Scientific Possibilities in Iroquoian Studies:

AN EXAMPLE OF MOHAWKS PAST AND PRESENT

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RÉSUMÉ

Cet article décrit les résultats de l'application de l'hypothèse écologico-culturelle à l'étude des changements culturels chez les Iroquois. L'hypothèse s'est avérée insuffisante et on suggère de la compléter par la notion d'adaptation au milieu social. L'article démontre aussi que le manque de précision dans la terminologie, le manque de théories bien agencées et de définitions valables rendent difficile l'application et la vérification de toute hypothèse.

INTRODUCTION

Modern science has been described by Whitehead as "a vehement and passionate interest in the relation of general principles to irreducible and stubborn facts" (1959:10). Modern anthropology, along with the other social sciences, is flooded with irreducible and stubborn facts but is rather short on general principles. A problem that must concern us as anthropologists and scientists is: How can our ethnographic facts be used more efficiently to increase our stock of general principles? *

One possible solution is to emulate our colleagues in the biological and physical sciences and to make more use of the experimental method. "An experiment" writes W.I.B. Beveridge in *The Art of Scientific Investigation* (1957:20), "usually consists in making an event occur under known conditions where as many extraneous influences as possible are eliminated and close observation is possible so that relationships between phenomena can be revealed." The active intervention of the experimenter,

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however, is but one way of obtaining control of the variables studied, albeit a most powerful way. It is possible to study certain variables in interaction over time. Control can be achieved when one or more of the variables change and such changes affect the system we are observing. History, can in fact, be turned into a laboratory for the anthropologist. This is particularly true for Iroquoian studies. As Fenton has pointed out "the long history of research in the Iroquoian field gives it rich material for testing cultural historical depth." (1951:5)

Like other experimenters, we can begin with a theoretical framework and frame a hypothesis for testing. Initially our variables may be gross and we may encounter all kinds of measuring problems. But in time, as we use our ethnography to make our theories more sophisticated, we shall discover more manageable variables, develop accurate measuring devices, and finally arrive at empirically based laws of human behavior. To exemplify the experimental possibilities in Iroquoian studies, I will utilize the theoretical framework of cultural ecology, historical literature on Mohawks and ethnographic data on the modern Mohawk.

The Theoretical Framework

To arrive at generalizations and laws in anthropology, I believe, with Anthony Wallace (and others) that it is necessary to consider the human organism "in response to genetic, ecological and cultural circumstances" (Wallace 1961:22). A theoretical framework which incorporates two of the above, ecological and cultural circumstances, is cultural ecology.

Cultural ecology is defined by Steward in at least two ways: as a problem and as a process. The problem of cultural ecology, writes Steward, is "to ascertain the extent to which the behavior patterns entailed in exploiting the environment affect other aspects of culture" (1955:41). The process is defined as: *the interaction between technology and the culturally defined way of exploiting the environment.* Steward refers to this process as "creative" in that it leads to culture change. As Steward puts it: "over the millenia cultures in different environments have changed tremend-

ously, and *these changes are basically traceable to new adaptations required by changing technology and productive arrangements"* (1955:37).[1]

The cultural ecological position could be conservatively stated as follows:

1. Cultural ecology is functionally related to culture.
2. A change in the cultural ecology of a group tends to lead to culture change.

The last statement could be framed as a hypothesis for testing in terms of Mohawk society and culture. To wit: If the cultural ecological adaptation of Mohawks has changed then parallel changes have also occurred in Mohawk culture.

Let us then compare the cultural ecological adaptations of Mohawks past and present and observe whether cultural ecological differences exist, and whether such differences are functionally related to cultural differences.

In essence, since the hypothesis here used is directly related to the theoretical framework of cultural ecology, this paper is a limited test of the cultural ecological position on cultural change.[2]

The Historical Mohawk

The aboriginal Mohawks lived in the woodlands of Northern New York. In the early days of the league the Mohawks were largely confined to an area between Utica and Albany.

