknown

This piece could be called "hole tempered" as all the temper has leached out. These molds of temper particles are oriented slightly with the longer axis parallel to the vessel walls. No compression voids are present.

PSK 241-12: Montezuma Puntate: Crushed limestone: Figure 11

A few compression voids are present. There are many

leaching voids, some of which still have some temper left in them. These voids are also oriented parallel to the compression voids.

Ap 21-141: Hopewell Cross Hatched Rim: Crushed limestone

Some compression voids and leaching cavities. There is an unusual void in the center of the rim. It is characterized by smooth sides except at its ends, where the void has widened slightly due to shrinkage of the clay. This void is oriented vertically and parallel to the vessel walls, yet is slightly convex to the vessel exterior. Above this void are several small drying cracks which curve parallel to the angle of the rim. Just below the large void is a smaller void which extends to the interior of the vessel and resembles a coil join. This group of voids possibly represents the folding over the upper part of the vessel to the interior. This was done to make the upper rim thicker and provide a surface for decorative treatment.

Ap 261a(22): Hopewell Plain: Crushed limestone

Compression voids present deformed by smoothing of vessel lip. Some leaching of temper particles has occurred.

Md-1-A(1) Hopewell Zoned Dentate: Crushed Granite

Compression voids, some of which are deformed by U-shaped incised line on the vessel exterior.

Md-1-D: Hopewell Cross Hatched Rim: Crushed limestone

A few very thin compression voids. Those compression voids near the lip have been deformed by having the upper part of the rim bent toward the interior while the paste was still moist in order to round off the rim and create a surface for decoration.

Hopewell ware is the most highly decorated ware produced in the lower Illinois River Valley. It is most often found interred with high-status individuals within mounds, although it is found associated with domestic architecture as well. The type is also the thinnest of any of the ceramic types of the Middle Woodland Period, which may account for the amount of leaching in the limestone temper. Yet, technologically it is no different from Havana ware in that compression voids are present in both.

The difference in idiosyncratic behavior between different potters is visible in comparing the rim-forming technique of Md-1-D and Ap21-141. Both sherds represent the same pottery type and are decorated the same way; yet the rims are made differently.

Baehr/Pike Ware

Ap 191-3: Pike Incised/Brushed: Crushed granite

Few compression voids, indicating good clay mixing. One leaching void is present. The upper part of the vessel is curved outward then back to the original plane of the vessel, giving the upper rim a convex appearance. The strain of making this rim is seen in the way the compression voids are deformed in the area stressed by flexing.

Ap 262-8: Pike Plain Rocker: Crushed limestone

There are a few compression voids present in this sherd. A possible coil join is visible at about the center of the sherd. While it may be due in part to the leaching of the temper particles along a drying crack, the walls of the crack connecting the leaching void are fairly smooth, unlike those of drying cracks. This feature extends almost diagonally across the sherd. Several leaching voids are present within the sherd.

Ap 290 (MZ)-63: Baehr/Pike Rocker: Sand

There are a few compression voids present, but the clay was well-enough compacted that little air was present in the past.

Ap 364a-1: Baehr/Pike Scratched: Crushed limestone

There are some compression voids and a few leaching voids. One drying crack is present which almost isolates a piece of unmixed clay or soil, possibly a natural inclusion in the clay.

Ap 522a-1: Baehr/Pike Scratched: Crushed limestone: Figure 3

The compression voids are quite apparent in this sherd and branch out slightly at their ends into drying cracks. These voids become deformed at the curve of the rim similar to Ap 191-3.

Ap 598c-13: Pike Plain Rocker: Crushed limestone

A few compression voids are visible in this sherd, less than Ap 552a-1. There are some leaching voids as well. Drying cracks in this sherd are confined to the center of an iron concretion which may have been a natural constituent of the clay.

Md-1-A(2): Baehr Zoned Rocker: Crushed sherds: Figure 9

Compression voids are present, but the most prominent feature in the sherds is a very strongly oriented set of dendritic drying cracks. These drying cracks parallel the compression voids. They also seem to break around temper particles, although one drying crack actually goes through one piece of temper.

Md-3: Pike Scratched: Crushed limestone

Good compression voids which deform as the rim curves away from the body. Some drying cracks are present, but they are small and connect some of the compression voids at the point of the greatest curvature of the sherd. Some leaching voids are visible. The temper particles have a profound orientation paralleling that of the compression voids.

This assemblage is similar to that of the Hopewell ware in that some sherds with similar paste and temper show or do not show compression voids. Why this variability in presence or absence of compression voids is unknown. It may be due to a lack of air trapped in the past during kneading. Leaching of crushed limestone temper is a common problem in both Hopewell and Baehr/Pike ceramics. With the exception of Md-1A(2), drying cracks are smaller than compression voids and fairly uncommon in the sherds of both wares.

The deformation of compression voids in Baehr/Pike ware in the upper rim area illustrates once again that compression voids were probably created fairly early in the manufacturing process.

White Hall Ware

Ap 123(a): White Hall Cord Marked: Sand

There are many well defined compression voids in this sample, even though the sherd is as thin as those of the Hopewell ware.

There is a coil join near the base of the sherd where a series of small rounded voids is found across the width of the sherd. Compression voids found on either side of this line of voids end there.

Ap 178: White Hall Cord Marked: Sand: Figure 5

There are so many compression voids intermingled and connected by drying cracks that it is difficult to separate either, except for the most obvious examples of both types of voids. Compression voids are oriented parallel to the vessel walls but are connected by a network of drying cracks of the same dimensions.

Ap 868-7: White Hall Cord-Wrapped Stick: Sand

Compression voids are quite common in this sherd and are seen to deform around the punctation, as do the drying cracks which connect them. Compression voids on either side of the punctation are quite wide, which may be a result of the drying of the paste opening them up.

This is a very homogeneous groups of sherds. All the paste could have come from the same lump of potters' clay. All sherds are heavily tempered with rounded sand grains. This may have been done to offset the problem caused by an unusual amount of shrinkage in the clay. This group of sherds has many more drying cracks which connect the compaction voids and even originate from them than any other group of ceramics studied. These drying cracks are very rough-sided, and if temper particles are imbedded in one side of a crack, they leave a negative cast of the grain on the opposite side.

The deformation of compaction voids in Ap 868-7 is the same as the pattern found in the Havana Cord Wrapped Stick samples.

The lips of all the White Hall vessels were made in the same manner. When the lip of the vessel was reached by the potter during the thinning process, the lip was simply smoothed off by the potter's wet hand. This brought the fine clay particles to the surface and truncated the compression voids that once extended to the lip.

Maples Mills Ware

Auds II -24: Mapes Mills Cord Impressed: Crushed limestone

This sherd has a very homogeneous paste with no

compression voids similar to samples of Hopewell ware. There are several leaching voids, two of which have a drying crack between them which is oriented parallel to the vessel walls. This may indicate that some sort of squeezing process formed the vessel and this drying crack is a fracture along a zone of weakness.

Jersey Bluff Ware

Auds II-3: Jersey Bluff Cord Marked: Crushed limestone:
Figure 2

The paste of this sherd is poorly mixed and seems to have been made up of clays from dissimilar sources. The clays vary in sand content, color, and percentage of iron concretions. Between the dissimilar pastes, a coil join is visible. It is smooth-sided with rounded ends like a trapped air pocket. Several drying cracks are visible, mostly around the iron concretions where the paste has shrunk away from them. Some small compression voids are present but uncommon. A few voids left by leached limestone temper are evident.

BL 5 -57: Jersey Bluff Cord Marked: Crushed limestone

Compression voids are evident in this sherd. A few leaching voids are also present. One drying crack originates at one of these leaching voids and extends to the interior edge of the sherd.

Per 1-5-2: Jersey Bluff Plain: Crushed Granite: Figure 6

There are good compression voids, some of which are extended to temper particles in the form of drying cracks. These drying cracks then skirt around the temper particles. The lip of the vessel shows how voids may be deformed by the smoothing off of the tops of the voids.

Misc. 1000: Jersey Bluff Plain: Crushed Granite

Compression voids are present, some of which form at the ends of the compression voids. Both of these features run parallel to the vessel walls. Some of these drying cracks skirt around the temper particles.

Although the sample of sherds is small and originated at different locations, they have many features in common.

All samples except Auds II -3, regardless of surface treatment, display compression voids indicating a similar manner of construction. Drying cracks are found in all samples. Rims on all samples were simply smoothed off by the potter's wet hand truncating, or slightly deforming, the compression voids and drying cracks that were present and leaving a thin layer of clay over the lip.

Mississippian Ware

Misc. 1001: Mississippian Jar: Burned Crushed Shell

A few compression voids exist near the rim. The rest of the paste is well-compacted with the shell platelets strongly oriented parallel to the vessel walls. A slight deformation of the paste caused by the flaring of the rim is visible as a series of small fractures perpendicular to the vessel walls near the vessel exterior. Drying cracks are visible in one iron concretion. Several larger angular voids between two temper particles may also have resulted from shrinkage of the paste during firing.

Misc. 1002: Mississippian Bottle/Jar: Burned Crushed Shell: Figure 4.

Few compression voids are visible in this sherd. Those that are visible are quite thin and rough-sided and so may be drying cracks, opening up fissures which might have been compression voids were not the paste so well compacted. There is a strong orientation of the temper particles like Misc. 1001. A few drying cracks surrounding temper particles near the edge radiate into the pastes with no orientation.

Two new types of voids are visible in this sherd. One is characterized by an almost circular shape and is quite small. Dark staining of the paste surrounding them is common. This type of void may be attributed to the burning out of accidental organic inclusions. The other type of voids is somewhat elliptical in shape, although two are slightly irregular. All of this type of void have their long axes parallel to the vessel walls and temper particles. The sides of this type of void are smooth. These voids possibly represent larger air pockets which were not sufficiently compacted enough to form compression voids.

The lip of this vessel is quite interesting in that it shows a large arc-shaped void just below and paralleling it. This may have been caused by folding excess clay left on the exterior of the vessel toward the interior to round off the lip. The temper particles above this void parallel it.

Misc. 1003: Mississippian Red Film Jar: Burned Crushed Shell

A few compression voids are present along with the strongly oriented temper particles. A few of the voids surrounded by dark areas are present. At the bend for the rim flair there is a group of large rough-sided voids, some of which have small pieces of shell-tempered paste inside them. Some of these shell-tempered pieces of clay, if they are in the matrix of the rest of the vessel, are surrounded by a drying crack. This area may represent a piece of clay with temper which was not thoroughly wetted during the kneading process which drew moisture away from the rest of the clay body causing it to be surrounded by massive drying voids. Another drying void surrounds an iron concretion toward the lip of the vessel.

The vessel lip has several small arc-shaped voids parallel to it similar to, though much smaller than, those in Misc. 1002.

The three Mississippian samples are quite complex structurally. Both compression voids and temper particles are strongly oriented parallel to the vessel's sides. Yet there seems to be air bubbles in the paste which are not as compressed as the compression voids of previous types. This may be due to the use of much thicker coils in the vessel construction. By using larger coils, there would be a greater chance of trapping air inside them; yet there would also be lots of paste to compress to orient the long, thin shell-tempered particles.

Overall fewer voids are present in shell tempered ceramics than in the other types observed. This lack of voids may result from the technological innovation of the use of burned shell as a tempering agent. Mississippian ceramic clays that have been analyzed by X-ray diffraction have been found to be high in montmorillonite (Million 1975, Stimmell, Heimann and Hancock 1982). In montmorillonite, portions of the octahedrally coordinated aluminum are replaced by magnesium, thus producing an overall negative charge for the clay structure. This negative charge is balanced by

alkali or alkali earth ions loosely bonded between the layered clay structure. These alkalis are susceptible to intercalation of large amounts of water that tends to separate the three layer stacks and clay particles. Vessels made using clays high in montmorillonite would be subjected to profound shrinkage due to the water expelled during drying and firing. Sufficient amounts of tempering material would have to be added in order to counteract this shrinkage.

The CaO created by burning the shell acts in two ways. First, it takes up water from the paste making the clay more workable (Million 1975:201-208). Secondly, the $\text{Ca}(\text{OH})_2$ formed provides calcium ions that cause a flocculation; that is, the attraction of the clay platelets to one another making large clay particles. The creation of flocs occurs at the expense of a void forming environment. The increased size of the clay particles inhibits their collapse that would cause voids to form in areas of structural weakness such as air pockets. Drying cracks are also not present in shell tempered ceramics again indicating decreased shrinkage of the clay minerals.

The use of shell as a tempering agent while solving the problem of highly saturated clays creates another, lime spalling. Lime spalling is caused by the expansion of the calcium hydroxide $\text{Ca}(\text{OH})_2$. It has been found that through the addition of NaCl to the clay lowers the onset of sintering and acts as a catalyst during the calcination of CaCO_3 . The ethnographic usage of saltwater for construction of shell tempered vessels lends credence to this hypothesis (Rye 1976). None of the cubic void surrounded by a sodium reaction ring (Stimmell, Heimann and Hancock 1982) were observed in the Mississippian ceramics observed, but in view of the small amount of salt needed this should not be considered unusual.

Two of the samples, Misc. 1002 and Misc. 1003, have arc-shaped voids caused by smoothing and folding excess clay from rim construction over to form the lip. Both of these samples have small, dark-rimmed voids which may represent the burning out of organic material and a carbon deposit as a result.

The lower Illinois River Valley's long ceramic history may be described as a tradition. That is, while some stylistic and minor technological changes occurred, the basic method of forming vessels remained the same throughout the ceramic period. Many features are found in ceramics of each time period and probably constitute a literal passing-down of pottery-making knowledge from generation to generation. This concept of tradition can best be grasped when the ceramics from all periods are compared to one another to look at common features.

Coiling as expressed by the presence of coil joins is found in few sherds. Yet examples of coil joins are found in Hopewell, White Hall, Jersey Bluff and, possibly, Baehr/Pike ceramics. Coil joins are an uncommon feature for two reasons. Coils are areas of weakness, and a poor coil join might cause the vessel to break along this zone of weakness. Consequently, potters made every attempt to get a good coil weld. Secondly, as all of these vessels were probably thinned by paddle and anvil, substantial reduction in coil from about $1\frac{1}{2}$ inches in diameter to about $\frac{1}{2}$ inch in thickness and $4\frac{1}{2}$ inches in height (Fontana, *et al.* 1962:65). Coils in Illinois ceramics, after they had been squeezed into their final height and thickness, range from 3.5 cm (Augs II -3) to 1.75 cm (Ap 123a). Recognize, however, that these are rim coils and, and such, were subjected to a process which has removed excess clay in smoothing the lip after the vessel had been formed.

Compression voids caused by the presence of air trapped during the kneading process and given their preferred orientation by paddling are found in ceramics throughout the ceramic sequence with few exceptions. These exceptions in Peisker, Hopewell, and Baehr/Pike sherds may be due to greater pressure exerted on the clay during vessel thinning. The rarity of compression voids in Mississippian ceramics requires another explanation. Paddle and anvil thinning is suggested in Mississippian ceramics by the strong orientation of the temper particles. Mushroom shaped pottery anvils have been recovered from Mississippian sites in the lower Illinois River Valley. In Mississippian vessels there are air pockets which are only slightly oriented parallel to the vessel walls. This may indicate the use of larger-diameter coils in the construction of Mississippian vessels. The use of larger coils would make a thicker pot, if the coils were not compressed very much, and therefore would not deform the air pockets to any great extent.

The method by which rims were formed was not always indicated by voids, as, often, they did not extend to the lip area. The direct smoothing of the lip by the potter, as illustrated in Figure 6, is the common method practiced by potters from the Early Woodland to Mississippian period. The method of squeezing or cutting off excess clay, as illustrated in Figure 7, is found only in Havana and Hopewell ware. One example of this may also be present in Misc. 1002, but this sample more likely represents the complete rounding of the lip by use of clay left after forming the rim, as shown by the arc-shaped void and the orientation of the shell-tempered particles. The folded Hopewell rim Ap 21-141 remains unique in the collection.

Drying cracks are found in ceramics of all periods but are less common in Hopewell and Mississippian ceramics, indicating better control over the amount of temper used versus the amount of shrinkage expected in the clay. It is interesting to note that the ceramic type with the most drying cracks, White Hall ware, also was the most abundantly tempered. This may indicate a change in clay resource utilization from the source used at an earlier period and learning to cope with a moister clay.

Leaching voids are present only in limestone-tempered ceramics and often have some limestone occupying a much larger void. These voids are found in most limestone-tempered sherds.

