

RESILIENCE FACTORS INHERENT IN SOCIAL
SYSTEMS: A COMPARATIVE STUDY

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Resilience Factors Inherent in Social
Systems: A Comparative Study

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I. Introduction

The purpose of this paper is to compare five traditional cultures, evaluating the premise that in-depth information on situations of stress--from inside the system or from the environment--should elucidate the factors which endanger a system. Where are the most vulnerable spots? What mechanisms are inherent in a social system to maintain its persistence? What agents must be mobilized to prevent a breakup of the traditional culture?

Special attention is given to the resilience phenomenon. As used in ecology, Holling (1973) defines this term as the ability of a system to absorb disturbance.

The effect of fluctuations on the behavior of a society, and the cause which brings about fluctuations are of major interest. In this paper the term "fluctuations" means changes which occur in time. A distinction is made between regular changes like the alternating seasons and irregular changes; whether fluctuations are predictable or unpredictable; whether they are natural or induced by men.

Another definition is far more difficult to give: when can a traditional culture be considered to have disinte-

grated? What are the criteria to recognize this? What constitutes persistence? What part is played by acculturation, by gradual influences from outside, from an alien "stronger" culture?

For convenience, a "traditional culture" in this context is a culture that functions undisturbed along traditional lines for several generations without major interruption. Minor changes are taken for granted in any culture, so much more as no culture is static; it is dynamic by degrees, according to decisive factors like geographical location, accessibility, nearness of neighbors, nearness of dominating groups, historical events, etc.

Breakup of a traditional culture can take place even if people continue to live. What makes the situation more complicated is that a breakup can take place in one aspect of the traditional pattern, thereby decisively altering the whole of it.

The following books have been used as the basis for this study:

on the Murngin of Australia:

W. Lloyd Warner, 1937, "A Black Civilization";

on the Blackfoot of North America:

John C. Ewers, 1955, "The Horse in Blackfoot
Indian Culture";

on the Basseri of South Persia:

Fredrik Barth, 1961, "Nomads of South Persia";

on the Cubeo of South America:

Irving Goldman, 1963, "The Cubeo";

on the Bemba of Rhodesia:

Audrey I. Richards, 1969(1939), "Land, Labor
and Diet in Northern Rhodesia".

For comparison, two more cultures have been included:

the Tikopia of the Western Pacific, and the North Alaskan Eskimo, divided into coastal and inland groups. The latter two have previously been studied by this author; the report appears in the Appendix. Background material for the Eskimo is taken from Robert F. Spencer, and for the Tikopia from Raymond Firth. Additional sources have been used where necessary (see Bibliography). The books have been selected partly according to the known description of stress situations, partly for the obvious amount of detailed information. It is not ideal to rely upon a limited number of sources for each culture for background data, but lack of time and difficulties of finding the sort of detail needed restricted the choice.

The idea was to examine representatives of different economic systems as follows: hunters, gatherers, herders, fishermen, horticulturalists. The borderlines are not clear-cut in most cases. The Murngin are hunters, gatherers and fishers; the Inland Eskimo are nomadic caribou hunters; the Coastal Eskimo are sedentary whalers with temporary camps for whale hunting; the Blackfoot are hunters and gatherers,

who occasionally fish but have a strong preference for hunting; the Basseri are rather pure nomadic herders with occasional, though reluctant, crop cultivation; the Cubeo are horticulturalists with a very strong orientation towards the river, making fishing a daily routine; and the Tikopia are sedentary horticulturalists.

The case of the Bemba is more complicated. Originally, they were warriors who had conquered tribes work for them. Richards writes that with the establishment of the British South Africa Company in their area in 1899 the military conquests of the Bemba suddenly ceased. They settled down and adopted the mode of life of shifting cultivators although agriculture was still looked upon as an inferior activity.

The present tense of the cultural anthropologist is used in the description of all cultures with the exception of the Blackfoot. In the former cases the traditional patterns lasted until the time of the field research underlying the books cited above. Gradual influences from the outside as well as interior or exterior stress were not able to endanger the survival of the cultural systems.

For the description of the Blackfoot the past tense is used. Their traditional culture broke down when they were deprived of their most important means of subsistence, the buffalo. The Blackfoot provide a striking parallel to the Eskimo of the interior of North Alaska (Spencer, 1959), whose culture disintegrated. They were finally absorbed by coastal

Eskimo groups after they lost their essential market for caribou hides when trading stations established on the coast provided European clothes to their former trade partners, the coastal Eskimo.

II. Case Studies

A. The Murngin of Australia

W. Lloyd Warner (1958) collectively calls several tribes living in the furthestmost northern and eastern part of Arnhem Land of north Australia the Murngin. The climate in this area is tropical with a marked seasonal cycle of rainy and dry periods. In the wet season, marshy lakes are formed by torrents of rain, but they disappear completely in the dry season, which goes on for six to seven months as continuous drought. Birds, fish and other animals are abundant, as well as vegetable foods, although the latter are limited in variety.

The Murngin belong to the Australoid race and their language is of the Australo-Dravidian linguistic group. The material culture of the Murngin is described as "stone age culture" although the discrepancy between this view and their extremely intricate social and ceremonial system has caused heated discussion (1). Women are responsible for gathering vegetable food, grubs and shell fish, while men catch fish along the coast and hunt big mammals, turtles and birds. Hunting and gathering activities force the Murngin to be on the move for most of the year. In fine weather, trees or windbreaks are sufficient for shelters. During the rainy season, the Murngin build small huts from bark to keep dry. Only few implements can be carried in baskets when they are moving, thus keeping their belongings at a minimum. Larger objects, serving at certain ceremonies like burials, for

instance, are ritually destroyed after use.

The basic social unit is the nuclear family consisting of a husband, his wife or wives, and their small children. Marriage is often arranged by the fathers of a girl and a boy, or by the father of a young girl and the future husband. A widow is taken over by the younger brother of her deceased husband. A man prefers to take sisters for wives because they are supposed to get along better in the polygamous family.

The kinship system of the Murngin is both patrilineal and matrilineal. Every individual kinship term represents a complex nexus of social behavior. It is desirable that a man marry the daughter or daughters of his mother's brother (the girl marries the son of her father's sister), but other marriages occur also. In such cases, the kinship term for the new spouse is altered to what she would be called if "right" marriage had taken place. The rule of marriage is patrilocal after one or two years of marriage, when a wife joins her husband to live with his clan. Sons are preferred to daughters because they are needed in constant tribal feuding and in ceremonial life, which centers around the males of a clan. On the other hand, women, who are more vocal than Murngin men, have considerable independence in daily life. Infanticide and abortion are occasionally practiced.

A Murngin clan is an exogamous patrilineal group of 40-50 persons who possess a common territory and within it one or more sacred totemic water holes formed by a creator totem.

All the members of a clan are born from these water holes and they all go back to it after death to live with their mythological ancestor, the souls of the dead, and unborn children. The clan is the war-making group, whereas within a clan no violent conflicts occur. Friendly clans may join to live together for a season if there is enough food in a certain area.

Through the grouping of Murngin clans into two moieties mother's clan is divided from father's clan. The moieties are subdivided into eight sub-sections. A spouse can be taken only from one or two particular sub-sections of the opposite moiety. Marriage inside the own moiety is not allowed; incest rules are very rigid. The moiety division is the most fundamental category in the mind of the Murngin, and their whole civilization is based on a dualism. Within a moiety certain neighboring clans, which feel united by the idea of common association with the creator totem, form a group which Warner calls a phratry. Such grouping does not seem to be of great importance and it is not a general phenomenon throughout the Murngin region. However, for help, the individual would not resort to the whole of his moiety, rather to members of his phratry, with whom he is connected by a common myth. On the other hand, phratry solidarity is not strong enough to successfully control rivalry for women within the moiety. The various tribes of northeast Arnhem Land constitute only weak social units. The Murngin tribe as a whole, is not the war-making unit, rather the most intensive warring

takes place within the tribe.

No social stratification exists in Murngin society. There is no tribal chief, no headman for a moiety. Only the clans have something resembling a headman, a ceremonial leader responsible for all clan ceremonies. Together with him other old men discuss arrangements for ceremonies. Age grading plays an important part in the religious and daily life of a Murngin man; it controls the degree of sacred participation a man has within the community. After circumcision a boy goes to live with the other boys of his own age. When he marries, a young man moves into the general camp, out of the men's camp. According to the personality of the individual, one or more old men take charge within the men's camp. The older men, by virtue of having passed the succeeding initiations and thus having acquired the knowledge of the sacred mysteries, have control over the younger men. By invoking religious sanctions they regulate the behavior of younger clan members, controlling them fairly effectively in the absence of other law-enforcing institutions. It depends on the personality of a ceremonial leader whether he can act as war leader at the same time; politically he does not have any power.

The economic unit in Murngin society is the horde in which a few brothers or brothers-in-law with their wives and children live together. It can also consist of men and their families from different clans. The horde is an unstable group

whose size is regulated by the change of seasons. Hordes become larger and more heterogeneous during the dry season when there is sufficient food in the area to feed large groups of about 30 to 40 people, and many more during the big ceremonies. During the rainy season the Murngin pass through a time of scarcity partly due to flooding, which disturbs the freedom of movement. It is then that the hordes disperse, assuming their minimal size. On the whole, the Murngin area is too rich in animal and plant food to allow real starvation.

Cooperation within the horde is common. When a bigger animal has been killed, the whole group eats as much as they can after the meat has been duly divided among them. If hungry, an individual turns exclusively to prescribed relatives. Gifts of food and objects of daily or ceremonial use are given or exchanged on many occasions along rigidly determined lines. Gift exchange also plays a prominent part in ritual life.

The Murngin trade over wide areas, even inside the country of distant tribes. Certain distant relatives are chosen as trading partners. They constantly exchange gifts to create good relationships and friendly feelings outside their own clan, and thus have a greater feeling of safety when traveling. A young boy, accompanied by a relative, is sent on a journey through the country of various clans before his circumcision. He invites relatives and friends for his arrival ceremony, he collects gifts, but at the same time, he establishes new friendships over a wide area.

The sacred in Murngin society is expressed in totemism. It permeates the everyday life of the individual. Murngin totemism is described by Warner as consisting of "a ritual relation which is established between members of the clans and certain species of plants and animals. This relationship is expressed in certain myths and rituals" (p. 244). The rule of kinship is applied to the relationship with a totem as though it were an actual relative of a Murngin. Women are never initiated. Most totemic emblems are too sacred to be seen by them. If by mistake a woman casts her eye on such a sacred object, she must die.

The big age-grading and totemic ceremonies are symbolically enacted narrations of the creation myths taking place every year in the dry season when a large number of hordes congregate. Certain totems are connected with clans or moieties. A child inherits the totem from his father. The life of the Murngins is dominated by many taboos centering around totems, totemic objects and names, all of which serve to regulate kinship behavior or prohibit certain foods to particular persons. Objectively, they do not protect members of the group or the group as a whole, but by forcing the Murngin to observe the same prohibitions they actually serve to unify the group.

Marital fidelity is highly appreciated, yet adultery--which is condemned by all--is very frequent and offers one of the foremost causes for inter-tribal warfare. Adultery

committed by a man is tolerated more easily than that of a woman. The husband feels he has the right to beat, and in some cases kill, the adulterous wife with the help of the latter's relatives. Warner observes that women seem to be even more interested in sex than men, and some women are continually in trouble because of love affairs. Incest taboos rule certain relationships, but very often they are clandestinely disregarded. Wife stealing of different types and elopement commonly end in bloodshed or with the husband's final consent, as the case might be.

In normal circumstances a younger brother should not have sexual relations with the wife of his elder brother, except in one case. During the initiation ceremony, "gunabibi", a brother from a distant clan will be contacted and selected for the exchange of wives and presents on the last night of the ceremony. If appointed, a man or woman must obey this rule even if it is against his wish. This sexual license is meant to be a purification rite for men and women and to protect the community against illness until the next ceremony. Warner states that advantage often is taken from this arrangement well before the last night of the ceremony at which the ceremonial sexual license is allowed to take place.

Warfare is one of the most important activities in the life of the Murngin. Warner says (p. 155) that any social change causing the loss of this cultural trait would demand an alteration in the fundamental structure of Murngin civili-

zation.

The most frequent cause for war are inter-clan fights for women. These often result in the death of a man, which, in turn, calls for blood vengeance. Land cannot be taken by war, as it is inseparable from a clan. War might occur within or between tribes or moieties, but never inside the clan. The whole clan rarely goes out to fight during a war, but small raids, night attacks or ambushes are staged. Two clans within the same moiety fight more often because it is inside their own moiety that a rival for a woman is to be found, rather than in the opposite exogamous moiety. Theft of a wife is considered an insult to the whole clan of the husband. The situation is aggravated if at the same time the husband is killed.

Since kinship relations are intertwined, the obligations of some clans might be divided in certain feuds. Such clans try to pacify the warring groups. A peacemaking ceremony, often held after one of the big totemic ceremonies, is designed to make them forget past quarrels. The injured parties are allowed to vent their feelings in a general duel by throwing spears at their enemies. The injured clan hurls insults at the members of the offending group, whereas these have to remain quiet. The spear-throwing goes on until the injured have exhausted their emotions.

A ritual within the large age-grading ceremony brings old feuds to an end and prevents open conflicts from breaking

out during the ceremony when many clans have gathered. Fighting on such occasions would be considered a particularly serious insult to the totem. When people who have had difficulties in the past begin to quarrel or fight, the ceremonial leaders try to stop them. The men giving the ceremony talk to them in a special language and a man with clownish abilities acts the fool. By making the crowd laugh he hopes to cause the quarreling men to calm down.

With regard to the question of stress situation and resilience adaptations, it can be stated that the Murngin are not exposed to major environmental disturbances. Relative food scarcity in the rainy season, when movement is restricted due to extensive flooding, is counteracted by the dispersal of larger family groups into hordes. The permission granted a family group from a poor territory to roam on the richer land of another clan serves the same purpose.

Stress of a different kind, obviously more deeply affecting Murngin society is the widespread prevalence of adultery and the resulting warfare. It is possible that the importance of sex is emphasized by hardships caused through particularly rigid exogamous marriage rules. A similar phenomenon will be seen in Cubeo and Eskimo societies. The Murngin have found solutions in ceremonies against stress manifestations from within, which will be discussed in Section III.

Finally, totemism shapes resilience behavior through religious sanctions, prohibitions and binding origin myths.

B. Blackfoot Indians

The Blackfoot Indians were typical representatives of the Plains culture, the most recent of all North American Indian cultures. Its development was intensified and led to climax by the Indians' acquisition of horses and guns from Europeans. In its course vast population movements took place.

According to Kroeber (1937), the Blackfoot might have been the ancient occupants of the northern true Plains, or of the foothills of the Rocky Mountains and adjacent plains. The Blackfoot country prior to 1855 (year of the peace treaty made between the Blackfoot and the U.S. government) extended from the North Saskatchewan River in Canada southward to the present Yellowstone National Park, and from the Rocky Mountains in the west to the mouth of the Milk River in the east.

