The Arctic ranks with the highest mountains and the broadest deserts as one of the most severe environments occupied by man. Extreme low temperatures of —30 to —60 degrees F. combined with winds up to fifty miles an hour produce chill factors well below —100 degrees F. It is both continuously dark and light for several months of each year. Yet, people have survived in the Arctic for millennia. The resources are so meager that they have been forced to live in small scattered groups. This separation was so extreme that in 1818 when John Ross first contacted the Polar Eskimos of Smith Sound in Greenland, they were shocked to find that they were “not the only people in the world.”

With the close of World War II, the arctic regions around the world began rapidly accelerating their process of change and acculturation to the larger national populations and cultures of which they are a part. In this article, we will see how recent national policies in this country concerning defense, statehood, oil and the Native Land Claim Settlement all impose pressures for some subtle and some not so subtle changes in the lives of North Alaskan Eskimo peoples.
In the course of my research in health problems created by the impact of modern technology and rapid social change in these regions, I have had the opportunity to visit many circumpolar places and compare notes with some highly knowledgeable individuals. What is increasingly apparent from my visits and discussions is the emergence of a pattern of rapid change which more closely mirrors national level priorities and plans for development of the various regions, than some of the needs and problems of the people.

In Finland, for example, the push for extensive lumbering in the Arctic has produced a rapid development of roadways now used widely by tourists to go to all parts of Lapland. In the Lappish town of Inari, tourism has grown to the point where the native Lappish people have established an outdoor ethnic museum. It earns cash by providing some fascinating views of their life style and it comfortably keeps most tourists out of their backyards.

On the Russian side of Lappland the continued development of the Arctic seaport of Murmansk, and its rail links with Leningrad passing through some Lappish regions have led to rapid changes for these people. One prominent Soviet scientist explained to me that programs of education for some of these Laplanders were "now so advanced" that occasionally they would become University professors. However, it is perhaps significant that this was a digression during a discussion of health problems that the other Russian Lapps were still having from continuing the old traditional practice of gulping down chunks of deer meat.

In the Western Hemisphere, the Danes, in attempting to stimulate economic autonomy for Greenland, have tried everything from packaging glacial ice for use in mixed drinks in Copenhagen to opening a new and plush Arctic hotel. Some Canadians have estimated that for the amount of money they spend on supplying rather meager welfare for people in scattered arctic settlements they could easily bring these people into downtown Ottawa and support them better. Although there are no serious moves in that direction, the idea of consolidating settlements in Canada is real. In this article, which is about Alaska, we will see that probably the four main factors historically underlying its recent development and change were defense, statehood, oil, and the Native Land Claim Settlement, in that order.

Change on "Top of the World"

Instead of discussing the impact of change on Alaska as a whole, I will focus intensively on a specific community which in many ways represents a microcosm of the kinds of problems faced by most of the native Eskimo peoples of Alaska. I will simply describe the facts and let them speak for themselves; more formal analyses are written elsewhere. Barrow, Alaska, has been called the Top of the World. Not only is the nickname appropriate geographically because it is the northernmost community on the North American continent, but also because it has frequently been the first to undergo the kinds of changes that are occurring in a half dozen similar communities in Alaska, whose populations grew about ten times faster between 1950 and 1970 than the surrounding small native villages. Barrow was always a little ahead of the others. It grew large a little earlier, and has had a better economic and health record.

In 1940 Barrow had 345 people, by 1950, 951 people and by 1970, in excess of 2,200 people. This sixfold increase in population size over thirty years is associated with a number of the most difficult problems with which the community has to deal. In Alaska, this rapid growth was due largely to the need for national defense during the Cold War period in the late forties and early fifties, which was then followed by statehood and more recently by the discovery of oil in the Prudhoe Bay area.

The infusion of cash in Barrow during the late forties and fifties as the result of large building projects associated with Defense Department contracts, attracted many families who came in the hope of satisfying their needs. For the man it may have been an outboard motor, or a good rifle; for the women it was a sewing "happy" machine. Of course, many other attractions existed in the form of better health and education facilities, kin ties and the continuous availability of a wide range of "lower 48" goods and services. This combination of migrants, money, and services had some subtle and not altogether predictable effects upon their lives.

