157

Social Change
and
Transmission of Knowledge and Bush Skills
among
Omushkegowuk Cree Women

by

Kayo Ohmagari, M.A.

A Thesis

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in partial Fulfilment of the Requirements

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SOCIAL CHANGE AND TRANSMISSION OF KNOWLEDGE AND BUSH SKILLS AMONG OMUSHKEGOWUK CREE WOMEN

BY

KAYO OHMAGARI

A Thesis/Practicum submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Dedication:

To living memories of J.J and Dude Hunter and Kathryn Chookomolin in Peawanuck, and I. Jane Harry in Little Black River.

Abstract

The present study examines the nature of changes in the James Bay Cree society (Moose Factory and Peawanuck, Ontario), and adaptations of Omushkegowuk Cree women to modern and traditional life styles. The study discusses the implications of the persistence of the traditional economy in terms of social and economic development of the Omushkegowuk region.

There are three objectives of the study: 1) to examine the changing roles of Cree women and their adaptations (chapter three); 2) to examine the transmission of bush skills and knowledge (chapter four); and 3) to explore an alternative model of development focusing on the importance of values and cultural sustainability in the process of change (chapter five).

A mixed economy has evolved as an adaptive strategy that perpetuates the Cree traditional economy in a contemporary setting, but it poses a dilemma: how to be successful in both aboriginal and non-aboriginal worlds at the same time. One adaptive strategy is to become bicultural. Increasing numbers of younger women are becoming Euro-Canadian oriented, but, they still participate in the traditional economy as well. Continued participation in both sectors could be attributed mainly to two reasons: the need for ensuring the persistence of traditional Cree values, and livelihood adaptation to limited economic options.

Indigenous knowledge and traditional skills are essential

to harvest and process food from the traditional economy. About half of 93 items of women's indigenous knowledge and bush skill (compiled from key informants) were still being transmitted at the "hands-on" learning stage. Incomplete transmission (a lower level of mastery than in older generations) was a major concern, attributable to changes in the education environment, diminished time available in the bush, problems related to learning bush skills at later ages, and changes in value systems.

In light of the evidence presented regarding the persistence of the traditional culture, the present study reconsidered conventional northern development planning, and discussed an alternative development paradigm, culturally sustainable development that focuses on Cree key values. The present study contributes to the anthropology of development by suggesting roles for anthropologist in planning for culturally sustainable development.

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Table of Contents

List of Appendices

List of Tables

Lists of Figures

I. Introduction

1-1: Statement of the Problem

The present study examines the nature of change in Cree society, the persistence (continuation or endurance, as in dictionary sense) of the Cree traditional economy, and the adaptations of Cree women to modern and traditional life styles. The study discusses the implications of the persistence of the traditional Cree economy in terms of social and economic development of the Omushkegowuk region, the west coast of James Bay.

This study examines the process of acculturation in the Cree society under the development policies of the early and mid-twentieth century. Many studies have reported that the Cree people managed to maintain their traditional economy, despite the predictions to the contrary of the acculturation-assimilation theory that was in vogue at the time. The aboriginal people were expected to abandon their traditional economic pursuits in favour of wage employment.

However, the traditional economy has remained, in fact, integral to the contemporary northern aboriginal village economy. Several writers observed that the northern aboriginal village economy consists of three parts: wage sector, traditional sector, and transfer payments (Berger 1977; George and Preston 1987).

The persistence of the hunting culture has intrigued many researchers (Cruikshank 1990:12). Most of the works on the

persistence of the traditional economy have focused on the role of men as hunters-fishermen-trappers (e.g., Berger 1977; Berkes et al. 1994; Feit 1991; Scott 1984), neglecting the role of women. There are two notable exceptions to the literature on Cree women of Northern Ontario, but neither deal with the contemporary role of women in the traditional economy. One is the monograph "Women and Work" (Blythe et al. 1985) which is restricted mostly to wage economy and settlement life. The other is a life history, "Ellen Smallboy" (Flannery 1995). This latter work exemplifies the traditional lifestyles of the 19th century James Bay Cree women, but does not deal with the rapid social change that occurred after 1945.

In order to complement the earlier studies, this thesis focuses on the contemporary role of Cree women in the traditional economy, and their acculturation and adaptation to village mixed economy. Two themes are chosen to explore acculturation-adaptation of the Cree women: 1) change in Cree women's roles and adaptive strategies in the traditional and village-based mixed economies of Moose Factory and Peawanuck; 2) the transmission and adaptation of traditional knowledge and skills among contemporary Cree women.

In the light of the evidence from these two themes, the thesis offers a critique of the concept and practice of northern native development, and an examination of alternative development paradigms with special attention to the role of

cultural values in planning for sustainable development.

Chapter two covers methodology and background of the research area. Chapter three discusses the changing roles and adaptive strategies of Cree women in the context of traditional and mixed economies. Chapter four examines the persistence and adaptation of Cree traditions, specially the transmission of bush skills among women. In conclusion, chapter five discusses the possibilities of an alternative development model for the Omushkegowuk Cree aimed at a mixed economy.

1-2: **Review of Theory and Significance of the Study**

The plan of this section is: 1) to review the northern development policy of assimilation and the implementation of the model of northern development; 2) to discuss an alternative model of northern development focused on acculturation-adaptation and culturally sustainable development; and 3) to discuss the significance of the study in relation to the complexities of culture change and the role of anthropology for planning sustainable development.

1-2-1: **Northern Development Policy**

The past policy of the Department of Indian and Northern Development was assimilation. The Canadian government established an assimilation policy for native people by the time the Indian Act was passed in 1876 (Miller 1987; Nock

1988:73; Richardson 1993:95). From the early 1900s on, residential school education was provided for aboriginal children to assimilate into the dominant Canadian society and to prepare for supposedly inevitable and desirable process of "social evolution" (Asch 1982:365; Miller 1987; Nock 1988:74).

Consequently, a summer day school was established in Moose Factory as early as 1810 for children of mixed marriages (Long 1985:45). However, the government had difficulty assimilating the native population, since most of the native people continued their nomadic way of life. In autumn, native families left for their trapping grounds, and they did not return to the posts until the following summer. Many children received an education only for a brief period of time during the summer, and some never went to school.

A major change in the northern development policy occurred after 1945 when the government began to enforce assimilation through "directed change" for native northerners (Feit 1982:365). This post-Second World War period coincided with a time of game depletion and the collapse of fur prices. Native people were struggling to make a living through their traditional economy. Many people turned to wage employment as well as assistance from the trading posts, missions, and Indian agents. Consequently, the government assumed that the native way of life was disappearing (Dacks 1981:29; Ross and Usher 1986:145).

In the view of the government, material poverty and poor

public health in the Canadian North were an "international embarrassment" (Judd 1969:598). The government implemented directed change using a comprehensive model for social development based on the classic modernization theory (Cruikshank 1990:11-12). According to this model, it was predicted that aboriginal societies would make a transition to an industrial economy; the aboriginal lifestyle of hunting-gathering was considered an evolutionary relic (Asch 1982).

Classic modernization theory assumed that all societies are classified into three stages depending on the degree of their development and industrialization: traditional; transitional; and modernized (Dube 1988:1). Progress through this process was considered inevitable and "good" because societies were moving toward the final stage of humanity and civilization (Bennett 1988:4; So 1990:19). The aboriginal societies were considered to be at the bottom of a civilization hierarchy, and they were expected to develop and industrialize. In this process, value change and assimilation was considered a prerequisite for aboriginal peoples' transition to an industrial economy.

This model of development was used for "rational social planning" to accelerate the process of social evolution in the belief that such development would ameliorate the native people's economic as well as health condition. Consequently, the Canadian government launched a series of social development programs to accelerate the gradual process of

assimilation and social evolution.

First, the government decided to ignore any "special characteristics" of native people (Dacks 1981:29). It extended the same social assistance services to northerners as to the rest of Canada's population in order to cope with native poverty and poor health (Coates 1988:13). Although this policy derived from good intentions, it had an ethnocentric bias since the government did not provide a choice: the only possibility was assimilation (Judd 1969:599).

Native people had to be sedentarized in villages where medical and educational services could be economically provided (Dacks 1981:29). The government opened nursing stations in most of the Cree villages after 1945. Moose Factory Hospital was established in 1951 to deal with tuberculosis among the native populations of the James and Hudson Bay coasts (Robinson 1988:1607). The Moose Factory school was established in 1905 but expanded in 1955, and provided both residential and day school education (Long cited in Blythe et at. 1985:39).

The federal government further implemented social assistance programs by means of child allowance, old age pensions, disability pensions, and welfare assistance. Government assistance was increased in Attawapiskat from $6.28 per capita in 1942-1943 to $14.11 per capita in 1945-1946 and $22.41 per capita in 1946-1947 to $36.17 per capita (estimated) in 1947-1948 (Honigmann 1961:102). According to

Trudeau (1966:39), three forms of government payment (child allowance, old age assistance, and old age security) comprised about 22 percent of the total annual gross income in Winisk (later Peawanuck) in the 1960s.

This cash income was originally aimed at relieving native hardship, but it was also used as a tool to promote sedentarism and assimilation. The government started to provide monthly checks in place of conventional autumn allowances in order to encourage hunters to stay in their settlements (Feit 1982:392). Limited wage work sponsored by the government also encouraged the Cree to stay "home" (Rogers 1963:81). As the government considered education as an essential tool for assimilation, it threatened to withdraw child allowances from the Cree people if their children did not attend school. As a result, many parents moved near school locations in order to send their children to day schools (Blythe et al. 1985:39).

Under this model of northern development, the only future envisioned for native people was to become wage earners. As the government believed that poverty and the poor health of aboriginal communities derived from underdevelopment, it was thought necessary to provide jobs for native people through industrial development by "opening up the North." Nevertheless, others have argued that opening up the North had little to do with the welfare of aboriginal people.

However, this development model did not work for the Cree

the way it was anticipated. Although some Cree people became totally assimilated and absorbed in Euro-Canadian society, the Cree as a group remained distinctive and marginalized. Industrial development in northern Canada did not provide the Cree and other native people with a stable wage employment base. Most native people failed to receive sufficient Euro-Canadian education and training required for the newly created jobs. Thus, most of the stable jobs created in the North were filled by southerners. Native people remained as marginal, unskilled, and temporary workers with low pay (Dacks 1981:21; Hobart 1982). Even in large industrial development projects such as the James Bay stage I hydro development in Quebec, the number of construction jobs created for the Cree was negligible (Salisbury 1986).

Furthermore, by the mid-1970s, the model of development based on assimilation and social evolution began to be questioned from another angle. The aboriginal people themselves became increasingly vocal about the directions of development, such as in the case of Berger inquiry. They appealed that their society was not vanishing, and was not in transition to be assimilated into Euro-Canadian society. Rather, they were committed to remain distinctive and wanted to continue to perpetuate their way of life in the contemporary setting (Cruikshank 1990:12). Thus, it became necessary to seek an alternative model of development.

1-2-2: **An Alternative Model of Northern Development**

The model of development based on assimilation and social evolution had failed in northern Canada. This failure was largely due to an ethnocentric assumption that dominated the thinking of policy-makers at that time. Hence, this thesis proposes to use an alternative assumption regarding the importance of values in the process of change. It examines sociocultural change among the Omushkegowuk Cree and seeks an alternative model of development. For this purpose, acculturation-adaptation theory and culturally sustainable development are selected and reviewed.

1-2-2-1: **Acculturation-adaptation theory**

According to Redfield et al. (1936:149),

> "acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous firsthand contact, with subsequent changes in the original cultural patterns of either or both groups."

Earlier mainstream acculturation studies focused on cultural systems in contact and typology of society by the end results of acculturation.

Redfield et al. (1936) defined three types of results: acceptance (assimilation), adaptation, and reaction. Likewise, the Social Science Research Council (1954) defined three types of results: fusion, assimilation, and stabilized pluralism. Mainstream acculturation studies have dealt with

various contact conditions, persistence of values, and diverse end-results of acculturation (e.g., Foster 1973; Spicer 1961).

However, one school of thought in acculturation studies has dealt mainly with the results of colonization and forced change by the technologically superior society. These studies assumed that the result of acculturation was always assimilation by the dominant culture of the less powerful (Spindler 1977:33). This acculturation-assimilation theory, as opposed to other possible outcomes of acculturation, was adopted as Indian policy in Canada and contributed to the failure of the implementation of northern development.

Thus, the present study proposes to use an acculturation-adaptation theory that acknowledges the importance of values in the process of change for an alternative model of northern development. Adaptation could be defined here as the processes of individual or collective adjustment to cope with change without assimilation (Spindler 1977:32-33). In this process of adjustment, individuals use "adaptive strategies" to maintain aspects of traditional cultures in changing social environment (Spindler 1977:33). Such strategies include "reaffirmation of seemingly traditional values and behaviour patterns, biculturalism, and cultural syntheses of conflicting cultural elements, and managed identities" (Spindler 1977:33).

In the adaptive process, cultural values are considered to be the basis of adjustment. Those values are assumed to be the foundation of decision making to accept or reject changes

that guide an individual behaviour. However, the system of values is considered not static but dynamic. Although individual values could undergo change, the value system itself remains coherent, and maintains its function to serve as the basis for adaptation (Keesing 1953:79-80; Bernard and Pelto 1987:2, 364).

This view of acculturation offers a more complex perspective of culture change than acculturation-assimilation. The assimilation theory used culture and society as a whole as the unit for analysis, and considered culture change as a uniform phenomenon leading to assimilation. By contrast, the adaptation theory used an individual as the unit of analysis, and considered culture change as a complex phenomenon leading to various forms of adaptations.

1-2-2-2: **Culturally Sustainable Development**

The concept of sustainable development emerged in response to the failure of development models that emphasized an increase in production and economic growth through industrial development. The result of such development was often ecological degradation for short-term economic gain, and loss of culture because such development often ignored social issues and, in particular, indigenous cultures (World Commission of Environment and Development 1987:3).

Two topics are involved in this sustainability issue: one is sustainability of economic systems, environment, and

resources in reaction to deterioration and resource depletion; the other is cultural sustainability in view of past neglect of cultural factors in the development. Culturally sustainable development addresses the latter.

There is a large amount of literature that addresses economic and environmental aspects of "sustainable development." The social and cultural aspects of sustainable development are usually considered important, but they remain largely undefined (Berkes and Folke 1994; World Commission of Environment and Development 1987). There is a lack of literature in anthropology on the social and cultural aspects of sustainable development and few anthropologists are involved in the discussions.

A notable exception was Berkes et al. (1994), which addressed the socio-cultural aspect of sustainable development in the Omushkegowuk region. Berkes et al. (1994:358) defined culturally sustainable development as:

> development that meets the material needs of the present without compromising the ability of future generations to retain their cultural identity, social relationships, and values, and to allow for change recognized and guided in ways that are consistent with existing cultural principles of a people.

This concept places the issue of values at the foundation of "culturally sustainable development." It also addresses the problem of how to incorporate culture into development

processes, that is, the designing of development programs in a way that sustains values.

Culturally sustainable development is a rational concept because it aims to sustain the system of values that is an essential adaptive mechanism for change (Keesing 1953:79-80). As acculturation-adaptation theory (cf. 1-2-2-1), the concept of culturally sustainable development acknowledges the importance of values during the adjustment process. Furthermore, culturally sustainable development projects, such as community-based projects that utilize traditional knowledge and institutions, are more likely to succeed than programs that totally consist of foreign elements (Boulding 1993; Goodland 1985; Warren et al. 1995).

However, the designing of culturally sustainable development is difficult because of the problem associated with the measurement of "cultural sustainability." The identification and quantification of values are difficult (Berkes et al. 1994:358). One approach may be to calculate the costs of socio-cultural <u>non-sustainability</u>. Such costs could be measured indirectly by calculating the social costs, e.g., costs deriving from family violence, crime and vandalism, drug and alcohol abuse, welfare, and medical costs (e.g., Niezen 1993 and Shkilnyk 1985). Unfortunately, such an approach fails to address the positive aspects of cultural sustainability (Berkes et al. 1994:358).

This thesis attempts to address cultural sustainability

in a positive way. First, the study explores Cree values for the criteria of cultural sustainability from the literature. Values such as respect (Honigmann 1961), modesty/humility (Tanner 1979), cooperation (Scott 1989), reciprocity (Berkes 1988), and self-control (Preston 1986a) have been identified as key Cree values by previous researchers (cf. 2-3-4 and Table 5.1). Secondly, the study adds to this list based on the findings of the present study. In summary, the study explores the issue of the role of cultural values in development, and how anthropology could contribute toward the design of a model of development that is culturally sustainable.

1-2-3: **Significance of the Present Study**

The major contributions of the present study are in the areas of acculturation theory and the anthropology of development in relation to culturally sustainable development. Each topic will be discussed in turn.

A leading research focus of acculturation-adaptation theory is the process of acculturation and the use of adaptive strategies to cope with changes in order to maintain certain aspects of traditional values. In contrast to assimilation theory which employs the sociocultural system as the unit of analysis and assumes sociocultural change to be a uniform phenomenon, adaptation theory offers a more complex view of sociocultural change. The latter theory employs the

individual as the unit of analysis, and examines individual options and diverse responses to sociocultural change.

The present study has examined two themes using acculturation-adaptation theory. The first theme deals with changes in the role of Cree women in the traditional economy, and explicitly studies the contemporary role of women in both traditional and mixed economies (chapter three). The study has examined Cree women's adaptation using a quantitative method of cultural orientation and has documented adaptations of the Omushkegowuk Cree women in the two communities and among different age groups. Hence, the present study makes a contribution to the acculturation literature by documenting the complexities of culture change.

The second theme deals with the transmission of traditional knowledge and bush skills, and the system of traditional education (chapter four). First, the study identifies the traditional education system in the bush during the nomadic and semi-nomadic periods using qualitative data. Second, the study examines how the traditional education system operates in sedentary village life, both quantitatively and qualitatively. Third, the study explores the persistence of the transmission, and examines the effect of sociocultural change on the traditional education system and its adaptation to changing social environment.

Since there are only a few studies on the transmission of practical knowledge and skills in anthropology (e.g., Ruddle

and Chesterfield 1977; Hewlett and Cavalli-Sforza 1986), this study makes a contribution to the literature of traditional education by offering the first detailed examination of the transmission of traditional skills in the Canadian subarctic. Moreover, the study also contributes to the acculturation literature by documenting the persistence and adaptation of traditional culture in a contemporary setting.

The major contribution of the present study is in the area of alternative paradigms of development and the role of values in the context of culturally sustainable development. This concept acknowledges the importance of cultural values in the process of change, and focuses on the issue of "sustainability" of values in development.

Although many of the earlier paradigms of development had ignored the importance of values, anthropologists have long been aware that values are indispensable for development. Values are seen as the important adaptive mechanism for change and they are the major factors of choice behaviour regarding whether to accept or reject change (e.g., Firth 1969).

Thus, the anthropological contributions of the present study are twofold. First, the study introduces culturally sustainable development as an alternative paradigm of development. Second, the study discusses the role of anthropology in designing alternative models of development.

II. Methodology and Sampling Design

2-1: Bias and limitations of anthropological research

2-1-1: Fieldwork and gender

Anthropologists never have an even access to all potential informants (Whitehead and Price 1986). As Wax (1979) states, a researcher's gender and age influence the nature of field research. In some cases, the researcher's gender and age work positively to facilitate the research of a particular topic, while in other cases they work negatively to inhibit or restrict some study topics (Warren 1988:45).

Due to the above limitation, anthropological studies are necessarily (although to varying extents) partial and therefore somewhat distorted representations of the social group they study. For example, many male researchers believe that they have investigated and described a problem without bias, when in reality their ethnographic information is restricted to half or less than half of the total culture (Abu-Lughod 1990; Wax 1979).

Native harvesting studies in the James Bay area, in which male hunters were the main respondents (NHRC 1982; Berkes et al. 1994) do not account for the activities of women to any extent. This researcher as well as others find that the Cree society have some degree of gender segregation (B. Cummings, G. Granzberg, H. Lewis, and C. Scott, personal communication). If this is the case, can male hunters speak for their wives and daughters?

The founder of Japanese ethnology, Kunio Yanagida, says that "women's wisdom and power should be used for the aspects of study where men have no access" (Yanagida cited in Yamazaki 1972:21). Following his advice, the researcher decided to use her gender to advantage. Thus, her decision to conduct research using Cree women as her study group pertains to the researcher's own gender.

2-1-2: **Anthropological knowledge, bias, and self-reflection**

The recent interest among anthropologists in self-reflection originates as a reaction to the past domination of positivism that has denounced the subjective aspect of anthropological inquiry. Although many anthropologists have been aware of the fact that so-called "objective" data are in reality subjectively obtained, they did not reveal this awareness until recently.

The deception was perpetrated by anthropologists like Malinowski, who stated "the problem was how to 'convince my readers' that the ethnographic information offered them was 'objectively acquired knowledge' and not simply 'a subjectively formed notion'" (Malinowski cited in Stocking 1983:105). In other words, anthropological facts were considered to be concrete, as in the hard sciences. In this process, it was necessary to denounce the subjective aspect of anthropological inquiry.

Increasing numbers of contemporary anthropologists openly

admit that anthropological knowledge of social reality is a "model" not concrete "facts", as previously claimed by some. They perceive anthropological reality as a "construction" between the subjects and the researcher, rather than "objective" reality.[1] The basis of anthropological knowledge is produced by intersubjective dialogues, that is the realized understandings between the researcher and subjects (Beatte 1984:2; Dwyer 1979:206; Karp and Kendal 1982:250-251; Myerhoff and Ruby 1982:9; Rabinow 1977:150-151).

On the basis of this understanding, anthropologists "translate" alien cultures into a representable and understandable model, but little is written about the actual process of this "translation" (Crick 1982:308). Since the intersubjective nature of understanding is the foundation of anthropological representation, it is of major interest to find out how the subjects and the researcher who share very little in common can reach understanding (e.g., Dumont cited in Hamamoto 1984:295; Myerhoff and Ruby 1982:18; Rabinow 1977).

The information provided by the subjects can only be understood from the viewpoint of the researcher who functions as the "human instrument" in this process of interpretation (Powdermaker 1966:19). However, this instrument cannot escape his/her bias because of the nature of human beings who also have their own biological and cultural background (Agar 1986:14; Beatte 1984:15; Fiske 1986:66; Powdermaker 1966:19;

Rabinow 1977:119).

Some anthropologists use the phenomenological approach that encourages detachment from one's own culture and suppositions, which is generally taken as granted, to achieve self-reflection (Merleau-Ponty and Schutz cited in Hamamoto 1984:285-290). This bias of the researcher is our only "foundation" for understanding, interpreting, and translating other cultures into a model (Spiro 1986:269; Webster 1982:101). Therefore, this translation is never perfect but is indispensable (Barnes and Bloor 1982:39).

Since the particular bias of an individual researcher is integral to the process of understanding, it is critically important to examine the researcher's bias by self-reflection. However, the examination of bias is difficult because the researcher may not always be aware of his/her biases. Variables, such as culture, gender, social class, age, and political ideology, influence the researcher's understanding of the subjects (Turnbull 1986).

In the present research, as the researcher does not have a Euro-Canadian background, she was curious how this difference might have affected her observation, interaction with informants, and interpretation of data. This researcher's bias is middle-class Japanese and female. Her background was a defining factor influencing her interaction with Cree informants and data collection using the Japanese technique of social interaction that will be discussed in 2-2.

Although the researcher made a conscious effort at self-reflection, the information that was collected and interpreted inevitably carries some of these biases. No interpretation is never purely objective.

2-2: **Methodology and sampling design**

2-2-1: **Description and Periods of Fieldwork**

Two practical field approaches were employed to get the more benefit from the fieldwork. The first approach was the division of field work experience into two phases, August-December in 1992 and April-July in 1993. In total, the researcher spent seven months in two communities, three months at Moose Factory and four months at Peawanuck. These two phases covered almost all of the yearly subsistence cycles of the communities. By going back to the same village and the same host families, the researcher had the opportunity to renew mutual trust and friendship. This strategy facilitated tolerance from the people. As well, it provided a chance to cross-check the earlier information and add to it.

The second approach was the selection of accommodations based on two criteria: local families and bush-oriented families. Accommodation with a local, well-respected family is an asset for the anthropologist since the local family's acceptance of outsiders generally means social acceptance.

Social acceptance is the first step of integration into community life. Local people frequently asked the researcher

with whom she was staying. Most of the families in villages were related through kinship. Host families played a critical role of local networking and establishing rapport with other villagers. Furthermore, host family members played the role of "guardian" for the researcher and they were the indirect "facilitators" of the research.

To ensure adequate opportunities for participant observation, staying with families who are active in bush activities was essential for the study purpose. In one village, the researcher stayed with a well-respected local family skilled in bush activities. Thus, this family satisfied both criteria.

In the other village, the host was also a local family with an extensive kinship network. However, the family was retired and no longer skilled in bush activities. Thus, the family only satisfied the first criterion but the researcher was fortunate to get an invitation from another family to join their bush activities.

The individual names in this thesis are changed in order to protect their privacy. However, the names of the communities are real.

2-2-2: **Field methods**

The researcher believes that successful fieldwork requires two sets of complementary field methods. Technical methods refer to acknowledged methods of generating data, such

as interviews and participant observation. Non-technical methods refer to a systematic approach to building reasonable social relationships in the host culture by manipulating skills of cross-cultural social interaction. Non-technical methods are prerequisite for using technical methods in an acceptable manner in host communities. These methods could determine the success or failure of fieldwork (cf. Karp and Kendal 1982: 253).

2-2-2-1: **Technical field methods**

Two technical field methods were employed for this study: first, participant observation; and second, interviews (directed and open-ended). Participant observation was employed during hunting, fishing, and trapping trips. The researcher made every effort to secure opportunities for field trips for participant observation. Participant observation is not only a culturally more appropriate mode of collecting information for Cree, but it also provides a context for posing questions later. Participant observation also allows the researcher to pick up basic bush skills and to establish rapport with informants.

The researcher was more comfortable with participant observation than interviews. In Japan, observation is a more appropriate mode of collecting information. Japanese patterns of human interaction heavily rely on participant observation and non-verbal communication to understand and to act on the

given condition. The ideal pattern of Japanese mode of communication is about 20 percent verbal communication and 80 percent non-verbal communication by participant observation (N. Chikudate, personal communication). It is possible that the researcher is able to generate more information through participant observation than Euro-Canadian researchers who have been socialized to sharpen their skills in verbal communication.

Interviews, the second field method, included two techniques: unstructured interviews for key informants and the older people, and structured interviews with questionnaires for the younger people. Unstructured interviews were used for key informants, who were active in bush life and acknowledged by community to be experts. This method generated information that was later used in context for questioning and constructing questionnaires. Unstructured interviews were also used with elders because they did not respond well to structured interviews. The researcher refrained from note-taking and the use of the tape recorder most of the time while conducting unstructured interviews so as not to threaten any interviewees.

Structured interviews were used to elicit information systematically on participation, frequency of bush activities, and transmission of 93 bush skills (cf. Appendix F). The researcher composed these questionnaires based on information collected by unstructured interviews with key informants and

elders. She administered two questionnaires; one for each field season. Structured interviews were mostly used with younger people who responded well to this research method.

2-2-2-2: **Sampling design**

This section summarizes sampling procedures employed in each of the field methods used, non-structured interviews and structured interviews. As for participant observation, no systematic sampling procedure was employed.

Non-structured interviews were used with key informants and elders. The researcher relied on local contacts and experts to identify individuals whom she should visit. She approached individuals and selected those people who were cooperative as key informants. The researcher worked with two women from each community; they were younger women who were nevertheless acknowledged by community members as active and knowledgeable in bush activities.

The researcher also visited elders who were suggested by local contacts and key informants. The depth of information generated from each interviewee regarding bush skills, traditional education, and life histories, varied depending on the informant's personality and the degree of rapport between the informant and the researcher. Thirty Moose Factory women and 11 Peawanuck women were interviewed by means of unstructured interviews.

Monolingual women were not interviewed due to

unavailability of funds for translators in either community. Three women in Moose Factory and eight women in Peawanuck were not interviewed for this reason. They could have provided the researcher with important additional information on traditional education as well as on nomadic and semi-nomadic life.

The sampling designs for structured interviews varied depending on communities. In Moose Factory, a large "urban" centre, sampling was not stratified but included people who were available through local contacts and willing to be interviewed. Relying on local contacts was the only way to get interviews done in Moose Factory to find out who was willing to be interviewed. It was neither culturally or politically acceptable for the researcher to impose her own sampling design on the community. Since the Moose Factory informants were a self-selected group interested in traditional skills, it can be said that the sampling was biased in favour of the bush oriented sector[2] in Moose Factory.

In contrast, in Peawanuck, a small village, the sample covered all women who were available and willing to be interviewed. This sampling procedure was possible because the Peawanuck people were perhaps more tolerant since they were less exposed to researchers.

The numbers of women who participated in structured interviews vary because two questionnaires were administered

and some women did not complete the questionnaire but supplied only part of the information the researcher required. In total, 37 Moose Factory women and 32 Peawanuck women supplied information for structured interviews. Those numbers represented 10 percent of Moose Factory women who were age 15 and over, and 51 percent of Peawanuck women who were age 15 and over. Overall samples (including, structured and unstructured interviews and participant observation) represented 20 percent of Moose Factory women who were age 15 and over, and 73 percent of Peawanuck women who were age 15 and over. Thus, samples from Moose Factory were selective. Samples from Peawanuck were considered more representative than Moose Factory.

Table 2.1: Numbers of sample size

	Moose Factory	Peawanuck
Structured Interviews	37	32
Non-Structured Interviews	30	11
Participant Observation	6 families	3 families
Total Population	1,196*	225
Women over 15	368*	63
Percentage Interviewed	20%	73%

Note:
* Both numbers exclude members of MoCreebec First Nations[3] who reside on Moose Factory Island.

2-2-2-3: **Informal field methods used**

The researcher employed Japanese techniques of social interaction in order to increase informants' tolerance and acceptance. It could be argued that the Japanese techniques may achieve this purpose for two reasons. First, Japanese society works on more rigid rules of social conduct than Euro-Canadian society. Japanese society could be called "highly structured" through the provision of a universal reference point in social structure, such as age or seniority. In Japanese society, basic structures of social interaction have been laid out and are not negotiable. Everyone is expected to find one's position in the social structure, to remain and to function within a given stratum.[4] The definition of proper behaviour differs depending on an individual's position in the social structure. Those individuals who deviate from the expected behaviour are penalized by teasing and social gossiping. The ultimate sanction is social ostracism.

By contrast, Euro-Canadian society can be considered "loosely structured" as it does not provide for an individual a fixed reference point in social structure (e.g. age or seniority carry little weight) and an individual is allowed to negotiate his/her position. An individual in Euro-Canadian society is expected to build rather than find one's position according to their needs and preferences. Position of individuals is relative and flexible because they are allowed to bargain. Accordingly, behaviour is flexible and negotiable

to certain extent. Acceptable behaviour within a stratum is more flexible than in Japanese society.

A common complaint among students who come from highly structured societies is that Euro-Canadian society is too loose. Foreign students feel that they get lost because that they cannot find a fixed reference point that would provide guidance for their position and proper behaviour within the Euro-Canadian social structure.

Second, the researcher believes that Japanese techniques of social interaction are closer to the Cree definition of "proper behaviour" than Euro-Canadian. Japanese and Cree society share some basic features, such as emphasis on kin groups and family intimacy, respect for seniority and silence, a concept of shame, some gender segregation, an emphasis on observation and apprenticeship in learning, and the value on non-verbal and indirect communication. This researcher's earlier research experience with the Saulteaux in Manitoba, another Algonquian-speaking group, also indicated that the Japanese techniques were effective in establishing rapport with informants.

Non-technical methods are prerequisite to administer technical field methods effectively because anthropological inquiry exists within fragile social interactions between the subjects and the researcher who share very little in common. Therefore, building human relationships is at the core of anthropological research. Nevertheless, these practical but

essential skills of social interaction have been long neglected in academic programs (Punch 1986:16). The researcher was fortunate because she had a option of choosing either Japanese or Euro-Canadian techniques of social interaction. However, most students do not have this option since they were only familiar with the Euro-Canadian technique.

There are increasing numbers of monographs on field experiences due to increased interest in self-reflection among anthropologists (e.g., Myerhoff and Ruby 1982; Rabinow 1977; Webster 1982). However, the benefit of students learning from previous literature is limited and may only serve as an anecdote to fieldwork unless they have other practical research experience they can relate to. Without any practical research experience, it would be difficult for students to realize the meaning of messages and to utilize the literature fully. Moreover, the researcher's personality is another important factor for conducting fieldwork because personality affects the pattern of human interactions (Bujra 1975; Powdermaker 1966; Whitehead and Price 1986). Thus, field experience described by one researcher may not be applicable to another researcher who may have a totally different personality and socio-cultural upbringing.

2-2-3: **Field methods on practice**

When the researcher arrived in the two communities, she

found her Cree hosts were reticent. She interpreted their behaviour according to her experiences among the Saulteaux and Japanese; their reaction was normal, anticipated behaviour toward an outsider. They were interested in the researcher but their reticence provided social distance. They kept this distance at first providing for themselves a security which would avoid possible embarrassment in associating with a potentially socially unacceptable person. The researcher also responded by reticence according to Japanese custom because it also warranted her social security for the same reason.[5] Her hosts may not prove to be the best people to associate with in the village. She showed her good will to her hosts by presenting them with small gifts and showing family photos. She was polite but maintained distances of interpersonal relationship so as not to pose any aggressive behaviour. She observed her hosts and tried to pick up social cues from their behaviours.

How to "break the ice," to dissolve reticence, and to gain social acceptance was a difficult problem. The researcher believed it was the only way for successful research. As a stranger, she would be the centre of their attention. She would be the bottom of social hierarchy without any kin. The only way out was to climb up the social hierarchy and gain status in the community. In order to achieve her status, she had to behave properly in the Cree context and pass their tests; proving that she was worthy of

their trust. Thus, it was up to her to gain social acceptance or to fail to attain social acceptance and face social ostracism. The initial period of fieldwork was extremely stressful without full knowledge of the rules of the game.

To begin with, the researcher had to visit local contacts in order to identify key informants. Contact persons were local government officials who were familiar with Euro-Canadian social interaction. Although the researcher was a stranger to them, it was still possible to get the information required.

However, it was very difficult for the researcher to visit and interview villagers because most of them were shy and showed reserve toward a total stranger. The researcher was particularly embarrassed to interview elders because she was not sure how to show proper respect in the Cree context. Moreover the researcher knew verbal communication would not warrant her opportunities to prove herself.[6] As she lacked the context knowledge of how to establish rapport with them, it was often difficult to have good interviews with them.

The researcher had to overcome uneasiness and she phrased the question in a way that would be so general that they would not be put 'on the spot.' The researcher appreciated any information they offered, listened very carefully and never interrupted. In the beginning, the researcher was not aware that a pause in conversation was longer in Cree than Japanese. Thus, she learned to be more patient and not to ask questions

without an adequate amount of silence because it might be considered aggressive behaviour, an equivalent of "talking back."

At the initial period of entry to research sites, the researcher spent time just "hanging around" and attending social activities in the two communities in order to establish rapport with villagers. The researcher avoided making a rigid research schedule and allocated sufficient time to "break the ice," and to wait for opportunities to prove herself before conducting interviews. When the researcher finally visited villagers for interviews, most of them stated that they had seen her before. Thus, they were less reticent since she was not a total stranger.

As the researcher had hoped, opportunities to prove herself trustworthy to her hosts happened through her actions. In Moose Factory, accidental participation in a ceremonial camp warranted her opportunities to prove herself. Her Cree hosts approved of her as a hard worker. Her diligence, willingness to cooperate and learn, and ability to understand indirect speech and to learn by observation convinced her host of her trustworthiness. After this short trip, she received an invitation from the host family to stay with them the rest of her field season. She again returned to the same family for her second field season.

In Peawanuck, accommodation with a local family was arranged through local contacts before her arrival at village.

The researcher started to help with the family's domestic chores soon after her arrival. A week later the researcher's arrival, the family took off on a moose hunting trip. The researcher was fortunate enough to be invited to go on this trip. This camping trip provided the researcher with the opportunity to prove herself to her hosts. Her Cree hosts approved of her again as being a hard worker. They were happy with her willingness to learn and to help, her diligent effort, and her ability to learn through observation and to take the initiative to help without verbal command. Thus, it cemented her tie with her host family and they became interested in her Cree education. She stayed with the family the rest of field work and again returned to stay with them for her second field season.

She found a role that she could play in both communities, and her hosts also encouraged her (cf. Warren 1988:19). This role-playing was very important to gain acceptance and tolerance from the Cree people since it provided a context of trust. She was treated as an "honourary member" of the host families, as a "daughter" who helped with domestic chores. Thus, she gained status in the community. The researcher played an active role in domestic production, such as the processing of bush food. She spent as much time as possible with the families, and avoided spending too much time alone in her own room. This helped the researcher increase the opportunity of learning and establishing rapport with host

families.

The researcher's status as a single woman was a consideration when she selected women as a reference group in the communities, to avoid the potential risk of being seen as flirting with men, and to increase more rapport with her hosts and women in villages (cf. Bujra 1975). Most of the men the researcher interacted with were members of host families. Nevertheless, she found that brothers were more open and accessible than fathers. A possible explanation is that fathers are authoritarian, and that social distance between father and daughter has to be maintained.

The researcher's new role and status as a family member had advantages, but it also brought obligations and restrictions. On the one hand, acceptance by host families was advantageous for the researcher. Her tie to the host families warranted her access to the rest of the community as a quasi-community member. By the end of fieldwork, most of the villagers knew where she was staying and related her as a quasi-community member.

On the other hand, the researcher had to comply with higher expectations placed on her social and cultural performance as quasi-kin and quasi-community member. She did not "enjoy the allowances made for the ineptitude of outsiders" (Aguilar 1981:21). She behaved as if she was a "daughter-in-law" in Japanese context, who was a new-comer to the household, diligent, humble, and willing to learn the

family customs and to compromise in order to gain acceptance from family members. Although this may be a self-imposed frame of social interaction, rather than imposed by her host families, the researcher did chores before leaving the house, prepared family meals, and tried hard to acquire skills in speaking Cree to maintain her status as a quasi-family member.

The researcher had to juggle her dual roles of stranger and quasi-kin, depending on the circumstances, to her advantage by moving between the role of family member and the role of stranger/researcher. Nevertheless, this switching of roles was difficult and stressful (cf. Bujra 1975; Whitehead and Price 1986). The researcher had to play the game according to the local standard, but at the same time, she had to get her work done.

For their cooperation and participation in the fieldwork, the researcher reciprocated by doing volunteer work in community activities. All the participants of the study received small gifts at the time of her visit as a token of help in the researcher's project. This gift giving is a commonplace practice in Japanese society. Copies of most photos were sent back to the people as a gift which is also a Japanese custom. Host families received gifts from the researcher's parents who thanked them taking care of their daughter at the second field season. Gift giving has social meaning; it is a sign of good will and friendship rather than payment. Moreover, all the research participants received

letters and Christmas cards to thank them for their help. Many appreciated Christmas cards that were sent from Japan. Social ties between the researcher and host families have been maintained since the fieldwork by means of letters and telephone conversation.