Mohawk land was communally owned with rights vested in three kinds of organizations: the tribe, the clan, and the *ohwachira* or maternal family. The products of tribal lands were used for feasting at tribal councils and ceremonies. The produce of clan lands was stored in clan granaries. Production from lands of the *ohwachira* nourished the family (Noon 1949:34).

[1] Italics added.
[2] For other such tests of the cultural ecological position see FREILICH 1960a and 1960b.

In terms of subsistence activities, the environment was mainly exploited by the women, who practiced what Fenton has called "semi-sedentary horticulture" (1952:334). Horticulture was considered women's work; the men were much involved in gaining prestige through small group warfare. And, according to Morgan, "the warrior despised the toil of husbandry and held all labor beneath him" (1901:42).

The men's role in solving the subsistence problem was secondary; they helped the women in clearing new fields, and added relishes to the diet by hunting. Hunting, however, was more a prestige point than a necessity, as can be deduced from the fact that village sites were changed when the surrounding fields were exhausted, rather than when the district had been hunted out (Randle 1951:172-3).

In addition to horticultural activities, the women made maple sugar in season and gathered some wild foods. In all, largely due to the Mohawk women, the food supply of the tribe included "15-17 varieties of maize... some 60 varieties of beans... about 8 native squashes... 34 wild fruits, 11 nuts, 38 varieties of leaf stem and bark substances, 12 varieties of edible roots, and 6 fungi" (Speck 1955:39).

The women worked together with the other members of their mutual aid society, under the leadership of the matron of the village. According to Fenton "the neighborhood, family and clan were all factors which conditioned the composition of the mutual aid society" (Noon 1949:35, f.n.61).

The women worked together during planting and during harvesting. Their technology was a simple though efficient one. The digging and planting sticks were used, with blades of antler or bone.

During and antecedent to early white contact days, the women's responsibility for solving the subsistence problem of the group greatly increased. When it became possible to exchange beaver pelts for firearms, the men spent much less time at food producing activities. After 1640, the Six Nations launched a series of wars against the Huron and other tribes allied with the

French to control the fur trade along the St. Lawrence. This led to a further decline in the production of food by Mohawk males. As John Noon tells us (1949:13)

> With war parties almost continually in the field, little time could be spared for hunting. Increased cultivation by the women had to compensate for the loss of game as well as assisting in providing war parties.

In summary, it is clear that in aboriginal times it was the Mohawk women who were primarily responsible for solving the subsistence problems of the group. They did this with a simple technology, on land communally owned, while working cooperatively with the other women of their mutual aid society. The women practiced semi-sedentary horticulture. Village sites were moved every 15 to 20 years when the land was used up. The Mohawk's diet was supplemented with wild foods and the extra delicacies of the men's hunt. Following white contact, the men's food producing activities greatly declined, and the women's responsibilities in solving subsistence problems greatly increased.

The Modern Mohawk

The environment of the modern Mohawks, here being discussed, is an urban one. The group resides in the North Gowanus neighborhood of Brooklyn, New York. The men exploit the environment in terms of a specialized trade — structural steel work. In and around New York City, Mohawks have worked on such structures as the Empire State Building (they boast "we built it"), the Bank of Manhattan, the Pulaski Skyway, the George Washington Bridge and the Bronx-Whitestone Bridge. The steel workers travel all over North America, and in a given year, may work in six or more widely separated cities. Between jobs, the Mohawks return to Brooklyn to see their kinfolk and to swap tales with other steel workers in the local Mohawk bar.

The young Mohawk starting to work in steel construction is given little formal training. At 17 or so he is brought into a gang by his father, brother, uncle or cousin who happens to be a "pusher" (gang foreman). For a short time, he earns

apprentice wages, but soon he is doing a man's job and receiving a man's pay.