Today, change in Barrow is apparent at all social levels. It is not uncommon in the evening to walk into a traditional Eskimo dance and see the older generation dancing to the blast of electric guitars and hard rock music. This generational contrast is apparent in every activity. In 1964 a city planning map for Barrow shows the special space set aside for some five hundred sled dogs, which were projected if the community continued to grow at its current rate. However, by the annual Christmas games and festivities of 1970, the traditional dog-sled races had to be canceled, not because there were too many dogs, or that the community did not grow, but because there were not enough sled dogs to get two sleds hitched up to race. In six years the "skidoos," which were practically unheard of in 1964, had entirely replaced the dog-sled as a means of transportation. "It was a simple matter of economics; the 'skidoo's' are faster, more dependable and cheaper to 'feed than dogs'"—and besides, it is obviously a status symbol. This past summer some sled dogs were brought in from nearby (ninety miles away) Wainwright to satisfy potentially disappointed tourists.

For many native people, Barrow is now cosmopolitan by comparison with the surrounding villages. It has a movie theater, several stores, restaurants, churches, a hospital and a large school. There was even a short-lived "happy" men's shop. As an illustration of the difference between town and village attitudes, I may tell how last year I met a wonderful elderly Eskimo
woman from a remote coastal area of the North Slope sported a warm smile displaying her worn but perfect teeth that spoke without words of her tra-
ditional diet, she told me how much her feet hurt her. When I asked how she made it in a tundra environment, she said she was glad to get back home so she could take off her high heels and once again put on her "Muk-luks!" I was amazed to learn that she was a circuit television and there are over a hundred subscribers. Although occasionally the TV news is late in being shipped up here, as the time when, I am told, Walter Cronkite was bidding a "Happy Thank-
giving" at the close of the evening news a few months ago, nevertheless, TV is having an important acculturating effect upon many adults and children. But people still talk about Louisiana and how the TV broadcast of the first astronaut landing on the moon a week after the Russians did.

The modern trappings, Barrow is still a community with many old traditions. Men still
make umiaks (pronounced "oomiak"), which are wooden sleds; in addition, with six "ooqviks" (beaded seals skins sewed together by village woman, to hunt the various species of whales (especially the baleen whale or achatvik) migrat-
ing in the late spring and summer past Point Barrow. The toggle-head harpoon which has been used for centuries is still in use, but it is now made out of brass and iron by a sporting goods store in Bucks County, Pennsylvania and shipped to Barrow by jet.

The owner of the boat is an umiak (pron-
ounced "oomiak") and as such is captain of ten men all dressed in traditional hand-
made clothes. Although the boat is still the same way and from a distance it may look as it did hundred years ago, up close you can see a "thirty-five horse" outboard motor hitched on. Run to one of these umiaks, the umiak must invest in a considerable amount in buying or building a self;
building a self, having a dozen or so women sew it together, supplying an outboard motor to run it, and then you are on the ice. Since not every boat catches a whale each year, the umiak must have enough money to invest for more than one year. Recently, this investment issue forced a change in the old tradition of shar-
ing the muktuk (the skin and underlying fat) from the whale with the rest of the community. The old traditional sharing practice shifted from one "belt" or strip of muktuk to the umiak, one for the crew and the rest to the other crews to two for the
umiak, one for the crew and the rest among the other crews. This way the captain can recoup some costs of the whale, but he is still part of the "belts" for $24-per pound in another community where muktuk may be in short supply. However, if you talk with the man who owns a boat or who has thrown the first successful harpoon into the whale you immediately find out that it is worth practically any investment. The pride and prestige brought by catching a whale is probably not equaled today by any other traditional activity, but like all the traditional activities, technology and economics are having their impact.

Not only is hunting changing but nutrition is rapidly changing, too. A large-scale survey was made recently to find out the sources of the food the native people eat. They were asked how much food they obtained by hunting, fishing and/or trapping. Upon analysis of the results, two inter-
esting findings are evident. First, that most people now buy at least some of their food in the stores. This suggests that it is very important to look at the composition of diet available in the stores in order to gain insight into the shift from a tradi-
tional high protein and fat diet to one containing considerable increases in refined carbohydrates. One investigator estimated that in one generation they changed from a diet very low in carbohydrates to one with almost two hundred pounds of refined sugar/person/year (a figure similar to urban U.S. population). This dietary change to refined carbohydrates, especially sugars in the form of candy bars, has led to such severe dental problems that many children believe them to be their number one health issue. Many children of two and three years of age already have serious rates of tooth decay and in the rest of the population the problem is immense. Of course, dental problems are evidence of only one of the metabolic effects of these drastic changes and many chronic diseases now begin-
ning to appear, such as diabetes and cardio-
vascular disease, are closely associated.