In contrast to other Plains Indians who exchanged their sedentary life for a nomadic life as mounted buffalo hunters upon acquisition of the horse, the Blackfoot were hunters for buffalo and other large game before the horses arrived.

The Blackfoot were divided into three tribes: the Northern Blackfoot, the Piegan, and the Blood. There were only slight variations in language between these three tribes, but politically they were independent of each other. The tribes were subdivided into preferredly exogamous bands which varied considerably in size (2). Kinship relationships with patrilineal orientation played an important part in the

organization of society. Formerly the bands, as smallest political and social units, were groups of blood relatives. However, through a process of shifting loyalty to different band leaders, the composition of the bands became independent of kinship considerations. The individual was free to change the band to join his father's or his mother's group. Polygamy was common with wealthy men who could afford to maintain several families. For practical reasons, sororate and levirate were frequent (3).

According to its size, each band had one or several leaders. This position was not hereditary but could be acquired by anyone who was able to attract followers due to his reputation as an outstanding warrior and who was wealthy enough to be generous with respect to gift-giving, feeding the poor, lending horses to needy families, etc.. There was no hierarchical stratification among the leaders and all were equally respected.

Band leaders were responsible for settling quarrels, discussing the nomadic movements of the bands with other prominent men of the band, and determining the sites where camps should be erected for the night. The head chief rose to office on grounds of his distinction as successful band leader, and due to his war record and his generosity. His title was honorific and did not extend much authority to the bearer.

As Ewers maintains, the power of both tribal and band chiefs in intertribal relations was limited by the recognition of social status on the basis of horse ownership. Important decisions were made by the total body of responsible men who had acquired social prestige through their bravery and generosity.

Although enjoying respect by the people, the shamans did not exert any political influence. Their status was acquired through a personal communication with supernatural beings. Their responsibilities were focused on curing the sick, discovering the enemy, or finding lost or stolen property. In the treatment of the sick not only supernatural power was at work but natural medicines such as herbs were used. The shamans were said to derive their knowledge of medicines directly from spirits or through visions or dreams.

A fixed system of social status did not exist. Social stratification was based on the number of horses a person owned. The wealthy had the acknowledged responsibility to give of their surplus to poor relatives and band members and to supply them with horses for hunting and for transportation.

Lacking an adequate number of horses, the poor were not able to hunt the number of buffalo needed to provide enough meat for the household. For the same reason, they did not have the facilities to transport the meat back to the camp or to carry enough supplies while on the move. Due to the lack of supplies for feasting or for giving-away, they were not in the position to take part in many of the tribe's activities.

Wealth based only on the ownership of horses was unstable and prone to losses due to enemy raids, war, injuries, horse diseases, cold winters, etc. High mobility inside the social system was the consequence. An ambitious individual was in the position to acquire wealth in horses and in kind through his service to a rich man, through bravery in horse raids, or through skillfull horsebreeding.

The Blackfoot had different kinds of societies for men and women, which were not dependent on kinship. Membership in a society had to be purchased. On the occasion of communal hunts or during the big ceremonies, some of the men's societies were appointed by the head chief as a police force to maintain order.

In the Plains Indians' society the settlement of crimes such as murder, theft, and adultery, was left almost entirely to individuals and families. Only during the seasons of communal hunting or the Sun Dance ceremony did the tribal police force come into action, appointed each session by the head chief to safeguard order in the camp.

Of utmost importance for the good of the tribe was adherence to the hunting rules declared by the chief the day before the communal hunt started. The idea was to prevent individuals from scaring away the buffalo herds, thus endangering the survival of the tribe. Non-conformist behavior was discouraged by ridicule and strong public opinion.

As mentioned above, the Blackfoot were hunters and gatherers even before the acquisition of horses. They mainly hunted big game, including buffalo, deer, elk, boar, antelope and wolves. The flesh of the killed animal was dried, pounded and mixed with berries and fat to make pemmikan, which could be stored for the winter and transported easily.

Besides the meat, all possible products of an animal were used; hides were for clothing and bedding and to cover the tipis, leather was made into moccasins, traps, saddles and ropes; bones into tools.

In addition to game and birds, the Blackfoot area was rich in many kinds of wild roots, turnips and berries.

The latter were consumed immediately or dried for the winter.

Transportation was originally provided by dogs on the dog-travois and later by the horse-travois. Dogs were also used to carry the poles and hides of which the tipis were made.

The nomadic cycle of the historical Blackfoot was conditioned by geographic and climatic factors. They depended on the erratic and incalculable seasonal migrations of the buffalo, on the occurrence of water and plants and, in equestrian times, on the availability of grazing grounds for their horses.

When movement was rendered difficult by cold and heavy snow, during the winter they were stationary in winter camps. If water, firewood, or game was exhausted in the vicinity, they moved to another site nearby. Shortage of these items forced them to spend the winter in individual bands. February and March, when the big buffalo herds started to drift away from their winter camps, were the most difficult months for the Indians. During this time, smaller game was hunted or, to prevent hunger, the bands separately followed the migrations of the buffalo.

In spring, individual bands frequently hunted in separate groups and collected wild turnips and roots. In early June, the scattered bands started to assemble for the tribal summer hunt, being summoned by the band leaders through special messengers. When all bands had taken their assigned place in the camp circle, the organized tribal hunt began under the leadership of the chief and the strict supervision of the tribal police. The communal Sun Dance ceremony, the most important

festival of Blackfoot ceremonial life, finished the summer camp which kept the bands together during 2-3 months. Then the bands separated for the fall buffalo hunt. At the same time, berries were collected and dried, and together with the dried buffalo meat they were preserved for the winter in as great quantities as could be stored and transported. The fall hunting season ended with the establishment of the winter camp.

About the beginning of the 17th century, the horse spread from the Spanish stock-raising settlements of the southwest, slowly diffusing towards the north and the northeast. By the middle of the 17th century the Plains Indians gradually became equestrian hunters. The horses were acquired through theft from and trade with the Spaniards and from other Indian tribes.

Horse trading took place mainly between nomadic and horticultural peoples. They traditionally exchanged products of the hunt for agricultural produce. Later, but before having direct contact with Europeans, they included European goods in their trading pattern. Firearms, traded to the Indians from British and French traders, were as much desired by Indians as were horses. Only the ownership of both a horse and a gun gave superiority in warfare.

The introduction of the horse brought new features into the Plains Indians' culture without significantly changing their traditional pattern of nomadic hunting. The buffalo hunt was dangerous and difficult in pre-horse days; other game had been within easier reach of Blackfoot hunters. With the advent

of the horse, buffalo became the most important source of subsistence. Buffalo meat became the staple food almost to the exclusion of other game. The tiresome and more dangerous hunting techniques of surrounding and driving the buffalo were given up gradually in favour of the chase for which special buffalo horses were trained.

Food storage was also enhanced, since horses could transport more than dogs. More animal carcasses could be carried back to the camps for preparation and more preserved meat could be transported when the band was on the move. At the same time, the bands were more mobile in the pursuit of buffalo herds.

Wars with neighbouring tribes were not undertaken for economic reasons, but in order to gain prestige through counting coup. The horse also contributed in this field, making warfare easier and safer by speeding retreats after the raids.

For nomadic hunters in aboriginal days the plains offered rich resources of animals and supplementary plant food. But due to seasonal climatic changes, times of plenty and of hunger alternated. The Blackfoot's dependence on buffalo meat aggravated hunger periods as the buffalo followed unpredictable routes of migration. According to Roe, (1951, p. 198 - 199) frequent occurrence of famine periods is reported for Plains Indians throughout known history, building in them a "physical and temperamental capacity for enduring

starvation during long protracted periods...". He argues that this "...could only be reached and maintained by ages of active, even if intermittent, practice..."

When hunting became so difficult that the Indians were on the verge of starvation this usually happened every year in January and February - the bands split up into small family units. This same reaction to stress has been seen previously in the description of Murngin dispersal during the rainy season.

Strict rules of behavior were in force throughout Blackfoot society; even remote relatives had the obligation for mutual help and altruistic behavior was expected by everybody. Poor families were given food by the wealthy. Generosity in giving was one of the most appreciated qualities of a Blackfoot man and the recognized responsibility of a band leader. Death from hunger was rare. A poor person who went to the butchering place was certain to receive some of the meat, for it was a rule that the on-looker should have a share. In very bad seasons, if hunters were able to kill animals, they would bring the meat to the band leader who had to divide it and distribute it in equal parts to every family, regardless of the number of family members. When game became more plentiful this method was abandoned and the individual family became responsible again for its own provision.

Whereas during the hunting season a person consumed several pounds of meat daily, in periods of hunger strict rationing was necessary and only one meal a day could be eaten.

Every piece of a carcass except the head was used and it is reported that even the leatherbags which had contained pemmican were sometimes boiled and eaten. Small animals were hunted which were not much appreciated when food was plentiful, even fishing gained some prominence in times of food stress. Under extremely acute conditions horse and dogmeat were eaten in limited amounts, though some Blackfoot denied that they ever ate horse meat, being too fond of their horses to kill them for food.

In pre-horse days the Blackfoot, like the inland Eskimo, occasionally left behind the poor and aged when these became a severe handicap to the moving band. This practice was later abandoned when it became an accepted practice of the wealthy to loan horses to the poor. Any disabled person could now be transported on the horse travois.

Before the introduction of the horse limited transportation facilities inhibited the accumulation of property, thus acting against social stratification. A similar situation is seen in the Murngin social system. The gap between rich and poor was insignificant and the communal hunt offered equal opportunities to all since all animals killed were equally divided among the participating families. When ownership of horses led to differences in status and wealth, society had to adopt measures in order to mitigate unsatisfied needs of the poor tribesmen. It belonged to the foremost duties of a wealthy Blackfoot to care for the poor, to give them gifts of food and horses, and to provide horses for

hunting and transportation on a loan basis. Formal gift-giving took place at the annual Sun Dance where the wealthy distributed all kinds of gifts to the less wealthy members of friendly Blackfoot tribes.

Early settlers reported that the plains were extremely rich in buffalo. Enormous herds drifted over vast areas in cyclic migrations. Many buffalo were seen in the year 1805 in the plains and even in 1874. Only five years later, in 1879, buffalo was exterminated in the Canadian part of the Blackfoot area. In 1884 the last buffalo was killed in Blackfoot country by a Piegan hunter (Ewers, p. 148).

In pre-horse days Blackfoot economy relied on the buffalo hunt for food and for a vast number of other products for daily use. Because of the danger in buffalo hunting and because of restricted means of transportation, only as many animals as needed for subsistence were killed. According to Ewers this equilibrium between men and buffalo was disturbed after the introduction of the horse. Mounted buffalo hunting became a prestigious sport; even young boys were expected to take part in the hunt, trying their skill on calves. The relative ease with which buffaloes could be killed, together with the still rather limited transportation facilities of a nomadic people, caused the wasteful slaughter of buffalo. Frequently, only choice pieces like tongue or ribs were taken, the rest being left to the wolves. On the other hand, enormous quantities of meat were consumed by rich and poor alike during feasting.

The fur trade in the 19th century brought still another dimension into native life. In the past, buffalo were hunted for food and personal provision, but now they were killed for commercial gain on a much larger scale than ever before. It should be noted, however, that the white population of North America was involved to a great degree in the extermination of the buffalo. Roe gives the following estimates of kills for the year 1873: (6)

Hides shipped by rail	754,000
buffalo killed and wasted (by whites)	754,000
buffalo killed by Indians	405,000
<hr/>	
total kill	1,913,000

As we shall see in the Discussion (Chapter III), the majority of authors do not hold the Indians responsible for the disappearance of the buffalo. But in any event, the death of the buffalo meant the end of the Blackfoot traditional culture. After extensive negotiations following the peace treaty with the U.S. government, the remnants of the Blackfoot tribes were settled as cattle raisers on three small reservations in Montana.

Available literature shows that the Blackfoot were exposed every year to stress situations due to seasonal changes.

This stress could amount to periods of near starvation according to the erratic movements of the buffalo herds. Blackfoot society found means to cope with such stress by splitting up the bands into family units in order to better use the sparse resources during the winter and by cooperation and mutual help. In particularly acute famine situations the band leaders assumed authority with regard to equal food distribution of the little that could be obtained. But losing the buffalo as staple food and as source of tools and equipment without having an alternative within their tradition, and at the same time being obliged to give up their homeland and the essential features of their mode of life, the typical Blackfoot culture came to an end.

C. The Basseri

The Basseri nomads migrate through the arid steppes and mountains south, east and north of the town of Shiraz in Fars Province, South Persia. They constitute a clearly defined group under the authority of one supreme chief. In the recent past they have been associated with other tribes in the Khamseh Confederacy, in opposition to the Qashqai Confederacy of hostile tribes neighbouring the Basseri. The total population of Basseri is around 16,000 persons living in 2,000 - 3,000 tents. Barth mentions a remnant group of the Turkish-speaking Nafar tribe which is politically dependent on the Basseri and around 50-60 tents of Ghorbati gypsies, who under the protection of the Basseri chief, migrate with the Basseri as despised but necessary smiths. The Iranian Army assumed administrative control over the tribe some time around 1956.

In their yearly cyclic migration the Basseri depend on the exploitation of extensive pastures located in a vast area from the hot and arid lowlands bordering the Persian Gulf to the high mountains in the north of Fars Province. The seasonal nature of the pastures makes migration necessary, as does the fact that the nomad sheep are not resistant to extreme hot or cold. In spring the pastures are good in the lowlying areas and in the middle altitudes, whereas the mountain meadows are still covered with snow. Gradually the pastures become dry and make an upward migration necessary,

these reaching a summer altitude of more than 6,000 feet. In autumn the pastures are dry throughout, but fields offer stubble for grazing. In winter the north is covered with snow thus forcing the nomads to turn south where the pastures are rather poor but useable at that time of the year. In winter as well as in summer individual migrations are local and short.

The Basseri are not the only nomads who frequent this area. They share with others a "natural" right, recognized by the sedentary tribes, to use roads, pastures, paths and wells on their traditional nomadic routes. Route and schedule in the yearly cycle of a tribe are considered tribal property.

Sheep and goats are of vital economic importance. Their products are milk, meat, wool, and hides. Milk is consumed in form of a kind of yoghurt or sour milk, and as butter, buttermilk, and as cheese of different varieties which can be stored for winter. Donkeys are kept for transport and riding though wealthier men may have a horse, and camels for heavy transport and wool. The animal products are partly used by the Basseri themselves and partly sold.

Of the many agricultural products used by the Basseri, at least a part is produced by the nomads themselves. Some crops are planted on first arrival in summer camp areas and are ready for harvest just before the time of departure. This seems to be a development of the last 10-15 years, and on the whole agricultural work is looked down upon by the nomads.

They prefer to pay some sedentary villager to do the work for them or, if they own a bit of land along the migratory route, they may let it to villagers on the basis of a tenancy contract.