2-3: **Area, People, and Demography**

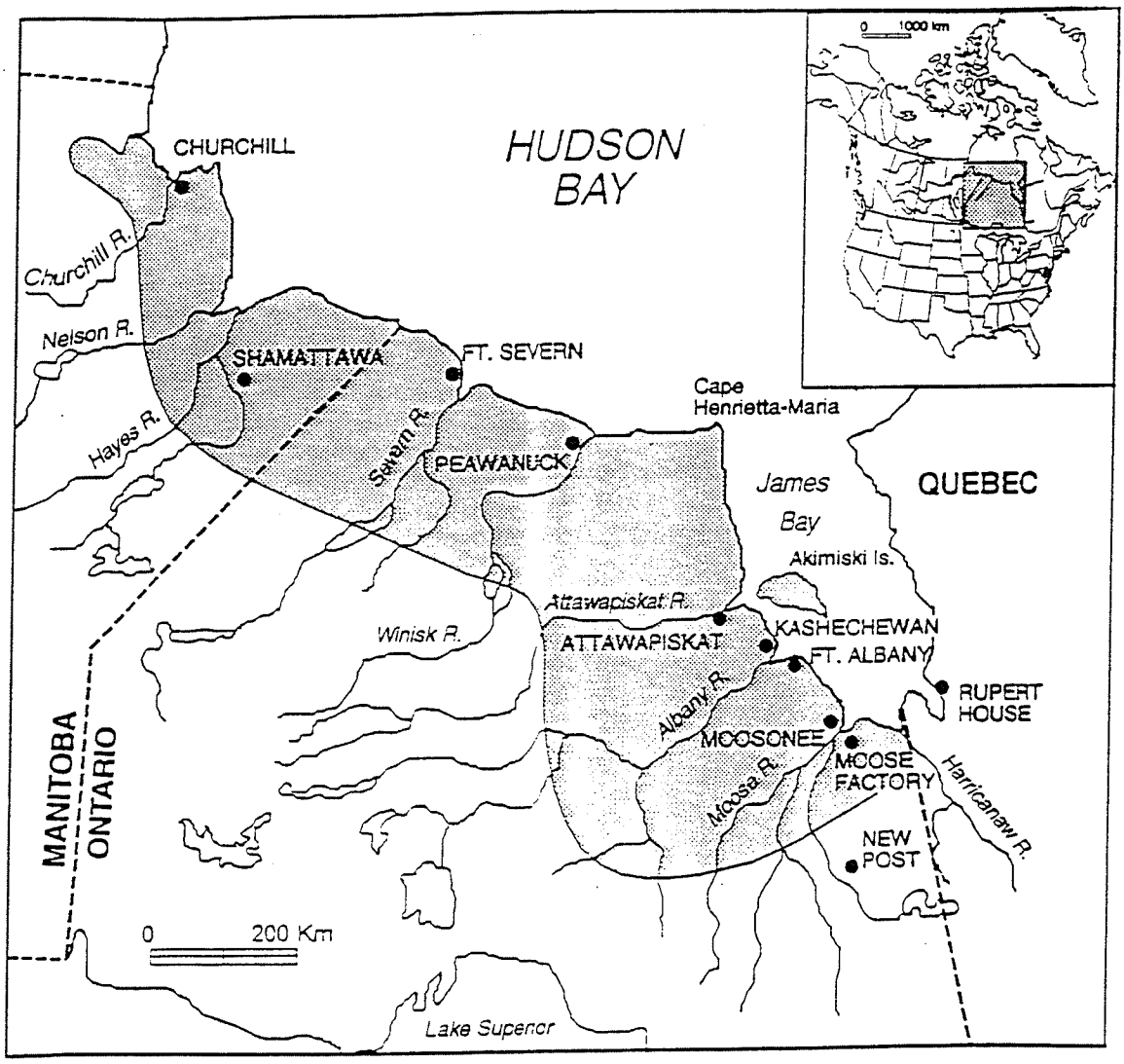
2-3-1: **Geographic Area**

The study was conducted in two Omushkegowuk Cree communities in Northern Ontario, Moose Factory and Peawanuck (Figure 1). The Omushkegowuk region of Northern Ontario extends from the Quebec border along the coast of James Bay and Hudson Bay to the Manitoba border. The area is geographically part of the Hudson Bay Lowlands, and one of the largest wetland regions of Canada. The entire area was covered by glaciers until about 10,000 years ago. It is flat and poorly drained, dominated by slow-moving rivers, and consists of a mosaic of forest, bogs and marshes. In vegetational classification, the region is called the tundra-open woodland. The typical vegetation is black spruce, sphagnum moss and ground lichen in the bogs; sedge, birch and tamarack in the fens; stands of white spruce, balsam fir, trembling aspen, balsam poplar and white birch occur in the better-drained areas.

Important food species in the region are caribou, goose, moose, snowshoe hare ("rabbit"), duck, grouse, ptarmigan,

Figure 1: Location of the study area, Moose Factory and Peawanuck (spelled Peawanuk on the map) in the Omushkegowuk region, the traditional territory of the West Main Cree.

Source: George and Preston (1987) after Honigmann (1981)



beaver, muskrat, and fish such as whitefish, pickerel, cisco, brook trout, pike, and sturgeon. There is no agriculture in the area except for small gardens in several of the villages because of the lack of top soil; furthermore, the average growing season is only 120 days, the average frost-free period is 40 to 60 days a year, and snow covers the ground more than 200 days a year.

The region is part of the subarctic, with mean daily temperatures of 10° to 15° C in July, -20° to -25° C in January, with 200 to 240 cm mean annual snowfall. The region is subjected to a seasonal cycle: spring breakup in May and an autumn freeze in November. It has a long severe winter and a short warm summer (Gardner 1981; Honigmann 1981; Rogers and Smith 1981; Rowe 1972).

2-3-2: **History and Language**

The people of the area have been referred to as Swampy Cree, a branch of the Algonquian-speaking peoples (Honigmann 1981). Their term for themselves is Omushkegowuk, literally the people of the muskeg, a Cree word that has entered the Canadian English language. Their range of nomadic activity was historically 200-300 km inland from the coast, to the limits of the wetland area. Band council records in 1990 gave a resident native population of about 6,500.

The identification and placement of territorial groups of

the Subarctic Algonquian-speaking people before the establishment of the trading posts is uncertain (Bishop 1981; Honigmann 1981). The group of Algonquian speakers who were referred as Christinaux or Kilistinon in the early records are believed to be ancestors of the Omushkegowuk Cree (Bishop 1981:158). According to Pentland (1979:61), the ancestors of the Omushkegowuk Cree probably occupied almost all of northern Ontario, with extensions into Manitoba and Quebec in the seventeenth century, but their territory was reduced in later years.

Early historical records identified Abitibi, Albany, Attawapiskat, Monsonis, Nipigon, Piscotagami, Severn, and Winisk as major Omushkegowuk Cree regional groups (Pentland 1981:228). Group boundaries among the Cree and Ojibwa populations in the territories south of Hudson Bay shifted during the early contact period. The stimulus of the fur trade probably displaced some of the Cree westward (Bishop 1981:158).

The relationship between the Western Cree and the Eastern Cree is controversial. The Jesuit Relations identified four Kilistinon groups of which one resided on the east side of James Bay (Bishop 1981:158). However, historical records also showed that relationships between Western Cree and Eastern Cree were not always friendly. For instance, Western Cree used to attack Eastern Cree when they could not find any Inuit with whom they were at war (Francis and Morantz 1983:71).

There are two major Cree dialects among the Omushkegowuk Cree: Swampy and Moose Cree. Swampy Cree, a n-dialect, is spoken from Fort Albany, Kashechewan, and Attawapiskat west. Moose Cree, a l-dialect, is spoken around Moose Factory, Moosonee, Fort Albany, and Kashechewan (Ellis 1995:xiii). By contrast, the Eastern Cree language belongs to another group of dialects with Montagnais and Naskapi who are their neighbours in the Labrador Peninsula (Rhodes and Todd 1981). Despite this linguistic affiliation, the Montagnais-Naskapi who live in eastern James Bay are often called the James Bay Cree or East Main Cree (Rogers and Leacock 1981:169). Although the Western Cree and East Cree speak different languages, it is assumed by some that there is cultural uniformity in the entire James Bay area (Preston 1987:287).[7]

As for the present territorial distinction, the Ojibwa occupy the area south of the Western James Bay Cree. At the north end of the Ojibwa territories, there are Northern Ojibwa who call themselves and their language, Oji-Cree (Rogers and Taylor 1981:231). There are some Oji-Cree at Fort Severn, just west of Peawanuck.

2-3-3: **Traditional Economy and Social Organization**

Traditionally, the Omushkegowuk Cree had a hunting, fishing and trapping economy. The only known division of labour was based on age and gender. They were considered hunters of waterfowl (Berkes et al. 1994) or of big game,

mainly caribou (Lytwyn 1993). They supplemented their diet with fish, small game, and fur bearing animals, such as beaver.

The unit of Cree social organization was the band, composed of an extended family with poorly developed political institutions (Fulford 1994:38; Rogers 1969a). Honigmann (1953; 1961) stated that the Cree practiced cross-cousin marriage and they practiced patrilocal residence with temporary bride service (also cf. Brightman 1993: 11-12; Turner and Wertman 1977). According to Rogers (1969a:56), ideal winter bands in Mistassini were composed of a father and his married sons. By contrast, Honigmann (1956:58) stated that ideal winter bands in Attawapiskat were composed of two brothers-in-law. Although band affiliation was generally patrilineal, this principle was applied with flexibility in accordance to prevailing circumstances (Morantz 1984).

Rogers (1969a,b) stated that the maximum size of the coresidential group was determined by how well the environment could provide the means of subsistence at a particular time and place. When necessary, the Cree band could disperse into smaller groups and then quickly reassemble (Preston 1981:201). This process constituted a form of environmental adaptation and a means to mitigate interpersonal conflicts that might develop. Thus, conflicts could be simply forgotten and there was little need to develop strong political institutions.

It is generally assumed that the Cree lacked strong

leadership. Leacock (1954) argued that all pre-contact aboriginal societies were egalitarian. However, Morantz (1983) claimed that pre-contact and early Cree society was egalitarian but with some development of leaders. She argued that the development of the trading captain system by the Hudson's Bay Company was the reinforcement of existing leadership patterns. Lytwyn (1993:72-73) also examined aboriginal leadership using historical documents, such as the Hudson's Bay Company Archives, and supported Morantz's position.

According to Lytwyn (1993), the Western Cree had well-developed leadership that was passed from a father to his son or another close male relative. In early historical records, Cree bands and their leaders were identified in association with river drainage systems. Generally leaders only influenced their immediate groups but some leaders' influence extended beyond. However, their leadership was characterized by consultation to build consensus within the group, not by the leader exercising authority on his own volition. Leaders were older males whose life experiences, hunting skills, and wisdom were valued (Berkes et al. 1992b:15-19; Brightman 1993:11; Fulford 1994:43).

Lytwyn (1993) argued that caribou were the most reliable resource before its serious depletion due to trade in meat and hides with the Hudson Bay Company around 1800. He argued that the development of leadership was necessary to coordinate

communal caribou hunts in aboriginal times. Leadership was also important in coordinating the communal hunt for geese, the most important resource on the coast (Berkes et al. 1994:351).

2-3-4: **Worldview and Cultural Values**

The Cree philosophy of nature and ethics is well adapted to bush life. The bush is considered "a dynamic and unforgiving teacher" (Preston 1986a:246). The bush is the context of self-discipline in which the Cree learn <u>self-control</u>. <u>Diligence</u> is a key work ethic for the Cree to survive in the bush (Honigmann 1961:169; Feit 1991:261). Similarly, <u>self-reliance</u> and <u>independence</u> are prerequisites for functioning competently in the bush environment (Preston 1979; 1986a; Sindell 1987). Although each individual is expected to be competent and self-reliant, the Cree acknowledge the importance of <u>interdependence</u> for survival. <u>Cooperation</u> is another essential work ethic to function efficiently in bush camps (Rogers and Rogers 1963; Sindell 1987).

Two closely linked Cree ethical values of <u>sharing</u> and <u>reciprocity</u> in sharing of bush food are "irreducible moral axioms" (Brightman 1994:10) that ensure group survival (Séguin 1992). An underlying concept for sharing and reciprocity is <u>respect</u>, the foundation of Cree social philosophy, which signifies relationship between humans, and between humans and

"other-than-human persons" (Feit 1991; Tanner 1979; Berkes 1988).

The act of hunting symbolizes "social reciprocity" for the Cree (Feit 1991). Success in hunting is not a matter of hunters' skills but implies a social relationship between animals and the hunter. The Cree consider that animals "give themselves" to hunters in order to sustain humans (Feit 1991; Scott 1989). In return for this gift, humans show respect to animals by approaching animals with humility or modesty, butchering meat properly, showing generosity in sharing meat, using animals without waste, and disposing of remains properly (Tanner 1979; Berkes 1988; Scott 1989). Thus, hunting implies social obligations for both people and animals.

2-3-5: **Fur Trade History**

The Omushkegowuk Cree have about three hundred years of fur trade history. Although inter-communal or inter-tribal fur trading existed in aboriginal times for domestic use, the importance for fur trapping increased after the Europeans encouraged the Cree people to trade the fur at their posts (Helm, Rogers and Smith 1981:150; Rogers 1969a). In the beginning, the fur trade was carried out through the existent aboriginal network (Lytwyn 1993:287, 292). By the late 17th century, European fur traders reached the area, and Fort Charles (Rupert House) was founded in 1668 on the Quebec side of James Bay (Honigmann 1961:13). Additional fur trading

forts were established in western James Bay at Moose Factory in 1673 and at Fort Albany in 1679 (Long 1985:44). A trading post was also established on Hudson Bay at Fort Severn in 1685 (Rogers 1982:100). The Hudson's Bay Company established trading relationships with local Indians through the medium of recognized local leaders whom the Company appointed as captains (Lytwyn 1993:71-79). After the establishment of posts, the fur trade was directly carried out between the Cree and white men, either English or French-Canadian (Francis and Morantz 1983:17, 25).

The best-known Cree adaptation to the fur trade is the role distinction between the Coasters (home guard) and the Inlanders (Preston 1981). The Coasters remained close to coastal posts and maintained a semi-permanent residence there. Their seasonal migrations were modified according to the post's needs. The Coasters eventually became integrated into post life. They engaged in various forms of employment at the posts, and their women intermarried with white traders. By contrast, the Inlanders kept their traditional way of life based on seasonal migrations. They only came to the posts to trade a few times a year. As a result, the fur trade's influence on the Coasters is believed to be stronger than on the Inlanders (Blythe et al. 1985:28; Fulford 1994:42; Helm, Rogers and Smith 1981:156; Preston 1981:198).

2-3-6: **Research Communities: Moose Factory and Peawanuck**

One of the research sites, Moose Factory, was originally established in 1673 by the Hudson's Bay Company, and its Canadian headquarters was eventually located on the island. Moose Factory developed into a Company town, and was the commercial centre of the James Bay region. Most of the early residents of Moose Factory are believed to have been "home guard" Indians (Blythe et al. 1985:28; Stephenson 1991a). However, a large portion of the current population is composed of immigrants from other James Bay localities. The Moose (Factory) band was established in 1905 by the signing of Treaty No.9; its reserves are located at Moose Factory Island and at the mouth of the North French River (Blythe et al. 1985; Stephenson 1991a).

Permanent migration to Moose Factory started as early as the 1920s, when serious game depletion occurred in the region (Blythe et al. 1985: 50, 58). Another major migration occurred after 1945 when the government reinforced its compulsory education policy. The construction and establishment of a government hospital in 1951 and an expansion of the residential school in 1955 provided adults with employment opportunities, such as unskilled construction work, kitchen work, janitorial work, and jobs as teachers' and nurses' aids. Thus, Moose Factory attracted a large permanent population.

With the opening of a railroad at Moosonee, a town on the

mainland, in 1931, the regional economic centre moved from Moose Factory to Moosonee. In the same year, the Hudson's Bay Company moved its Canadian headquarters from Moose Factory to Winnipeg and moved its shipping docks to Moosonee. Thus, the economic importance of Moose Factory declined. However, among the aboriginal people of the James Bay region, Moose Factory is still considered to be the region's capital. A regional government hospital and the Mushkegowuk Council office are located on Moose Factory Island.

Although Moose Factory is regarded as the most acculturated town in the James Bay region (Blythe et al. 1985; Stephenson 1991a), the traditional economy has been of continuing importance for the community. Its on-reserve band member population was 1,196 in 1992, but the actual reserve population was 1,278, including non-status Indians and people from other bands (Moose Factory First Nation 1992). However, many members of the MoCreebec First Nation, a group of people who immigrated mostly from Quebec and who settled on non-reserve land, also live on Moose Factory Island (Stephenson 1991a:10). The MoCreebec population was 654 in 1992, but this number included MoCreebec members who live in Moosonee. If the numbers of the MoCreebec population are included, the total aboriginal population in Moose Factory is estimated at 1,932 in 1992.

Table 2.2: Demography of Moose Factory First Nation (Moose Factory First Nation band members only, including non-residents) in 1992.

	Male	Female	Total
0-4	65	49	114
5-14	185	127	312
15-24	118	123	241
25-34	101	80	181
35-44	83	77	160
45-54	40	29	69
55-64	24	28	52
65+	36	31	67
Totals	652	544	1196

Source: Moose Factory Community Profiles 1992, Moose Factory First Nation

The other research site, Peawanuck (formerly Winisk), is located farther North, near the Hudson's Bay coast. It is smallest community and most isolated community in the region. There being no road access to Peawanuck. Winisk was established by the Hudson's Bay Company as a trading post in 1901 and a Roman Catholic mission was built there in 1924. The Winisk band was established in 1930 when the Winisk Cree signed Treaty No.9. However, these early white contacts had relatively little impact on the basic pattern of Cree social and cultural life. Winisk merely remained as the place for summer gatherings and no Crees lived in Winisk permanently

before 1955 (Graham 1988:7). Winisk was destroyed by a flood in 1986; a new village, Peawanuck, was built about 32 km upriver from Winisk.

Table 2.3: Demography of Peawanuck First Nation (band members only, which includes non-residents) in 1992.

	Male	Female	Total
0-4	21	12	33
5-14	21	28	49
15-24	32	20	52
25-34	22	15	37
35-44	7	6	13
45-54	7	10	17
55-64	6	7	13
65+	6	5	11
Total	122	103	225

Source: Peawanuck Community Profile 1993, Peawanuck First Nation

Winisk experienced major modernization due to the construction and maintenance of a radar site during the Cold War. Construction of the radar base started in 1955, providing large-scale opportunities for unskilled workers. During the construction and operation of the radar base between 1955 to 1966, the Winisk Cree experienced year-around sedentary lives for the first time because wage employment was

temporary available (Liebow and Trudeau 1962; Preston 1989:45-46). However, by 1960, the construction was completed and most of the jobs disappeared. Therefore, many families returned to the bush. Some families did not settle down in the village until around 1973.

Peawanuck remains an isolated Cree village whose population (counting band members only) is about 225; however, some people have taken temporary residence elsewhere for the education of their children. According to Graham (1988), there is a distinctive settlement pattern which has existed between families of coastal origin, Coasters, and families of inland origin, Inlanders, since the people lived in Winisk. The coastal families live in the southwestern section of Peawanuck. The inlander families live in the northeastern section. At Winisk, their locations were the opposite (Graham 1988:46). Peawanuck is still considered a traditional community. Resources are abundant near the village: fish, caribou, moose, geese, and shorebirds as well as labrador tea. The harvest study (Berkes et al. 1994, 1995) also confirmed the strength of its traditional economy.

2-4: **Background of the Research**

The present study was conducted in affiliation with TASO (Research Program for Technological Assessment in Subarctic Ontario) project, based at McMaster University. This research program started in 1982. The project aimed at long-term

research to investigate the social, economic and environmental effects of resource development in Northern Ontario. It also aimed at compiling information and providing a profile of the region to communities in relationship to anticipated hydro-development proposed in 1990. The project hoped to maximize the benefits of development and minimizing the negative impacts upon communities (George and Preston 1992).

The first phase of the TASO program started in 1982 and ended in 1988. During this period, climatological, hydrogical, biological, economic, and socio-cultural research was conducted. The socio-cultural research concentrated on three areas. The first area was to produce reports that were submitted to the Royal Commission on the Northern Environment, and to review the environmental and social impacts assessment methods of the hydro project. The second area was to compile basic information and to analyze demographic histories of the communities at Moose River, and Peawanuck/Winisk. At Moosonee and Moose Factory, the focus of research was women in domestic and wage work. The third area was various realms such as social change concerning sedentarism, wage employment, political leadership and religious movements (Preston 1989; George and Preston 1992).

Among the second area, the research on women at Moosonee and Moose Factory by Blythe et al. (1985) was a community study, and informants included both aboriginal and non-aboriginal women. The study objective was "to discover the

roles of women in managing and mediating familial relations and economic involvements, including public and domestic employment and unemployment of women and men" (Blythe et al. 1985:3).

According to Blythe et al. (1985), this study aimed to document the contemporary life style of northern communities and women's adaptive strategies for employment, unemployment and management of family affairs. The main focus of this study was community life, but it lacked a description of the contemporary role of women in the traditional economy.

The second phase of TASO began 1990, concentrating on the socio-cultural and economic determinants of sustainable community development in the Cree villages of the Mushkegowuk Council region. The Cree and TASO researchers sought to establish an alternative model of community development.

In contrast to conventional northern development planning, which is based on the export of non-renewable resources, this alternative scenario is based on a mixed economy by strengthening the local economy and promoting local self-reliance (cf. Berger 1977; Watkins 1977:95). Wage employment is considered important, but offers limited opportunities. Thus, integration of renewable resources into development planning is important to strengthen the community's economic base. With these means, the Cree could retain their traditional values, and adapt to the changing world "in ways that will not destroy their culture and will

not lead only to their assimilation into white society" (Berger 1977:110; cf. Chance 1970:26). This model is consistent with acculturation-adaptation and culturally sustainable development as discussed in chapter one (see 1-2-2).

To achieve the aim of integrating the traditional economy with development planning, TASO researchers studied and analyzed the basic characteristics of Cree communities that could lead to local self-reliance. Studies of the community profiles of Moose Factory, Moosonee, New Post and Moose River were compiled by Stephenson (1991a,b,c). Berkes et al. (1991) investigated co-management of natural resources in the area. Cummings (1991) conducted harvest and land use studies in Attawapiskat. A cultural and historical reconstruction of New Post was compiled by Schuurman et al. (1992). The summaries of TASO studies on region-wide wildlife harvest and land use were published by Berkes et al. (1994; 1995) and George et al. (1995). Furthermore, Berkes et al. (1992b) investigated indigenous resource management systems and indigenous ecological knowledge among the Cree. Meanwhile, an economic profile of the region was prepared by the Mushkegowuk Council economic adviser (Farley 1992). The present study makes an additional contribution to the project's goal by focusing on cultural change and the role of women in the traditional economy.

Endnotes:

1. This acknowledgement of the subject in the construction of anthropological knowledge leads to the ethical issue of the relationship between anthropologists and research subjects. The conventional notion of anthropological knowledge as objective reality did not encourage the development of ethical concerns over the subject (Cassell and Wax 1980: 261).

2. Bush-oriented women are defined as women who go to the bush for subsistence purposes. This category includes both older and younger women. The researcher was given names of people who fit this definition by local key informants. The researcher believed that the number of women who went to the bush for leisure purposes might be higher, but these women were not included in contact lists by key informants because these people were not considered "real" bush-oriented women (cf. George, Berkes, and Preston 1995:86 for male perception of "real" hunters).

3. The population of MoCreebec First Nation was excluded because population statistics based on gender were not available. Furthermore, the population number of 654 acquired from Mushkegowuk council included members who lived in Moosonee.

4. For instance, Japanese students were expected to find friends from their own age groups. Friends outside this age group are kept at a distance which shows respect. Even a one year difference among students, such as juniors and seniors in university, imposes a clear difference in patterns of social interaction and speech. Juniors are expected to show respect to seniors by keeping a certain social distance and using a distinctive respectful forms of speech.

5. In Japanese rules of social conduct, restraint in facial expression works in an established social strategy to interact with strangers. Reticence and informal speech warrant social distance and security before persons find out whom they are dealing with in relation to relative social status, and social as well as personal acceptance.

6. In Japanese rules of social conduct, the outsider is expected to prove his/her trustworthiness only through action.

7. Assumption of cultural uniformity of the James Bay area has just recently begun to be questioned (cf. Preston 1986:239). According to Preston (1987:287), cultural uniformity of the James Bay area has been taken as granted and there is no comparative studies. Little is written for cultural inconsistencies between East Coast culture and West Coast, coastal and inland communities.

III. Women's Roles in the Traditional and Village Mixed Economy

3-1: Introduction

This chapter discusses changes in women's roles from the traditional economy to a village-based mixed economy during three periods: nomadic and semi-nomadic life; sedentary life; and contemporary community living. To discuss how these changes are taking place, a comparative study of the role of women over a certain time frame is necessary. Since this researcher has had access to a "traditional" culture only from the recall of informants, starting from around the 1940s, recent time periods were selected: pre-sedentarism (circa 1940s-1970) in Peawanuck; post-sedentarism (circa 1940s-1980) in Moose Factory; and contemporary village life (circa 1992-1993).

Informants from Moose Factory settled into villages earlier than those from Peawanuck creating an overlap of years. In Moose Factory, sedentarization started as early as the 1920s and many bush-oriented families, including many from the east side of the James Bay, moved into the settlement for their children's education after 1945 (Blythe et al. 1985: 50, 58; see 2-3-6).

By contrast, sedentarization started at Peawanuck only after 1955, when the construction of a radar base provided large-scale employment opportunities. However, by 1960, the construction was completed, and most of the jobs disappeared.

Many families returned in the bush. Some families did not settle down into the village until around 1973. Others remained in the village, and only men went to the bush with their hunting partners leaving their wives and children in the settlement.

Sedentarization is an appropriate linchpin for a comparative time framework because of the impact of sedentarism on the nomadic Cree. Previous researchers (Preston 1986a; Trudeau 1966:149) have proposed that it is sedentarization that caused a radical socio-cultural change in the lives of the nomadic Cree. A view that assumes that the level of mobility is a determinant of Cree subsistence and socio-cultural adaptations. Moreover, Cree adaptations of Coasters and Inlanders also relates to their mobility. Coasters often stayed near the coast year round, taking employment from fur traders; inlanders mostly stayed inland and moved around in their traditional territories following their subsistence cycles (Preston 1981).

This chapter first presents the life histories of women in the nomadic, semi-nomadic, and sedentary periods, and then discusses the roles of women in the contemporary village mixed economy and examines women's adaptive strategies.

3-2: **Methodology**

3-2-1: **Research method**

Three kinds of information were used for examining

changes in the roles of women in the traditional economy during these time periods. One is qualitative information -- life stories-- collected by the researcher. Lives and roles of Cree women before and after sedentarism are compared. The chapter includes one life story for each of the two periods, nomadic or semi-nomadic life, and sedentary life. Information from life stories does not necessarily follow the time periods rigidly because the time of sedentarization varies depending on the family.

The second kind of information is ethnographic reconstruction (Honigmann 1956; Skinner 1911), anthropological studies of the Western James Bay (Graham 1988; Honigmann 1961; Preston 1981; Trudeau 1966), and studies based on early fur trade documents (e.g., Lytwyn 1993) to verify the life histories of women.

The third is quantitative data collected by previous scholars and this researcher on the regional economy, employment, participation of women in the traditional economy, and the transmission of bush skills. These quantitative data are used to discuss the roles of women in the contemporary village mixed economy, to illustrate changes in the roles of women described in the life histories, and to examine the adaptive strategies of women.

For life histories, informants were selected from individuals willing to participate. They were individuals with whom the researcher had established good rapport and they

provided quality information. Their life stories were used to characterize Cree life in each of the two time periods.

Alice (cf. 3-3) was selected to represent nomadic-semi nomadic life styles as she had spent over 40 years in the bush. She was an ideal candidate because she was a respected woman along the coast and very competent in bush skills. Although she had little formal education, a limited command of English, and oriented to an aboriginal way of life, she had adapted successfully to a life of mixed economy in the village.

Ida (cf. 3-4) was selected because she was also an well suited to represent life after sedentarization as she was fully bicultural. Although she was born in the bush, she had good command of both Cree and English. She had formal education, and had settled into the community in her 20s. She successfully found and kept full-time wage employment, and had adapted well to a life of mixed economy in the village.

One of the problems of collecting life histories was that the researcher did not interview monolingual Cree women due to the unavailability of funds for translation. Those women may have provided information on nomadic and semi-nomadic life and added insightful information.

For quantitative interviews on participation in wage and traditional economy, 34 Moose Factory women and 27 Peawanuck women were involved in the survey. Additionally, three Moose Factory and five Peawanuck women provided information used in

cultural orientation (cf. 3-5-4-1). In total, samples from Moose Factory represented 10 percent of Moose Factory women age 15 and over. Samples from Peawanuck represented 51 percent of women age 15 and over.

Table 3.1: Sample sizes for structured interviews

	Moose Factory	Peawanuck
Participation in wage and traditional economy	34	27
Additional numbers of informants who provided part of the information	3	5
Total numbers interviewed	37	32
Total population	1,196*	225
Women over 15	368*	63
Percentage Interviewed	10%	51%

Note:
* Numbers exclude members of MoCreebec First Nations who reside on Moose Factory Island.

3-3: **Women in Nomadic and Semi-Nomadic Life: Alice's Story**

Alice was born in the bush in the late 1930s, the second child and oldest daughter of the family. Both of her parents came from Attawapiskat. Her father was a Cree but her mother was a Métis. Their marriage was arranged. Her mother had never seen her father before the wedding ceremony. After the

wedding, she went to the bush to live with her husband's family. Alice's parents always camped with her paternal grandparents. Her parents had sixteen children, out of which only nine (five boys, four girls) survived. Seven children died when they were very young.

Alice grew up in the bush because her family stayed there all the time except for two weeks in the summer (cf. Skinner 1911). Her father's traditional hunting and trapping ground was located about 130 miles inland from Attawapiskat, and they spent most of their time at their base camp on a lake. However, they did move around following the yearly subsistence cycle. This pattern of seasonal migration continued until the late 1950s when her family moved to Winisk so that her brother could work for wages. After several years, the family returned to a nomadic life. In 1973, Alice moved to Winisk after she was married.

When she was growing up, Alice did not have much interaction with outsiders. As her family was isolated in the bush most of the year, she did not have any friends to play with (cf. Flannery 1995:21). She used to play musical instruments, such as the harmonica and accordion, when she became lonely in the bush. She saw an airplane for the first time around 1947 and a float plane in 1952. Until around 1956, she had never seen beadwork. Although both of her parents went to residential school for several years, Alice stayed at residential school at Fort George for only one year

because her mother wanted her to come back to help her. Alice learned to speak the East Cree dialect and had an opportunity to practice her French.

The high point of their annual migration was summer, when the family paddled to Attawapiskat to visit the Catholic church and relatives. As they did not have a motor boat, they used a sail when the wind was favourable, but otherwise had to paddle long distances (cf. Feitz 1992:97). Since her family did not come to the village very often, summer was the only time she had companions around her own age to play with.

Her family was devoutly Catholic. They did not hunt or work on Sundays, they ate only fish on Friday if they could, and went to church almost every day whenever they were in the settlement. She used to visit Catholic nuns every summer, and stayed with them most of the time because she respected them and wanted to be a nun like them. They taught her French and she was once fluent in French.

Summer was the time for social gatherings and weddings. Weddings and dances lasted a couple of days. Alice once went dancing all night and did not come home until the next morning. Her mother was very angry and came after Alice with a stick in her hand. Her mother did not punish Alice because a Catholic priest helped to explain about the dance.

In July, they obtained their yearly supplies, which included food as well as cloth, yarns, and miscellaneous goods, and left the village to reach their hunting grounds in

time for geese and big game hunting. They hunted geese at the Hudson Bay coast in mid-August. Caribou was also available along the coast. Since summer caribou hides had holes from deerfly larvae, these hides were used for practice hides or for making babiche for snowshoes.

Goose season was a busy time for women. Women had to pluck all the geese the hunters brought in from the day's catch. To stretch their supply of geese, they ate boiled or fried goose intestines first. They used to chew on boiled goose feet when they were hungry. Most geese were well-smoked so that they could not spoil. Some geese were preserved in goose grease after being boiled and smoked. Goose grease was saved for this purpose, but it was also used for making bannock and "tea broth" (a mixture of tea, Labrador tea, goose grease, and flour). If the weather was cold enough, some geese were gutted but left unplucked for later use; these geese were hung on a tall rack so that dogs could not reach them.

In September and October, the family started to prepare for the coming winter. Both men and women cooperated to prepare the winter camp. Firewood had to be readied before the rivers froze because they had to paddle to where there was good dry wood. They made a raft of the firewood to carry it back to the camp. Wood was stored near the camp in a conical pile.

Green wood was collected near the camp using dogsled.

Before the chain-saw became available, women chopped only smaller trees. All tall trees were sawed into short pieces for the stove, and dry and green wood were piled separately. Women collected spruce boughs for flooring and lichen (Usnea raponica) that was attached to the lower branches of trees for fire starter. Their winter base camp was repaired or renovated.

As soon as their winter camp was organized, they started to work according to their gender specialization. Women maintained the camp, snared small animals near camp, and checked nets and fish lines every morning. Men, on the other hand, left camp to secure big game, such as moose, for winter food (cf. Trudeau 1966:45-46). Fall was the moose mating season and also the best time for moose hunting. During this time of the year, moose would come to the river's edge at dawn and dusk in search of a mate. Hunters usually called moose at the shore, and shot them from boats. If the animal was nearby, women helped the men gut it, preferably on the same day as it was shot. Moose were butchered the following day so that the meat would not be stiff. Women assisted in butchering and saved the intestine fat. After the moose was cut into large pieces, it was the women's responsibility to process the moose further (cf. Flannery 1935).

Moose meat was considered good food because one did not get hungry for a long time after eating it. Internal organs were eaten first. They used kidney, liver and intestines.

Intestines were cleaned and turned inside out; they were then boiled. Most of the meat was preserved by smoke-drying. Meat was cut into thin strips, and hung inside the smoking tent above a slow fire. If the weather was cold enough, meat was kept on the stand (cache) to keep it away from wolves. Moose were considered a good source of grease. Women saved the fat found in the intestines and collected bone marrow to make grease. Bones were also boiled to generate fat. With bone marrow and fat from bones and intestines, moose grease was made. The grease was cooked and boiled in a pot for a while. Then, it was left to cool down and was stored in the stomachs of butchered moose. Moose grease was eaten as a snack in solid form or melted and served with pemmican.

Women also processed moose hides. An expert could turn a raw hide into a soft finished product within five days. Tanned hides were essential for mittens, hats, mukluks, and moccasins. Women also knitted or repaired snowshoes, but some also made snowshoe frames, which was usually men's work. They made feather blankets from goose down and small feathers.

October and November was the season for fishing. Fish such as whitefish and trout migrated from Hudson Bay to the rivers. Alice's family built a camp at their fishing sites. Fishing was women's work but men also helped. The women set fish nets, checked them every day, and also angled for trout. They processed their catch at the camp. Scaling fish was the children's job. Fish intestines were either fried to render

fat or boiled and eaten. Fish eggs were also boiled or fried with intestines and eaten. In some cases people mixed fish eggs into bannock. Most of the fish was well-smoked, and to dry them evenly they had to be cut along the back bone. Fish were sometimes processed further to make fish pemmican. However, if the weather was cold enough, fish were simply left outside in a storage box to freeze (cf. Calliou 1992:147).

Sometimes men hunted seals for dog food (cf. Lytwyn 1993:240). Women used the seal skin to make sturdy rope and boots. Alice used to watch her grandmother making various sizes of sealskin boots. The longest ones were hip boots, and the shortest ones were booties to wear around the camp. Women also cooked seal blubber and rendered seal grease for oil lamps. In late fall and early winter, the men might be fortunate enough to kill migrating caribou along the coast. Caribou were hunted with guns but sometimes men placed snares where the caribou passed by. If caribou passed near the camp, the women also shot them. Caribou was processed the same way as moose: the meat was dried and fat was rendered. Caribou hide was easier to tan than moose hide because it was thinner; it was used to make mittens, hats and mukluks. Before canvas became available, caribou hides were used to cover the mîkiwâm.

The family stayed in their winter camp until spring (early March). Their main dwelling was a askîkan (earth lodge), but later a log house. As soon as the trapping season

started in November, men left the camp to check their trap lines. They were absent for a period of several days to a few weeks. Meanwhile, women and children stayed in the camp. To secure their food supply, a fish net was set under the ice. Several fish hooks were also set to catch large fish, such as pike.

The camp routine started in the early morning when men or women got up at sunrise to make a fire. Women made tea and ate whatever food was available. When Alice was growing up, they only had bannock on Sundays in order to preserve their supply of flour. On the other days of the week, they only had tea broth in the morning and before bed. After they finished a meal, the men and the older boys went off to their trap lines or went hunting.

Women, small children, and the aged remained in the camp and did most of the work around the camp. Older women, small children, and sick people did indoor chores. Younger women, older girls, and boys who were not old enough to accompany the men did the outdoor work. The aged also helped with the chores, depending upon their health. Indoor chores consisted of baby sitting, cooking, cleaning, washing dishes and clothes, working with furs and pelts, and making mittens, moccasins, mukluks, and hats. When the floor covering of boughs became yellow or dirty from butchering animals, they changed them, usually about a once a week. In winter, they did the wash indoors. They heated water for washing and the

woman who did the washing remained inside. She handed wet clothes to the older children who were standing outside. They hung the clothes to be dried outdoors.

Women usually cooked meals once a day in large quantities, and ate whenever they wanted. Their diet varied depending on the season, but they had to eat the same food all season. Alice's mother cooked differently every time for variety. Meat was barbecued, boiled or fried, so that they would not get tired of eating the same food. In winter, bannock with berry jam was a special treat.

If they had any animals to skin, they skinned them and stretched them on a hoop or on a stretching board. If they had spare time, they made crafts, such as moccasins, mittens, mukluks, and hats, or they repaired footgear, socks, and clothes. They also made dog harnesses and dog shoes.

Outdoor chores consisted of checking fish lines and nets, carrying water, gathering and chopping wood, taking care of dogs, snaring, trapping, and hunting ptarmigan. They checked fish lines and nets in the morning, and carried fish to the camp on sleds. Snow or blue ice was collected for drinking water and for washing. Women and children snared rabbits around the camp and hunted ptarmigan using guns, nets or snares. They had to gather green wood, spruce boughs, and old-man's beard if they were in short supply. Sometimes women and children had to walk long distances to carry back big game on sleds when men killed caribou or moose while trapping.

Before evening, they had another set of chores. They checked the water supply and prepared enough wood to last until next morning. They made wood chips for starting the fire in the morning from dried wood if they did not have any fire starter left. In the evening, after all the work was done, they talked or listened to stories under the beaver oil lights. Otherwise, they went to bed soon after sunset.

Women usually only trapped small animals, but Alice also trapped beaver, mink, marten, and otter. She still traps because she likes to. She also set traps in trees to catch snowy owls to eat. Traps had to be checked frequently or else the trapped animals would be eaten by other carnivores. To avoid problems in checking traps, she had a notebook to keep trapping records.

When she was growing up, her parents and grandparents discouraged her from learning the men's skills of hunting and trapping. They tried to scare her off by telling her that something would grow between her legs if she tried. Nevertheless, she did not listen. She asked her older brother to teach her because her father and grandfather were reluctant to teach her male skills.