The second finding came out of a careful statistical analysis in which we attempted to sort out but the most important source of nutrition is the percentage of food purchased in the stores. We found that this varied with the size of the family. Traditionally, large families were able to provide a wide variety of hunters and a plentiful supply of food. Today the beliefs about a large family are still widespread, but the reality is that the children are all in public school and the head of the house-
hold recognizes the need, even if he is an excel-
 lent hunter, to put at least a part-time job to earn sufficient cash to buy enough store food for his family.

Although the Barrow area contains some multimillion dollar federal establishments such as the Naval Arctic Research Laboratories and ad-
vanced technology with jet planes landing at their airport, it is relatively isolated without any fresh water system or any means of disposing of sewerage. This is in sharp contrast to the highly effec-
tive and efficient systems of the federally funded installations. In the village, raw sewage is plied high in leaky, abandoned oil drums beside some houses, and the run-off continues to threaten a fresh water lake which during the summer is one of the few sources of drinking water. Roads carried by the Army Corps of Engineers sliced out a section of gravel bank about a mile from town to complete the airport runway, but now the ocean storms threaten to wash away part of the town as the beach line is receding to the depth of the original site.

The building of new houses has just come in pace with the increase in population size. The houses are small and crowded. Data from a hous-
ing survey indicate that most of the people in
Barrow would like significant improvements in the condition of their housing. Heating of these houses leads to less air precondition humidity, and although mortality rates have been greatly lowered in both infants and adults, mortality rates due to upper respiratory infections associated with this low humidity and the crowded conditions have increased. Chronic middle ear infections often leading to permanent hearing loss are also commonly associated with upper respiratory infections.

Over the last several decades, the decrease in infant and adult mortality and increases in fertility have led to a rapid expansion of family size. Although the average child is far less the same day it and the distance may look as it did hundred years ago, up close you can see a "thirty-five horse" outboard motor hitched on. Run to one of these umiaks, the umiak must invest in a considerable amount in buying or building a self;
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hold recognizes the need, even if he is an excel-
 lent hunter, to put at least a part-time job to earn sufficient cash to buy enough store food for his family.

While the people espouse the idea of raising children in the traditional ways with lots of love and attention, the constraints of large families and the kind of life they now lead often prevent them from effectively carrying out their desires. For the children born and reared during a period of rapid expansion of the community—after World War II until now—the outlook is at best mixed. On the one hand, the children and young adults have been exposed to all kinds of stimulating experi-
ences either outside of the village or through TV and their schooling. On the other hand, they have not received enough training in the traditional hunting techniques to follow the ways of their father's father. The result is that a disproportionately high number do not feel comfortable in the big

Alaskan cities where they are frequently not skilled enough to compete with white men for a job, nor do they feel entirely comfortable back in Barrow where many of the traditional things to do are gone and their doings are little little little. Few men leave and go back to the larger cities where some do succeed; for the women, a few have married while men and have also left. Most men remain in town and for some, heavy alcohol consumption is a way out; for others, more recently it is drug use. There are a number of suicide attempts each year.

However, for the majority who would rather live in Barrow than practically anywhere else there may be a question in the world and are not plagued by these difficulties of adjustment, there is a genuine community-wide concern over these problems. Some local community health and public health service efforts are just starting, with the hope of dealing directly with the people and their problems. Nonetheless, it is pos-
ible that the success of these new service pro-
grams may be more dependent on the kinds of general changes taking place in the community, producing new sources of self-respect, pride and identity, than on the contents or approach of any of the particular programs being developed. Although some people hope that the expected financial boom from the recently approved Trans-
Alaska oil pipeline development brought by the Alyeska Company will bring long-term changes in the Barrow economy that may result in new sources of jobs and self-respect, unemp-
lois predict privately that most jobs will last only as long as it takes to construct the pipeline. This means that more born outside the community in non-traditional settings the children and cash-
paying jobs make it difficult for parents to teach the children hunting and domestic skills to their children. For other parents the traditional laissez-
faire child-rearing attitude toward the wants and needs of the child is still apparent, but the subtle ef-
tects of sanctions applied through traditional speech, joking, and ridicule are decreasing. Social regulation in a large community such as Barrow cannot be maintained through explicit sanctions in the same manner as in the small villages; in-
stead, explicit sanctions in the form of laws and legal regulations enforced by local police are apparent everywhere.
The Future of Change in Alaska

Fortunately, the Trans-Alaska pipeline is not the only factor which is important to these people. Actually, if there is a single factor that is going to play a major role in determining the future of the Alaskan people it is the 1980 Statehood Act, including the oil-irrigated Prudoe Bay, belonging to the United States of America under the right of acquisition by aboriginal rights. These rights went back 101 years to the time when the United States purchased Alaska from Russia.

