

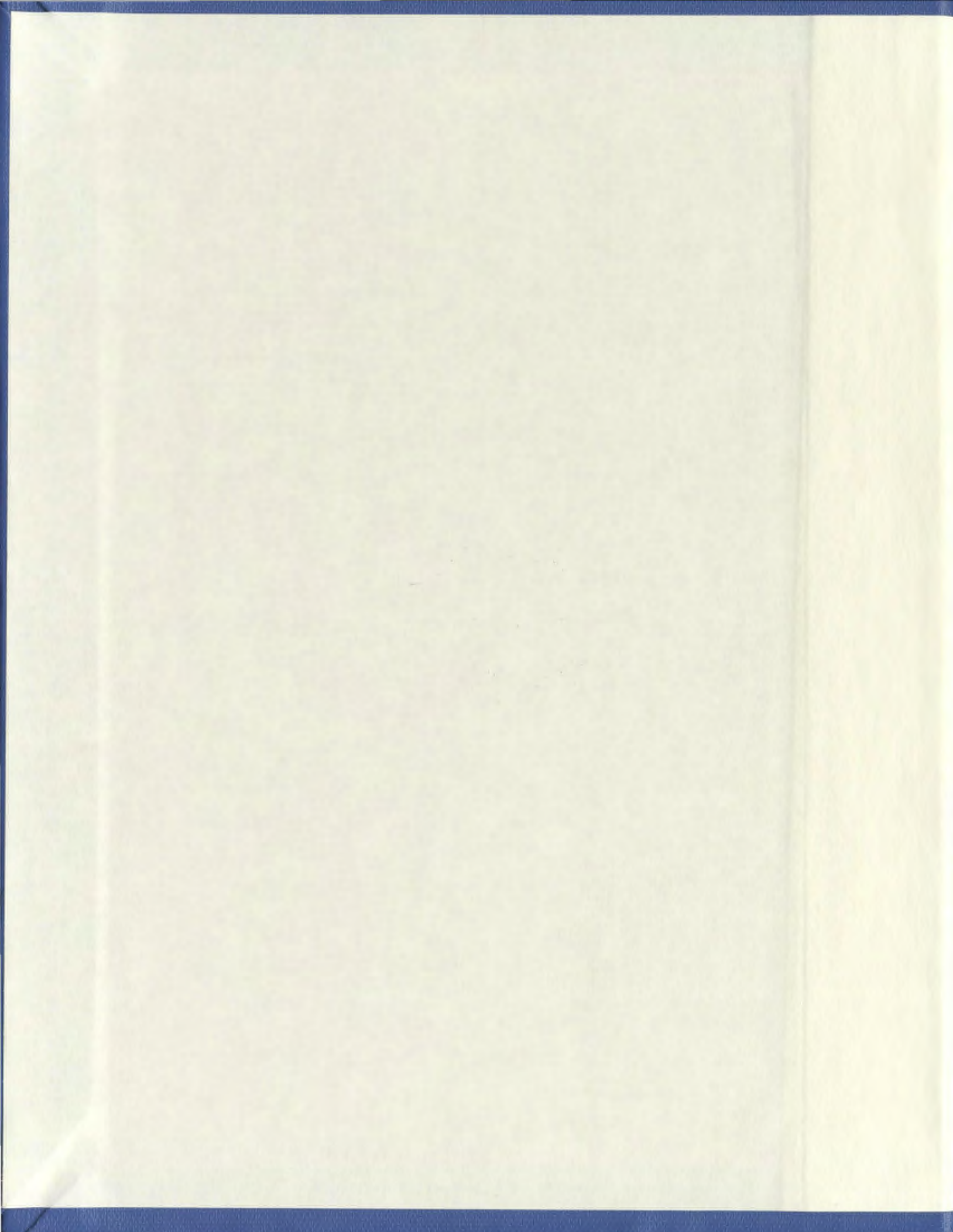
NORTH LABRADOR AND THE TORNGAT CO-OP:
AN EXPLORATION OF CHECKLAND'S SOFT
SYSTEMS METHODOLOGY THROUGH ITS
APPLICATION TO FISHERIES DEVELOPMENT

CENTRE FOR NEWFOUNDLAND STUDIES

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HAMISH GORDON RENNIE, B Sc (Hons)





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North Labrador and the Torngat Co-op:
an Exploration of Checkland's Soft
Systems Methodology through its
Application to Fisheries
Development

BY

© Hamish Gordon Rennie, BSc(Hons)

A thesis submitted to the School of
Graduate Studies in partial
fulfillment of the requirements
for the degree of Master of Arts

Department of Geography
Memorial University of Newfoundland
August 1989

St. John's

Newfoundland



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ABSTRACT

Checkland's "soft systems" methodology was developed for analysing institutional problem situations and the extension of its use to geography has been the focus of some debate in the geographical literature. Some geographers have argued that the methodology is not fundamentally different from the traditional "hard systems" methodologies or, alternatively, that it cannot be applied to the type of problem situations (i.e. regional, open-ended) which are the main focus of geographers' concern. Others disagree and suggest that these views reflect fundamental misunderstandings of the philosophy which underpins the methodology. This debate has taken place within an overall framework of concern over the perceived failure of the systems approach to make the expected progress within geography over the last twenty years. Some have ascribed this failure to the inadequacies of systems' methodologies.

This thesis explores the potential of Checkland's methodology for use by geographers. It examines the methodology's philosophical base and applies the methodology to a problem situation within the domain of fisheries geography. The situation selected is the North Labrador fishery and the role played by the native peoples' co-operative in its current development. The research consequently develops two main threads: the philosophic, and the applied.

The philosophic analysis suggests that the methodology would be more soundly based on Husserlian phenomenology than on the mixture of positivist and existentialist philosophies Checkland espouses. The application of the methodology results in a richer expression of the North Labrador fishery than would have been expected from a more traditional approach. A number of conceptual models are generated for both the North Labrador fishery and the Torngat Co-operative, and the capacity of the methodology to produce results that relate well to current theoretical approaches such as "modes of production" is demonstrated. The implications of the overall analysis of the models are that the North Labrador fishery should be seen as part of a pluralistic economic system and that the role of Torngat is one of operationalising the drive for greater independence by North Labradorians.

The overall conclusion is that the methodology has the capacity for use in geographical research, but requires additional development before it can be expected to readily attract geographers. It is suggested, however, that geographers should play a role in such developments, particularly through extending the number of applications the methodology receives in supra-institutional research.

Key Words: Checkland's methodology; soft-systems methodology; Labrador; fisheries geography; phenomenology; Torngat Co-operative; First Peoples; Native rights; government policy

To Tam Ox

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It is not possible to give due recognition to all those who have aided the production of this thesis. Those not mentioned have not been forgotten.

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"Believe it or not Mr. De Bané, Torngat Co-op is the first stirring of an oppressed people that have been victimized for generations by outsiders. It is the people deriving the utmost for themselves from their own resources and it is marching ahead of the total North coast of Labrador in a combined effort for recognition of its needs and showing Canada that we are moving ahead with confidence in ourselves and hope for ourselves. We will stumble, we will falter, and we will err, but by God, we will keep on trying."

Alex Saunders, General
Manager, Torngat Fish
Producers' Cooperative
Society Ltd. in a letter
to Mr. De Bane

CHAPTER ONE

Introduction: Scene Setting

1.1 Thesis objectives

"From both a methodological and an empirical point of view . . . the concept of a system appears absolutely central for our understanding of explanation in geography."
(Harvey 1969:449)

More than a decade after Harvey's pronouncement and despite considerable use of systems terminology and techniques, Huggett (1980) noted the exceedingly slow progress of systems analysis in geography. In commenting on Huggett's reasons for this lack of substantial progress, Morgan (1981a) argued that it is not so much the complexities of the "real" world that had inhibited systems analysts in geography, but the failure to develop or adopt suitable methodologies for implementing the systems approach. Morgan (1980, 1981a, b) argued instead that geographers should look more closely at the potential of a "soft" systems methodology developed by Checkland (1981).

The debate between Morgan (1981a, b) and Huggett (1981) resulted (in my view) primarily from a combination of two factors: differing understandings of the nature of the theoretical and philosophical underpinnings of the soft systems methodology, and a paucity of geographical

research using the methodology (which left both authors with little of empirical substance on which to argue). During the course of the research on this thesis the methodology came in for further debate in the geographical literature (Agnew 1984, 1985; Rennie 1985), largely for the same reasons.

These debates point to quite fundamental difficulties with the methodology. Some of these have been noted by its originator (Checkland 1981), namely, that "reductionist thinking" dominates those educated in Western civilizations", and that the counter position "does not provide a clear philosophy" (Checkland 1981:97). Unfortunately Checkland's argument, while in parts profoundly phenomenological and explicitly recognising subjectivity, is in other parts rigidly positivist and rooted in a conception of the nature of the physical world as objectively assessable through positivist scientific method. These two opposed conceptions (see Chapter Two) can, in Checkland's view, live compatibly if the world of knowledge seeking is divided into the social and natural sciences and if each is accepted as "fundamentally different" (ibid: 246).

Geography straddles both fields, yet paradoxically while Checkland argues for his methodology as a tool for

the social sciences the only major attempt to apply the methodology in geography, prior to this thesis, has been a biogeographer's analysis of the New Forest in England (Morgan 1977). This thesis was therefore conceived initially as a test of the potential of the methodology as a unifying tool for geographers. However, at the outset, it became apparent that there would need to be a sound phenomenological philosophical base if the criticisms of systems methodologies as positivist and supporting the tyranny of the status quo (Hoos 1976, Gregory 1980, 1981) were to be overcome. Consequently the thesis has developed two objectives:

- (i) to establish the methodology within a phenomenological framework; and
- (ii) to exemplify this concept by showing how a phenomenological soft systems approach yields a richer understanding of a situation of interest to geographical research (in this instance, North Labrador).

Hence, while the empirical data for this thesis are from within the realm of fisheries geography, this is incidental to the main thrust of the thesis - a primarily philosophical exploration of Checkland's methodology, but

one which is grounded in empirical data. Consequently, there is only limited reference to the work of geographers. This is not a denial of the value of work done by geographers, but rather a recognition of their limited experience of Checkland's methodology and its phenomenological base. This may seem strange given the ample literature on, or using, systems within geography (e.g. Ackerman 1963, Berry 1964, Chapman 1977, Chorley 1962, Draper 1977, Jonsson 1981, Warntz 1973 and Woldenberg and Berry 1967), but apart from Morgan (1977, 1980, 1981a, b), O'Reilly and Rennie (1983), Agnew (1984, 1985), and Rennie (1985), geographers have largely ignored Checkland's version of systems methodology. The basis of the two approaches to systems analysis ("hard" and "soft" - see Chapter Three) is sufficiently different to render detailed cross-referencing and analysis of little relevance to the main thrust of this thesis.

Similarly those geographers who have looked seriously at critical rationalist and phenomenological approaches (e.g. Billinge 1977, Buttimer 1974, 1976, Jackson 1981, Ley and Samuels 1978, Smith 1981, Tuan 1968, 1974) have generally eschewed systems as functionalist and not emancipatory (Gregory 1980, 1981). They have also adopted existentialist "lifeworld" as opposed to Husserlian phenomenological interpretations.

Checkland's methodology, as this thesis will demonstrate, is more Husserlian than existentialist. Consequently, there are few opportunities to draw on the work of phenomenological geographers.

1.2 Thesis Methodology

As the methodology has had limited application in geographical research (Morgan (1977) and O'Reilly and Rennie (1983) provide the only case studies known and each has its limitations), an exploration without application would be of dubious validity. Published experiences of using the methodology in supra-institutional studies (into which domain most geographical research problems fall) are also limited, with Cornock (1980) a notable exception. Additional supra-institutional experiences with the methodology are needed to assist analyses of the methodology and this thesis contributes directly to that experience.

In this thesis an attempt is made to evaluate Checkland's methodology and its utility for geographical research. To enable the evaluation to proceed it was decided an application, in the form of a case study, was essential. The thesis research therefore focusses upon the application of the methodology to identifying "the

role of the Torngat Fish Producers' Co-operative in the North Labrador Fishery". This application was chosen for four reasons:

- (i) my lack of knowledge of it (which would assist in minimising bias);
- (ii) it was identified as a problem situation, but one that was also unclear;
- (iii) it was considered the data available would be fairly limited and thus logistical constraints would not hamper the successful completion of the research; and
- (iv) it had potential to shed light on the socio-economic role played by a native peoples' fishery development in a regional context (i.e. a practical outcome was possible). The combination of physical, human and regional factors was also considered a suitable testing ground for Checkland's methodology and its potential for utilisation by geographers.