Before Christmas, the main staples from the settlement store, such as tea, sugar, flour, baking powder, powdered milk and lard became exhausted, so someone had to go to the post with their furs to get more supplies. Although they had dog teams and sleds, winter travel was difficult; they had to walk

in front of the dogs to break trail for them. Sometimes women went alone to get supplies. Alice travelled with another woman to get supplies from the post before Christmas after she was married. The two women walked alone with sleds for two days and two nights to reach the trading post.

Around the end of February to early March, caribou start to migrate along the coast. Alice's family moved their camp to the coastal zone to hunt caribou, and to wait for the spring goose hunt. They moved to the coastal area before the ice became too unstable in the warming weather. For spring travel, dogs were much better than snowmobiles, because they could pick out a path on stable ice.

Ice in the river began to break up at the end of the goose season. During the spring, one had to be careful not to camp in areas which would be flooded. Soon after break-up, the fishing season started. Fish such as whitefish and speckled trout were migrating again from Hudson Bay to the rivers. People also collected birds' eggs and hunted shore birds and goslings. Women used sticks and dogs to catch moulting ducks (cf. Lytwyn 1993:222,237). The family stayed in their spring camp until June. They preserved fish and waterfowl by smoke-drying. After the fishing season, they left their spring camp to reach the settlement to exchange their furs, and get their supplies, and to meet relatives. This completed their yearly cycle.

In 1955, Alice went to Moosonee to work for wages in the

hospital as a nurse's aide and at a restaurant as a kitchen helper. Her impression of settlement life was that Indians in Moosonee and Moose Factory were too fat. She did not understand why they were so big. She believed that they had little exercise because they had outboard motors, and that they were eating too much store-bought food. She left the settlement and went back to the bush at the end of the summer to comply with her mother's request for her to return.

The years 1955 and 1956 were very hard for Alice's family because they could not do much hunting and trapping. Some days men could not kill any game, and they returned to the camp empty-handed. They were all hungry. They could not buy food from the store because the store did not allow credit unless they had furs to trade. The store would not help them even though they were starving.

Around 1957, her family moved to Winisk by dog team because her older brother wanted to work for wages. When Alice arrived in the village her clothes were old and torn, and she was embarrassed. Her brother earned cash and helped the family. A few years later, her brother married, and he moved to Churchill. Her family moved back to their traditional territories.

Around the same time, she also got married to a Cree man from the village. She chose to marry a Native man because she loved the bush life, even though her mother was against the marriage. Her husband had to stay in the settlement because

he worked at the radar base and a government office for wages most of the time. She chose to stay in the bush with her natal family, however.

She gave birth to four children in the bush. Her mother and husband assisted (cf. Paulette 1989). It was only after 1967 that she started to use a hospital for giving birth to six more children. She had to be away for a month for each birth because there was no doctor in the village. Patients who needed medical attention were sent to the regional hospital at Moose Factory. During her stay in the hospital, she made money by making traditional crafts such as moccasins and mittens and selling them locally. Meanwhile, her husband stayed in the village taking care of their children. During that time, he could not go hunting.

She had her own log cabin at a lake where her family's base camp was located. She kept her cabin clean, and she washed clothes every day so that her children would be dressed in clean clothes. Although she continued fishing and trapping, she had lost her shooting skills. She had not done much hunting because she had to take care of her children. She moved back to the village in 1973 because of her natal family's drinking problems and so her children could go to school.

After she moved to the village, she had six more children. She could not go to the bush as often as she wanted because she had to take care of her young children who went to

day school. Around this time, snowmobiles and argos (all terrain vehicles) became available in the village. Since her husband worked in the village, they could purchase these new technologies. She also found part-time wage employment and purchased a washing machine and dryer. She purchased bush equipment so that she could go to the bush in weekends with her husband and children. While she worked, her older children helped her with baby-sitting and doing housework.

After she began using a snowmobile, she gained a lot of weight, and now has to be careful of what she eats because she is a borderline diabetic. She had many children but used to be very skinny. She became as obese as the natives in Moosonee and Moose Factory who she had earlier criticized.

Later, she quit her wage job and made money by being a foster parent. She also made money selling tanned moose hides and crafts to the James Bay communities. From this income, she bought her own guns, boat, fish nets, snowmobiles, motor, argo, and bush radio. Her husband had his own set of bush equipment that he bought from his income.

Now that she has finished raising her children, she can go to the bush whenever she wants. Thinking about her past, Alice says she had to work very hard to survive because there was no welfare or social assistance. She did the work expected of both men and women, because she liked some men's work and also because she had to. Her mother was constantly sick during her pregnancies. Her father had tuberculosis, and

he was very often away. As the oldest daughter of the family, she not only hunted and trapped with her brother but also had to take care of younger siblings, sick parents, and aging grandparents. The male skills of hunting and trapping, which her grandparents and parents objected to her learning, were useful for her in order to hunt and trap to provide for her family.

She still goes out in the bush to hunt goose and moose, to fish, and to trap with her husband, sons, and friends. She also goes to the bush to get wood and Labrador tea. She hopes to maintain good health and to continue her harvesting activities. She loves the bush life because it is quiet and the land provides many resources.

3-4: **Women After Sedentarization: Ida's Story**

Ida was born in the bush as the oldest daughter of the family in 1926. Both of her parents came from Rupert's House, on the Quebec side of James Bay. Her father's trapline was at a lake near Hannah Bay between Rupert's House and Moose Factory. Since their trapline was easier to get to from Moose Factory, the family later moved to Moose Factory. Her mother was married before and had two daughters from her former husband, who had drowned. Her father felt sorry for the widow, and he married her and adopted her children because she was a good worker. Ida's mother had three children from her second marriage, two daughters and one son.

Ida's father used to work for the Hudson's Bay Company as a sailor on a cargo ship. In winter, he used to deliver mail along the coast with a dog team. Most of the time, however, her family lived in the bush in her father's traditional territory and trapped there. Ida helped her mother with indoor chores in the camp; her younger sister and brother helped with outdoor chores. As soon as her brother was old enough, her father took him hunting and trapping. Women usually did the fishing. Ida's father, however, also taught Ida how to shoot goose and to trap. By the time she was thirteen, she could do almost everything an adult could in the bush.

When Ida was fourteen and her sister was thirteen, her father sent them to school in the south. Two years later, around 1942, her father pulled them out of school, and they returned to the bush. When Ida came home, she had forgotten Cree and only spoke English. She could not communicate with her mother. Since her father understood English, he translated for them. Ida later relearned the Cree language.

They continued their seasonal migration, with a log cabin as their base camp. When they were away from it, they stayed in a tent. Around this time, outboard motors became available, and her father was one of the first men in Moose Factory to get one. Before they got a motor, they travelled by paddling. When they used the motor for the first time, they were scared because it made the boat move too fast.

In 1946, her family moved to Moose Factory permanently because her parents needed medical attention. Her father soon passed away. Around the same time, Ida got married to a Cree man from the village; eventually they had eight children. Her husband was a bush-oriented man but he also worked for the Hudson's Bay Company as a sailor. When he was not working for wages, the family stayed in the bush. After two of their children reached school age, Ida sent them to her mother who lived in the village. When her third child reached school age, they all moved to the village because it was becoming too much for her mother to take care of the children by herself. Ida's mother moved in with the family.

Sometimes Ida's husband was away for a long time because he travelled in the cargo ship to the coast. While her husband was away, she got bush food from her brother and sister-in-law. Ida stayed home and took care of the children. However, she started working full-time at the Moose Factory hospital as soon as the opportunity arose. To live in the village, money is essential to buy basic necessities, and her husband had only seasonal employment. Her husband and mother helped her take care of the children. As her older daughters grew up, they also helped with the housework. All of her children went to day school in the village.

When he was not working, Ida's husband went to the bush with his hunting partner. He used to have a dog team but replaced it with a snowmobile. He brought back bush food, and

Ida processed the food in the village. She also cleaned pelts, then her husband stretched them for her. She also tanned moose hides at home. Both she and her husband made extra money making crafts. Her husband still makes snowshoes and repairs canoes. Ida also tans moose hides and makes slippers and mittens. She used to do her own bead work, but she no longer does because her eyes are weak from diabetes. She now buys beaded tops from other women. She uses the beaver that her husband traps for trimming her craft work. She sells slippers for about $60 and mittens for $100 to nurses and doctors at the hospital and to tourists during the summer.

Although some of her children went to high school, they still cannot find jobs in the village, and live on welfare. When she stays in the village, Ida earns extra money baby-sitting for her grandchildren. She and her husband have retired and live on pension. Both of them still earn extra income from crafts.

Since her retirement, she has time to go to the bush, going out twice a year. She goes to Hannah Bay to take care of the goose camp every fall. She charters an airplane, and usually stays for more than a month at the camp. She cooks and manages the camp. Her siblings and her children also come and camp near Ida and her husband. She enjoys her extended family camping together and sharing the work.

In winter, she goes trapping with her husband but not

every year. They have a log cabin on their trapline. Her husband does not like staying in the bush alone because he becomes lonely. Sometimes they take their grandchildren to teach them how to live in the bush.

She likes to eat bush food, and her sons bring bush food to her whenever they go out to the bush. They share bush food among their extended families and friends. As they do not have much to share during lean years, they ask for bush food from people in other communities. She has received frozen geese, caribou, and speckled trout: she usually sends something back for reciprocity, such as clothes and fish nets.

She does not understand why people no longer go to the bush to get their own food. She does not know why people stay home and rely on welfare. However, she realizes people now need money to charter flights to get to the bush. She wishes she could get some money to go to the bush like people on the Quebec side: she could go to the bush as often as they do.

3-5: The Role and Adaptive Strategies of Women in the Contemporary Village Mixed Economy

In addition to government transfer payments, new opportunities for wage employment arose after sedentarization. As a consequence, the roles of both women and men diversified. The village came to have a mixed economy composed of three parts: the wage sector, the traditional economy (income from

trapping and substitute value of meat), and transfer payments, including welfare, child allowances, disability pensions, and unemployment insurance (Berkes et al. 1994). This section discusses how these sectors are integrated, what comprises a mixed economy in contemporary Cree villages using quantitative data, and examines women's adaptive strategies within a mixed economy.

3-5-1: **Village Mixed Economy**

According to preliminary data from the region (Berkes et al. 1994:356; Farley 1992), transfer payments provide the largest part (38 percent) of an average household's income. The wage sector provides 29 percent, and the traditional sector provides the equivalent of 25 percent (Farley 1992; Table 3.2).

Since the opportunities for wage employment are limited on northern reserves, government transfer payments have been the largest source of income. The wage sector is the second largest source because of job shortages. Income from the traditional sector, calculated as the replacement value of bush food, is the third major income source because bush food still remains an essential part of the diet in many Cree villages.

Table 3.2: Omushkegowuk region economies, preliminary average household* income (Farley 1992)

Income Source	Income	Percentage
Transfer Payments**	$13,000	38%
Wage Income	$10,000	29%
Bush Products***	$ 8,420	25%
Other****	$ 2,500	7%
Total	$33,920	100%

Note:
* 7 people per household. Total number of the household in region is 1,116.
** Income from government assistance, such as welfare, family allowances, and disabilities pensions.
*** Bush products are calculated by replacement values.
**** Other sources of income derived from private small businesses owned by Cree people, such as retail shops and food stands.

According to Berkes et al. (1994), about 111 kg per capita of bush food is still harvested and used in Moose Factory, and 220 kg per capita in Peawanuck. A bush-oriented family in Peawanuck used bush food about 19 days per month while living in the village. However, they used bush food 26 days per month in the goose camp. An older Moose Factory couple, who only received bush food as gifts, still used bush food about 14 days per month (cf. Berkes et al. 1994:356). Many Moose Factory residents want to have more bush food, such as goose, moose, and fish, but they have difficulty getting it, particularly if their family members are not active in

bush activities. In Peawanuck people eat more bush food than in Moose Factory, but they emphasize variety in their diet, and still consume store-bought food.

Bush food provides northern native people with an essential source of protein. It is difficult to maintain a quality diet without bush food, because the traditional Cree diet is high protein-based, and many people cannot afford to buy a large quantity of expensive meat from a store (cf. Appendix B). The researcher observed that about 500 grams of meat per adult per meal was consumed in both communities. Native people belong to the "poor" segment of the population in Canada. Nevertheless, they do not suffer from malnutrition from lack of adequate protein sources, as is the case for many people in Third World countries, because they have access to an alternative source of protein (Young 1979). If the protein intake from bush food declines, and if carbohydrates became their basic staple, their diet could deteriorate (Thouez, Rannou and Foggin 1989; Waldam 1985; Young 1979; Young 1992). Thus, bush food remains essential for their diet.

Bush food is also a prerequisite to maintain Cree culture and tradition. The sharing of bush food is a basic cultural value for many northern hunter-gatherers (Freeman 1988; Palinkas 1987:294; Scott 1984). Sharing still continues today even though the present villages are beyond a reasonable distribution size (Freeman 1988:159-160). According to Berkes et al. (1994:357), about 69 percent of Moose Factory

hunters and about 64 percent of Peawanuck hunters share their harvest with more than three families.[1] Nineteen percent of Moose Factory and nine percent of Peawanuck hunters share their meat with more than six families. Meat is further distributed both within and outside the village by secondary sharing.

Sharing and delayed reciprocity create and maintain personal relationships that have social importance (Gregory 1982:19). If the receiving family is not active in the bush economy, various other forms of gifts be given, often in delayed reciprocity. Gifts range from cash to baked goods, groceries, clothes, rides, and financial help to buy bush equipment (cf. Scott 1984). Production in the traditional economy promoted a common good through sharing, mutual assistance, and enhancement of personal relationships.

Furthermore, bush food has an important role for the continuity of Cree culture because what you eat determines who you are (Freeman 1988:166; Twigg 1983:18). The Cree call bush food "Indian food" in contrast with store-bought "whiteman's food." Thus, the use of bush food allows Cree to maintain their ethnicity in contemporary society.

Although bush food remains integral to the economic and cultural survival of northern communities, bush activities are becoming more expensive. According to Peawanuck First Nation (1992), the purchase and maintenance of bush equipment (snowmobiles and hunting ammunition) is estimated at about

$8,800 per year (Table 3.3). Snowmobiles have to be replaced every two years because of hard use. The replacement cost of snowmobiles is about $3,600. A boat with motor, essential for summer transportation, costs about $6,600 (Peawanuck First Nation 1992).

Moreover, on top of these costs of equipment and maintenance, the actual hunting expedition requires an additional purchase of food and fuel as well as camping equipment. For instance, a moose hunting trip for four people cost about $1,400 for food and fuel alone (Table 3.4). On this particular trip, three moose were secured for the winter supply of meat. Such trips are productive, but not everyone could afford such a high cost.

It is, therefore, difficult for many people to get involved in bush activities, unless they have a substantial cash income. According to George et al. (1995:81), high levels of bush activity occurred in communities with relatively high rates of employment. Since the major output of the traditional economy is bush food that has no market value, it is necessary to obtain cash from other sectors. Thus, income from the wage economy is essential to capitalize the traditional economy (Ross and Usher 1986:147-149; cf. Petterson 1987:92 for an Alaskan case).

Welfare has been an important source of cash income. However, welfare income alone does not provide the Cree people with enough money to invest in bush equipment. Welfare income

Table 3.3: Yearly expenses for maintaining bush equipment (Peawanuck First Nation 1992)

Item	Cost
Gasoline (snowmobile cost to get firewood only)	$5,500
Snowmobile maintenance: a) accessories b) oil and grease	 $1,500 $ 500
Hunting ammunition: a) shotgun shells b) rifle bullets	 $ 700 $ 600
Total	$8,800

Table 3.4: Operational costs of Moose Hunting (fall, 1992; hunting ground 180 miles from the village; means of travel, boat; hunting party, four people)

Item	Cost
Gasoline (130 gallons) ($5.06/gallon)	$ 658
oil	$ 80
food (2-3 weeks supply)	$ 660*
Total**	$1,398

* The number excludes the food cost of one participant who came from a separate family.

** Total cost excludes the cost of ammunition. For moose hunting, little ammunition is used in comparison for goose hunting.

only allows people to live modestly in their villages since food costs in many northern communities are very high (Appendix B).

The borrowing of cash and bush equipment among members of the extended family is a common survival strategy. Many native people are still unable to go out in the bush because they simply cannot afford it. Consequently, many suffer from loss of identity, confidence, and pride. More social problems seem to develop in communities as idle time increases.

3-5-2: **Participation of Women in the Wage Sector**

Despite the increasing importance of cash for community living and bush activity, most northern communities have cash shortages because of chronic unemployment problems. According to the available statistics, the unemployment rate at Moose Factory is 30 percent and in Peawanuck 51 percent (Table 3.5). However, the number for Moose Factory is a rough estimate based on year-round jobs, and does not includes hunting as a job. During the summer, the employment rate is higher. The Mushkegowuk economic coordinator tentatively has proposed 64 percent as the unemployment rate for the Mushkegowuk region (Farley 1992:1).

Employment statistics by gender were available only from the Peawanuck band office at the time of research (Table 3.6 and 3.7). However, limited information about employment among Moose Factory women had been published earlier (Blythe et al.

1985: Table 3.8). The employment status of household heads was also published in a TASO report (Berkes et al. 1992a; Table 3.11). I have provided the employment status of respondents of the present study (Table 3.9 and 3.10). These data are used to estimate the employment status by gender in Moose Factory.

Table 3.5: Employment statistics of two communities (1992-1993; Source: Farley 1991, Moose Factory Community Profile, and Peawanuck Community Profile)

	Employed	Total Work Force (Age groups 15-65)	Unemployment Rate
Moose Factory	+495*	703	30%
Peawanuck	+68	132	51%**
Regional Average	+2650	4141	64%

Legend:
"Employed" includes three kinds of employment: full time, part time, and seasonal.
"Total Work Force" includes band members who are not residents of the area.

Note:
* In general, employment figures are higher (+) in the summer because of the availability of seasonal employment.
** According to calculation, the percentage is 48%. As potential labour force includes band members who are not residents, the officially published number has been adjusted accordingly.

Table 3.6: Employment by gender (Source: Peawanuck community profile.)

	Wage employment			
	Male	Female	Unknown	Total
Moose Factory*	-	-	+495	+495
Peawanuck**	23	14	+31	+68

Notes:
*The numbers do not include some local as well as outside contract work and water taxis. In general, employment figures are higher (+) in the summer because of the availability of seasonal employment.
**Numbers exclude seasonal contract work.

Table 3.7: Full time employment by age group in Peawanuck* (Peawanuck First Nation 1992)

Age	Male	Labour Force**	Female	Labour Force
16-25 yrs	6(19%)***	32	8(40%)	20
26-35 yrs	10(45%)	22	2(13%)	15
36-45 yrs	3(43%)	7	1(17%)	6
46-55 yrs	2(29%)	7	1(10%)	10
56-65 yrs	2(33%)	6	0	7
Total	23(31%)	74	12(19%)	63

Note:
* Official classifications of gender and age of five part-time jobs and 28 seasonal jobs are not available. According to field observation, two of the part-time workers are women.
** The labour force is the potential numbers of people who could participate in wage employment. Numbers include non-resident band members and students, persons with disabilities, and home makers who do not wish to be employed.
*** Numbers in brackets are percentage of people who have jobs in relation to the potential numbers of labour force for the age group.

Table 3.8: Moose Factory native women employment status among respondents (Blythe et at. 1985:121)

	Female*
Employed outside home (Full and part time)	62 (48%)
Working at home	19 (15%)
Unemployed	17 (13%)
Retired	22 (17%)
Students	9 (7%)
Total	129 (100%)

Notes:
* Age of respondents ranging 14 to 60 and over. Information based on age group was not available. Research was conducted in 1984. Total labour force number was not available. Separate employment records between full-time and part-time not available.

Table 3.9: Employment status of women - respondents of the present study

	Moose Factory	Peawanuck
Full time employment	14(41%)	9(33%)
Part time employment	4(12%)	3(11%)
Non wage work*	16(47%)	15(56%)
Total	34(100%)	27(100%)

Note:
* Includes craft work, trapping, home-making (for those who do not wish to be employed), and unemployment.

Table 3.10: Types of female respondents employment by age groups (more than one answer possible)

Moose Factory	Full time	Part time	Non wage	Craft
20s	0	0	2	2
30s	4	4	1	0
40s	6	0	0	0
50s	4	0	2	1
60s<	0	0	10	9
Peawanuck	**Full time**	**Part time**	**Non wage**	**Craft**
20s	5	1	4	2
30s	2	1	4	3
40s	1	1	0	1
50s	1	0	6	6
60s	0	0	1	1

Table 3.11: Employment status of heads* of households in 1990/1991 (Berkes et al 1992a: 18)

Communities	S/C	PT	FT	pension	UE	Total
Moose Factory	113	7	59	38	18	235**
Peawanuck	19	7	8	3	7	44***
Total	131	14	67	41	25	279

Legend:
S/C: seasonal or casual employment, PT: part time year around employment; FT: full time, year around employment; UE: unemployed

Note:
* heads of households are mostly men, but include two women: one woman in Moose Factory and another in Peawanuck, as far as the researcher knows.
** 53 percent of all potential hunters (men age 18 and over) were interviewed.
*** 63 percent of all potential hunters (men age 18 and over) were interviewed.

According to the available statistics, 70 percent of Moose Factory's labour force had some sort of wage employment: full time, part time, seasonal, or casual labour. Compared to the regional unemployment rate of 64 percent, more people in Moose Factory seemed to have jobs. This was partly because Moose Factory had large scale employers, such as the band office which alone employed 131 people, and the hospital and the catering company for the hospital which employed about 95 people. Moose Factory also has small businesses owned and operated by local entrepreneurs. Thus, employment opportunities at Moose Factory were higher than on the smaller reserves along the James Bay coast.

According to earlier studies, more Moose Factory women had jobs than men (Blythe et al. 1985:120; Stephenson 1991a:53). Among the female respondents of Blythe et al.'s 1985 study, 48 percent worked outside the home, and 15 percent of respondents worked at home. On the other hand, among the male respondents of Berkes et al's 1992 study (1992a:18; Table 3.11), only 28 percent of Moose Factory respondents reported that they had regular full-time or part-time employment.

As employment by gender was not available at the time of the present research, it was difficult to confirm whether more women than men work for wages. If women were more successful in securing steady employment, it could be because service or clerical jobs generally held by women were more available in the village. Women took advantage of new economic

opportunities of wage employment to increase cash income for their families. Among the respondents of the present study, 53 percent of Moose Factory women had wage work. Those women who did not participate in the wage economy participated in the traditional economy and handicrafts production to diversify their income opportunities. The majority of the women who had employment were middle-aged. They sent their children to the village day-care centre or hired their own mothers or sisters for baby-sitting. Fathers or grandfathers did baby-sitting in some cases, if they were unemployed or stayed at home.

According to Peawanuck band statistics, 49 percent of the total work force were employed (Table 3.7). Those women without employment also participated in the traditional economy and craft production to diversify their income source. Among the employed, more men had jobs than women. Only 31 percent of men had full time employment, while 14 percent of women did (Table 3.7). Most of the employed women were young: 40 percent of the women aged 16 to 25 had employment. By contrast, only 13 percent of women aged 26 to 35 had wage employment.

However, the opposite was true for males. Only 19 percent of young males in the 16 to 25 age group had jobs, while about 40 percent of men in the age group 26 to 34 had jobs. Most of the younger women held gender-specific jobs adhering to Euro-Canadian standards, such as clerks and

secretaries. It was uncertain why these jobs were not filled by middle aged females as is the case in Moose Factory. By contrast, younger men were unemployed because most of the traditionally male jobs were already filled by older males.

3-5-3: **Participation of Women in the Traditional Sector**

Women's participation in the traditional economy changed particularly after 1945 when the government made education mandatory. To encourage school attendance, the government threatened to withhold assistance from families who refused to send their children to schools (Graham 1988:30). As a result, many families moved to school locations because they could not afford to lose income generated from their large numbers of children (Shimpo 1993:101; Trudeau 1966:37).

Most of the women stayed in the settlement to take care of their children. Meanwhile, men continued to go out in the bush with their hunting partners to harvest bush food, and to gain income from trapping. Men became "monthly commuters" (Trudeau 1966:97) between the bush and the settlement while their families stayed in the village. This new pattern of harvesting was developed after 1945 and was called "posting" by Honigmann (1960, 1981).

At the same time, men started to adopt new technologies, such as outboard motors and snowmobiles, to alleviate the conflicting interests of the maintenance of family in the village and the need to go out to the bush. This adoption of

technology was ideal for the Cree because it shortened their time of travel, and increased harvesting efficiency. The use of new technology enabled them to maintain their dual mode: village life with their families and bush life with their hunting partners.

However, this innovation increased the cash expenditure for bush activities because of the cost of machinery, maintenance, fuel, as well as commercial food. An extra travel cost incurred if women and children were taken to the bush. This involved the transportation of additional passengers, food, supplies, and gas. Women and children became a burden for bush travel because men no longer needed paddlers or haulers (Leacock 1954:28; 1981:78; Rogers 1963:83).

Women encouraged and supported their husbands' participation in the traditional economy. While staying in the village, women adapted to the mixed economy by taking wage employment to supplement family incomes. They still continued to participate in the traditional economy by cleaning and cooking the game brought to them by their husbands.

Among the Moose Factory and Peawanuck women interviewed, about 61 percent of the women accompanied hunters in the bush and maintained the camp (Table 3.12). The rest of the women, some 43 percent, followed the pattern of "posting." More Moose Factory women (88 percent) accompanied hunters in the bush than Peawanuck women (26 percent). Moose Factory samples

may be overrepresented because of differences in sampling procedures employed in two communities (cf. 3-2). However, these numbers are similar to those from the TASO study which had reported 51 percent of respondents' wives participating in hunting, trapping and fishing (Berkes et al. 1992a:15).

Table 3.12: Women who accompany hunters in the bush

Communities	Women interviewed	Women who accompany hunters	Percentage
Moose Factory	34	30	88%
Peawanuck	27	7	26%
Total	61	37	61%

For Moose Factory, the numbers of women who accompanying hunters appears to be very high (88 percent). This is because the women interviewed refers to the "bush oriented" sector of Moose Factory and is not a representative sample of the whole community. By contrast, sampling in Peawanuck is more representative. As well, Peawanuck is different from Moose Factory because Peawanuck hunters do not have to travel far, since game is abundant near the settlement. Most of Peawanuck hunters commute between the bush and the settlement, and families do not usually go along these short trips.

Table 3.13 shows the differences in women's levels of

participation in bush activities. In the present study, "intensive" participants are those women who participate in subsistence activities for more than a week each year. This category is further divided into two categories of highly intensive and intensive (Table 3.13). "Highly intensive" participants stay in the bush more than a month each year for subsistence purposes, and "intensive participants" stay in the bush more than a week but less than a month. "Active participants" refer to those women who go out, and stay in the bush only on weekends for leisure purposes, such as boating, camping, and rod-and-reel fishing. "Occasional participants" is a term that refers to those women who go out in the bush for less than a weekend for leisure purposes.

In this study, 27 Peawanuck women were interviewed[2], of which 60 percent were active participants (Table 3.13) and went out in the bush fewer than three times a year (Appendix C: c-2). These active participants included both women with employment and without employment. In the bush, Peawanuck women's activities were mostly leisure activities (41 percent), but not subsistence hunting/fishing/trapping (Table 3.14). Most went out to the bush with their husbands and children: their bush activities were camping (27%), picnicking (14%), and fishing (14%). Only 14 percent of the women participated as support workers in the bush camp.

Table 3.13: Extent of bush activity participation among women in the sample.

Intensity	Moose Factory (N=34)		Peawanuck (N=27)	
Highly Intensive	13	38%	5	19%
Intensive	17	50%	2	7%
Active	3	9%	11	41%
Occasional	1	3%	5	19%
None	-	-	4	15%
Total	34	100%	27	100%

Legend:
Highly Intensive: go to the bush for more than a month for subsistence purpose.
Intensive: go to the bush for more than a week mainly for subsistence purpose.
Active: go to the bush for a weekend mostly for leisure purpose.
Occasional: go to the bush for less than a weekend (e.g., a day trip) for leisure purpose, and clean game at home.
None: do not go to the bush but clean game at home.

In summary, most Peawanuck men went to the bush with their hunting partners; women and children only accompanied men to the bush for leisure purposes. Although women encouraged their husbands to go to the bush and to harvest bush food, they themselves mostly stayed in the village to work and to be with their children. They followed the pattern of "posting" and processed bush food brought back to the village by their husbands.

In contrast, Moose Factory women spent more time in the

bush. Thirty-four women were interviewed[3], of which 88 percent were intensive or highly intensive participants (Table 3.13) but most went to the bush less than three times a year (see Appendix C: c-2). Among them, 76 percent of the intensive participants and 30 percent of the highly intensive participants also had wage employment. Women went to goose hunts as support workers (48%), fishing (17%) and hunting geese, duck and ptarmigan during the goose hunt (12%) (Table 3.14).

Table 3.14: Bush activities by women (more than one answer counted)

#	Moose Factory	Percentage	Peawanuck	Percentage
1	supporting bush camp	48%	camping	27%
2	fishing (net and hook)	17%	picnicking	14%
3	hunting birds	12%	fishing(net)	14%
4	trapping snaring	9%	supporting bush camp	14%
5	camping	5%	getting wood	9%
6	moose hunting	3%	hunting birds	9%
7	getting wood	3%	trapping	7%
8	berrying	3%	fishing(rod)	5%
9			moose hunting	5%

In summary, more Moose Factory families went out to the bush as a family unit than Peawanuck families. Women who had jobs used two adaptive strategies to manage their time. The first was to go out in the bush less than three times per year, but to stay in the bush longer once they were out (mean length of stay 3 weeks). They not only had to allocate their yearly holidays for this purpose, but also had to coordinate with their husbands' holidays. These women and their families mostly went goose hunting. This is a twice-a-year activity, during special cultural holidays occurring at the time of the goose season.

The second strategy was to go out frequently (more than three times per year) but to stay in the bush for shorter periods of time (mean length of stay 1.8 weeks). These women took short but frequent holidays, and made full use of long weekends. They usually went out near the village for fishing.

Full-time hospital workers stated that they used a worker's benefit program to receive monetary assistance once a year to go out in the bush with their spouses and children. They stated that only because of this benefit could they afford to charter bush planes or helicopters during spring goose hunting. When this benefit was not available, they relied more on snowmobile transportation, and had to use more time for travel.

Patterns of participation vary between the two communities. Most of the Peawanuck respondents still follow

the "posting" pattern developed after sedentarization. In contrast, most of the Moose Factory women do not follow this pattern. The contemporary role of Moose Factory women in the traditional economy is still to accompany their husbands and to maintain their base camp, staying in the bush more than a week. However, this pattern of participation among Moose Factory women could be attributed to a sampling bias. Samples from Moose Factory are more biased toward people who are active in bush activities than those who are not.

For instance, among Moose Factory women who are fifteen and older, only 8 percent are classified as intensive participants (Table 3.12), but 88 percent of the respondents of the present study are intensive participants (Table 3.13). Thus, this pattern of participation among Moose Factory women is not representative of the community. It can be speculated that the pattern of participation among Peawanuck women may be also applicable for Moose Factory women, if larger and more representative samples were collected.

3-5-4: **Women's Adaptive Strategies in a Mixed Economy**

Northern communities have problems of employment shortages as well as cash shortages. On the one hand, individuals have to make the best use of the cash income opportunities when available. On the other hand, staying active in the traditional sector is an economic necessity. The aim of this section is to examine how Cree women adapt to

the village mixed economy and cope with the general problem of economic insecurity prevalent in northern communities.

Among the respondents of the present study, 53 percent of Moose Factory women and only 14 percent of Peawanuck women had employment. For those women without jobs, the traditional economy still provided income opportunities, such as handicraft production. However, as handicraft production was not a source of steady income, they still needed other sources.

The best option available was to rely on the traditional sector, with possible additional income from transfer payments, while waiting for employment opportunities. The reliance on all sectors of the economy is essential to cope with economic insecurity in northern communities. In other words, the best adaptive strategy is to have the ability to participate in both wage and traditional sectors and to manipulate economic opportunities to one's advantage. However, this strategy requires one to be bicultural, since these two sectors require different sets of skills and values.

Thus, it is necessary to examine women's acculturation status in order to understand their adaptations to a mixed economy. The following subsections examine how women are adapting to a mixed economy from two points of view: their acculturation status (cultural orientation) and their economic choices. The study of economic choices was an attempt to examine whether women's acculturation status influenced their

choice of economic activities.

Thirty-seven women in Moose Factory and 32 women in Peawanuck participated in this part of the study. Profiles of study participants are compiled in Table 3.15.

Table 3.15: Sample sizes according to age and community

Age groups	Moose Factory(N=37)	Peawanuck (N=32)
24 and under	0*	8
25-34	8	12
35-49	11	5
50 and over	18	7

Note:
* Women who were 24 years old and under were not interviewed in Moose Factory. As the potential number of informants was large, the researcher only interviewed those women who participated in bush activities. Unfortunately, the lists of potential informants generated by key informants did not include women 24 years old and under.

3-5-4-1: **Cultural orientation**

This part of the study uses the concept of cultural orientation in order to examine women's acculturation status and adaptation to a mixed economy. Culture in this study is defined as a cognitive map that is the systems of meanings, values, ideologies, and conventionalized understandings (adopted from Singer 1968:540). Since culture is defined here as an abstract concept, there is a problem of how to measure

one's cultural orientation because values are difficult to quantify.

This study assumed that culture could be inferred from behaviours which were implicit expressions of culture and values. This study employs five measurable variables as heuristic devices. There are some limitations. First, variables used in this study might be too simple to measure acculturation status holistically. Second, the assessment of acculturation status based on behaviours could be never complete because humans did not always act according to their beliefs.

The study measured orientation to aboriginal culture by two variables: Cree language skills[4] and bush skills (cf. chapter four). Both bush skills and Cree language were considered important to function and to identify oneself with Cree culture. Orientation to Euro-Canadian culture was measured by four variables: English language skills, level of schooling, employment status, and the amount of interaction with Euro-Canadians (Table 3.16). Cree people also acknowledged the importance of having those Euro-Canadian skills because they believed these skills were prerequisite for village living, by allowing them to find and maintain employment.

Cree and English language skills of interviewees were evaluated on the basis of three categories: no command, limited command, or fluency in Cree and English. Bush skills

were evaluated as belonging to five ranges of transmission rates: 0 to 45 percent, 46 percent to 55 percent, 56 percent to 65 percent, 66 percent to 75 percent, and over 76 percent and full competency in bush skills. The amount of education the interviewees had was evaluated according to three levels of educational achievement: grade six or less, more than grade six but less than grade 13, and more than grade 13.[5] Interviewees' employment status was evaluated as having wage employment in the past or presently employed. Interaction with Euro-Canadians was recorded as being either limited or more extensive (through either wage employment or education).

Each respondent was assessed on her involvement in aboriginal and Euro-Canadian culture. Depending on their scores, respondents were classified into four categories of acculturation status and cultural orientation: aboriginal culture, Euro-Canadian culture, bicultural or neither (Table 3.17). These categories were used as operational categories for the study in order to examine women's adaptations.

Orientation toward aboriginal culture means that individuals are familiar with aboriginal values and language. They are the less acculturated individuals who have not familiarized themselves with Euro-Canadian culture. They are individuals who have little formal schooling. Their first language is Cree, and have only limited English skills. They function competently in cultural activities in the aboriginal context, such as bush camp, but have difficulty functioning in

Euro-Canadian context.

Orientation toward Euro-Canadian culture means that individuals are familiar with Euro-Canadian values and language. They could function better in an Euro-Canadian context, such as wage work, than in an aboriginal context because of acculturation. However, the category did not exclusively included those individuals who went through a drastic value change, such as total assimilation. The category merely included these respondents who had difficulty in functioning in aboriginal context because they lacked language and bush skills.

"Bicultural" orientation means that individuals are familiar with both cultural values and languages. They have an above-average ability to function adequately in both cultural contexts and choose between two ways under different circumstances where appropriate (cf. Spicer 1956:24). They are acculturated individuals who have learned how to function in Euro-Canadian context. They maintained their ability to function in Cree context as well and made a successful adaptation to a mixed economy arrangement.

"Neither" orientation means that individuals are lacking skills and languages needed to be functional in either cultural context. They are marginalized individuals who have failed to adapt to change. They failed to learn how to function in Euro-Canadian context, but at the same time, they also failed to maintain their ability to function in the Cree

Table 3.16: Summary of point system

Aboriginal culture variables		scores
Language	No Command of Cree	0
	Limited command of Cree	1
	Fluency in Cree	2
Bush skills	Transmission rates 45% and less	0
	Transmission rates 46% to 55%	0.5
	Transmission rates 56% to 65%	1
	Transmission rates 66% to 75%	1.5
	Transmission rates 76% and over and competency in bush skills	2
Euro-Canadian variables		**scores**
Language	No command of English	0
	Limited command of English	1
	Fluency in English	2
Education	Grade 6 and less	0
	Grade 7 to grade 12	1
	Grade 13 and over	2
Employment	Formerly held wage employment	0.5
	Presently holding wage employment	1
Interaction	Little interaction with Euro-Canadians	0.5
	Experience interacting with Euro-Canadians by schooling or by employment	1

Table 3.17: Classification of respondents by scores

Orientation	Aboriginal	Euro-Canadian
Aboriginal	≥1.5	≤2.5
Euro-Canadian	≤1	≥3
Bicultural	≥1.5	≥3
Neither	≤1	≤2.5

Table 3.18: Cultural orientation among respondents

	Aboriginal	Euro-Canadian	Bicultural	Total
MF	4(11%)	4(11%)	29(78%)	37
PWK	8(25%)	8(25%)	16(50%)	32

Table 3.19: Cultural orientation by age

MF	Aboriginal	Euro-Canadian	Bicultural	Total
24 and under	0	0	0	0
25-34	0	2	6	8
35-49	0	2	9	11
50 and over	4	0	14	18
Total	4	4	29	37
PWK	**Aboriginal**	**Euro-Canadian**	**Bicultural**	**Total**
24 and under	1	5	2	8
25-34	1	2	9	12
35-49	2	1	2	5
50 and over	4	0	3	7
Total	8	8	16	32

Table 3.20: Mean raw scores by age group (cf. Appendix E)

	Moose Factory			Peawanuck		
Age group	No.	A*	E-C	No.	A	E-C
24 and under	0	-	-	8	1.7	4.3
25-34	8	1.6	5.0	12	2.4	4.1
35-49	11	2.1	4.9	5	2.9	3.5
50 and over	8	3.8	3.6	7	3.6	2.4

Legend:
No.: Number of respondents;
A: Aboriginal; E-C: Euro-Canadian

Note:
*Highest possible: Aboriginal 4; Euro-Canadian 6

Table 3.21: Dominant cultural orientation by age group

	Moose Factory		Peawanuck	
Age group	Mean scores*	Orientation	Mean scores	Orientation
24 and under	-	-	1.7/4.3	Euro-Canadian
25-34	1.6/5.0	Euro-Canadian	2.4/4.1	Bicultural
35-49	2.1/4.9	Bicultural	2.9/3.5	Bicultural
50 and over	3.8/3.6	Bicultural	3.6/2.4	Aboriginal

Note:
* Numbers in the left indicated scores in aboriginal variables and numbers in the right indicated scores in Euro-Canadian variables.

context. This category corresponds to those who have less than a grade six education, and at the same time have minimal knowledge of the Cree language and traditional skills.

Full lists of the respondents' scores are given in Appendix E. Cultural orientation among respondents is compiled in Table 3.18 and an age-based classification is compiled in Table 3.19 in order to examine how adaptive strategies have changed over the generations.