For most of the necessities of life the Basseri depend on trade with the sedentary population. Their own products offered for sale are mainly clarified butter and other milk products, wool, hides, and sometimes livestock.

The tribe of the Basseri is divided into 12 descent groups of variable size called "sections" by Barth. The bigger sections are subdivided into groups called "oulad" (=family). Being a descent group above the level of a household unit, the "oulad" seems to be comparable with a clan in other societies. The oulad with a formal leader and joint grazing rights is the structurally most important group in Basseri society. Its leader or headman has a position which resembles that of camp headman, but he is responsible for all members of his oulad, whether they live in his camp or whether they are dispersed over other camps. Membership in such groups is transmitted patrilineally, giving to its members exclusive pasture rights in specific areas at specified times.

The actual communities in which the Basseri live are not oulads but subdivisions of these in the form of separate camps. The basic unit of Basseri society is the tent, consisting of a nuclear family with occasional additions of unmarried or widowed close relatives, and represented by a male head. The average number of persons in the tent is 57, according to Barth. The tents are square structures

of cloth woven from goat hair supported by tent poles along the sides and in the corners. While they are travelling, the Basseri use smaller tents.

Within the household the social organization follows a highly elastic pattern without rigid bonds of tradition. Though the husband is the head of the household in dealings with the outside, within the tent man and woman share the responsibility in individual proportions, women enjoying considerable authority in domestic affairs. Patrilineal descent is important in matters of succession but matrilineal and affinal relations tie households together. The rules of exogamy concern only relatives of first degree, and much close-kin marriage goes on. Barth writes that Basseri men prefer to remain with their agnatic and matrilineal kin but seek to establish as many strategically placed affinal bonds within the herding group as possible, trying to renew affinal ties in every generation through marriages.

Ideally the household is a self-sufficient and independent unit consisting of the husband, responsible for man's work and for the matters of migration; the wife, responsible in her domestic sphere; and several children for the various herding tasks. If there are no children to fill such jobs a child must be adopted from close relatives of the husband to serve as a shepherd and to inherit the estate, or a shepherd must be employed on a contractual basis which offers certain difficulties as it is a job of considerable responsibility.

According to Barth both devices--adoption of a child or employment of a non-related shepherd--serve to maintain the individual household as a self-sufficient unit, able to survive in economic relation with the external market, but in complete isolation from all other Basseri nomads. Parallels with the inland Eskimo again present themselves.

To facilitate herding tasks many households unite in small groups of 2-5 tents forming camps within the large migration group of the tribe. Nevertheless, the household heads are completely free to withdraw from one herding group and to work alone or to join another group. These herding units do not depend in any way on kinship considerations but on sizes of herds, personal feelings of friendship, etc. Herding units and camps are the primary communities of nomad society functioning in terms of the migratory cycle of the Basseri.

In winter months the available pastures are poor but extensive, causing a dispersal of the population. Herding groups are reduced to no more than 2-5 tents, whereas the rest of the year the camps are larger consisting of 10-40 tents migrating together. In summer a certain fragmentation again takes place but camps remain bigger than during the winter.

Every camp is represented by a leader, either by the headman who is formally recognized by the Basseri chief, or by an informal leader appointed by common consent but without formal recognition of the chief. The headman acts on behalf of the chief inside his herding group but he does not receive political powers from the chief. His main task is to hold

the camp together through his authority, and to establish daily agreement within the camp in all matters of migration.

Toward the outside, the camp is represented along patrilineal lines. Inside the camp all members interact frequently. Interaction with outsiders is clearly avoided even with other Basseri groups.

The supreme chief of the Basseri has a position of central and autocratic authority over all members of the tribe. Through his person the tribe is considered a political unit in spite of sometimes divergent origins. Members of the chiefly dynasty belong to a category entirely apart from the rest of the tribe. They are free to join any oulad and to use any of the Basseri pastures. However, they take little part in nomadic life. They are primarily landowners and, above all, the chief and his brothers belong to the Persian elite, owning houses in Shiraz and travelling extensively in Persia and abroad. Besides his inherited property the chief has the right to impose taxes on the tribesmen consisting of sheep and animal products to secure his generous and imperial way of life.

The authority of the chief is related to the distribution of pastures and to all aspects of migration, to disputes within the tribe, and to representing the tribe towards the outside. In his dealings with the oulads the chief might assign an observer or a special representative to the headmen, the formen usually drawn from a special group forming his entourage. In matters of law the chief exercises

his own opinion. In cases of inheritance he frequently refers to the religious judges in the villages.

Whereas the tribe as a whole is represented by the chief in political matters, trading relations with sedentary groups are maintained by individual efforts. Each nomad has stable relations with trading partners throughout the whole migration area. The villagers usually give goods on credit with interest rates of 5-10%, providing the nomads with all the necessities during the time of their stay. The nomads will pay their debts shortly before leaving or even in some future season and rarely escape their debts.

The possibilities the Basseri migration cycle offers are favourable enough to prevent actual famine. According to Barth, for the successful maintenance of the present organization of nomadic life a certain amount of wealth, (i.e. flocks) is essential. The stability of the pastoral population depends on the maintenance of a balance between pastures, animal population and human population. The available pastures set a maximum limit to the animal population that an area can support, and the pattern of production and consumption sets the minimum size of the herd that can support a human household. Various mechanisms are active within the system to compensate for fluctuations in the size of the flocks. For instance, loss of wealth caused by fully arbitrary events, by epidemics, inclement weather, etc--is compensated for by reduced consumption of

animal products, postponement of the process of subdivision and multiplication of households by the marriage of sons, and acquisition of additional animals through shepherding of the animals of more prosperous nomads. On the other hand, if more wealth than usual is accumulated, the reverse takes place: increased consumption, early subdivision of the household through early marriages, and its division into larger number of new units. Where these mechanisms fail to compensate for excessive loss or growth of herds, sedentarization follows.

With growing herds sedentarization by upward mobility takes place acting through the accumulation of wealth and its transfer to landed property. In payment for land, animals are drawn off from Basseri herds and transferred to sedentary buyers thus reducing human and animal population.

Sedentarization through impoverishment is another consequence of animal overpopulation. Through increased density, health and fertility of the flocks are reduced making them more susceptible to epidemics and animal diseases. Such diseases reduce the animal population of some of the herds below the minimum required to maintain a pastoral household. The herd owners struck by such disaster, and therewith deprived of the main purpose of nomadic activity, are forced to become sedentary and to look for work in the villages of that area. By sedentarization through impoverishment, human and animal populations are reduced as well.

An essential requirement for control mechanisms of this kind is the presence of patterns of private ownership of herds and individual responsibility for each household. Only when the population is fragmented with respect to economic activities can economic factors strike differentially, eliminating some members of the population without affecting others. The described processes suffice to maintain a balance between pastures, herds and people.

Barth does not give a description of what measures are taken in situations of actual stress, although seasonal changes and the nomadic cycle in itself bring about hardships to the herdsmen. Again, however, it is found that bigger units split up during times of relative scarcity (i.e. in winter) and on a lesser scale in summer when pastures become very dry.

No mention is made of the headman or the tribal chief being responsible for food distribution. As the individual household carries the sole burden of decision, it must be assumed that, particularly in emergency time, the tent has the responsibility for its members assisted by consanguineal and affinal relatives, if they are in a position to do so. This assumption is strengthened by the fact that it is the basic family unit which decides if and when to give up nomadic life and settle down.

D. The Cubeo of South America

The Cubeo Indians of South America live along a small stretch of the Vaupes River and several of its tributaries in the northwest of the Amazon Basin, within the state borders of Colombia. The River Vaupes, joined eventually by the Rio Negro, drains into the Amazon River. Its rapid flow is interrupted by numerous cataracts. The Indians prefer to settle at these points, believing them to be the locations from which their ancestors emerged.

The landscape is of the tropical forest type and almost impenetrably dense, forcing most of the activities of the people and concentrate on the river. Most settlements are separated by a canoe ride of about an hour or more, although along the Cuduiari River tributary some residential sites are located only a few minutes apart.

The Cubeo are members of the Tucanoan-speaking language group of lowland South America. Goldman gives their number as 2,500, but he thinks that the population was greater in the past. The native concept of the tribe is vague. It refers more or less to shared language, descent and customs. The tribe is composed of three exogamous sibs (6). A phratry - being a confederation of sibs bound by rules of exogamy, common origin and descent - is of greater social weight than the tribe. It is differentiated by rank, history and place of residence.

The basic segment of Cubeo society is the sib. It is an exogamous, patrilineal, patrilocal descent group believed to stem from a common ancestor through the male sib members.

Politically and economically independent, a sib is able to move away from a phratry grouping and to join another one if its members feel it to be necessary. Sib members often do not live together as in the case of women who will join their husbands' sib after marriage.

Most families of a common residential site live in the long house, or maloca, which serves as dormitory and community center for social and ceremonial activities. The ideal is that all households of a community live together in a maloca, which may be large enough to house 16 individual "compartments". In reality some families live in small houses alongside the main maloca, using it as their sib center. They may move to another site forming a subsib while still maintaining their attachments to the parent sib. "Independents" or "Satellites", so called by Goldman, have separated for personal reasons such as quarrels with the maloca headman. Such freedom of choice as to the group a man wants to live with has been observed in the cultures so far described including the Eskimo.

The most important kinship relationship in Cubeo society is that of brothers. Under the rule of patrilocal residence, brothers live together in the same maloca, in the same community, or nearby. They share economic and ceremonial activities. Sisters are included in this close relationship until marriage. Monogamy is the most common form of marriage, although the maloca headmen usually have

several wives. Whenever possible, brothers will exchange their sisters for their future wives. Orphans might be adopted into a family.

A typical feature of Cubeo society is the ceremonial friendship, an exceptionally close relationship between particular members of the same or of the opposite sex. By a certain ceremony, sib or phratry mates may become as close as lineage kin, with all respective duties and privileges of mutual help and gift exchange.

As described above, the concept of tribe is only vaguely defined. The Cubeo do not have a name for it nor do they regard the tribe as representing any kind of political entity. Although the phratry is more clearly seen by the Cubeo, it does not exert political authority. There is no chief, no political council, neither for the tribe nor for the phratry. It is the sib, the basic segment of Cubeo society, which has a name and a headman of some standing, and which is autonomous in political and economic matters. The Cubeo sib can be viewed as corresponding to a "clan" in other cultures, and possibly to the "oulad" of the Basseri.

The headman is the owner of the long house or maloca. When he dies the house is abandoned and a new one built. Those of his sib mates who accept his authority will live with their families in his maloca. Two types of leaders can be distinguished; the man of qualities and skills, and the owner of the house. The former may be headman but not necessarily the case. Even so he will be a leader in activities within his own sib. The latter is the organizer of drinking

parties and of ceremonies, the mediator of quarrels, the keeper of order and morale in the house, and responsible for hospitality, but he has no punitive authority. He is expected to direct collective working parties in preparing a new clearing, but he has no right over a person or over another person's property.

In Cubeo society, leadership is characterized by giving more than receiving. The headman dedicates all his efforts to the well-being of his community which has little to give him in return. He does not have economic or religious power nor does he have to be a war leader. With regard to agricultural activities, individual household heads sometimes decide the steps to be taken, but more often a joint decision by several men is reached.

In spite of clearly leveling features, seniority plays a certain part in Cubeo kinship relations. Respect and ritual precedence, but not authority, is granted to a senior person. As in the case of a headman or a man of extraordinary skills, a senior member of the group is expected to give more than he receives. The same applies to a person who strives for leadership in his community.

Shamans are the principal holders of power in Cubeo society. There are two kinds; both know how to cure and to kill people, but only the principal shaman can take the form of a jaguar, which makes him superior in malevolence. A shaman knows how to control the weather and the water level of the river and tutelary spirits are at his command. Anyone can become a shaman if he is accepted by the other shamans. Some shamans engage in competitive battles with one another. Only older men will become jaguar shamans

when they are more malevolent and more aggressive. Since illness is attributed to human sorcery, the act of curing is equivalent to counter-sorcery. It seems that shamans do not exert any political power.

Practicing slash-and-burn horticulture, the Cubeo periodically give up a site and make a new clearing after three to five years' use. These movements always take place within the boundaries of the sib's territory. This territory is of such size that the sib members can circulate on it freely and reoccupy land after the 15 years or so necessary for it to become workable again.

Women are responsible for the cultivation and preparation of bitter maniok. The maniok garden is their domain, only the clearing has to be worked by their husbands or brothers. Besides maniok, a number of less important crops are planted. Whereas every Cubeo man is a fisherman, not everybody is a hunter. Participation in hunting parties is voluntary. Hunting in the forest is rare; most game is shot along the river. Hunting is done when for a short period fish are not as abundant in the river. Besides bitter manick the basic food of the Cubeo is fish. The Cubeo are very skilfull canoemen, and strongly oriented toward the river. Fish are abundant in these rivers. Every male knows how to catch fish by various techniques, individually or in organized collective fishing parties. Fish are dried and smoked, but cannot be stored for more than about two weeks.

Normally, the Cubeo do not experience periods of real famine, although they report that their ancestors were exposed to hunger much more than they are themselves. Maniok is a reliable crop, fish and game are available, and supplementary food is cultivated in the gardens or collected in the forest. There are seasonal differences however. In the dry season fish are scarce, and small tributaries may even dry up. The rainy season also brings some scarcity because fish and game are difficult to catch when the river is high and the cataracts are dangerous. The best seasons are the periods of falling or rising water.

The Cubeo attitude toward food is one of temperance. Since meat and fish can be preserved by drying and smoking for a short time only, there is no point in catching more than necessary for the moment. Besides, the Cubeo are moderate eaters, never eating the limits of their capacity, even if enough food is available. Men are expected not to feel hunger during the long drinking parties when no food is served by the hosts.

Food is offered only within a household or sib. Outsiders are not fed by the Cubeo. Eating is considered to be a rather intimate activity, and the presence of strangers during a meal is embarrassing. In the maloca the individual households have casual meals separately during the day but eat together formally in the evenings. Food accumulation is not thought to enhance prestige; only the ability to offer to the invited of another sib more chicha

(fermented drink from masticated maniok) than can possibly be drunk during a feast gives social status to a sib.

The catch of a fisherman is taken home individually but distributed to all households in the maloca. The same applies to game. If a catch is unusually abundant some of it may be sent to the satellite communities or they will be invited for the meal. The meat is boiled separately, but eaten jointly by the whole community. If some food remains, it is distributed to households that for some reason do not ordinarily join the hunt. Also, meat which is smoked by individual households is consumed later at a communal meal.

Hunters who kill game in the territory of another sib will give a substantial part of the meat to households of the host sib. The remainder is distributed in their own maloca. Travelers are allowed to fish along the river even on the territory of another sib as long as they remain a short time only and do not show any signs of settling down. During the dry season when upper parts of a river are without water, people who live in those areas are free to fish further down along unoccupied stretches of the river.