Ceramics from the lower Illinois River Valley have, throughout their history, been formed by coiling and the coil built to walls thinned by the use of paddle and anvil. Other methods of vessel-shaping were products of a combination of individual potters' desires and the culture which produced the potters.

While the analysis of the shapes of voids has revealed much about prehistoric ceramic manufacturing processes, it leaves tantalizing questions for future research. For example, at what temperature do the different clays used form drying cracks, and is the variability in drying cracks due to differences in clay mineralogy, amount of temper, or firing temperature? More experiments need to be carried out in the realm of experimental void forming. Replicative experiments carried on by the Center for American Archaeology could provide much in the way of controlled comparative information. Perhaps in future such studies in voids and other features visible in oriented thin sections will provide clues toward producing a more complete technological and behavioral history of prehistoric ceramic production.

ACKNOWLEDGMENTS

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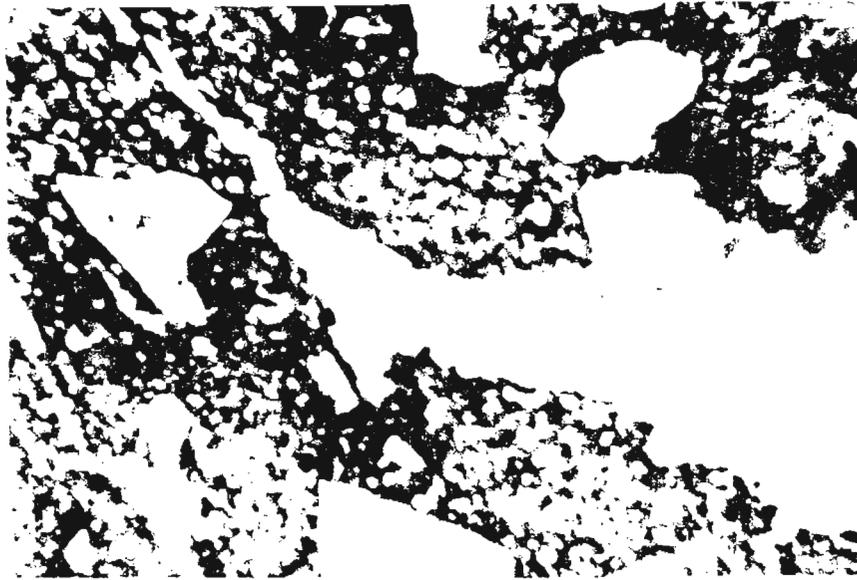


Figure 1: Coil join in Mancos Corrugated sherd: CN2826 Ewing Site Colorado. The amount of dye which has penetrated between the two coils indicates a good coil join. Exterior of the vessel is to right.

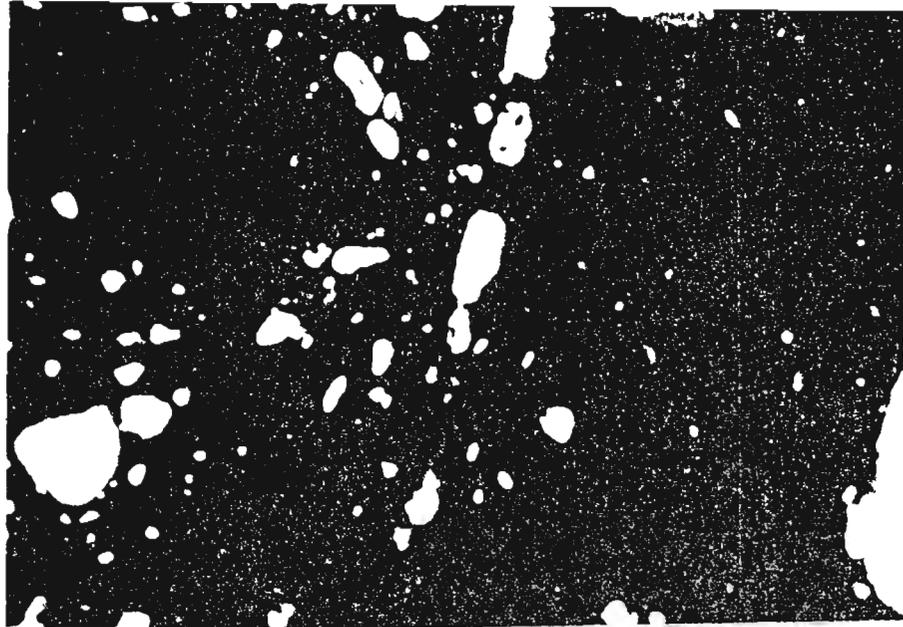


Figure 2: Coil join in Jersey Bluff sherd: Auds II -3. Poor coil join between coils of dissimilar pastes. The smooth sided void between the two coils is an air pocket caused by not compressing the coils together. Exterior of the vessel is to right.

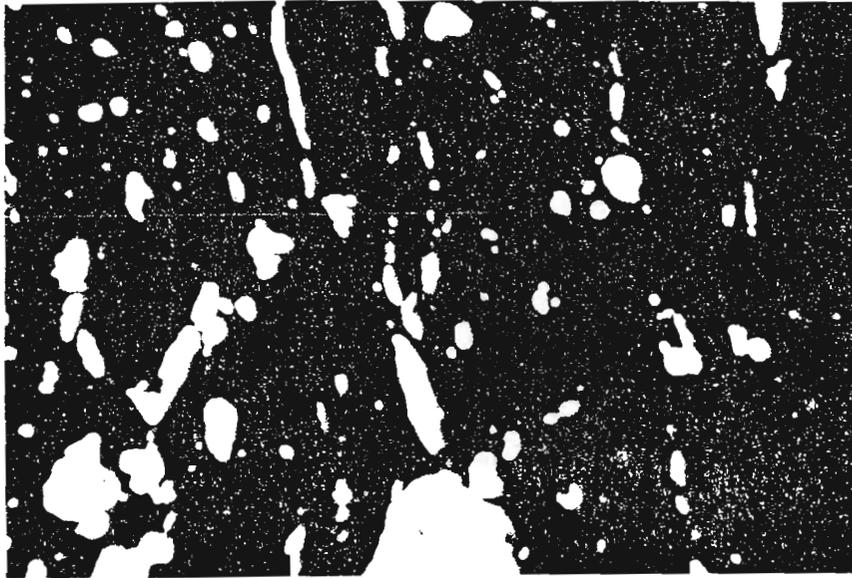


Figure 3: Compression voids in Baehr/Pike Scratched: Ap 552a-1. The parallel orientation of fairly smooth-sided voids is diagnostic. The exterior of the vessels is to right.

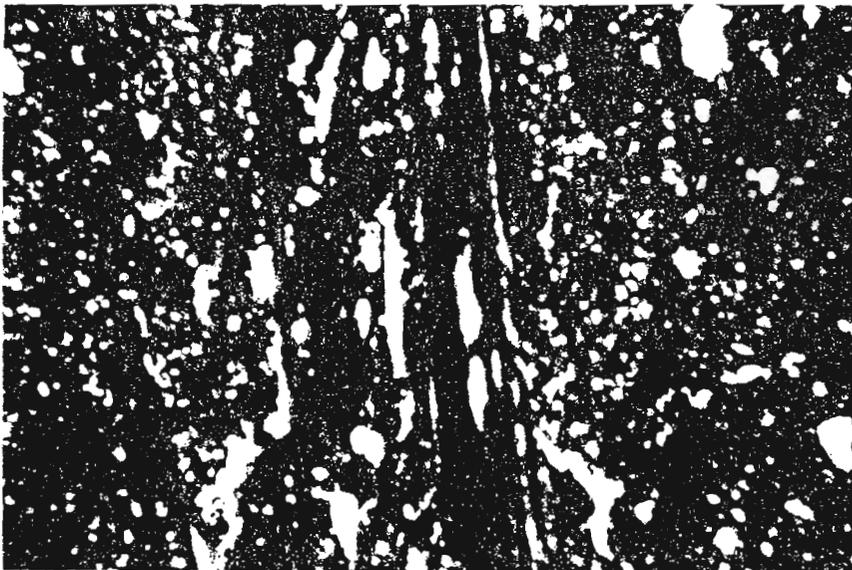


Figure 4: Compression voids in Mississippian Jar:. The particles of shell temper are oriented parallel to the vessel walls. The exterior of the vessel is to the left.



Figure 5: Deformation of compression voids of White Hall Cord marked: Ap 185e(2). Smoothing of the lip truncates compression voids and leaves a clay film which caps some voids. The exterior of the vessel is to the left.

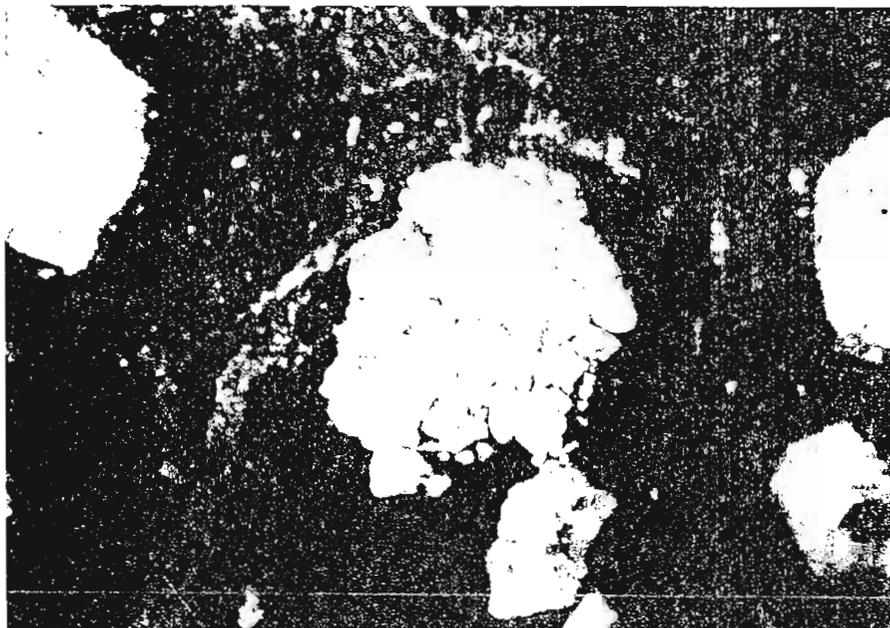


Figure 6: Deformation of compression voids at lip, of Jersey Bluff Per 1-5-2. The curved compression voids indicate that the lip was shaped by folding it over onto itself. The exterior of the vessel is to the left.

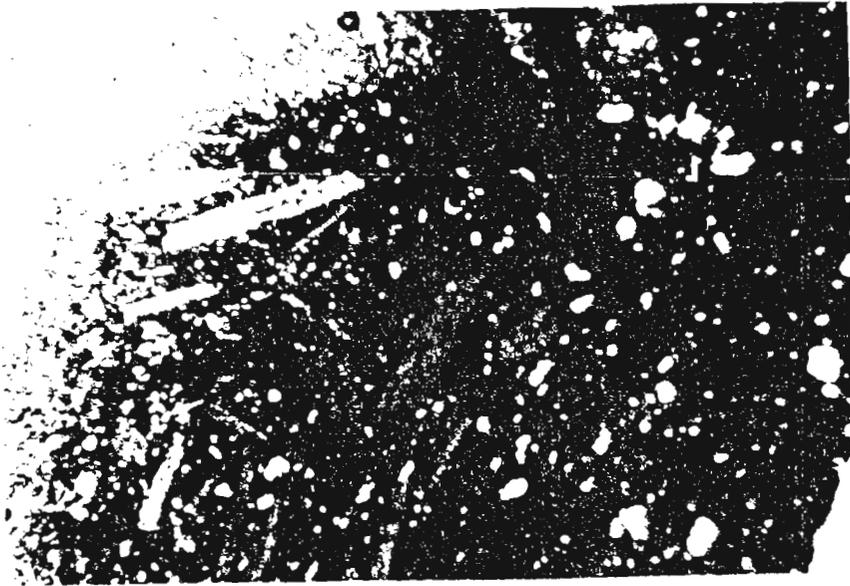


Figure 7: Deformation of compression voids and temper particle alignment at the rim of a Cowley Plain sherd, Rice County, Kansas. The verticle orientation of the temper particles and voids have been modified by the rounding off of the lip.

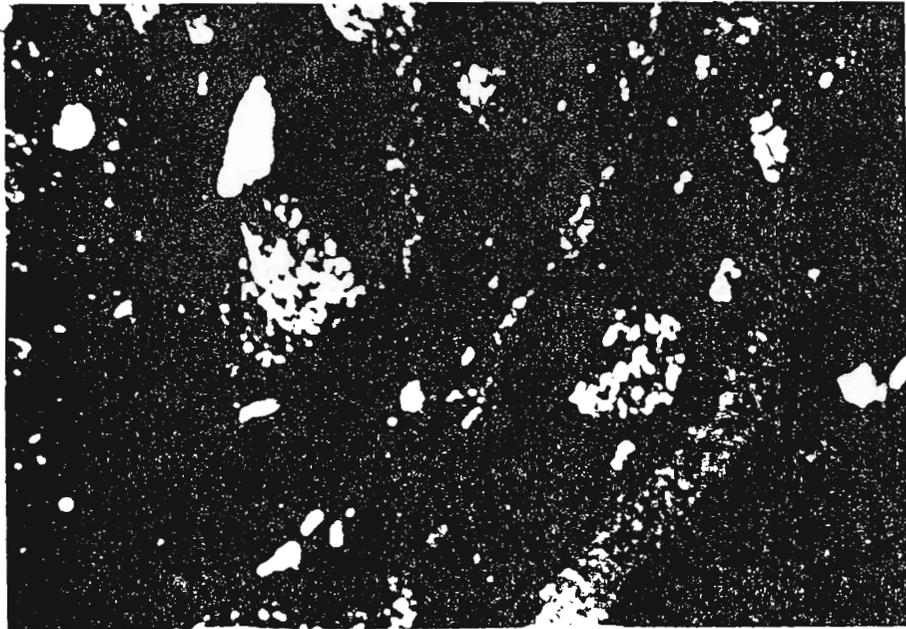


Figure 8: Deformation of compression voids of Havana Cord Wrapped Stick: Ap 112B'66. These compression voids were deformed by a punctation 90° perpendicular to their original orientation. The exterior of the vessel is to the left.

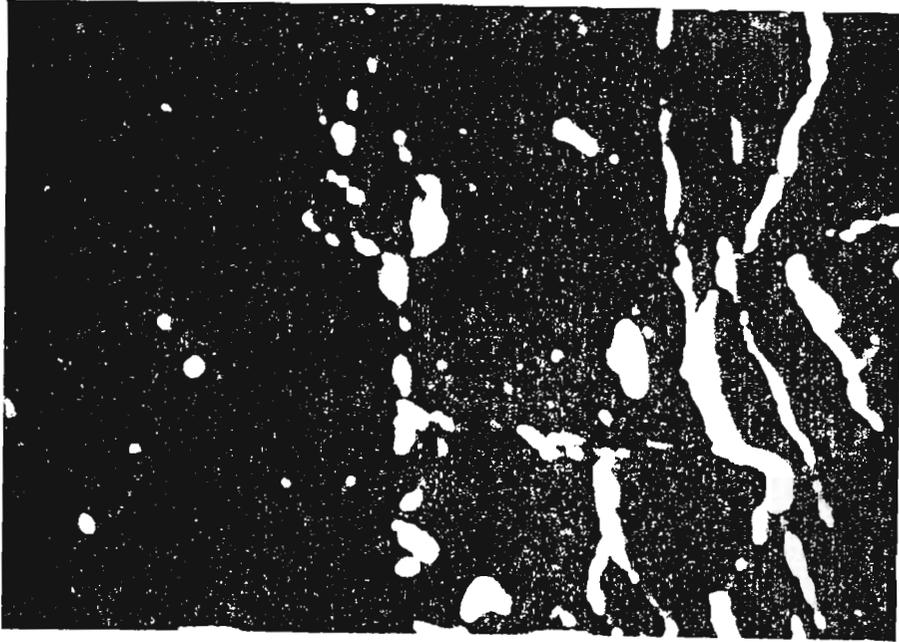


Figure 9: Drying cracks in Baehr Zoned Rocker; Md-1-A(2). The drying cracks run through both paste and through the crushed sherd temper particles. Note their strong orientation paralleling the vessel walls. The exterior of the vessel is to the left.