For reasons explained in the text, a phenomenological commitment was made in an attempt to provide a fair assessment of the methodology. As a consequence the method of thesis presentation and data collection differs somewhat from the norm of geographical research.

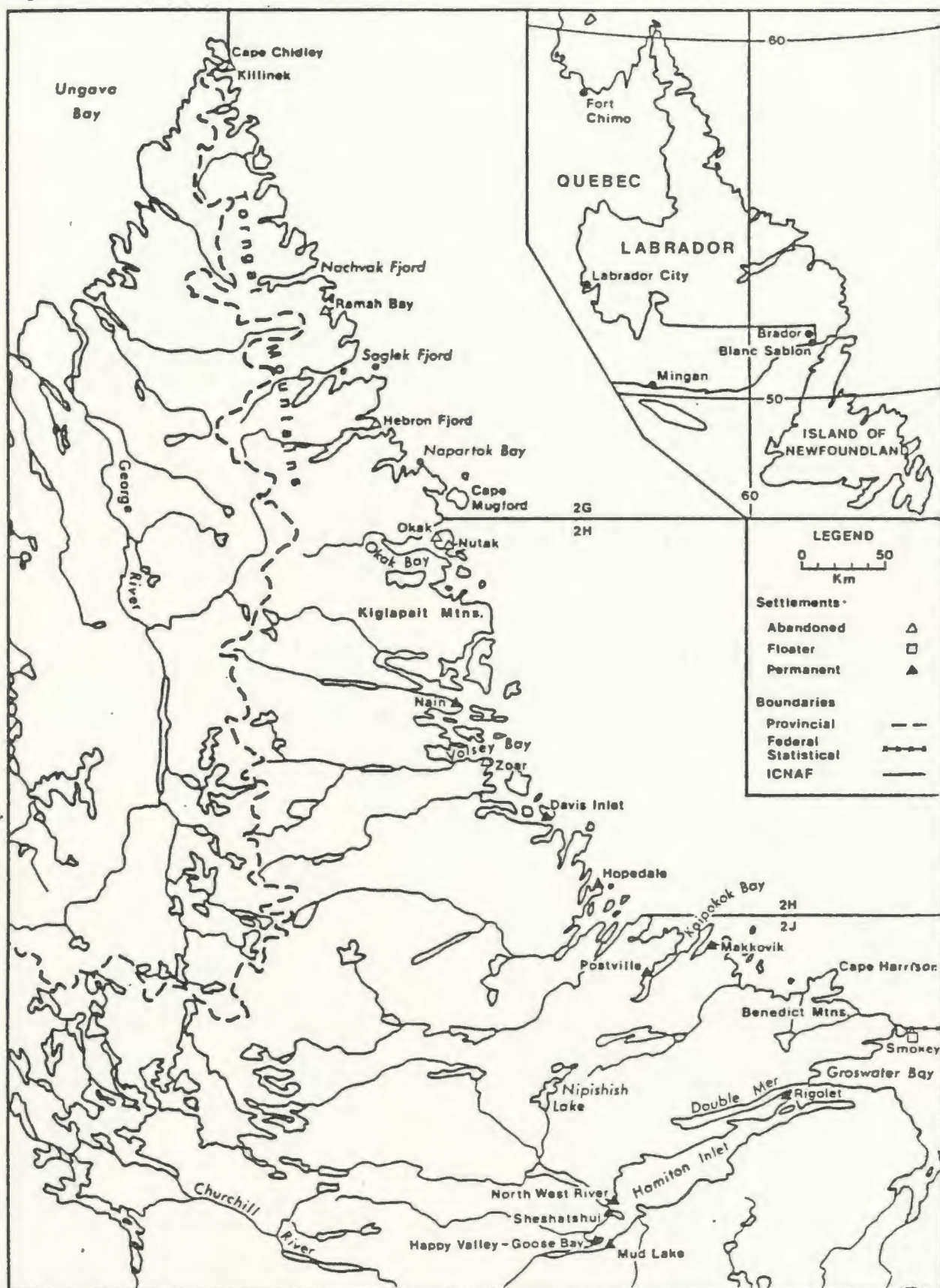
For example, the process of Checkland's methodology is an iterative one. In presenting the outcomes of each step of the methodology, the interdependent nature of the steps is problematic. The methodology is usually used as a consultant's tool and the presentation of the outcome of such use is the focus, rather than the methodology by which it was achieved. This is not readily amenable to a piece of academic research. For instance, the methodology resulted in a relevant system and root definition being identified which related to a particular theory of development. Development theory was not an area familiar to me prior to commencing the research. In order to keep the discussion of the conceptual models focussed, I have not included a sketch of the relevant development theories in the "review of literature" which comprises Chapter Two.

Similarly, as a trained positivist scientist, I felt considerable discomfort with the quantitative data

collected in that I was not overly confident in the validity of the data in positivist terms. However, in the context of Checkland's methodology there is no real world and consequently the data presented to me had its validity in simply "being". By making a phenomenological commitment, exploration of the validity of the raw data would not only be invalid, but would tend to give it more weight than it should have in its context.

On another level, I was conscious that the audience for whom the outcomes of Checkland's methodology are usually intended is one familiar with the subject (in this case the North Labrador region, Figure 1). An academic thesis however is written for people not necessarily familiar with the specific subject/location in which the research takes place. Hence a description of the region is usually included early in the thesis. To present such a background in this thesis would have implied an objectivity and a reality which would not be in keeping with the methodology. In an attempt to resolve this I have tried to order the data collected (and expressed in the rich picture of Chapter Four) in a way which facilitates the reader's comprehension of North Labrador.

Figure 1. North and Central Labrador



Some may see this as, in fact, presenting North Labrador from the perspective of the conceptual model (which is sovereignty-based) which appeals most to me. This may be true, but (while I am confident it arises naturally from the data) it does not alter the rigour of the analysis or methodology. It should be noted that the significance of sovereignty issues and the historical domination of one culture and mode of production by another is not usually at the forefront of geographers' fisheries research. Consequently this in itself provides a "new" perspective, a "learning experience" which is one of the hallmarks of Checkland's methodology and an indicator of its success.

Two unanticipated difficulties have also affected the research significantly; (i) the unexpected wealth of poor quality but phenomenologically valid data that the methodology unearthed, and (ii) substantive changes in my personal situation. As mentioned above, at the outset I was led to believe by people familiar with the region that I might encounter difficulties obtaining much data. Some suggested that to have enough data for a thesis I should look at expanding the subject (to include, for instance, southern Labrador, or the Fogo Island Co-operative). Once the research commenced, it became apparent there was substantially more information

available than anticipated. This eventually posed considerable logistical problems if the data was to be adequately covered in the time available, and be presented in a format comprehensible to those unfamiliar with the methodology or the region.

The second set of problems were those resulting from changes in my personal situation. These resulted in the thesis taking considerably longer to complete than envisaged. Consequently the final step intended, the comparison of the conceptual models with the "real" world, was not able to include the debate between key players which the Checkland methodology calls for. Although unfortunate, this has not invalidated the research.

This extended time frame has also encompassed my return to New Zealand and (as a direct consequence of my research) my employment with New Zealand's (then) Ministry of Foreign Affairs as an aid administrator. This experience has enhanced and informed my understanding of development theory and of the perspectives of the employees of the Newfoundland and Canada Governments, especially those dealing with North Labrador on a day-to-day basis. It has not, however,

significantly affected the major conclusions drawn in this thesis.

1.3 Structure of the thesis

This thesis consists of eight chapters, commences with an "Introduction" and ends with a "Conclusion". In the Introduction the main aims of the thesis and its structure are briefly outlined. Comment is also made on problems encountered which have affected the presentation of the thesis.

Chapter Two provides a philosophical background to the research. It deals with the Received View and positivism, the major criticisms of these views and the continuing battle over objectivity/subjectivity, neutrality/value-ladenness, and reality/fantasy. The major alternative to positivism, phenomenology, is described and parallels drawn between it and the Weltanschauungen approaches of positivism's critics.

This leads to the establishment of science (positivist or phenomenological) as rhetorical transaction, the purpose of which is to advance the particular interests of those involved in it.

Chapter Three describes the Checkland methodology and some of the issues which it addresses. In particular it provides a transition from the philosophy to the methodology in practise.

Chapter Four is an expression of the "rich picture" of the North Labrador fishery. The field area, North Labrador, is described together with its history. Demographic and historical data combine with data derived from fieldwork to provide a range of perspectives of the current situation. Particular emphasis is paid to the fishery, but the interdependence of regional resources and man's well-being arises from the methodology.

In Chapters Five and Six, relevant systems and root definitions provide a basis for conceptual modelling of Torngat and the North Labrador fishery.

Chapter Seven provides a comparison of the outcomes of the models with the "reality" of the region. It also provides a comparison with root definitions and models resulting from an out-of-order use of the methodology.

Chapter Eight draws together the threads of the thesis and identifies directions for future research on the methodology. Although titled a "Conclusion" it in

fact sets the framework of a new problem situation for exploration.

CHAPTER TWO

"Dancing on Pinheads?" The Philosophic Context

2.1 Introduction

As mentioned above, the basis of this thesis is a methodological test and critique. The proponents of the methodology which is being examined have recently attempted to ground it within a philosophical context (Checkland 1981). Hence, just as Chapter Three describes the field context within which the empirical data for the test were collected, so must this chapter treat the philosophic equivalent.

An exhaustive and comprehensive coverage of this would, however, require more space than its relative importance to this research permits. Consequently, this chapter neither achieves nor attempts this, but instead focusses on areas I consider most relevant and interesting. The major strands emerging from this discussion are related to systems thinking and practice and also to geography.

2.2 "Philosophically . . ."

My emphasis in this section is on two main philosophic schools of the twentieth century: the "positivist/Received View" and the "phenomenological". The rationale behind this will become apparent in later sections.

2.2.1 Positivism and the Received View¹

Scientific objectivity is a much sought-after commodity in the world of academic research, but this is a fairly recent phenomenon (Habermas 1971). To a large extent objectivity can be considered the child of the positivist philosophy, or anti-philosophy (Kolakowski 1968), formalised by Auguste Comte in the early 19th century. The subsequent influence of positivism has been so all-pervasive in the western world that it has had a major impact on the development of both geography and systems methodologies (see Sections 2.3 and 2.4). Hence in this section I will briefly outline the fundamental tenets of positivism and describe some of the criticisms

¹ The following discourse owes much to discussions held in a compulsory graduate geography course (GEOG 6000: History of Geographic Thought) under the guidance, in 1983, of Dr. Roger White at Memorial University of Newfoundland's Department of Geography.

and developments which have led to its modern-day expression in the Received View.

Although Kolakowski (1968) argues that Hume is more deserving of the appellation "the Father of Positivism", it was Comte who coined the term "positive" for the set of methodological precepts he expounded as the basis for his philosophy (Habermas 1971). It is in these precepts that we find the division of the search of knowledge into the objective scientific-technical and the metaphysical, the former being (in Comte's view) more worthy of pursuit than the latter.

Basically he used "positive" to refer to

"the actual in contrast to the merely imaginary (réel-chimérique), what can claim certainty in contrast to the undecided (certitude-l'indécision), the exact in contrast to the indefinite (le précis-le vague), the useful in contrast to the vain (l'utile-l'oiseux), and, finally what claims relative validity in contrast to the absolute (le relative-l'absolu)"

(Habermas 1971:74)

Le réel is fundamental to positivism's attempt at differentiating between lines of inquiry directed towards attainable objects of research and those devoted to undecidable, meaningless and unfathomable mysteries. For knowledge to acquire scientific status it had to be

guaranteed by "direct experience of an immediate reality" (Gregory 1978:26). The influence of empiricist schools on Comte's thought is clear: observation through sense experience defines the domain of "facts". This phenomenal approach, as Gregory (ibid.) indicates, "effectively proscribed any critical reflection on the principles of science" by confining such to the metaphysical, "meaningless" category.