Hospitality and the exchange of food are regulated by traditional rules along the lines of kinship. Normally, a Cubeo would not allow his sibmate or phratry mate to experience serious hunger so long as he had something to

share with him. However, it may happen during times of scarcity that a person will not be willing to share his food. He will not be reprimanded by his sibmates but, as Goldman notes (p. 84), "the non-sharers at the end will have to leave the house". A chronic non-sharer must count on being killed one day by sorcery.

The Cubeo form part of a complex trading network spread over the whole northwest Amazon region. Economic dealings with whites are constantly increasing in importance, either directly or through middlemen. Most Cubeo men work at some time for the white rubber entrepreneurs from whom they have learned some Spanish or Portugese. For their labor they receive Western articles. Women, on the other hand, trade farinha, a flour made of bitter maniok, to the white rubber merchants. They are also paid with Western goods which often, however, do not reach the value of their efforts. Traditionally, all direct trade is executed by women. In general, the attitude is not to quarrel over a bargain, but to show generosity - to take less than one gives. Intertribal trade is focused on special articles produced by the experts of a particular tribe. The circulation of goods within the tribe cannot be understood so much in terms of trade but of a patterned exchange of similar objects among kinsmen, each individual knowing his obligations towards his reciprocals. The headman is not of importance in Cubeo economy.

Within the framework of their social system, the Cubeo do not have a person or an institution in charge of detecting or punishing crime. All cases are discussed and decided upon by the entire adult community. In minor cases, the headman acts as mediator to calm tempers. Serious offenses like murder, sorcery, persistent adultery, repeated theft of food, etc. are believed to have been committed in anger. Therefore it follows that the best decision will be equally taken in anger. It is the headman who tries to arouse the passions of his community members against the culprit who will do well to disappear for some time until tempers have calmed down. Drinking parties are good opportunities to provoke such a quarrel with the offender, at the end of which he is asked to leave the community.

Murder will be avenged by the members of the victim's household and lineage only; other kinsmen do not interfere when they are not involved personally. Theft of food or of the sacred plant, mihi, is taken very seriously. In certain cases, the thief might be punished by death. Theft of objects is not felt to be a crime in terms of the Cubeo code of behavior. Adultery is very common and a cause for heated quarrels: The woman is always considered as being the one to be blamed; men are the innocent victims. Her husband and her parents-in-law can punish her with a thrashing. Quarrels between the husband and the lover of his wife will calm down eventually.

Cases of sorcery, which supposedly can be committed only by men, are felt to be very serious and dangerous offenses. The Cubeo think a sorcerer must be killed either by direct attack or by counter-sorcery. However, Goldman reports that in all cases he had heard of during the time of his fieldwork, men accused of sorcery left just in time to avoid persecution.

All sibmembers and phratry members have the same right to sustenance and well-being. The ideal attitude of the Cubeo is that of avoiding quarrels. If tensions arise, they prefer to withdraw and move out of the maloca to settle down at some distance. Quarrels are very frequent, however. Practically every drinking party ends in a brawl, old antagonisms are brought out and played up under the influence of chicha and narcotics. Brothers and sibmates come to the help of their kinsmen until the whole maloca is in an uproar. Some of these quarrels end as quickly as they erupted, the old men or the headmen doing their best to pacify the community. Other quarrels lead to minor violence and more often they end when tempers are calmed, but mutual hard feelings remain and will erupt at some later opportunity. The involved sibs will not invite each other for some time to drinking parties.

All quarrels Goldman witnessed during drinking parties concerned sexual matters (p. 216). They were provoked by justified or unjustified accusations of adultery or by

remarks on a man's virility. From there it was a short step to more insulting and menacing utterances involving the whole sib of the quarreling parties.

Adultery is the most common reason for divorce in Cubeo marriages. Women seem to be sexually aggressive in the whole Amazon Basin area, becoming more licentious with age. Adultery between young married women and older married men is very frequent. In order to reduce the adulterous passions of his young wife, a husband may give her an antiaphrodisiac. Most quarrels over the infidelity of a wife will quiet down sooner or later if the suspicion of sorcery is not introduced into the matter.

Sorcery is much feared by all Cubeo. All illness and each unexplained death is thought to have its origin in sorcery. Such accusations are possible even among sibmates. In fact, human sorcery is feared much more than that of non-human spirit beings.

Constant warfare was carried on in the past and some persisted during the time of study. Between sibs of intermarrying phratries small raids are common. Raids from other tribes are much feared. These take place mainly in the dry season when an enemy can come overland, and when they might escape unseen. Men are killed by the raiders, women and children are taken prisoner. In the past the slain enemies were consumed by the victorious warriors.

Taboos are mentioned only briefly by Goldman. He was told by the Cubeo that in the recent past no animals whose

names were used in sib genealogies or carried by sib members could be eaten by anybody from that sib. This taboo is no longer in force.

Drinking parties are held at certain occasions such as initiation rites, mourning, naming of a child, etc., but very often for their own sake. There are drinking parties for a sib alone or to entertain all sibs of a phratry. Goldman writes that all drinking parties have a markedly erotic connotation which in the end can only stimulate adultery, since this feasting does not take place for potential marriage mates but with relatives from the same exogamous group.

By far the most complex of Cubeo ceremonies are those given for the memory of a deceased relative at some time, perhaps one year, after his death. The mourning ceremony consists of two parts. In the first part, lasting three days, masked dancers appear representing familiar animals as well as some of the mischievous spirits of Cubeo mythology. Dancing and singing go on until the last day of this first phase, and a symbolical dance represents intercourse between masked men and the not-so-young women. The second part of the mourning ceremony takes place one month later, this time for one night only. After a dance of several hours the masks are burned, and sexual license follows between the men and the wives of their phratry and sib mates, while an unmasked dance goes on all night.

Only on the following morning is the ghost of the deceased sent away, subsequent to a ritual in which the substance of the dead is magically absorbed into the body of the sib after his burned and pounded bones have been mixed with chicha and consumed by some adult members of the sib.

Stress from within the social system seems to be more important in Cubeo society than stress from the environment. Sex is a cause for quarrels which can lead to war and killing. Resilience in this respect is seen in the ceremony of sexual license. Other stress situations like crime, sorcery, and quarrels are met by the Cubeo with respective counteractions. As easily as individual families can leave the main body of the community, they can join it again when bad feelings have been forgotten.

E. The Bemba of Northern Rhodesia

The Bemba are a Bantu offshoot of the great Luba tribe, inhabiting the Tanganyika Plateau in North eastern Rhodesia. Before the coming of the Europeans at the end of the last century, their rulers governed the whole area between the four great lakes of Tanganyika, Nyasa, Bangweolu, and Mweru. As a warrior people they came to this region at the end of the 17th or beginning of the 18th century, pushing back earlier immigrants of the same origin. Only after the establishment of the British South Africa Company at Kasama did the military exploits of the Bemba come to an end. Since 1890 the Bemba have been in permanent contact with Europeans through various missions, schools, government, and medical stations and European trading companies.

The Bemba know three alternating seasons: wet, dry and windy, and hot. Seasonal variations in temperature are marked, and due to the altitude of more than 1000 meters, the nights are rather cold.

The Bemba live in small communities of thirty to fifty huts, scattered over a wide area. The settlement where the paramount chief lives now has up to one hundred and fifty huts, a figure which was even higher in earlier times. Bemba society is organized matrilineally as to descent, clan affiliation and succession to office. With regard to marriage, matrilocality is the rule but patrilineal ties may determine residence as well when a man returns with

his family to his own mother's lineage group after a number of years spent in his wife's village. Matrilineage and patrilineage are of evenly balanced importance to the Bemba with regard to kinship obligations. Polygamous marriages are common.

The nucleus of a Bemba village is the matrilocal extended family consisting of a headman, his married daughters, their husbands and children. Daughters are much appreciated because together with their husbands and children they make their father head of a strong economic unit. A girl lives with her mother and her sisters and even after she has settled in her husband's village she constantly returns to her mother. Before marriage a young man goes to live in the village of his wife-to-be, where he works for his father-in-law until mature age when he becomes the head of a matrilineal family himself. The relationship with in-laws is surrounded by taboos, thus a husband does not eat with any of his wife's relatives. Particular emphasis is given to the peaceful relationship within the communities. Quarrels are avoided and a constant effort is made to tolerate insults and to prevent friction. Among commoners, personal ambitions are often associated with witchcraft.

According to Miss Richards, the dominant institution of the Bemba is a highly complex political system. A central characteristic is the particularly autocratic chieftainship. The paramount chief is head of the whole tribe. He rules over his own district, located in the heart of Bemba country.

He is overlord of a number of territorial chiefs who govern districts which are about similar in size to his own district. They come from the same lineage of the royal clan as the paramount chief. Each territorial chief has one to two subchiefs under him from the royal clan or possibly from more distant lineages. Beneath sub-chiefs are the headmen of the villages. A hierarchy of forty or fifty officials is attached to the court of the paramount chief. Being of royal descent, they are responsible for certain ritual duties and act as hereditary councilors for the Bemba tribe. Not only the court of the paramount chief, but also each chief and sub-chief has his own councilors with legal and executive functions.

The power of the chief is based on his followers' belief in his supernatural powers over the land and over the well-being of the people. This is granted to him through the guarding spirits which he inherits from the line of his dead predecessor and through his ownership of the sacred relics of the tribe. The main task of the chiefs is the execution of agricultural rites believed to secure the food productions of the tribe. Traditionally, the chief has power over life and death of his subjects. He is the owner of all lands with associated food products, game and fish, and labor of the people.

A strong bond of mutual obligations ties chief and subjects together. The chief gives the right to use the land to his followers, he protects them and represents them to the outside. In times of shortage he provides food for the needy. The subjects, on the other hand, give tribute

in return, consisting of labor and products of their agricultural and hunting activities. As a warrior people, the whole Bemba economic system was based on the conquest of territory for booty and tribute, and on the labor done by commoners and slaves for the chief. Thus, the wealth of a chief did not consist of accumulated goods or money, these being unknown before the coming of the white man, but rather of the amount of service he could secure for agricultural work or military service. Personal favors play a part in the appointment of a village headman but, in addition, the headman-to-be must prove to a chief that a group of his near relatives is willing to accept his authority and live with him. Only then will he receive the permission to build a village on a site within the district of the chief.

The economic system of the Bemba is closely linked to the kinship system. This is manifested in an extremely complex network of giving and receiving large quantities of cooked and uncooked food. The exchange of food takes place both between commoners of different degrees of relationship, and between chiefs and commoners. Chiefs do not receive cooked food from commoners. It marks their high status that they do not share a meal with a commoner, but that they are given supplies in homage, which they can distribute as they wish. Prestige is associated with the ability to distribute food rather than to own or to consume it. The supplies procured by tribute labor and by slaves are given in kind or in food to the officials attached to the chief's court, to politically or ceremonially

important persons, and to visiting chiefs. Food is distributed according to very definite rules; if it is given as a form of payment for a service done, the serving will be of another type than if it is given for compliment.

Food is rarely prepared by one woman alone.

Cooperation with other women of her maternal kingroup is close throughout her whole life. Food is not cooked for the own household alone, but for neighboring huts as well. Its distribution follows fixed rules of behavior toward kinsmen and visitors. The food gifts offered oblige the recipient to reciprocate and, if possible, to return more than he received. Supplies are shared in the phase of preparation according to kinship and age prerogatives. The rules of correctly distributed food are enforced by the fact that no activity connected with food preparation can be carried out secretly and also by supernatural sanctions. Thus, a relative who dies feeling that injustice has been done him by the refusal of food can return after death and bring misfortune to the person who insulted him. Food taboos are frequent, particularly in respect to pregnant women or to chiefs, and others are prescribed by a native healer to cure illness.

Organized labor is common. Men or women offer their help temporarily to a householder in harvest time, for instance.

The Bemba men also form economic units of cooperation. Their agricultural tasks are done jointly for greater efficiency, but also for the pleasure of it. Hunting and fishing are undertaken commonly.

As swidden agriculturalists, the Bemba change the site of a village every four to five years, but at the same time, the village's composition and its size may alter. A main characteristic of Bemba tribal life is the high mobility of its members. The status of a chief is reckoned by the number of huts around his court. The village is a kinship unit in which the majority of inhabitants are directly connected with the headman. Its composition is not rigidly fixed and the head of an individual family is free to join whichever headman he wishes following his liking for the status or wealth of a particular village headman. Newer villages consisting primarily of one matrilineal family tend to be smaller than old villages, which consist of several matrilineal extended families. In modern villages the inhabitants are no longer close relatives of a headman a condition which tends to lessen his authority.

The Bemba win their subsistence through swidden agriculture enriched occasionally by some hunting and fishing. Wild plants and fruit are gathered in the bush. Cattle are rarely owned and sheep and goats are kept in the villages though their meat is eaten almost exclusively at ceremonial occasions. The consumption of milk is unknown.

Millet is grown on newly-burned patches for two years; then crops of secondary importance are grown on mounds built on these places. New patches for millet are cleared every year. When all the land around a village has been used, the villagers move to a new village site with unused bush for cultivation. This period takes about four to five years. As fertilizer for their gardens the Bemba use the ashes from cut branches and underwood piled evenly on the whole garden patch before burning.

The agricultural products harvested only once a year are stored in granaries made of mud and located around the village near the huts. Millet, the staple food, may be stored for more than one year but seldom lasts that long. Chiefs were in a better position to make their supplies last until the new harvest. Leaves, vegetables and some pulses are dried and stored in the granaries but on a far smaller scale than millet. Most millet supplies last about nine months. During the three months of heavy rains until the new millet harvest, the only cultivated crops available are edible gourds and small quantities of maize. In the bush only fungi and caterpillars are found at that season, which means that during the months without staple, only foods with low nutritive value are available. Thus, every year some months of plenty and some of hunger regularly alternate.

Audrey Richards gives particular emphasis to the behavior of the Bemba in the face of hunger and to the

circumstances regularly leading to such situations. As mentioned above, the Bemba rely on one staple food only, which due to climatic conditions can be harvested only once a year. Millet in form of a porridge is served with vegetable or, if available, with a meat or fish relish. Meals are prepared when the women feel like cooking, when they have gathered enough leaves for a relish, and when they are not too tired. Other foods like pulse, cucumbers, ground nuts, etc., all cultivated in small amounts, are served either as relish or as a snack sometime during the day. Eating outside the main meal is considered to be childish and is discouraged in adolescents. In spite of their reliability, sweet potatoes and cassava roots are not thought to be a staple food. They do not serve as an essential substitute for millet during the hungry season. Fruits are limited to two months and pulse, which could be an important accessory food in terms of vegetable protein, lasts only a part of the year, as do green vegetables. Game is scarce in the region, and fishing does not provide an important addition to the diet. The seasonal changes in the supply of food leave the Bemba without their main staple food for about three months. This is the time of heavy rains and no other cultivated food is available. Fungi and caterpillars, neither being cherished very much are then collected.

Maize ripens a little later but is not cultivated on a satisfactory scale. On many occasions, beer is made of millet, also reducing the supply of the staple grain.