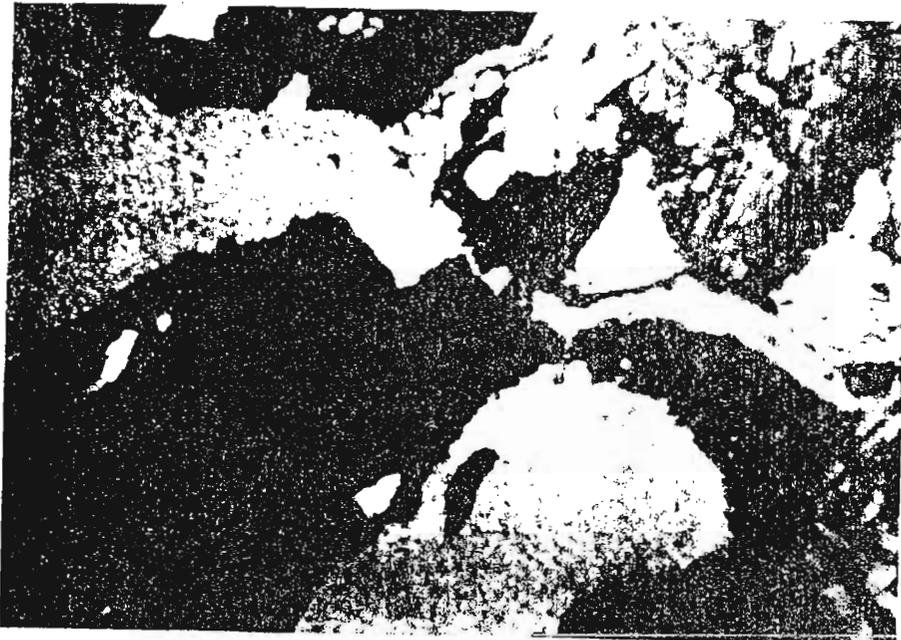


Figure 10: Drying cracks in Peisker Pinched; PSK I 13A-7. The paste has drawn away from the temper particles. The exterior of the vessel is to the left.

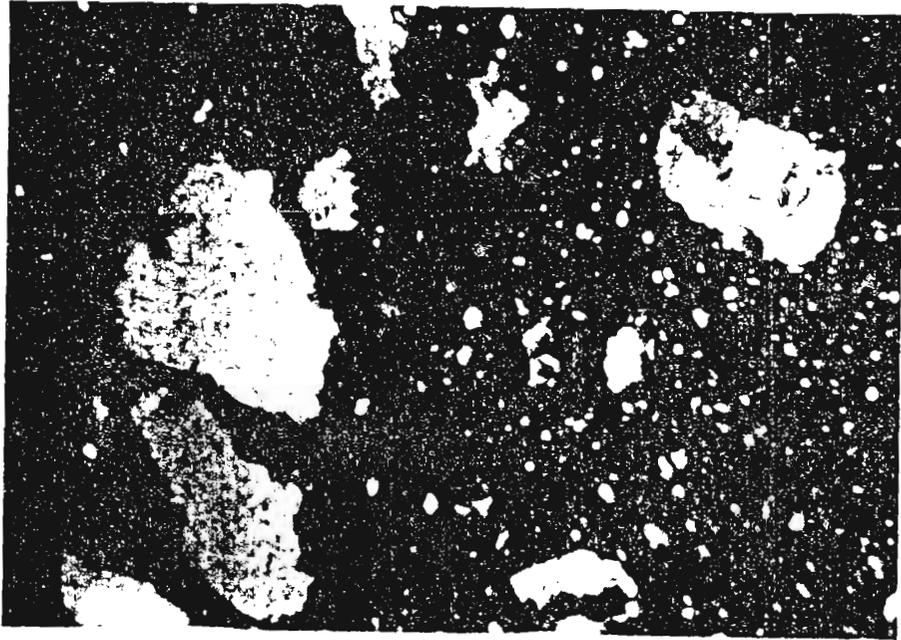


Figure 11: Leaching voids in Montezuma Puntate: PSK 241-12. Note the vertical orientation of the leaching voids. The mineral occupying the void at the right is limestone. The exterior of the vessel is to the right.

BIBLIOGRAPHY

- Bartlett, Katharine
1934 Material Culture of Pueblo II in the San Francisco Mountains. MUSEUM OF NORTHERN ARIZONA BULLETIN 7 Flagstaff.
- Brewer, Roy
1969 FABRIC AND MINERAL ANALYSIS OF SOILS. New York: John Wiley and Sons, Inc.
- Chapman, Carl H.
1980 THE ARCHAEOLOGY OF MISSOURI, II. Columbia: University of Missouri Press.
- Cole, Fay Cooper and Thorne Deuel
1937 REDISCOVERING ILLINOIS: ARCHAEOLOGICAL EXPLORATIONS IN AND AROUND FULTON COUNTY. Chicago: University of Chicago.
- Fewkes, V. J.
1944 Catawba Pottery Making, with Notes on Pamunkey Pottery Making, Cherokee Pottery Making and Coiling. PROCEEDINGS OF THE AMERICAN PHILOSOPHICAL SOCIETY 88:2:69-129.
- Fontana, et al
1962 Papago Indian Pottery. Seattle: ETHNOLOGICAL SOCIETY. University of Washington Press.
- Fowler, Melvin L.
1952 The Clear Lake Site: Hopewellian Occupation. In Hopewellian Communities in Illinois. Edited by Thorne Deuel. SCIENTIFIC PAPERS, No. 5, pp. 131-74. Illinois State Museum. Chicago.
- Gifford, E. W.
1928 Pottery Making in the Southwest. UNIVERSITY OF CALIFORNIA PUBLICATIONS IN AMERICAN ARCHAEOLOGY AND ETHNOLOGY 23:8:353-73.
- Griffin, J. B.
1935 Aboriginal Methods of Pottery Manufacture in the Eastern United States. PENNSYLVANIA ARCHAEOLOGIST 5:1:19-24.

1952 Some Early and Middle Woodland Pottery Types in Illinois. In Hopewellian Communities in Illinois. Edited by Thorne Deuel. SCIENTIFIC PAPERS, No. 5, pp. 93-130.

- Guernsey, Samuel J.
 1931 Explorations in Northeastern Arizona. PAPERS OF THE
 PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY
 Vol. 12, No. 1. Harvard University. Cambridge.
- Hodges, H.W.M.
 1964 Thin Sections of Prehistoric Pottery: An Empirical
 Study. BULLETIN OF THE UNIVERSITY OF LONDON INSTITUTE
 OF ARCHAEOLOGY 3:58-68.
- Holmes, W. H.
 1903 Aboriginal Pottery of the Eastern United State. ANNUAL
 REPORTS OF THE BUREAU OF AMERICAN ETHNOLOGY, Vol. 20.
 Smithsonian Institution. Washington, D.C.
- Kidder, Alfred V.
 1932 THE ARTIFACTS OF PECOS. Yale University Press, New Haven,
 Connecticut.
- Million, Michael
 1975 Ceramic Technology of the Nodema Phase Peoples.
 SOUTHEASTERN ANTHROPOLOGICAL CONFERENCE. Bulletin 18:
 201-208.
- Rye, O. S.
 1976 Keeping Your Temper Under Control: Materials and the
 Manufacture of Papuan Pottery. ARCHAEOLOGY AND PHYSICAL
 ANTHROPOLOGY IN OCEANIA 11:106-137.
 1976 Pottery Manufacturing Techniques, X-Ray Studies.
 ARCHAEOOMETRY 19:2:205-211.
- Shepard, A. O.
 1936 "Cell-tempered" Pottery. AMERICAN ANTIQUITY 2:137-138.
- Stevenson, R.B.K.
 1939 Two Bronze Age Burials. PROCEEDINGS OF THE SOCIETY OF
 ANTIQUARIES OF SCOTLAND 73:229-240.
 1953 Prehistoric Pot Building in Europe. MAN 53:65-68.
- Stimmell, Carole R., B. Heimann and R.G.V. Hancock
 1982 Indian Pottery from the Mississippi Valley: Coping with
 Bad Raw Materials. In ARCHAEOLOGICAL CERAMICS.
 Jacqueline S. Olin and Alan D. Franklin, editors.
 Smithsonian Institution Press, Washington, D.C.

THE BERDACHE AS SHAMAN: AN ANALYSIS

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The phenomenon of berdache sexual inversion among the Northern Plains Indians continues to be both a source of interest and confusion for anthropologists. Early ethno-historic literature and later causal analyses of the role of the berdache have tended to be biased by either western morality or western psychological paradigms. This problem was clearly described by Blakeslee (1979). Yet even recent interpretations have tended to circumvent the issues of role transgression in regards to the maintenance of the role in Plains cultures and the ritualistic importance of the berdache to those groups. What has been missing in the analysis of the berdache is the process of native conceptualization of sex roles and the process by which these cultures accommodate individuals who do not conform to the norm. A comparative analysis of belief systems can be useful in demonstrating the integration of atypical roles into society, for it appears that the berdache is intimately associated with shamanism.

The sanctioned normative function of sex in society is procreation. This activity is as basic in a culture as subsistence. Justly, sex roles are very basic in society and tend to be ascribed from birth. Mead (1949:120) states: "because primary sex differences are of such enormous importance . . . most children take maleness or femaleness as their first identification of themselves." But this does not apply to all individuals or groups of individuals within any one particular culture. A sociobiological explanation of the drive for perpetuation of the species cannot explain sanctioned, institutional non-reproductive roles. Monastic communities are often set aside from procreative activities. In many cases celibacy or at least isolation from reproduction merits special status. Sexual atypicalness (celibacy, inversion) can utilize the powerful symbol of sex, rather, the control over sexuality, for attainment of religious goals.

The term berdache has been used rather loosely in various historic accounts, describing everyone from eunuchs to hermaphrodites (Blakeslee 1979:45). A more precise definition might be those individuals who assume some of the duties and

often the mannerisms and attire of the opposite sex, either briefly or permanently, according to the psychological and spiritual needs of the various North American Indian groups. A true berdache is a sex-role invert who has a special relationship (either sanctioned or non-sanctioned) with the larger group. It is important to try to understand that relationship.

The berdache was usually initiated upon reaching maturity, either by the individual's declaration or by the larger group. The latter incidence, obviously, tended to be more positively sanctioned. Among the North American Indians, the vision quest was often an appropriate occasion for the transformation into the berdache role. It was an atypical rite of passage, not from childhood to adulthood, but from a normative role to an atypical one.

Shamanism and the Berdache in Ethnography

The berdache existed in many tribes throughout North America. The occurrence of this role was especially great among the Northern Plains groups. The berdache as a socially sanctioned role with shamanistic characteristics was found in the Assinaboine, Crow, Cheyenne, Mandan, Omaha, Teton, Yankton, Santee Sioux, Cree, Hidatsa, Blackfeet (Schaeffer 1965:200), and others. In general, the institution of the berdache consisted of men and women, who during a vision quest (a formal projection) were instructed by the spirits to wear the clothing of the opposite sex and/or perform certain duties of the opposite sex. Yet the acquired roles were by no means identical to the normative male or female roles.

Among the Winnebago, the berdache was considered a man who had obtained his transsexual form from the spirit of the moon (Lurie 1953). These berdaches performed female tasks "better than any woman," according to some informants, but were clearly not limited to them. They foretold future events and functioned as shamans, yet not all shamans were berdaches (342). However, the initiation into the role of either shaman or berdache-shaman seems to be structurally similar.

Many Winnebago berdaches carried their inversion to the point of marriage with other men and the adoption of children. Generally the Winnebago berdache were highly respected.

Lurie states that the Winnebago berdache institution was similar to those of adjacent tribes such as the Omaha and Pona (354). Noting the widespread occurrence of sexual inversion throughout the Siouan groups, Lurie suggested diffusion.

Shaeffer's account of the Blackfeet clearly shows berdache-shaman affiliation (1965:207); Four Bears was a male berdache who was believed to have obtained his role from the spirits of the sun and moon. He obtained the powers of shaman and weather controller after his initiation as berdache. Four Bears wore female garb only during certain rituals, and normally functioned in the male role. As a berdache, he was particularly important during the initiation of new warriors. Four Bears held the powers of supernatural communication and was called upon to bless all young novice warriors before their first raid. Eliade (1964) notes that one of the primary attributes of shamanism is communication with the spirit world.

Perhaps the most positively sanctioned and culturally integrated berdache institution was found among the Cheyenne (Grinnell 1923). In fact, Shaeffer (211) accounts for an entire kindred whose males were all berdaches. These individuals were high status shamans; their medicines were love potions and they often acted as go-between in marriage propositions. Their status was based on the native concept that stored sexual power transformed itself into great spiritual power - a notion common to mystic initiates throughout the world. The transposition of sex roles is a symbolic device which affects entry into the realms of the sacred.

Female sexual inversion and shamanism was not as common as male-to-female inversion, but it did exist. Recent studies seem to overlook its occurrence. The Sioux had an institution wherein women could assume certain male duties. Such females were not women warriors as such, but served as warrior's aides-de-camp during battle (Shaeffer:215). Among the Cheyenne, female berdaches gathered arrows and cooked for the men at battle camps, and performed other duties that were typically male oriented. Such women had very high status - to kill such a woman would provide many coups to the assailant (Ibid).

There was a case of a female chief among the Crow who was a powerful warrior and shaman. Despite her role inversion, Yellow Weasel Woman did not wear male clothing, even in battle. (Ibid:216).

Perhaps the most notable of all female role inverters was the Kutenai berdache, Ko-Come-Ni-Pi-Ka. David Thompson's journal mentions her, as have others, and traces of her memory seems to have lingered among the Kutenai for quite some time (Ibid:190). She was apparently unattractive and had an oversized physique. She was greatly teased because of this. According to Thompson, Ko-Come-Ni-Pi-Ka married one of her male White servants. This husband, so the berdache claimed, had performed an operation transforming her into a man. She explained to her people that the White Man had great spiritual power and had caused this transformation. The berdache attired herself in

leggings, breech clothes, and other male articles, and carried a gun and bow. In an attempt to further substantiate her male role, she desired to marry a female. The girls refused at first and were punished for the disrespect of the berdache's newly acquired status.

The Kutenai berdache assumed the role of a warrior. This was extremely unusual for this normally peace-loving tribe. A warrior, and a female at that, had to possess incredible courage and skill to face the martially oriented tribes across the Rockies (Blackfeet). Ko-Come-Ni-Pi-Ka eventually left the Kutenai and became a prophetess among the Chinook. There she predicted disasters, disease, lowered fertility and the establishment of reservations. Accordingly, she played an important role in the spread of the Prophet Dance. This wide travelling berdache was credited for the introduction of the ritual among the Mackenzie Athapaskans in 1812 (Ibid:201).

In future years, Ko-Come-Ni-Pi-Ka was an interpreter for the Kutenai, and was a noted shaman who healed the sick. On occasion she served as a mediator between the Blackfeet and the Flathead. She died trying to save the Flathead from a raid. So great was her shamanistic status that her Blackfoot killer received dishonor rather than coups from his own people.

Oscar Lewis (1941) documents the existence of "manly-hearted women: among the Northern Piegan. These women assumed the roles of men and were accorded high status. In this capacity, they expressed aggressiveness, independence, ambition, and 'manly courage.' They were especially important in religious events, and played a key role in the Sun Dance (184). Apparently they did not outwardly manifest male dress, rather, they assumed the 'inner' qualities of men.

The fact that women were berdaches indicates that the process of symbolic sex role inversion, rather than either the outward signs of inversion or the pre-initiatory male or femaleness of the participant, was the primary characteristic of the sacred role.

Although occurring less frequently than on the Great Plains, male berdaches were common among the Kutenai and other Salishan tribes. Berdaches have been associated with the Flathead and Pend d'Oriell (Cline 1938). As with the Plains Indians, many of these berdaches were initiated during adolescence or early youth by the vision quest ritual.

A Nez Pierce berdache male was reported in 1875, and was noted by Cline to be sexless (23). Verne Ray (1932:121) reported berdaches present in the same area, and referred to

them as being hermaphroditic. As noted by Blakeslee (45), early anthropologists and explorers looked to biological explanations of the berdache.

Cross-cultural Comparisons

Hassrick (1964) found that the high frequency of berdaches among the Plains Indians was correlated with a high emphasis on warfare. A Dakota boy, for example, who was unable to meet the rigorous demands of the war system escaped by taking a female role (65). This might seem functionally logical, yet the aggressive Gros Ventre and Arapaho had no berdaches. The idea of sexual inversion as a cultural 'safety valve' seems inconsistent with the high status and ritualistic obligations often accorded the berdache. There is no conclusive evidence to credit Hassrick's hypothesis.