In erecting steel structures, there are three main types of workers: raising gangs, fitting-up gangs, and riveting gangs. The men in the raising gang hoist the steel beams and girders, using a crane or a derrick. They set them in position with temporary bolts. The men in the fitting-up gang, composed of plumbers and bolters, tighten up the structure with guy wires and turnbuckles and add more temporary bolts. Then along come the glamor boys of structural steel work, the riveting gangs.

Each riveting gang is comprised of four men: a heater, a sticker-in, a bucker up and a riveter. The heater heats the rivets on a portable coal burning forge. He stands on a platform formed by laying wooden planks across two beams. The other three men using about six two-by-ten planks make a scaffold and hang it by ropes from the steel on which they are going to work. They thus have just enough space to work if they are careful. A careless member of a riveting gang does not live to tell the tale of his daredevilry. Although the members of the riveting gang do the most dangerous work in steel construction, it is this work that the Mohawks prefer. The technology involved is one simply learned; heating and bracing rivets and working a pneumatic hammer against the stem ends of rivets requires guts and strength rather than education and intellectual ability. A short apprenticeship is therefore all that is necessary for the young steel worker to become a full member of a riveting gang. And, as a full fledged member, he can earn between 150 and 250 dollars a week, depending on the amount of available overtime. The subsistence problem of the Mohawks is well solved by the male steel workers.

The Mohawk women play a secondary role today in solving the subsistence problem of the group. It is their job to get hold of the men soon after they are paid; the men left alone would drink away most of their earnings.

Comparing the cultural ecological adaptations of Mohawks past and present, we find two completely different situations. Not only is horticulture no longer the means of solving subsis-

tence needs, but the two sexes have changed their roles in relation to the group's subsistence problem. Today it is the men who have taken over the major role of solving the subsistence problem. Maize, beans and squash are no longer grown to feed the tribe; instead cash wages are obtained by men working in steel construction gangs.

A Comparison of Mohawk Culture Past and Present

A comparison of aboriginal and modern Mohawk cultures shows distinct areas of culture change. Small group warfare and palisaded villages are no longer seen. The Long Houses, which aboriginally housed several matrilineally extended families and which were named with clan insignia, have gone. The matrilineally extended families and the clans once permanent social units in the community are practically non-existent in Brooklyn. Few families know their clan or moiety affiliations. Indeed, when an Indian male marries a non-Indian their children have no clan affiliation.[3] In Brooklyn there have been many such marriages. Mohawks have married into Irish, German, Jewish, Norwegian, Italian and Filipino families.

In aboriginal times, marriages were frequently arranged by the mothers of the marrying couples, and residence was matripatrilocal with respect to a composite household. Today a young Mohawk selects his own wife and takes her into a separate apartment which will usually house only the nuclear family.

The mutual aid societies of the women are gone, and also much of the material culture of the group (i.e. box-turtle shell cups, elm-bark hide scrapers, pails, trays, dishes, spoons, etc.).

The extent to which women influence the behavior of men has also greatly changed. In aboriginal times, according to

[3] A man without clan affiliation can however give his children a clan membership by marrying an Indian woman. This is what occured in the case of Charles A. Cooke, a native Iroquois scholar. His father belonged to no clan since his father's mother was French. His mother however was a Mohawk of the Bear clan and thus Charles Cooke became a Bear clan member (BARBEAU 1952).

Snyderman "the women more than any other group tended to control the actions of the warriors" (1948:24). Failure to heed the warnings of women was considered a bad omen by the group. And since the women were responsible for providing the staple foods, the warriors had good reason to follow the advice of the women.

Today Mohawk males are relatively unrestricted in their movements and are minimally influenced by the women of the group. They move from job to job if and when they please and speak with pride of their great mobility.

According to the foreman of the American Bridge Company:

> Everything will be going fine on a job. Plenty of overtime. A nice city. Then the news will come over the grapevine about some big new job opening up somewhere; it might be a thousand miles away... (suddenly) they turn in their tools, and they are gone. Can't wait another minute. They'll quit at lunch time, in the middle of the week. They won't even wait for their pay (Mitchell 1960:22).