This food situation constitutes a vicious cycle from which the Bemba find it difficult to escape. They do not have enough food, so they are hungry; they are too hungry to cook or to gather wild plants for food, so there is not enough food. All activities slow down during the hunger season. There is little or no dancing at that time of year and ceremonies normally connected with food distribution are not carried out now. Since supplies are secured through individual efforts or scavenging, there is a considerable variation in the amount of food available during the time of need, leaving some households or some villages in a better condition than others. In theory, barter or food buying could be carried out. The Bemba, however, lack any tradition in marketing and if they resort to such transactions, it is invariably to their disadvantage. Meat is never eaten for hunger alone, sacrifices do not take place in this season and, as mentioned above, milk is not consumed in any form.

A hungry person has the right to ask his chief for food, or to take it from the chief's garden. He can also ask his relatives for it if they are better off than he. If the whole village is suffering from food scarcity, he can move with his household to more distant relatives living

in a remote area and stay with them, enjoying their hospitality during some weeks or even months until the new crop is due. A wife who lives with the relatives of her husband might leave him and join her own family.

During the months of food shortage, stealing of food is frequent, but the supplies in the granary are practically never touched. The granary is taboo, so much more as millet can only be pounded in public. It can happen, however, that an individual might "borrow" from his kinsman's garden. If he does so secretly, it is regarded as theft and may be punished. If he admits and describes his motivation in terms of his or his family's hunger, it is pardoned and he has only to compensate for the amount taken. If someone takes food in times of plenty, it is not considered as theft. If the thief is not able to compensate for his theft, a curse might be temporarily placed on some of his property. It can be lifted after he has compensated his victim. Such a curse serves as a powerful sanction against theft in times of scarcity.

The cause for food shortage is recognized by the Kamba as deriving from the sequence of the seasons. In particularly severe years the cause may be seen as some failure of the chief. Through his supernatural powers and his contacts with tutelary spirits, through his observance of a particular way of life, and through his leadership in agricultural ceremonies, he is responsible

for sufficient food supplies. If he neglects his duties, famine may strike his followers who begin to grumble or threaten to leave him and look for a more powerful chief.

A complex set of rituals surrounds all agricultural activities carried out by the chiefs and individuals, with special emphasis on magic directed at making the supplies last longer or giving food the ability to nourish better and with lasting effect. A person who owns considerably more supplies than the others or whose supplies last much longer is believed to have used supernatural powers. Special counter-magic is applied against the sinister doings of such sorcerers and against those who by sorcery steal the supplies out of the villagers' granaries or take the force out of the grains so that people may remain hungry after a meal. In order not to be suspected of sorcery, people abstain from conscious competitive accumulation of food. Also, the knowledge that they have to share their food anyway with other households makes a housewife reluctant to work harder and to keep a bigger supply than other households.

The system of mutual food-sharing with the bilateral kin gives a certain amount of security to the individual during the hunger period. The custom of making food gifts to relatives may be discontinued for some time, but a housewife can still share her family meal with those who have less than she has. The Bemba know very well the effects of constant hunger on their well-being and on

their output of energy. However, being used to irregular and insufficient eating, they do not seem to be greatly disturbed by being without a meal for some days. Such situations do not provide a stimulus to change the state of affairs. Food problems are constantly discussed but nothing is done. Miss Richards rarely observed any ingenuity or particular initiative in this respect. She asserts that the deficiencies are not so much due to particular environmental defects, but rather to traditionally fixed difficulties of production and storing. Available food sources are definitely not fully exploited.

As an example of how a solution can be found, Richards writes of a neighboring tribe, the Bisa of Cilubi Island on Lake Bangweolu. By common decision, this tribe had changed its staple food from millet to cassava, giving up traditional methods of agricultural work because of environmental conditions; living on an island they run short of trees necessary for burning their gardens. As another example, one Bemba village voluntarily adopted the agricultural practices of the neighboring Bisa when in a year of locust raids they changed from shifting agriculture, which is connected with tree burning, to the cultivation of cassava in steady gardens after they had used up all the available trees. Richards also speaks of the following incident. Some time ago the authorities strictly forbade the cutting of trees to make the burned

gardens of the Bemba. No alternatives were suggested to them, no new methods taught. The result was that in that year no millet was cultivated and the people were on the verge of starvation. They had to be fed by the government.

Miss Richards explains the passive attitude of the Bemba in the face of hunger as due to the traditional pattern of a warrior people. In the past, food production was left to slaves and to conquered people. Even in the time under study, the members of the royal clan did not learn to cut trees. The abilities of a warrior continued to be more appreciated in a young man than those of a gardener. A young boy did not have any individual responsibility for gardening, he started with serious agricultural work only after he had children of his own. Modern migratory labor destroyed the traditional pattern, leaving the Bemba in a changed condition over which they have little control.

To summarize, stress for the Bemba is due to environmental combined with cultural factors. The yearly hunger period is not efficiently counteracted through exploitation of possible resources nor through intensified application of existing techniques and not even through efficient marketing. Such resilience as can be found comes from within the social system through traditions which had survived the transformation of the tribe from a warrior people to agriculturalists.

III. Discussion

It is unfortunate that few detailed descriptions of major stress situations in so-called primitive societies exist. Exemplary is the report on typhoons and the resulting famine on Tikopia Island by R. Firth (1959). This has been discussed in IIASA Working Paper WP-74-2 by this author (Appendix A). David M. Schneider gives an account of the behavior of the population of Yap during and after a typhoon. In his short description Schneider does not provide sufficient ethnological background data to make his observations suitable for this comparative work. Other authors briefly mention hunger situations in primitive societies, but without elaborating on the behavior of the respective population group. Disaster studies exist for traditional and modern societies, however, they concern the sociologist much more than the cultural anthropologist. Very often, their attention is focused mainly on the steps taken by the authorities after the disaster, and on the behavior of modern people of "Western" orientation.

In reviewing available detailed descriptions on primitive societies, it was found that nearly all are exposed to certain dominant stress situations which bear the germ of destruction of the traditional culture if they are not counteracted by some means. This inquiry shows that stress situations are caused by environmental

and by social factors. Social stress clearly dominates in Murngin and in Cubeo life, whereas environmental stress is a permanent burden on Basseri, and Bemba, as well as on the Eskimo. Stress on the Tikopian society was also caused by environmental factors. Here incidence is not regular and intensity might vary. The particular stress situation which made the traditional pattern of Blackfoot culture collapse is indirectly environmental, but aggravated by social factors.

The Murngin live in a tropical coastal environment with a rich supply of animal and vegetable food. Easy living is guaranteed throughout the greater part of the year. Only in the rainy season does food become scarce, making it difficult for large residential groups to gain subsistence resources from a particular area. The Murngin are well adjusted to their environment. Their simple hunting and fishing techniques suffice for the purpose of satisfying daily needs and gathering activities make it necessary to move about the clan area for most of the year. In order to be mobile, few belongings are taken along. Windbreaks and stoves can be made from quickly gathered materials on the site where they intend to spend the night. Larger ceremonial objects are destroyed so they do not hinder mobility. When food becomes scarce the otherwise large hordes split into small family groups and disperse over a wider area of the clan territory, sometimes even

onto the territory of a friendly clan when their own land is particularly poor in food resources. Cooperation in food gathering activities, food distribution after a good catch, food exchange, and the obligation to feed certain reciprocals when they are hungry all serve to prevent severe need.

Tropical forest and river offer sufficient food supplies to the Cubeo. The agricultural efforts of their women contribute considerably to the daily diet. Food is preserved on a limited scale tiding them over days of lesser hunting or fishing luck. The rainy season brings about a relative food scarcity for a short period, but actual famine is not known. Since food supply is never seriously short in Cubeo society, it seems to play a different part than in societies which experience real hunger. Overeating is unknown because they do not have to compensate for hungry days as in the case of hunters-gatherers. Moderation is emphasized by the embarrassment toward onlookers while they are eating and by the fact that only relatives of one's own clan are served food. Eating is considered necessary, everyone should get his share through fair distribution. Patterned food distribution does not serve to satisfy hunger, but rather deepens the feeling of kin relationships and family or sib unity.

In aboriginal times the Plains offered rich food resources to the nomadic Blackfoot, but seasonal changes caused an alternation of good months and poor months with periods of real famine not unknown. Provision had to be

made to survive these periods. Obviously, the Blackfoot had a number of ways to cope with the particular difficulties of their environment. They got to know the migration habits of the buffalo and of other game. Big communal hunts were organized. A tribal police safeguarded the success of the hunt. As in the case of the inland Eskimo mentioned above, individual bands parted from the camp when the herds drifted away and followed the animals in small family units for better use of scarce resources. Preserved food in form of the very nourishing pemmikan could be stored and transported easily, and even better after the acquisition of the horse. Equipment for daily use and for the construction of their tents was efficiently transported on the travois.

In pre-horse times old people who were the least productive members of Blackfoot society were occasionally left behind when the group had to move on. The same behavior has been noted with the Inland Eskimo. Obviously it was done reluctantly and this custom was given up when people could be transported on the horse travois. It shows that in stress situations the community was more highly valued than an infirm individual. The horse was well integrated into Blackfoot culture, not changing the original pattern of nomadic hunters, but giving it new dimensions. New mechanisms had to be mobilized where old ones ceased to work. Whereas in pre-horse days the band leaders were responsible in bad seasons

for dividing and distributing the meat of jointly killed game to all families in equal parts, later the wealthy were obliged to give of their own supplies to the poor, with the traditional pattern of the strong giving to the weak remaining in force. Horse ownership had created a previously unknown stratification within Blackfoot society. Band leaders, who for obvious reasons belonged to the wealthy, remained under the same obligation to give to those who had less. Included was the obligation to give or lend horses to the poor in order to give them the ability to provide their own food.

Until acquisition of the horse at least, Blackfoot society seemed to be in a state of balance with its environment. It is not easy to determine exactly when this balance was disturbed or through what agents. Obviously many factors were effective simultaneously. According to Strong (in Roe, 1955, p. 332 f.f.), before the acquisition of the horse the Plains Indians did not use practices in hunting that led to mass slaughtering of the buffalo. Kroeber (Roe, op. cit) is also of the opinion that in pre-horse days the Plains Indians did not hunt the buffalo on a large scale. Watt (1968) gives the following reasons as principally responsible for the annihilation of the buffalo:

"there was a total absence of any attempt at management;

seven-eighths of the animals killed after 1830 were females. Thus the reproduction potential of the population was destroyed;

the buffalo was an extremely stupid and un-aggressive animal. Males weighing a ton or more were herded into flimsy corrals that any three bulls could have smashed into matchwood. Hunters were allowed to ride unmolested through herds that could have stampeded and killed them."

These reasons do not explain why the buffalo was reduced almost to extermination. Roe, who carefully studied this problem (1955, p. 339-340), writes that he knows of "... no evidence either of fact or of informed opinion which indicates that prior to the 'high-pressure' methods of the fur trade the buffalo were in any danger of extermination...", although mass-slaughtering methods can be shown through archaeological findings to have been used already in pre-horse days.

Whatever the immediate causes were--easy hunting, wasteful slaughter for choice food pieces or for hides, interference of white traders and hunters, etc--the fact which is relevant in this context is that after the Plains Indians in general and the Blackfoot in particular had lost the buffalo as their main staple food and source of a large number of their utilitarian objects, the traditional pattern of the Blackfoot culture was irreversibly destroyed. What was left were North American Indians settled by a government agency in surroundings that were not their native land and forced to live from cattle breeding, rather than traditional hunting. Under the pressure of this new situation, the complex network of interacting beliefs and customs, of lifestyle and, of values,

which had formed around the horse, was disrupted forever.

As mentioned in the Introduction, the Bemba offer a problem of a special kind since in historical times they were forced to give up their way of life as warriors and assume a life of sedentary agriculturalists. It will be seen that their behavior under the threat of famine gives an impression of unexpected indifference. In an area characterized by the regular occurrence of hunger months every year, not all the potential resources are utilized. A staple grain is kept that can be harvested only once a year. It is not cultivated in sufficient amounts although it could well be stored until the next harvest. Bitter manioc, the starchy root which is used by neighboring groups as staple food and which is easy to cultivate and harvest although troublesome to prepare for consumption, is not even considered as possible replacement for millet in the hunger period.

The protein-rich ground-nuts and pulse, which could be stored for much longer time than the Bemba actually do, are eaten as occasional relish and serve only unsatisfactorily to bridge the gap. Richards explains this attitude as deriving from their background as a warrior people. Agriculture was not a part of their traditional culture, and was looked down upon as an occupation of the conquered. When no new peoples could be forced to work for them and agriculture was inevitable, it was practised under the

guidance of the chiefs who did not work themselves but who had an authoritative knowledge of agricultural practices. Obedience to the chiefs was undisputed and originated from the times when they were the military leaders of the Bemba. By the time of Miss Richards' field studies among the Bemba, however, the chiefs had lost their authority to some extent. They were paid by the colonial government but they did not receive enough to maintain the prestigious food distribution customs which were the foremost characteristics of chieftainship. Without their guidance the Bemba had insufficient incentive to pursue gardening or other agricultural practices.

The case of the Bemba shows that traditional patterns of behavior though disrupted, can continue to effect people if they persist as a group. Social disintegration does not necessarily occur suddenly. Traditional values persist, especially if certain parts of the original system are maintained. In this case the institution of food tribute to the superior who in turn will redistribute the ready-made meal to inferiors existed when Bemba society was socially stratified as a warrior tribe. This attitude safeguarded an equal food distribution among all members of the kinship group and, later on, among members of the community. It persisted into the new agricultural era of the tribe. A threat to persistence caused by forced cultural change is counteracted through surviving patterns of behavior. Hunger periods are faced with equanimity because there is always someone who will give of his supplies.

If it cannot come from the same hungerstricken community, help is expected from more distant relatives. The tropical habitat of the Bemba, in spite of certain climate-bound difficulties, leaves many options open to its inhabitants. If the environment is exhausted with respect to the traditional techniques of cultivation, as in the case of the island-dwelling Bisa it is still possible to avoid starvation by adopting new agricultural methods learned from neighbors.

In contrast, the inland Eskimo did not have any alternatives open to them. Their poor arctic habitat did not enable them to adopt other means of subsistence. They were forced to move to another environment where new possibilities allowed them to survive as individuals; but annihilated them as an integral society.

The blow to the traditional cultural system of the Blackfoot was too violent to be absorbed: at the same time their staple food and the basis of their material culture was taken away, they were forced to settle in another region with different environmental, economic, material, and social conditions. The change was irreversible and the society disintegrated.

Basseri nomadism seems to be particularly well-adjusted to the environment. Full use is made at any season of the resources offered to a traditional herdsman by a basically arid terrain. Shelter and equipment can be easily transported. The route of migration is suitable for the available animals.