This problem was considered by Goldberg (in Munroe 1969: 88). Through cross-cultural analysis, a high warfare-berdache correlation was refuted by Monroe. Factors other than warfare precipitated sexual inversion, according to Munroe. In those cultures where sex role differentiation is well defined, less is the occurrence of sexual inversion (90). Munroe found that transsexuality appeared more often in groups with weakly defined sex roles. Gender confusion was therefore common, and the berdache institution could easily accommodate individuals with identity problems.

Munroe utilized the standard cross-cultural method of Murdock and White (1969), sampling 44 worldwide cultures. The following variants were chosen: 1) residence, 2) kin group affiliation, 3) vuncular terminology, 4) cousin terminology, 5) authority succession, 6) eating arrangement, and 7) the couvade (Munroe:92). Cultures were assessed one point for each characteristic with sexual distinctions - zero for those without. Thus, seven would be the theoretical score for groups with the highest sexual distinctions.

The problem with this methodology is, of course, the choice of variables. I tested this methodology using other social variables which might have functional correspondence with the concept of sexuality. First, I tested the presence of the berdache against post-marital residence. Twenty-seven Plains Indian cultures were chosen from Murdock's world ethnographic sample (1957). I found a correlation between the presence of the berdache and the absence of post-marital matrilocality.

Secondly, the sample was increased to 44 cultures throughout the world and sexual inversion was tested against division of labor and conceptualized sex role distinctions. In the following results, 'equal participation of labor' is defined as the degree of sharing of all duties listed by Murdock (1957) relating to the maintenance of society:

Sexual Inversion Present

- | | | |
|---------------------------------|-----|---------------------|
| 1. High role distinctions . . . | 50% | equal participation |
| 2. Low role distinctions . . . | 73% | equal participation |

Sexual Inversion Absent

- | | | |
|---------------------------------|-----|---------------------|
| 1. High role distinctions . . . | 66% | equal participation |
| 2. Low role distinctions . . . | 57% | equal participation |

It appears that sexual inversion tends to prevail in cultures where sexual distinctions are low and there is a greater equal labor participation by men and women in all activities. This seems to support Munroe's findings.

Similar correlations were made between sexual inversion and the dominance of either male or female based subsistence technology. The results seem to indicate that in those cultures in which women play a more dominant part in daily subsistence, and the differentiation of sex roles is high, the frequency of sexual inversion is also high.

Of course, one could continue to test any variable that would appear to be related to sexual distinctions and the presence or absence of inversion. Despite some recent attempts to assign quantifiable values to variable selection (Rohner, et al 1982), the basic problem remains: a high correlation of variables cannot imply a functional relationship of those variables. There has been an attempt by some anthropologists to explain the berdache through cross-cultural comparison, predicated by causality models from western psychology and sociology. Implied in their selection of variables is the assumption that the dominance of women in any particular group promotes an identification by young males towards female identities. This problem has been hotly debated in our own society. It loses even more credibility when extrapolated through cross-cultural comparison.

It seems illogical to assume that the institutionalized berdache-shaman complex developed as a convenient accommodation

for individuals with sexual identity problems - these problems occur in cultures that do not have defined roles for sexual inversion. Identity problems might be a result of a certain lack of culturally defined sex role distinctions, but they do not explain the ritually sanctioned operation of sexual inversion as it is found in many cultures.

The Berdache as Shaman

It is important to investigate probable functional relationships rather than causal ones in regard to the berdache. It seems clear from ethnographic description that the berdache is frequently associated with shamanistic power. An analysis of shamanism can be useful for explaining the function and status of the berdache.

In the search for common themes in the worldwide expression of shamanism, Eliade's monumental work (1964) stands out. Eliade attempted a comprehensive study of the phenomenon. But we need an analysis of the dynamic relationship of spirit possession, role reversal, and sexual inversion.

The system of shamanism tends to embrace outcasts in society - individuals who don't seem to fit into normative roles. Shamans become highly privileged persons with many liberties not usually ascribed to the common folk. The role of shaman is burdened with the attributes of norm reversal - a phenomenon found so frequently in religious activity (Norbeck 1974). Shamanistic traits are often found in cultures undergoing the pressures of alien contact. Ecstatic cults, such as found in the Prophet Dance in North America, are a reaction to events perceived as not being within the group's control. One who can control these unseen forces through shamanistic trances achieves an elevation of status. During periods of social chaos and 'liminality,' performers behave in a manner often opposite the normative roles of society (Turner 1974; Klieger 1983). Role inversion becomes a method whereby the power generated by symbolic mastery of sexual distinctions is utilized for dealing with the unknown. The "contraries" of the Plains Indians seem to follow the same pattern but use a broader range of reversal.

An equilibrium is brought about in society through the practice of shamanism - an individual role conflict resolution that has sacred parameters for the group. The peculiarity conferred by the atypical role of shaman is of the same genre as the conceptualization of the sacred and the profane.

Knoll-Greiling (1952) differentiates four main periods in the life of a shaman: 1) predisposition, 2) call to the profession, 3) preparation for the office, and 4) experience recorded in the course of shamanistic vocation. These steps are essentially similar for the Indian berdache. Recognized by Eliade as being characteristic of shamanism throughout the world are the characteristics of 1) initiatory visions and 2) subsequent communication with the spirit world (13). The practitioner's control over these sacred forces is usually appreciated by the general society. A certain respect and status enhancement follows.

In an interesting paper by Devereux (1951), the shaman may start his life as a functional psychotic manifesting extreme identity conflict. The individual simply does not fit into normative society. The important point is that he learns to adjust to his affliction. A shaman, becoming the 'master of chaos' finds culturally acceptable ways of controlling his individual eccentricities.

Of course not all Plains Indian shamans were berdaches, but ethnohistoric and ethnographic descriptions seem to support the converse: the role of the berdache and its status indicates that these individuals, for the most part, were shamans. Some groups, such as the Cheyenne, sanctioned and even recruited individuals into the berdache role. Other groups negatively sanctioned the berdache, yet these individuals existed - feared and respected rather than derided. It seems to be a matter of the scale of adjustment from the individual level to the cultural.

The role of the berdache was certainly not identical to normative male or female roles. The outward manifestations of sexual inversion, cross-dressing, was not always practiced. The inversion was more significantly symbolized as a combination of external and internal qualities perceived in the opposite sex. It was the act of transcending the normative world which resulted in the acquisition of special status and power. In this regard, it is akin to shamanism.

Summary

The widespread occurrence of the berdache in Plains and adjacent Indian groups has been widely documented in ethnohistory and ethnography. Interpretation of the role played by these individuals exhibiting sexual inversion has often been misleading. Early explanations of the berdaches' morally

'deviant' behavior was followed by the use of western psychological and sociological models in an attempt to show causality. Both attempts are ethnocentric. The recent work of Blakeslee has shown what the berdaches weren't. Cross-cultural attempts have sought correspondence between sexual inversion and other social variables - variables which may or may not be functionally related.

It appears evident in the descriptive accounts that the role of the berdache is usually associated with shamanism. The structure and function of the Plains Indian berdache follows the general pattern of shamanism, with its rites of initiation, role reversal, the curative/prophetic powers. It is important to look at the berdache as a special, sacred role which individuals achieve through a symbolic transformation of normative male and female roles. A special status is achieved by the berdache through the initiatory ordeal which ultimately transcends the mundane world. Whether that status was encouraged or despised by the various cultures, it was nevertheless feared and respected. It implied a control over forces that were unseen, yet powerful. The control over basic sexual identity was perceived as a manifestation of this power.

BIBLIOGRAPHY

- Blakeslee, Donald J.
1979 Who were the Plains Indian Berdaches? LAMBDA ALPHA JOURNAL OF MAN. 11 (1):41-65.
- Cline, W.
1938 THE SINKAIETT OR SOUTHERN OKANGAN OF WASHINGTON
Menosha
- Devereux, G.
1951 REALITY AND DREAM: PSYCHOTHERAPY OF A PLAINS INDIAN.
New York: International Universities
- Eliade, Mircea
1964 SHAMANISM: ARCHAIC TECHNIQUES OF ECSTASY. New York
Bellinggen Foundation.
- Grinnell, G. B.
1923 THE CHEYENNE INDIANS: THEIR HISTORY AND WAYS OF LIFE.
Vol. 2. New Haven, Conn: Yale University Press.
- Hassrick, R. B.
1964 THE SIOUX: LIFE AND CUSTOMS OF A WARRIOR SOCIETY.
Norman, Okla: University of Oklahoma Press.
- Klieger, P. Christiaan
1983 On Cataclysms and Dogmas. ZEITGEIST. 1 (3).
- Knoll-Greiling, K.
1952 Berufunf und Berufungserlebnic beiden Schamanen.
TRIBUS, JAHRBUCH DES LINDEN-MUSEUMS. Stuttgart:
Linden Museum.
- Lewis, Oscar
1941 Manly hearted Women among the North Piegan. AMERICAN ANTHROPOLOGIST. 43:173-187.
- Lurie, Nancy O.
1953 Winnebago Berdache. AMERICAN ANTHROPOLOGIST. 55 (5).
Part 1:708-712.
- Mead, M.
1949 MALE AND FEMALE. A STUDY OF THE SEXES IN A CHANGING WORLD. New York:Morrow. 1952 edition.
- Munroe, R. L.
1969 Instituional Male Transvestism and Sex Distinctions.
AMERICAN ANTHROPOLOGIST, 71 (1).

- Murdock, G. P.
 1957 World Ethnographic Sample. AMERICAN ANTHROPOLOGIST.
 59 (4):664-687.
- Murdock, G. P. and D. R. White
 1969 Standard Cross-Cultural Sample. ETHNOLOGY. 7:329-369.
- Norbeck, Edward (ed.)
 1974 THE ANTHROPOLOGICAL STUDY OF HUMAN PLAY. Rice
 University Studies. Houston: Rice University Press.
- Ray, V.
 1932 THE SAMAIL AND NESPELEM: SALISHAN PEOPLES OF NORTHEAST
 WASHINGTON. Seattle: University of Washington Press.
- Rohner, Ronald P., D. Scott Berg and Evelyn C. Rohner
 1982 Data Quality Control in the Standard Cross-cultural
 Sample: Cross-Cultural Codes. ETHNOLOGY. 2 (4):
 359-372.
- Schaeffer, C. E.
 1965 The Kutenai Female Berdache. ETHNOHISTORY. 12 (3):190-216.
- Turner, Victor
 1974 Liminal to Liminoid in Play, Flow, and Ritual: An Essay
 in Comparative Symbology, in Edward Norbeck (ed.) THE
 ANTHROPOLOGICAL STUDY OF HUMAN PLAY. Rice University
 Studies. Houston: Rice University Press.

THE TOBIN SITE - 36CW27
AN ARCHAIC MANIFESTATION IN NORTHWEST PENNSYLVANIA

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Although strategically located geographically, below the Great Lakes and between New York and Ohio, northwestern Pennsylvania has been largely ignored as a potential area for archaeological exploration. This has been especially true of the Crawford County area. The only work done, prior to 1964, was limited to the efforts of a group of dedicated amateurs, who functioned under the triple handicaps of lack of time, experience and facilities.

Therefore, in 1964, the Alliance College Archaeological Field School was organized for the dual purposes of training students in archaeological field methods and attempting to supply some of the answers to questions of the prehistory of the French Creek Valley. (The Field School was discontinued in 1977, with the cancellation of the Anthropology program.)

In 1960, an amateur reconnaissance party, under the direction of Fred E. Brown, Jr., located a site on the property of Raymond Tobin in Vanango Township, Crawford County, approximately four miles west of Cambridge Springs, Pennsylvania. The surface data collected appeared to give evidence of Archaic occupation and, considering the scarcity of authenticated information on this horizon, it was decided to excavate the location thoroughly. Mr. Tobin generously gave his full permission for the excavation to be carried out to its conclusion, even to the extent of leaving the field out of cultivation for as long as necessary.

The site was accordingly listed as the TOBIN SITE and catalogued by the Archaeological Archives of Western Pennsylvania as 36Cw27.

The Tobin site is located on the eastern edge of a large pasture, above the first terrace of the west bank of French Creek. The site is over 250 m. from the creek itself which proposed an immediate question, since it would appear that immediate proximity to water was a logical necessity. However,

detailed stratigraphic examination and soil profiles gave evidence of a layer of alluvial silts, indicating the presence of a moderately large lake, approximately 3.65 m. at its deepest point, on the immediate northern boundary of the site, fed by springs and a now dry small creek.

The occupation site stands on the crest of a small bluff, on what was formerly the beach of the lake. There is ample evidence that the area immediately south of the site was heavily forested; indeed, it was wooded within the memory of persons still living. Extensive test pitting along the southern border of the site revealed no evidence of occupation but an almost continuous pattern of major tree root systems. Existing terminal woodland on the eastern border of the site is mainly birch, aspen and hemlock.

The site runs in a northwest to southeast direction and is 32.91 m. long and 10.05 m wide. The extreme eastern portion of the site was destroyed by the right-of-way of the now abandoned Erie to Meadville interurban railroad. However, post-excavation analysis indicates that any loss was minimal. (Figure 1.)

The soil composition of the area is a light yellow, coarsely textured sand with occasional sporadic deposits of a finely textured yellow clay. There is a superabundance of pebbles, shale and gravel throughout the area. In addition, in the occupied zone, there are vast amounts of fire-cracked sandstone; in some places, the occupation level appears to be paved with sandstone. There is a shallow humus layer of approximately 22 cm. The sandy soil terminates in a layer of bluish-gray gravel, which is completely sterile. This gravel deposit, obviously of glacial origin, occurs at various depths throughout the site, from a minimum of 48 cm. to a maximum of 94 cm. below the surface.

Unfortunately, the soil has a very high level of acidity (pH 5) which, combined with the very high permeation rate of the sandy soil, precluded the recovery of any material of bone, antler or horn.

The site was first surveyed and a base line established along the eastern boundary. Excavation proceeded by means of 5 foot grids. (All linear measurements have been converted to metrics.) All soil removed was carefully screened and examined. All artifactually related debris, as well as artifacts, were recovered and the amounts recorded.

FEATURES:

Three distinct types of features of particular interest were located on the site:

1. Fired areas of four major variations.
2. Post mold patterns.
3. Pit structures.

FIRED AREAS:

There were four separate types of fired areas on the site:

1. Deep broad basins with large amounts of fired rock and charcoal in situ. (Figure 2, 3, 4abc)
2. Deep steep sided basins with very heavy deposits of charcoal and ash but no evidence of fired rock. (Figure 5a)
3. Shallow fired basins with central deposits of charcoal and ash and a heavily indurated perimeter but with no fired rock in situ. (Figure 6a)
4. Surface fired areas consisting of an irregular area of heavily indurated, bright red soil with charcoal and ash within the matrix but no interior basin or fired rock. (Figure 5b)

There were 85 clearly defined fired areas on the site; 6 of the first type, 7 of the second, 40 of the third and 32 of the fourth. It should be noted that these features were not concentrated on specific stratigraphic levels but were distributed at random intervals between the depths of 30.6 cm and 68.5 cm. from the surface or 41.9 cm. to 68.5 cm. below datum. The majority of the fired areas appeared at an average depth of 45.7 cm. below the surface or 60.9 cm. below datum. Under certain optimum viewing conditions, a thin layer of white ash, 1.2 cm. to 2.5 cm. in thickness was visible at this depth.

The fired areas of the first type were all located in the northwestern portion of the site within a radius of 6-9 m. They ranged in size from 63.5 cm. x 50.8 cm. with 5 rocks in situ to 101.6 cm. x 73.6 cm. with 55 rocks in situ. Interior pit dimensions ranged from 33.0 x 30.4 cm. and 12.7 cm. in depth to 99.0 x 45.7 cm. and 27.9 cm. in depth.

It might be interesting to note, at this time, a unique aspect of one of these features. This particular fire pit

had a sloping ramp of earth built up to the edge of the fire basin. The surface of the ramp showed extensive reddening from heat. It would appear that this might be a sort of labor-saving device, whereby the stones used in stone-boiling, could be placed on top of the ramp and rolled into the firepit as needed. At first, it was believed that this might be the personal pattern of a single individual. But, later, an identical structure, with the rocks in situ on the ramp, was discovered at the Crowe Site (36Cw 39)- approximately 7 miles southwest.