According to the results, only 11 percent of the Moose Factory respondents can be identified as belonging to the aboriginal orientation category (Table 3.18). All of them were in their 60s with only a few years of Western education (less than grade six), and their primary language was Cree. They lived a nomadic way of life when they were young adults; thus bush skills were a necessity for them. However, after they settled into villages, they did not acquire the skills of speaking English and interacting with Euro-Canadians.

Eleven percent of the Moose Factory respondents were identified as belonging to the Euro-Canadian orientation category. They were between the ages of 25 and 49. They were raised in the village and their first language was English. Many of them reported that they were not taken to the bush when they were growing up. Although those women were interested in bush activities, they started to go out in the bush only after marriage and they were learning about their tradition gradually. Thus, their ability to function in

aboriginal setting, such as bush camps, were limited.

Most Moose Factory women (78 percent) were included in the bicultural orientation category. All age groups of women were represented. As Moose Factory is one of the most acculturated villages along the coast, most of the respondents in their 50s and 60s are fluent in both Cree and English. They had moved to the village in their adolescence or sometime after marriage. Since these older women experienced the traditional way of life in the bush, they were competent in bush skills. At the same time, they had learned to speak English and to function in the Euro-Canadian society through wage employment after they settled in the village.

On the other hand, most of the younger women (ages between 25 and 49) grew up in the village. Since they had limited experience with bush life, they were more familiar with bush skills through observation rather than practice. These younger women had more Western education than the older women. Some had spent years in the South completing their education and English was their primary language. After they finished school, many of them took wage employment. As a result, the younger women in this study had lower bush skill transmission rates (an average of 57 percent). Although their functional ability in the traditional economy was limited, they continued to participate in traditional activities that were regarded as family affairs so that they kept their traditions. Thus, they could function in both worlds.

By contrast, 25 percent of Peawanuck women were classified as having an aboriginal orientation. All age groups of women were represented but half of them (50 percent) were in their 50s and over. These older women had little formal education and spent 30 or more years of their lives in the bush. Their first language was Cree, and they did not have a good command of English except for one woman who had married into the community. Contact with outsiders was limited because the village was isolated and offered few employment opportunities. Thus, they functioned better in the Cree culture.

Twenty-five percent of Peawanuck women belonged to the Euro-Canadian orientation category. These women were predominantly in their early 20s. Most of them grew up in the settlement and had very little experience with bush life. They were familiar with bush skills for the most part only through observation because they had not learned many of the traditional skills yet.

Women in their early 20s had more education than women in their 30s. Two of them had above grade 12 education. Most of them spent time in southern towns attending secondary schools. They learned to work with Euro-Canadians in school and lived with Euro-Canadians at boarding homes. About half of them were fluent in both English and Cree, and for the rest English was the primary language because they had lost their command of Cree. At the same time their interest in the traditional

culture declined, and they became more oriented toward youth culture and the Euro-Canadian culture. After they finished school, they preferred to take wage employment. However, only 38 percent held jobs because employment opportunities were limited.

Fifty percent of Peawanuck women belonged to the bicultural category. Women of all age groups were included; however, women in this category were predominantly (56 percent) between 25 and 34. This age group of women had more experience in the bush life because they grew up in the traditional way for part of their life: people in Peawanuck moved around their traditional territories as late as 1973. Thus, they were more competent in the bush skills than women in their early 20s. Most of the women aged between 25 and 34 (88 percent) were fluent in both languages. They also spent some years in southern towns for secondary education and learned to interact with Euro-Canadians mostly through school experiences. Half of them held wage employment.

None of the respondents in either community were classified as being in the "neither" category. However, it is possible that a certain number of people might fall into this category. This segment of the population was not represented in this study, possibly because women who have bush skills were sought for informants and because of the small sample numbers, particularly in Moose Factory (cf. Palinkas 1987:302 for cases of Alaskan natives) or those people possibly

migrated to urban centres.

In summary, 78 percent of Moose Factory and 50 percent of Peawanuck women presently belong to the bicultural orientation. They were adapting well to the village mixed economy since those women could function in both sectors of economic activity. However, the same data, when sorted according to age group, showed a trend of maladaptation.

The data for this study suggested that older women were more familiar with Cree culture. In the younger of the age groups, there was a trend of acculturation to Euro-Canadian culture: the less the competency in Cree language and traditional skills but there was an increase in the competency in Euro-Canadian culture (Table 3.19 and 3.20; see Appendix E: e-2). The dominant cultural orientation of the youngest age groups of women in both Moose Factory and Peawanuck was Euro-Canadian.

There was a difference in cultural orientation in the age groups 25 to 34 and 50 and over between two communities. The age group between 25 and 34 was bicultural oriented in Peawanuck, but Euro-Canadian oriented in Moose Factory. Among the age group 50 and over, cultural orientation was Aboriginal in Peawanuck and bicultural in Moose Factory. The reason for these differences could be attributed to the difference in a time of sedentarization in two communities. In Peawanuck, women who were over 50 grew up in the bush, and women who were older than 25 also lived in the bush for part of their lives.

Women who were between 25 and 34 were bicultural oriented because they experienced both the traditional way of life and also learned English and how to function in a Euro-Canadian context in southern schools.

Conversely, Moose Factory families settled into the village as early as the 1930s, and some women in their 50s grew up in the village. Most of the women who were 50 and over spoke both Cree and English fluently, and they had employment experience. Thus, their cultural orientation was bicultural. However, women who were younger than 50 did not have experience in the traditional way of life since most of the families moved to the village soon after World War II. Thus, many younger women who were between 25 and 34 lost touch with bush activities and English became their dominant language. Consequently, their cultural orientation was Euro-Canadian.

There are two possible interpretations for this trend of declining scores in Aboriginal culture and increasing scores in Euro-Canadian culture among Cree women. The first is that they are indeed losing their traditions and language, and are in the process of assimilation to the Euro-Canadian culture. This hypothesis is supported by the large drop in scores in the aboriginal-culture orientation between the generations who experienced the traditional ways of life and those who did not. In Moose Factory, the drop was between the age groups 50 and over, and 35 and 49. In Peawanuck, the drop was between

age groups 25 and 34, and 24 and younger.

However, the data of this study could not confirm whether the younger women are indeed in the process of assimilation. It is because the data merely mean that the younger women's ability to function in aboriginal context was in decline but the data do not necessarily mean that their decline of skills is a reflection of drastic value change and total assimilation.

The second interpretation is that their behaviour changes are merely temporal phenomena. The younger women are learning their traditions and language later in life. This hypothesis is supported by the transmission study (chapter four) by the present researcher. The study revealed that younger women still learned the traditional skills, but their learning was still at the initial stages and incomplete. Although some women were interested in learning skills and aboriginal culture, they simply did not have opportunities or time to learn when they were young. Several informants from Moose Factory stated that they became interested in bush activities only after marriage. When they were young, they did not want to clean bush food. After marriage, they started to go to the bush, rediscovered their traditions, and learned to appreciate bush food. Now, many of them emphasize that the bush food is "better" than store-bought food.

In the Eastern James Bay community of Chisasibi, Berkes (personal communication) observed in the 1970s and 1980s that

younger men seemed to lack both an interest in bush activities and the necessary skills. However, once they were married and had the responsibility of feeding a family, the same men became much more interested in the bush and more competent in bush skills. Hoffman (1957:75) also reported that those who were active in bush activities were married men in Attawapiskat. A similar trend may be occurring among women in Moose Factory and in Peawanuck.

There was a possibility that the phenomenon of Euro-Canadian orientation among younger women could be merely temporal. As women grew older and became mothers, they might learn traditional skills in order to educate their own children. Those women could become bicultural as they matured. However, it is uncertain how much of the traditional culture can be learned in later years and how much would remain lost. Thus, long-term research to examine knowledge transmission over many years is needed.

3-5-4-2: **Economic choice**

Tables 3.22.1 and 3.22.2 present data on cultural orientation and economic choices. These data suggest some degree of correlation between cultural orientation and economic choice. All the Moose Factory women who were oriented toward aboriginal culture participated in the traditional economy full-time (Table 3.22.1). Most (89 percent) of the Peawanuck women who were oriented toward

Table 3.22.1: Cultural orientation and participation in economic activity-Moose Factory

Cultural orientation	Traditional economy only	Both	Wage economy only	Neither
Aboriginal	4(100%)	-	-	-
Euro-Canadian	1(17%)	5(83%)	-	-
Bicultural	11(41%)	16(59%)	-	-

Table 3.22.2: Cultural orientation and participation in economic activity-Peawanuck

Cultural orientation	Traditional economy only	Both	Wage economy only	Neither
Aboriginal	8(89%)	-	1(11%)	-
Euro-Canadian	3(33%)	5(56%)	-	1(11%)
Bicultural	6(43%)	6(43%)	1(7%)	1(7%)

Legend:
Both: Traditional and wage economies.
Neither: refers to women who do not participate in neither of economic activity, e.g., retired or economically dependent housewives.

aboriginal culture also participated in the traditional economy full-time (Table 3.22.2). One woman deviated from the pattern. She participated only in the wage economy and did not go to the bush, although she did process bush products at home.

For those women who were bicultural, both wage and traditional sectors were equally important economic activities. Only one Peawanuck woman relied solely on the wage economy. Fifty-nine percent of the Moose Factory women and 43 percent of the Peawanuck women participated in both sectors, securing both cash and bush food. Forty-one percent of the Moose Factory women and 43 percent of the Peawanuck women participated solely in the traditional economy (Table 3.22.1 and 3.22.2). Their relatively high participation in the traditional economy was attributed to lack of wage employment. However, as they were bicultural, they could shift their economic emphasis if wage employment opportunities became available.

Women who were oriented to Euro-Canadian culture also participated in both economic activities. As they were familiar with the Euro-Canadian culture, the present study hypothesized that they preferred wage employment to other forms of economic activity. But, in fact, that was not the case (Table 3.22.1 and 3.22.2). No person in either community relied solely on the wage economy; women preferred to participate in both economies in order to secure cash as well

as bush food. Most of the Moose Factory women (83 percent) and about half of the Peawanuck women (56 percent) preferred to participate in both economic activities (Table 3.22.1 and 3.22.2).

A few women, 17 percent of Moose Factory women and 33 percent of Peawanuck women, deviated from expectations and participated in the traditional economy full-time (Table 3.22.1 and 3.22.2). Although they managed to participate in the traditional sector, their degree of involvement in the traditional economy remains insignificant as their bush skills, as well as their interest, are limited (cf. Elias 1991:207).

Two interpretations were possible for their continued participation in the traditional economy. The first interpretation was that the women identified as Euro-Canadian oriented for the purposes of the study still retained some Cree values because of the limitations posed by a behaviour based study (cf. 3-5-4-1). They might have participated at some point in the traditional economy as a part of family tradition. As a matter of course the family tradition may have presented an opportunity for learning.

The other interpretation, not mutually exclusive with the first, was that reliance on both economies was the most sensible option available. Since there was almost no prospect of economic growth in isolated northern communities, most wage employment was provided by the public sector. Thus,

economic security based only on wage employment was a myth (Hodge 1982:984), and aboriginal women already knew this.

Thus, these young Euro-Canadian oriented Cree women faced only three economic options: 1) leave the community in order to get wage employment elsewhere; 2) participate in the traditional economy; or 3) participate in neither economic activity, becoming welfare recipients and dependent housewives. Thus, most of them had chosen the most rational option, participation in the traditional sector. This option also allowed them to exercise traditional Cree values.

To summarize, this section of the study examined how Cree women adapted to the general problem of economic insecurity of northern communities. A mixed economy has been identified by previous researchers as a viable economic compromise. However, as a mixed economy required one to be bicultural, the study further assessed the acculturation status of the respondents in order to examine how well Cree women were adapting to mixed economy.

Seventy-three percent of Moose Factory and 44 percent of Peawanuck women were bicultural oriented, and their orientation was the best adaptive to cope with the economic insecurity of northern communities because they could manipulate economic opportunities to their advantage as well as having the ability to function in a mixed economy. By contrast, 16 percent of Moose Factory and 28 percent of Peawanuck women were Euro-Canadian oriented, lacking the

practical ability to function in an aboriginal context. Their orientation was not well adaptive to cope with the economic insecurity of northern communities because they only had the ability to function in the wage sector. Most of them were younger women who were raised in the village and it was expected that this trend would continue because the village setting was maladaptive to the traditional system of education (cf. 4-4)

The data of this study indicated that the degree of acculturation increased as the respondents age became younger. The respondents' ability to function in the aboriginal culture had gradually decreased; thus, cultural orientations had changed from aboriginal, bicultural to Euro-Canadian. The data possibly indicated a gradual process to assimilation.

This ambiguity of interpretation derives from the fact that the study used behaviour-based variables in order to assess acculturation status. For instance, those individuals who lacked functional ability in aboriginal culture, such as bush skills, but who might retain aboriginal values were categorized as of Euro-Canadian orientation for study purposes.

One interpretation might be changes in behaviours means value changes. However, it was still possible to interpret that Euro-Canadian oriented younger women participated in the traditional economy because they retained some aboriginal values. Thus, it could be argued that Euro-Canadian

orientation among the younger women might be temporal and they could turn into bicultural individuals as they matured and had been given opportunities to learn traditional ways.

3-6: **Summary and Conclusions**

In the pre-sedentary period, the Cree moved around according to their subsistence cycles, as Alice described in 3-3. The extended family was the unit of production. Women played an active role in the traditional economy as equal partners of hunter/trappers. The division of labour was by gender and age, but roles were flexible according to the gender composition of a given family; having survival skills took precedence over gender roles (Hoffman 1957:74).

Men hunted big game, and trapped far from the base camp. By contrast, women trapped, snared, and fished near the camp. This division of labour was an adaptive strategy to increase the probability of securing an adequate supply of food. As men often had to be away from their camp, they had to learn how be self-reliant and independent, that is, to cook, get firewood, skin animals, and mend clothes. At the same time, women also needed to utilize the male skills of hunting, trapping, and woodworking because they were left in the camp for considerable periods of time. Self-reliance and independence for both sexes became key traditional Cree values because they were clearly adaptive.

Women's work was considered as important as men's, and it

was generally known that a male hunter-trapper without his female partner could not manage in the bush for a long time (Lange 1988:28). The difference between male and female work was "qualitative" (Cummings 1991:166), in that the big game usually hunted by men was considered "better" food (Bourgeault 1989:91). However, once big game had been brought to the camp, women were in charge of distributing the meat (Tanner 1979:153). In the bush, men and women were interdependent on each other --another key traditional Cree value-- for economic production and for their survival (Olsen 1989:55; Rogers 1963:84; Sharp 1981:238). As one elder stated, the relationship between men and women was "team work," in which women were essential partners to men.

The economic production unit began to change after sedentarization. Transfer payments became an important source of cash income after 1945, and employment opportunities became available in villages particularly during the 1970s due to the creation of band offices: administration and financial responsibility was transferred from the Indian agents to the local communities (N. Suzuki, personal communication). After sedentarization, women remained in the community to take care of their school-aged children as Ida's narrative described in section 3-4. With the aid of new technology, men went to the bush with their hunting partners and commuted between bush and village. Thus, a new pattern of bush activity, "posting," developed (Honigmann 1960).

Among the respondents of the present study in both communities, about 61 percent of the women accompanied men to the bush and maintained a bush camp. This percentage was considered high as samples from Moose Factory was biased toward the bush oriented sector, and was not representative of the community. More representative samples from Peawanuck showed only 26 percent of women accompanied men to the bush. Most of the women still follow this posting pattern of participation. The contemporary role of women in the traditional economy could be characterized as staying in village, and cleaning and cooking bush food for their families.

Once sedentarized, Cree women, especially women in Moose Factory, started to participate in the wage economy to supplement their family income, since many men only had seasonal employment. This way both sexes could pool their cash income to invest in bush activities. Thus, after sedentarization, both women's and men's roles became more diversified. Interdependence between men and women continued, but under these changed circumstances, in a mixed economic arrangement.

With the introduction of transfer payments and the wage sector, the contemporary village economy came to consist of three parts: wage sector, traditional sector, and transfer payments (George and Preston 1987). Despite the increasing importance of cash income, the traditional sector still

continues in Omushkegowuk Cree communities. Bush food is still integral to the diet, and all Cree anxiously wait for the arrival of the first goose each spring. Families gather to feast on the first goose of the season.

Bush food is economical and nutritional, and also essential to maintain a Cree cultural identity. Some younger mothers have rediscovered their traditions and come to consider bush food as "better" than store-bought food (cf. Olsen 1989). They are making a conscious effort to feed bush food to their children so that they acquire a taste for it, and develop their Cree identity. Bush food is generously distributed through extended families and friends; it symbolizes the Cree generosity of giving and the sharing ethic, both key traditional Cree values.

Since cash income is necessary for community living as well as for participation in the traditional economy, wage employment is much desired and considered important. Northern communities have chronic unemployment: there are not enough jobs for those who want to work. To cope with the economic insecurity in northern communities, it is necessary to rely on all three sectors of the economy. Women have adapted to the village mixed economy by becoming bicultural, and by learning to take advantage of economic opportunities. Among respondents of the present study, 73 percent of Moose Factory and 44 percent of Peawanuck women are of "bicultural" orientation.

However, increasing numbers of younger women are becoming Euro-Canadian oriented. One interpretation might be that they were in the process of assimilation. Many younger women, despite their Euro-Canadian orientation, have not been depended solely on the wage sector for work opportunities. Eighty-three percent of Moose Factory women and 56 percent of Peawanuck women manage to rely on both sectors of economic activities. Furthermore, 17 percent of Moose Factory women and 33 percent of Peawanuck women rely solely on the traditional economy. The continued importance of women's participation in both sectors could be reflections of: the persistence of traditional Cree values and livelihood adaptation to limited economic options.

Endnotes:

1. The percentage is calculated from Berkes et al. 1992: 16, Table 4.

2. About forty women were contacted, out of which only 22 provided complete quantitative information. The number of active participants was calculated from 27 participants in total. Five informants were added because they supplied this part of the information.

3. About 60 women were contacted, out of which 34 women provided quantitative information. Twenty-eight of them gave complete quantitative information. Six more informants were added because they provided this part of the information.

4. Cree and English language skills are employed to assess cultural orientations because each language reflects its own worldview. Some of the concepts expressed in a language are not translatable. Thus, a command of the language is an asset to function competently in a cultural setting.

5. The Ontario education system provides a grade 13 education. By contrast, all other provinces only offer grade 12 education.

IV. Transmission of Women's Skills

4-1: Introduction

This chapter discusses the transmission of female bush skills and knowledge of the land in Moose Factory and Peawanuck. The researcher was interested in how bush skills and knowledge are presently transmitted from older to the younger generations. Furthermore, this chapter discusses how the nature of this transmission has changed, and it identifies the problems and factors that have retarded the transmission. Thus, it examines the persistence and adaptation of traditional education in the contemporary village.

4-2: Methodology

Three research techniques were used for this part of study: structured interviews, unstructured interviews, and participant observation. To obtain information about present bush skill transmission, structured interviews (surveys) were conducted among women in the following age groups; 20 to 29; 30 to 39; 40 to 49; and 50 to 59. The survey questions were formulated from unstructured interviews conducted in the fall and winter of 1992. On the basis of the unstructured interviews, the researcher generated a list of female bush skills composed of 93 items. This list was developed by the suggestions of key informants. These informants were younger women who were acknowledged by community members as active and knowledgeable in bush activities.

Sixteen Moose Factory women and 19 Peawanuck women participated in the survey. Each interviewee was asked to answer three questions for each of the 93 items on the list: 1) has she learned the skill (learned by hands-on practice, learned by observation, or did not learn the skill); 2) if yes, who was her major influence; and 3) how old she was when she learned the skill, to the best of her memory. From these interviews quantitative data were obtained in both communities in 1993. Several tables were generated from this quantitative information.

For comparative purposes, bush skills and transmission of knowledge among older generations were also studied. Unstructured interviews, rather than structured interviews, were used to collect qualitative information on native learning from elders because they did not respond well to the structured interviews (cf. Kater 1993:22). Thirty Moose Factory women whose ages ranged from the 50s to the 70s and 11 Peawanuck women whose age ranged from the late 40s to the 70s provided qualitative information. In both communities, monolingual women were not interviewed due to budgetary restrictions. Three women in Moose Factory and eight women in Peawanuck were not interviewed for this reason.

The participant observation technique was used in both communities. The researcher lived with native families in Moose Factory and Peawanuck, and accompanied the families on hunting trips for moose hunting, trapping, goose hunting, and

fishing. The researcher participated in bush food production, and played the role of an apprentice to learn the bush skills expected of an adult Cree women. Although only a brief period of apprenticeship was experienced, she was able to generate valuable information about traditional learning (cf. Kater 1993:22).

In summary, structured interviews were used with 16 younger women and unstructured interviews with 30 older women. These represented four percent and eight percent, respectively, of Moose Factory women who were age 15 and over. In addition, six families were observed during participant observation (two percent sample). In total, samples from Moose Factory represented about 14 percent of women who were age 15 and over (Table 4.1). However, these samples from Moose Factory are not representative but biased in favour of the bush oriented sector (cf. 2-2-2-2).

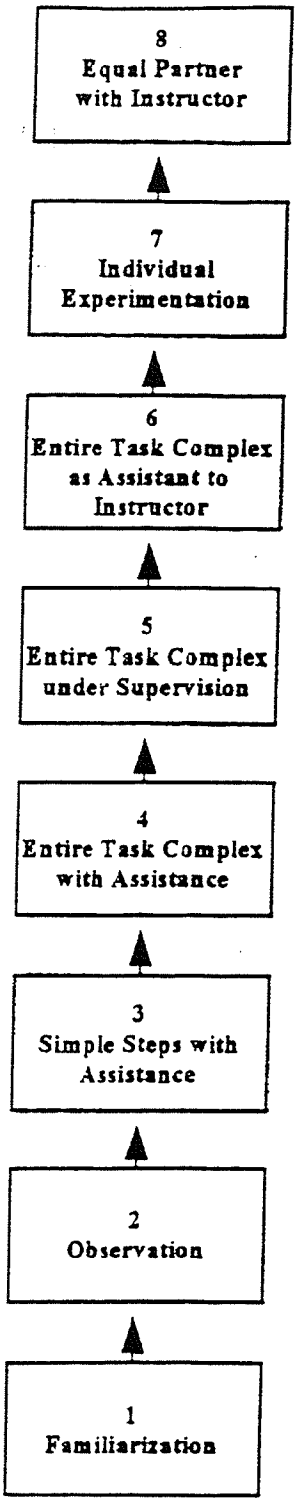
In Peawanuck, structured interviews were used with 19 younger women and unstructured interviews were used with 11 older women, representing 30 percent and 17 percent respectively, of Peawanuck women who were age 15 and over. In addition, three families were observed during participant observation (five percent sample). In total, samples from Peawanuck represented about 52 percent of women who were age 15 and over (Table 4.1). Thus, samples were considered more representative than Moose Factory.

Table 4.1: Sample sizes for the study of transmission

	Moose Factory	Peawanuck
Structured Interviews	16	19
Non-Structured Interviews	30	11
Participant Observation	6 families	3 families
Women over 15	368*	63
Percentage Interviewed	14%	52%

In the survey process a problem occurred in the collection of quantitative information regarding the quantification of steps of learning. The researcher was never sure about the actual (as opposed to stated) level of learning. Since learning is a sequential process, the approach taken in the present study was to quantify by breaking the skill-learning process into a sequence of steps. This approach was taken by Ruddle and Chesterfield (1977:116) who identified eight processes of the learning complex: 1) familiarization or identification of skills; 2) observation; 3) helping with simple steps; 4) performing an entire task complex with a teacher; 5) performing an entire task complex with little supervision; 6) becoming an assistant to the instructor; 7) independent performance; 8) becoming a peer to the instructor (Figure 2.)[1]

Figure 2: Learning Sequence (Ohmagari 1995 based on Ruddle and Chesterfield 1977:116)



The present study uses the scheme of Ruddle and Chesterfield (1977) as a guide, but due to the potential problem of "informant fatigue," the actual learning stage of informants could not be established accurately. As well, the learning age of different stages was estimated but not established with certainty.

Qualitative information - stories of learning - about traditional learning was also obtained from some younger women in Peawanuck because they experienced the nomadic way of life when they were young. One of these families did not settle down in the village until 1973. Some elders in Moose Factory who grew up either in residential schools or in the village provided qualitative information on bush skill transmission in the village.

4-3: **Patterns of Transmission**

4-3-1: **Traditional System of Transmission**

Many elders pointed out that bush skills were not taught in the abstract manner. Their way was "learning by doing" (cf. Preston 1975:262; 1982:299) through apprenticeship. After an extended period of learning by watching and helping (Ruddle and Chesterfield's learning sequence stages three to four), they were told to attempt to repeat the observed skills. Depending on the complexity of the skill, an apprentice started to perform one part of the skill complex that was easiest to learn. After they mastered that part,

they moved to the other parts of the skill complex and eventually learned the entire skill complex. Mastery of the skill complex was a gradual process, and it was only achieved by trial and error (Blythe et al. 1985:49; Lafond and Longneck 1992:343; Preston 1979:86; 1986b:71; Sidney 1990:69; Séguin 1992; Tokolik 1990:267).

As the Cree people considered young children to be "small adults," they were expected to help with and share in the work (Long 1978:76). They start to do chores in the camp as soon as they learn to walk. Both boys and girls helped with chores in the camp. Their parents, grandparents, older siblings, and members of the extended family with whom they camped, were responsible for their education. Their teachers emphasized diligence and denounced laziness. After puberty, boys accompanied adult males to learn about hunting, and spent more time outside the camp. In contrast, girls remained in the main camp to perfect women's work (Rogers and Rogers 1963; Sindell 1987).

The anecdotes of elders give us a good understanding of how traditional education took place. One Peawanuck elder in her mid fifties related that she learned how to do inside chores in the askîkan and mîkiwâm by age eight. After she mastered indoor chores, she started to do outside jobs. Since her parents usually camped with her paternal grandparents, she was sent to stay with her grandparents as soon as she was able to assist them.

She learned most of the skills from her mother and paternal grandmother, but she also learned from other women who camped with them. However, most of the time, her parents and grandparents camped alone. Therefore, she did not have anyone to play with, so that helping her mother and grandmother was a form of play modelling. She enjoyed doing things with her grandmother because her grandmother always actively showed her the skills when teaching. On the other hand, when her mother asked her to do things, she had to do it herself.

When she was young, few items could be purchased in stores and manufactured garments were not available. Stores carried only cloth, thread, needles, and yarn. Everything else had to be made. At eight, she made her first pair of socks. Her mother gave her a little bit of yarn and "knitting needles" which were quills from large goose feathers. She wanted to imitate her mother but she could not do it, and she began crying out of frustration. Her grandmother came to see what was the matter. Her mother explained the reason. Then her grandmother told her, "When you make things, you try many times until you get it; never give up." Her grandmother showed her how to knit, and she kept trying: she finally learned how to knit (also cf. Preston 1986b:75).

A few years later, she made her first skirt. Her mother gave her one and half yards of material. She thought she knew how to make it by helping and by watching her mother make

clothes. However, she cut the material too straight and the skirt was too tight to wear. Later, her mother showed her how it should be done. She was expected to watch carefully so as not to repeat the same mistake. When she tried the second time, she could wear the skirt. She was very proud of wearing her own skirt even though its length was still not even.

At age 13, she finally tanned her first moose hide. She had given a smaller hide to practice on. While she was trying to remove the hair, she made many holes in the hide. She worked very hard and her arms ached, but the hide still had to be thrown away in the end. Later she learned how to remove the hair so that she could move onto the next stage of making the hide thinner. During this process, she scraped the frozen moose hide too much, and ruined it. She was not aware that the thickness of the hide naturally varied; for example, the skin over the neck of deer and the rump of moose are thicker than other parts. She had to try many times to master the entire skill complex. After many diligent efforts, she managed to tan her first hide, and she made moccasins from her hide. She was very proud of them.

She had learned through practice. When she just watched and helped, making things seemed to be easier. However, when she first tried to make things by herself, it was not as easy as it seemed to be. To be good at doing things, one must practice and try hard. The same mistake would not be repeated, and she would become an expert. Despite all her

mistakes, her grandmother and mother always encouraged her, and they told her to keep trying. She never saw her grandmother and mother get angry when she made mistakes. However, there was a prescribed way to perform each step of the skill complex. Functional alternatives were not permitted, and she had to follow the way it was shown to her. When she performed a task correctly, her grandmother praised her, saying "Êkotê (that's the way)."

As she grew up, more responsibilities were given to her (cf. Rogers and Rogers 1963). Older children were taught how to identify "travel points," which mark the beginnings of trails. They could then guide the family in travel if necessary. She learned the knowledge of land and rivers because she was one of the oldest in the family. When she was about sixteen, she travelled with her fourteen-year-old brother, from the trading post to her family's trap line (approximately 120 kilometres) during the winter with a dog team. They took only a little food, such as flour, sugar, and tea. They camped at night and ate small game they killed along the way. They were able to survive, and arrived safely at their trapping camp.

In traditional Cree culture, parents taught their children adequate survival skills that allowed them to live in the bush by the time they reached their mid to late teens (Blythe et al. 1985:49; Flannery 1962; 1995:55; Rogers and Rogers 1963). Parents were responsible for their children's

education. However, members of extended families were readily available to take over teaching responsibilities whenever needed (Preston 1986b:41).

Traditional education was carried out in the form of observation and apprenticeship which involved the hands-on experience of trial and error. Children were not always given verbal instructions. They were encouraged to learn skills by playing and by imitating adults through participation in the production of bush products (Flannery 1995:23,38; Long 1978:76-77). At the same time, the children acquired the Cree values of being self-reliant, independent, and competent, but also of sharing and being cooperative (Sindell 1987:384-385).

4-3-2: **Changes in Traditional System of Transmission**

The traditional system of education described above began to change with the removal of children to residential schools as early as 1900. Missionaries encouraged the education of native children hoping to assimilate them into the dominant Euro-Canadian culture (Nock 1988:74). The first residential schools in the western James Bay region were established in Fort Albany by the Oblate Fathers around 1892 (Long 1978:89). Many Cree people were by that time devout Christians, and they began to send their children to schools because of the strong influence of missionaries (Willis 1973). Interviewees who were born in the 1910s had attended to residential school.

Until 1945, missionaries encouraged parents to leave

their children in school while they were in the bush, and they discouraged the parents from camping near the school (Johnston 1988). Missionaries were interested in educating the young because they considered the older generation "beyond redemption" (Nock 1988:74). As the younger generation was the only hope for assimilation and social change, it was necessary to disconnect children from their home environment and to eliminate parental influence (Willis 1973; Titley 1986).

Children who lost either or both of their parents were sent to residential schools. Quite often children who lost their parents were sent to stay with grandparents so that their surviving parents could find new spouses more easily. However, their grandparents were sometimes too old to care for young children. Thus, these children were sent to residential schools to alleviate family stress. Residential schools had a function similar to the fur trade post during fur trade days as a "depot" where orphans, the disabled, and older people were left.

Children were physically removed from their traditional educational environment when they were as young as four years old. They spent about nine months in school learning the white people's ways. They only came home for two months in the summer. About a month of Christmas break was also spent in schools because most parents were in the bush trapping. In the early years of residential school education circa 1910s to

1920s, most of students stayed in the school for two to three years. However, beginning in 1930s, students stayed in the residential school for longer periods because residential schools followed the provincial government policy of keeping students until age 16 (J. Long, personal communication). Students staying in residential schools for many years experienced a serious loss not only of bush skills and knowledge but also in the development of traditional values.

The purpose of the residential school education was to turn "backward" native people into mainstream Canadians. In the name of assimilation policy, Cree children were taught to disregard their own heritage (Nock 1988:74-77). As a consequence, some of them were ashamed of being "backward" Indians. They began to despise the Indian way of life and did not want to learn bush skills and knowledge of the land (e.g. Willis 1973:182).

Moose Factory women in their 60s and 70s, who practically grew up in the school, acquired different values during their early years of socialization. The educational environment of residential schools was radically different from the traditional educational environment in the bush. In the bush, Cree children were raised within multi-generational kin groups. Adults were always around them for guidance. Although parental authority was strong, the relationship between adults and children was close. Children received support and constant encouragement from their parents,

grandparents, and members of their extended family during their apprenticeships. Furthermore, children were encouraged to be self-reliant, self-motivated, and independent. At the same time, they were taught to be cooperative and helpful to each other (Flannery 1995:39; Sindell 1987; Cruikshank 1971a:6).

In contrast, in the classroom, children were taught to be obedient and dependent upon their teachers. Self-motivated behaviour was not permitted, and they were expected to get permission from teachers before doing anything (Nock 1988:83; Sindell 1987; Willis 1973). The school environment was authoritarian: students were expected to follow orders, and obedience was mandatory. If they disobeyed, punishment and public shame were the consequence. The children did not have any native adults around them to give them guidance and support in residential schools. The only available support came from peer groups of the same sex with whom they slept, ate, worked, studied, and with whom they developed strong ties. Even though they had older or younger siblings in the same school, they were kept in separate rooms. The only contacts with adults were their white teachers who were authority figures.

The school environment required children to master different patterns of social interaction than they learned in the bush. Children had to learn how to deal with people other than their kin groups because there were no relatives to

protect them in schools. To gain support and acceptance, they had to worry about their reputation and standing at school. If they did well in academic or social classroom competition, public rewards were given (Nock 1988:84). However, if they failed, there was public shame (Preston 1979). Since a sense of shame has been considered very strong among the Cree people, they became reluctant to try to learn anything new among strangers (cf. Honigmann 1961:39). As a result, children learned to behave submissively and dependently to survive among strangers. These school experiences created distance between the adults who were authority figures, and the peers who were their support groups. Consequently, when they returned to the community, the relationship between Cree adults and children became distant, and the influence of Cree adults declined (Mason 1967).

As a consequence, those children who grew up and who were socialized in residential schools acquired values and orientations that were not adaptive to bush life. By the time they finished their schooling, they had become foreigners to bush life, not only by failing to have any bush skills and knowledge of the land, but also by lacking an appropriate attitude for bush life. Education of children originally served to recruit new members to the society in order to maintain the existing social systems (Spindler 1987). However, when the missionaries and the government took over the control of Cree education, Cree children were recruited

for a society other than their own. In other words, formal schooling led to the destruction of the existing social system (Barman, Herbert and McCaskill 1987: 4; Spindler 1987). As a result, those students lost the opportunity to learn Cree values, bush skills, religion, and language. Although some graduates chose to re-learn the Indian ways, the Cree culture experienced stresses.

The students who went to residential schools were forced to make the choice of either adopting Euro-Canadian ways or aboriginal ways because the pressure of acculturation was so severe (Dubois cited in Sindell 1987). Those children who decided to adopt the white man's way did well, and they remained in school. Those children who decided to be Indian eventually dropped out of school (Deyhle cited in Ledlow 1992:28).

Acculturation stresses probably affected more those students who chose to adopt the white man's way more than those who did not. They saw limited value in the Indian way of life for future generations. When they themselves became parents, many chose not to transmit bush skills and knowledge, or the Cree language to their children. Some informants explained that they did not want their children to go through the same suffering of making "either/or" choices. They believed it would be much easier for their children not to know the "backward" Indian ways so as to minimize painful value conflicts. Thus, those parents neither took their

children to the bush nor taught them the language (cf. Cummings 1991:55-56; Schuurman 1994).

However, for those people who attended school briefly and dropped out, the effects of acculturation stresses were probably less severe. Several informants stated that their parents wished them to come back early so that they only stayed in school for a few years. After they come back from school, they went back to the hunting way of life and learned the traditional values and skills.

Also, some parents did not send their children to school every year. Consequently, these children learned traditional values, bush skills, and the Cree language during those years when they did not go to school. Other children learned bush skills and Cree before they went to residential school. Some of them only went the school after they reached ages of 9 through 12: they already possessed bush skills, knowledge, and Cree values. Thus, acculturation stress caused by residential schools did not affect all the individuals evenly, and it did not always lead children to disregard their traditions.

4-3-3: **Present System of Transmission**

This subsection examines how bush skills and knowledge of the land have been transmitted to the younger generations. Peawanuck women in the three age groups (20 to 29, 30 to 39, 40 to 49) were interviewed. In Moose Factory, women in the four age groups (20 to 29, 30 to 39, 40 to 49, and 50 to 59)

were interviewed.

Since residential schools still existed as late as the mid 1970s,[2] some interviewees in their late twenties to fifties had experiences attending residential schools. However, most of the younger interviewees attended day schools in their own village. Some of the interviewees' mothers attended residential schools. However, systematic data were not collected on this topic. Thus, a comparison between women whose mothers attended residential schools, and those mothers who did not attend these schools is not available.

Three kinds of information were generated from the structured interviews: 1) the status of bush skills and the transmission of knowledge - whether these informants learned the skills and knowledge of the land; 2) who was their main teacher; and 3) the approximate age when they learned their skills. Each interviewee was asked to answer each of the questions of 93 items on the bush skill list (cf. Appendix D). The 93 bush skills of the list were identified by key informants as traditionally important skills, plus a few recent skills, possessed by women.

The status of all the bush skills transmission is compiled in Appendix D. The transmission status of key bush skill items is compiled in Table 4.2, showing that about 54 percent of the skills are being still transmitted. There is also some regional variation in the level of skills being transmitted.

Table 4.2: Transmission of key bush skill items and age of skill acquisition (cf. Appendix D: d-1)

	Moose Factory(N=15)		Peawanuck(N=19)	
Bush skills	Mean age	Transmission rates	Mean age	Transmission rates
dressing warmly	8	100%	7	100%
getting wood	8	100%	8	95%
using axes	13	100%	10	100%
making bannock	12	100%	10	73%
sakapwân*	16	100%	13	42%
smoking fish	12	94%	12	71%
smoking goose**	18	73%	12	63%
setting snares	15	87%	9	95%
setting fish nets	15	100%	11	63%
paddling	15	93%	12	95%
setting up tents	14	100%	12	95%
orientating in bush	13	73%	12	53%
stretching beaver pelts	16	60%	11	58%
tanning-caribou	16	76%	12	79%
tanning-moose	18	67%	12	68%
making moccasins	16	66%	13	69%
Mean (93 items)	14	58%	11	50%

Notes:

* See to the glossary for Cree names.
**"Smoked goose" refers especially to the "namêshtêk" method of smoking goose that eliminates all bones. There are four methods in all.

The plan of this section is first, an analysis of those skills that are not fully transmitted (using the complex of fur preparation skills as an example). Second, to present a mix of poorly transmitted and well transmitted skills by the followings tasks: food preparation skills, camping related skills, hunting, fishing, and trapping related skills, and craft related skills as examples.

4-3-3-1: **Fur preparation skills** (Table 4.3)

The importance of fur in the village economy declined sharply in the mid-1980s. This decline can be attributed to the animal rights movement and the decline in fur prices. Therefore, the transmission rates of fur preparation skills were for the most part low, except for skills relating to marten and beaver in Moose Factory. The transmission rates of skills relating to small animal fur preparation were notably low (0-5 percent) in Peawanuck. These animals, such as squirrel and weasel, were traditionally used for practicing skill development.

The transmission of skills relating to the important trapping species, such as otter, fox, marten, mink, and beaver, were also low, varying from 5 percent to 21 percent in Peawanuck. In the case of beaver, the researcher collected separate information on skinning and stretching. The transmission rate of beaver skinning was 16 percent in Peawanuck. By contrast, skills relating to stretching beaver

pelts were exceptionally high at 47 percent. A higher transmission rate of skills relating to beaver fur stretching than of skinning could be attributed to: 1) the decline of the importance of beaver as food; 2) Peawanuck youngsters learning how to stretch fur before learning how to skin because stretching required fewer skills than skinning; 3) younger women having more opportunity to see stretching than skinning because the fur could be stored in a freezer until the right opportunity for instruction arose, but beaver had to be skinned immediately to maintain the quality of the fur.