During the seasonally occurring periods of food scarcity, Basseri society splits into its smallest economic units, i.e., the tents of individual households. A similar phenomenon is found among all hunting and gathering groups under study, the Murngin as well as the Blackfoot and, in the previous study, the inland and the coastal Eskimo. A striking mechanism is described by Barth to keep the nomadic population in a stable state. Herdsmen who become either too wealthy or too poor will eventually leave the camp and settle down as landowners or in the service of wealthy villagers. Thereby the number of sheep, as well as that of the human population, is kept at a level which can be supported by the available pastures. Control to this mechanism is the ultimate individual responsibility of each tent for decision-making. This definitive disaggregation of the nomadic tribe takes place only when other and more conservative mechanisms fail, i.e., when measures had been taken to intensify distribution of wealth, or to economize with what is left of one's possessions.

It has been seen that in the Murngin cultural system, the environment does not cause serious conditions of stress. Social factors are more apt to endanger the unity of a group and the persistence of the system. According to Warner, sex plays an important part in the daily life of the Murngin. Sex seems to be one of the foremost topics of conversation and a constant source of conflict between married couples and between clans.

Sex is responsible for obscene insults frequently heard between men but also between spouses. It even causes wars. Incest taboos regulate marriage in Murngin society, but they are not powerful enough to prevent tensions and open warfare. Another mechanism seems to be more efficient in venting motions, the institution of sexual license at the end of the initiation ceremony. This adaption ostensibly makes people clean and brings luck and good health to all participants and to the community, but in reality it fosters peace and unity.

Social stress is accommodated by various means. Similar in concept to ritual intercourse is the peace-making ceremony of the Murngin in which warring groups simulate a real fight. Under the supervision of the old men of the involved clans, symbolic dances and mock fights are carried out until the warriors are tired and their emotions have cooled down. Ridicule is another method widely used in societies without established law-enforcing institutions. It is the friendliest expression of public disapproval to bring a member of society back to the desired behavior. The Murngin ridicule opposing individuals in a special ritual in the course of a major ceremony. When everybody laughs, the quarrelling persons who take themselves so seriously will find it easier to make peace. In Blackfoot society ridicule was also known and often used for socializing children or to force a person to conform to social norms.

Cubeo society is threatened by disturbances from within which are of similar nature to those experienced by the Murngin and by the Alaskan Eskimo. Sex is the main cause of social tensions. Particularly rigid marriage regulations might be blamed. In the same circumstances the Cubeo developed an institution similar to the Murngin in order to maintain peace between clans competing for women. They grant sexual license in ritualized form to partners normally subject to strict incest taboos. Many a bad feeling can be changed through this ritual into a sentiment of cohesion and mutual responsibility. The institutions of wife exchange with trade partners and joking relationships, both understood by the Eskimo to strengthen partnerships or extend quasi-kinship bonds, might seem to serve a similar purpose; i.e., relief from tensions through institutional broadening of the range of mates.

Sorcery as a threat to the persistence of society is visible among the Cubeo. Magic and ritual protect them from sorcery and counteract its effects. The sorcerer as well as the asocial will eventually be obliged to leave the community. Informants even felt that such individuals should be killed if necessary.

A very simple device in Cubeo society provides relief from social tensions. A household head is free to leave a maloca when he is in conflict with the headman or with another inhabitant of the maloca and move away with his family to some distance without suffering discrimination.

This mechanism serves well to separate the difficult or malcontent person from the rest of the group, leaving behind those members of society who are willing to conform.

Although food scarcity is not a threat to the Cubeo social system, theft of food is not known. In a society that recognizes a basic right of sustenance for each of its member, food theft is utterly incomprehensible and duly punished by beating or death. The Bemba consider the severity of food theft according to the season. As punishment, compensation is requested or the thief is speared. More powerful than legal sanctions are protecting curses which are thought to bring bad luck or illness.

Within the context of this paper, resilience is understood as the ability of a social system to accommodate stress from within and without. Stress situations have been illustrated in the first part of the discussion, together with the mechanisms inherent in the respective social systems to cope with the resulting threats to persistence. These mechanisms may be viewed as manifestations of the resilience phenomenon.

It is evident that resilience adaptations appear in most of the institutions of a traditional social system. In spite of considerable differences among the seven groups under study--differences with regard to economic activities, political structures, religious beliefs, kinship organizations, and such--they share features which serve to make survival of the system possible. Some features seem to be common to all the studied groups.

The most striking manifestation of the resilience phenomenon is flexibility expressed in various ways. This was found in the preliminary study on the Tikopia and the Eskimo cultures, and its effectiveness is emphasized by the more thorough studies reported here. Flexibility shows a different face in each social system.

In Murngin culture flexibility is obvious in the kinship system but also in the social structure. Provision is made that a man can take a wife who is not the daughter of his mother's brother, which normally would be a "right marriage". She will be integrated into the kinship system as if she were his cross-cousin, and she will be called by proper kinship terms. Flexibility is also seen in the freedom an individual or a clan has to choose the grouping he or they might wish to live with for a season.

The choice of trading partners among distant relatives with whom friendly relations are established are another example of the flexibility of the kinship system. Distant relatives who normally would play a minor role in a person's life are given privileges and affections of a nearer relative. By granting protection to the tradesman when he is travelling away from his group, this institution helps to maintain peace on a wider scale. The extension of friendship outside the closest kin group is accomplished when a young Murngin boy, before his circumcision, travels through the country of various clans and seeks to strengthen bonds with relatives and friends by inviting them for the ceremony. Flexibility is expressed

in the institutionalized sexual freedom of both Murngin and Cubeo, as this breaks the rigid kinship regulations for a predetermined time.

Similar mechanisms to those of Murngin society are effective in the Cubeo social system and, not only with respect to sexual release. The freedom to decide which headman one prefers to live with is an exception to the rule of common residence, and thus an instance of the flexibility of kinship systems. Richards emphasizes the high mobility of the Bemba, where the head of an individual household is free to join whichever headman he wishes. Another instance is the ease with which strangers, individuals or sibs, are integrated into society. It goes so far that one of the Cubeo phratries was ethnically different from the Cubeo before they were adopted. The same applies to the adoption of orphans by the Cubeo, the Basseri, the Eskimo, and by the easy integration into the household of Murngin children who are born out of wedlock.

Cubeo ceremonial friendships are as strong as the trading friendships of the Murngin and of the Eskimo. They are supposed to last forever and to replace blood brotherhood. In traditional systems kinship relations are organized according to strictly enforced rules, yet they are flexible enough to extend and to include outsiders or quasi-kinsmen. Herewith the rights, privileges, and duties of near relatives are granted to a wider circle of persons. Mutual help in times of crisis gives security to a simple system that does not have the formal institutions to mitigate disaster.

Many measures which are meant to protect the individual in fact affect the whole group. They are unconscious actions to maintain persistence of a social system or, in other words, they grant the system an ability to absorb disturbances.

Very evident in the groups under study is the constant attempt to conform to public opinion, to tolerate insults, not to excel at the expense of others or, at least, to fulfill conscientiously the obligations dictated by tradition. In Bemba society the sharing of food supplies is accompanied by a levelling effect. No one should have more supplies than the other, and what he has is shared with his reciprocals. Eskimo children (Spencer, 1959) are educated to show only limited ambition and to speak well of other children. The ideal attitude is one of patience.

Basseri family heads try to establish as many strategically placed official bonds within herding camps as possible in order to extend friendly relationships among consanguineal kin. Barth speaks of relations of comradeship and respect between Basseri kinsmen in general (Barth, 1961, p. 38). Their reluctance to admit new members from outside emphasizes the mutual trust and atmosphere of warmth within the camps. This is the opposite to the attitude of the Cubeo, for instance, but it serves the same purpose.

The importance of peace within the Murngin camp is expressed in the belief that all fighting should cease while a totemic emblem is in the camp for the duration of a ceremony.

The shared totems symbolize the unity of a Murngin clan. The peacemaking ceremonies represent a conscious effort in this direction. Similarly, Goldman writes that the ideal attitude of the Cubeo is that of avoiding quarrels, of drawing back and separating from the group. Individuals do not interfere in quarrels where they are not directly implicated. A parallel attitude was found by this author during her three years of field research in a Tagalog group on the Philippine island of Luzon. Conflicts between members of the residential group could not be detected by the author for a long time. They were not referred to openly. It was found that troublesome individuals are avoided; they first separate to live in the neighborhood, alone or with their families, and finally they leave the settlement. "Good manners" are much appreciated and often talked about. People who do not have "good manners", according to public opinion, are avoided.

According to Goldman, the Cubeo have an extremely low tolerance of social disturbances. The suspicion that someone strives for authority might poison the atmosphere within the big house. Although quarrels and fights are common, they are resented. They induce a family to break away from the community. Goldman speaks of a cyclic movement: at drinking parties fights break out, the accusation of sorcery may be made. A household separates from the maloca and will not be invited for some time to drinking parties until, through distance and time, confidence is restored. Parties are then once again attended and fights start again.

The economy of primitive societies is mainly directed toward food production and distribution. Division of labor according to sex determines food production. The form food distribution will take depends on various factors such as social system, kinship organization, and political structure. It was found that in an egalitarian society like the Cubeo or the Murngin, food is distributed on a kinship basis according to patterned obligations. Under emergency conditions, food distribution procedures serve to share available supplies equally among all members of the community. It was not noted in the literature consulted whether this holds true even in acute famine. Since dispersal of Murngin hordes is known in the rainy season, it can be assumed that the supplies will be shared equally within a community, be it a large horde in the good season or a small horde in the more difficult rainy season. From Cubeo society it is known that under psychological stress segments of the community might separate from it until tension has subsided. In the same way it might be possible that under stress of hunger the maloca would break up temporarily. Such extreme cases are not recorded however.

In a system with political stratification, food sharing between kin takes the form of gift exchange, but at the same time an interchange of food between inferiors and superiors takes place, thus effecting another kind of distribution.

The chiefs are given tribute or labor. They, in turn, redistribute food at special occasions, feasts, gift givings, etc. A Kankanay Igorot of the mountains of North Luzon (Philippines) told this author (field research 1969 - 1972) that the rich men of his community are safe from theft of water buffalo because nobody will take from them what is given some day to the people at merit or memorial ceremonies.

Resilience in the economic field is visible in distribution patterns. Exchange of food and commodities serves not only to ensure physical well-being, but creates and maintains social cohesion and the sense for a common cause.

Resilience is further manifest in the fact that responsibility of the individual toward his reciprocals may lessen in emergency situations. Richards notes that when food is plentiful, a Bemba housewife gives her kinswomen grain to grind. When there is less food she gives a smaller portion of flour, and during real scarcity, she just invites them to share her meal. A similar diminution of responsibilities is reported from Tikopians and from the Eskimo. In times of hunger the circle of persons who should receive food is gradually restricted to the nuclear family.

Religion in its various expressions plays a resilience role, which should not be overlooked. Religious sanctions and taboos exert a pressure on the behavior of the individual to bring him to conformity. Hse (1952) describes in his book on a cholera epidemic in China that the reactions of

the populace to the epidemic were almost wholly focused on religion. The belief in gods or spirits who brought disease to punish sins or negligence made religious measures necessary to cope with the disaster. Resilience through flexibility in religion was observed by this author in the earlier mentioned Tagalog group. They had taken over native ceremonies into modern times, adapting to them Christian prayers not understood as to their contents but giving a desired effect of sacredness. They replaced their ancestor idols with vast numbers of Christian saints in wood and then in plaster, not knowing their origin or meaning, yet asking them for help in hardship. (Velimirovic, 1972).

The material culture of a primitive society shows little resistance to cultural influences from outside. People of all cultures like to facilitate procedures and labor. Obviously, this does not radically alter the social system so long as these innovations fit reasonably into the broader traditional whole. The horse was well integrated into the Blackfoot hunting culture, and Goldman writes that the Cubeo prefer trade goods to domestic products. When money was introduced into the economy of the Tikopia, it was understood in terms of their own cultural pattern as a kind of gift in return for services rendered. The Bemba use money in specific transactions, but not in the Western sense. At the time of Miss Richards' field work, the use of coins in everyday life was still very limited. European goods and taxes were paid with it. Marriage payments are made in money,

probably because instead of rendering service to the father of his bride, a young Bemba goes to work in the copper mines for money. Since opportunities to acquire money are limited, its value is high and hence it is considered as a particularly suitable offering to ancestral spirits. The Kankanay Igorot keeps coins from the Spanish colonial time to offer to their ancestors in ceremonies. Japanese money printed in the time of Japanese occupation in the Philippines serves the same purpose. The Tagalog value old coins highly. Spanish or Mexican coins are kept as "anting-anting", i.e. they are powerful in many ways, especially for granting luck in business transactions. These examples show how material items, when they serve an obvious and well-known purpose, are taken over into traditional culture without bringing about substantial change. Items alien to tradition are either compartmentalized, as when money is used to purchase foreign goods, or integrated into the material culture along traditional lines.

In the sense of the previous definition that fluctuations are changes which occur in time, several types of fluctuations were found in the present study.

I. Fluctuations in Nature

1. Predictable and regular

- a. seasons
- b. some game movements
- c. sowing and growing of plants

2. Unpredictable and predictable but irregular

- a. natural disasters (e.g. typhoons: Tikopia, Yap)
- b. some game movements (Eskimo, Blackfoot)

II. Effects of Natural Phenomena on Humans

1. Predictable and regular
 - a. - seasonally caused food shortage (Bemba, Blackfoot, Murngin, Cubeo)
2. Unpredictable and irregular
 - a. - famines (and epidemics) as consequences of natural disasters (Tikopia, China: Hsu 1963);
- special droughts (Tikopia)

III. Socio-economic Order: Fluctuations in Behavior or Actions of Humans

1. Predictable and regular
 - a. seasonally motivated migrations of nomadic herdsmen in search of pastures for their herds (Basseri: Blackfoot for their horses);
 - b. seasonal movements of hunters and gatherers in the pursuit of game and in search of edible plants (Murngin, Eskimo: Blackfoot hunting the buffalo);
 - c. seasonal dispersal and reunion of small population groups, from and with larger units (Blackfoot, Murngin, Basseri, Eskimo);
2. Unpredictable and irregular
 - a. fission and fusion of small population groups with regard to larger units (Cubeo, Bemba, Basseri, Eskimo, Blackfoot);
 - b. growing population, consequently splitting off by settling down; (Basseri)

IV. Ritual Fluctuations

1. Unpredictable and irregular
 - a. ritual of sexual license (Cubeo, Murngin);
 - b. peacemaking ritual (Murngin);
 - c. ritual regulation of environmental relations in the sense of R. Rappaport (1973) (Tsembaga, New Guinea) (7)

V. Cyclic Interdependences

1. Irregular occurrence (One action or state brings forth one or more situations which in turn provoke the first action or state.)
 - a. frequent war, many men are killed, excessive number of women makes polygamy necessary
fight for women provokes war (Cubeo; Murngin);
 - b. people suffer from hunger, they are tired and lack energy for work, consequently they are hungry (Bemba);
 - c. during drinking parties fights break out, someone is accused of sorcery withdraws from main group, he is not invited, time elapses and trust will be restored, he is invited for drinking parties where fights break out (Cubeo).