The fired areas of the second type appeared to be strung out in a long line, roughly paralleling the shore of the lake. They were roughly circular in shape, averaging 33 x 45 cm. in diameter and 30 cm. in depth. Several had alternating lenses of charcoal and ash, indicating multiple usage. These lenses could not be discerned in the Type I firepits, but their extremely heavy deposits of charcoal (approximately 2.5 - 7.9 kg.) might well have destroyed such fragile lines of demarcation. In any case, charcoal deposits of such degree would seem to indicate multiple usage.

The third type of fired area was randomly scattered throughout the area. They were irregular ovals or circles, averaging 33 x 45 cm. in diameter and 15 cm. in depth.

The surface fired areas were also scattered at random throughout the site. These features were highly irregular, almost amoeboid in shape, averaging 1.5 m. in length and 91.5 cm in width. They were approximately 7.5-12.5 cm. in thickness; there were no interior basins. Several showed lenses in cross section, again indicating multiple use.

Finally, another unique feature might be mentioned, in the broadest definition of a "fired area." In one grid, a series of overlapping circles of burned earth were uncovered. Cross section examination revealed very shallow basins, approximately 2 cm. in depth. The circles themselves averaged 15 cm. in diameter. It was suggested that these marks were the scars, caused by placing the red-hot rocks, used in stone-boiling, on the ground after they had been removed from the firepit, in order to readjust the grip with the tongs. This suggestion appears to be validated by the presence of a firepit of Type II, within 1 m. In addition, the uncracked sandstone recovered from the firepits are approximately the same size as the fired circles. (As one crew member remarked, "We've just excavated a smoke ring.") (Figure 6b)

POST MOLDS:

The loose sandy soil made the identification and excavation of post molds extremely difficult. There were apparently many post molds which could not be recognized or were destroyed by soil conditions or the overlay of fired area. Considering the large number of fired areas in the northwestern portion of the site, there should logically have been post mold patterns as well. But, direct evidence of many patterns could not be recovered. Post molds less than 7 cm. in diameter simply could not be identified.

This is especially unfortunate since the most important of the post mold patterns which was recovered was the delineation of a complete house pattern, located in the southeastern portion of the site. (Figure 7)

The post mold pattern revealed a structure in the shape of an elongated oval, 5.46 m. in length and 3.55 m in width. The ends of the structure are fully rounded. There is a gap in the pattern along the northeastern wall - 1.04 m. in width - which may logically be assumed to be the door opening.

The pattern consists of 18 recognizable post molds in sequence but, unfortunately, the pattern is incomplete. In one grid, all features were destroyed by extensive rodent burrowing. In a second grid, instead of recognizable post molds, an area of intensively red earth, probably the result of firing, extended in a band from the west wall of the grid to the southeast corner. However, this arc of reddened earth coincided precisely with the post mold lines in the adjoining grids.

The post molds themselves measure from 10.1 to 12.7 cm. in diameter and from 14.1 to 22.8 cm. in depth. The structures showed an inclination of 10-15° from vertical, inclining toward the interior of the structure. The interior matrix is a soft, loosely textured dark soil. It should be noted, that fortunately, this entire pattern was located in a soil with a high clay content, which probably accounts for its preservation.

Two other items of interest should be noted in relation to the house pattern. 1) Although the occupation level uniformly showed great quantities of pebbles and shale throughout the entire site, the floor within the post mold pattern was totally lacking in any sort of rocks or pebbles and had a completely clear sandy surface. The implication may be made that the floor had been deliberately cleared by the inhabitants.

Such clearing of floors has been noted by Ritchie. (Ritchie 1969:96) 2) There is no evidence of any hearth or fired area within the house pattern itself. Considering the foul winter weather of the area, the absence of interior heating (aside from body heat) would seem to predicate summer occupancy.

Another pattern in the northwestern section was a pair of post molds in direct association on either side of a surface fired area. This evidently represents some type of drying rack. Other post molds were uncovered at random but could not be combined into any sort of intelligible patterns.

PITS:

Three unique pit structures were located on the site. The inner matrix of these structures was composed of a uniformly reddish gravelly sand, homogeneous in structure and loose in texture, which contrasted sharply with the surrounding yellow sand. Pebbles and shale were conspicuously absent. These structures averaged 1.34 m. in length, 91.5 cm. in width and 91.5 cm. in depth. The general shape was that of an elongated oval.

Since one pit was fortunately located in two grids, making a cross section possible within the grid wall, it was possible to take soil samples from the interior and exterior of the pit, under conditions which precluded any possibility of contamination. These samples were subjected to intensive infra-red spectrophotometer analysis. The results showed no evidence of any chemical variation between samples, especially in the matter of organic compounds. Since the analysis would have revealed any variance to one part in several million, it may safely be inferred that the samples were identical. This would appear to rule out the possibility that these structures were refuse pits or burials. The inference may logically be drawn that these were earth ovens. This conclusion was strengthened by the fact that each of these pits was in extremely close proximity to one of the major rock-strewn fire pits.

Similar structures were subsequently discovered at the Sonnerheim Site, by Prof. M. Jude Kirkpatrick of Gannon University, Erie, Pennsylvania.

There is one other unique aspect to the site that is worth mentioning..

One season, during an extensive drought, the grass in the entire pasture was burned brown. It was noted, however, that there was a limited amount of greenery in the field, which appeared to be highly localized. On closer inspection, it was disclosed that this vegetation consisted entirely of thistle plants, which remained green despite the drought. Moreover, it was further noted that the thistles were growing ONLY on that part of the field which was PRECISELY within the established boundaries of the occupation area. Similar correlations between archaeological data and floral growth have been recorded at the Angel Site, Newburgh, Indiana. Otherwise, the reason for this botanical oddity is unknown.

ARTIFACTS:

Artifact types located on the site included: Expanded base and stemmed points, side notched, corner notched and eared notched points, expanded base and straight drill, blades, stemmed scrapers, large and small retouched scrapers, large numbers of utilized flakes, plano-convex and beveled adzes, pitted stones, hammer stones, abrading stones, a crude un-grooved axe, flat sandstone griddles and a single round steatite sherd.

The following general notations can be made concerning the artifact assemblage of the Tobin Site:

1. All artifacts, regardless of type, were equally distributed throughout the site. There were no distinctive concentrations of a particular sequence of artifacts in a given area. Since most of the artifacts were located below the plow zone, this cannot be attributed to plow action.

2. The distributions of artifacts, artifactual debris and the heaviest concentrations of charcoal and fired sandstone coincided exactly.

3. The heaviest total concentrations of artifacts and artifactual debris were located in the northwestern section of the site, close to the major fired areas and within and directly northeast of the house pattern.

Mineralogical analysis of the artifacts was undertaken by students of the Geology Department of Allegheny College, Meadville, Pennsylvania under the supervision of Dr. William Parsons. The great majority of the artifacts were of local flint and chert. However, several factors of unique interest were disclosed.

Several of the artifacts are of Kanahwa black flint from West Virginia and one from Flint Ridge, Ohio. One point is of basalt. Comparative X-ray defraction of the steatite sherd demonstrated that its point of origin was the St. Lawrence River valley. The beveled adze proved to be of porophytic rhyolite; a mineral not found in western Pennsylvania. However, this particular specimen was of a type of porophytic rhyolite common in the Finger Lakes district of New York State. The Plano-convex adze and ungrooved axe were of "greenstone" of local origin.

RADIO-CARBON DATING:

Regretfully, radio-carbon dates are not available for the site. Charcoal samples were acquired, under sterile conditions, at each of the major firepits and forwarded to a reputable laboratory for processing. Unfortunately, due to the careless error of a laboratory technician, the samples became contaminated and unusable.

ANALYSIS:

The relative scarcity of corroborative information on the Archaic period in this area makes generalized analysis difficult. And the date from the Tobin Site does not yield itself readily to quick interpretation.

The existence of specific assemblages of artifact types appears to demonstrate the presence of at least two separate cultural stimuli.

There is positive evidence of the BREWERTON complex, as demonstrated by the corner-notched, side-notched and eared-notched points and the plano-convex adze. However, in addition, there are the stemmed and expanded base points and the beveled adze, which strongly indicate LAMOKA influence as well. This is strengthened by the results of the mineralogical analysis, which points to definite connections with central and western New York State. (Several artifacts, such as Iroquois triangular points, found at the site, may be regarded as intrusive.) It is to be regretted that conditions prevented the recovery of artifacts of bone, which play such an important role in the Brewerton and Lamoka cultures.

The random distribution of artifacts of all types throughout the site and the fact that there is only one major occupation level would seem to preclude the possibility of occupation of

the site, at different times, by separate contemporary groups of these two different cultural traditions.

Therefore, let us consider the following theoretical possibilities:

1. Since the predominant artifacts of the site appear to be those of the Brewerton focus, it would appear likely that the Brewerton culture was the major cultural emphasis in this area during the late Archaic period. The Lamoka elements may be purely intrusive, due simply to the geographical proximity of New York State. However, the idea that both cultures independently occupied the same small location by sheer coincidence seems highly unlikely.

2. A second possibility remains that this represents, in itself, a separate, localized manifestation or phase. It is entirely possible, in that such localized manifestations, drawing cultural items from a variety of sources, were a definitive aspect of the eastern Archaic period, in general.

As Ritchie has stated, "Far from uniform, the northeastern Archaic, like its counterparts in the southeast and the upper Mississippi Valley, displays a surprising variability in its content, reflecting in part, local ecological adaptations, and probably also the inherent dissimilarities of the severally historically diverse traditions involved in its composition, as well as the varying interactions which took place between cultures within and, to a lesser extent, outside this area. This variety, although less well marked among the manifestations of the Laurentian Archaic, imparts a distinctly regional flavor from area to area . . . suggesting territorial distributions of tribal (?) units, analogous with the historic picture of tribal arrangements in the Northeast, although not, of course, directly corresponding thereto." (Ritchie 1969:32)

3. A final and more direct possibility is that the Tobin Site represents a fusion of Lamoka-Brewerton elements, similar to that demonstrated by Ritchie at Frontenac Island. However, the Frontenac phase is of such limited distribution that one hesitates to project such cultural connections. If that possibility were true, it would greatly expand the scope of the Frontenac phase from a highly localized development to a major culture pattern.

However, in a personal communication, Dr. Dolores Elliott of SUNY-Binghamton has informed me that a similar Lamoka-Brewerton fusion appears to have occurred at the Castle Garden Site,

near Binghamton, New York and at the Englebert Site, near Athens, Pennsylvania. Therefore, if such a fusion has occurred at least three times, there is no reason to preclude that it could not happen again.

Obviously, much more data will be required, for northwest Pennsylvania, especially in the matter of comparative assemblages of features, artifacts and time differentials. A limited amount of Brewerton material was uncovered at the Crowe Site, mentioned above and at the Sonnerheim Site, on the shores of Lake Erie. However, neither assemblage has been fully analyzed.

CONCLUSIONS:

Abstract theorizing apart, we can make certain firm statements concerning the specific findings of the Tobin Site:

1. The Tobin Site corroborates the general patterns of Archaic culture in the Northeast: Nomadic hunting and gathering, small band organization, stone boiling, lack of ceramics and horticulture, etc.
2. The evidence of Brewerton occupation in northwestern Pennsylvania is unquestioned at the Tobin Site and has been corroborated by subsequent excavation in nearby localities.
3. The evidence at the Tobin Site also validates the existence of Lamoka cultural occupation without question.
4. This would indicate that there were definite cultural relationships between central and western New York and northwest Pennsylvania during the Late Archaic period. Western New York was not culturally isolated, as has been suggested. The relationships between northwestern Pennsylvania and other geographical areas, such as West Virginia, during this period are more tenuous.
5. It is strongly suggested that the western Pennsylvania Archaic represented a completely different tradition from its counterpart in the eastern portion of the state. The scarcity of steatite and the general artifact patterns seem to indicate few contacts with the east. (Excavations at the O'Connor Site 36Cw60 - have demonstrated a large Susquehanna Broad Point cultural intrusion in the area but the full impact of this material remains to be analyzed. In any event, it has no

connection with the Tobin Site.) It is probable that, in general, the central mountain areas served as a very effective barrier to most communication between east and west, whereas contacts with New Yor were more easily established.

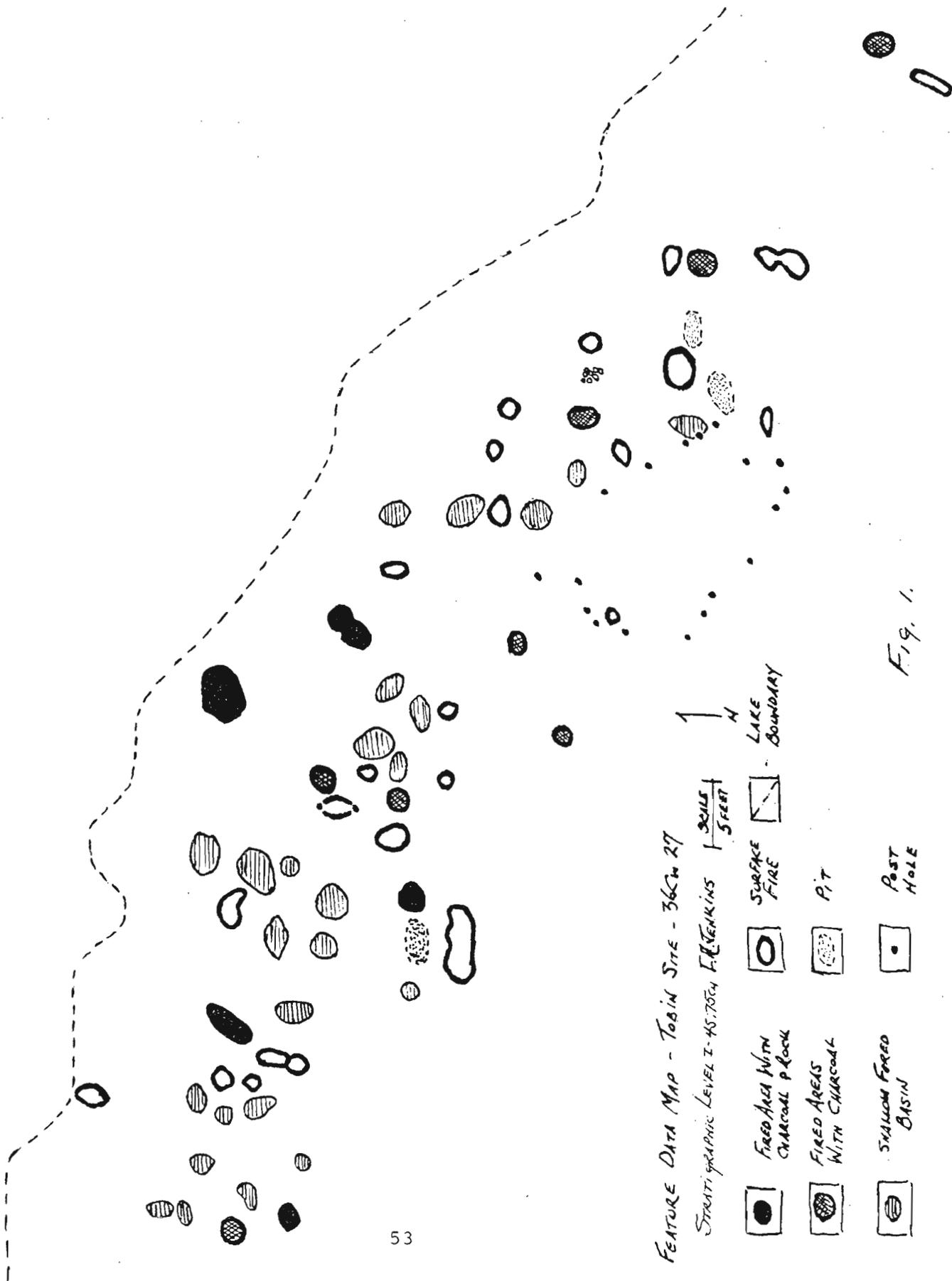
6. Since the house pattern at the Tobin Site, does not conform to the house patterns, uncovered by Ritchie at Lamoka Lake, the logical inference is that this is a house pattern of the Brewerton focus. Since, to the writer's knowledge, no house pattern of the Brewerton people has been recorded to date, this discovery should add to our knowledge of the settlement patterns of these people.

7. Since no house patterns were uncovered at Frontenac island, the alternative suggestion is that this is the style of the Frontenac house. However, Ritchie does not feel that the Frontenac Islanders were well housed. "Probably flimsy bark or rush covered shelters were sufficient." (Ritchie: 1969:113)

To summarize, the Tobin Site represents a summer camp site of a small band or extended family group of the Brewerton or closely related culture of the Late Archaic period. (Figure 8).