In contrast, in Moose Factory, the transmission rates of skills relating to fur preparation were low, but they were higher than in Peawanuck. As for Peawanuck, the transmission rates of skills relating to fur preparation of otter, mink, and fox were also low, ranging from 14 percent to 33 percent. However, the transmission rates of skills relating to muskrat, marten, and beaver fur preparation were much higher than other species. The transmission rate of skills relating to beaver skinning was the highest at 66 percent. Among the three species, marten (60 percent) was the most important commercially because of its popularity on the world market.

Table 4.3: Fur preparation skills not fully transmitted

	Percentage Reporting the Skill					
	Moose Factory			Peawanuck		
Items	Y	O	N	Y	O	N
preparing fur -squirrel	20%	-	80%	0%	-	100%
-weasel	27%	-	73%	5%	-	95%
-otter	20%	13%	67%	16%	5%	79%
-mink	33%	-	67%	11%	5%	84%
-fox	14%	14%	73%	21%	16%	63%
-marten	60%	7%	33%	5%	11%	84%
-muskrat	40%	13%	47%	16%	5%	79%
cleaning beaver	66%	14%	20%	16%	21%	63%
stretching beaver	60%	13%	27%	47%	26%	26%

Legend:

Y: learned by hands on practice.
O: learned by observation only.
N: did not learn.

Although the price of beaver was very low in 1992-3, some people still trapped beaver commercially. Beaver meat was still considered a delicacy in Moose Factory. Thus, people trapped primarily for food needs. Some pelts were sold locally, rather than at fur auction, for trimming moccasins, mittens, and hats. Some informants stated that the furs skinned by apprentices were used for crafts because these furs

would not bring good prices at auction.

In contrast, the commercial importance of muskrat as a pelt was very low since there was almost no demand. The transmission rate of skills relating to muskrat fur preparation was 40 percent. It could be speculated that the transmission rate was relatively high because the animal was used for skinning practice. Without adequate small animals skinning practice, the skinning of important commercial species was not possible because the pelt price depended partly on the skill with which the pelt was skinned.

4-3-3-2: **Food preparation skills** (Table 4.4)

Food preservation skills, as a complex, showed a mix of poorly transmitted and well transmitted skills. Preserving food was traditionally an important part of aboriginal subsistence strategy to survive in an environment in which food production was periodic. Although some skills were still fully transmitted, other food preservation methods were impaired with the introduction of commercially manufactured food and availability of refrigerators and freezers.

Since bush food was still commonly consumed, skills relating to fish cleaning and fish smoking/drying, plucking and gutting waterfowl, deboning moose meat, and the apwân and sakapwân methods of barbecuing geese were still well transmitted. On the other hand, some skills were totally lost. For instance, according to the historical records, the

Table 4.4: Food related skills

	Percentage Reporting the Skill					
	Moose Factory			Peawanuck		
Items	Y	O	N	Y	O	N
cleaning fish	100%	-	-	84%	16%	-
smoke/dry fish	94%	6%	-	68%	26%	5%
plucking waterfowl	100%	-	-	100%	-	-
gutting waterfowl	100%	-	-	100%	-	-
Grease making -moose/caribou	33%	14%	53%	16%	16%	68%
-fish	-	7%	93%	-	-	100%
-seal	-	-	100%	-	-	100%
-goose	40%	40%	20%	10%	58%	32%
fish pemmican*	14%	14%	73%	47%	32%	21%
moose/caribou pemmican	20%	20%	60%	37%	26%	37%
namêshtêk*	73%	20%	7%	63%	26%	11%
shinegamishigan*	7%	-	93%	58%	10%	32%
sakapwân*	100%	-	-	42%	11%	47%
apwân*	100%	-	-	68%	21%	11%
smoked beaver	47%	47%	6%	16%	5%	79%
deboning moose	74%	13%	13%	74%	21%	5%
canning meat	-	-	100%	63%	16%	21%
pickling meat	40%	7%	53%	16%	5%	79%

Note:
* See to the glossary for Cree names.

Legend:
Y: learned by hands on practice.
O: learned by observation only.
N: did not learn.

Cree people used to make ruhiggan with pounded dried meat, fat, and dried berries (Isham cited in Lytwyn 1993:234). This form of food preservation is no longer practiced. It was possible that this food was a fur trade adaptation for travellers.

Skills relating to rendering grease from fish and seal were also almost lost. Originally, seal oil was used for lamps, seal meat was fed to dogs, and seal skin was used for making boots and crafts. Presently there is little use for seals in the village and seal is not frequently sought after. Fish oil was also used for lighting as well as for cooking, but now it had been replaced by commercial vegetable oil, lard, and camping fuel. In some cases, fish oil was reported to have been used for sunburns.

Some other skills were not fully transmitted, relating to making grease from moose and caribou. Presumably, the decline is because the importance of moose and caribou grease in the Cree diet had decreased. Moose and caribou grease was traditionally eaten in solid form as a snack (cf. Bear 1992b:209). Elders still favoured this form of snack, but the younger generations had turned to commercially available snacks, such as potato chips. On the other hand, the skill relating to the making of grease from geese was still transmitted since goose grease was still part of the Cree diet. Goose grease was used for frying, making bannock, and was served with smoked fish and pemmican.

With the introduction of electricity and freezers, the traditional and "semi-traditional" ways of food preservation that were introduced by the Hudson's Bay Company and the missionaries, were becoming infrequent (cf. Flannery 1995:60). Traditionally most meat was preserved by smoke-drying. Presently smoking is done to enhance flavour rather than to preserve the meat; foods are not smoked for as long as they used to be. Lightly smoke-dried meat and fish are kept in the freezer.

Presently, fish, moose, and caribou pemmican are not commonly manufactured. Although some Peawanuck elders still manufacture them, they are not a part of the regular diet. An elder was visited by her granddaughter, and the young girl believed that her grandmother was eating sawdust. The girl had never seen fish pemmican before.

The transmission rates of skills relating to both fish and meat pemmican-making were higher in Peawanuck than in Moose Factory; pemmican was still being manufactured in Peawanuck. The reason for the continuing production of pemmican was not certain, but probably because the older people grew up with it, they liked the taste. Moreover, bush food was more abundant, and more time was available for pemmican production in Peawanuck.

According to Senauer (1990), it was common for women in developing countries to adopt commercial food items in order to save time because preparation of the traditional foods was

too time consuming. Senauer's hypothesis could be applicable to Moose Factory. The researcher did not find anyone currently manufacturing pemmican. Time was considered more important, in Moose Factory, the more acculturated village. Thus, people were not willing to spend the time making fish, moose, or caribou pemmican.

Furthermore, there was a shortage of raw materials in Moose Factory. Fish was not abundant because of past hydro development and possibly over-fishing. Moose were plentiful, but a hunter did not keep a large amount for himself since the population of the settlement was quite large, and the sharing network had expanded. If a person shot a moose, a large quantity of meat was distributed. His own share could be easily stored in a freezer. His share was not enough to warrant making pemmican. In addition, people did not have to have pemmican. Now they had access to a wide variety of store goods if they wanted to have a snack or ready-to-eat food. Consequently, the transmission rates of skills relating to pemmican production were lower in Moose Factory because now learners had no opportunity to observe or to participate in making pemmican.

The goose is one of the most valued bush foods in western James Bay, and all Cree people look forward to the arrival of geese in the spring. Smoked goose was considered a great delicacy. Among the four kinds of smoked goose, the transmission of skills relating to manufacturing

shinegamishigan (boiled and smoked goose) was notably infrequent in Moose Factory. Some younger Moose Factory residents had never heard of this method of preservation and only a few elders knew about it. Only one interviewee had learned this method from her great-aunt (her maternal grandmother's sister); one out of fifteen respondents. This gives a transmission rate of only 7 percent. The reason for the decline of this method was uncertain.

However, several informants stated that there was a regional preference for methods of goose preservation. In Peawanuck, shinegamishigan was still a preferred form of goose preservation (58 percent transmission). On the other hand, the transmission of the traditional method of barbecuing, sakapwân (barbecue on a string), was infrequent in Peawanuck. Geese barbecued over an open fire were considered a delicacy. However, Peawanuck residents preferred to use another traditional method of barbecuing, apwân (goose on a stick).

Most of the younger Peawanuck interviewees were aware of the sakapwân method, but stated that they used the apwân method when they barbecued goose. According to one informant, sakapwân was the preferred method on the east side of the James Bay, and apwân was the preferred cooking method on the west side of James Bay and west of Attawapiskat.

As a cooking method, sakapwân requires more time and skill than apwân. The whole goose is hung on a string, close to the fire, but off centre (otherwise it catches fire). The

cook has to watch the goose, constantly twisting the string to barbecue the goose evenly. It takes about two hours to cook the goose. The sakapwân method of cooking was used not only for smaller geese and ducks, but also for beaver. Although it was a time consuming method, this way of cooking remained popular in Moose Factory where many people had immigrated from the Quebec side of James Bay.

The transmission of skills related to beaver smoking varied regionally. In Moose Factory, it was transmitted at 47 percent. Conversely, in Peawanuck, smoked beaver was not well transmitted. The rate of transmission was only 16 percent. The reason for the decline of smoked beaver in Peawanuck was uncertain, except that Peawanuck is north of the prime beaver area, and the Peawanuck Cree people are caribou- and goose-oriented people (Fikret Berkes, personal communication). Elders attributed the lack of popularity of smoked beaver to the time factor as well as to health status. As most of traditional food was prepared in mîkiwâm, cooks had to sit on the floor. Many women complained that sitting on the floor was uncomfortable and getting up was difficult as they suffered from arthritis. Some younger Peawanuck women said that they did not like beaver because the flavour of the meat was too strong so they had little incentive to smoke beaver.

When the researcher stayed with a local family for four months, they never once cooked beaver. In contrast, beaver meat was still considered a delicacy by Moose Factory

respondents. The researcher had three occasions to eat beaver in the village within three months. The most common ways of cooking beaver were boiling or roasting in the oven. Sometimes beaver was cooked using the sakapwân method to drain off the fat. Although smoked beaver was still considered a delicacy in both communities, many young people never had tasted it.

The "semi-traditional" forms of food preservation that were introduced by the Hudson's Bay Company and the missionaries, such as canning and pickling (salting), were also no longer popular, with the exception of canning in Peawanuck. Canning of meat was not transmitted in Moose Factory because Moose Factory residents had access to a wide variety of food in the stores, but less access to bush food. A large quantity of bush food was allocated for sharing but not for canning, because of the extended sharing practices in the village.

In contrast, canning was still practiced in Peawanuck because of the high cost of shipping manufactured food by air freight and the abundance of bush food. They also shared bush food, but since the population in the settlement was small, a hunter could still keep a large quantity of meat for his own use. People canned bush food for the winter because the amount of food that could be stored in freezers was limited.

Pickling and salting goose or fish was presently not common because of the convenience of freezers. Many

households that were particularly active in the bush economy had freezers. Those who did not have a freezer or adequate freezer space went to members of their extended family or to friends who did. However, neither community had a communal freezer as do other communities on eastern James Bay and Hudson Bay.

The transmission rates of salting were moderate, 40 percent in Moose Factory and 16 percent in Peawanuck. This was because meat or fish was sometimes slightly salted to keep the bush food fresh while they camped. Before electricity became available, goose and fish were salted and kept in barrels. The barrels were buried in earth to keep the food fresh. The practice of salting for preservation has been abandoned.

4-3-3-3: **Camping related skills** (Table 4.5)

Camping skills, as a complex, showed a mix of poorly transmitted and well transmitted skills. Since bush life is still active, basic camping skills, such as fetching water and wood, starting fires, dressing warm, using axes and saws, setting up tents, are well transmitted. With the introduction of new technology, driving snowmobiles and outboard motors became a new necessity in the bush life. Thus, skills relating to operating modern equipment were well transmitted.

However, some traditional skills and knowledge, such as making an askîkan, orientation in the bush, forecasting the

weather, and "semi-traditional" skills, such as handling dog teams, the use of sails, and some modern skills like using bush radios, were not transmitted among women. The askîkan was replaced by the log cabin with a stove, the dog team was replaced by the snowmobile, and sails were replaced by outboard motors. Orientation in the bush, forecasting weather, and the use of Citizen's Band bush radios were not well transmitted because of sedentarism and new patterns of bush activity.

The askîkan or sod lodge, the traditional form of winter dwelling made from split logs and blocks of sphagnum-moss sod, was no longer in use. Some Peawanuck respondents grew up in a askîkan, and they helped to repair it when they were young. Accordingly, the transmission rate of skills related to building an askîkan in Peawanuck was higher than at Moose Factory, where the skill was not transmitted at all. Most of people did not know what it was. The Cree hunters presently use log cabins for their base camp and canvas tents with stoves for shorter camping.

With the introduction of the snowmobile, the Cree people no longer used dogs for transportation. Dog teams were not aboriginal, but were introduced by white men through the fur trade (Honigmann 1956:52). Dogs were not only used for travelling long distances, but also for hauling wood around the camp. Getting wood was traditionally a woman's job, and sled were used to haul wood to the camp. Some Peawanuck

Table 4.5: Camping related skills

	Percentage Reporting the Skill					
	Moose Factory			Peawanuck		
Items	Y	O	N	Y	O	N
fetching water	100%	-	-	95%	-	5%
fetching wood	100%	-	-	95%	5%	-
starting fires	100%	-	-	95%	-	5%
using saws	100%	-	-	89%	-	11%
setting up tents	100%	-	-	95%	5%	-
making askîkan	0%	-	100%	32%	-	68%
handling of dogs	7%	60%	33%	11%	5%	84%
driving snowmobiles	100%	-	-	100%	-	-
driving motors	87%	-	13%	74%	-	26%
using paddles	93%	-	7%	95%	-	5%
using sails	27%	20%	53%	11%	-	89%
orientation in bush	73%	-	27%	53%	5%	42%
forecasting the weather	80%	-	20%	53%	-	47%
mechanical repairs	67%	-	33%	42%	-	58%
chain-saw use	54%	6%	40%	95%	-	5%
chain-saw repair	27%	-	73%	42%	-	58%
using bush radios	60%	7%	33%	32%	-	68%
setting bush radios	40%	7%	53%	5%	-	95%
making shelters	67%	-	33%	32%	5%	63%

Legend:

Y: learned by hands on practice.
O: learned by observation only.
N: did not learn.

informants learned how to handle dogs from their mothers and sisters because they had the duty of getting wood. By contrast, Moose Factory residents learned how to handle dogs mostly from observation, although other informants had to learn to feed dogs or make dog harnesses.

Sails for boats were no longer in use by the Cree people because of the introduction of outboard motors. Before the arrival of motors, people used sails as well as paddles to propel their canoes. Most of the informants remember watching their grandparents using sails. However, a few Moose Factory interviewees stated that they used tarpaulins as sails when their motors broke down.

Since 1945 the Cree people have settled in villages. The importance of orienting themselves in the bush, forecasting the weather, reading ice and water conditions, and making emergency shelters - all essential for survival in the bush - had declined among women. Traditionally, women possessed this knowledge and skill because family groups stayed in the bush for about 10 months of the year. Women were as knowledgeable as men about survival techniques, and women could travel alone with their children for long distances in emergencies.

Although knowledge and skills are still needed for travelling between the village and the bush, women's skills has declined and their knowledge base has shrunk. Women do not travel frequently, the travel time has shortened, and safety has improved with the introduction of new technologies,

such as bush radios and the use of aircraft. Generally, women take passive roles during travel and in the bush camp as "support workers." As they usually remain in the camp and do not travel far into the bush, they do not apply their knowledge of bush orientation. Although the transmission of knowledge relating to orientating oneself in the bush is still 73 percent in Moose Factory and 53 percent in Peawanuck, most of these women stated that they only remained on the trail. Thus, their knowledge base is limited.

The transmission of knowledge relating to forecasting weather and skills relating to making emergency shelters are similar to those of orientation. Although the transmission rates of forecasting are 80 percent in Moose Factory and 53 percent in Peawanuck, women did not go to the bush frequently enough to apply, test, or improve their knowledge. The transmission rates of skills relating to making emergency shelters were 67 percent in Moose Factory and 32 percent in Peawanuck. The higher transmission rates could be attributed to the fact that Moose Factory women spent more time in the bush than Peawanuck women.

With the introduction of new technologies, mechanical skills were also required for bush life. The transmission rates of skills relating to outboard motors and snowmobile repairs are moderate (67 percent in Moose Factory and 42 percent in Peawanuck). Most of the informants stated that they have only preliminary experience with machinery, such as

changing spark plugs. Other preliminary skills were related to the chain-saw, such as changing of the spark plug and replacing the chain. Peawanuck residents were more familiar with skills related to the operation of chain-saws because they still cut wood to heat their houses. Therefore, handling chain-saws is a necessity for village life in Peawanuck, which is reflected in a higher transmission rate (95 percent) than in Moose Factory (54 percent).

Another technological innovation is the introduction of Citizen's Band radio which improved safety by maintaining communication between community and bush camp. Radio operating skills are relatively high in Moose Factory (60 percent transmission) where the bush camps use radios. By contrast, in Peawanuck, women (and most men) rarely stayed more than two or three days in the bush (32 percent transmission). Since the CB radio was introduced in the 1970s, those people who are not currently active in bush activities have not learned how to use it.

4-3-3-4: **Hunting, fishing, and trapping skills** (Table 4.6)

Hunting, fishing, and trapping skills as a complex show a mix of poorly transmitted and well transmitted skills. Since bush food production has been important in Cree villages, basic skills, such as setting fish nets, snaring, and use of guns, are still well transmitted, as well as modern skills, such as rod and reel fishing. However,

some other skills were not well transmitted. For instance, the transmission of skills relating to fish seining is very low (7 percent) in Moose Factory. By contrast, fish seining is transmitted more frequently (26 percent) in Peawanuck. The reason for decline in this fishing method is uncertain, although fishing with nets is commonly practiced. However, a couple of Moose Factory informants complained that there are so few fish now that it is not worth setting nets.

In contrast, the skills relating to ice fishing, making bait and maintenance of holes, are transmitted more in Moose Factory than in Peawanuck. Since Moose Factory women stay longer in the bush than Peawanuck women, Moose Factory women learned how to take care of the fishing holes on frozen rivers and lakes.

Since most of the women did not take an active part in food procurement, their knowledge of animal movements and their skill of imitating animal calls had declined. Moose Factory women were more familiar with such knowledge and skills because they had maintained a bush camp.

Another essential skill for survival, the transmission of knowledge related to native medicine, declined after the introduction of Western medicine and Christian influence. The Cree people traditionally used native medicines extracted from plant and animal sources to deal with sickness and injuries in isolated bush camps. This knowledge base included not only

Table 4.6: Hunting, fishing, and trapping related skills

	Percentage Reporting the Skill					
	Moose Factory			Peawanuck		
Items	Y	O	N	Y	O	N
reading animal movements	47%	-	53%	16%	-	84%
animal calls	66%	7%	27%	32%	-	68%
medicinal knowledge	80%	13%	7%	47%	11%	42%
net fishing	100%	-	-	63%	26%	11%
fish seining	7%	-	93%	26%	16%	58%
rod fishing	100%	-	-	95%	-	5%
ice net fishing	33%	40%	27%	42%	26%	32%
maintenance of ice fishing holes	87%	-	13%	21%	-	79%
making fish bait	93%	-	7%	58%	5%	37%
handling guns	93%	-	7%	89%	5%	5%

Legend:

Y: learned by hands on practice.
O: learned by observation only.
N: did not learn.

use of medicine itself, but also the identification and location of plant or animal species. However, no special attempt was made to follow up on native medicine with the few surviving practitioners.

The use and transmission of knowledge relating to native medicine had been disrupted by contacts with missionaries

(Preston 1986a:242). They introduced Western medicine and, at the same time, discouraged the use of native medicine because they considered it a form of paganism associated with shamanism and native religion. Western medicine was quickly accepted among the Cree people and the use of native medicine declined.

Presently the most commonly used native medicine is Labrador tea. Skunk was the most commonly mentioned animal used for medicine; its spray was used for various remedies. The Cree people use Western medicines most of the time, but they also regard the native medicine as an alternative when necessary. One informant reported that she used powdered rotten wood to control baby rash after Western medicines had failed to work for her baby. The transmission rates of knowledge relating to traditional medicine are 80 percent in Moose Factory and 47 percent in Peawanuck. However, most of the medicinal knowledge among younger women is derived from observation and listening to stories.

4-3-3-5: **Craft related skills** (Table 4.7)

Craft related skills, as a complex, also show a mix of poorly transmitted and well transmitted skills. Since handicraft skills are still highly regarded, commercially important, and necessary in the traditional economy, the transmission rates of skills related to handicraft production are relatively high. On the other hand, skills relating to

woodwork and bone tools are not well transmitted as they have been replaced by commercially manufactured goods.

Among commercially important handicraft skills, the "semi-traditional" skill of silk embroidery is not fully transmitted because a lack of silk thread in the store. Silk embroidery was used to decorate hand made moccasins and mittens. Bead embroidery has replaced silk embroidery decoration. The transmission of skills relating to bead work is high at 87 percent in Moose Factory and 95 percent in Peawanuck.

The transmission of skills relating to making moccasins was 67 percent in Moose Factory and 68 percent in Peawanuck. The transmission of the skills relating to making mittens, a necessary item during winter travelling by snowmobile, were 73 percent in Moose Factory and 58 percent in Peawanuck. Several people stated that caribou or moose hide mittens were superior to store-bought mittens. These gave more protection.

Other essential crafts in the traditional economy were skills related to making feather blankets and snowshoes. Cree hunters still use goose blankets when they go trapping during winter. Women save Canada goose down during the fall goose hunt for this purpose. The transmission rates of skills related to making feather blankets were 80 percent in Moose Factory and 42 percent in Peawanuck. Snowshoes are still a necessity in the bush during winter. Informants reported that it was generally the men's job to make snowshoe frames, but it

was the women's job to make the webbing. As only few people manufactured snowshoes in the villages, the transmission rates of the skills relating to snowshoes webbing were low at 20 percent in Moose Factory and 21 percent in Peawanuck.

On the other hand, those skills that were replaced by commercially manufactured goods were not well transmitted. Skills relating to making traditional forms of rabbit skin garments and blankets were not fully transmitted (20 percent transmission in Moose Factory and 21 percent transmission in Peawanuck), since they were replaced by ready made clothing and blankets by 1940. Although an informant in her 60s stated that she wore rabbit skin garments when she was young, and a few Peawanuck and Moose Factory informants did make rabbit skin blankets themselves when they were young, no women manufacture rabbit skin work in either village.

Waterproof sealskin boots have been totally replaced by inexpensive and sturdy rubber boots. The Inuit technique of sealskin boots was introduced by the Hudson's Bay Company around 1887, and it quickly became popular among the Cree people (Honigmann 1956:47). The skill of waterproof stitching has been forgotten and none of informants have had hands-on practice: transmission rates by observation were 27 percent in Moose Factory and 5 percent in Peawanuck. Most of the interviewees stated that they have seen the boots, but they have never seen the process of making them.

Although women used to make their own fishnets, the

skills relating to knitting fishnet are declining because of the availability of commercially manufactured fishnets: transmission rates were 53 percent in Moose Factory and 32 percent in Peawanuck. Since no woman in the village actively knits her own net, the researcher speculates that the transmission rate by observation in Moose Factory could be much higher than reported.

Although babiche (rawhide string) was still needed to web snowshoes, the transmission of skills relating to production of raw hide string was declining (47 percent transmission in Moose Factory and 26 percent transmission in Peawanuck). Manufacture of home-tanned caribou or moose hide was also declining. Home-tanned moose and caribou hides were valued for beadwork, moccasins, and mittens. Reported transmission rates of skills related to tanning hides were relatively high: 53 percent transmission for caribou hide and 67 percent transmission for moose hide in Moose Factory, and 79 percent transmission for caribou hide and 68 percent transmission for moose hide in Peawanuck). However, most of those numbers include transmission only by casual assistance (below stage three in Ruddle and Chesterfield's learning sequence).

For instance, the researcher knew only one younger woman who regularly tanned hides with the supervision of her mother in Moose Factory. In Peawanuck, more younger women were tanning hides, but very few could prepare hides on their own. The most active hide tanners in Peawanuck were women in their

Table 4.7: Craft related skills

	Percentage Reporting the Skills					
	Moose Factory			Peawanuck		
Items	Y	O	N	Y	O	N
making -moccasins	67%	27%	7%	68%	11%	21%
-mittens	73%	27%	-	58%	21%	21%
-moss bags	47%	27%	27%	42%	26%	32%
-feather blankets	80%	20%	-	42%	26%	32%
-seal skin boots	-	27%	73%	-	5%	95%
-beadwork	87%	13%	-	95%	-	5%
-silk embroidery	20%	13%	67%	-	-	100%
netting -rabbit skins	20%	20%	60%	21%	42%	37%
-fish nets	53%	33%	13%	32%	21%	47%
-snowshoes	20%	60%	20%	21%	37%	42%
making babiche	47%	27%	27%	26%	16%	58%
tanning hides -caribou	53%	33%	13%	79%	21%	-
-moose	67%	33%	-	68%	16%	16%
smoking hides	53%	33%	13%	32%	47%	21%
making wood horses or poles for hides	-	87%	13%	16%	32%	52%
making tools -moose bone scrapers	-	80%	20%	11%	37%	52%
-bear bone scrapers	-	40%	60%	5%	11%	84%
-bone needles	-	67%	33%	5%	-	95%

Legend:

Y: learned by hands on practice.
O: learned by observation only.
N: did not learn.

fifties; but in Moose Factory, they were women in their sixties.

Since only a few actually tanned moose and caribou hides, the transmission of the tools essential for home tanning had been disrupted. The transmission of skills relating to making wood poles and "horses" (wood stands) that were essential tools for scraping meat and hair from hides were almost lost (87 percent transmission by observation in Moose Factory and 16 percent transmission by hands-on-practice in Peawanuck). Another essential tool for tanning, the bone scraper,[3] is still made, but most informants only knew of its use. The transmission rates relating to moose-bone scraper production were 80 percent by observation in Moose Factory and 11 percent by hands-on practice in Peawanuck.

Other tools have been replaced by commercial tools. Bear-bone scrapers were traditionally used to skin beaver but most people used knives for this (40 percent transmission by observation in Moose Factory and 5 percent transmission by hands-on practice in Peawanuck). Bone needles used for webbing snowshoes were also replaced by commercially available steel needles (67 percent transmission by observation in Moose Factory and 5 percent transmission by hands-on practice in Peawanuck). Most of the informants had seen how needles were used, but not how they were made.

In summary, those skills and knowledge that are not fully transmitted reveal the present day reality of village life.

The reality is that of all 93 skills and knowledge, 42 percent of them are not fully transmitted in Moose Factory and 50 percent of them are not fully transmitted in Peawanuck (Table 4.2). Furthermore, the study finds that those skills which are still needed, but take a considerable amount of time to master, such as reading animal movements, forecasting the weather, orientation in the bush and tanning hides, are transmitted incompletely because urban life makes it difficult for young people to invest enough time to learn them.

Decreased rates of skills and knowledge transmission can be explained by changing economic conditions rather than the processes leading to assimilation. There are two arguments that support this interpretation. First, the transmission of key women's bush skills, such as camping skills and goose related cooking skills are still strong (cf. Table 4.2, 4.4, 4.5). Many skills indicate transmission rates of 100 percent. Second, those skills that are no longer needed or no longer essential to community living have not been transmitted. People can buy commercially manufactured clothing, goods, and food in stores. Fur preparation skills are no longer essential because the importance of fur has declined in the village economy.

4-3-3-6: **Age of learning**

In Table 4.2, the mean age[4] for all skill acquisition was 14 years in Moose Factory and 11 years in Peawanuck. These

findings were consistent with two other studies. A study of cultural knowledge transmission among the Aka Pygmy by Hewlett and Cavalli-Sforza (1986:933) found that more than 80 percent of the traditional skills were transmitted by age 15. Another study of education for traditional food procurement among Venezuelan peasants by Ruddle and Chesterfield (1977:104) also found that acquisition of subsistence skills was at age 15.

Older generations of Cree women also learned traditional skills by age 13. Many elders' narratives confirmed that women mastered almost every bush skill before the age of marriage. Parents trained their daughters to be good workers because competent women attracted husbands who were good hunters (Rogers and Rogers 1963:27).

However, the researcher found that the meaning of "learning" was different between the generations. Interviews with the older women revealed that they learned the skills fully. They had practiced most of the bush skills at an early age because it was necessary for them to survive in the bush. It could be argued that bush skill competency among older generations was at least at stage seven in Ruddle and Chesterfield's learning sequence (1977:116; Figure 2) by the time the older women were in their mid teens.

By contrast, most of the young women interviewed are not as competent in bush skills at the ages reported in the survey. Although systematic data for the stages of skill acquisition were not collected, informants reported that about

55 of the 93 skills in Moose Factory and 59 of the 93 skills in Peawanuck which included transmission based on observation (stage two in Ruddle and Chesterfield's learning sequence; see Figure 2 and Appendix D: d-1).

Thus, the survey data show that the younger generations are still learning the skills. However, the results also reveal that learning is incomplete and some of this learning remains at an elementary level. Although there is a possibility that the younger women will learn the skills as they grow older, it is not known how many women actually improve their levels of learning at a later age.

This incomplete transmission has resulted from the fact that most of the bush skills and knowledge are transmitted by observation and casual assistance rather than apprenticeship. Consequently, most of the bush skills and knowledge are superficial because they are not acquired through adequate practice.

4-3-3-7: **Teachers of the traditional skills**

Survey data confirmed that parents were the principal teachers in both Moose Factory and Peawanuck (Table 4.8). Among them, mothers were the most important teachers, transmitting about 39 percent of all these skills. Fathers transmitted about 15 percent of the skills. Both parents transmitted about 67 percent of 93 skills in both communities. Thus, transmission from the nuclear family was predominant.

Table 4.8: Main sources of knowledge

Main sources of Knowledge	Moose Factory	Peawanuck
Mother	32%	46%
Father	17%	12%
Both Parents	12%	15%
Grandmother	6%	8%
Grandfather	4%	4%
Both Grandparents	1%	2%
Aunt	3%	3%
Sister	1%	3%
Mother-in-law	5%	1%
Husband	12%	3%
Brothers	2%	3%

The study findings concerning the sources of knowledge were consistent with two other studies. Hewlett and Cavalli-Sforza (1986:932) found that most of the traditional skills (80 percent) were transmitted by parents among the Aka Pygmy. Ruddle and Chesterfield (1977:125) found that parents were also the primary teachers among Venezuelan peasants.

There were regional differences in the secondary teachers. In Moose Factory, husbands transmitted 12 percent of all skills; grandparents[5] transmitted 11 percent; and mothers-in-law transmitted 5 percent. On the other hand, in Peawanuck transmission from husbands and in-laws was

infrequent. Husbands transmitted only 2 percent of the skills, and mothers-in-law transmitted about 1 percent of the skills. However, both grandparents transmitted 14 percent of all skills; aunts[6] and sisters each transmitted 3 percent.

The mean age of skill acquisition in Moose Factory was higher than in Peawanuck because many women started going to the bush with their husbands who were still interested in bush activities, after marriage. Accordingly, they learned bush skills after marriage from their husbands and in-laws. By contrast, young women in Peawanuck did not change their lifestyle after marriage with bush-oriented men. Since they did not go out to the bush with their husbands, transmission from husbands and in-laws was infrequent.

The early transmission of bush skills from extended families in Peawanuck suggests a "traditional" learning pattern. In the past, young women traditionally learned bush skills from their extended family with whom they camp before their marriage (Rogers and Rogers 1963:27). Competency in bush skills is necessary to function as an equal partner with husbands. However, now many young women are not qualified in bush skills before their marriage. This reflects the present reality of village life, where bush skills are no longer a prerequisite.

Since young women are learning traditional skills later in life, it is logical that husbands and in-laws are becoming important teachers as at Moose Factory. Women are busy with

their schooling when younger and busy with wage work in later years. The transmission from husbands and in-laws can be seen as an alternative transmission route for those who decided to learn these skills later on.

In one family, traditional skill transmission from the mother-in-law is extended over two generations. One woman whose mother had died when she was just four years old spent eleven years at a residential school. She finished school at 16, and she then stayed with her aunt who did not know much about bush skills. Therefore, she did not have the opportunity to learn bush skills before her marriage. She married a bush-oriented man and learned all the necessary skills from her mother-in-law. Now her sons have married Cree women without bush orientation. These women did not learn any bush skills because their families did not take them to the bush. Consequently, the woman is taking an active part in the education of her daughters-in-law.

However, husbands and mothers-in-law could have been traditionally important teachers particularly if the wives come from different ecological zones. There is a Cree distinction between Coasters (Wînipêkôw) and Inlanders (Nôhcimîw) depending on whether the territory is either in James Bay or Hudson Bay coastal areas or inland. A woman who came from an Inlander family married into a Coaster family. It was only after marriage that she learned how to smoke geese. She had not learned the skill previously because there

were not many geese in her own traditional territory.[7] Thus, husbands and in-laws could be important transmitters of the traditional skills and the knowledge.

4-4: **Problems with the Present System of Transmission**

The most important problem in the present transmission system is the incomplete transmission of bush skills and knowledge. This can be attributed to the fact that the traditional mode of education, learning by watching and apprenticeship, is no longer operative in the current educational environment. The rest of this section examines why the traditional mode of transmission, observation and apprenticeship is no longer working well, or perhaps is not even suitable in present social conditions.

4-4-1: **Factors Disrupting Transmission.**

Four elements in the present day social conditions are working against the traditional educational system: a) changes in the educational environment and increased peer influence; b) diminished time due to formal schooling and wage employment; c) value changes; d) problems of delayed transmission.

4-4-1-1: **Changes in the educational environment**

Sedentarism in the village caused a drastic change in the educational environment. After World War II, the government

assumed that the native way of life was disappearing and therefore instituted policy of assimilation and compulsory education. Many families started to settle in villages at school locations so that families could stay together.

Since the families settled in the villages, only men went to the bush to secure bush food, and to generate cash income from trapping. Located far from the game, the Cree adopted new technologies after the 1960s to alleviate the conflicting interests of maintaining a family in the village and satisfying the need to go out in the bush. These technologies enabled them to develop a new lifestyle of "going in between" the village and the bush (George and Preston 1987).

However, the adoption of new technologies increased cash expenditure and forced men to go to the bush, without their families. Operational costs had to be as low as possible, since the men had a limited source of cash income. Blythe et al. (1985:66) stated that most of their informants, native women aged 30-44, were rarely taken to the bush when they were growing up. As women and children started to lose opportunities to go out and to stay in the bush, a serious social impact was derived from this "posting" pattern of bush activity (Honigmann 1960; 1981).

Since many bush skills were only relevant if practiced in the bush, children did not have the opportunity to observe and learn in the community. Furthermore, children lost contact

with Cree traditional values such as sharing, self-reliance, patience, and diligence, as those values were often acquired through learning in the bush which provided an essential self-disciplining educational environment (Niezen 1994; Rushforth 1977). Although some parents tried to teach bush skills to their children in the community, they found it difficult. Parents had difficulty keeping their children's attention, and teaching skills and knowledge of the land out of context.

Table 4.9 compares limited data among the respondents of this study who fall into two groups: women who had access to the traditional education environment staying at residential schools,[8] and women who did not have access to the traditional education environment instead attended local schools. Of those two groups, the former had higher transmission rates.[9]

The women from highly bush-oriented families who went to residential school had better access to the traditional education environment than those who went to a day school in the village. Whenever they were not in school, during the summers and Christmas holidays, their parents took their children trapping, fishing, and camping in the bush. Their parents were interested in teaching bush skills, since they themselves had chosen a traditional way of life. Thus, they gave their children opportunities for learning by watching, apprenticeship, and hands-on practice in traditional education. As the bush was considered a self-disciplining educational environment, those children learned bush skills

effectively.

Table 4.9: Transmission success by access to traditional educational environment: Residential schools (RS) vs. Local schools (LS)

	Moose Factory(N=15)		Peawanuck(N=19)	
Group of Skills	RS(N=7)	LS(N=8)	RS(N=10)	LS(N=9)
Food Preparation	67%	56%	60%	45%
Bush camp skills	76%	71%	72%	55%
Handicraft making	51%	27%	47%	26%
Hunting, fishing trapping skills	79%	63%	57%	48%
Fur preparation	54%	17%	25%	4%
Mean of 93 skills	66%	51%	53%	40%

Legend:
N: Numbers of respondents

Group of Skills: 93 skills were classified into 5 groups; see Appendix D:d-3 for which skills were included in each skill group.

By contrast, women who came from settled families and who did not have opportunities to learn bush skills had lower transmission rates. Because of the high cost of bush activities, children of settled families were seldom taken to the bush. In some cases, their parents did not teach them bush skills at all. Even if their parents tried to teach the skills in the settlement, their teaching was not effective because the new educational environment was not as isolated as

bush camps and it could be easily disrupted. Those children of settled families were most affected by the "posting" pattern of bush activity and consequentially did not learn much about the traditional skills and knowledge.

The introduction of television in the 1970s and Western-style housing further retarded the transmission of bush skills in the villages. Television was the first major "modern" leisure activity for the Cree people. This kept them in the communities and inside houses. Television is still a major leisure activity and most Moose Factory residents subscribe to a cable service. Also some Moose Factory and Peawanuck residents have satellite dishes.

With the introduction of the VCR, watching video movies also become a popular leisure activity. After work or school, many people are preoccupied with such activities rather than learning bush skills. Therefore, new leisure activities have disrupted the practice of bush skills and decreased opportunities for learning by observing.

The adoption of Western houses, with several private bedrooms and a basement, also prevents children from observing skills performed in houses. In the bush, camps are in open spaces, and it is difficult not to see the skills performed. In contrast, space is compartmentalized in houses, so that it is difficult to see the skills performed in different rooms. This means that even if the bush food is brought home to be processed, the children may not see it. Their mothers could

be in the basement performing the skill, and they could be upstairs watching television. Thus, children are losing opportunities for learning by observing.

Community living does not offer as good an educational environment as the bush did (cf. Blythe et al 1985:67,89; Trudeau 1966:101). Since village life provides children with constant companions of their own age, peer influence has increased at the cost of parental influences (cf. Blythe et al. 1985:66; Honigmann 1981; Preston 1979; Sindell 1987; Trudeau 1966:98). Children prefer to play with their friends rather than to stay at home doing chores (Trudeau 1966:114.) Every night, many Cree youths walk around the village and spend a lot of time with their friends rather than staying at home (cf. Willis 1973). In fact, village life offers children options not to learn. As Berkes et al. (1994:358) argue, "the loss of subsistence or hunting practice deprives the Cree of the experience with which culture can be transmitted." Thus, the loss of the traditional economy involves the loss of "intangibles" (Fernandez 1987).

4-4-1-2: **Lack of time**

Western schooling poses a problem since Cree children spend more time in Western education than in traditional education. All the Cree communities have grade schools so that children go to local day-schools. As children attend schools, they are not at home to learn bush skills by watching

their mothers. After they come home from school, children are busy playing with their friends and watching television. Thus, children do not have time for traditional education.