The language of the group has also changed. Mohawk, once spoken by young and old, is now the language of the aged. As a Mohawk woman remarked, "The children don't speak Indian and some old people can't speak English, so can't speak to the young ones." Many of the older Mohawks I interviewed thought it "shameful" that the younger generation had lost the use of the Mohawk language.

The religious situation of Brooklyn Mohawks is unclear. According to Mitchell, "the Mohawks are church goers." The majority of Catholics go to St. Pauls... (and) the majority of Protestants go to Cuyler Presbyterian Church." (Mitchell 1960: 26). Yet many of my informants told me that the Mohawks were not strongly attached to Christianity. Speaking of the Catholics, one woman stated "They are Catholics in name only". Other informants stated that only a minority attended church regularly. Although Reverend David Cory encouraged Mohawks to attend his church, and even held special services in Mohawk to attract the older people, only a small minority of the Mohawks regularly attended his services.

The kind of attachment the Mohawks have to Christianity is perhaps well exemplified by Mrs. B. who has two boys and

two girls. She told me "the two boys are Catholic like their father and the two girls are Protestant like their mother."

The pull of the Longhouse religion is lessening the influence of Christianity. Mr. D., a Catholic, on a visit to Caughnawaga (the Mohawk reservation in Canada) decided to hide in the bushes while a Longhouse ceremony was being performed at the Catholic graveyard. He soon found a friend sitting near him. His friend told him, "The bushes are full of Catholics and Protestants... Every night there's a Longhouse festival, they creep up here and listen to the singing. It draws them like flies" (Mitchell 1960:36.)

In aboriginal times, related to their horticulture, the Mohawks had a triad of deities, the Three Sisters. These were the spirits of the corn, the bean and the squash, who were known as *De-o-há-ko* meaning "Our life" or "Our Supporters". Indeed, all growing things had a spiritual counterpart towards which festivals were held. Related to the hunting activities there also existed a number of animal deities each of which was the supernatural patron of a secret society. The old religion was closely articulated with the clan. The appointment of religious officials was controlled by the clan matron and religious officials were to a large degree clan officials (Noon 1949:30).

Since most of the Brooklyn Mohawks are Christians, the content of their religious beliefs has changed. It is clear that religion itself is no longer the integral aspect of Mohawk life which it was in aboriginal days.

Some of the cultural changes enumerated above, are functionally related to the change in cultural ecology. Changes in religion, in residence rules, in the importance of the matrilineal family and clan, in women's influence in marriage and male mobility and in women's mutual aid activities are all functionally related to changes in the subsistence problem and its solution. However, other changes enumerated — warfare, palisaded villages and language seem unrelated to the changed cultural ecology. Nor is any functional relationship evident between the cultural ecological change and data available on cultural persistence.

In a previous paper (1958:477-78), the writer outlined the following areas of cultural persistence:

Women:

1. Maintaining a fixed residence.
2. Looking after the home and children.
3. Storing the "grain" (be it maize or money).
4. Living in close contact with the matrilineal family.
5. Having constant relationships with other Mohawk women.
6. Providing hospitality for their males and gang.

Men:

1. Leaving a home base to be able to return as conquering heroes.
2. Bringing of booty home as a sign of a successful expedition (slaves or goods by the warriors; a new car or a large "wad" of money by the steel worker).
3. Achieving certain observable accomplishments, which can be spoken of at length exaggerated ("We laid low the Erie lands," or "We built the Empire State Building").
4. Working in an all-male group under the leadership of a more experienced tribesman.
5. Being subject to the minimum of lineal authority, under a leader that one picked; for short periods of time (length of the war party or job assignment — in both cases the Mohawk leaves any time he wants to).
6. Becoming a full member of the group without having to undergo a long, formal learning period.
7. Having chances to display daring and courage and thereby gain personal prestige both from the whole community and from the group one fought or worked with.
8. Having excitement as an ever present ingredient.
9. Leaving the maintenance of home and family to the women.
10. Forming short and brittle bonds around a leader (war chief or "pusher").