A closer examination of these different fluctuation types shows that groups I and II include natural causes, in most cases outside of men's sphere of influence. These fluctuations carry the potential to change a society qualitatively. Socio-economic and ritual fluctuations classified in groups III and IV are men's answers to stress situations caused by natural phenomena, i.e. to groups I and II in a larger sense, and to disturbances coming from within a given group. They do not strive to change a social system. On the contrary, they are mechanisms of resilience, consciously or unconsciously created and serve to absorb disturbances.

If fluctuations in the natural order are predictable, it is easier for men to react and to take remedial measures. Since the behavior of a person in a disaster is determined

by the needs of the situation, and by what he knows about it, it is of importance how often a particular disastrous event takes place. Attitudes will be different if a typhoon occurs several times each rainy season as on the central islands of the Philippines, or at intervals of about 20 years as on Tikopia, which means that an adult person will remember what had happened when he was a child. If a disaster strikes very rarely, people will know about it from hearsay only. Their reactions to surprise might influence the efficiency of countermeasures for some time.

The cyclic fluctuations of group V, here called cyclic interdependences because a set of interdependent factors bring about a cyclic movement and return to the point of departure, represent neither causes nor effects. They show in clear-cut instances the feedback mechanisms inherent in a system, be it to a positive or to a negative effect. A feedback mechanism may serve to maintain persistence within a system or within an institution which is part of a system.

These relationships are summarized in Tables I and II.

POSSIBLE DISTURBANCES

TABLE 1

War and quar-
rels with out-
side groups

	Material Culture	Kinship Organization	Social Organization	Economy	Law	Religion	War and quar- rels with out- side groups
Murngin	-	-	x	t	-	-	x
Inland Eskimo	x	-	x	x	-	-	-
Blackfoot	x	-	x	x	-	x	x
Basseri	-	-	-	t	-	-	x
Coastal Eskimo	-	-	-	t	-	-	-
Cubeo	-	-	x	t	x (sorcery, theft)	-	x
Bemba	x	-	x	t	x (sorcery, theft)	-	-
Tikopia	t	-	-	t	t (theft)	-	-

- = not affected
x = affected
t = temporarily affected

TABLE 2

COUNTERACTIONS

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	Flexible group size or affili- ations	Flexible kinship system	Mobility in space	Cooperation in Community	Striving for peace in community	Religious sanctions	Ritual counter- actions	Food-sharing in the community	Food distrib- ution chief/ wealthy
Murugin	x	x	x	x	x	x	x	x	-
Inland Eskimo	x	x	x	x	x	x	x	x	x
Blackfoot	x	x	x	x	x	x	x	x	x
Basseri	x	x	x	x	x	-	x	x	-
Coastal Eskimo	x	x	x	x	x	x	x	x	x
Cubeo	x	x	x	x	x	x	x	x	-
Bemba	x	-	-	x	x	x	x	x	x
Tikopia	-	x	small movements of social importance	x	x	-	x	x	x

IV. Conclusions

As mentioned earlier, practically any traditional culture is threatened by some kind of stress from the environment or from within the group. Stresses from the environment tend to initially affect the economic sector. Disturbances from within are more likely to concern the attitudes of individuals or groups towards other members of society, manifest in warfare and criminal acts or asocial behavior.

The kinship system was not obviously affected in any of the examined population groups. This is in accordance with Baker's and Chapman's findings (1962) that few physical catastrophes are likely to destroy kinship ties and that most such adversities intensify the sense of family unity. Similar results were found by a team (Carroll and Parco, 1966) who undertook research into the behavior of a Philippine group after a severe volcano eruption.

It can be speculated on the basis of this research that the persistence of a social system might be severely jeopardized when more than one of its subsystems are disrupted at the same time. Irreversible changes are apt to occur when the environment does not offer an alternative to the disturbed economy (e.g., Blackfoot, Inland Eskimo). At this point, it must be emphasized that the effects of culture change through Westernization are not considered in the context of this paper. Its acute influences on aboriginal societies are well known.

In all the traditional cultures under study the ability to cope with stress was found in various fields. Resilience mechanisms might be political, religious or social. It seems that population groups exposed to recurrent threats from their environment within the lifetime of an individual have developed the most efficient mechanisms of resilience.

The comparative study showed that in all examined cultures the most striking aspects of resilience are flexibility in group size and flexibility in the social organization. The latter allows for alterations, extensions, and intensifications of existing institutions. It is manifest in the tendency of all traditional cultures to grant mobility to its members, freedom to choose or to refuse a certain union, and to absorb or to expel a person or a group. Flexibility in determining group size is manifest in several ways according to the kind of stress involved. Scarcity of resources in a particular area makes a dispersal of big groups necessary for survival. After the threat is over, groups will join again and move together (Murngin, Blackfoot,, Eskimo, Basseri). Another kind of dispersal under stress is seen in sedentary groups where due to social tension a household may break away from the community to settle at some distance from the community (Cubeo) or from a particular neighbor (Tikopia). These dispersal adaptations are similar in effect to those of the sedentary Bemba and Tikopia which lead them to gradually tighten the range of food distribution from large kinship groups to the

household during famine.

The political structure of a society clearly shapes its resilience behavior under stress. In unstratified societies food is shared on equal terms by all families (Eskimo, Cubeo, Murngin) throughout the year; all adult members are responsible. Under normal conditions and under moderate stress a wide network of mutual help guarantees well-being and security of the individual. In stronger hunger situations however, if political ranks (pre-horse Blackfoot) or a social stratification on the basis of wealth (equestrian Blackfoot, Eskimo) are present, food distribution through the leader or the wealthy is meant to give additional security. In a society with strong leadership (Tikopia, Bemba), an interdependence between chief and commoner exists, the latter giving tribute to their chiefs and in return receiving food. In times of acute stress, food distribution to the hungry will continue for some time until supplies are exhausted (Tikopia) and other measures must be taken. Dispersal will set in at this point.

With regard to fluctuations, it was found that fluctuations of the natural order are synonymous with stress. Only much more extensive research, primarily in the field of the extinction of traditional cultures, can reveal "how much" fluctuation of the natural order a society can take before it changes qualitatively.

Patterned fluctuations of the socio-economic order develop to counteract the environmental stress. They serve to maintain a general equilibrium which promotes chances of persistence. The available material does not suffice to elucidate how fluctuations of the socio-economic order change in a major upset. More extensive field studies on disasters in traditional societies should be made by ethnologists for this purpose. The report on the Tikopia shows that when due to a disaster a new situation is created, new methods or intensified traditions may be effective until the old order is restored.

Traditional social systems are of simpler structure than modern societies. They show the basic elements of their structure less ambiguously than complex systems. In normal times and under stress they are focused mainly on the family. Disaster studies (Kates et al., 1972) show that societies in transition are especially vulnerable to natural disasters. In such cases, mechanisms inherent in a traditional society have vanished or they are mutilated, but the highly developed infrastructure which absorbs a great deal of disturbances in a highly industrialized society is not yet effectively developed.

This paper does not aspire to draw generalizations from limited material. At best, it has offered several working hypotheses for further studies.

NOTES

- ¹ A.H. Radcliffe-Brown, "The Social Organization of Australian Tribes", Oceania, I (1930): 43-45 et passim; W.E. Lawrence, "Alternating Generations in Australia", Studies in the Science of Society, ed. G.P. Murdock, New Haven, 1973, pp. 319-54; both cited in G.P. Murdock, Social Structure, New York, 1949, pp. 51-55.; M.G. Meggitt, Desert People, Sydney, 1962.
- ² blackfoot bands seem to correspond to Murngin hordes. Both are groups of related or unrelated nuclear families roaming together in hunting and gathering activities. Bands and hordes may change their size according to various circumstances.
- ³ sororate = a man marries the sister of his wife either during his wife's lifetime or after her death.
levirate = a man marries his brother's widow.
- ⁴ counting coup = touching of an enemy's body with the hand or with a special stick. (Lowie 1954, p. 108.)
- ⁵ in: Kenneth E.F. Watt, 1968, p.12.)
- ⁶ Irving Goldman prefers in this context the term "sib" which, according to Lowie, is synonymous with "clan". (Goldman, 1963, p. 24.)
- ⁷ Rappaport relates that in the Tsembaga social system a recurring sequence of war, pig festival, and peace ". . .helps to maintain an undegraded environment, limits fighting to frequencies which do not endanger the existence of the regional population, adjusts man-land ratios, facilitates trade, distributes local surpluses of pig throughout the regional population in the form of pork, and assures people of high quality protein when they are most in need of it...." (Rappaport, p. 29)

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Appendix A

IIASA Working Paper, WP-74-2.

Analysis of the Relationship between Social Structure
and Stress Behavior in Primitive Societies

H. Velimirovic

Two population groups have been chosen for this study based on the findings of two conscientious and presumably unbiased ethnologists: the Tikopia [1] and the North American Eskimo [3].

The Tikopia

The book on the Tikopia is especially suited for a study under this heading. It circles around a very acute stress situation caused by two heavy typhoons which were followed by exceptionally severe drought resulting in famine.

The Tikopia live in the Western Pacific on the Island of the same name under the authority of the British Solomon Islands. Firth [1] calls them a small-scale strongly patterned community of people in a very isolated situation.

Kinship ties are forming a primary basis for social relationship. The people reckon their descent patrilineally with respect to kin group membership, rank and property but at the same time with strong matrilateral accentuation. As Firth relates, all Tikopian feel themselves as members of a common body with one language, the same customs and a highly interknit kinship system. Characteristic for the interrelations

between individuals are the many obligations and reciprocities binding them together. For any kind of service or gift fixed equivalents are established and standard returns are known and accepted.

A strongly developed status system divides the Tikopia into chiefly families and commoners. There are four chiefs in Tikopia, each being the head of a clan. Their power is absolute, though they tend to act following common opinion or at least to give the impression of doing so. Their rights for privilege are acknowledged by the commoners and no feeling of being exploited by the chiefly class was related by Firth.

Ritual elders named by the chiefs belong to the political aristocracy as well as the maru, i.e. the executive officers who interfere in the communal life in the name of the chiefs. Differences of rank among the maru are dependent on the closeness of their family links to the chiefs but also on personal skill.

The Tikopia are mainly horticulturists with taro, breadfruit and coconut as staple food together with banana, sago and several other starchy tubers of less importance. Traditionally there were no pigs on the island. As source of protein serve fish from the sea and from interior lakes.

Several methods of food preservation are known, i.e. the preparation of a paste or of flour. As a final reserve for cases of emergency, enormous giant taro is left to grow in the gardens for years.

Firth calls the system of Tikopia economy primitive because traditionally they did not use any kind of money but resorted to barter instead. A specified system of values was elaborated according to which exchange of objects was carried out. Food was excluded from this kind of exchange. It symbolized social status and was used for a complex net of gift giving between chiefs and commoners, relatives, visitors or the poorer members of family of community. To give any objects in order to obtain food was unconceivable for the Tikopia. When money became known on the island, mainly through wage labour on plantations, it was understood in terms of their own cultural pattern as a kind of gift in return for services rendered.

Typhoons are not unknown in Tikopia. They occur occasionally in intervals of about 20 years so that every adult remembers such phenomenon. Famines are more commonly known from the periods between main crops. In March 1952 shortly before the arrival of Firth on the island where he had undertaken extensive studies already in 1929, the island was hit by a strong typhoon. When the first shock of the disaster was overcome and the people started to return to a fairly normal life, a second typhoon struck the island about one year later, not as heavy as the first one but leaving the people in a state of desperation. Whereas after the first typhoon they were able to collect the crops harvested by the storm, and to preserve them according to their modest

abilities, there were no mature fruits now and what was destroyed were the young plants and fruits cultivated after the first disaster. The second typhoon was followed by a severe drought which pushed the next harvest for more than one year in the future.

Natural causes are primarily considered as being responsible for typhoon and drought. There are at the same time religious considerations involved. The Tikopia believe in the existence of links between chiefs, their clan gods and natural phenomena. The latter can be controlled by the chiefs, that means through the favour of gods towards chiefs, but spirit powers without specific intentions may also affect the course of nature. Personal qualities of specific chiefs can be responsible.

Famine is considered as a consequence partly of human failure through lack of foresight, through laziness or theft of immature crops, but also of the inadequacy of chiefs who can be too old to secure fertility or as a consequence of the malevolence of two rivalling chiefs who might destroy food supplies by sorcery. On the whole it appears that an unnatural condition of society is manifest in abnormal conditions of nature, i.e. the natural order is related to social harmony [1, p. 80].

In such extreme situations the strength and the weakness of a social system can best be tested out, as Firth emphasizes, it was not always easy to distinguish between altered behaviour

due to the famine or due to cultural changes as a consequence of influences from outside.

Firth gives a detailed description of the reaction of the Tikopia after they recovered from their first shock immediately after each of the typhoons. The political leaders, aware of their responsibilities, deepened their acknowledged leadership. They organized the people to clean up the debris of the disaster, to repair paths and the water system, children were sent to collect broken branches as firewood. Laziness stigmatized traditionally was looked upon with contempt. People were called to give up their apathy. The formerly strictly religious assembly, the fono, was remodelled as public assembly now regularly held on Sundays, where the damages were assessed and steps to be taken were discussed among chiefs and commoners. New regulations were adopted for the use of the land, whereby fallow land had to be put under cultivation, boundaries of family lands had to be clearly demarcated, the collecting rights on the lands of others were restricted or cut altogether, and cultivation rights on the lands of others had to be newly defined. Even such land was used which was left fallow in preparation for ceremonial use, though not all of it. New crops with emphasis on short-term crops and plants resistant to drought were introduced. Fishery was discouraged in favour of agricultural activities in order to make up for the loss of productive plants. After the typhoon there continued to be enough fish as a supplement but an intensification of fishing

would not have brought additional food because the amount of fish available was just enough for the normal daily needs.

A very serious problem arose under the impact of the famine: people started to steal food, to dig up immature crops. They did not even spare the chiefs and their families. It seemed that the only people who did not resort to such means were the chiefs themselves and the executive officers, the maru, conscious of the necessity of their stating an example. The stealing was a serious menace to law and order although it was felt by all, even by those who were involved in such acts themselves, that it was a shame to be a thief in times of emergency. As Firth says this feeling for morals was the best guarantee for a quick return to normal standards.

The system of customary law had to be revised regarding the punishment of thieves. One of the traditional methods to send a culprit in a boat off into the rough sea to almost certain death was given up under the influence of government authorities. Instead it became more frequent to insinuate to a person known as a thief to go abroad as a wage labourer, to a kind of exile. The usual procedure of wailing over a discovered theft was soon stopped because it became too frequent. The detection of theft became increasingly often a source for violence and public disorder. But since there were no means in the system to find out and to methodically punish a theft, new ways had to be found in order to avoid theft altogether by protecting the crop, by prohibiting fishing in certain

waters where stealing would be easy to undertake, etc.