Attendance at secondary school poses further problems for skill transmission because most of the northern communities still do not have high schools. In Peawanuck, the community school offers only kindergarten and grades one to eight. Therefore, Peawanuck children are sent to southern towns as early as age 13 to attend junior high schools, high schools, and colleges. There is no longer an institutionalized residential school system, but most of the younger children board with host parents who are of non-aboriginal origin.

On the other hand, Moose Factory students have the option of going to high school in Moosonee, on the mainland across from Moose Factory Island. There is another high school in Attawapiskat in western James Bay. However, some students still go South to receive an education because it costs the bands less. Moreover, the chronic shortage of housing in northern communities poses an accommodation problem for students if they wish to attend local high schools.

The students educated in the South come home only twice a year, the two-month summer vacation, and a brief Christmas holiday. Many children lose their command of Cree while they stay in southern towns. When they come home, they are not interested in learning during their vacation time, but are more interested in playing with their friends, whom they have

not seen for a long time. Some researchers report conflict between parents who want children to do chores, and children who want to play (Christian 1977:291; Cruikshank 1971a:7; Sindell 1987:384).

Since time and money increasingly becomes the most important elements in making a living in the village, young people are mostly interested in investing their time in a way that can generate cash income. Many seek wage employment after they finish school. However, there are not enough jobs for everyone. Hence, they participate in the traditional economy that is a secondary option to wage employment (George 1989). Nevertheless, they expect to get paid to serve an apprenticeship, as in paid training programs. But this is not usually possible.

From the parents' point of view, community living has also made the parents busy. Due to economic integration, a cash income has become necessary to provide adequately for family needs. Thus, parents take full-time, part-time and seasonal employment whenever such jobs are available. In some cases, fathers temporarily leave the community to work elsewhere or to take training courses in the South. Mothers are working and burdened with the care of the home and children. Many mothers prefer to get their work done while the children are at school, rather than to wait for the children to be home to observe. Visiting, watching television, and playing bingo are also important forms of

leisure for mothers. Therefore, they spend less time demonstrating bush skills. Not only do the bush skills become less visible, but also they appear to be taught less, and practiced less in the community.

Although the family is "the basic structure" for cultural transmission, parents and children presently do not spend much time together. Parents are too busy to teach children at home and to take children into the bush. Some parents also lacked capital and the means, e.g., boats, motors and snowmobiles, or the knowledge of the land, to take them out. As a result, some parents have left their children's education entirely to the schools.

Research among the Ojibwa in Minnesota that compares the time adolescents spend with their parents and elders in 1930s and 1980s shows a drastic decrease of time in five areas: eating together has dropped from 20 hours a week in the 1930s to 4 hours a week in the 1980s; working together has dropped from 25 hours a week in the 1930s to 2 hours a week in the 1980s; recreation together has dropped from 8 hours a week in the 1930s to 3 hours a week in the 1980s; entertainment has dropped from 5 hours a week in the 1930s to 3 hours a week in the 1980s; and spiritual activity has dropped from 3 hours a week in 1930s to 0.4 hours a week in the 1980s (Zitzow 1990; Table 4.10).

In summary, adolescents in the 1930s spent 62 hours a week with their parents and elders, but in the 1980s only 12

hours a week (Zitzow 1990). A similar trend has also been occurring among Cree people (cf. Honigmann 1981:226; Trudeau 1966:98) but numerical data are not available. Thus, learning opportunities from their parents and elders has drastically decreased and affected the transmission. Although teaching and learning of skills demands its own time, neither teachers nor students seem to invest enough time.

Table 4.10: Adolescent time (hours per week) spent with family (Source: Zitzow 1990: Table 1)

Activity	1930s	1980s
Eating	20.41	4.15
Working	24.62	1.72
Recreation	8.15	2.85
Entertainment	5.40	3.35
Spiritual activity	3.16	.40
Total	61.74	12.47

4-4-1-3: **Value changes**

The social changes caused by sedentarism, Western schooling, and the introduction of television have induced value changes among the older as well as the younger generations. Those individuals saw limited value in the Indian way of life for future generations. Since most of their material needs are easily available from stores, parents

were not interested in teaching their children bush skills as they considered them as obsolete. Some young people also do not see the necessity of learning bush skills because these skills, by and large, are not needed to live in the village.

Moreover, television programs reveal the material wealth of southern Canada. This has astonished the Cree people and has made them realize their poor conditions (personal communication N. Suzuki 1993; cf. Stenbaek 1987:307). Some Cree have come to believe that they are poor because their Indian culture and lifestyle are inferior to southern Canadian ways.

Some become increasingly material-oriented because they want to be as good as southern Canadians. As a consequence, they prefer to be consumers rather than producers. They prefer to buy rather than to hunt, fish, and clean game. They prefer to eat store food already processed and easily cooked (including canned spaghetti in sauce). They would rather eat instant meals than start from scratch with preparation. Thus, those people reject bush food and never have acquired a taste for it (Berkes and Farkas 1978:160, 169).

Some think that bush skills are <u>obsolete</u> and mere menial labour rather than a part of a living tradition and culture. Some of the younger women even state that they are not learning the skills because they are not interested in them. They prefer to work in offices rather than spending much time in dealing with bush food, stretching pelts, and tanning

hides. Consequently, even those young women who have knowledgeable mothers do not necessarily learn much from them.

For instance, one elder has seven daughters, of whom only one has learned to tan moose hides. Other elders have four and five daughters each, but none have shown an interest in learning hide tanning. Their daughters are familiar with how to tan hides by observation and casual helping. Nevertheless, most of them have never engaged in apprenticeship for extended periods and they have never tried to do it themselves.

Some mothers have tried hard to teach their daughters bush skills, but they have failed because their daughters are not interested. After several attempts, these mothers have become disappointed, and no longer try to teach them. In addition, some daughters have chosen to marry Métis men, Euro-Canadian or native men without bush orientation (cf. Cruikshank 1971b:46; Trudeau 1966:111). Since their husbands do not go out in the bush except for leisure purposes, they do not need to have bush skills.

Those women and their husbands generally have secure wage employment, so that they lead a southern Canadian lifestyle filled with material possessions. These people might prefer to spend their money travelling to popular vacation spots, rather than investing in bush equipment. When they want to eat bush food, they go to their parents' house.

However, some younger women have decided to learn bush skills after marriage or after having children. In Moose

Factory, there are five such women out of 46 interviewed. They married bush-oriented husbands and this changed the course of their lives. Those women started to go to the bush with their husbands. They have learned to appreciate bush food and the traditional food procurement because they have rediscovered their traditional heritage.

They stated that before their marriage, they were not interested in bush food and they did not want to gut geese or clean fish. However, cleaning and preparing meals became their responsibility after they were married. These tasks have become part of their everyday life and they have become accustomed to it. They now feel that bush food is superior to store bought food (cf. Olsen 1989). As a result, their interest in bush food has improved their families' nutrition, and they have perpetuated their children's traditional education.

Thus, younger women's lack of interest in the Cree tradition and bush food could be due to two reasons: their acculturation status and consequent value change regarding food (cf. Berkes and Farkas 1978:169); and temporal phenomena related to their marital status and age (cf. 3-5-4-1).

4-4-1-4: **Problems of delayed transmission**

Those people who want to learn and improve their bush skills must do so later in their lives because it appears that often people in these communities are busy when they are

young. Thus, seeking teachers later in life (rather than learning tasks before puberty), may be considered an adaptive strategy. However, this strategy has certain limitations.

The first problem is the gap between the rapid aging of the "expert generation" and a slow rise of interest in the younger generation. Although many people do eventually become interested in learning when they reach their 30s or 40s, by that time the elders are inactive, or ill (or dead) and cannot transmit their skills and knowledge. In other words, the younger generations are not picking up the skills as quickly as the older generations are disappearing.

By the time someone becomes interested in learning bush skills, she may not be able to find teachers from her immediate family. Her mother, grandmother, and aunt may be too weak or sick to teach her. She may move out of her natal village and live closer to her husband's family. If she could find a teacher among her in-laws, it would be fortunate, but her in-laws may be also too old to teach her. Thus, a prospective apprentice may not be able to find a teacher with skills and the knowledge when she wants to learn.

Moreover, residential school experiences have caused a shrinkage of bush skills and the knowledge base of the community. Many of the bush skills that were once common to all have not been fully transmitted. Delayed transmission led to further loss of knowledgeable women. As a consequence, the knowledge may be held by only a few people in the community.

Thus, people who are interested in learning a specific skill have only a few experts to go to.

This kind of bush skills transmission has already happened in Moose Factory. For instance, active hide tanners account for less than ten persons in the entire village, most of them women in their 60s. One woman in her 40s has decided to learn how to tan hides to secure home-tanned hides for craft work. She no longer has potential teachers from her own relatives and in-laws. Therefore, she has approached a local expert, a woman in her 60s, to teach her the skill. She also realized that the tradition of home tanning is disappearing, and she wanted to learn it before it was too late. The local expert consented to teach her only if she came with her into the bush, because the physical environment in the village made it difficult to teach tanning properly.

The second problem is that once young people are married and have their own households, Cree parents generally adopt a non-interference policy over their children's affairs (Preston 1986a:243). In other words, they no longer try to teach their children because they consider it an intrusion. Thus, if grown children wish to learn, it is expected that they take the initiative (cf. Blythe et al. 1985:88).

Furthermore, tension among the generations may affect the transmission of bush skills and knowledge. First, a communication gap may exist, because some elders are monolingual in Cree and some youths are not sufficiently

bilingual in Cree and in English. Second is the generation gap. Elders may think young people do not have adequate respect toward their elders. They believe some do not have enough patience for listening, and they speak disrespectfully to their elders. Similarly Chisasibi Cree hunters have commented that the lack of patience and respect is probably the single most important barrier to bush skill transmission (F. Berkes, personal communication). Elders regret that some younger people are not willing to try things because they do not have the patience to learn. These younger people believe that learning traditional skills is too hard for them. An elder commented that "When we are dead, that is the end. Those young people have to learn from scratch."

On the other hand, youths who have a Western education also want acknowledgement from elders, and do not wish to be dismissed merely because they are young. Some young hunters, for example, become quite proficient in shooting waterfowl. Some young women have proficiency in traditional crafts. However, other young people are not sure how to approach elders without losing face because they feel embarrassed that they have not learned the skills earlier. For instance, one young woman had never processed caribou meat before her marriage. After marriage, her husband brought a caribou back, and it was her responsibility to process it. She tried to do it with her husband, and she did not ask for help from her in-laws living nearby. While she was working, her female in-laws

came to watch how she worked. She thought that they laughed at her without giving her any assistance. She thought that she was doing something wrong, but she did not know what it was. She felt badly about it, but she did not have anyone whom she could ask freely to teach her the skills, since she had married into a different village.

4-5: **Summary and Conclusion**

Given the social changes that have occurred in the last half century, it is perhaps surprising that about half of the bush skills are still being transmitted. Decreased rates of skills and knowledge transmission can be explained by the realities of village life and changing economic conditions rather than other processes leading to assimilation.

There are two arguements that support this interpretation. First, the transmission of key women's bush skills, such as camping skills and goose related cooking skills are still strong (cf. Table 4.2, 4.4, 4.5). Many skills indicate transmission rates of 100 percent. There is also renewed interest in Cree culture and traditional knowledge among younger women, especially in Moose Factory. Second, those skills that are no longer needed or no longer essential for livelihoods in the village have not been transmitted. Instead, people can buy commercially manufactured clothing, goods and foods. Fur preparation skills are no longer essential either, because the fur economy

has declined sharply. Thus, the evidence seems to reflect social change, rather than changes in values and assimilation.

The study finds that the most important concern in the transmission system may be the incomplete transmission of bush skills and knowledge. Those skills that are still needed but take a considerable time to master, such as reading animal movements, orientation in bush, and tanning hides, are transmitted incompletely because urban life makes it difficult for young people to invest enough time to learn them.

Many younger women are familiar with a skill but the level of mastery of the skill tends to be low compared to the mastery of the older generation. Incomplete transmission of bush skills and knowledge may be attributable to the fact that the traditional mode of education, learning by watching and apprenticeship, can no longer compete with the present sedentary community life full of distractions, such as TV.

The relevalent factors are no doubt complex and interrelated. The study focused on four problems as obstacles for bush skill and knowledge transmission. The first problem is the change in the educational environment. The village is a poor location for learning traditional skills and Cree key values, such as sharing, self-reliance, patience, and diligence, associated with them. The retention of traditional values is no doubt an essential factor for the sound transmission of bush skills and knowledge.

The second problem is the lack of time due to schooling

and wage labour. The third problem is lack of interest because of value changes or a slow rise in interest: many women only become interested when they reach their 30s and 40s. The fourth problem is the ambiguity of responsibility in delayed transmission. Seeking teachers later in life (rather than learning of tasks before the "teen" years), may be considered an adaptive strategy. However, this strategy had certain limitations. By the time a willing learner is in her 30s and 40s, it is not clear whom she could turn to for instruction. In summary, social change is the underlying factor for this incomplete transmission of knowledge; the traditional education system is incompatible with the sedentary community life.

Thus, an issue of central importance for the Omushkego Cree is whether reduced transmission of bush knowledge and skills among the women is becoming a liability for the whole society for the continuation of the traditional sector. The overview provided in the present study indicates that the traditional sector is still a vital part of the contemporary village economy, and thus reduced transmission does not (yet) seem to be a critical factor.

Endnotes:

1. The purpose of the learning sequence model by Ruddle and Chesterfield was to show that learning was a complex process. As the researcher did not collect systematic data on how each informant evaluated herself in these stages of skill acquisition, it is difficult to assess whether the Cree themselves agreed to this particular model of learning. The researcher believes this learning sequence model is applicable to the Cree people to a certain extent. She did not, however, attempt to modify this learning model because of a lack of adequate information.

2. The Moose Factory residential school was operational as late as 1974 (N. Suzuki, personal communication 1994). According to Fort Albany band office, the residential school was closed in 1970.

3. There are actually two tools used for fixing hides: first a flesher to remove meat from hides and second a scraper to remove hair from hides. The researcher only collected the information on the scraper.

4. The total mean age for all 93 items was calculated by adding each of 93 items' mean age, and this number was divided by total item number, 93.

5. No systematic data was obtained for kinship. According to limited data, there was no strong orientation to either the father's or mother's side.

Moose Factory	Mother's	Father's	Unknown
Grandfather	2	0	2
Grandmother	4	1	1

Peawanuck	Mother's	Father's	Unknown
Grandfather	2	1	2
Grandmother	2	2	3

6. No systematic data was obtained for kinship. No women mentioned transmission from in-laws (father's brother's wife or mother's brother's wife).

Aunt	Mother's sister	Father's sister	Unknown
Moose Factory	5	2	1
Peawanuck	2	2	1

7. According to Lytwyn (1993:264-267) and Preston (1981:196-197), Coasters and Inlanders had different adaptive strategies for living in different ecological zones. Coasters relied more on geese and other migratory waterfowls. On the other hand, Inlanders relied more on beaver and sturgeon.

8. This category referred to women who attended residential schools for at least one year.

9. There was no comparative data available between: 1) residential school graduates and drop outs; 2) residential school graduates and those who never went to school.

V. Alternative Models of Development: Culturally Sustainable Development and the Mixed Economy

5-1: Introduction

This thesis has discussed change in Cree society, and the persistence and adaptation of the traditional Cree economy. This concluding chapter reviews the Cree adaptive strategy of a mixed economy, and discusses the implications of the persistence of the traditional culture on development. Lastly, the thesis explores an alternative development model based on the mixed economy, focusing on cultural aspects of sustainable development.

5-2: Cree Strategies for Survival: Mixed Economy and Acculturation-Adaptation theory

Despite the prediction that the Cree people would assimilate into the dominant Euro-Canadian culture, they adapted to the changes carried out by the federal government, maintaining aspects of the traditional social economy and evolving the mixed economy that consists of the three parts identified by George and Preston (1987): the wage sector, the traditional sector, and transfer payments.

In the 1990s, the traditional economy still remains a vital aspect of life in the Omushkegowuk Cree communities. More than 80 percent of all men over 18 years old in the Omushkegowuk region participated in waterfowl hunting (Berkes et al. 1994). Omushkegowuk Cree hunters seem to have made the

appropriate adaptations to continue to produce a livelihood from the bush, and there are similar findings from other parts of the North American Arctic and Subarctic (Berkes et al. 1994). Harvesting is still being carried out because bush food is still needed. The Cree are meat-eaters, and store-bought protein is very expensive (cf. Appendix B). For instance, if a man works full time and is not able to find time to hunt, fish or trap, his entire income can easily be spent on his family's food bill (cf. La Rusic 1971:14-5).

Estimated replacement values for bush food ($7,082 in 1990 dollars per household in the region), as summarized for example by Berkes et al. (1994), indicate that northern aboriginal households do not have the cash needed to purchase high quality food. Thus, it is an economic necessity for the Cree people to secure bush food. In fact, the present study showed that most of the women in both villages were involved regularly in the preparation of bush food regardless of their cultural orientation, although many of them did not go to the bush with their husbands (cf. 3-5-3). Likewise, about half of the bush skills that were essential for harvesting and processing food were still being transmitted among Cree women despite social change (cf. 4-5).

Moreover, the maintenance of a traditional social economy is essential for the continuation of the Cree culture. The traditional economy is the basis of the Cree value system, and Cree values are necessary for the people to be able to adapt

to the dominant society without assimilation. Participation in traditional activities and the use of bush food nurture the Cree identity as aboriginal people (Chance 1990; Dacks 1981:12-3; George and Preston 1987; Palinkas 1987:302). Many Cree people claim a strong attachment to the land, and they cannot totally abandon bush life. They continually go back to bush for enjoyment, harvesting food, and sharing the food. Even a weekend hunting and fishing trip is more than a leisure excursion (Dacks 1981:12-13; George and Preston 1987; Jorgensen 1984). Participation in traditional activities gives the people a sense of self-reliance and security, as the land is considered their "store," "life insurance," and "bank" (Brightman 1993:18; Feitz 1992:97).

Consequently, the Cree people consider that the conventional view of economic development, which includes the replacement of the traditional sector by a wage economy, is neither desirable nor feasible. Their reasoning is that this form of development not only destroys the mixed economy of northern communities but it also weakens their efforts at cultural survival.

For instance, the Omushkegowuk Cree strongly opposed the Moose River basin hydroelectric development project proposed by Ontario Hydro in 1991-1992, despite the promise of employment benefits and greater economic integration with the South (Berkes et al. 1994:359). They rejected hydro development because they believed that this kind of

development would bring them more harm than benefit. Specially, the development would cause considerable damage to the traditional economy by dislocating people and animals, flooding hunting territories, and blocking the primary means of summer transportation, the river.

One informant stated that rivers are like the earth's blood vessels. Rivers should not be blocked by dams because dams would clog the "blood," and destroy lives. She did not like the kind of development that would damage the environment and ruin animals and fish that the Cree people have been relying on. Likewise, many people were afraid that those projects might affect the quality of bush food (Eddy Trapper and George Sutherland Jr., personal communication; Bear 1992a:77). When bush food is no longer available, it affects the economic, physical, and mental health of native communities. Thus, the conventional project-based development is rejected by the Cree. Economic and social developments are seen as desirable and thus, it is necessary to seek alternative models of development consistent with values and priorities of Cree people.

The Cree people hope to achieve economic development within a framework of their own socio-cultural continuity that allows them to perpetuate Cree culture. Economic activities and institutions that would support the traditional way of life, or those that could complement traditional economic pursuits with increased wage income, are considered ideal.

Since wage employment offers only limited opportunities, the integration of renewable resources into economic development planning is seen as essential to strengthen the community's economic base, to increase local self-reliance, and to reduce external economic dependence (Berkes et al. 1994:359).

The mixed economy could be the basis for such an alternative model of development. The mixed economy is consistent with acculturation-adaptation theory; the mixed economy evolved as an adaptive strategy to maintain the traditional values and economy in a contemporary setting. Furthermore, the mixed economy also can be considered a practical economic compromise for northern communities where wage employment is limited. The Cree people acknowledge that wage employment is important, but that the wage sector offers them only limited opportunities. Jobs are few, the aboriginal labour force has low skill levels, and the number of young people who seeking work is increasing.

The prospects for an increase in number of wage jobs are minimal. From the point of view of potential industrial investors, operational costs are too high, accessibility to markets is too low, and the northern communities lack skilled individuals and sufficient local capital (George 1989:63). Since there is almost no prospect of economic growth in isolated northern communities, most of the wage employment is provided by the public sector. Thus, economic security based only on wage employment alone is a myth (Hodge 1982:984).

As an increasing number of young aboriginals enter the labour force, economic development based only on the wage economy will not be able to provide jobs for all who want to work (CARC cited in Elias 1991:173; Irwin 1988; Nahanni 1990:176). Consequently, the traditional economy is a supplementary economic option (e.g., Brightman 1993:18).

This mixed economy was originally thought to be a stage that was "transitional" to a wage economy based entirely on industrial development (Stabler 1989). However, the mixed economy continues to thrive in many northern Cree villages, and many researchers argue that this mixed form could, and should, persist indefinitely as a stable economic base for aboriginal communities (Berkes et al. 1994; Kruse 1991; Wolfe and Walker 1987).

Although the mixed economy arrangement can be considered an economically and culturally viable compromise, there are two major problems. First, the viability of the bush sector is negatively affected by the incomplete transmission of bush skills and knowledge among women. Women and children are seldom taken to the bush because of high transportation costs. Thus, all-male hunting teams, rather than family unit bush camps, have become the profile group for bush activities (cf.4-4). In turn, this new pattern of bush activity has disrupted the transmission of skills as women have lost the land-based context of learning bush skills and Cree values associated with them.

Second, the mixed economy puts an adaptive pressure on the individual. It requires biculturalism: two different sets of skills and values are necessary to function in two economic sectors, wage employment and the traditional economy. Consequently, the study examined how well Cree women were adapting to the mixed economy by analyzing their acculturation status (cf. 3-5-4). The results showed diverse acculturation status among women and among age groups in the two communities.

Among the study participants, 73 percent of Moose Factory women and 44 percent of Peawanuck women were identified as having bicultural orientation, meaning that they could function effectively in the mixed economy. Those women made a successful adaptation to socioeconomic change without assimilation. By contrast, 16 percent of Moose Factory and 28 percent of Peawanuck women, mostly younger women, were Euro-Canadian oriented. Their orientation was not adaptive to the mixed economy arrangement, as they lacked the practical ability to function in the traditional sector.

However, it is uncertain whether those women chose to assimilate into Euro-Canadian culture, or they merely lacked traditional skills. In any case, this trend of Euro-Canadian orientation among the younger generations may be expected to continue since the village setting is maladaptive to the traditional system of education (cf. 4-4). If the trend in losing bush skills continues, the younger generations may not

be able to function in the traditional sector of a mixed economy.

Thus, an issue of central importance for the Omushkegowuk Cree is whether reduced transmission of bush knowledge and Euro-Canadian orientation among the women is becoming a liability for the sustainability of livelihood security for the whole society.

Hence, it may be necessary to provide support for the traditional system of education by giving the younger generations the option to be bicultural. Since the loss of an adequate educational environment was the major factor in incomplete transmission of knowledge (cf. 4-4) and undermining of Cree traditional values, programs that encourage the family unit to go out to the bush, such as a hunters' income security program (Feit 1991; Scott 1984), may be necessary.

5-3: The Alternative Paradigm of a Culturally Sustainable Development and Cree Values

The present study has discussed the implications of the persistence of the traditional culture using acculturation-adaptation theory, and has sought an alternative model of development that is consistent with the values and priorities of the Cree people (chapter one). In this section, the study explores an alternative model of development: culturally sustainable development.

The concept of culturally sustainable development

acknowledges the importance of values in the process of change, and aims to perpetuate traditional values in a changing sociocultural environment. In this regard, culturally sustainable development is consistent with the acculturation-adaptation theory that considers the value system as the basis of choice and an adaptive mechanism in the process of change (cf. 1-2-2-1).

To explore the culturally sustainable development for the Cree, it is necessary to have a grasp of the Cree system of values as a whole. However, this study limits its focus to individual values that are components of the system of values. The study identified five key traditional Cree values which may be used as criteria for cultural sustainability (cf. 3-3 and 3-4).

These are sharing of bush food, generosity, self-reliance, patience, and diligence. Other researchers have identified some of the above, as well as at least five other key traditional Cree values: respect, modesty/humility, cooperation, and interdependence, reciprocity, and self-control (as reviewed in 2-3-4). Table 5.1 summarizes these ten key Cree values.

The study considers that the maintenance of many of these values is tied to participation in the traditional economy. The bush provides the context for experiencing and learning all of those values (cf. 4-4-1-1). As many Cree leaders themselves point out, participation in the traditional

Table 5.1: Key Traditional Values for the Omushkegowuk Cree, as relevant to Culturally Sustainable Development

Value	Description	Sources
Respect (between humans, humans animals)	basis of interaction for human relationship and in hunting	Honigmann 1961 Tanner 1979 Berkes 1988
Sharing of bush food	survival strategy; livelihood security; way of showing respect	The present study Feit 1991 Scott 1984 Séguin 1992
Generosity	helping others; survival strategy; way of showing respect	The present study Feit 1991 Sindell 1987 Scott 1989
Self-reliance, independence	development of survival skills; competency in bush skills; prerequisite for bush life	The present study Preston 1979 Preston 1986a Sindell 1987
modesty/humility (between humans; humans-animals)	being humble, not boastful; prerequisite for "correct" human-human, and animal-human interaction	Honigmann 1961 Tanner 1979 Berkes 1988 Feit 1991
cooperation (sharing of work) and inter-dependence	survival strategy; efficient way to hunt and to assign roles in bush camp	Rogers and Rogers 1963 Sindell 1987 Scott 1989

Table 5.1: (continued)

Reciprocity (between humans; humans-animals)	Cree hunting philosophy; Cree social philosophy	Berkes 1988 Brightman 1993 Feit 1991 Scott 1989
Patience(between humans; humans-animals)	prerequisite for learning and teaching of bush skills	The present study Preston 1975,
Self-control	context of discipline, maturity; basis for several key values, including humility and cooperation	Preston 1975, Preston 1986a
Diligence	"If they (children) are lazy, they cannot do anything" "If a woman is lazy and doesn't know how to do things she won't stay married long, and will have a very poor life" Cree work ethics	The study, quotes from Eddy Trapper (1992) and Ellen Smallboy in Flannery (1995) Honigmann 1961 Feit 1991

economy is a prerequisite for the perpetuation of Cree values (Berkes et al. 1994; George and Preston 1987). Hence, a model of development that has a traditional economy component (i.e., a mixed economy), may be considered "culturally sustainable" to the extent that it supports these key traditional values.

By contrast, conventional economic development that aims to replace the traditional sector with a wage economy provides little support for these values. For example, the ethos of competition, individualism, and self-promotion undermines the traditional values of cooperation, modesty, and humility. Thus, industrial-style or wage-based development, which embodies values which are incompatible with the traditional ones, would not be considered "culturally sustainable."

Anthropology has an important role to play in the process of planning the culturally sustainable development. Anthropologists could analyze the changing sociocultural environment, and examine aspects of traditional culture and values that persist in a given group. Such anthropological research makes it possible to identify key values and the context in which such values are perpetuated, and to examine their compatibility with proposed development programs.

In summary, anthropological input is essential for refining and advancing the concept of culturally sustainable development. More work is needed in defining the development that supports traditional values and can thus be culturally sustainable.

5-4: Summary and Conclusion: Cultural Sustainability in Development

The present study has examined changes in Cree society, and the persistence and adaptations of the traditional Cree economy. A mixed economy has evolved as an adaptive strategy that perpetuates the Cree traditional economy in a contemporary setting. The study examined the implications of the persistence of traditional culture, reconsidered the northern development paradigm based on assimilation and classic modernization, and explored an alternative model: culturally sustainable development.

This section recapitulates the three objectives of the study: 1) to examine the changing roles of Cree women and their adaptations (chapter three); 2) to examine the transmission of the bush skills and knowledge (chapter four); and 3) to explore an alternative model of development focusing on the importance of values and cultural sustainability in the process of change (chapter five).

Chapter three examined changes in women's roles and adaptive strategies in the traditional and the present mixed economies. Chapter three documented the persistence of tradition and various individual adaptive strategies to cope with sociocultural change. After sedentarization, the roles of men as well as women diversified. Although wage work has become increasingly important in community living, Cree people still maintain the traditional economy because there is

continued reliance on bush food, but perhaps more importantly, because of the central importance of the bush life for the perpetuation of Cree culture. Hence, a contemporary village economy has come to exist as a mix of the traditional and wage sectors, along with government transfer payments.

The mixed economy arrangement is an economically and culturally viable compromise. However, the mixed economy requires people to be bicultural to function in the different sectors. People have had to become competent in both bush life and in the settled village life. Among respondents of the present study, 73 percent of Moose Factory and 44 percent of Peawanuck women are of such "bicultural" orientation. They have learned to take advantage of economic opportunities in the village to improve their livelihood, without giving up traditional culture. Sanderson (1990) describes such biculturalism as having two pairs of footwear: a pair of shoes and a pair of moccasins, to be worn as the situation requires.

In Moose Factory and Peawanuck, increasing numbers of younger women are becoming Euro-Canadian oriented. However, many younger women, despite their Euro-Canadian orientation, have not depended solely on the wage sector for work opportunities. The continued importance of women's participation in both sectors could be attributed mainly to the following two reasons: the need to ensure the persistence of traditional Cree values and the need for livelihood adaptation to limited economic options.

Chapter four examined the transmission of bush skills and knowledge among Cree women, and provided a detailed study of the traditional system of skill transmission, and of the effect of sociocultural change on the transmission. Despite sociocultural change, about half of the bush skills and knowledge are still transmitted. Decreased rates of skills and knowledge transmission can be explained by the realities of village life and changing economic conditions rather than the process leading to assimilation.

However, such transmission is becoming attenuated; that is, the younger women are often familiar with a skill but are not competent in it. Four factors have led to this incomplete transmission: change in the educational environment, lack of time, value changes, and problems of delayed transmission. The traditional system of education was not compatible with sedentary community life because villages are not suitable for hands-on learning, and because there are too many distractions in the village. Southern influences such as TV are also causing value changes. Seeking teachers later in life (rather than learning of tasks in the "teen" years) may be considered an adaptive strategy. However, this strategy has a limitation. By the time a willing learner is in her 30s and 40s, it is not clear whom she could turn to for instruction.

In light of the evidence presented in the previous chapters regarding the persistence of the traditional culture, the present study reconsidered the conventional northern

development planning, and discussed an alternative development paradigm that incorporates cultural values in development. The mixed economy can be considered as an adaptive strategy. The Cree people want to remain distinctive without assimilation and to achieve development within their own cultural framework. Although the Cree themselves have not articulated a coherent view of development, their action in opposing the Moose River hydro development shows that they reject conventional northern development (Preston et al. 1994). Thus, it is necessary to seek an alternative development model which incorporates Cree culture and values.

The study introduces the concept of culturally sustainable development that focuses on key Cree values. Since the study found such values are only nurtured in the context of the traditional economy (in the bush), the mixed economy, which supports the traditional sector, can be considered culturally sustainable. The present study suggests some potential roles for anthropology in planning a culturally sustainable development.

In terms of future research directions, two issues need to be addressed. First, studies are needed to examine how to translate the mixed economy framework into action, and how to institutionalize this potential alternative model of development. Although the mixed economy model has been suggested since the 1970s in the Berger report (Asch 1982; Berger 1977), it has not been implemented, at least not in the

Canadian North. The question of how to build institutions for culturally meaningful development is still under investigation, and is being debated. Cultural aspects of sustainable development are not a part of the current sustainable development paradigm (Goodland 1985; Warren et al. 1995), and very little has been done on cultural aspects. More anthropological work in this area is needed.

The second issue is how the Cree themselves can achieve a cultural compromise within the mixed economy paradigm, and how anthropology can contribute to such empowerment (Titi and Singh 1995:13). As many traditional values (e.g., humility) are incompatible with Western values in the modern economy (e.g., assertiveness), the younger generation may have difficulty in resolving these value conflicts. This may lead (and has led to) an identity crisis and failure of adaptation; it may have contributed to the social pathology of northern aboriginal communities.

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Glossary (Cree words are underlined):

Apwân: a method of barbecue for meat and fish using sticks.

Argo: all terrain vehicle, mainly used for transportation in hunting (name of ATV make).

Askîkan: a native dwelling composed of split logs and blocks of sphagnum-moss sod. The term is translated as "earth lodge" by Honigmann (1956:42).

Bannock: Bread made of flour, baking powder, grease, and water. The cooking method is originally introduced by the Scots employed by the Hudson's Bay Company.

Mîkiwâm: tipi, a native conical lodge composed of canvas. Traditionally caribou hide was used.

Mikobeshigan: method of smoking geese that removes sternum only.

Moss bag: baby wrapper made of textile. Infant was wrapped with sphagnum moss, multi-layered clothes, and finally covered with this bag, and placed in cradle board (Tikanagan).

Mukluk: a soft boot made from moose hide, caribou hide, and seal skin often lined with flannels.

Namêshtêk: methods of smoking geese in which all bones are removed.

Neohiganak: powdered dried fish. Bones and skins are removed from dried fish and pounded fine.

Grease and fresh berries(if any) are mixed just before serving.

Niska: goose. The Omushkegowuk Cree refer to Canada goose in particular (cf. Appendix)

Pemmican: pounded dried meat. Presently Cree do not mix it with grease and dried berries. Grease is mixed just before being served. Moose and caribou meat are commonly used.

Sakapwân: a method of barbecue for meat using strings.

Shinegamishigan: a method of preserving geese by boiling and smoking and stored in geese grease. No bones are left in geese.

Appendix A: Ethics Statement

Anthropological ethics generally deals with the following four issues: 1) informed consent and deception; 2) privacy and confidentiality; 3) harm and benefit; and 4) government regulations[1] (Beauchamp et.al. 1982; cf. Punch 1986:35; SSHRC 1977.) The present research was sensitive to three ethical issues excluding government regulations.

The Mushkegowuk Council gave general consent in 1989 for the TASO project with which this study was affiliated. This regional government body was officially the local contact. Verbal consent from each interviewee was obtained when the researcher explained to them the nature of the research. Thus, the study was conducted with the participants' consent at two levels; the local government body and the individual participant.

Privacy and anonymity was afforded to individuals during the study by means of coded notes. Japanese was used for this purpose in both field notes and academic diaries. Therefore, privacy and confidentiality were protected. In the thesis, all names of individuals have been changed to protect their privacy. However, the real names of communities were used.

Harm and benefit to subjects have been particularly

[1] Discussions on government regulations generally deal with the applicability of certain government regulations that protect subjects in biomedical research rather than social science research, in which the subjects have greater control over research conditions (cf. Cassell 1980).

complicated issues among many native groups in North America. Native people claimed that the relationships of anthropologists with native people have been unethical and exploitative. Native groups have complained about anthropologists for constant invasions of their privacy, for their failure to provide the studied communities with research results, and their failure to reimburse the communities with the research funds available to anthropologists (Mayard cited in Warwick 1980:345; cf. Cohen 1976:84). Anthropologists have been seen as predators who take advantage of natives to advance their own careers and to achieve financial gain.

Thus, anthropologists, must keep one fundamental ethical issue foremost in mind: whether or not they should have the right to study people in order to achieve personal advancement, such as a degree. There is no straightforward answer. However, this issue could be answered in relation to the question of "fair return", both to the community and to the individual participant.

For this study, the researcher attempted to give fair return to the community by providing a report of the transmission status of bush skills to the local educational authorities as a part of reciprocity. Many native people are aware that increasing numbers of young people are losing their native culture and skills. The study provided them with evidence on how their traditional learning patterns have been disrupted. To make the study results comprehensible, an

independent report was prepared for them. It is debatable whether this report could be considered "fair exchange" (cf. Beals 1978; Jacobs 1980). Judgement will be vested on reaction from communities. However, individual informants might not be interested in the study results, other forms of reciprocity was given for their time because benefits to an individual participant were also an important issue.

The revised ethics statement for the American Anthropological Association (1991) released in 1976 clearly stated that the obligation of researcher was to the researched. "Fair return" had to be given to individual informants. One form of reciprocity, payments to informants, has been controversial. Since this researcher had budgetary restrictions, she was not able to pay informants; small gifts were given instead. Host families received gifts not only from the researcher but also from the researcher's mother as a way for her to thank the "local mother" for taking care of her daughter. Every informant received small gifts from East Asia and Christmas cards during the holiday season both from Japan and Winnipeg. In some cases, the researcher had given baked goods because gift exchange was developed with some informants and involved multiple transactions. In some cases, other forms of personal favours, such as volunteering in community activities, were given.

Since many informants showed curiosity toward the researcher's cultural background, she often talked about Japan

with informants and photos were shown. The researcher had to play the role of a cultural ambassador to satisfy their curiosity about Japan just as these informants had to satisfy the researcher's curiosity about Cree culture. Sometimes cultural differences of Euro-Canadian, Cree and Japanese created stimulating discussion among friends. Moreover, the researcher made tangible contribution to the host families by doing domestic chores as a quasi-kinsman. The researcher did benefit from her status of being their kinsman. Her involvement in kin relationships, however, required an obligation to keep this honourary membership. Hopefully, this arrangement could also be considered "fair exchange" (cf. Jacobs 1980:2). The most common harm[2] to an individual informant is the invasion of privacy and stress. Most of the informants have had experiences in dealing with researchers in the past. Some informants felt exploited by previous researchers, who had come and gone. A couple of informants complained to the researcher that they had been repetitiously interviewed in short intervals because there were many projects going at one village and no coordination of research was made. Accordingly, the subjects felt uneasy toward

[2] There are two kinds of harm to informants. One is intrinsic to the research process: it derives from the conduct of researchers (Cassell 1980:30), and it is controllable by the researcher (Warwick 1982:121). The other is extrinsic to the research process: it originates outside of the research process and cannot be directly controlled by the researcher, such as misuse of published information (Warwick 1982:121). Here, I refer to only intrinsic harm which could be eliminated by the efforts of the researchers.

researchers and were reluctant to participate in the present study.

To overcome their uneasiness, the researcher respected the participants' preferences for the date and time to be interviewed. The researcher also used local gossip from host families regarding death or sickness of villagers to adjust visiting patterns so as not to disturb informants during family crises.

Anthropologists should be reminded that they cannot force the informants to participate in research. Research questions are academically significant, but this interest in research is not often shared with the subjects. Some consider research as something to "get over with." Anthropologists are often not welcomed guests and are considered as intruders. Help from informants, a prerequisite for research, cannot be taken for granted.

For the most part, cooperation and help are offered at a personal level. Informants assist the people they like personally. One's success in obtaining help and acquiring quality information is closely associated with one's social relationship with the informant. Thus, success in anthropological research is largely based on how the researcher builds a relationship with the informant. If the informant does help anthropologists as a personal favour, what then are the anthropologists' ethical responsibilities? (cf. May 1980) Generally speaking, if someone receives a personal

favour, that person is expected to reciprocate. The same expectation holds for anthropologists. However, the past relationship of anthropologists with the subject often neglected the welfare of the subject for the sake of research. The researcher believes careful attention should be paid to the welfare of individual informants.

For these reasons, anthropologists should make an effort to eliminate the potential harm to the informant, although this discipline has been neglecting this responsibility. Unfortunately, the discipline has not been providing adequate training for novice anthropologists before their initial fieldwork. Students were never taught ethics although the researchers' "sense of ethics guides our field work choices and behaviour" (Rynkiewich 1976:59). General graduate training in anthropology excludes ethics. Ethical issues are only dealt within applied anthropology, since this subdiscpline specializes in "intervention" (Rynkiewich 1976).