BIBLIOGRAPHY

- Ritchie, William A.
1969 THE ARCHAEOLOGY OF NEW YORK STATE. Natural
History Press



FEATURE DATA MAP - TOSIN SITE - 3626 27

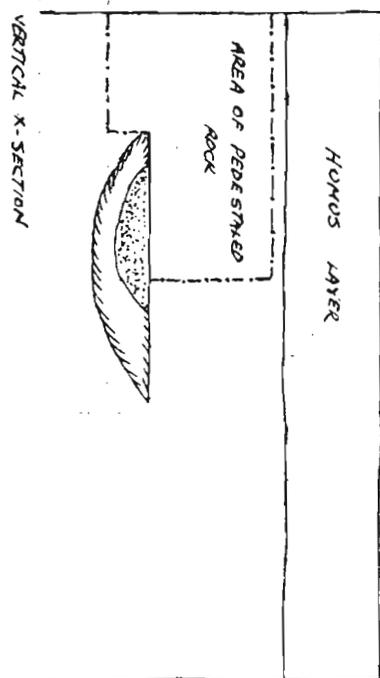
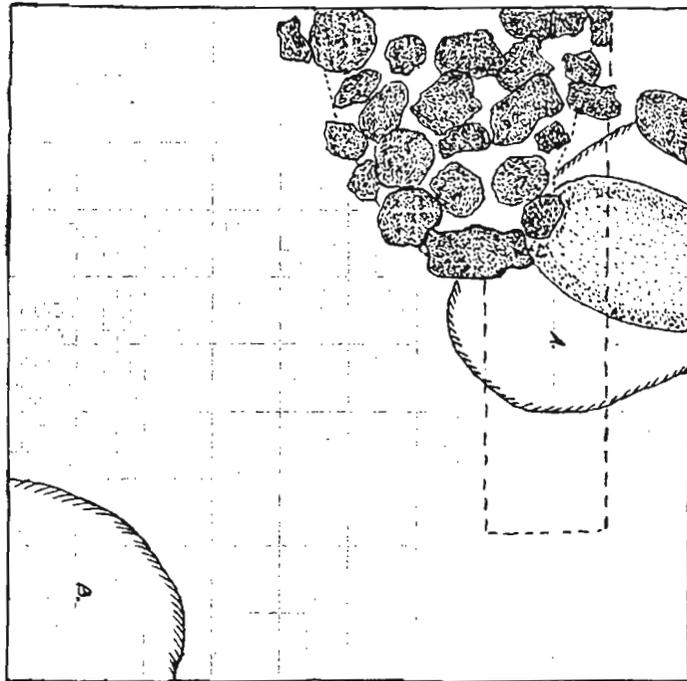
STRATIGRAPHIC LEVEL I - 45.75m F. JENKINS

- | | | | | | |
|--|--------------------------------|--|--------------|--|-----------|
| | FIRED AREA WITH CHARCOAL BLOCK | | SURFACE FIRE | | POST HOLE |
| | FIRED AREAS WITH CHARCOAL | | PIT | | |
| | SHALLOW FORED BASIN | | | | |

Fig. 1.

FEATURE No: 3948
 TOBIN SITE (36 CAT)
 JULY 19, 1967

FIRE AREAS: GRID F4C

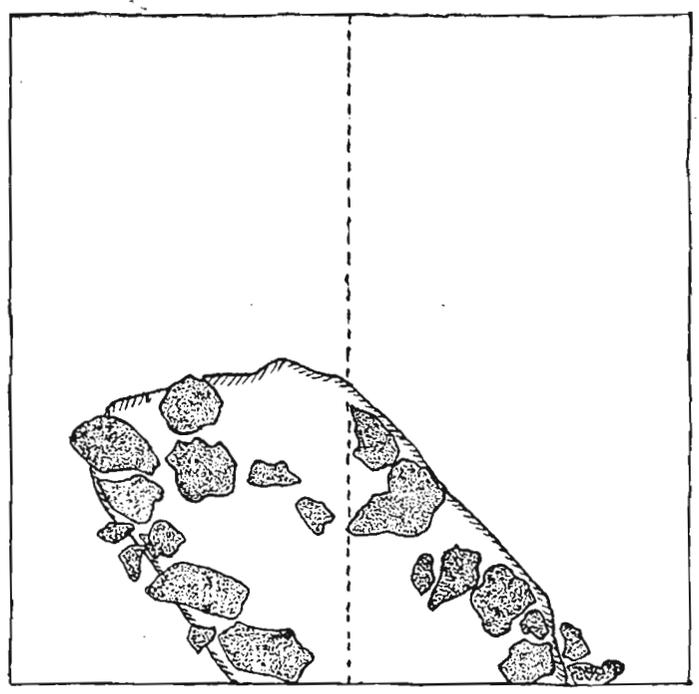


SCALE
 1 FOOT

- C.R.L.
-  - FIRED ROCK
 -  - CHARCOAL
 -  - FIRED EARTH
 -  - PEDESTAL LINE
 -  - CROSS-SECTION LINE

RECORDED BY: RADOSSI
 FIG. 2

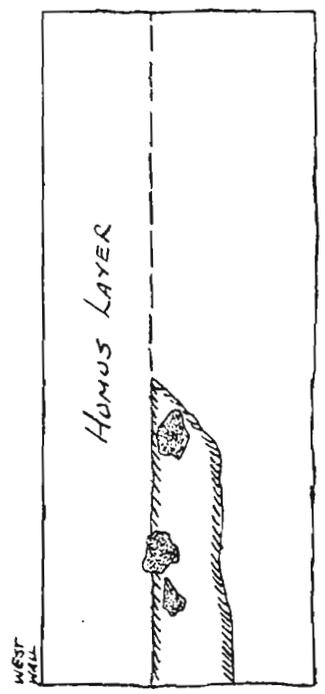
FEATURE No: 27A (LEVEL I)
 TOBIN SITE (36CUR7)
 OCTOBER 8, 1966



HORIZONTAL FLOOR PLAN

RECORDED BY: MAZALESKI

FIRED AREA - GRID I3C



VERTICAL CROSS-SECTION

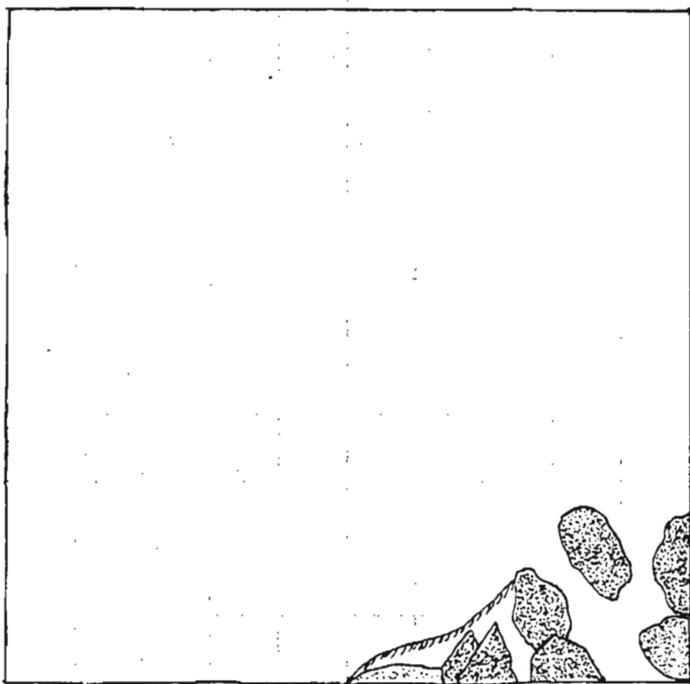
SCALE 1 FOOT
 E.R.U.

- FIRED ROCK
- FIRED EARTH AND CHARCOAL
- CROSS SECTION LINE

ARCHAEOLOGICAL FIELD SCHOOL
 ALLIANCE COLLEGE
 CHICAGO, ILLINOIS

Fig. 3

FEATURE No: 55A
 TOBIN SITE (36 GALT)
 AUGUST 7, 1967



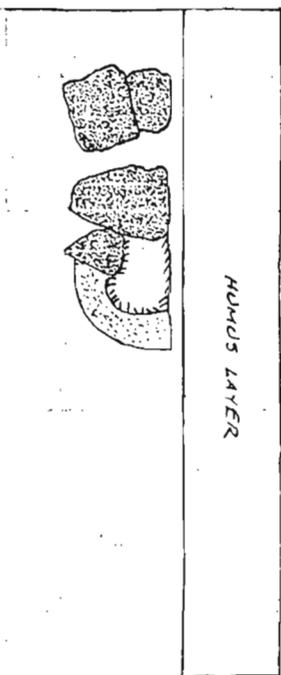
HORIZONTAL FLOOR PLAN

RECORDED BY: RECOVER

FIG. 4A

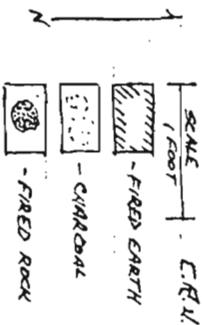
FIRE AREA - GRID G5C

NORTH
 WALL



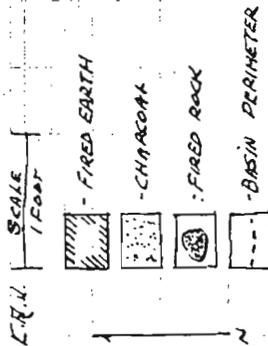
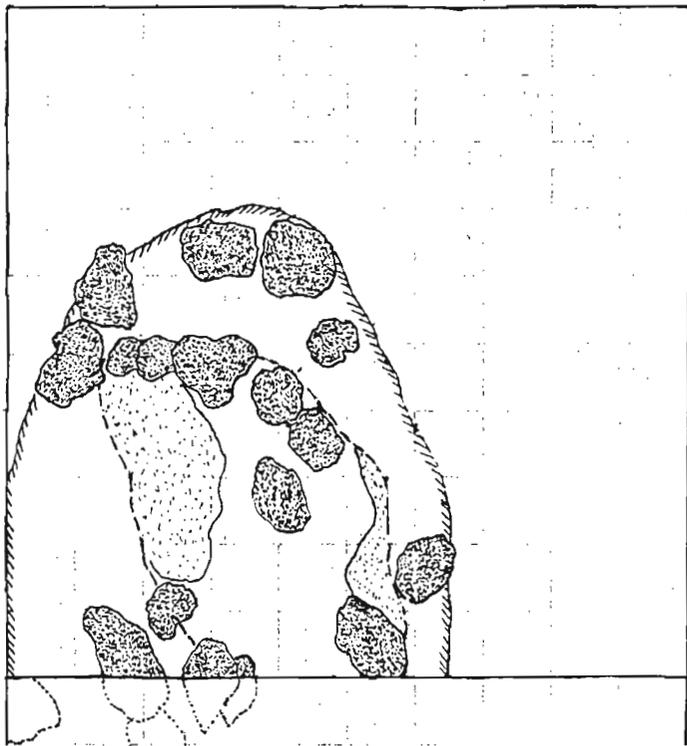
HUMUS LAYER

VERTICAL X-SECTION - ON EAST WALL



FIRE AREA - GRID G3D

FEATURE No: 558
TOBIN SITE (36W27)
AUGUST 9-10, 1967

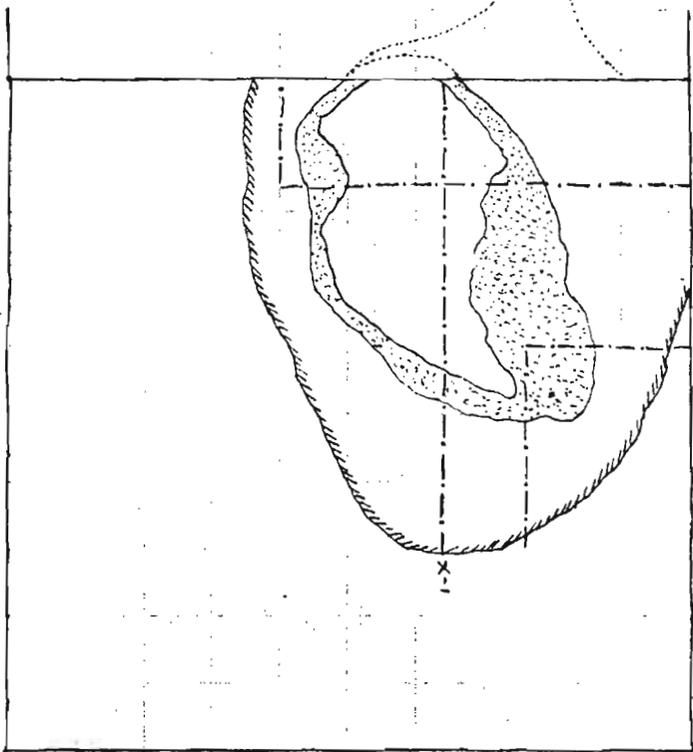


HORIZONTAL FLOOR PLAN

RECORDED BY: PRECOURT + KENLISH

FIG 4B

FEATURE No. 55C
 TOMB SITE (36027)
 August 9-10, 1967

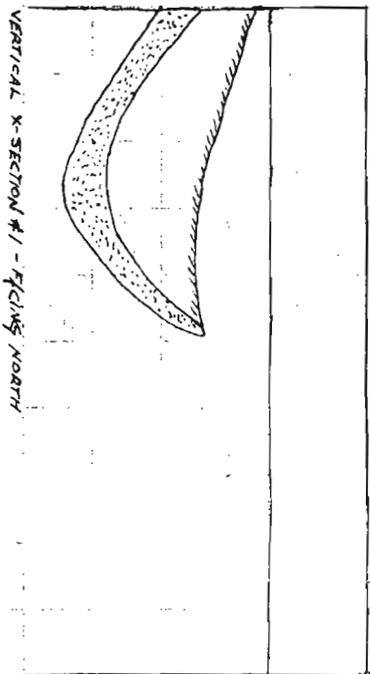


HORIZONTAL FLOOR PLAN

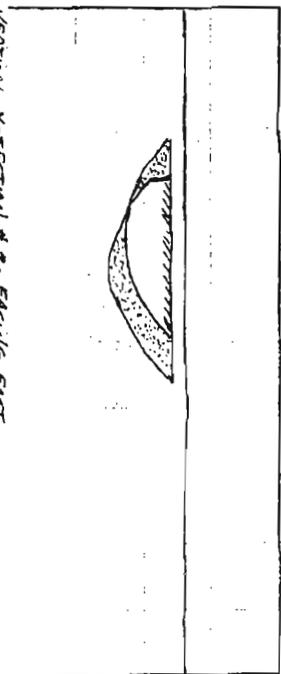
RECORDED BY: RECOVER & KUSH

Fig. 4c

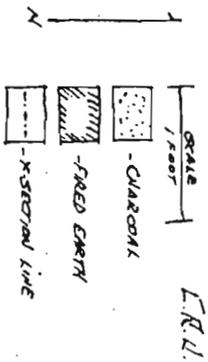
FIRE BASIN - GRID Q3D



VERTICAL X-SECTION #1 - FACING NORTH

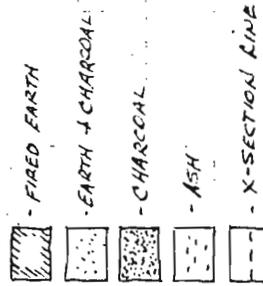
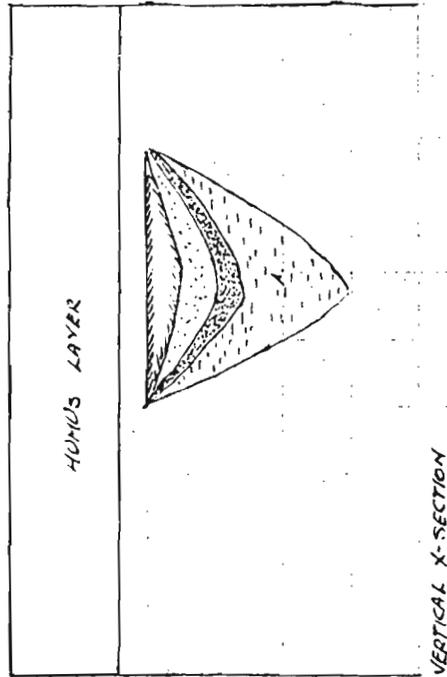
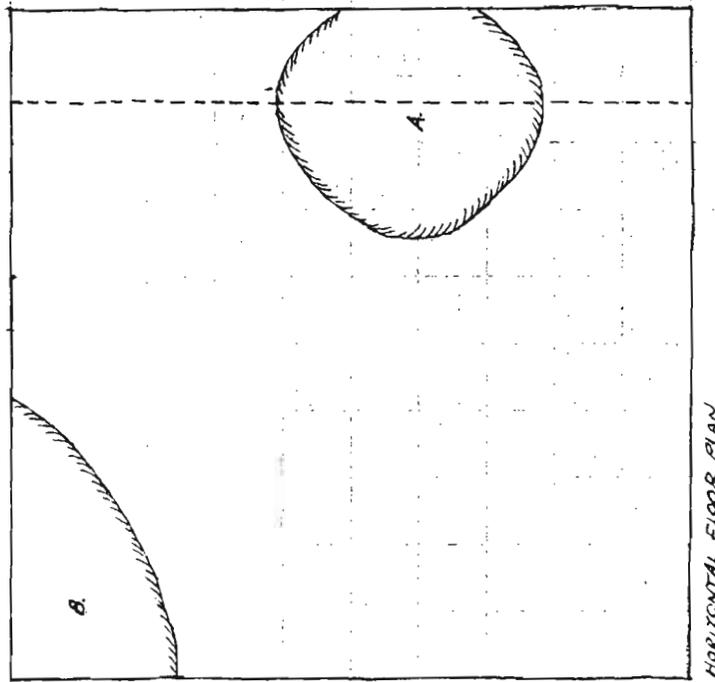