However, and this is crucial to the argument in Section 2.3, le réel was qualified by la certitude. In effect this means that empiricism by itself was deemed insufficient and must be supplemented by methodical certainty. The universe was seen as too vast, too complex to be able to be comprehended. Consequently the unity of knowledge must be restricted to a subjectively chosen systematic procedure of investigation.

"Science asserts the priority of method over substance, because we can reliably inform ourselves about substance only with the aid of scientific modes of procedure. The certainty of knowledge demanded by positivism thus means simultaneously the empirical certainty of sensory evidence and the methodical certainty of obligatorily unitary procedure."

(Habermas 1971:75)

The unity of method meant that observations should be replicable, thus giving grounds for certainty.

Comte went still further with le précis. In order to provide exactitude for knowledge, fact statements must be connected with theoretical statements, thereby obtaining scientific value:

"no isolated fact, no matter of what sort, can really be incorporated into science before it is at least correctly connected with some other conception through the aid of a rational hypothesis."

(Comte 1864: cited in Habermas 1971:75)

"Correctly connected," Comte considered, involved deductive connections. Thus "scientific progress" could attempt to provide a unity of knowledge through

"decreasing gradually the number of separate and independent laws through an unceasing extension of their connections."

(Comte 1864, cited in Habermas 1971:76)

As Habermas (1971:76) noted, Comte was aware that he combined rationalist and empiricist principles, but he could do this because they were functioning as "normative rules of scientific procedure, through which science itself receives its definition".

The introduction of l'utile stems from this combination of epistemologically opposed schools. Essentially l'utile emphasises that all scientific knowledge must have technical utility and that science

enables processes of both nature and society to be technically controlled. Using a Baconian viewpoint, but extending it to include the social sciences, Comte argued that

"genuine science - far from consisting of simple facts - always aims as much as possible at freeing us from immediate [empirical] research by replacing the latter with that rational foresight which represents in every respect the hall-mark of the positive spirit ... This significant property of all our sound theories is just as important for their practical utility as for their intrinsic value. For the immediate investigation of fixed phenomena would not suffice to permit us to change their course if it did not lead us to foresee the latter adequately."

(Comte 1864, cited in Habermas 1971:77)

Knowledge of laws to enable facts to be both explained and foreseen, he believed, enabled "the continuous improvement of our individual and collective conditions of life" (Comte 1864, cited in Habermas 1971:76).

The fifth precept, le relative, forms an acknowledgement of the limitations of positivism and mortals, of the inability to acquire certain knowledge of ultimate origins. Thus positive knowledge is not absolute, but remains unfinished and relative.

"Not only must our positive investigations universally and essentially be restricted to the systematic judgement of what is, by renouncing the

discovery of its ultimate origin and final designation, but it is also important to realize that this study of phenomena, instead of somehow being capable of becoming absolute ..., must always remain relative to our organization and our situation."

(Comte 1864, cited in Habermas 1971:78)

These then, le réel, la certitude, le précis, l'utile and le relative, form the base of Comte's positivism. He believed positivism constituted the third stage in the history of the human mind (Kolakowsk: 1968:54-62); the first two being the theological (covering the progression from fetishism to polytheism to monotheism) and the metaphysical (in looking for the "why" the mind looks for "natural" as opposed to "supernatural" divinities - a process which compresses occult "powers", "qualities", "forces" into the single overall concept of "nature"). In the positive stage we no longer ask "why?" or speculate on the hidden nature of things, but look at "how" phenomena arose and what course they take.

"It (positivism) does not employ terms that have no counterpart in reality. Its sole aim is to discover invariable universal laws governing phenomena in time, and for this purpose it makes use of observation, experiment, and calculation. ... the human brain should be a faithful mirror of the objective order, and knowledge of this order serves as the mind's own ordering principle."

(Kolakowski 1968:56-57)

The legacy of Comte's positivism is still readily apparent and familiar to most scientists and those familiar with the practise of "science".

"the rejection of metaphysics, faith in the essential unity of the sciences, the (unobtainable) ideal ... of reducing all knowledge to a single universal formula, and the interpretation of knowledge as ultimately of practical value or nothing."

(Kolakowski 1968:68)

The problem for positivism is, paradoxically, its metaphysical base. Under positivism the "scientistic self-understanding of the sciences ... replaces the philosophical concept of knowledge" (Habermas 1971:80). This leads naturally to the delineation of science as science. Habermas (1971:80) puts the problem thus:

"Science is delimited from other cognitive activities primarily through its object domain. In turn, the object domain can be defined only by methodological rules of inquiry. Since these rules, however, are derived by projecting individual rules of pre-critical epistemology onto the level of methodology, they can be suited for a definition of science only if they have already been selected according to an implicit pre-understanding of science. This pre-understanding has emerged critically from science's self-delimitation from metaphysics. Nevertheless, once epistemology has been displaced, the only system of reference available for the explicit demarcation between science and metaphysics is the very metaphysical system that has been withdrawn from circulation."

How, then, can science provide a scientific basis for the demarcation between itself and metaphysics?

"Since the path of reflection on the meaning of knowledge is blocked off and the meaning of science is prejudged according to the model of replicating reality, the only remaining possibility is that of elucidating the possibility of the objectivism that has been adopted as a foundation. If science differs from metaphysics in describing facts and relations between facts, the problem of demarcation leads to the problem of what the significance of the positivity of facts actually is. Epistemology, having been disavowed, revenges itself with an unsolved problem that now has to be dealt with by an ironically restored ontology of the factual."

(Habermas 1971:80-81)

The above discourse does justice to neither Comte nor Habermas, but I believe it suffices as the necessary background for the Received View and provides the thesis for the antithetical phenomenological approach discussed below.

In describing, once again inadequately, the Received View it is important to note its relationship to positivism. The Received View is part of a Germanic movement and consequently its development was influenced by philosophic trends in Germany at the time of its original formulation, the first quarter of this century (Suppe 1977b). According to Suppe (1977b:8-10) the three main philosophic positions held at the turn of the

century were "mechanistic materialism", "neo-Kantianism", and "Machian neo-positivism".

Mechanistic materialism was an amalgam of Comptean positivism, materialism, and mechanism; matter was paramount and empirical enquiry was favoured over philosophical speculation. There was "no doubt that a real objective world exists independent of individual perceivers" (ibid:8), that observation of this world was immediate, and if done "in accordance with the procedures of natural science", would provide knowledge of the world's "mechanistic nature". Hence there was no room for a priori elements to enter consideration, nor was any conceptual mediation involved in obtaining observational knowledge.

Neo-Kantianism paved the way for an escape from the purely phenomenal by insisting that science must discover the structure of phenomena, and arguing that thus science could obtain knowledge in the form of webs of logical relations. Sensory experience was merely an exemplification of an underlying ideal world structure and scientific laws would describe this structure. Hence scientific knowledge can be seen as absolute, not relativistic.

The neo-positivism of Ernst Mach initially accepted a neo-Kantian a priori element in scientific theories. Later, however, his approach dealt with science as being "no more than a conceptual reflection upon facts whose elements are contents of consciousness given to us by sensation" (ibid:9). There could be no place for absolute space and time, but all scientific statements must be empirically verifiable and all empirical statements must be able to be reduced to statements about sensations.

With the 1905 publication of Einstein's special theory of relativity and the subsequent development of quantum theory, a philosophical "crisis" emerged - none of the philosophic schools of thought were compatible with the new physics. The attempt to resolve this crisis which gave rise to the Received View was that of Moritz Schlick and the Vienna Circle. Their solution was based on Mach's neo-positivism, modified to enable the inclusion of mathematical logic and theoretical terms. Suppe (1977a:16-17) describes the initial version as

"Construing scientific theories as axiomatic theories formulated in a mathematical logic L meeting the following conditions:

- (i) The theory is formulated in a first-order mathematical logic with equality, L .

- (ii) The non-logical terms or constants of L are divided into three disjoint classes called vocabularies:
 - (a) The logical vocabulary consisting of logical constants (including mathematical terms).
 - (b) The observation vocabulary, V_o , containing observation terms.
 - (c) The theoretical vocabulary, V_T , containing theoretical terms.
- (iii) The terms in V_o are interpreted as referring to directly observable physical objects or directly observable attributes of physical objects.²
- (iv) There is a set of theoretical postulates T whose only nonlogical terms are from V_T .
- (v) The terms in V_T are given an explicit definition in terms of V_o by correspondence rules C - that is, for every term "F" in V_T , there must be given a definition for it of the following form:

$$(x) (Fx = Ox),$$

where "Ox" is an expression of L containing symbols only from V_o and possibly the logical vocabulary."

In tracing the evolution of the Received View from this initial version to what he describes as the "final version", Suppe (1977a:17-53) highlights three major problems:-

² Suppe's footnote 32 merely notes that he has included a clause (iii) which probably would not have been included originally because the necessity for a semantic-syntax destination was not clearly seen at that time. Also "=" is to be read "if and only if", "(x)" is "for every x" (ibid: 12 fn 22).

- 1 admissibility of correspondence rules and the consequent criterion of cognitive significance,
- 2 realistic versus instrumentalist interpretations of theories, and,
- 3 the distinction between observables and non-observables.

To understand the admissibility problem we must first be clear on the functions of correspondence rules in the Received View:

"first, they define theoretical terms; second, they guarantee the cognitive significance of theoretical terms; third, they specify the admissible experimental procedures for applying a theory to phenomena."

(ibid:17)

As Suppe shows, the form of the correspondence rule is fundamental. If legitimate experimental methods lie outside admissible forms then new forms will have to be admitted, thereby giving rise to "new kinds or forms of definition" for theoretical terms. As cognitive significance is dependent on these definitions, the criterion of cognitive significance also changes in response to the introduction of new forms of correspondence rules. Consequently the most important

changes in the Received View involved the correspondence rules.

Amongst the attempted modifications of this clause (V), the special case of explicit definition of correspondence rules through "operational definitions" (Bridgman 1927) is worth brief explanation, if only because of its continued use by today's scientists.

Basically Bridgman (1927:5) argued that "the concept is synonymous with the corresponding set of operations". Suppe (op. cit.:18-20) provides three arguments which he believes eliminates such a definition. The first is that explicit definitions are fundamentally dispositional and therefore, following Carnap, cannot be admitted under the Received View, for it permits of confusion between theoretical terms which are not subjected to observational verification.

His second and third arguments are based on the fallacious assumption that merely because scientists treat concepts (such as "mass") as equivalent, regardless of the wide variety of sets of operations used to define them, then those concepts are in fact one and the same concept, but measured (in the case of mass) in different ways. Bridgman, on the other hand, maintained that there

are as many distinct concepts (of, say, mass) as there are procedures for determining them and that scientific practice was confused when trying to equivocate them illegitimately. Suppe also rejects Bridgman's analysis as "unreasonable" because of the possibility of developing new methods for measuring the same concept and the consequent proliferation of concepts (which Bridgman considers a virtue) that would ensue. Suppe's refusal to accept Bridgman's analysis emphasises an underlying pragmatic acceptance of realism which I consider a major flaw in Suppe's (1977a) paper and which largely and explicitly explains his later impatience with Feyerabend (Suppe 1977).

The eventual outcome of attempts to clarify correspondence rules and cognitive significance was acceptance of our inability to define theoretical terms. Instead a theory may have observable consequences which renders it testable; but these consequences are no more than "the empirical manifestations of theoretical entities interacting in the ways specified by the laws or axioms of the theory." (Suppe 1977a:25). Thus the correspondence rules provide theoretical terms with partial observational interpretations. At the same time the search for a criterion of cognitive significance was

eventually deemed fruitless and abandoned. In the final version of the Received View, correspondence rules:

"specify the admissible experimental procedures for applying the theory to observational phenomena; at the same time they, in conjunction with the theoretical postulates, partially interpret the terms in VT by specifying their observational contents."

(Suppe *ibid*:27)

This weakening of the requirements of CR enabled the inclusion of prediction in the Received View. Suppe notes (1977a:28) that Hemples' "Covering-Law" model of explanation (wherein prediction and explanation are formally the same) was accepted by most proponents of the Received View. However, if theories make predictions/explanations of observable phenomena - that is, they serve to establish lawlike regularities between observable phenomena - are the theories empirically true? Assuming all the theoretical predictions about observable phenomena are empirically true, is this enough to warrant the theory itself as being empirically true?

The answer lies in the empirical status accorded the theoretical postulates, or basic laws, of the theory. This in turn depends on the empirical status of the theoretical terms used in these postulates. Hence we arrive at the instrumentalist/realist distinction.