To the above, I would now add the following:

1. *A Persistence of the Adoption Complex* — In the past captives were frequently adopted into families with full standing as members of clan and tribe and given native spouses. Today many a white man has been adopted, so to speak, by the Mohawks. These white men at time marry Mohawk girls; they frequently travel with other Mohawks to the reservation at Caughnawaga; identify completely with the Indians and are accepted by the Mohawks as equals. My field work in Brooklyn and Caughnawaga was quite unsuccessful until I

was "adopted" by a young Mohawk steel worker. Thereafter I was known, not by my own name, but as R's friend.

2. *A Persistence of Disinterest in Property* — In the past, according to Jenness "so little did they respect personal wealth, that a multitude of beads brought neither honour nor profit except so far as it gave the owner an opportunity to display his liberality by lavish contributions to the public coffers" (1955:139). Today the Mohawks are not greatly interested in storing up wealth according to the dictates of middle class American society. Although during the time of my field work (1956-1957), many earned more than $150.00 per week; Mohawks frequently asked me to "lend" them money. Frequently, Mohawks discussed the fact that although they made very good wages most of them had little money in the bank.

Conclusion

The hypothesis, that a change in the cultural ecology of Mohawks will lead to parallel changes in Mohawk culture must be rejected since a completely different cultural ecological adaptation is still associated with (1) cultural persistence, and (2), with culture change unrelated to the changed cultural ecology.

The rejection of the hypothesis casts doubt on the theory from which it was derived, and tempts one to reject the theory also. Before rejecting the cultural ecological approach, however, three factors must be kept in mind. First, the degree of control available in the study does not warrant the complete rejection of a theoretical framework on the basis of one experiment. Second, the lack of adequate measures of cultural persistence and cultural change, further weakens the experiment and limits the conclusions one can make from its results. Until we arrive at an operational definition of culture this will remain an inherent weakness in cutural experiments of this type. Third, although the hypothesis has been rejected, some of the cultural changes enumerated were explainable in terms of the cultural ecological framework. For a fuller explanation of the Mohawk data, a modification of the cultural ecological approach, rather than its rejection, is therefore indicated.

The attempted modification of cultural ecology presented below, is greatly indebted to the work of George Snyderman (1948). Snyderman, after an extensive study of the Iroquois data, concluded that warfare was a basic aspect of Iroquois (and

thus Mohawk) society. Following Snyderman, warfare, as a type of social process, must be incorporated into any theoretical scheme which attempts to explain culture change and persistence among Mohawks.

Warfare, in conceptual terms, is a type of adaptation a society makes to its larger social environment. To incorporate warfare into an explanatory system of Mohawk culture, adaptation to the *social milieu* must be considered in addition to adaptation to the natural environment. Following Steward, but modifying his approach somewhat, I would say that Mohawk culture past and present can best be understood in terms of *two kinds of adaptational systems*: first, adaptation to the natural environment (cultural ecology), and second, adaptation to the social environment (what might be called *intercultural adjustment*. Related to both of these adaptational systems, it is possible to isolate cultural traditions which dictate behavior, ideas, and beliefs appropriate to given situations.

Let us examine the aboriginal culture in relationship to these two adaptational systems. Related to the cultural ecological adaptation of semi-sedentary women-managed horticulture were such cultural items as: rules of land ownership and land uses, the role of women, the organization of maternal families and matrilineal clans, civil authority and social and religious ceremonialism. The intercultural adjustment was largely in terms of small group warfare and the League of the Iroquois. Related to this social adaptation were such cultural items as: military authority, male roles and prestige systems, adoption processes, palisaded villages, and positions and ceremonies associated with the League.

The modern adaptation to the natural environment is considerably changed and parallel changes can be seen in those areas of culture which are closely connected to subsistence activities (see above). The modern adaptation to the social environment when compared to the aboriginal one shows aspects both of change and non-change. An elucidation of this point is necessary.