On December 18, 1971, after many hearings and deliberations, President Nixon signed the Alaska Native Claims Settlement Act. The law provided that 40 million acres of land, a $426.5 million cash settlement, and $300 million mineral rights on land frontage from the natives (Prudoe Bay and other areas) for a total of $926.5 million be distributed to "Native Corporations" over the next ten years. The "Native Corporations" have been designated for the 55,000 Aleut, Eskimo and Indian natives living in Alaska, and a thirtieth for the 2,500 living outside of Alaska. The latter will share in the money, but not the land, since they are no longer residents of Alaska.

The Natives, faced with legal battles, obtaining national recognition, and winning the largest Native Settlement in American history brought about new leadership, as well as pride, hope and a sense of real achievement. People now feel that they are "first-class citizens," and will have some freedom to live in peace on their much reduced but, nevertheless, their own lands. They hope that the money will provide some of the important material things and services that have been wanted in the past. Leaders have emerged who are entirely different, at least to the Eskimos, from the traditional village leaders who silently led more by impressive example than by verbal acuity. The new leader has to know both worlds. He must deal in the culture of the "lower 48" by being verbally aggressive and mindful of economics, and in the village by meeting more traditional expectations. The net result of this ferment over the leadership, land and money is the Eskimos' newly strengthened identity with their past, present and future.

While the people were fighting for their land and money there was an intense build-up of expectations of what could be done with the new wealth. Some of these expectations were realistic and others were not. However, what is clearly on the minds of most leaders is how to manage their settlement wisely so that it will not end up managing them, and thereby enrich the non-native people who have no desire to be rich. The Natives now have to return to find a place for themselves, and to share in the land and money with their relatives. The money involves many new relationships and new responsibilities to the young. The elders must decide whether the money should be put aside in non-taxable trust funds which, for example, would slow down the rate of economic change. Alternatively, they may want to invest the money in specific needs of the people to develop new industries or any number of other plans to change from a basically subsistence to a cash economy. Even if the cash is spent upon traditional foods, fishing or hunting the change will still induce considerable alterations in values, traditional leadership, and community organization. They must not only explore and develop new kinds of economic bases for their communities, but also must protect their investments from the many outsiders who might migrate to Alaska specifically for that "golden opportunity." The people will have to insure and lobby for continued services from the sources or else all of the settlement money will be spent up in a very short time just to pay for health, education and welfare services that they now receive. They must also ensure that the federal government continue to grant them the traditional privilege of sea mammal hunting (seals, sea otters and whales), at least until it can be carefully demonstrated that their efforts would endanger a given species.

The people are thus confronted with the fact that the total of $926.5 million is for about 90,000 people for the next ten years. This is only about $1000 per person per year. In Alaska, where inflation is at twice the rate in many big cities in the "lower 48," that will not take them very far. Perhaps in this point lies the rub of the matter. On the one hand, the people have very high expectations of what this amount of money will enable them to do, but on the other hand, they must be extremely careful not to divide its spending power to the point where none of their expectations can be met. In two years' time, enrollment and registration, education, labor training and self-direction, permanent land selection, spending and investment priorities, taxes and, perhaps most important of all, the development of a sound economic base for native villages and cities. These issues, as well as a long list of other matters, will produce both internal and external pressures. One reflexive native leader quite candidly admitted to me a few weeks after the President's announcement: "I do not know if the settlement is going to make us any happier or not." If it is possible to make this transition at the accelerated rate of change, then the natives will have to use their reawakened identity to "make the best of both worlds."*  

References


Solomon H. Katz is Director of the W. K. Krogman Center for Research in Child Growth and Development at the University of Minnesota. He is also Assistant Curator of Physical Anthropology in the Museum and Assistant Curator of Anthropology in the University of Pennsylvania. In presenting this article for Expedition, Dr. Katz says: "I first became interested in the Arctic in 1963 as a result of my work with Dr. F. C. Wallace. My first trip there was in 1968-1969, followed by another visit in 1970, in the midst of a personal crisis. I then had the good fortune to meet a number of very fine people; each time I have returned, the number has increased. It is only through their kindness that I have been able to put together this picture of such a striking rate of change. In this sense, they would like to dedicate this article to the children of the Arctic who mean so much to those individuals."