For the "realist", theoretical terms refer to real, but nonobservable physical entities or their attributes (e.g. the term "electron" refers to a nonobservable entity, an electron, which really exists). Hence the laws of the theory are empirically true generalisations about the behaviour of the entities referred to by the theoretical terms. Consequently the correspondence rules will include "empirically true or false statements how these theoretical entities manifest themselves in observable ways" (ibid:2a). Thus if all the theoretically practical observations are empirically true this is not sufficient to consider the theory itself empirically true as the laws or the correspondence rules may be false.

An alternative interpretation, the "instrumentalist", involves a denial that theoretical terms refer to existing objects. Under this interpretation the issue is whether or not the theory adequately predicts the observations. This adequacy is judged on the basis of whether or not all and only those empirically true observations constitute the predicted observations. Hence not the veracity, but the adequacy of the theory is questioned by the instrumentalist. Grossly oversimplified it could be stated that for the instrumentalist the end justifies the means, and

consequently we are unconcerned with the means except in so far as they adequately provide the end.

As Suppe (ibid:34) points out, however, few people feel comfortable with the concept that the theoretical terms they are using do not necessarily mean, or refer to, any real "thing". Consequently most adherents of the Received View who accept theoretical terms commit themselves to realism. The problem for realists then becomes one of how to account for these nonobservable entities and the meanings of the theoretical terms attached to them. The correspondence rules of the Received View provide the solution:

"theoretical entities may be countenanced whenever they are referred to by theoretical terms which have been introduced by correspondence rules; and such introduction of theoretical terms provides them with empirical meaning."

(ibid:35)

It should be noted, however, that the correspondence rules and the theoretical postulates for a particular theory only provide a partial interpretation and specification of the theoretical terms and their meaning. The full meaning of theoretical terms is not wholly observational.

If, for instance, a "scientist" uses the theoretical term "electron" in a theory, he makes the assertion that an entity exists which has the observable manifestations specified by the theoretical postulates in combination with the correspondence rules. However, "electron" has various other associations of both an empirical and a nonempirical nature. All that the scientist has committed himself to is that his use of the term has captured part of its empirical meaning (cf Sect. 2.2).

The third major problem area of interest to us is the observational-theoretic distinction. Comprehension of this distinction and its difficulties is crucial to understanding the main thrust of my thesis (see especially Sect. 2.2.2). Comprehension is also fundamental to much of the above discussion of realist/instrumentalist viewpoints.

Somewhat surprisingly, most supporters of the Received View considered the idea of "things" being directly observable as non-problematic. Carnap (1966:225-226) attempted to clarify "observable" by distinguishing between the philosophers' and the scientists' use of the term. In particular he argued that where an instrument (for example, a voltmeter) is used to measure something (like voltage) although all

that is directly sensed by the observer is (as the philosopher might suggest) a pointer position, not the actual current, the latter is "inferred" from the former. He then argues that a continuum exists stretching from direct sensory observation to complex indirect methods of observation; hence distinctions along this continuum, whether made by the philosopher or the scientist, are highly arbitrary.

In clause (iii) of the Received View we can see that every term in Vo refers to or designates a directly observable thing or its attributes. There is a distinction between the "language" and the "thing and its attributes" and these must be coextensive. This is an arbitrary distinction which will assume greater importance in Sect. 2.2.2. More importantly, clause (iii) implicitly claims that:

"the assertions which can be made using terms from Vo as their only non-logical terms will be intersubjectively nonproblematic with regard to truth; any two observers who possess the words from Vo used in the assertions, regardless of their scientific or theoretical background, will be able to agree upon the truth of such Vo assertions. Differently put, such assertions are scientifically and theoretically neutral, and nonproblematic with respect to truth."

(Suppe 1977:48)

Here lies the fundamental problem of values, commitment and neutrality, the debate over which is still enjoined. We can see, from the above description of the commitments of realists and instrumentalists, from Carnap's inference, and from his suggestion of arbitrary distinctions, that there is already an intersubjective problem (e.g. is "electric current" an observable (inferred) entity in V_0 or a useful theoretical term?). Suppe (ibid:66-86) goes on to elaborate further problems with the observation-theoretic distinction and concludes:

"The primary rationale for the observational-theoretical distinction was to provide an empiricist methodology. Its approach to doing so was to show how the sentences of L were cognitively significant; doing so amounted to showing that the analytic-synthetic distinction held for all assertions in the language L a theory was formulated in. We have seen that the observational-theoretical distinction fails to do so. Furthermore, the distinction has not been successfully drawn, and what is more cannot be drawn in any plausible way on the basis of ordinary usage of terms in natural scientific languages. The only way the distinction could be drawn is artificially in a reconstructed language, and doing so would introduce an unwarranted degree of complexity into the analysis ... Finally, the distinction fails to capture what is distinctive either of theoretical terms or observation reports in science. The observational-theoretical distinction obviously is untenable. As such, most of the epistemological interest of the Received View is lost. Insofar as the observational-theoretical distinction is essential to the Received View, the Received View is inadequate."

(ibid:85-86)

Before leaving the positivist philosophy it is worth briefly mentioning the work of Karl Popper - if only because of the way in which many geographers invoke his name in support of their positivist research.

Popper (1972) saw the logical flaws in inductively generalising theories and laws from empirical data. His alternative was to adopt a doctrinal realism and to establish on this what has become known as the falsificationist approach to scientific knowledge. In a nutshell, he argued that through "crucial" tests we can falsify "wrong" theories. Theories can never be "true", but when tested against observation and refuted we come up against the "reality" of the world. In other words our theories are about an assumed real world. When they do not "work" then we have to alter our knowledge of the real world.

Leaving aside doubts as to whether or not it is possible to design crucial tests for anything other than the more mundane, and perhaps trivial, aspects of the "real" world (how, for instance, could one crucially test a theory based on a biblical or phenomenological interpretation of the world? - Popper would probably avoid such by proclaiming their basis to be metaphysical and therefore not to warrant the attention of

"scientists"), historians of science have raised the objection that few theories are discarded merely for failing a crucial test. Instead ceterus paribus arguments regarding the test conditions are invoked or additional hypotheses and theories are added to explain the failure of the original theory while still maintaining it (a simple illustration is the oft heard phrase "within the margin of error ..."; another is the practical impossibility of empirically testing the ideal gas equation which would require a pure vacuum - a commodity yet to be found).

Lakatos (1970, 1971) has attempted to provide a normative framework based on "research programs", "negative" and "positive heuristics") for the conduct of science in which this practice of maintaining empirically refuted theories can be justified. In the process of formulating his justification he argues that competing research programs are good for science (no one research program should be allowed to establish a monopoly or become a Weltanschauung (Lakatos 1970:155)). His negative heuristic contains a "hard core" within the research program which if modified or discarded entails the rejection of the research program. The positive heuristic "consists of a partially articulated set of suggestions or hints on how to change, develop the

"refutable variants" of the research program, how to modify, sophisticate the "refutable protective best" around the "hard core" (ibid:135).

The problem with Lakatos' research programs is, as he readily admits, that the validity of their theories can never be established. Hence "it is irrational to suppose that your theory is true, and so science ought to encourage the proliferation of competing research programs" (Suppe 1977a:664).

In summing up this section I wish it to be clear why I have chosen to discuss in such detail the untenable Received View, especially as most practising scientists and geographers (if the two can be considered separable) pay relatively little attention to it. Put simply, the efforts of philosophers and historians of science to refine the Received View have led to the clearest exposition of the inherent difficulties of the positivists' position. Subsequent attempts to re-establish positivism will always fail in my view because they will have to overcome these problems.

At the outset I outlined the five fundamental concepts of Comte's positivism: le réel, la certitude, le précis, l'utile and le relative. The subsequent

discussion of the Received View concentrated on the admissibility of correspondence rules, the realistic/instrumentalist and the observable/non-observable distinctions. These discussions left us in a position whereby the tenability of the Received View is severely questioned, but more importantly the underlying assumptions and need for commitment to particular viewpoints (e.g. realist or instrumentalist), the arbitrary nature of observation and the comprehension of the partial nature of definitions obtainable for theoretic terms (given the above commitment) have been exposed. The subsequent outline of Popper's falsificationism and its Lakatosian expansion has illustrated still further the subjectivity that interthreads and cocoons positivism. In the next section a philosophical approach which explicitly includes the subjectivity of knowledge is presented.

2.2.2 Phenomenology

My discussion of phenomenology will be somewhat briefer than the vast amount of literature on it would perhaps suggest is warranted. This is because, to me, much of what has been written has centred on certain fundamental difficulties with the approach and, because of both the nature of the philosophy and the rather

extreme point to which I am prepared to commit myself, I am not certain they could be resolved. Before discussing these problems it is useful to at least establish the basic philosophical outline.

Essentially the version of phenomenology I have adopted is based on Husserl (as opposed to those of Merleau-Ponty, Sartre, etc. to whom the "lifeworld" phenomenologists in geography more usually turn). Phenomenology is therefore grasping essences through intuiting, it is reflection, it is description and it is subjective. Moreover, as Kolakowski notes, it is a search for "certitude" and

"ultimate certitude can be achieved only in innocence ... the ultimate content of this certitude is incommunicable. To achieve certitude I have to have an insight consisting in a perfect, unmediated convergence of act and content. The insight cannot be replaced by a verbal message which by definition is a mediating device."

Kolakowski (1972:72)

Given this, how is the phenomenological method (upon which phenomenology's claim to be a "rigorous science" is founded) to be communicated through written or spoken word? The answer is that the essence of it may not be, but I can attempt to describe it in at least one form - and that is what follows.

There are two methods which make up the phenomenological method: transcendental (or phenomenological) reduction and eidetic reduction (or constitutive intentional analysis) (Kockelmans 1967b:30-31). The transcendental reduction takes Descartes' position of radical doubt and develops it still further.

"The world and I as a body and empirical subject are "put out of play", eliminated (ausgeschaltet) and bracketed (eignekammert). The pure sphere of transcendental subjectivity can only be attained by means of the phenomenological attitude, which requires the performance of an "epoche" . . . The stream of my cogitationes is immediately and apodictically given; and the world is there as a cogitatum, or as the corresponding object of experience. The objects of experience are then not limited to the factual world, but include all possible objects (as cogitata), such as ideal objects, so-called impossible objects, etc."

Farber (1943:526)³

³ It should be noted that Farber believes in a factual world:

"Existence cannot be derived from essence, or from any ideal constructions. It must be acknowledged in its prior status - prior to human experience in all its forms. The basic fact of the independent existence and reality of the physical world, antedating the emergence of mind (and philosophical systems) by an indefinitely great amount of time, and the dependence of mind upon cultural conditions, must be regarded as preconditions for all sound inquiry in philosophy. These are factual truths, conveyed to us by the course of ordinary experience, and by a host of scientific observations."

(Farber 1943:VIII)

As a phenomenologist my response must be to "bracket" this assertion and consider it merely as one possibility among many.

It is important to understand the nature of this "epoche", and its "bracketing" effect, which is fundamental to the phenomenological suspension of belief in anything other than pure consciousness.

"It does not mean that a thesis is abandoned which was laid down, or that a conviction has been altered. The thesis in question is as it were "placed out of action", "eliminated", "bracketed". It remains in this bracketed form; it is still an experience, but we "make no use of it". This peculiar epoche can be examined with regard to every thesis; it involves a certain abstention from judgement, which is compatible with an unshaken conviction of truth. The judgement (for instance, that our every-day world is "present", that is, "it exists") becomes a "bracketed judgement". In the case of phantasied objects one eliminates the judgement or assumption "I think it as being such and such". Instead of the universal doubt of Descartes, then, Husserl proposes this universal "epoche" ... That which remains when the entire world is eliminated (including us with all "cogitare") is "pure" or "transcendental" consciousness."

Farber (1943:527)

In other words Husserl is arguing that our everyday world (i.e. the world given to us in our "natural" or "naive attitude") is not apodictically given: it is capable of being doubted. In science (especially positivistic science) the world is taken as "real" (see Section 2.2.1), but this is merely belief not certainty.

A perception of an "object" in science becomes a doxic positing of the object's existence. In a similar vein, the objects which we perceive without cognition, that are "simply there" for us as "disinterested observers", when reflected upon, we realise are present to the reflection as an "ontic claim" (while continuing to be present to the original perception "with the ontic character correlative to that act's positionality") (McKenna 1982:148-150).