VERTICAL X-SECTION #2 - FACING EAST



FEATURE NO: 44 AB
TOSIN SITE (36(2) 27)
JULY 25, 1967

FIRE AREAS - GRID DTA



SCALE
1 FOOT

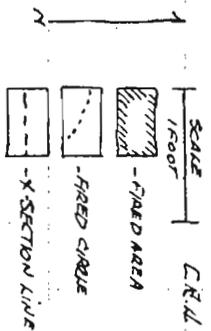
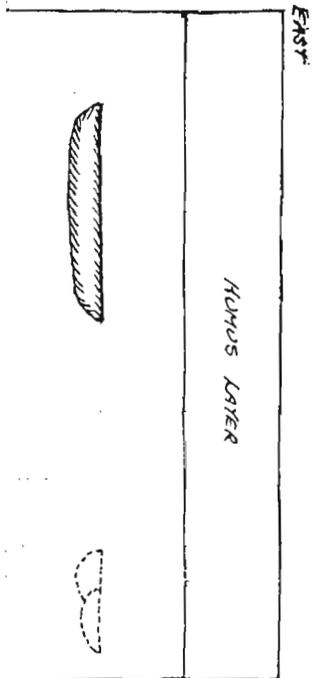
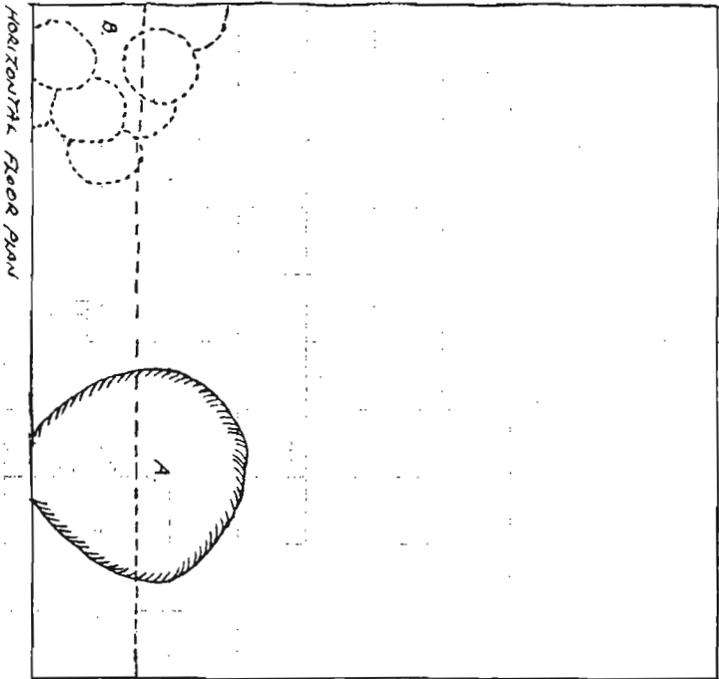
C.R.U.

RECORDED BY: RADOSX

FIG. 5(A)
5(B)

FEATURE No: 514.8
 TOBIN SITE (36 GUY)
 AUGUST 4, 1967

FIRE AREA + CIRCLES - GRID D6B



RECORDED BY: FELLER

FIG 6A
 6B



Fig 8 - RECONSTRUCTION - TODIN SITE - 36 CW 27

BITCH

AN EXAMPLE OF SEMANTIC DEVELOPMENT AND CHANGE

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Southern Illinois University
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Perhaps the most undisputable statement which can be made about language is that it changes. This process of change has occurred since the beginning of spoken language and most definitely remains active in the present day. Change may happen on several linguistic levels but most often concerns syntax, morphemics, phonetics, or semantics. The most common language change, according to Liles, is in a textical item or, more simply stated, in the meanings we assign to words (1975:286). New words may be added, old words may disappear, functions may change, features may be added, new dimensions of meaning may appear, or any other unforeseeable change may occur, for change is not limited to one type and is totally unpredictable in nature. In fact, Wardhaugh states that the process of change is predictable only in that certain kinds of things happen and these things happen slowly (1972:185). With this in mind, all that a student of language change can do is attempt to note past changes, what they were and what possibly prompted them into being. It is according to this thinking that, in this paper, I investigate the several meanings of one word, "bitch," which is extremely common in American vocabularies. I will show not only what it has meant through the years, but also what might be the ideas behind the changes in this particular lexical item. To best do this, it is beneficial to look first at some of the theory regarding the ways in which language accomplished meaning changes as well as at a few ideas regarding the interaction of word meanings with cultural environments.

Processes of Lexical Change

Since we are dealing with changes in word meanings, it helps to first consider what words are. Words have been pondered for hundreds of years by thinkers certainly greater than myself. The most obvious thing about words that most of these great thinkers have noticed is, of course, that they carry meanings and these units of meaning are strung together to

creat larger units of meaning we call sentences. But the age old question remains: Why does a word have a certain meaning? Not claiming to be a philosopher, I can only agree with the statement that words mean what we make them mean (Bloomfield and Newmark 1963:353). Edward Sapir followed a similar line of reasoning when he defined a word basically as a form containing as much information as a language will allow it to have (1921:32). Since language is in control of its speakers to a certain extent, it is those speakers of a language who, by general consensus, decide what the meaning of a word will be. One must remember, however, that this is not a conscious decision. People rarely get together and discuss what they would like a word to mean. Like language change itself, assignment and meaning is a slow, unpredictable process which will continue to change as long as the users of the particular language allow such change to happen.

Generally, words have two different types of meaning: denotative and connotative (Hayakawa 1978:52). A denotative meaning simply denotes what something is in a form much like a dictionary definition. Denotatively, a four-legged, furry canine is a dog. But different people associate different thoughts and feelings toward this same four-legged creature, depending upon their individual experiences and learning; thus some people love the animals while others are frightened by them. This, the connotative meaning of a word then is, by its very nature, highly personalized and unique to specific individuals. The distinction between denotation and connotation is important to us if we are to be aware that our choices of words will have different effects on different people and in different situations. In any case, this distinction between denotative and connotative clearly emphasizes the fact that there is much more to a word than its definition. This becomes very apparent to people trying to master a foreign language since they eventually will find that words in other languages have uses in addition to their English glosses and that mastery of this new language requires learning these new uses in order to communicate effectively in cultural situations where that language is spoken. It also becomes apparent when looking at language change since usually it is the connotative value of a word that prompts a denotative lexical change.

The connotative associations of words are highly integrated into the processes by which a language acquires new words. Bloomfield lists three possible ways for speakers to increase the lexicons of their language (1963:331f). First,

they may create new words out of existing morphemes and words in their language through compounding and other methods. Liles adds that this may be accomplished merely by shifting the function of a word, i.e., changing its grammatical role or part of speech (1975:291). Second, they may borrow words from other languages and apply the morphemic and phonologic rules of their language to make them their own. Third, they may extend the uses of existing words so that they have new applications and shades of meaning appropriate to certain situations. It is this third process for creating new vocabulary which is usually the most common in the English language and which is most at work in the history of our word "bitch."

This extension of meaning can happen in several ways and may or may not result in the loss of a word's original meaning (Liles 1975:292). One way it occurs is by generalization, or widening, of meaning. This involves expanding the meaning of a preexisting word to include a broader category of referents which are all similar in some respect. A second way of extending meaning actually involves the opposite process of specializing, or narrowing a word down, to a specific referent. Third, a meaning may shift or transfer so that it may be applied to other objects. A shift involves applying the ideas associated with one thing and its name to some other thing. Often shifting occurs through a process known as amelioration whereby a word shifts to naming a more favorable class of objects than that to which the original meaning referred. Transference of meaning, or metonymy, is very similar to a shift but often involves just the opposite association, that is, a word becomes attached to a less favorable class of objects through the pejoration process. The concept of pejoration will be quite clear when we look at our example of change, but it is surprising to note that amelioration also occurs to "bitch."

In the development of meaning changes, yet another process is common, and I hope to prove that it is the phenomenon most often responsible for the particular changes to the meaning of "bitch." This process is noted by many linguists (Liles 1975:292, Bloomfield and Newmark 1963:356, Hickerson 1980:114, Hayakawa 1978:111) and has long been a tool in figurative writing. This process is simply the use of metaphor, but the profound semantic changes it has prompted in language are far from simple. Metaphor basically involves taking advantage of the connotative values of words by applying selected features of these connotations to something new. This creation of metaphors selects characteristics of a word and extends them to other word referents not having

all of these same characteristics. The idea of semantic markers, or features, as developed by Jerrold Katz helps us to understand this process. The semantic marker theory posits that words have features to them which are used to distinguish them from other words (Pearson 1977:168). In turn, the connotative meaning of words will add additional features to that word to distinguish it from the denotative meaning. What happens in a metaphor is that we take a certain word and its features and apply it to something not possessing an identical set of features, but which has certain features in common with the other word. Thus, if we say "He is scum," we feel the person referred to has something in common with the green stuff on the top of a pond or with our bathtub ring. Perhaps this individual is disgusting and undesirable as we might perceive scum to be. Through the use of metaphor we have conveyed this association which we have made in our minds to other participants in our communicative activity. In this way, the meaning of "scum" itself may start to be associated with disgusting undesirables and eventually take on a new meaning. Through just this type of process many of our words have, in fact, changed in meaning.

The fascinating aspect of semantic changes, and of metaphors in particular, is that these changes usually remain specific to the language in which they originated. Of course metaphoric expressions may be borrowed, but it is unlikely that the thoughts behind the metaphor's original application will simultaneously occur elsewhere and lead to the same new application of meaning. The puzzle inherent to metaphors is that their initial associations become lost and we are left with what are called "dead metaphors." It is the linguist's job, then, to try to recreate the circumstances and associations responsible for the metaphor. Unfortunately, this recreation is based to a big degree upon speculation, and no exact truth is discoverable as to how, or whether, a new word meaning is in fact the result of such figurative usage. As an exercise in recreating metaphors, I will give one word as an illustration of many meanings resulting from one metaphor and its extensions. It is truly a marvelous thing that in one language so many meanings can derive from one word such as "bitch," while in other languages these same meanings must be conveyed by several different words or even entire phrases, clauses and sentences.

In dealing with meaning changes, it also becomes necessary to go back to a statement made previously concerning words meaning what we let them mean. It is necessary to have this in mind in order to see some of the "why" involved in changing meanings and creating metaphors. The reasons behind our letting

meanings exist are directly connected with the cultural attitudes and social norms of the time. Language is, after all, a part of culture and, as such, is best understood in contexts of cultural phenomena (Nida 1964:97). Bloomfield and Newmark state that "the study of semantic change takes us into the study of culture in the broadest sense and often tells us a great deal about the culture of past and present societies (1963:352)." Few people would disagree that words mean little outside of contextual situations. In turn situations mean little outside of cultural contexts. Therefore, in addition to looking at the semantic aspect of "bitch," I will also try to give, when I can, the situations and ideas necessary for a particular meaning change to occur. An exercise such as the following is very enlightening and entertaining for the researcher, but its true worth lies in illuminating the processes of change as discussed and the actual effects of culture on language. Let us now deal directly with "bitch" and see how all of this discussion fits together.

Bitch

The word "bitch" has had a colorful and busy past in the English language. The main meaning of bitch is that of the female of the species, particularly dogs. I call this the main meaning because it is the meaning which the word first had in our language and the meaning from which metaphors were made. The word's origin is not certain. Partridge thinks that perhaps it is related to the Sanskrit word for genitals, *bhagas* (1961). If we consider this origin for a moment, we might come up with an association of some creature with exposed genitals with those creatures we call beasts. This is our first metaphor and is supported by the fact that the next step Partridge gives in his etymology is the Latin *bestia* (beast), which in turn becomes *bistia* in Late Latin and enters Old French as *bisse* with the dilectical form of *bische*. This later becomes *biche* in French. Somewhere in this progression the meaning of geast became specialized to refer only to female beasts. Exactly when this occurred can not be determined since it happened before written records, but that it did occur seems fairly certain since the feature of being female is still prominent in many of the meanings of "bitch." But no one is sure if this is our source for "bitch" because in Old Norse there existed the *bikkja* with the same meaning. This source seems the most likely for the Old English word *bicce*, and perhaps it, too, is ultimately a cognate of the Sanskrit word. The earliest cited occurrence of the Old English *bicze* (*bicce*) is at 1000 A.D. This date follows the

migration of the Germanic tribes, the Angles and Saxons, into England in the fourth through the sixth centuries and the Viking expansion into Britain in the ninth and tenth centuries. It is very possible that *bikkja* was brought with the Vikings and borrowed by the Anglo-Saxons. Once the word was in the English language, it underwent phonological modification involving a change from /k/ to /c/. This is a relatively easy sound change and would leave us with a word almost identical with our modern pronunciation. However, the French were probably not without influence in this word. At the time of the Norman Conquest in 1066, the Old English and French forms of the word were very close, close enough in fact that they were probably mutually understandable between the Normans and Anglo-Saxons so that the two words became one.

The spelling changes no doubt came about due to the influence of the Norman scribes hearing sounds and writing them differently from how the Anglo-Saxons had. The spelling of the word is a prime example of the language fluctuations in the Middle English period. Between 1000 and approximately 1600 it is found written as *bicze*, *bicche*, *bytche*, *bytch*, and finally *bitch*. From these different written forms we witness the palatalization of /k/ to /c/ before the letter "e," representing a fronting of the consonant sound in the environment of other front sounds. We also see the addition of "h" in the spelling of this /c/ sound; no doubt this was a French addition similar to the insertion of a "t" before the "ch." As the French scribes attempted to apply their spelling rules to foreign words, they found it necessary to add and delete some letters. The "y" for our "i" is another common example of the French influence as well as of a dialectical spelling found in "bytch" in 1398. Finally, we note the loss of the final "e," the last remnant of the Old English declensional system to disappear in the singular form of the word, although the "e" still is used whenever the morphemic rules of English require it (before an "s" in the genitive and plural forms, etc.).

So, after all of this, what the English language is left with is a word pronounced /b c/, spelled "bitch," meaning a female animal, particularly a canine. And the rest is history. The first change to be considered here is the shift from a female dog to the meaning, first recorded around 1400, for a lewd, promiscuous woman in general and a prostitute specifically. For clarification, Appendix 1 lists those semantic features of the female dog "bitch" which seems to be applicable to a female human "bitch." The most obvious feature shared is femininity, but with dogs it really is not completely obvious

or important to know that one is female until the onset of estrus. It is at that time when the female dog is sexually receptive and engages in promiscuous copulation. These features may, then, be shared by a human female of a similar nature, albeit not only when she is in estrus. Through this metaphor, then, the new meaning occurs when speakers ignore the features which distinguish human and nonhuman beings in order to express this similarity in sexual behavior.