Nevertheless, the conventional anthropological understanding of intervention that only considers applied research as "intervention" is highly questionable (Rynkiewich 1976:58-59). Any anthropologists' involvement with informants could be also considered intervention. Thus, ethics are relevant in any anthropological research. The anthropologist's intense human interactions with the informants often causes the ethical dilemma, because the anthropologist has to play different roles depending on

conditions to have an access to various kinds of information. This switching of roles is ethically debatable and consequently stressing (cf. Punch 1986:81). As Cassell and Jacobs (1987) argue, ethics should be taught in the context of practice to make students realize the kinds of ethical issues they will actually encounter in the process of research.

The discipline should also critically evaluate the conventional process of anthropological education. For instance, the academic community regards field experience as "education." This is the time for a novice anthropologist to translate anthropological method and theory into practice. The novice is required to move freely from the role of the quasi-community member who sees the phenomenon from the native's viewpoint to the role of the scientist, who sees the phenomenon with analytical detachment. It is through this evaluative process that the novice becomes a "real" anthropologist. Consequently, once those students return from their fieldwork, their status moves from novice to full fledged anthropologists.

However, the academic community has been neglecting the role of informants in the whole process of "intrusive" education, and has failed to reduce harm to the informants. The academic communities must realize that informants are not always willing participants in this educational process. They have been receiving those novices for generations. When those

novices arrive at the field, they are definitely not the first ones and will not be the last ones, either. How long is this intrusive education to continue? Anthropological education takes place at the expense of the hosts, using the hosts as "living laboratories" (personal communication, J. Kaufert). The irony is that although anthropologists are specialized in taking the "native" perspective, the "native" perspective is neglected.

Therefore, there is an urgent need to improve the academic community's attitude toward this form of education in order to reduce the potential harm to the subjects. This underdevelopment of ethics in anthropological education is manifest in the lack of practical training. For instance, the essential field skills of interpersonal networking, interviewing, and manoeuvring through human relationships are not taught. It is assumed that these skills should be developed by the novices during their research. Without practical knowledge, many novice researchers often do not recognize the difficulty of establishing rapport and immersing themselves in local social networks. As a consequence, they miscalculate the time required for research. Accordingly, out of desperation, they end up pushing the informants to complete their project on time.

This failure to give practical information to these novices influences their relationship with their informants. Hit and run research may invade informants' privacy, and it

may cause the informants to mistrust them. In the end, this type of research will result in the informants' rejection of future researchers. The neglect of practical training seems to relate with two academic traditions. One is an emphasis on academism rather than on practical knowledge, and the other is the status of one's knowledge as private property. Accordingly, the practical knowledge that has been accumulated by pioneers has not been effectively transmitted.

It is with this knowledge that the academic community should make an effort to ease the burden of educating their students from the host community, because some field skills are trainable (cf. Spindler 1987). Students should get more than the traditional "no advice" before their departure for the field. There should be enough practical knowledge accumulated over the past seventy or eighty years of anthropological endeavour. At the same time, the emphasis on practical knowledge will also help students who have traditionally faced the "sink or swim" approach to their fieldwork (cf. Wax 1952).

Fieldwork remains an educational asset for expanding our knowledge. However, researchers should improve the unethical aspect of field education to discourage harm to and to develop new relationships with informants. There is an urgent need to develop special curricula to emphasize the practical side of research and to ensure the effective transmission of expert knowledge to students.

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Appendix B: Food price list, 1992-1993

Item	Moose Factory	Peawanuck	Winnipeg('94)
beef steak	$17.30/kg	$23.00/kg*	$14.31/kg
ground beef	$ 7.30/kg	$16.80/kg*	$ 2.82/kg
pork chops	$ 5.99/kg	$ 9.00/kg*	$ 8.58/kg
bacon	$ 6.15/kg	$ 8.50/kg*	$ 5.38/kg
chicken leg	$ 2.62/kg	$ 4.00/kg*	$ 4.17/kg $ 1.99/kg*
frozen fried chicken	$ 7.45/900g	$10.80/900g	$ 4.89/709g
luncheon meat (Klik,340g)	$ 1.86/can	$ 3.30/can	$ 2.29/can
eggs (doz)	$ 1.75(M)	$ 3.35(L)	$ 1.45(M) $ 1.56(L)
milk, 2%	$ 1.99/1l	$ 3.05/1l	$ 1.08/1l
evaporated milk (385ml)	$ 1.09/can	$ 1.60/can	$ 1.09/can
whole wheat bread	$ 1.86/loaf	$ 2.50/loaf	$ 1.15/loaf
flour	$ 8.73/10kg	$17.80/10kg	$ 6.99/10kg
sugar	$ 1.29/kg	$ 2.75/kg	$ 1.59/kg
tea	$ 2.99(252g)	$ 8.35 (454g)	$ 3.49(252g) $ 5.69(454g)
pop	$ 2.69/2l	$ 7.25/2l	$ 1.29/2l
oranges	$ 1.24/lb	$ 1.38/lb	$ 0.69/lb

Note:
* frozen meat

Appendix C: Participation in bush activities

c-1: Intensities of bush activities by age group
(cf. Chapter 3: Table 3.12)

Moose Factory (N=34)

Intensities	20s	30s	40s	50s	60s*	Total
Occasional	0	0	0	0	1	1
Active	0	1	0	0	2	3
Intensive	0	6	5	3	3	17
H.Intensive**	2	2	1	3	5	13
Total	2	9	6	6	11	34

Note:
* Age group 60s include one woman in her 70s.
** H. Intensive refers to Highly Intensive.

Peawanuck (N=27)

Intensities	20s	30s	40s	50s	Total
Occasional	2	2	0	1	5
Active	4	4	0	3	11
Intensive	1	1	0	0	2
H. Intensive	2	0	0	3	5
None	1	0	2	1	4
Total	10	7	2	8	27

c-2: Frequencies in bush activities

Age group classification:

Moose Factory (N=34)

Frequency	20s	30s	40S	50S	60S	Total
<3/Y	2	5	4	3	9	23
>3/Y	0	4	2	3	2	11
Total	2	9	6	6	11	34

Peawanuck (N=27)

Frequency	20s	30s	40S	50S	Total
<3/Y	7	7	0	1	15
>3/Y	2	0	0	6	8
None	1	0	2	1	4
Total	10	7	2	8	27

Occupation based classification:

Moose Factory (N=34)

Frequency	FT	PT	None	Total
<3/Y	8	2	13	23
>3/Y	6	2	3	11
Total	14	4	16	34

Peawanuck (N=27)

Frequency	FT	PT	None	Total
<3/Y	7	2	6	15
>3/Y	1	0	7	8
None	1	1	2	4
Total	9	3	15	27

Appendix D:d-1: Transmission of 93 bush skills and traditional knowledge

Moose Factory		Transmission rates			Peawanuck		Transmission rates		
Bush skills	Mean age	yes	obs. only	no	Bush skills	Mean Age	yes	obs. only	no
fetching water	9	100%			fetching water	9	95%		5%
fetching wood	8	100%			fetching wood	8	95%	5%	
starting fires	12	100%			starting fires	8	95%		5%
baby sitting	10	100%			baby sitting	10	100%		
dressing warm	8	100%			dressing warm	7	100%		
making bannock	12	100%			making bannock	10	73%	16%	11%
boiling meat	14	100%			boiling meat	11	79%	16%	5%
sakapwan	16	100%			sakapwan	13	42%	11%	47%
apwan	16	100%			apwan	13	68%	21%	11%
cleaning fish	12	100%			cleaning fish	12	84%	16%	
smoke/dry fish	12	94%	6%		smoke/dry fish	12	71%	24%	5%
plucking duck	9	100%			plucking duck	11	100%		
plucking wavy	10	100%			plucking wavy	11	100%		
plucking niska	11	100%			plucking niska	11	100%		
gutting fowl	13	100%			gutting fowl	13	100%		
shinegamishigan	12		7%	93%	shinegamishigan	14	58%	10%	32%
mikobeshigan	16	53%	20%	27%	mikobeshigan	12	53%	21%	26%
nameshtek	18	73%	20%	7%	nameshtek	12	63%	26%	11%
smoke beaver	15	47%	47%	7%	smoke beaver	11	16%	5%	79%
neohiganak	9	14%	14%	73%	neohiganak	11	47%	32%	21%
pemmican	11	20%	20%	60%	pemmican	10	63%	26%	37%
canning	0			100%	canning	14	79%	16%	21%
pickling	14	40%	7%	53%	pickling	14	21%	5%	79%
deborning moose	17	74%	13%	13%	deborning moose	13	74%	21%	5%
cleaning rabbit	16	94%	6%		cleaning rabbit	11	73%	26%	11%
cleaning muskrat	16	40%	13%	47%	cleaning muskrat	8	16%	5%	79%
stretching rat fur	17	40%	13%	47%	stretching rat fur	9	16%	5%	79%
cleaning beaver	13	66%	14%	20%	cleaning beaver	13	16%	21%	63%
stretching beaver	16	60%	13%	27%	stretching beaver	11	58%	16%	26%
streching squirrel	12	20%		80%	streching squirrel	0			100%
stretching weasel	11	27%		73%	stretching weasel	10	5%		95%
stretching otter	16	17%	17%	67%	stretching otter	12	16%	5%	79%
stretching fox	14	14%	14%	73%	stretching fox	13	21%	16%	63%

Appendix D:d-1: Transmission of 93 bush skills and traditional knowledge

stretching marten	16	60%	7%	33%	stretching marten	0	5%	11%	84%
stretching mink	18	33%		67%	stretching mink	10	11%	5%	84%
raw hide rope	16	47%	26%	27%	babiche	13	26%	16%	58%
tanning caribou hide	16	76%	11%	13%	tanning caribou hide	12	79%	21%	
tanning moose hide	18	67%	33%		tanning moose hide	12	68%	16%	16%
smoking hide	18	54%	33%	13%	smoking hide	12	32%	47%	21%
goose grease	14	40%	40%	20%	goose grease	12	10%	58%	32%
moose grease	16	33%	14%	53%	moose grease	11	16%	16%	68%
seal oil	0			100%	seal oil	0			100%
fish oil	19		7%	93%	fish oil	0			100%
handling axes	13	100%			handling axes	10	100%		
handling saws	13	100%			handling saws	11	89%		11%
sharpening knife	15	81%	12%	7%	sharpening knife	16	47%	16%	37%
using chainsaws	20	54%	6%	40%	using chainsaws	15	95%		5%
chainsaw repair	19	27%		73%	chainsaw repair	16	42%		58%
using chisel	16	66%	7%	27%	using chisel	11	58%	5%	37%
setting up tents	14	100%			setting up tents	12	95%	5%	
making askikan	0			100%	making askikan	9	32%		68%
making e.shelters	16	67%		33%	making e.shelters	11	32%	5%	63%
packing for trips	15	100%			packing for trips	12	68%	11%	21%
handling dogs	0	7%	60%	33%	handling dogs	13	11%	5%	84%
using paddles	15	93%		7%	using paddles	12	95%		5%
using sails	20	27%	20%	53%	using sails	17	11%		89%
driving motors	17	87%		13%	driving motors	15	74%		26%
driving snowmobiles	14	100%			driving snowmobiles	11	100%		
mobile/motor repair	19	67%		33%	mobile/motor repair	14	42%		58%
using bush radios	23	60%	7%	33%	using bush radios	8	32%		68%
setting up radios	22	40%	7%	53%	setting up radios	8	5%		95%
setting fishnets	15	100%			setting fishnets	11	63%	26%	11%
fish seining	13	7%		93%	fish seining	13	26%	16%	58%
rod fishing	16	100%			rod fishing	11	95%		5%
making bait	12	93%		7%	making bait	10	58%	5%	37%
maintenance /fish holes	13	87%		13%	maintenance /fish holes	9	21%		79%
setting net under ice	16	33%	40%	27%	setting net under ice	11	48%	20%	32%
setting snares	15	87%	13%		setting snares	9	95%		5%

Appendix D:d-1: Transmission of 93 bush skills and traditional knowledge

setting traps	15	67%	20%	13%	setting traps	13	47%	16%	37%
handling of guns	17	93%		7%	handling of guns	13	89%	6%	5%
animal calls	15	66%	7%	27%	animal calls	9	32%		68%
reading animal moves	20	47%		53%	reading animal moves	12	16%		84%
native medicine	13	66%	27%	7%	native medicine	14	48%	10%	42%
reading ice, weather	15	80%		20%	reading ice, weather	11	53%		47%
orientation in bush	13	73%		27%	orientation in bush	12	53%	5%	42%
wood horses/poles	17		87%	13%	wood horses/poles	11	16%	31%	53%
moose-bone scrapers	17		80%	20%	moose-bone scrapers	11	39%	8%	53%
bear-bone scrapers	16		20%	80%	bear-bone scrapers	12	5%	11%	84%
bone needles	18		67%	33%	bone needles	12	5%		95%
snowshoe webbing	15	40%	47%	13%	snowshoe webbing	12	58%	16%	26%
knitting fish nets	14	54%	33%	13%	knitting fish nets	10	32%	21%	47%
weaving mitten's string	16	74%	6%	20%	weaving mittens' string	11	68%	6%	26%
rabbit skin work	9	20%	20%	60%	rabbit skin work	8	21%	42%	37%
bead embroidery	11	87%	13%		bead embroidery	9	95%		5%
silk embroidery	11	20%	13%	67%	silk embroidery	0			100%
snowshoes frames	17	20%	60%	20%	snowshoes frames	11	21%	37%	42%
cradle board	15	20%	20%	60%	cradle board	11	26%	37%	37%
woodwork	12	14%	66%	20%	woodwork	12	32%	32%	37%
moss bags	15	47%	26%	27%	moss bags	14	42%	26%	32%
feather blankets	16	80%	20%		feather blankets	12	42%	26%	32%
making moccasins	16	66%	27%	7%	making moccasins	13	69%	10%	21%
making mittens	16	74%	26%		making mittens	12	58%	21%	21%
making seal boots	-		27%	73%	making seal boots	-		5%	95%
Total	1296	53.94	12.99	26.11	Total	999	46.45	10.35	36.78
Mean age	14				Mean age	11			
Mean transmission rate		58%	14%	28%	Mean transmission rate		50%	11%	40%
Legend:									
yes: learned by hands-on practice									
obs. only: learned by observation only									
no: did not learn									

Appendix D:d-2: Transmission of traditional skills: Learned (hands-on)

Moose Factory																	
Informant	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Total	T.rates
making bannock	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
boiling meat	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
sakapwan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
apwan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
cleaning fish	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
smoke/dry fish	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	14	93%
plucking duck	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
plucking wavy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
plucking niska	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
gutting fowl	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
shinegamishigan	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	7%
mikobeshigan	0	1	1	0	0	1	1	1	0	0	1	0	1	0	1	8	53%
nameshtek	1	0	1	0	1	1	0	1	0	1	1	1	1	1	1	11	73%
smoke beaver	0	0	1	0	0	1	1	1	0	0	0	1	0	1	1	7	47%
neohiganak	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2	13%
pemmican	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	3	20%
pickling	0	0	1	0	0	1	0	1	1	1	0	0	0	1	0	6	40%
deborning moose	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0	11	73%
cleaning rabbit	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	14	93%
cleaning muskrat	0	0	0	0	0	1	1	1	0	1	0	1	0	1	0	6	40%
cleaning beaver	1	1	1	0	0	1	1	1	0	1	1	1	0	1	0	10	67%
goose grease	1	0	1	0	0	0	0	1	0	0	0	1	0	1	1	6	40%
moose grease	0	0	0	0	0	0	1	1	0	0	0	1	0	1	1	5	33%
seal oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fish oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fetch water	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
fetch wood	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
starting fires	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
baby sitting	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
dressing warm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
handling axe	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
handling saws	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
sharpening knife	1	1	1	1	0	0	1	1	1	1	0	1	0	1	1	11	73%

Appendix D:d-2: Transmission of traditional skills: Learned (hands-on)

using chisel	1	1	1	0	0	1	1	0	1	1	0	0	1	1	1	10	67%
setting up tents	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
making askikan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making e.shelters	0	0	1	1	1	0	1	0	1	1	1	0	1	1	1	10	67%
packing for trips	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
handling dogs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	7%
using paddles	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	14	93%
using sails	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	4	27%
reading ice, weather	1	0	0	1	1	1	1	0	1	1	1	1	1	1	1	12	80%
orientation in bush	1	0	1	1	0	1	1	1	0	1	1	1	0	1	1	11	73%
stretching rat fur	0	0	0	0	0	1	1	0	0	1	0	1	0	1	1	6	40%
stretching beaver	0	1	1	1	0	1	1	1	0	0	0	1	0	1	1	9	60%
streching squirrel	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3	20%
stretching weasel	0	1	0	0	0	1	1	0	0	0	0	0	0	1	0	4	27%
stretching otter	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	3	20%
stretching fox	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	13%
stretching marten	1	0	1	1	0	1	1	1	0	1	0	0	0	1	1	9	60%
stretching mink	1	0	0	0	0	0	1	0	0	1	0	0	0	1	1	5	33%
making babiche	1	1	1	0	0	0	0	1	1	0	0	1	0	1	0	7	47%
tanning caribou hide	1	1	1	0	0	1	0	1	0	0	1	1	0	1	0	8	53%
tanning moose hide	1	1	1	1	0	1	1	1	0	1	0	1	0	1	0	10	67%
smoking hide	1	1	1	0	0	1	1	1	0	0	0	1	0	1	0	8	53%
wood horse/poles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
moose-bone scrapers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
bear-bone scrapers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
bone needles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
snowshoe webbing	1	0	1	0	1	0	0	0	1	1	0	0	0	1	0	6	40%
knittng fish nets	1	1	0	0	1	1	0	1	0	0	1	0	1	1	0	8	53%
weaving mittens' string	1	0	1	1	1	1	1	1	0	1	1	0	0	1	1	11	73%
rabbit skin work	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	3	20%
bead embroidery	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	13	87%
silk embroidery	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	3	20%
snowshoes frames	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	20%
cradle board	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	20%
woodwork	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	13%

Appendix D:d-2: Transmission of traditional skills: Learned (hands-on)

moss bags	1	1	1	0	0	0	0	1	0	0	1	1	0	1	0	7	47%
feather blankets	1	1	1	1	0	1	1	1	0	1	1	1	0	1	1	12	80%
making moccasins	1	1	1	0	0	1	1	1	0	0	1	1	0	1	1	10	67%
making mittens	1	1	1	1	0	1	1	1	0	0	1	1	0	1	1	11	73%
making seal boots	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
setting fishnets	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
fish seining	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7%
rod fishing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
making bait	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	14	93%
maintenance /fish hole	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	13	87%
setting nets under ice	1	0	1	0	0	1	0	0	0	0	0	1	0	1	0	5	33%
setting snares	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	13	87%
setting traps	1	0	1	1	0	1	1	1	0	1	0	1	0	1	1	10	67%
handling of guns	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	14	93%
animal calls	1	1	1	1	0	0	0	1	1	1	1	0	0	1	1	10	67%
reading animal moves	1	0	0	1	0	1	1	0	1	1	0	1	0	0	0	7	47%
native medicine	1	1	1	1	1	1	1	1	0	0	1	1	0	1	1	12	80%
canning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
using chainsaw	0	1	1	0	1	1	1	1	0	1	1	0	0	0	0	8	53%
chainsaw repair	0	0	1	0	0	1	1	0	0	0	1	0	0	0	0	4	27%
driving motors	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	13	87%
driving snowmobiles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
skidoo repair	0	1	1	1	1	1	1	1	1	0	1	0	0	1	0	10	67%
using bush radios	0	1	1	1	0	1	1	1	1	1	0	0	1	0	0	9	60%
setting up radios	0	0	1	0	0	1	1	1	1	1	0	0	0	0	0	6	40%
Total	60	56	66	47	41	65	61	62	43	55	48	50	32	69	52	807	54
Transmission rates	65%	60%	71%	51%	44%	70%	66%	67%	46%	59%	52%	54%	34%	74%	56%		58%

Appendix D:d-2: Transmission of traditional skills: Learned (observation only)

Moose Factory																	
Informant	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Total	O. rates
making bannock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
boiling meat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
sakapwan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
apwan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
cleaning fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
smoke/dry fish	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	7%
plucking duck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking wavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking niska	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
gutting fowl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
shinegamishigan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
mikobeshigan	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	3	20%
nameshtek	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	3	20%
smoke beaver	1	1	0	1	1	0	0	0	1	1	1	0	0	0	0	7	47%
neohiganak	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	13%
pemmican	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3	20%
pickling	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7%
deborning moose	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	13%
cleaning rabbit	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	7%
cleaning muskrat	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2	13%
cleaning beaver	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2	13%
goose grease	0	1	0	1	0	1	0	0	1	1	1	0	0	0	0	6	40%
moose grease	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	13%
seal oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fish oil	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7%
fetch water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fetch wood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
starting fires	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
baby sitting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
dressing warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling axe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling saws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
sharpening knife	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	3	20%

Appendix D:d-2: Transmission of traditional skills: Learned (observation only)

using chisel	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	7%
setting up tents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making askikan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making e.shelters	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
packing for trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling dogs	1	1	1	1	1	0	0	1	1	0	1	0	1	0	0	9	60%
using paddles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
using sails	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	3	20%
reading ice, weather	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
orientation in bush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
stretching rat fur	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2	13%
stretching beaver	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	13%
streching squirrel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
stretching weasel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
stretching otter	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	13%
stretching fox	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2	13%
stretching marten	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	7%
stretching mink	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making babiche	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	4	27%
tanning caribou hide	0	0	0	1	1	0	0	0	1	0	0	0	1	0	1	5	33%
tanning moose hide	0	0	0	0	1	0	0	0	1	0	1	0	1	0	1	5	33%
smoking hide	0	0	0	1	1	0	0	0	0	1	1	0	0	0	1	5	33%
wood horse/poles	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	13	87%
moose-bone scrapers	1	1	1	0	1	1	1	1	1	1	0	0	1	1	1	12	80%
bear-bone scrapers	1	0	0	0	0	1	0	1	1	1	0	0	0	1	0	6	40%
bone needles	1	1	1	0	0	1	1	0	1	1	0	0	1	1	1	10	67%
snowshoe webbing	0	1	0	1	0	1	1	1	0	0	1	0	0	0	1	7	47%
knittng fish nets	0	0	0	1	0	0	1	0	1	1	0	0	0	0	1	5	33%
weaving mittens' string	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7%
rabbit skin work	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	3	20%
bead embroidery	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2	13%
silk embroidery	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	13%
snowshoes frames	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	9	60%
cradle board	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	3	20%
woodwork	0	0	1	0	1	1	1	1	1	1	1	0	0	1	1	10	67%

Appendix D:d-2: Transmission of traditional skills: Learned (observation only)

moss bags	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	4	27%
feather blanket	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	3	20%
making moccasins	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	4	27%
making mittens	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	4	27%
making seal boots	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	4	27%
setting fishnets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fish seining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
rod fishing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making bait	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
maintenance /fish hole	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
setting net under ice	0	0	0	1	0	0	1	1	1	0	1	0	1	0	0	6	40%
setting snares	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	13%
setting traps	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	3	20%
handling of guns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
animal calls	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	7%
reading animal moves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
native medicine	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	13%
canning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
using chainsaws	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	7%
chainsaw repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
driving motors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
driving snowmobiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
snowmobile repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
using bush radios	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
setting up radios	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	7%
Total	8	12	7	18	15	11	12	10	26	17	16	0	21	8	17	198	13
Observation rates	9%	13%	8%	19%	16%	12%	13%	11%	28%	18%	17%	0%	23%	9%	18%		14%

Appendix D:d-2: Transmission of traditional skills: Not Learned

Moose Factory																	
Informant	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Total	No rates
making bannock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
boiling meat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
sakapwan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
apwan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
cleaning fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
smoke/dry fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking duck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking wavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking niska	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
gutting fowl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
shinegamishigan	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	14	93%
mikobeshigan	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	4	27%
nameshtek	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	7%
smoke beaver	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	7%
neohiganak	1	1	1	1	1	0	1	0	0	1	1	1	1	0	1	11	73%
pemmican	1	1	0	1	1	0	1	0	0	1	0	1	1	0	1	9	60%
pickling	1	0	0	1	1	0	1	0	0	0	1	1	1	0	1	8	53%
deborning moose	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	13%
cleaning rabbit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
cleaning muskrat	1	1	1	0	1	0	0	0	1	0	1	0	0	0	1	7	47%
cleaning beaver	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	3	20%
goose grease	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	3	20%
moose grease	1	1	1	0	1	1	0	0	1	0	1	0	1	0	0	8	53%
seal oil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
fish oil	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	14	93%
fetch water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fetch wood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
starting fires	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
baby sitting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
dressing warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling axe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling saws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
sharpening knife	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	7%

Appendix D:d-2: Transmission of traditional skills: Not Learned

using chisel	0	0	0	1	1	0	0	1	0	0	0	1	0	0	0	4	27%
setting up tents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making askikan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
making e.shelters	1	1	0	0	0	1	0	1	0	0	0	1	0	0	0	5	33%
packing for trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling dogs	0	0	0	0	0	1	1	0	0	1	0	1	0	1	0	5	33%
using paddles	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	7%
using sails	1	1	1	0	0	0	1	1	1	0	0	1	1	0	0	8	53%
reading ice, weather	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	3	20%
orientation in bush	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	4	27%
stretching rat fur	1	1	1	0	1	0	0	1	0	0	1	0	1	0	0	7	47%
stretching beaver	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	4	27%
streching squirrel	1	0	1	1	1	0	0	1	1	1	1	1	1	1	1	12	80%
stretching weasel	1	0	1	1	1	0	0	1	1	1	1	1	1	0	1	11	73%
stretching otter	1	0	1	0	1	1	0	0	1	1	1	1	1	0	1	10	67%
stretching fox	1	1	1	0	1	1	1	1	0	0	1	1	1	0	1	11	73%
stretching marten	0	1	0	0	1	0	0	0	0	0	1	1	1	0	0	5	33%
stretching mink	0	1	1	1	1	1	0	1	1	0	1	1	1	0	0	10	67%
making babiche	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	4	27%
tanning caribou hide	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	13%
tanning moose hide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
smoking hide	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	13%
wood horse/poles	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	13%
moose-bone scrapers	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	3	20%
bear-bone scrapers	0	1	1	1	1	0	1	0	0	0	1	1	1	0	1	9	60%
bone needles	0	0	0	1	1	0	0	1	0	0	1	1	0	0	0	5	33%
snowshoe webbing	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	13%
knittng fish nets	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2	13%
weaving mittens' string	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3	20%
rabbit skin work	1	0	0	1	0	1	1	0	1	1	1	1	1	0	0	9	60%
bead embroidery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
silk embroidery	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	10	67%
snowshoes frames	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	3	20%
cradle board	0	0	0	1	1	0	1	1	1	1	0	1	1	1	0	9	60%
woodwork	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	3	20%

Appendix D:d-2: Transmission of traditional skills: Not Learned

moss bags	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	4	27%
feather blankets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making moccasins	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	7%
making mittens	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making seal boots	0	0	0	1	1	1	1	1	1	1	1	1	1	0	1	11	73%
setting fishnets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fish seining	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	93%
rod fishing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making bait	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	7%
maintenance /fish hole	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	13%
setting net under ice	0	1	0	0	1	0	0	0	0	1	0	0	0	0	1	4	27%
setting snares	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
setting traps	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2	13%
handling of guns	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	7%
animal calls	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	4	27%
reading animal moves	0	1	1	0	1	0	0	1	0	0	1	0	1	1	1	8	53%
native medicine	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	7%
canning	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100%
using chainsaws	1	0	0	1	0	0	0	0	1	0	0	1	0	1	1	6	40%
chainsaw repair	1	1	0	1	1	0	0	1	1	1	0	1	1	1	1	11	73%
driving motors	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	13%
driving snowmobiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
snowmobile repair	1	0	0	0	0	0	0	0	0	1	0	1	1	0	1	5	33%
using bush radios	1	0	0	0	1	0	0	0	0	0	1	1	0	1	0	5	33%
setting up radios	1	1	0	0	1	0	0	0	0	0	1	1	1	1	1	8	53%
Total	25	25	20	28	37	17	20	21	24	21	29	43	40	16	23	389	26
Not transmitted rates	27%	27%	22%	30%	40%	18%	22%	23%	26%	23%	31%	46%	43%	17%	25%		28%

Appendix D:d-2: Transmission of traditional skills: Learned (hands-on)

Peawanuck																					
Informant	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	Total	T. rates
making bannock	1	1	1	1	0	0	0	1	1	1	1	1	0	1	0	1	1	1	1	14	74%
boiling meat	1	1	1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	15	79%
sakapwan	1	0	1	1	0	0	0	1	1	0	0	1	0	1	0	0	0	0	1	8	42%
apuwan	1	0	1	1	0	0	0	1	1	1	1	1	0	1	1	0	1	1	1	13	68%
cleaning fish	1	1	1	1	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	16	84%
smoke/dry fish	1	1	1	1	0	0	0	1	1	1	1	1	0	0	0	1	1	1	1	13	68%
plucking duck	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
plucking wavy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
plucking niska	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
gutting fowl	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
shinegamishigan	1	0	1	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	1	11	58%
mikobeshigan	1	0	1	0	1	0	0	0	1	1	1	1	0	0	0	1	1	1	0	10	53%
nameshtek	1	0	1	1	1	0	0	0	1	1	1	1	0	0	0	1	1	1	1	12	63%
smoke beaver	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	3	16%
neohiganak	1	0	1	0	0	0	0	0	1	1	0	1	0	0	0	1	1	1	1	9	47%
pemmican	1	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	1	1	7	37%
pickling	0	0	0	0	0		0		0	0	0	1	0	0	0	1	1	0	0	3	16%
deborning moose	1	0	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1	1	1	14	74%
cleaning rabbit	1	0	1	1	1	0	0	0	1	0	1	1	0	1	1	1	1	1	0	12	63%
cleaning muskrat	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	3	16%
cleaning beaver	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0	5	26%
goose grease	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	11%
moose grease	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	3	16%
seal oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fish oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fetch water	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	18	95%
fetch wood	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	18	95%
starting fires	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	18	95%
baby sitting	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
dressing warm	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
handling axe	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
handling saws	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	17	89%
sharpening knife	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	1	1	9	47%

Appendix D:d-2: Transmission of traditional skills: Learned (hands-on)

using chisel	1	1	0	0	0	1	1	0	1	0	0	1	0	1	0	1	1	1	1	11	58%
setting up tents	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	18	95%
making askikan	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	1	1	0	6	32%
making e.shelters	0	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0		1	0	6	32%
packing for trips	1	1	1	0	1	1	1	1	0	0	1	1	0	1	1	1	1	0	0	13	68%
handling dogs	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2	11%
using paddles	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	18	95%
using sails	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0		0	1	2	11%
reading ice, weather	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	1	1	1	1	10	53%
orientation in bush	0	0	0	0	0	1	0	0	1	1	1	1	0	1	0	1	1	1	1	10	53%
stretching rat fur	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0		1	1	3	16%
stretching beaver	0	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1	1	1	1	9	47%
streching squirrel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
stretching weasel	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	5%
stretching otter	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	3	16%
stretching fox	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	4	21%
stretching marten	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5%
stretching mink	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	11%
making babiche	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	1	1	0	5	26%
tanning caribou hide	1	1	1	1	1	1	1	0	1	1	1	1	0	1	0	1	1	0	1	15	79%
tanning moose hide	1	1	0	1	1	1	1	0	1	0	1	1	0	1	0	1	1	0	1	13	68%
smoking hide	1	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	6	32%
wood horses/poles	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	3	16%
moose-bone scrapers	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2	11%
bear-bone scrapers	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	5%
bone needles	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	5%
snowshoe webbing	0	0	0	0	1	1	1	0	1	1	1	1	0	1	0	1	0	1	1	11	58%
knitting fish nets	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	0	1	1	0	6	32%
weaving mittens' string	1	1	1	1	1	0	0	1	0	0	0	1	1	1	0	1	0	1	1	12	63%
rabbit skin work	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	0	4	21%
bead embroidery	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	18	95%
silk embroidery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
snowshoes frames	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	4	21%
cradle board	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	1	5	26%
woodwork	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	1	6	32%

Appendix D:d-2: Transmission of traditional skills: Learned (hands-on)

moss bags	1	0	1	0	0	0	0	0	1	0	1	1	0	1	0	0	1	1	0	8	42%
feather blankets	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	1	1	1	0	8	42%
making moccasins	1	1	1	0	1	1	0	0	1	1	1	1	0	1	0	1	1	0	1	13	68%
making mittens	1	1	1	1	0	1	0	0	0	1	1	1	0	1	0	0	1	0	1	11	58%
making seal boots	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
setting fishnet	0	1	1	1	1	0	0	0	1	1	1	1	0	0	0	1	1	1	1	12	63%
fish seining	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	5	26%
rod fishing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	18	95%
making bait	1	0	0	1	0	0	1	1	1	1	0	1	0	0	1	1	1	1	0	11	58%
mainain fish hole	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	4	21%
setting net under ice	0	1	0	1	0	0	1	0	1	0	0	1	0	0	0	1	0	1	1	8	42%
setting snares	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	18	95%
setting traps	0	0	1	0	1	0	1	0	0	1	1	1	0	0	0	1	0	1	1	9	47%
handling of guns	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	17	89%
animal calls	0	1	0	0	0	1	1	0	1	1	0	1	0	0	0	0	0	0	0	6	32%
reading animal moves	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	3	16%
native medicine	0	1	0	0	0	1	1	0	1	0	0	1	0	0	1	1	1	0	1	9	47%
canning	1	0	1	1	1	0	0	1	1	0	1	0	1	1	0	0	1	1	1	12	63%
using chainsaws	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	18	95%
chainsaw repair	1	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	1	1	1	8	42%
driving motors	1	1	0	1	1	0	0	1	1	1	1	1	0	1	1	1	1	1	0	14	74%
driving snowmobiles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
snowmobile repair	1	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	1	1	1	8	42%
using bush radios	0	0	0	0	1	0	1	0	1	1	0	0	1	0	0	0	1	0	0	6	32%
setting up radios	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	5%
Total	52	35	43	40	34	34	34	33	64	43	50	82	19	41	25	51	62	65	56	863	45
Transmission rates	56%	38%	46%	43%	37%	37%	37%	35%	69%	46%	54%	88%	20%	44%	27%	55%	67%	70%	60%		49%

Appendix D:d-2: Transmission of traditional skills: Learned (observation only)

Peawanuck																					
Informant	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	Total	O. rates
making bannock	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	16%
boiling meat	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	16%
sakapwan	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11%
apuwan	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	21%
cleaning fish	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3	16%
smoke/dry fish	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0	0	0	0	0	5	26%
plucking duck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking wavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking niska	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
gutting fowl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
shinegamishigan	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	11%
mikobeshigan	0	1	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	4	21%
nameshtek	0	1	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	5	26%
smoke beaver	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
neohiganak	0	1	0	1	0	1	1	0	0	0	1	0	0	1	0	0	0	0	0	6	32%
pemmican	0	1	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	5	26%
pickling	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
deborning moose	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	4	21%
cleaning rabbit	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1	5	26%
cleaning muskrat	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
cleaning beaver	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	11%
goose grease	1	1	0	1	1	1	1	0	1	1	0	0	1	1	0	0	1	0	0	11	58%
moose grease	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3	16%
seal oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fish oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fetch water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
fetch wood	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	5%
starting fires	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
baby sitting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
dressing warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling axe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling saws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
sharpening knife	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	16%

Appendix D:d-2: Transmission of traditional skills: Learned (observation only)

using chisel	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
setting up tents	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	5%
making askikan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making e.shelters	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
packing for trips	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	11%
handling dogs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5%
using paddles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
using sails	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
reading ice, weather	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
orientation in bush	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
stretching rat fur	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
stretching beaver	0	1	0	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0	5	26%
streching squirrel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
stretching weasel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
stretching otter	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
stretching fox	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3	16%
stretching marten	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	11%
stretching mink	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5%
making babiche	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	16%
tanning caribou hide	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	1	0	4	21%
tanning moose hide	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	3	16%
smoking hide	0	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	0	9	47%
wood horses/poles	1	1	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	6	32%
moose-bone scrapers	1	1	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	1	7	37%
bear-bone scrapers	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	11%
bone needles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
snowshoe webbing	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	16%
knitting fish nets	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	21%
weaving mittens' string	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	11%
rabbit skin work	1	1	1	0	0	0	1	0	0	0	1	0	1	0	0	1	1	0	0	8	42%
bead embroidery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
silk embroidery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
snowshoes frames	0	1	0	0	1	1	0	0	1	0	1	0	0	1	0	0	1	0	0	7	37%
cradle board	0	1	0	0	1	1	0	0	1	0	1	0	0	1	0	0	1	0	0	7	37%
woodwork	0	1	0	0	1	1	0	0	1	0	1	0	0	1	0	0	0	0	0	6	32%

Appendix D:d-2: Transmission of traditional skills: Learned (observation only)

moss bags	0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	5	26%
feather blankets	0	1	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	5	26%
making moccasins	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	11%
making mittens	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	4	21%
making seal boots	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	5%
setting fishnets	1	0	0	0	0	1	1	1	0	0	0	0	0	1	0	0	0	0	0	5	26%
fish seining	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	3	16%
rod fishing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making bait	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	5%
mainain fish hole	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
setting nets under ice	1	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	5	26%
setting snares	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
setting traps	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	3	16%
handling of guns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	5%
animal calls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
reading animal moves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
native medicine	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	11%
canning	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	3	16%
using chainsaws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
chainsaw repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
driving motors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
driving snowmobiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
snowmobile repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
using bush radios	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
setting up radios	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
Total	10	28	4	6	23	27	20	12	10	6	12	1	8	17	5	3	4	3	6	205	11
Observation rates	11%	30%	4%	6%	25%	29%	22%	13%	11%	6%	13%	1%	9%	18%	5%	3%	4%	3%	6%		12%

Appendix D:d-2: Transmission of traditional skills: Not Learned

Peawanuck Informant	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	Total	O. rates
making bannock	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	11%
boiling meat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	5%
sakapwan	0	0	0	0	0	1	1	0	0	1	1	0	1	0	1	1	1	1	0	9	47%
apuwan	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	11%
cleaning fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
smoke/dry fish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	5%
plucking duck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking wavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
plucking niska	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
gutting fowl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
shinegamishigan	0	0	0	1	1	1	1	1	0	0	0	0	1	0	0	0	0	0	0	6	32%
mikobeshigan	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	1	5	26%
nameshtek	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	11%
smoke beaver	0	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0	1	15	79%
neohiganak	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	0	4	21%
pemmican	0	0	0	0	1	0	0	1	0	1	0	0	1	1	1	1	0	0	0	7	37%
pickling	1	0	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	15	79%
deborning moose	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	5%
cleaning rabbit	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	11%
cleaning muskrat	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	1	1	0	1	15	79%
cleaning beaver	1	1	1	1	1	0	1	1	0	1	1	0	1	1	1	0	0	0	0	12	63%
goose grease	0	0	1	0	0	0	0	1	0	0	1	0	0	0	1	0	0	1	1	6	32%
moose grease	1	1	1	1	0	1	1	1	0	1	0	0	1	0	1	0	1	1	1	13	68%
seal oil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
fish oil	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
fetch water	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	5%
fetch wood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
starting fires	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5%
baby sitting	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
dressing warm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling axe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
handling saws	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	11%
sharpening knife	0	0	0	0	0	1	1	1	0	1	0	0	1	0	1	1	0	0	0	7	37%