The phenomenological epoche attained through reflection can be described therefore as "a neutralisation of the positing of the actuality of an object (and of the world in general)" (ibid.:158).

It is within this epoche that I must seek the constitution of the world, for it is within this epoche that I am granted the freedom to search for the "essences" which are manifested in the things which present themselves to my consciousness. This search is undertaken through the method termed eidetic reduction (Kockelmans 1967b),⁴ but before we consider this method we should be clear what "things" fall within the scope

⁴ McKenna (1982:159-177) considers the eidetic reduction described here as the "static" component of what he terms "constitutive intentional analysis".

of this method. In short, that which can be considered a "thing" includes all perceptions and all acts of perception; it includes imaginary objects, phantastical objects, perceptual acts, etc. It should be obvious that under the epoche the difference, for instance, between "dreaming" and "reality", which we find in the "natural attitude", is non-existent - the content of both "dream" and "reality" are considered "objectively" through the refraining reflection (that epistemic reflection which does not posit belief or disbelief in either) as "possibilities", as "ficta" which are part of the experience of consciousness.

Eidetic reduction is aimed at taking the "seeing I" back to the "things themselves". Each perceived "thing" is considered to be a manifestation of a "pure generality", of the "essence". To be able to "intuitively grasp" the essence of a perceived "thing" (i.e. to be able to grasp the essence without mediation), we "run through" the manifold of ways in which the thing can be possibly conceived while remaining the "thing itself".

"Through the most arbitrary changes, which wholly disregard reality as it is and which therefore are best made in our phantasy, the immutable and necessary complex of characteristics without which the thing cannot be conceived manifest themselves. This "invariant" arises automatically and passively because the objects of the different acts partly

overlap, but this "pre-constituted" and still imperfect identical content must still be seized in an "actively intuiting grasp". Through this grasp, the absolutely immutable and unique eidos which governs all individuals of this species stands before our mind."

(Kockelmans 1967b:31)

The importance of the freedom which the epoche grants us, to perform the phantasies necessary for the eidetic reduction, is difficult to over-emphasise. Husserl illustrates it with the analogy of the "pure geometer":

"In fancy it is true he (the "pure" geometer, who dispenses with the methods of algebra) must toil to secure clear intuitions, and from this labour the drawing and the model sets him free. But in actual drawing and modelling he is restricted; in fancy he has perfect freedom in the arbitrary recasting of the figures he has imagined, in running over continuous series of possible shapes, in the production therefore of an infinite number of new creations; a freedom which opens up to him for the first time an entry into the spacious realms of essential possibility with their infinite horizons of essential knowledge. The drawings therefore follow normally after the constructions of fancy and the pure eidetic thought built upon these as a basis, and serve chiefly to fix stages in the process already previously gone through, thereby making it easier to bring it back to consciousness once again ... Keeping to the most general considerations, the position for the phenomenologist ... is substantially the same ... Here too at all events the freedom of research in the region of the essence necessarily demands that one should operate with the help of fancy."

(Husserl 1967:112-113)

Let us for the moment consider some examples which I find particularly useful to illustrate the richness of the eidetic reduction.

As I write these words I have a house cat sitting on my lap. Barely a foot in front of me another house cat lounges on my notes. The angles at which I receive these empirical data are completely different and consequently the shape and form of each as presented purely through perception are substantially different. Not only can I not see the other sides of each and so empirically do not perceive that these other sides exist, but I cannot see within the cats. For all I know "empirically", they may be robots, or they may consist of pure vacuum within! Even on the empirical level they not only present different shapes, but also different colours and different smells. Despite this I perceive them, and the other two cats in the room, as (within the suspension of my epoche) claiming to exist as "instances" of a general idea or essence which I endow with the meaning "cat". As I perform an eidetic reduction upon these instances in an attempt to grasp intuitively this essence, I call upon my memory (of, for example, other appearances of these instances), my imagination (manipulating them through various possibilities which would make them "non-cat"), and also upon feelings;

feelings engendered in the present and in the past, by these appearances and by descriptions of such. I find myself, for instance, considering the poem "The Tiger" (by William Blake) with its quintessential distillation of that "big" cat.⁵ Hence I would fashion descriptions of essence.

It is not hard to see how the use of imagination so crucial to eidetic reduction may lead to accusations that, rather than truth, all that emerges is mere speculation (Kolakowski: 1968, 1972) Husserl himself acknowledges this when pointing to the apparent paradox of phenomenology:

"the element which makes up the life of phenomenology as of all eidetical science is 'fiction', that fiction is the source whence the knowledge of 'eternal truths' draws its sustenance".
(Husserl 1967:113)

⁵ In elaborating on the richness of art and poetry in this process Husserl says:

"These (art and poetry) are indeed fruits of imagination, but in respect of the originality of the new formations, of the abundance of detailed features and the systematic continuity of the motive forces involved, they greatly excel the performances of our own fancy and, moreover, given the understanding grasp, pass through the suggestive power of the media of artistic presentation with quite special ease into perfectly clear fancies."

(Husserl 1967:113)

Husserl comments (in a footnote) that this sentence is one

"which should be particularly appropriate as a quotation for bringing ridicule from the naturalistic side on the eidetic way of knowledge!"
(Husserl 1967:113, fn.3)

On the other hand, a further justification (if such were required) of Husserl's phenomenology and hence his method is provided by Farber:

"The method of philosophy is in short a method of direct intuition. The phenomenological grasping of essences opens up an endless field for work, and provides knowledge without any indirect symbolism and mathematical methods, without the apparatus of inference and proof. This appears to be the most rigorous type of knowledge."
(Farber 1967:50)

Regardless of the above rationale for Husserl's approach, there are a number of key points at which it can and has been attacked. I deal here, briefly, with only those I consider of importance to my thesis; namely the problem of certitude, and the intersubjective communicability of essences.

I have already discussed the idealist/realist distinction in relation to the Received View, and highlighted the doxicity of the positive scientist.

Husserl's idealism, as has been illustrated above, is much more pregnant with possibilities than the earlier account. However, by returning to the self-knowing ego as the only apodictic given, Husserl places himself on the dead-end path of the sophist (Kolakowski 1975:63-71). His attempt to extricate himself from this has been the focus of much study (Kockelmans 1967c, Kolakowski 1968) and its resolution has been found by some to be in the formulation of existential phenomenology (e.g. the works of Heidegger, Merleau-Ponty, Sartre, etc.). Husserl, however, clearly notes the distinction between himself and the sophist when commenting that by bracketing the natural world:

"I do not then deny this "world", as though I were a sophist, I do not doubt that it is there as though I were a sceptic; but I use the "phenomenological" ... (epoche), which completely bars me from using any judgement that concerns spatio-temporal existence (Dasein)."

(Husserl 1967b:78)

This does not absolve Husserl of sophism, but it does provide him with his way out, a way which may never be proven conclusively. Neither does it, or any other argument he has raised, help him to avoid the simple idealism inherent in the pure generalities found through eidetic reduction. It is difficult for him, therefore, to escape the criticism that Kolakowski (1968) levels at

him - that there is no way for him to bridge the gap between the transcendent realm of consciousness and the "real world".

The second problem area, that of certitude, Husserl has tackled through the combination of both phenomenological and eidetic reduction. As noted above, this certitude is grounded in "I"; all else is capable of being doubted. As Schmitt puts it:

"the content of experience is dependent on myself as subject; experience presents to me its claim to validity: I must certify this claim ... (I) the subject is not only the source of validity of experience, but also of its significance."

(Schmitt 1967:67)

So how can a phenomenologist be certain of his grasp of essences? Kolakowski (1975:81-82) suggests that it is always possible a "diabolic will" will intervene to subvert the eidetic reduction. Whether or not it is possible to grasp the "true" essences without being deluded by such a will is really an open question, but one which applies equally to any positivist scientific method. It seems that for me to even believe in some ability of my own to discern either falseness or truthfulness in anything would require some belief in divine intervention. On the other hand, it could be argued that it is impossible for a diabolic will to place

the "weight of self-evidence" on delusions since delusions themselves will contain an essence, and it is this essence we will grasp and hence cannot be considered misled.

Also within the ambit of this problem of certitude is the historicity of the ego. Although Husserl deals in depth with the need to return to the "original" perception, it is questionable whether such a return is possible. How can I be certain that my current intuition of a thing is able to lead me back to my first perception of that particular entity? Does not my subconscious store within it all manner of sedimented perceptions from before I became "reflective" (in the phenomenological sense)? From before birth even? How am I to know that these perceptions have not been altered, indeed been the cause of alteration of my intuitive grasp of their essences?

This is another, and perhaps the key point of departure for the existentialist. An ego, to the existentialist, cannot be seen as shaped by the culture, etc., of the society within which it evolved, and all attempts to grasp the essences of "things" are in fact attempts to grasp the meaning of such thing to the ego.

Bluntly (and hence oversimplified), for Husserl:

"Being" means "being an object for consciousness."
(Kockelmans 1967d:226)

whereas for Heidegger the concept Dasein (self) discloses
the world: Dasein is:

"Being-in-the-world. Husserl's "pure ego" is ...
a mere artificial abstraction which only hampers our
understanding of man as concrete ek-sistence, that
is to say of man as "standing out" toward things in
the world and, in the final analysis, to the world
itself."

(Kockelmans 1967d:227)

The roots of much existentialism may be found in
Husserl (see, for example, Merleau-Ponty's work), and in
particular in that form of phenomenological reduction
described by some as:

"The reduction of the cultural world to the world
of our immediate experience (Labenswelt)
[Life-world]."

(Kockelmans 1967:31)

(perhaps because it can be interpreted in non-idealist
fashion). I have, however, opted for the more idealist
interpretation. Hence I have not dealt to any extent with
the problem of intersubjectivity which I believe is
largely the motivation for the existentialist. In
response to the questions posed above I would therefore

answer that even in the briefest of perceptual encounters there lies the essence of the thing itself encountered. As this is a pure essence it will exist (regardless of my cultural upbringing) to my self-reflecting I, and it will be immutable (as such is the essence of essences). Where my experiences may interfere with my grasping of this essence lies to me not in the essence, not in the thing perceived, but in the limits of my imagination, in the restraints placed on (either through the language of my culture or whatever other medium which may limit) my ability to "indulge" in absolutely "free" fancy. Given the importance of fancy to Husserl's eidetic reduction these limitations may not be insignificant and I believe this may have been one of the reasons Husserl has placed so much emphasis on art and poetry as aids to the phenomenologist. Both tend to challenge the imagination thus "freeing" it, or at least loosening the cultural resin.

This leads to the third problem area: "How does one communicate an essence"? Kolakowski argues strongly that it is incommunicable:

"certitude is accessible only in immanence, ... the perfect transparency of the object is to be found only when the object and subject ... come to identity. This means that a certitude mediated in words is no longer certitude. We gain or we imagine to have gained access to certitude only as far as we gain or imagine to have gained perfect identity

with the object, an identity whose model is the mystical experience. This experience however is incommunicable; any attempt to hand it over to others destroys the very immediacy that was supposed to be its value - consequently it destroys certitude. Whatever enters the field of human communication is inevitably uncertain, always questionable, fragile, provisory, and mortal."

(Kolakowski 1975:83-84)

If this is so, how can a phenomenologist provide convincing evidence of not only her coming to the ego, but also of the essences of objects which she wishes to describe? How can she escape the idealists' dilemma? The answer, I believe, lies in McKenna's (1982:91-92) discussion of imagination and what can or cannot be claimed to be imagined. McKenna takes the interesting example (for geographers) of non-Euclidean space. Is it possible for non-Euclidean space to be experienced by a human being? A friend of McKenna's raised this question and claimed it was not possible. McKenna responded that Poincaré (1952) and Von Helmholtz (1962) had effectively described it. After re-reading the stories of each, McKenna had to recant, and accepted that they had not done so. What they had done was to imagine "how this non-Euclidean space would look through "Euclidean eyes" ... [that is] the space imagined was only a translation of the non-Euclidean space into Euclidean terms" (McKenna 1982:91). McKenna goes on to elaborate this in a statement which can be considered to large extent to

provide a description of how my thesis can be (and in fact how most theses are) evaluated:

"I do not know exactly what Poincaré and Helmholtz imagined, i.e., what they held before their imagining "eyes", nor did my friend. I also do not know exactly what my friend imagined as he read the stories, nor he what I imagined. All we have are the stories. However, the stories do make it possible for the alleged verification of the claim to be evaluated objectively. To be in a position to make this evaluation, it is not necessary that one have access to the very images of Poincaré and Helmholtz; it is sufficient that one read their stories."