Mohawk society today is no longer an independent political unit. It is now governed by American and Canadian law. War-

fare is thus no longer a possible mode of intercultural adjustment for Mohawks. The intercultural adjustment of Mohawks to their larger social milieu is now mainly in terms of *intermarriage* and *work*. The linguistic change from Mohawk to English is functionally related to the change in intercultural adjustment. Work with, and marriage to, English speaking individuals is greatly facilitated by proficiency in English.

Marriage to non-Iroquois women represents a change in intercultural adjustment and is related to changes seen today in (1) the importance of the clan and (2) the importance of the matrilineal family. The non-Iroquois women cannot transmit clan affiliation and have no tradition of families organized along matrilineal lines.

Work, as a mode of intercultural adjustment, shows aspects both of change and non-change. Working peacefully for non-Iroquois is certainly a change from small group warfare against non-Iroquois. This change is related to the disappearance of palisaded villages, of war parties and their associated ceremonies.

However, peaceful work in the *steel construction industry* shows structural parallels to participation in small group warfare. In both cases dangerous activities are performed in a small group setting. The Mohawk male still thinks of himself as a "warrior" as I have documented elsewhere (1958). The cultural persistence described above can be attributed to a large degree to the structural similarities which exist between the aboriginal and modern modes of intercultural adjustment.

Steward's theoretical system, based as it is on adaptation to the natural environment, includes an overly limited definition of environment.[4] The general social milieu, what I am calling the intercultural adjustment, is not considered by Steward, and cultural complexes related to the intercultural adjustment cannot be explained by his system.

[4] A similar conclusion independently arrived at by Thomas G. Harding is of interest here. Harding in a discussion of a subject matter far removed from Mohawk Indians — adaptation and stability in cultural evolution — writes (1960:49-50):

"Without consideration of the cultural aspect of an ecological niche,

It was possible to explain the data on Mohawk culture change and persistence by the modified cultural ecological approach presented. Perhaps the suggested modification will be useful to explain culture change and persistence among other groups also. In addition, it may explain similar cultural forms at a given point in time in different geographic areas.

To enhance the utility of modified or neo-cultural ecology, I would present it as a series of related statements which would be amenable for testing cross-culturally:

1. Cultural ecology and intercultural adjustment are functionally related to culture.
2. Change in a society's cultural ecology and/or in its intercultural adjustment will lead to parallel changes in related aspects of culture.
3. Persistence in a society's cultural ecology and/or intercultural adjustment will lead to persistence in related cultural complexes.
4. Societies with similar modes of cultural ecology and/or intercultural adjustment will show similar cultural forms related to the similarities in adaptation.

To summarize: the experimental method is useful to the anthropologist. In testing hypotheses, observation of differential changes in cultural systems over time can be substituted for active intervention by the experimentor. A cultural ecological hypothesis has been tested by this method and rejected. A modification of the theory of cultural ecology to incorporate adaptation to the social environment has been presented. It was noticed that the level of present anthropological theory and particularly the lack of operational definitions made this type of experimentation difficult. A by-product of the paper was thus to point out the need for a more precise terminology.

The point of this paper is well summarized by Daryll Ford (1947:213-224):

> evolutionary anthropology is unneccessarily prevented from viewing diffusion and acculturation in a developmental context; hence, that pervasive process of specific cultural evolution, convergence by coalescence, escapes us if the supereorganic environment is ignored... "Cultural ecology" simply must embrace the relations between cultures, the superorganic setting, as well as the natural features of habitat, just as "ecology" in biological studies includes the organic environment, competing species, as well as the inorganic."

> The theories or laws of physics and chemistry differ in degree, in degree of explicitness, precision and verification, but not in kind, from hypotheses concerning processes in human society... in the study of the social relations of man, the variable factors that in combination determine any section of the pattern are so manifold it is not surprising that hypotheses are crude or limited in reference... [it is] of paramount importance... to subject social phenomena to the inductive analysis and the critical testing of hypothesis which are the canons of science.

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