Appendix D:d-2: Transmission of traditional skills: Not Learned

using chisel	0	0	1	1	0	0	0	1	0	1	1	0	1	0	1	0	0	0	0	7	37%
setting up tents	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
making askikan	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	1	13	68%
making e.shelters	1	0	0	0	1	1	1	1	0	1	0	0	1	1	1	1	1	0	1	12	63%
packing for trips	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	1	4	21%
handling dogs	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	1	1	16	84%
using paddles	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	5%
using sails	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	17	89%
reading ice, weather	1	1	1	0	1	0	0	1	0	1	0	0	1	1	1	0	0	0	0	9	47%
orientation in bush	1	0	1	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	8	42%
stretching rat fur	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0	0	15	79%
stretching beaver	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	5	26%
streching squirrel	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
stretching weasel	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	18	95%
stretching otter	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	0	0	1	15	79%
stretching fox	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	0	0	0	12	63%
stretching marten	1	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	0	1	16	84%
stretching mink	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0	1	16	84%
making babiche	0	1	1	1	0	0	1	1	0	1	1	1	1	0	1	0	0	0	1	11	58%
tanning caribou hide	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
tanning moose hide	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	16%
smoking hide	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	0	0	0	4	21%
wood horses/poles	0	0	1	1	0	1	1	1	0	1	0	0	1	0	1	1	0	1	0	10	53%
moose-bone scrapers	0	0	1	1	0	1	1	1	0	1	0	0	1	0	1	1	0	1	0	10	53%
bear-bone scrapers	1	1	1	1	0	1	1	1	1	1	1	0	1	0	1	1	1	1	1	16	84%
bone needles	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	18	95%
snowshoe webbing	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	0	1	0	0	5	26%
knitting fish nets	0	0	1	1	0	0	0	1	0	1	0	0	1	1	1	1	0	0	1	9	47%
weaving mittens' string	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	1	0	0	5	26%
rabbit skin work	0	0	0	1	1	1	0	0	0	1	0	0	0	1	1	0	0	0	1	7	37%
bead embroidery	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	5%
silk embroidery	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	100%
snowshoes frames	0	0	1	1	0	0	1	1	0	1	0	0	1	0	1	1	0	0	0	8	42%
cradle board	0	0	1	1	0	0	1	0	0	1	0	0	1	0	1	1	0	0	0	7	37%
woodwork	0	0	1	1	0	0	1	0	0	1	0	0	1	0	1	1	0	0	0	7	37%

Appendix D:d-2: Transmission of traditional skills: Not Learned

moss bags	0	0	0	1	0	0	1	0	0	1	0	0	1	0	1	1	0	0	0	6	32%
feather blankets	0	0	1	1	0	0	1	0	0	0	1	0	1	0	1	0	0	0	0	6	32%
making moccasins	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	4	21%
making mittens	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	4	21%
making seal boots	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	18	95%
setting fishnets	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	11%
fish seining	1	1	1	0	1	1	0	1	1	0	0	0	1	0	1	1	1	0	0	11	58%
rod fishing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	5%
making bait	0	1	1	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	1	7	37%
mainain fish hole	1	1	1	1	1	1	1	0	0	0	1	0	1	1	1	1	1	1	1	15	79%
setting nets under ice	0	0	0	0	0	0	0	1	0	1	0	0	1	1	1	0	1	0	0	6	32%
setting snares	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	5%
setting traps	1	1	0	1	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	7	37%
handling of guns	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	5%
animal calls	1	0	1	1	1	0	0	1	0	0	1	0	1	1	1	1	1	1	1	13	68%
reading animal moves	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	0	1	1	1	16	84%
native medicine	0	0	1	1	1	0	0	1	0	0	1	0	1	1	0	0	0	1	0	8	42%
canning	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	1	0	0	0	4	21%
using chainsaws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	5%
chainsaw repair	0	1	1	1	1	1	0	1	0	1	0	0	1	1	1	1	0	0	0	11	58%
driving motors	0	0	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1	5	26%
driving snowmobiles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%
snowmobile repair	0	1	1	1	1	1	0	1	0	1	0	0	1	1	1	1	0	0	0	11	58%
using bush radios	1	1	1	1	0	1	0	1	0	0	1	1	0	1	1	1	0	1	1	13	68%
setting up radios	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	18	95%
Total	31	30	46	47	36	32	39	48	19	44	31	10	66	35	63	39	27	25	31	699	37
Not transmitted rates	33%	32%	49%	51%	39%	34%	42%	52%	20%	47%	33%	11%	71%	38%	68%	42%	29%	27%	33%		40%

Appendix D:d-3: Transmission status by skill groups

Cooking skills(N=26)							
Moose Factory	Transmission rates				Peawanuck	Transmission rates		
Bush skills	yes	obs. only	no		Bush skills	yes	obs. only	no
making bannock	100%				making bannock	73%	16%	11%
boiling meat	100%				boiling meat	79%	16%	5%
sakapwan	100%				sakapwan	42%	11%	47%
apwan	100%				apwan	68%	21%	11%
cleaning fish	100%				cleaning fish	84%	16%	
smoke/dry fish	94%	6%			smoke/dry fish	71%	24%	5%
plucking duck	100%				plucking duck	100%		
plucking wavy	100%				plucking wavy	100%		
plucking niska	100%				plucking niska	100%		
gutting fowl	100%				gutting fowl	100%		
shinegamishigan		7%	93%		shinegamishigan	58%	10%	32%
mikobeshigan	53%	20%	27%		mikobeshigan	53%	21%	26%
nameshtek	73%	20%	7%		nameshtek	63%	26%	11%
smoke beaver	47%	47%	7%		smoke beaver	16%	5%	79%
neohiganak	14%	14%	73%		neohiganak	47%	32%	21%
pemmican	20%	20%	60%		pemmican	37%	26%	37%
pickling	40%	7%	53%		pickling	21%	5%	79%
deborning moose	74%	13%	13%		deborning moose	74%	21%	5%
cleaning rabbit	94%	6%			cleaning rabbit	73%	26%	11%
cleaning muskrat	40%	13%	47%		cleaning muskrat	16%	5%	79%
cleaning beaver	66%	14%	20%		cleaning beaver	16%	21%	63%
goose grease	40%	40%	20%		goose grease	10%	58%	32%
moose grease	33%	14%	53%		moose grease	16%	16%	68%
seal oil			100%		seal oil			100%
fish oil		7%	93%		fish oil			100%
canning			100%		canning	63%	16%	21%
Total	15.88	2.48	7.66		Total	13.8	3.92	8.43
	0.610769	0.095385	0.294615			0.53076923	0.150769	0.324231
	61%	10%	29%			53%	15%	32%

Appendix D:d-3: Transmission status by skill groups

Bush camp skills(N=26)							
Moose Factory	Transmission rates				Peawanuck	Transmission rates		
Bush skills	yes	obs. only	no		Bush skills	yes	obs. only	no
fetching water	100%				fetching water	95%		5%
fetching wood	100%				fetching wood	95%	5%	
starting fires	100%				starting fires	95%		5%
baby sitting	100%				baby sitting	100%		
dressing warm	100%				dressing warm	100%		
handling axes	100%				handling axes	100%		
handling saws	100%				handling saws	89%		11%
sharpening knife	81%	12%	7%		sharpening knife	47%	16%	37%
using chisel	66%	7%	27%		using chisel	58%	5%	37%
setting up tents	100%				setting up tents	95%	5%	
making askikan			100%		making askikan	32%		68%
making e.shelters	67%		33%		making e.shelters	32%	5%	63%
packing for trips	100%				packing for trips	68%	11%	21%
handling dogs	7%	60%	33%		handling dogs	11%	5%	84%
using paddles	93%		7%		using paddles	95%		5%
using sails	27%	20%	53%		using sails	11%		89%
reading ice, weather	80%		20%		reading ice, weather	53%		47%
orientation in bush	73%		27%		orientation in bush	53%	5%	42%
native medicine	66%	27%	7%		native medicine	48%	10%	42%
using chainsaws	54%	6%	40%		using chainsaws	95%		5%
chainsaw repair	27%		73%		chainsaw repair	42%		58%
driving motors	87%		13%		driving motors	74%		26%
driving snowmobiles	100%				driving snowmobiles	100%		
mobile/motor repair	67%		33%		mobile/motor repair	42%		58%
using bush radios	60%	7%	33%		using bush radios	32%		68%
setting up radios	40%	7%	53%		setting up radios	5%		95%
Total	18.95	1.46	5.59			16.67	0.67	8.66
	0.728846	0.056154	0.215			0.64115385	0.025769	0.333077
	73%	6%	22%			64%	3%	33%

Appendix D:d-3: Transmission status by skill groups

Craft skills (N=22)							
Moose Factory	Transmission rates				Peawanuck	Transmission rates		
Bush skills	yes	obs. only	no		Bush skills	yes	obs. only	no
raw hide rope	47%	26%	27%		babiche	26%	16%	58%
tanning caribou hide	76%	11%	13%		tanning caribou hide	79%	21%	
tanning moose hide	67%	33%			tanning moose hide	68%	16%	16%
smoking hide	54%	33%	13%		smoking hide	32%	47%	21%
wood horses/poles		87%	13%		wood horses/poles	16%	32%	53%
moose-bone scrapers		80%	20%		moose-bone scrapers	39%	8%	53%
bear-bone scrapers		20%	80%		bear-bone scrapers	5%	11%	84%
bone needles		67%	33%		bone needles	5%		95%
snowshoe webbing	40%	47%	13%		snowshoe webbing	58%	16%	26%
knitting fish nets	54%	33%	13%		knitting fish nets	32%	21%	47%
weaving mitten's string	74%	6%	20%		weaving mittens' string	68%	6%	26%
rabbit skin work	20%	20%	60%		rabbit skin work	21%	42%	37%
bead embroidery	87%	13%			bead embroidery	95%		5%
silk embroidery	20%	13%	67%		silk embroidery			100%
snowshoes frames	20%	60%	20%		snowshoes frames	21%	37%	42%
cradle board	20%	20%	60%		cradle board	26%	37%	37%
woodwork	14%	66%	20%		woodwork	32%	32%	37%
moss bags	47%	26%	27%		moss bags	42%	26%	32%
feather blankets	80%	20%			feather blankets	42%	26%	32%
making moccasins	66%	27%	7%		making moccasins	69%	10%	21%
making mittens	74%	26%			making mittens	58%	21%	21%
making seal boots		27%	73%		making seal boots		5%	95%
Total	8.6	7.61	5.79			8.34	4.3	9.38
	0.390909	0.345909	0.263182			0.37909091	0.195455	0.426364
	39%	35%	26%			38%	20%	43%

Appendix D:d-3: Transmission status by skill groups

Fur skills (N=8)							
Moose Factory	Transmission rates			Peawanuck	Transmission rates		
Bush skills	yes	obs. only	no	Bush skills	yes	obs. only	no
stretching rat fur	40%	13%	47%	stretching rat fur	16%	5%	79%
stretching beaver	60%	13%	27%	stretching beaver	58%	16%	26%
streching squirrel	20%		80%	streching squirrel			100%
stretching weasel	27%		73%	stretching weasel	5%		95%
stretching otter	17%	17%	67%	stretching otter	16%	5%	79%
stretching fox	14%	14%	73%	stretching fox	21%	16%	63%
stretching marten	60%	7%	33%	stretching marten	5%	11%	84%
stretching mink	33%		67%	stretching mink	11%	5%	84%
Total	2.71	0.64	4.67		1.32	0.58	6.1
	0.33875	0.08	0.58375		0.165	0.0725	0.7625
	34%	8%	58%		17%	7%	76%
HFT skills (N=11)							
Moose Factory	Transmission rates			Peawanuck	Transmission rates		
Bush skills	yes	obs. only	no	Bush skills	yes	obs. only	no
setting fishnets	100%			setting fishnets	63%	26%	11%
fish seining	7%		93%	fish seining	26%	16%	58%
rod fishing	100%			rod fishing	95%		5%
making bait	93%		7%	making bait	58%	5%	37%
maintenance /fish holes	87%		13%	maintenance /fish holes	21%		79%
setting net under ice	33%	40%	27%	setting net under ice	48%	20%	32%
setting snares	87%	13%		setting snares	95%		5%
setting traps	67%	20%	13%	setting traps	47%	16%	37%
handling of guns	93%		7%	handling of guns	89%	6%	5%
animal calls	66%	7%	27%	animal calls	32%		68%
reading animal moves	47%		53%	reading animal moves	16%		84%
Total	7.80	0.8	2.40	Total	5.9	0.89	4.21
	0.709091	0.072727	0.218182		0.53636364	0.080909	0.382727
	71%	7%	22%		53%	8%	39%

Appendix D:d-4; List of primary teachers

Moose Factory(N=15)																
Skills	Mo	Fa	Par	GM	GF	GP	Aunt	Uncle	Bro	Sis	M-in-L	Hus	Self	Others	Total	No
fetch water	3		10		1					1		1	1		17	
fetch wood	3	1	9		1	1			1	1		1	1		19	
starting fire	2	5	6		1	1						1		1	17	
baby sitting	12		2		1					1			1		17	
dressing warm	11		4	2	1	1				1					20	
making bannock	12			1	1						1			1	16	
boiling meat	14		1								1				16	
sakapwan	8	1					2				1	1			13	
apwan	8	2					1				3	1		1	16	
cleaning fish	8	2	1	2			1				1	1			16	
smoke/dry fish	9			3			1								13	
plucking duck	14		1	1	1										17	
plucking wavy	14		1	2	1										18	
plucking niska	14		1	2	1										18	
gutting fowl	12		1	2	1						1				17	
shinegamishigan				1											1	14
mikobeshigan	5	2		1			1				2			1	12	4
nameshtek	6	2		3	1		2				3				17	1
smoke beaver	9			2			2				3				16	1
neohiganak	2			1							1				4	11
pemmican	4			2							1				7	9
canning															0	15
pickling	3		2								2				7	8
deborning moose		5	2									5			12	2
cleaning rabbit	9		1	2	1	1	1				3	1			19	
cleaning muskrat	4										2	1	1		8	7
stretching rat fur	2	2	1								1	3			9	7
cleaning beaver	9		1	2	1		2				2	1			18	3
stretching beaver	3	2	3			1	1				1	2			13	4
streching squirrel	1		1												2	13
stretching weasel	1	1	1												3	12
stretching otter	1		1					1				1			4	11

Appendix D:d-4; List of primary teachers

stretching fox	2	1										1			4	11
stretching marten	2	3	3			1		1				2			12	5
stretching mink	1	2	1			1						1			6	10
raw hide rope	3	3	1	1	1			1						2	12	4
tanning caribou hide	8	1		1			1				2				13	2
tanning moose hide	9			1			1				3	1			15	
smoking hide	9			1			2				1				13	2
goose grease	9			3	1		1				2				16	3
moose grease	6			1							1				8	8
seal oil															0	15
fish oil											1				1	14
handling axe	2	7	3	1					2			1		1	17	
handling saw	2	4	2	1					2			1			12	
sharpening knife	3	6	3									3			15	1
using chainsaw		4										4	1		9	6
chainsaw repair		3										1			4	11
using chisel	1	5	3		1							3			13	4
setting up tent	2		9				1	1	1	1		5		2	22	
making askikan															0	15
making e.shelter		4			1							5		2	12	5
packing for trips	7		3									4	1	1	16	
handling dogs		5	2		2										9	6
using paddles	1	4	5	1	1					1		4			17	1
using sails			1		1	1		1				2		1	7	8
driving motor		6	1		1				2			6			16	2
driving skidoo		8							2			4	2		16	
skidoo repair		3							1			4			8	5
using bush radio		1	1						1			4		1	8	5
setting up radio		1	1									4		1	7	8
setting fishnet	1	3	7	1	1							4			17	
fish seining		1													1	14
rod fishing		2	3						2			5	3		15	
making bait	2	4	4	1								4	1		16	1
maintain fish hole	2	4	3	1	1				1			3			15	2

Appendix D:d-4: List of primary teachers

setting net under ice	1	2	3		2		1	1				2			12	4
setting snare	4	4	1	2	1				1			4			17	
setting trap	1	5	1	1	1		1					4			14	2
handling of guns		7		1					1			5			14	1
animal calls	1	4	1	1	1				1			3	1		13	4
reading animal moves		2	1		1				1			3			8	8
native medicine	1	2	5	4	3						1			1	17	1
reading ice, weather		3	4	1	1	2	1	1	1	1		3		1	19	3
orientation in bush		3	5		1	2	2	1	1	1		2		1	19	4
wood horse/poles	1	7			1			1			1	1		2	14	2
moose-bone scraper	1	7						1			1			1	11	9
bear-bone scraper	1	2									1			2	6	9
bone needles		6									1	1		2	10	5
snowshoe webbing	1	7			1		1	2				1		1	14	2
knitting fish net	4		2	4	2						1	1			14	2
weaving mittens' string	7			2			1				1			1	12	3
rabbit skin worlk	4			2											6	7
bead embroidery	10						1			1	1			2	15	
silk embroidery	3			1			4								8	9
snowshoes frame		8			1			1				1		2	13	3
cradle board		4			1			1							6	9
woodwork		10			1							1		1	13	3
moss bags	9			1						1				1	12	4
feather blanket	11			2			2				3				18	
making moccasins	10						1				3				14	1
making mittens	10						1				3		1		15	
making seal boots	1			1											2	13
Total	356	193	129	66	42	12	36	14	21	10	56	128	14	33	1110	398
Percentage	32%	17%	12%	6%	4%	1%	3%	1%	2%	1%	5%	12%	1%	3%	100%	

Legned:

Mo: Mother; Fa: Father; Par: Parents; GM: Grandmother; GF: Grandfather; GP:Grandparents;

Bro: Brother; Sis: Sister; M-in-L: Mother-in-law; Hus: Husband; No: Did not learn skills

Appendix D:d-4; List of primary teachers

Peawanuck (N=19)																
Skills	Mo	Fa	Par	GM	GF	GP	Aunt	Uncle	Bro	Sis	M-in-L	Hus	Self	Others	Total	No
fetch water	4		13	1		2	2								22	1
fetch wood	1	1	14	1		2	1		1						21	
starting fire	3	2	7	1	1	1	1		1						17	1
baby sitting	15						3			2				1	21	
dressing warm	15	1	2			1							1		20	
making bannock	15		1	1	1				1						19	2
boiling meat	13	1	2	1	1		1					1			20	1
sakapwan	7		2		1						1				11	9
apwan	11		3	2	1							1			18	2
cleaning fish	14		2	2	1	1						1			21	
smoke/dry fish	12		1	4	1	1									19	1
plucking duck	12		4	3						1		1			21	
plucking wavy	12		4	3						1		1			21	
plucking niska	12		4	3						1		1			21	
gutting fowl	12		3	2	1		1			1		1			21	
shinegamishigan	8	2		2	1		1					1			15	6
mikobeshigan	11			3	1		1								16	5
nameshtek	16			1	1		1								19	2
smoke beaver	3			1											4	15
neohiganak	8			5	1		1								15	4
pemmican	7			5											12	7
canning	7	4	1		1				1	2	1	1			18	4
pickling	4									2					6	11
deborning moose	7	3	3	2	1						1	3			20	1
cleaning rabbit	13	1	1	1	1	1									18	2
cleaning muskrat	3		1												4	15
stretching rat fur	2	1	1												4	14
cleaning beaver	5		2												7	12
stretching beaver	11	2	1												14	5
streching squirrel															0	19
stretching weasel	1														1	18
stretching otter	2	2													4	15
stretching fox	3	2	1	1											7	12

Appendix D:d-4; List of primary teachers

stretching marten	1	1		1											3	15
stretching mink	1	1		1											3	15
raw hide rope	5		1		1		1								8	10
tanning caribou hide	16			2						1	1				20	
tanning moose hide	13			2									1		16	3
smoking hide	14			1	1										16	4
goose grease	11			3	1										15	6
moose grease	5			1	1										7	13
seal oil															0	19
fish oil															0	19
handling axe	3	5	6	1	2	2			3			1			23	
handling saw	2	6	4	1	2		1	1	2	1			1		21	2
sharpening knife	2	4	3		1				1						11	7
using chainsaw	3	6	2				1	1	1	1		2	1		18	1
chainsaw repair	2	2							1	1			2		8	11
using chisel	2	6	1	2											11	7
setting up tent	5	6	7	4	1	1	1					1			26	
making askikan	2	1	4	1					1						9	13
making e.shelter		4	1						1				1		7	10
packing for trips	8	1	4		1	1									15	4
handling dogs	1									1				1	3	15
using paddles	4	4	5	1	1	1									16	1
using sails		1	1												2	16
driving motor	1	7				1	1	1		2		2			15	5
driving skidoo	1	6	2				2	2	3	4			1		21	
skidoo repair		3	2			1	1	1	1	1					10	11
using bush radio	1		2					1					1		5	13
setting up radio			1												1	17
setting fishnet	5	2	8	2	1			1							19	3
fish seining	1	1	3	1	1		1			1	1				10	10
rod fishing	1	6	3	1			1	1	4	1		1	1	1	21	
making bait	2	6	3				1								12	7
maintenance /fish hole	1	2					1								4	14
setting net under ice	5	1	6			2	2								16	5
setting snare	9	1	4	3	1				1	2		1			22	1

Appendix D:d-4; List of primary teachers

setting trap	2	5	2			2			1			2			14	7
handling of guns	3	8	2			1	1	2	4			1		1	23	1
animal calls		2	1			1			1				2	1	8	13
reading animal moves		1	2												3	15
native medicine	5		4	2								1			12	8
reading ice, weather	2	3	5		1	1									12	10
orientation in bush	2	1	5		3	1						1		1	14	7
bear-bone scraper	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	8
bone needles	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
snowshoe webbing	3	3	4	1	3	0	1	0	0	0	0	0	0	0	15	8
wood horse/poles	6	1			1										8	10
moose-bone scraper	7				1										8	7
knitting fish net	7			3											10	9
weaving mittens'string	12			1	1						1				15	3
rabbit skin work	4			7											11	7
bead embroidery	15			1			1			2			1		20	1
silk embroidery															0	19
snowshoes frame	3	4			2	1									10	8
cradle board	3	3	2		2	1									11	7
woodwork	2	5	2		2	1									12	7
moss bags	11						1								12	6
feather blanket	12						1								13	5
making moccasins	13			2			3			1					19	4
making mittens	13			2			3								18	4
making seal boots	1														1	18
Total	525	142	175	92	47	27	38	11	29	29	6	25	13	6	1145	
Percentage	46%	12%	15%	8%	4%	2%	3%	1%	3%	3%	1%	2%	1%	1%	1	

Appendix E:e-1: List of evaluated respondents

Community	Age	Aboriginal culture		Euro-Canadian culture			Scores		Cultural Orientation
	group	Language	Bush skills	Education	Job(past)	interaction	Aboriginal	Euro-Canadian	
Moose	70s(1)	Cree	competent	<6	NW	1	4	1	Aboriginal
Factory	60s(10)	Cree-Eng	competent	<6	NW(Y)	1	4	3.5	Bicultural
(N=37)		Cree-Eng	competent	<12	NW(Y)	1	4	4.5	Bicultural
		Cree-Eng	competent	<6	NW(Y)	1	4	3.5	Bicultural
		Cree/Eng	competent	<6	NW	1	4	2	Aboriginal
		Cree/Eng	competent	<6	NW(Y)	1	4	2.5	Aboriginal
		Cree-Eng	competent	<12	NW	1	4	4	Bicultural
		Cree/Eng	competent	<6	NW(Y)	1	4	2.5	Aboriginal
		Cree-Eng	competent	<12	NW(Y)	1	4	4.5	Bicultural
		Cree-Eng	competent	<12	NW(Y)	1	4	4.5	Bicultural
		Cree-Eng	45%*	<6	NWY)	1	2	3.5	Bicultural
	50s(7)	Cree-Eng	competent	<6	NW(Y)	1	4	3.5	Bicultural
		Cree-Eng	competent	<6	NW(Y)	1	4	3.5	Bicultural
		Cree-Eng	competent	<6	FT	1	4	4	Bicultural
		Cree-Eng	competent	<6	FT	1	4	4	Bicultural
		Cree-Eng	56%	<6	FT	1	3	4.5	Bicultural
		Cree-Eng	competent	<12	FT	1	4	5	Bicultural
		Cree-Eng	74%	<12	FT	1	3.5	5	Bicultural
	40s(7)	Eng/Cree	70%	<12	FT	1	2.5	5	Bicultural
		Eng/Cree	46%*	<12	FT	1	1.5	5	Bicultural
		Cree-Eng	competent	<12	FT	1	4	5	Bicultural
		Eng/Cree	34%	<12	FT	1	1	5	Euro-Canadian
		Eng/Cree	46%*	<12	FT	1	1.5	5	Bicultural
		Eng/Cree	65%	<12	FT	1	2	5	Bicultural
		Eng/Cree	54%	<12	FT	1	1.5	5	Bicultural

Appendix E:e-1: List of evaluated respondents

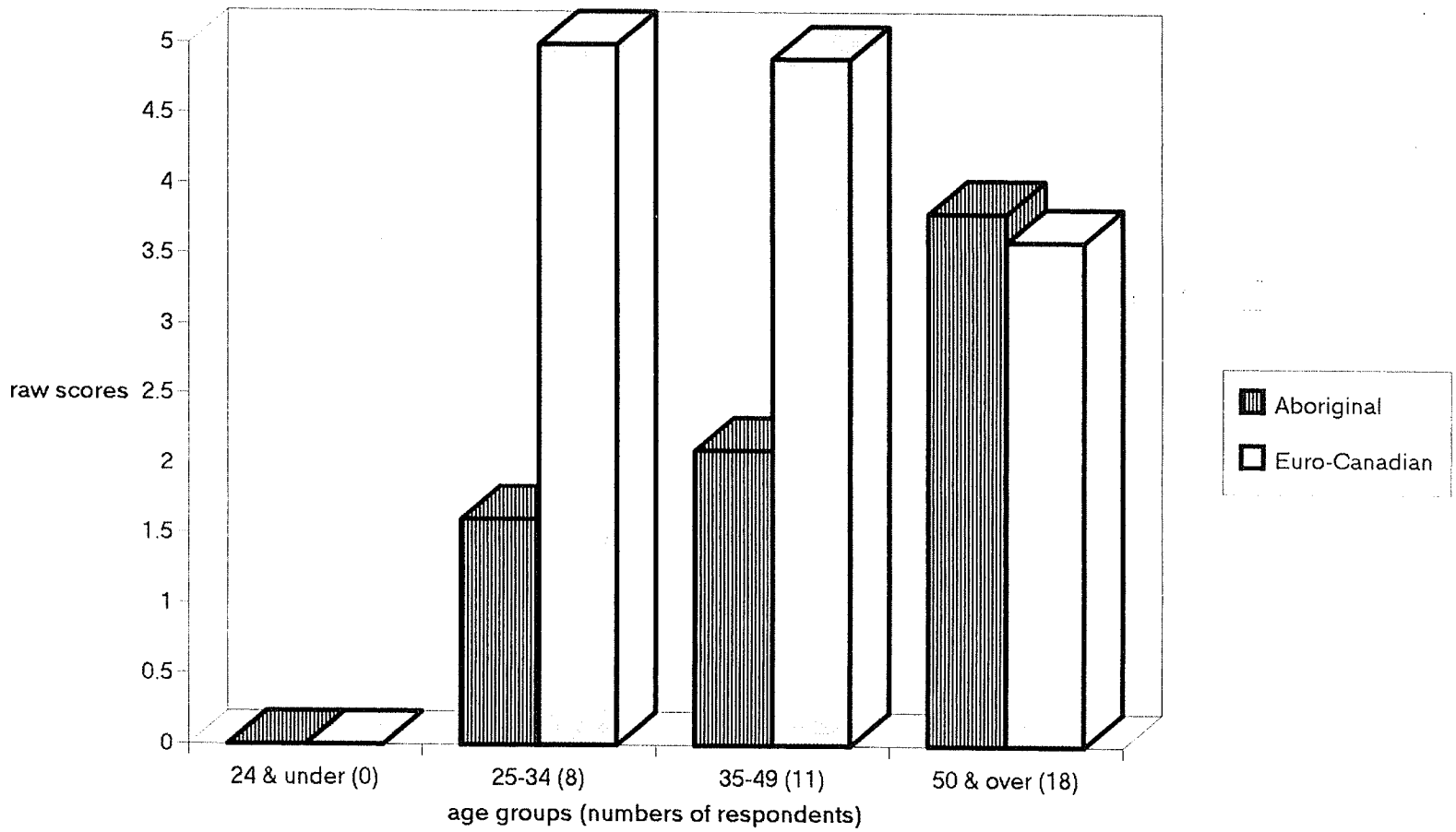
Moose	30s(10)	Eng/Cree	52%	<12	FT	1	1.5	5	Bicultural
Factory		Eng/Cree	60%	<12	FT	1	2	5	Bicultural
		Eng/Cree	51%	<12	FT	1	1.5	5	Bicultural
		Eng/Cree	67%	<12	NW	1	2.5	4	Bicultural
		Eng	46%*	6<	FT	1	0.5	5	Euro-Canadian
		Eng/Cree	59%	6<	PT	1	2	5	Bicultural
		Eng	56%*	6<	PT	1	1	5	Euro-Canadian
		Cree-Eng	65%*	6<	PT	1	3	5	Bicultural
		Eng/Cree	46%	6<	PT	1	1.5	5	Bicultural
		Eng/Cree	44%	<12	PT	1	1	5	Euro-Canadian
	20s(2)	Eng/Cree	66%	>12	NW(Y)	1	2.5	5.5	Bicultural
		Eng/Cree	71%	<12	NW(Y)	1	2.5	4.5	Bicultural
Peawanuck	60s(1)	Cree-Eng	46%*	6>	NW(Y)	1	2.5	3.5	Bicultural
(N=32)	50s(6)	Cree	competent	<6	NW	0.5	4	0.5	Aboriginal
		Cree/Eng	competent	<6	NW	0.5	4	1.5	Aboriginal
		Cree-Eng	competent	6<	FT	1	4	5	Bicultural
		Cree	competent	<6	N(Y)	0.5	4	1	Aboriginal
		Cree/Eng	competent	<6	N(Y)	0.5	4	2	Aboriginal
		Eng/Cree	competent	<6	N(Y)	0.5	3	3	Bicultural
	40s(3)	Cree-Eng	56%*	6>	NW	0.5	3	2.5	Aboriginal
		Cree-Eng	56%	<12	FT	1	3	5	Bicultural
		Cree/Eng	competent	<6	PT	0.5	4	2.5	Aboriginal
	30s(9)	Eng/Cree	56%	<12	NW	1	2	4	Bicultural
		Eng/Cree	38%	<12	FT	1	1	5	Euro-Canadian
		Cree-Eng	60%	<12	NW	0.5	3	3.5	Bicultural
		Eng/Cree	37%	<12	PT	0.5	1	4.5	Euro-Canadian
		Cree-Eng	67%	<12	N(Y)	0.5	3.5	4	Bicultural
		Cree-Eng	70%	<12	NW	0.5	3.5	3.5	Bicultural
		Cree-Eng	45%*	<12	NW	0.5	2	3.5	Bicultural
		Cree-Eng	88%	<12	PT	0.5	4	4.5	Bicultural
		Eng/Cree	27%	<12	NW	1	1	4	Euro-Canadian

Appendix E:e-1: List of evaluated respondents

Peawanuck	20s(13)	Eng	46%	>13	FT	1	0.5	6	Euro-Canadian
		Eng/Cree	35%	<12	PT	0.5	1	4.5	Euro-Canadian
		Eng	20%	<12	NW(Y)	0.5	0	4	Euro-Canadian
		Cree-Eng	37%	<12	PT	0.5	2.5	4.5	Bicultural
		Eng/Cree	45%*	<12	N(Y)	0.5	1	4	Euro-Canadian
		Cree-Eng	37%	<12	Y	0.5	2	4.5	Bicultural
		Cree-Eng	44%	<12	Y	0.5	2	4.5	Bicultural
		Cree-Eng	54%	<12	Y	0.5	2.5	4.5	Bicultural
		Eng/Cree	46%	<12	Y	0.5	1.5	4.5	Bicultural
		Cree/Eng	competent	<12?	NW	0.5	4	2.5	Aboriginal
		Cree/Eng	competent	<12?	NW	0.5	4	2.5	Aboriginal
		Eng/Cree	44%	>13	NW	1	1	5	Euro-Canadian
		Eng-Cree	69%	<12	NW	0.5	3.5	4	Bicultural
Note:									
* estimated transmission rates									
Legend:									
Cree-Eng: equally functional in Cree and English									
Cree/Eng: fluency in Cree and limited command of English									
Eng/Cree: fluency in English and limited command of Cree									
<6: grade 6 and less									
<12: grade 7 to 12									
>13: grade 13 and more									
FT:full-time employment									
PT:part-time employment									
NW:non wage									
(Y):formerly held wage employment									

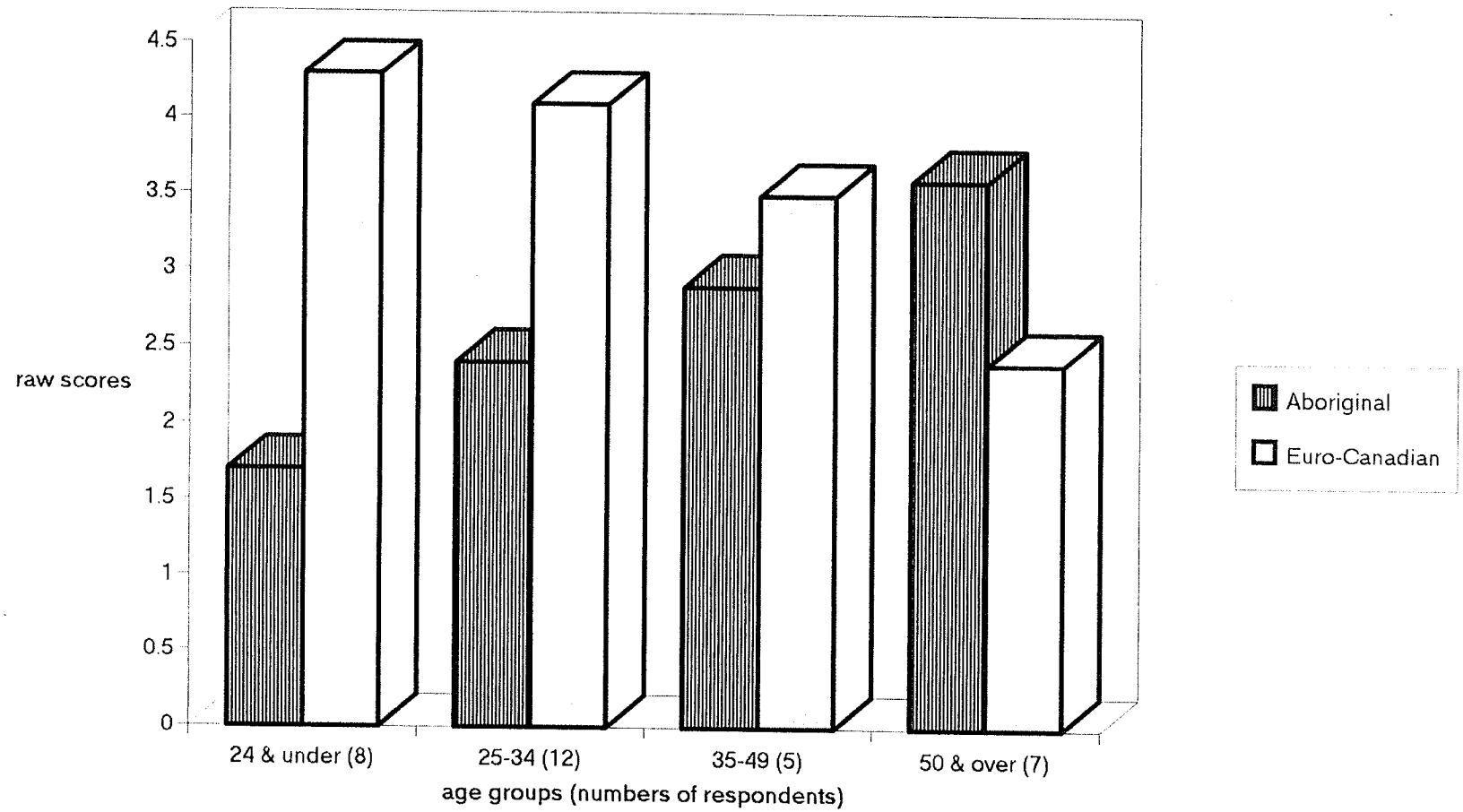
Appendix E: e-2; Cultural Orientation;

Scores of Cultural Orientation, Moose Factory



Appendix E:e-2; Cultural Orientation;

Scores of Cultural Orientation, Peawanuck



Appendix F:

f-1: Frequencies of bush activities

Age group: 10s, 20s, 30s, 40s, 50s, 60s
Occupation: FT, PT, NW

1. How often do you go out to the bush?
   With whom do you go?

2. What kind of activities do you do?
   How long do you stay? Why do you go?
   Is it important for you to go to the bush?

3. Does your husband/father HFT? Do you go with him?

4. Do you process/ clean his harvest at home?
   If not, who does it for you? Do you want to learn?

5. What do you think about hunting, fishing, and trapping?
   Do these harvesting activities important for you?
   Do you like bush food? Is bush food important for you?
   Why?

6. Do you share bush food? With whom?
   Do you send bush food outside of this community?

7. If you give bush food, what do you receive in return?
   If you receive bush food, what do you five in return?

8. If you need bush food, whom do you ask for?

9. Younger women are increasingly losing traditional skills, e.g. cleaning animals and tanning hides.
   What do you think about this?
   Do you think it is bad and they should learn these skills?
   Or time are changing and they do not have to learn these skills? Do you want to learn these skills?

Appendix F: f-2: List of 93 bush skills

Bush skills	O/N	Age	Teachers	Bush skills	O/N	Age	Teachers
fetch water				chainsaw repair			
fetch wood				using chisel			
starting fire				setting up tent			
baby sitting				making skeegan			
dressing warmly				making e.shelter			
making bannock				packing for trips			
boiling meat				handling dogs			
sakabon				using paddles			
abuwan				using sails			
cleaning fish				driving motors			
smoke/dry fish				driving skidoos			
plucking duck				skidoo/motor repair			
plucking wavy				using bush radios			
plucking niska				setting up radios			
gutting fowl				setting fishnets			
shinegamishigan				fish seining			
mikobeshigan				rod fishing			
nameshitek				making bait			
smoke beaver				maintenance /fish holes			
neohiganak				setting net under ice			
pemmican				setting snares			
canning				setting traps			
pickling				handling of guns			
deborning moose				animal calls			
cleaning rabbit				reading animal moves			
cleaning muskrat				indian medicine			
stretching rat fur				reading ice, weather			
cleaning beaver				orientation in bush			
stretching beaver				wood horse/poles			
streching squirrel				moose bone scrapers			
stretching weasel				bear bone scrapers			
stretching otter				bone needles			
stretching fox				snowshoe netting			
stretching marten				making fish nets			
stretching mink				making mit string			
raw hide rope				rabbit skin work			
fixing caribou hide				bead embroidery			
fixing moose hide				silk embroidery			
smoking hide				snowshoes frames			
goose grease				cradle board			
moose grease				wood works			
seal oil				moss bags			
fish oil				feather blankets			
handling axes				making moccasins			
handling saws				making mittens			
sharpening knives				making seal boots			
using chainsaws							

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