(McKenna 1982:92)

If we can substitute the "essence of some object" for the "non-Euclidean space" that forms the object of these "imaginings" we can perhaps see in what way an essence can be communicated intersubjectively. Some slight modifications are necessary, however, to the above description. The first modification is that we must add that the importance of the medium of communication and its modification of the original essence (through its translation to language) may effectively render the original essence incommunicable. But while the essence itself may be incommunicable as a whole, we can evaluate the essence of the communication itself through performing our own eidetic reduction on it. On the basis of this we should be able to say whether or not the person involved has performed the eidetic reduction or not, and hence whether or not he or she has grasped an

essence. Thus we would have to add to the above passage that the reader of the stories "to make an objective evaluation", must place herself within the epoche and perform an eidetic reduction herself. Thereby we see that certitude is available to the evaluator only through transcendental subjectivity. S/he must be reflective.

The second and perhaps more subtle point is that Husserl understood that the essence of a "thing" can be brought to the ego from even the briefest perception of that thing - we do not, for instance, have to see a "house" from all angles (inner and outer) to be able to grasp its essence, and we need only see its "front" (or "top", or "back", or whatever) to be able to perform the eidetic reduction on the "house". As this is so (made possible through "fancy") perhaps an essence can be communicated through language. If I were to describe a "house", for instance, would you not be able to intuit a "house"? It may be that such communication is possible only where a unique one-to-one relationship between certain language symbols and "things" is pre-agreed. This is as yet unresolved, but its possibility requires that we modify the above passage to include that in some cases we may "know exactly" what is imagined.

Thus we can conclude that essences may indeed be communicable, but even if this is not considered possible, we may still be able to evaluate whether or not another person has grasped an essence from her description of it.

2.3 Parallels and Differences

Before drawing conclusions from this Chapter, I believe it is interesting to take a closer look at some of the parallels and differences in the "positivist" and phenomenological approaches to knowledge.

The most striking parallels are illustrated by the so-called Weltanschauungen critics of positivism.⁶ The arguments they present tend to develop from, or are exemplified by, Thomas Kuhn's "The Structure of Scientific Revolutions" (1962, 1970). Basically these critics were concerned with the ability of positivist science to progress towards truth, given that the practice of science was so constrained by the social

⁶ Whether these critics are stepping beyond positivism is open to debate, if only because their arguments, especially those of Thomas Kuhn, have been utilised so well by positivists within positivist research. Most practising scientists seem quite happy to pay lip service to Weltanschauungen while carrying on with positivist research seemingly unaware of the contradictions therewith. Note also Kuhn's retreat toward positivism in Bohm (1977).

environment within which it was undertaken. Kuhn provided a framework for these arguments with his analysis of the historical development of science. In this analysis he developed a model of the evolution of disciplines whereby they evolved from several schools of thought into a ruling "paradigm" which defined the discipline's problematic. The problem which this paradigmatic control of the work of science faced was how to find new knowledge rather than to continue merely "puzzle-solving". Kuhn argued that it needed a revolution in thought and practice to overthrow the ruling paradigm and enable a discipline to advance.⁷

The key points for this discussion are the recognition of the sociology of the conduct of science and the relative emancipation provided by these revolutions. Together they provide the freedom to look at the familiar, and the unfamiliar, with "new eyes" - ducks could become rabbits, the earth could move around

⁷ It should be noted that Kuhn's model of the development of, and particularly his concept of, "paradigms" has come in for such severe criticism (e.g. Masterman 1970) that Kuhn (1977) has since considerably modified his model (e.g. he now differentiates between "exemplars" and "disciplinary matrices"), but this does not affect the points of his argument relevant to this thesis. In particular Lakatos' (1970, 1971) criticisms and his establishment of diverse research programmes reinforces the inconsistency and theoretical pluralism advocated by Feyerabend (1975).

the sun and not vice-versa, etc. We can see here hints of the importance of "free-fancy" which is so crucial to phenomenology. More importantly, however, they opened the door for theoretical pluralism.

We have already noted Bridgman's argument for the proliferation of concepts. Of interest to this thesis is the way in which he tied the entity with the observer, thus ultimately guaranteeing its subjectivity. Suppe's denial of Bridgman is based on a doxic denial of realism and an implicit belief in simplicity as a criterion of validity. I have already discussed the subjectivity of a commitment to realism, but it should be noted also that simplicity, as Mario Bunge (1974, p.437) has pointed out, "is neither a necessary nor a sufficient sign of truth" despite the frequency of its invocation by "scientists". If we can thus dispense with Suppe's criticism of Bridgman, and thereby accept the validity of the latter's pro-proliferation stance, we should also recognise that this suggests elements of freedom and confirms the subjectivity of "facts".

Feyerabend (1965, 1970) has developed the Weltanschauungen criticism still further. Following Popper's falsificationism, Feyerabend argues that any

observation is dependent upon the theory within which it is observed. He goes on to assert that:

"The meaning of every term we use depends upon the theoretical context in which it occurs. Words do not "mean" something in isolation; they obtain their meanings by being part of a theoretical system. Hence if we consider two contexts with basic principles that either contradict each other or lead to inconsistent consequences in certain domains, it is to be expected that some terms of the first context will not occur in the second with exactly the same meaning."

(Feyerabend 1970:70)

The logical conclusion for Feyerabend is that "facts" are theory dependent and hence cannot be granted the autonomy necessary to enable a Popperian test.

If there exist theories whose facts are dependent on the theories and those theories do not allow for consistent interpretations (between the theories) of the "same" facts, then a test to decide between them is not possible. Can we, Feyerabend asks, decide between the two theories on an objective basis? Can we weight factors, other than facts, objectively to enable us to decide between theories? Noting that:

"intuitive plausibility, for example, was once thought to be a most important guide to the truth; but it disappeared from methodology the very moment intuition was replaced by experience."

(Feyerabend 1970:71)

he asks:

"Does experience play such a role in the business of science? Is it as essential to refer to experience as it was once thought essential to refer to intuition? ... These questions must be answered in the negative."

(ibid.)

The conclusion Feyerabend reaches is that there are "incommensurable theories":

"Their content cannot be compared, nor is it possible to make a judgement of verisimilitude except within the confines of a particular theory. None of the methods which Popper (or Carnap, or Hempel, or Nagel) want to use for rationalizing science can be applied, and the one that can be applied, refutation, is greatly reduced in strength. What remains are esthetic judgements, judgements of taste, and our own subjective wishes."

(ibid.:90)⁸

Does this mean that:

"... the choice between theories which are sufficiently general to yield a comprehensive world view and which are empirically disconnected may become a matter of taste? ... the choice of a basic cosmology may become a matter of taste?"

(ibid.:90-91)

⁸

I do not agree completely with Feyerabend in that the judgement of verisimilitude within a theory cannot be made without reference to another theory. Similarly the concept of "refutation" is not merely weakened, it is nonsensical.

The answer for Feyerabend is "yes", and this is "good" because it is better to have the humanity of science with all its frailty and avenues for alternatives out in the open than to erect a dictatorial, supposedly objective, edifice to which we must pay homage.⁹

Bohm (1977) takes Feyerabend's analysis still further when pointing out that it is misleading to speak of incommensurable theories as this implies that there are commensurable theories.

"Each theory is itself a whole, in which analysis into disjoint components or elements is not relevant ... This is because all the terms in such a theory can have their meanings and their criteria of factuality and truth only in the total context given by that theory. There is, therefore, actually no way to "measure" or "evaluate" the basic concepts and notions of any one theory in terms that are common to those of another theory, so that one could meaningfully compare the theories and thus establish whether they are commensurable or incommensurable."
(Bohm 1977:375-376)

⁹ In a footnote Feyerabend also argues that Popper's distinction between art and science (and implicitly the relative merits of each) is not tenable.

"Popper has repeatedly asserted, both in his lectures and in his writings; that while there is progress in the sciences there is no progress in the arts. He bases his assertion on the belief that the content of succeeding theories can be compared and that a judgement of verisimilitude can be made. The refutation of this belief eliminates an important difference... between science and the arts, and makes it possible to speak of styles and preferences in the first, and of progress in the second."

(Feyerabend 1970:91)

This automatically leads to theoretical pluralism and incommensurability, but there is an additional more dynamic aspect to Bohm's conceptualisation.

"Theories are changing all the time; ... each new step may introduce something novel and "incommensurable" with what came before. Indeed, even to read an article and to understand it is, in general, to change it significantly. For understanding something is assimilation, that is, making it a whole with oneself."

(ibid:388)

To my mind this assertion by Bohm, a physicist, is one of the clearest statements in favour of a phenomenological approach yet made by a scientist or science historian. Where Feyerabend (1970) explicitly favours a dialectic after the fashion of Hegel or Kierkegaard, Bohm has fashioned the situation for still deeper more personal and more intimate research.

Let us recap the Weltanschauungen position before moving on to establish the basis of methodology. According to Suppe the core of the Weltanschauungen argument consists of three basic points:

"(1) Observation is theory-laden: The Weltanschauung determines or influences how one views, describes, or interprets the world; hence adherents to different theories will observe different things when they view the same phenomena.

(2) Meanings are theory-dependent: The descriptive terms (both observational and theoretical) used by

a science undergo a shift in meaning when incorporated into, or used in conjunction with, a theory; thus the principles of a theory help determine the meanings of the terms occurring in them, and so the meanings of such terms will vary from theory to theory; hence changes in theory result in changes of meaning.

(3) Facts are theory-laden: What counts as a fact is determined by the Weltanschauung associated with a theory; as such there is no neutral set of facts for assessing the relative adequacy of two competing theories; rather, the adequacy of a theory must be assessed according to standards set by its associated Weltanschauung."

(Suppe 1977:191)

Although Suppe's summary (1977) and discussion of the Weltanschauung approach (1977) is more charitable and shows a greater understanding of their views¹⁰ than do many, he does fail to grasp (or, rather, dismisses) the key point being made in Feyerabend's (1970) "Against method: outline of an anarchistic theory of knowledge". Suppe (1977:643) erroneously assumes that Feyerabend believes "his anarchistic theory of knowledge will lead to, or converge on, truth and knowledge". In fact, as illustrated above, Feyerabend's stated intention is to humanise science and to achieve this he must accept that knowledge is internal; we must shape science in accord

¹⁰

The summary does not include Bohm's privatisation of science - an issue which was the subject of much discussion (and notably opposed by Kuhn) subsequent to the presentation of Bohm's (1977) paper (see Causey 1977, Bub 1977 and Kuhn (1977a)).

with our individual taste, not as a method for obtaining truth, but as a creative force.

If science is not to be a method for obtaining truth, then what is the nature of its creativity? To progress further I think we must turn to Weimer's (1979) conception of science as "rhetorical transaction".

Weimer's thesis is that the development of a philosophy for science is:

"a quest for a theory of rationality (or rational inquiry) that would render the practice of science both a rational form of inquiry and, hence, a legitimate source of knowledge."

(ibid:3)

This transposes into the fundamental question "what is the nature of the rational authority that will justify science as knowledge claims?" (ibid:3-4). If no rational authority can be found then science can be no more valid than any other form of knowledge acquisition because all are equally irrational.

"Thus the basic epistemological problem ... can be characterized as the dilemma of ultimate commitment. We must either succeed in justifying our ultimate rational authority, or we shall be forced to conclude that not only science but even the rational way of life in general cannot be shown to be rationally superior to its alternatives. Either we succeed in justifying commitment to the rational, scientific way of life, or intellectual honesty

demands that we embrace an irrational way of life. In either case, an ultimate commitment is called for: We must rationally justify rational ways of life (such as science), or we will be forced to acknowledge that irrationalism is rationally justifiable."

(ibid:4)¹¹

Science is, therefore a way of life to which the practitioners irrationally commit themselves and then try to rationally justify.¹² The essence of science can hence be described as an "argumentative mode of discourse" (ibid:78).