A marked consequence of the food shortage was the atomization of the kinship group. Whereas before it was one of the most respected obligations to offer food to agnate and also to affinal relatives, this custom could not be maintained any more. It dissipated gradually, first the host and his family did not eat the same quality of food offered to the guest, then under some pretense they did not eat with their guest anymore, giving him the little they had, excusing themselves toward strangers first and relatives later on. They ate secretly in order not to be obliged to share the food they could provide for the household which remained the only unit where obligations remained existent also in times of utmost scarcity. Even the obligations towards chiefs were abandoned but under the common understanding that in the worst case the chief would have to be supported by the commoners, not so much as his personal privilege but acknowledging that the chief is the representative of the community, and that supporting the chief is supporting the community. Food was never pooled by common action, it always remained under the responsibility of the household.

Dancing was an important part of Tikopia recreational activities. During the famine the leaders recognized its value to release tensions and to keep the people moving. Public dances were intensified and later on they even became compulsory so much that mourning periods were shortened to

allow the family members of a deceased person to take part in public dancing soon again.

With respect to Tikopia religion, consequences of the food shortage were unavoidable since food was essential for any kind of ceremony. It followed that in such ceremonies where food as offering played a symbolical part, a small offering was still significant and the food which was offered first could be eaten later on. The situation was different where food exchange on a big scale was an important part of the ceremony, like for a wedding and initiation. It was thus ruled that none of such occasions could take place during the time of the famine. Even funeral ceremonies were reduced and many people were not attending because they were unable to provide the necessary food gifts. Certain types of ceremonial performances merged with others or were simply omitted and at the height of the famine even basic elements were abandoned.

No special ritual appeals seem to have been made for relief except through normal pagan and Christian rites in regular ceremonies, in accordance with their assumption of the famine causation through human failure.

North Alaskan Eskimo

Firth emphasizes in his book on the Tikopia that there are hardly any and only marginal investigations made on people living in a hunger period. As comparison with the Tikopia study, it was necessary to look for a population group in an

equally isolated location and living under economically difficult conditions. The material should be well documented, or course. Spencer's book [3] on the North Alaskan Eskimo proved to offer these prerequisites dealing with two Eskimo groups living under an almost permanent stress due to the harsh environmental conditions of the Arctic.

The area under study is the tundra between Point Barrow and Point Hope in northwestern North America where two groups of aboriginal Eskimo were living, the nomadic caribou hunters of inland regions, called nuunamiut, and the sedentary whalers of the coastal slope, the tareumiut.

Despite differences in social form particularly concerning differences in subsistence and ceremonial life they were more alike than different in their societal organization. They spoke the same language, although with regional variations, their kinship organization was similar.

Both groups acknowledged bilineal descent giving to each individual the membership of two lineages and with it a wide circle of relatives. These were bound together by strong bonds of mutual aid, by reciprocal obligations and responsibilities. Beyond the nuclear family as residence units and smallest economic unit and the extended kin grouping existed a wide range of quasi-kinship and the formalized extensions of cooperative ties to non-kin. Half-relationships were considered as true relatives, a half-brother was a brother, etc. Adoption was extremely frequent, and the adopted child had kin

obligations towards his native and adoptive families, also with respect to the exogamic marriage regulations. An orphan was regarded as a poor person because he had no kin to give him economic security. He had to work for his living if he was not adopted within the extended family or non-related groups.

The institution of wife exchange on a temporary or permanent basis was not so much an expression of granting hospitality or pleasure to a trade partner or joking relationship but much more a strengthening of a partnership or extending of quasi-kinship bonds through the exchange of personal property (wives) thus broadening the range of mutual aid and cooperation which went in such cases to the kin and to all the children of the respective couples, and not only to those who originated from such union.

Wife abduction was common, not necessarily resulting in murder which happened frequently. It could occasionally serve to create new friendships between the two men who shared the wife, and consequently to new bonds of cooperation.

The coastal Eskimo lived off whaling and the hunting of sea mammals. Complex social and religious behaviour was patterned around the whale but also around most other animals which were hunted, like bear, fox, wolf, and especially the seal. The subsistence of the inland groups was gained through caribou hunting which received the same ceremonial attention as whaling by the coastal groups. Caribou hunting

was undertaken by the coastal Eskimo in individual raids after the whaling season but no inland Eskimo was traditionally prepared to go whaling on the coast.

The Eskimo lived mainly on meat, an adult consuming 7 to 8 pounds a day so that tremendous quantities had to be stored in the ice after a whaling or caribou hunt or dried in the manner of the inland Eskimo. Vegetable food was not eaten to any important extent, except the partially digested content from the stomachs of herbivorous animals. The inland Eskimo used a wider range of vegetables than the coastal groups, consisting of certain roots, shoots and grasses and a variety of berries which were also traded to the coast.

Success in hunting depended mainly on the movements of whales and walrus according to the prevalence of the ice or on the unpredictable seasonal ways which the caribou herds took. A change in routes could mean a year of famine which might occur every 6th to 7th year. Food shortage was not necessarily frequent but it was well known and Eskimo society was prepared for it.

For the inland Eskimo, food provision was rather unbalanced varying between times of surplus and acute food shortage, much more than for the people involved in whaling.

The hunting activities of both groups shaped their settlement patterns. On the coast permanent villages served as basis for the hunters, besides they established camps for whaling and duck hunting. The houses were grouped around the dance house,

the communal gathering place mostly of men but also of women, where the socially important recreational activities of dark winter days took place, as well as ceremonial preparations for hunting. The inland Eskimo depended on the unpredictable migrations of the caribou herds. They had to cover wide areas in search of herds or while hunting them in corrals or by driving them into the water. Their settlements were made of tent-like temporary or of semi-permanent houses. The dance house was also a temporary structure. They travelled from winter camps to spring camps and then to their summer settlements.

Eskimo culture granted a great freedom of choice of the economic activity to the individual who could do as he liked, go hunting or stay at home and dedicate his time to other occupations like tool making or trap laying, or he could hunt individually or in groups or go fishing. Only laziness was frowned upon. At the same time a man could choose the place where he liked to settle, either together with relatives or alone. He was not bound by any rules of behaviour with respect to the place of residence. He was also free to choose the relatives he wanted to live and travel with, or the whaling or hunting group respectively.

There was no person, no chief to direct the behaviour, no defined political structure, It was the family which exerted social controls.

The only social distinctions were made according to the wealth of a person. A skillful hunter who was able to gather

surplus food or goods could buy a boat and support those men who went whaling with him in his boat. He had great prestige but his influence did not go beyond his crew members. Anyone who could have surplus food could become a boat owner. This was a position of social and ceremonial importance but without any political significance.

Similar to the boat owner of the coastal Eskimo, the director of the caribou drive was a man of local influence. He was the builder of the stockade who attracted the same men every year for the big caribou hunt. Expression to the wealth concept was given by severely elaborate ceremonies, particularly the "Messenger Feast" at which extensive gift exchange took place suggestive of the potlach of the Northwest Coast. Invitations were given to one crew captain by crew captains from other communities to partake in the feast if his group felt they were able to provide the necessary objects involved for exchange.

A main part in Eskimo society was played by trading. It never took place within the family or community but between villages or districts or the two ecological groups. Long trading journeys were undertaken after the big communal spring hunts making the community break into small bands.

It was possible to buy food within the community but it was looked upon as avowal of one's failure to provide for one's own subsistence.

Most markedly was the interdependence between coastal and interior groups. The inland Eskimo provided mainly caribou

hides for the coastal village dwellers. In return they received whale blubber and oil which was essential for their survival. When new products were introduced from the outside through the establishment of trading stations, and Western textiles were imported, there was no need any more for caribou hides. In search of whale oil the inland Eskimo had to give up their pattern of life in the interior. They settled down in the coastal villages where they were absorbed in the labour force of the Alaskan naval petroleum project. In 1952/53 there were only two bands left who followed the traditional pattern of caribou hunting, resisting school and medical care. They will have ceased to exist in the meantime.

The responsibility which each individual had with respect to any person of his kin was mainly related to blood feuds which were common in the Eskimo culture between extended families and which could last through several generations. If retaliations for minor offenses were involved, it was a personal matter of the individual and the kin grouping was not expected to interfere. Only when killing was involved, the kin group might agree to find a peaceful solution or to meet for war which was not necessarily putting an end to the feud. Reasons for hostilities and killing were often related to sexual involvements, a stolen wife, or rape and adultery, and less because of food or personal property. Food was freely given if asked for. The inviolability of a house was sacred and burglaries practically did not occur.

In opposition to the strong urge for cooperation within the kin group and the formalized extra-kin associations was the marked hostility towards strangers. They were harassed accordingly if they ventured into a strange community so that they were obliged to look for some kind of cooperation possibility within the otherwise hostile community.

The ideal pattern of intersocial behaviour favoured modesty and uniformity. Children were educated to show only limited ambition. The individual should excel in certain abilities or qualities but not at the expense of others. Children were taught not to speak unfriendly about others. They were consciously prevented to hear adult gossip. The ideal attitude was to be "patient" or to "save the face" and not to be too good in a competitive game lest the shaman would take revenge. Industriousness and generosity were well liked. If somebody showed an extreme antisocial behaviour being intolerably quarrelsome he was murdered or driven away to starve.

North Alaskan Eskimo religion held that the animals of the surrounding nature have the ability to talk and to think in the same manner as men do. It was extremely important in order to secure success in individual or communal hunting to show the appropriate behaviour and respect towards animals to be hunted. Any kind of insult would make the animal withdraw and leave the humans to starvation. The behaviour was patterned along this belief with an infinite number of prescriptions, prohibitions, rules, particularly with respect to eating.

The shaman was the principal religious practitioner. Men and women could become shamans. They knew how to cure the sick, how to find lost articles or missing persons, how to provide charms, and speak to the dead, and how to prepare individual taboos, but black magic and eventually murder was ascribed to them. They received their power through the interference of their particular spirit helpers. The shaman was feared by the people because of his partly sinister powers but resorted to when necessary. Very often an individual lacking skill for becoming a successful hunter or the unbalanced or neurotic became shamans. A person usually tried to avoid the call for the office through a particular spirit, but frequently he was not able to escape. Each hunting group had its shaman who was supposed to call the caribou to perform the necessary hunting magic. Their influence did not extend to the political level.

Not only a shaman had supernatural powers, any person was in possession of powers of some kind to achieve a desired end by magical means. Only the shaman had the ability for contact with a particular type of spirit which he used for the good of the community. Everybody could be the owner of a magical song mainly directed to control game or weather but also used in feuds.

In times of stress which might be caused by acute food shortage, the wider circle of kin began to function giving the individual aid as far as the situation allowed. In such

instances bigger family groupings used to break up, but assistance was still expected within the net of kinship and extra-kinship associations and more so from the wealthy boat owners, wealthy in terms of food supplies, and from successful hunters. It could happen that these were left hungry after giving aid to the entire community, kin or non-kin. Old people sacrificed their food for the younger, and also parents went hungry in order to feed their children.

When a family grouping was travelling together under particular conditions of stress, it occasionally happened that a newborn child was left behind to die. This was not practiced when the child was already given a name and thus had been accepted into the community. Newborn children were abandoned with great reluctance and it was always tried first to give the child in adoption before taking such steps. It was not the mother who decided and the baby had to be torn away from her by members of the family group who had carefully considered the action.

Besides newborn children and infirm or sick people, the very old were also abandoned if the situation afforded it. Old people often asked to be left behind to die when they recognized that their presence was an extra burden.

A man who in times of famine saved himself at the expense of others was treated like a criminal and hunted down by the relatives of the abandoned. If it exceptionally happened that somebody took all of another person's food storage he was

considered as a murderer for leaving a family to starvation. He was persecuted as such by the kin group of the victim.

Cases of abandonment were more frequent among the inland people who were constantly travelling under the most difficult circumstances. Loyalty in this respect was preferredly given to blood kin. Consequently in times of famine a wife with her children might join her father whereas the husband would join his brother. When times ameliorated they eventually joined again. But it was not considered to be good if a husband would leave his wife in times of need.

Spencer relates that only one case of cannibalism was known, when a woman had eaten the flesh of her mother and sisters after they had died. It was not stigmatized by the community but just considered to be very sad.

Conclusions

A social system works through the complex interaction of its parts. When one part of the whole is affected the other parts are affected as well. If one component is weakened, more strength will be needed by another component to secure survival of the system.

For this mechanism which balances the interrelationship of the components, i.e. the ability of a social system to absorb disturbance, the term resilience as known in ecology [2] could be applied.

At first sight the two described population groups seem to be very different with no common traits visible. Their

subsistence activities are different, kinship organization follows different lines, and their political structure has nothing in common.

A more thorough study shows a number of correspondences which are of minor importance in this context. One characteristic which both groups share is their flexibility in the organization of social life in times of stress.

Stress situations due to unpredictable natural phenomena are known in both cultures but do not occur regularly. Both systems had to deal with them in the past and developed mechanisms for an appropriate behaviour of their members.

Through the particular environmental conditions the economic pursuit is interrupted and famine threatens the survival of the population. The Tikopia face such a situation by strengthening the power of their political leaders, who are able to face the disaster with the collaboration of the commoners. A general breakdown of law and order is reversible under the impact of new regulations and stricter surveillance. The importance of chiefs is shifted from the ceremonial to the political field in the course of the famine.

An egalitarian system like that of the Eskimo has to search for other means. In order to surmount the hardships of the environment, people depend on mutual aid. Since there exists fear from and thus hostility towards strangers a great number of ways are found to include as many people as possible in the kinship and quasi-kinship groups or similar

associations. With kinship or partnership bonds also the obligations of mutual cooperation are extended.

If an individual or individuals are under stress the wider circle of persons bound by mutual obligations will act. But when the whole group is hit by extreme need both social systems allow the kinship groups to split up with regard to food distribution to lessen the responsibility for many and thus to focus it on the nuclear family in the struggle for survival.

A particular form of flexibility is present in the Eskimo social system with its outspoken freedom of choice concerning many aspects of social life thus balancing the limitations of the Arctic environment. On the other hand it is society, i.e. the particular family grouping, which is free to eliminate an individual who is a burden or a danger for their survival.

The extinction of the inland Eskimo as described above is an example of how the resilience factor can be exhausted. They were prepared for temporary famine situations which they could master in the same manner as the coastal Eskimo. Once they were definitely deprived of their main foodstuff their resistance was broken and the ecological conditions did not allow an alternative within the habitual setting.

Recommendations

This study is too short to be representative for every social structure. It can only serve to show that--fortuitously or not--the resilience phenomenon is manifest in both instances in the form of marked flexibility. In order to draw generalizations, research on a far broader scale would be needed in which a variety of societies should be compared as to their economic levels, or political and religious systems for instance. Different stress situations, manmade and environmentally conditioned, should be examined. By an inquiry into the death of cultures it should be found out in what domain the decisive impact for complete destruction can lie.

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