To attempt to offer some explanation for this association, I turned to the mythology of the Viking times. Before Christianity was introduced in England in 597 A.D., the Anglo-Saxons worshipped gods similar to those of the early Scandinavians. One of these gods was Freyja who was associated with love affairs and fertility, and was called upon for assistance in the love affairs of mortals. Freyja herself was rather loose in character and more than once was accused of sleeping with gods, elves, giants, and dwarfs (Davidson 1981:115). Venerable Bede, an early Christian poet of England in 731, reported that the worship of the Norse deities, including Freyja continued in his time even though Christianity was already widespread. Synge reports that before conversion to Christianity, these worshippers strongly sought the gratification of passion (1954:49) and they probably continued to do so, following Freyja's example. With the spread and acceptance of Christian morality such gratification would be condemned as improper and would be forced to cease. Or, if I may use a simile, people realized that according to Christian teachings such behavior was like a dog in estrus. This idea is not of my creation, however, for an early Christian poet in Iceland, where Christianity was not completely established until later in 1000 A.D., wrote that Freyja herself was a bitch (Davidson 1981:115). From Iceland this metaphor could have been, and evidently was, passed on and became active in English. It, however, did not appear in a written text in English until 1400, but this does not mean that it did not exist before then in oral form. Once in written form, though, it was a standard English usage until 1660 when it became a colloquialism (Partridge 1966:57). It remained in acceptable colloquial usage until it became considered as vulgar in 1837 when the high social standards of the Victorian age deemed it an improper word in polite company. The word survived, through the efforts of enough vulgar people I suppose, so that the meaning of "bitch" as a lewd, promiscuous woman is still used as often as is the earlier meaning, "female canine."

With this meaning established through metaphor, a myriad of other meanings spring to life. Most also form by metaphor

with either the canine or human bitch, or both. "Bitch" appears in verb, noun, adjective, and adverb forms, as well as in numerous combinations, through functional shifts. Most of these uses reflect the process of pejoration, having transferred features deemed negative by society to new meanings. Many of the derived pejorative meanings are fairly straight-forward. For example, "son of a bitch" appears in written form in 1833 and refers to the offspring of a lewd woman (Farmer 1965:202). This term is at the same time an example of a dead metaphor since we often hear it in contemporary usage in situations which are not necessarily pejorative in context. Also straight-forward, the verb "to go bitch" meant to either visit prostitutes or to call someone a bitch; "bitchy," an adjective, can mean sexually provocative; the obsolete word "bitchery" meant lewdness or harlotry; the queen in a deck of cards has also been known as a "bitch." Less obvious are "bitch's wine" and "Bitch's Heaven." "Bitch's wine" appeared in 1850 and referred to champagne, a drink of prostitutes, perhaps. "Bitch's Heaven" was an American slang word used among railroad tramps in the 1930s to refer to Boston, Massachusetts. Boston was famous among tramps, also known as "bitches," for its abundance of prostitutes at that time. It must have been an idyllic place for a travel-wearied hobo seeking the companionship of a willing female (Partridge 1968:42).

A little known meaning of "bitch" is used as an English mining term. This "bitch" (sometimes "biche," indicating a French influence) is a tool ending in a conical cavity which is used for recovering rods from a bored hole (Oxford English Dictionary). This would be something similar to our reference to male and female socket parts or pipe sections, and I believe refers to the similarity of this tool to that orifice of the female genitalia most utilized in copulation.

An interesting combination form is "bitch daughter." A bitch daughter is a nightmare and may relate to the idea of the succubus, or female demon, which supposedly has intercourse with a male while he is asleep.

It is a frequent and justified complaint of women who are at all sensitive to our derogatory slang that so many pejoratives eventually refer back to women, even though they have been applied to a man. Terms such as "bastard" and "son of a bitch" ultimately indicate a characteristic of a man's mother, not of the man himself. But "bitch" has, during its history, been applied to men although not always in the same

way. In Tom Jones, Fielding uses "bitch" in a whimsical way to refer to a man, much as we might call someone a "sly dog" (Oxford English-Dictionary). There is, though, a male correspondent to "bitch" in the word "butcher." "Butcher," because of social attitudes, probably does not have exactly the same connotations as "bitch" but is defined as "a male harlot" (Partridge 1966:57). This meaning comes about in this century in Britain.

The remaining meanings of "bitch" depart from this first metaphoric derivation yet still share some of its features. One such meaning is "to yield, give up, or cower." The feature it shares is that of a female dog's submissiveness and docility when compared to the male dog (Partridge 1968:42). This usage, found between 1785 and 1840, was evidently coined by someone with more favorable impressions of dogs. Since this usage was short-lived, we might conclude that the more negative associations with dogs won out in the end. This idea is supported by our very common current usage of "bitch" to mean "nag, complain, be sour, carp, be negative" or to refer to a person with any of these qualities. This usage, first appearing at the beginning of this century in written texts, may be extrapolating on features of female dogs at those times in the bearing of pups when a less domesticated bitch than ours of today would have been very protective of her newborn young and would snarl, bite growl, and bark to keep people away. So, someone who exhibits similar behavior metaphorically is said to be "bitchy" or "bitching." Also, a dog who keeps bearing pups again and again is going to become a nuisance to its owner, as well as to the neighborhood, and may be considered as undesirable. Again, metaphorically something which is undesirable, whether because it is a nuisance or because it is extremely negative in character, can be called a "bitch."

These two meanings of something undesirable (a task, object, or person) and "to nag" serve as beginnings for other usages. A "bitch is a complaint; in World War II a "bitch box" was a loud speaker used to voice complaints; a "bitch session" is a time set aside for people to vent complaints; and a "bitch kitty" is a particularly disagreeable girl or task (Wentworth and Flexner 1960:39). Perhaps the most common meaning of "bitch" today is this one which is synonymous with the verb "to complain" and the adjective denoting something hard or disagreeable, both based upon the shared characteristics of the snarling, growling, disagreeable nature of a bitch protecting her young.

A different common usage of "bitch" has the opposite meaning of something disagreeable. First appearing in the 1930s and meaning classy or striking in appearance (Wentworth and Flexner 1960:39), this usage is still alive. In the past few years this meaning reappeared in the Valley Girl fad and is also common in the gay community. In both cases it means that something is very desirable and, indeed, pleasant. This meaning may derive from that characteristic of flashiness, colorfulness, and glitter associated with bitches (prostitutes) which make them attract attention. Another source may be that an object described as "real bitch" stays on a person's mind and "nags", making it even more desirable. In any case, this currently common slang usage is one that reverses the trend of pejoration for "bitch."

The most curious use, to me, of this word comes from Britain. In this case, "bitch" refers to human females, but not necessarily those of ill repute, and extends from them to something associated with them. This usage, in fact, refers, to the more socially popular ladies who gather together to chat at a tea party, or bitch party as it was called circa 1880. This bitch party was composed of females of the species (wives) who would spend their afternoons discussing topics of importance to them. To the husbands, this was a gathering of bitches who spent their time together bitching while drinking a typical drink of bitches, tea. Perhaps through guilt by association, Cambridge University slang from 1820 to about 1914 called this drink - tea - "bitch" (Partridge 1966:57). Furthermore, to pour out tea was to "bitch the pot" (Partridge 1950:210), and one who poured the tea was said to "stand bitch." "Stand bitch" in the late 18th and 19th centuries actually meant not only to preside at tea but also to perform any other typically female duty (Partridge 1966:57) or, in short, to behave like the female of the species. Metaphors accounting for these tea-time terms are not apparent to me and I do not think metaphors are responsible for these meanings. Instead, I think that the terms came about through their associations with the social function of tea and ladies at tea parties and shifted to the other meanings.

The final meaning of "bitch to be discussed is the exception to the concept of extending meanings through metaphors, transfers, or shifts. This meaning is "to spoil, bungle, or ruin" and is, I think, the result of a confusion with a different word, "botch." "Botch" means denotatively to repair sloppily and, in so doing, spoil something, the same meaning assigned to "bitch up" (Wentworth and Flexner 1960:39). Curiously, this meaning is similar to our current slang phrase "fuck up," but I doubt that any connection is to be found. From this con-

fusion of the two words we get a few metaphorical usages, usually referring to something hastily made or makeshift such as a "bitch lamp." This term may also be derived from its association with tramps who were previously noted to also have been bitches. A bitch lamp, though, is a lantern made out of scavenged materials, such as cans and rags, and is made to serve a temporary purpose. Such a lamp is intended to substitute for the real thing, and "substitute" is another meaning which is found. Perhaps then, a bitch (prostitute) is to be viewed as a temporary replacement for a real mate. Additionally, we may get from this sense of the word the obscure meaning of "to cheat" or, metaphorically, to spoil someone else's chances for something.

So, all of this tells us what "bitch" has meant, what it means in our generation, and where and when certain meanings have become associated with it, as well as some suggestions as to its origins. But what remains to be seen is where "bitch" stands now as it moves into the future. To test this I did a limited survey to measure the qualities now perceived in the word. From this date, summarized in Appendix 2, we can conclude that "bitch" is considered to have the characteristics of being bad, hard and negative, but otherwise is fairly neutral. Perhaps this is because we have both good and bad connotations of the word in operation in our society making it difficult to decide on the general characteristics of the word. For the present, it suffices to say that "bitch" is used in more than one way, and only the context in which it occurs will pinpoint its particular meaning for us. As for the future of the word, let us remember the statement made earlier that change is only predictable in that certain things happen and they happen slowly. In other words, who knows?

Conclusion

Having examined the history of this particular word, what have we learned? In my opinion, we have merely seen further evidence that language changes through time, both phonologically, functionally, and semantically in accordance with cultural circumstances which allow such changes to happen. We have looked at the ways languages acquire new words and the way these words may extend their meanings. We have especially noted that metaphors are very influential

in the process of change and that at the heart of a metaphor is some feature shared between two things. To illustrate, we have followed the history of only one word out of the thousands available in our lexicon, "bitch." I suppose one could maintain the idea that one of the aims of semantic studies is to delay verbal responses (Weinberg 1973:141), but I doubt that anyone will actually stop to think about pouring tea or makeshift lamps the next time he calls someone or something a bitch. However, it is my hope that we all will become even more aware of the forces behind our words and their meanings as well as the processes capable of changing these meanings, for whatever these forces are, they will most certainly also bring changes to our way of thinking and talking about the world around us.

Appendix 1
Semantic Features of 'Bitch'

Female Dog:

- +Female
- +Animate
- Human
- +During estrus is:
 - +Promiscuous
 - +Sexually receptive
 - +Copulated with
- +When bears young is:
 - +Protective involving:
 - +Snarling
 - +Biting
 - +Growling
 - +Barking
- +Cowers to males
- +Submissive
- +Docile
- +Caters to needs of others
- +Possesses anatomical orifice into which male organ is inserted
- +Undesirable to possess if constantly snarling after pups
- +Undesirable to possess if constantly bearing pups and creating a nuisance

Lewd Woman:

- +Female
- +Animate
- +Human
- +Sexually receptive
- +Promiscuous
- +Engages in frequent copulation
- +Bears young
- +Undesirable in polite company and as a mate
- +Flashy in appearance

Miners' Tool:

- Animate
- +Possesses orifice into which something is inserted

Stand Bitch:

- +Cater to need of others
- +Female activity, but associated with females
- +Human activity
- Sexual nature
- +Serve tea

Bitch the Pot:

- +Pour tea
- +Orifice emptied (?)

Yield:

- +female
- +Cowering, submissiveness

Bitch Party:

- +Female
- +Tea
- +Chatting

Unpleasant Thing or Person:

- +Female
- +Undesirable
- +Negative responses

Complain (Complaint):

- +Female
- +Snarling and other negative responses

Classy:

- +Striking in appearance

Appendix 2
Semantic Space of "Bitch"

To test for the current feelings of English speakers toward the word "bitch," I asked 24 people of the university community to rate the word in terms of 18 pairs of opposite adjectives, similarly to the method proposed by Osgood and described in Pelto (1970:109) for determining semantic space. Rating occurred on a seven point scale with the middle three columns indicating neutrality or vagueness, and the outer columns indicating stronger feelings and associations. The adjective pairs and percentages of response for them appear on the following page.

I have chosen 60% consensus as indicative of how the public may feel toward this word. Taking only the responses in the outer two columns on either side as indicative of strong feelings, most of the pairs do not display such consensus, except for those pertaining to bad, hard, and negative. Therefore, I surmise that the general feelings associated with this word are vague, or at least neutral, due to the several definitions one may use for it. When it is thought of out of context, though, it is thought to have a notion of being bad, hard, and negative.

Appendix 2

	+3	+2	+1	0	-1	-2	-3	
good	0%	0%	4%	4%	29%	21%	42%	bad
hard	42%	33%	12%	8%	0%	0%	4%	soft
active	21%	38%	33%	8%	0%	0%	0%	passive
stable	4%	8%	8%	13%	25%	18%	29%	changeable
defensive	17%	21%	13%	13%	0%	3%	29%	aggressive
optimistic	4%	0%	8%	42%	8%	17%	21%	pessimistic
excitable	21%	38%	13%	13%	8%	8%	0%	calm
colorful	13%	25%	17%	8%	4%	17%	17%	colorless
positive	0%	4%	0%	8%	8%	29%	50%	negative
masculine	9%	4%	0%	25%	21%	21%	25%	feminine
cold	13%	8%	8%	42%	4%	13%	13%	hot
sane	0%	4%	8%	50%	8%	13%	13%	insane
competitive	21%	38%	13%	13%	13%	4%	0%	cooperative
sensitive	4%	4%	4%	13%	25%	21%	29%	insensitive
severe	25%	25%	33%	8%	8%	0%	0%	lenient
prudent	0%	0%	17%	25%	21%	29%	8%	rash
humble	4%	21%	17%	42%	8%	0%	8%	proud
interesting	8%	13%	21%	25%	8%	8%	17%	boring

Further testing might result in significant consensus in active, excitable, competitive, feminine and insensitive, giving "bitch" more negative characteristics in general.

REFERENCES CITED

- Bloomfield, Morton and Leonard Newmark
 1965 A LINGUISTIC INTRODUCTION TO THE HISTORY OF ENGLISH. Westport, Connecticut. Greenwood Press.
- Davidson, H. R. Ellis
 1981 GODS AND MYTHS OF THE VIKING AGE. New York. Bell Publishing Company.
- Farmer, John
 1965 SLANG AND ITS ANALOGUES: PAST AND PRESENT, Vol. 1. London. Routledge & Kegan Paul, Ltd.
- Hayakawa, S. I.
 1978 LANGUAGE IN THOUGHT AND ACTION, 4th ed. New York. Harcourt Brace Jovanovich, Inc.
- Hickerson, Nancy Parrot
 1980 LINGUISTIC ANTHROPOLOGY. New York. Holt, Rinehart and Winston.
- Liles, Bruce
 1975 An INTRODUCTION TO LINGUISTICS. Englewood Cliffs, New Jersey. Prentice Hall, Inc.
- Nida, Eugene A.
 1964 Linguistics and Ethnology in Translation Problems in Hymes, Dell, LANGUAGE IN CULTURE AND SOCIETY. New York. Harper and Row.
- Oxford English Dictionary
 1933 London. Oxford University Press.
- Partridge, Eric
 1968 A DICTIONARY OF THE UNDERWORLD. British and American, 3rd ed. London. Routledge & Keagan Paul, Ltd.
- 1966 DICTIONARY OF SLANG AND UNCONVENTIONAL ENGLISH. New York. MacMillan Co.
- 1961 ORIGINS: A SHORT ETYMOLOGICAL DICTIONARY OF MODERN ENGLISH. New York. MacMillan Co.
- 1950 SLANG TODAY AND YESTERDAY. London. Routledge & Kegan Paul, Ltd

- Pearson, Bruce L.
1977 INTRODUCTION TO LINGUISTIC CONCEPTS. New York.
Alfred A. Knopf.
- Pelto, Pertti
1970 ANTHROPOLOGICAL RESEARCH: THE STRUCTURE OF INQUIRY.
New York. Harper & Row, Publishers.
- Sapir, Edward
1921 LANGUAGE. New York. Harcourt, Brace and Company.
- Synge, Margaret B.
1954 A SHORT HISTORY OF SOCIAL LIFE IN ENGLAND. London.
Hadder & Stoughton.
- Wardhaugh, Ronald
1972 INTRODUCTION TO LINGUISTICS. New York. McGraw-
Hill Book Company.
- Weinberg, Harry L.
1959 Some Limitations of Language in DeVito, Joseph A.,
1973, LANGUAGE: CONCEPTS AND PROCESSES. Englewood
Cliffs, New Jersey. Prentice-Hall, Inc.
- Wentworth, Harold and Stuart Flexner
1960 Dictionary of American Slang. New York. Thomas Y.
Crowell, Co.

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