"The object of communication in science is always to educate the members of the research communities involved. Science instructs us in how to conceive the universe in which we find ourselves, and it does so rhetorically because the claims of scientific theory can only be given support by argument. The modal reasoning in which the scientist engages is inextricably linked to injunction in tuition addressed to other scientists (and students). Scientific description can only be descriptive in virtue of being embedded in an explanatory framework; explanations can only be explanatory in virtue of being argumentative; and arguments can only be learned by injunction. Hence, to state a fact is to argue for the warrant of the theory that necessitates it, and to teach others that it is a fact is to enjoin them to see reality as that theory

¹¹ Weimer notes this is the justificationist problem, both positivism and phenomenology are justificationist.

¹² The agreement between Weimer and Feyerabend is readily apparent. Indeed, Weimer (p. 78) states:

"Insofar as they instantiate rhetorical activity within the argumentative function of discourse and action, science, art, education, philosophy, even rational theology are all on a par."

commands one to see it. Whenever scientists communicate, even the most mundane and seemingly innocuous descriptions, they are persuading their audience, literally commanding them, to adopt their point of view."

(ibid:79)

It is this interaction between scientists and audience that produces scientific "knowledge". Within Weimer's rhetorical framework we can gain insight into the importance of the "scientific community as an active constructor of the scientific dialogue and the meaning that it manifests" (ibid:85). The active nature of this audience, which is often presumed passive, is crucial for understanding the role of methodology. Weimer (p.86) points to two particular areas; the manner of communication of knowledge and the "enormous discrepancy between a scientist's preachment and his or her research practice." He argues that:

"In communicating results, researchers are quite literally engaged in a dialogue with the persona representing their research community. The initial process of formulating (to themselves) what they know, what they can argue for and against, involves researchers in an internal dialogue with what they perceive to be the point of view of their research community. Subsequent communication (from informal discussion with colleagues, through colloquim or convention presentation, to and including publication) requires researchers to sharpen their presentation such that it will be maximally effective to the audience persona in question."

(ibid)

This provides an explanation for the preaching/practice discrepancy. If a scientist has to communicate with an unknown audience she will need a basis on which to support her research, her results and herself. Thus "when queried about their research methods and practice, scientists usually respond that it confirms to one or another methodology that they take to be the personification of "good science"" (ibid). As Weimer illustrates, with Newton for his example, the consequence is quite logically that the actual methodology used by a scientist may frequently differ significantly from that espoused in justification. The appeal to methodology exemplifies both its injunctive importance and the inherent conventionalism of positivist science¹³. Equally important are the implications for my research and the manner of its presentation in this thesis, which I discussed in my previous chapter. Perhaps the most important point to be taken from Weimer's discussion, however, is that it eliminates the value-free assumptions of both science and logic.

Returning to phenomenology and positivism, it is obvious that neither is value-free; indeed both have

¹³ The "pure phenomenology" I have discussed here relies on individual knowledge acquisition and hence does not lead, through its methodological emphasis, to the conventionalism of positivism's "public" knowledge.

committed themselves to rationality and to attempting to provide a rational explanation and justification of their ultimate authority primarily on methodological grounds.

In summary:

1. Phenomenology places its ultimate authority in the incommunicable, seeing, self-knowing "I"; positivism has its authority in a reality which is detectable through its scientific method.
2. Phenomenology and positivism lay claim to being scientific on the basis of their methodologies.
3. Phenomenology emphasises the epoche and eidetic reduction; positivism stresses replication and public examination.
4. Phenomenology is individually liberating; positivism tends to conventionalism.
5. Phenomenology is unable to communicate "essences"; positivism cannot communicate "facts".

2.4 Conclusion

The above discussion was primarily intended to place the subsequent methodological research in context. It should also be seen as the basis for a justification of my research, in particular the methodology employed. To these ends I draw your attention to the fundamental, subjective, irrational commitment a rational researcher makes in her search for knowledge. Subjectivity has been my target and my destination. The discussion has drawn attention to many of the usually implicit presuppositions of both positivism and phenomenology, shown that knowledge is inseparable from self and that communication of knowledge is always mediated and hence knowledge altered. Thus is the "objectivity" of science swept aside and its rhetorical nature exposed to our grasping intellects; thus does Weimer's analysis enable us to apprehend the role of methodology as a suasive, rhetorical device; and thus is the incommunicability of knowledge, the "language ceiling", laid suffocatingly upon this thesis. We are now well-enough armed to venture to the heart of the struggle within the systems movement.

CHAPTER THREE

Systems Thinking, Practice and Methodologies

3.1 Of Eyes, I, and Differences

The willing eye can, and sometimes has, perceived systems thinking and/or concepts in the communications of such "men of knowledge" as Lao Tze, Heraclitus (Checkland 1981) and the ancient Indian philosophers (Capra 1976). No doubt a discerning/constructing I could "eye-identify" the same in the cultures/philosophies/sciences of the Inuit, Innu, Maori or Cibecue Apache! But, while such conventional, dispersed ancestral knowledge may be used to provide suasory weight to arguments for the use of systems approaches, I concur with Mattessich (1978), Churchman (1971), Checkland (1981) and Cornock (1980) in suggesting that formalised systems thinking emerged in the 20th century, both as an outgrowth of an holistic vitalism and as a revolt against the mechanical reductionism of the positivist sciences. However, as I will illustrate in the following sections, this emergence has not been characterised by a single cohesive and comprehensive school or disciplinary matrix, but rather by the same problematic divisions which have plagued all attempts at furthering knowledge: those between the "real" and the "ideal", the "applied" and the

"theoretical", the "subjective" and the "objective". These have delayed the introspection needed to develop a suitable systems methodology for handling the complexity of research. In this chapter I briefly outline the development of systems thinking and the evolution of the "hard" systems methodologies. This is followed by a detailed description and discussion of Checkland's soft systems methodology and concluded with some questions which have yet to be answered. First, however, let us be sure of what I mean by "system".

3.2 The Origin and Evolution of Systems Thinking

There appears to be some confusion as to what a system is and what can be considered systems thinking. At one stage during my thesis research I performed a phenomenological reduction to define the essence of the concept "system". That essence in my best translation is "more than one".

To be aware of something, of an "I" in a "vacuum" is to be aware of two "things". To be aware of two is to be aware of boundaries, fuzzy or sharp, real or imaginary. For a boundary to exist requires separation

and therefore connection by separateness.¹ This is rather obvious, but to consider such as being a "system" is often not so obvious because we are accustomed to explicit systems thinking rather than implicit.

For instance, if we consider the planets Earth and Mars we identify each as distinct one from another (how will be discussed shortly). This separateness of identity can only be made by considering them as "separate". To explicitly systems- formulate these we could have

$$E = M$$

or, E related to M by =

where E is Earth, M is Mars and = is separateness. If we remove the systemic description of "things and relationships" we still have a system described implicitly by our awareness of the existence of the two.

Returning to my original "more than one" definition, it is apparent that my concept "Mars" implies at least one system. "Mars" is one entity and the "I" that has the

¹ Separateness is n-dimensional, but because geographers tend to think in spatial terms I have used a spatial example rather than, say, "time" and "intentionality" in the following discussion.

concept "Mars" is another. The system is completed by the relationship of separateness which enables "I" to recognise the concept "Mars". It is important to note that I have not specified what constitutes the entity "I" or the entity "Mars". I merely recognise the difference. To specify the factors which distinguish "Mars" from "I", would be to construct new systems within the already specified entities. Thus is created a hierarchy, one dependent on the constructing "I". Indeed, it is this subjective, constructing "I" which creates the differences between Earth and Mars. The failure to recognise this crucial fact, that explicit and implicit systems thinking are both subjective, is the crux of the methodological differences discussed in sections 3.4 and 3.5. It is also the implicit systems thinking, the awareness of Mattessich's (1978) "Janus face", of connection and separation, to which, I believe, systems proponents point when asserting a lengthy history for systems approaches. This is not to denigrate such thinking, but merely to clarify a distinction between implicit (informal) and explicit (formal) systems thinking.

Formal systems thinking has provided both the drive and the basis for failure of the systems "movement" in

the 20th century.² The history of formal systems thinking has been well-documented and variously categorised by a number of writers (Bunge 1973, Churchman 1971, Checkland 1976, 1981, Cornock 1980, Mattessich 1978) and therefore I will provide only a brief sketch.

Just as positivism finds its recent roots in Judaeo-Christian ideology, neo-Kantian idealism, Machian mechanism and empiricism, formal systems thinking is usually traced to the pantheistic, spiritual vitalism of 19th century science. It is often seen as the antithesis of the reductionist/determinist Weltanschauungen (Morgan 1981b) and although, according to Mattessich, first comprehensively formulated by Baranov (1918), von Bertalanffy is usually credited as its modern father.³ As a direct consequence of von Bertalanffy's work, notably in biology, a branch known as General Systems Theory (GST) was established within the systems movement.

² Although a Department of Systems exists at Lancaster University, there is so little cohesiveness amongst systems thinkers and practitioners that it is more accurately described as a "movement". By the systems movement is meant "the set of attempts in all areas of study to explore the consequences of holistic rather than reductionist thinking" (Checkland 1981:92).

³ Mattessich (1978), as near as legally and academically allowable, suggests von Bertalanffy plagiarised the little known Baranov's ideas. Von Bertalanffy's own contributions, at least in promoting systems thinking, may still be sufficient to warrant his status as "Father".

The influence of this branch has been felt in many disciplines, notably economics (see Boulding 1956) and geography (see Chorley 1967, Warntz 1973).

However, the systems movement includes far more than GST and is not necessarily opposed to positivism or reductionism. Indeed, as Checkland (1981) notes, it is complementary to reductionism. It is this complementarity, the consequence of the concept of hierarchy, which has enabled the holistic approach to achieve such a prominent place in modern research. Unfortunately the effectiveness of applied systems research and analysis, particularly that of Operations Research or RAND Corporation type analyses, has led to such a predominance of positivistic approaches as to effectively discourage non-positivists from considering the systems approach as providing viable methodologies for their use (cf Gregory 1981).

The basis for this dissatisfaction has been the general acceptance by systems thinkers and practitioners of the objectivity of the world: the positivistic belief that the world is knowable through the tools of scientific procedure/method/technique and that this is the one and only world. The contribution of the systems movement has been to systematically provide the concepts

and tools for understanding "organised complexity" (Checkland 1981). Thus to the methodological precepts of "reductionism, repeatability, and refutation", the keystones of positivist science (Nagel 1961, have been added the concepts of hierarchy, emergence, communication and control (Checkland 1981). In considering the expression of the positivist/phenomenological debate in systems, we should clarify some systems concepts.

3.3 Systems Concepts

One fundamental philosophical question which has been clearly transferred into the debate between researchers has been that of "free will" versus "determinism". Amongst geographers this was expressed explicitly in the environmental determinism versus possibilism debates at the beginning of this century. The important contributions from the systems viewpoint are to the holistic versus reductionist debate.

The reductionist argument amounted to reducing everything to its parts in order to rebuild and understand it. Holists, on the other hand, argued that "the sum may be greater than the parts". Such an argument suggested to its opponents an element of vitalism that they wished to reject if the positivist

programme was to advance (and with it, the progress of civilization). After all, how could anything be greater than that of which it was comprised?

For the holists, the reductionist argument was a denial of humanity. If everything could be reduced to the sum of its parts then everything was determined. Hence there could be no hope and no justice. What was absolutely determined was absolutely predictable and could not be changed. A murderer could not help but murder, and could not be justly punished (as he had no choice).⁴ The development of systems concepts has provided both sides with some leeway. Holists supporting a greater-than-the-sum argument can justify their view through the concept of emergence. Reductionist positivists can support their claims through the concepts of hierarchy and control.

Within this debate the development of teleonomic as opposed to teleologic systems description has, I believe, been underrated for its importance in making systems thinking palatable for positivists. Essentially teleologic systems are "goal seeking" as opposed to acting as a result of prior causes. Teleonomic systems

⁴ The recent work on chaotic functions suggests that things may be perfectly determined yet unpredictable (R. White pers. comm.).

however are purposive rather than purposeful. In other words the concept of teleonomy enables systems actions to be described "neutrally" "by an observer in terms of the ends served by them" (Checkland 1981:319). We can see that teleonomy helps remove the vitalistic element for positivists, however flawed its logic may be.

Systems thinkers, whether by accident or design, have gone still further in creating a positivistic character for the systems movement. In 1950 von Bertalanffy proposed the "Law of Equifinality"; in 1956 Ashby put forward the "Law of Requisite Variety". More recently Checkland (1981) has proposed the Laws of "Conceptualization" and "Model Building".⁵

Underlying von Bertalanffy's Law is the distinction between "open" and "closed" systems. This is a particularly interesting conceptual separation which should be fully understood in light of our later analysis

⁵ The Law of Equifinality states that "open, but not closed systems can reach the same final state from different initial conditions"; the Law of Requisite Variety that "the variety of a regulator must equal that of the disturbances whose effects it is to negate"; the Law of Conceptualization that "a system which serves another cannot be defined and modelled until a definition and a model of the system served are available"; the Law of Model Building that "models of human activity systems must consist of structured sets of verbs specifying activities which actors could directly carry out" (Checkland 1981:234, 237).

of "soft" and "hard" systems methodologies. Closed systems consist of a set of unchanging components settled in a state of equilibrium. Open systems, on the other hand, have an import and export of material, energy, information, etc. Such a division is purely pragmatic, having little to commend it logically. For a system to be closed requires a non-temporal dimension and an acknowledgement of hierarchical context. Also a system cannot be identified without an observer, which immediately creates a relationship between observer and "system", thereby creating a "new" system. This "new" system, because of the observer's temporality, is apodictically "open". However, in pragmatic, every-day life the concept of open and closed systems is a useful one. It enables distinctions and idea developments for creating mechanisms of system control and communication. Thus we can design, monitor and regulate a closed system for, say, turning on and off the refrigerator light when we open and close the door.

Unfortunately, such simple successes have led researchers to the erroneous conclusion that closed systems are present in reality, are relatively easy to identify, design and/or construct. This has resulted in attempts to impose such simplistic approaches at much higher orders of complexity (e.g. human society). The

consequences have been somewhat disastrous (e.g. Hoos 1972). The failure of such attempts has led to criticisms of the systems approach (Habermas 1971, Hoos 1976). This type of criticism, I believe, is misguided, but only insofar as it attacks the approach rather than the practitioners. In damning the systems approach a potentially valuable tool is being lost, one which merely needed proper use.

It seems clear that were practitioners more aware of the implications of the hidden "I" in closed systems, they would be less concerned with boundaries and typologies and more concerned with the creativity of system identification. In other words systems, like resources, are of human origin. They are mental constructs imposed on reality; they are inherently open and the systems methodology chosen by practitioners should reflect this. That the failures have led to methodological questioning and the emerging comprehension of two distinct systems methodologies is the best that I can say of these early attempts. But let us now look at the methodology which has failed.

3.4 Hard Systems Methodologies

Hard systems methodologies reflect the dominance of positivism within the systems movement. Checkland (1981) has isolated two main strands, the systems engineers and the systems analysts. The former he sees as having grown out of the marriage of science and technology. Its emphasis is on "conceiving, designing, evaluating and implementing a system to meet some defined need - the carrying out . . . of an engineering project" (Checkland 1981:130). Since the 1950s considerable effort has been devoted to identifying procedures to ensure the success of such projects.

Systems analysis is more truly holistic. It attempts to find the optimum choice amongst alternatives. To do so it requires a comprehensive approach, taking into account many of the factors (e.g. financial, political, etc.) which will affect the outcome of a particular change (proposed or occurring). It grew from the effectiveness of Operations Research in World War II and the subsequent work of the RAND Corporation (v. Optner 1973 for examples of RAND research). The use of systems analysis in tackling resource allocation problems in defence has led to its use in other fields, notably management science (cf Duncan 1983). Indeed Checkland

(1981:134) notes that the International Institute of Applied Systems Analysis (IIASA) throughout the 1970s practised and developed the RAND methodology. Both Systems Engineering and Systems Analysis are systemic in nature while systematic in procedure. Checkland (1981:138) argues that the single idea that links the two (SE and SA) is that

"an important class of real-world problems can be formulated in the following way: there is a desired state, S_1 , and a present state, S_0 , and alternative ways of getting from S_0 to S_1 . "Problem-solving", according to this view, consists of defining S_1 and S_0 and selecting the best means of reducing the difference between them. Thus, in SE, (S_1-S_0) defines "the need", or the objective to be attained, and SA provides an ordered way of selecting the best among the alternative systems which could fulfil that need. The belief that real-world problems can be formulated in this way is the distinguishing characteristic of all "hard" systems thinking."

As Checkland (1972) has pointed out, the root of the "hard" systems approach is definition of the "need", the "aim", the "objective". The

"need and objective-defining are taken as given at the start of [the engineers] . . . problem-solving, and we find this carried over into "hard" systems methodology together with the structured model of problem-solving which objective-defining implies."
(Checkland 1981:139)

Hard systems methodology consequently takes the following format (Morgan 1980):

1. Lexical
2. Parsing
3. Modelling
4. Analysis

We can see how this methodology could run into problems by referring back to Chapter Two's discussion of the invalid basis of the Received View. There is not an objective world, but a subjective seeming. Hence, to assume a defined need is to accept a particular structure. In "real"-world applications, therefore, the hard-systems approach could be expected to work well on "well-structured" problems. By well-structured is meant situations so restricted that boundaries are agreed as "easy" to define, as are the components and relationships (e.g. a microwave oven).⁶

The difficulties arise when dealing with more complex problems, particularly those involving humans.

⁶ It can be argued quite logically that these boundaries, components and relationships are not "easy" to define, but that the seeming ease reflects a Judaeo-Christian "hard" Weltanschauung that excludes possibilities such as "little men running around inside fridges or microwaves making them work".

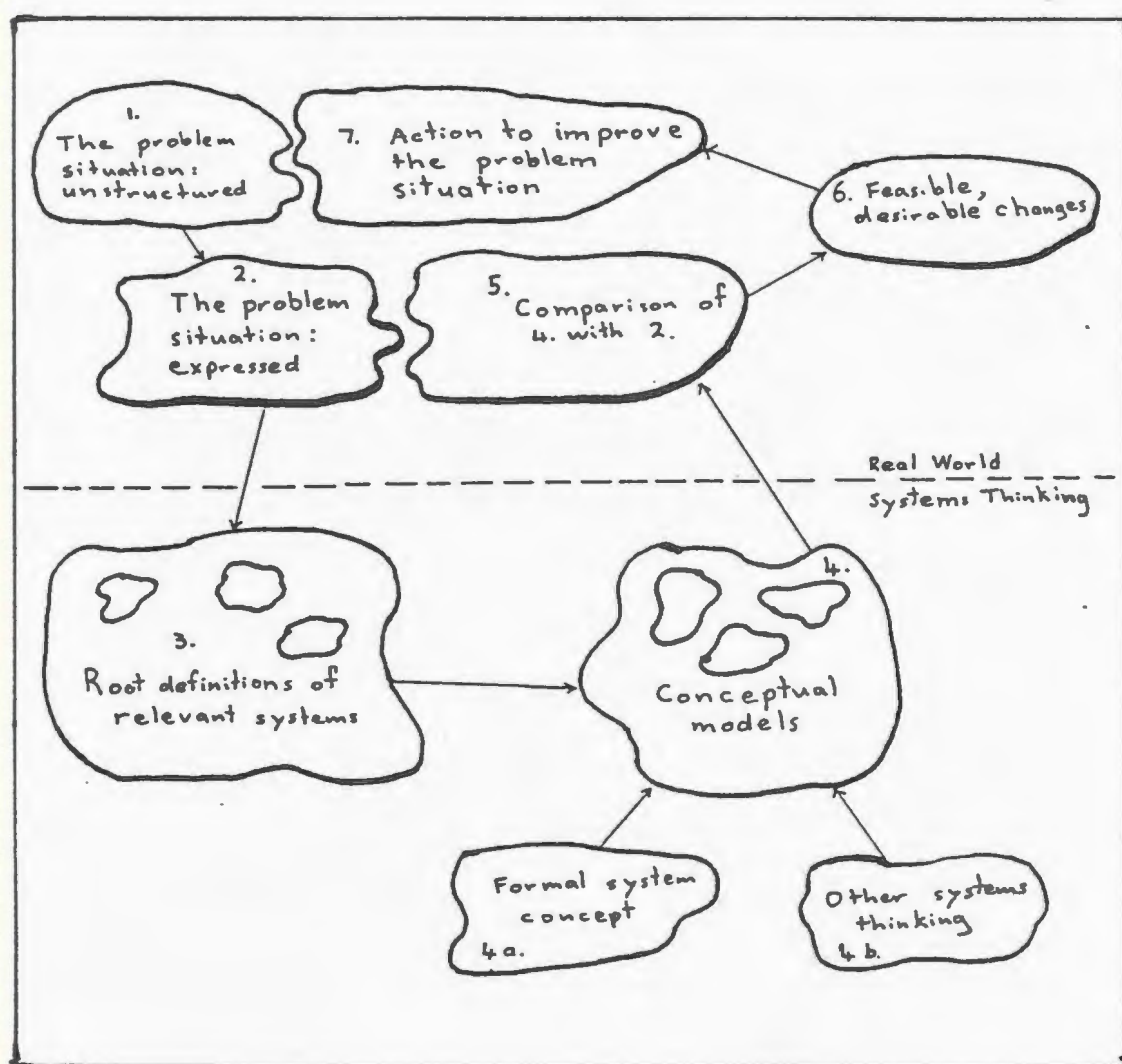
It is this added degree of complexity, the diminution of the communications barrier (which exists between, say, man and microwave or man and tree) which has caused problems for the systems analyst or engineer (Mattessich 1978, Checkland 1981). Indeed it was the inappropriateness of hard systems thinking when dealing with human activities that led the researchers at the University of Lancaster, in England, to develop the soft systems methodology (alternatively known as Checkland's methodology) (Checkland 1972, Cornock 1980).⁷

3.5 The Soft Systems Methodology

Checkland's soft systems methodology has evolved considerably since his first major paper on it (Checkland 1972). The most recent and well-tested version (1981) is illustrated in Figure 3.1. Although it has been described in detail elsewhere (ibid.) the methodology is so fundamental to this thesis that I will describe it in depth.

⁷ Dissatisfaction with the traditional systems approach had a different consequence in America. There Contingency Theory, a less omniscient version of systems analysis, was developed in the main area of applied research into human activity systems, Business Administration (Duncan 1983).

Figure 3.1: Checkland's soft-systems methodology
(After Checkland 1981:163)



3.5.1 The Methodology in Outline

The methodology is based on phenomenology (although as discussed below I believe Checkland shows a marked reluctance to fully integrate this into the methodology). It takes the starting point of its application as an ill-defined situation in which there is a feeling of "unease", a feeling that things "could be better". The next step is to try to "express" this situation. This is achieved by gathering together as much information and detail as possible about the situation. The aim is to build "the richest possible picture" of the problem situation. It is important at this stage to refrain from imposing a structure on the problem situation. The aim is to gather the information from as wide a range of sources as possible, without prejudice. As discussed in Chapter Two, this is impossible unless done phenomenologically (some may argue that it cannot be done phenomenologically). This is the "ideal" to be attempted.

The next stage involves the abstracting of root definitions. These are descriptions of relevant systems. This is not a description of what the systems are supposed to be, or could/should be, but of what they

actually are. Thus a starting point for a relevant system of religion may be:

"Religion is the sigh of the oppressed creature, the sentiment of a heartless world, and the soul of soulless conditions. It is the opium of the people."

(Karl Marx cited in Checkland 1981:167)

Having defined your relevant systems as concisely and precisely as possible, the next stage requires conceptual modelling of each. This modelling is an attempt to describe what the systems do. That is, a model of the system described by a root definition is a description of the activities or processes which must logically occur for the system to be the one described in the root definition.

This conceptual model is then, in stage 5, compared with the rich picture of stage 2. In essence this involves taking a purely abstract model and fitting it against the real world as you have expressed it. In so doing the intention is to prepare to set up the debate which occurs in stage 6. This debate is between those involved in the problem situation. It is intended to try to identify those needed, possible and desirable changes in the problem situation which would effectively enable

an "easement" of it. It is at this stage that the "action" nature of the research is most apparent.

The final stage involves attempting to implement the changes agreed in stage 6.

3.5.2 The Methodology in Detail

The methodology has been criticized for providing too little guidance in its use for it to be of much value to geographers (Agnew 1984). As I have argued elsewhere (Rennie 1985) this criticism illustrates both a misunderstanding of the nature of the methodology and an ignorance of much of the literature discussing the "how" of its application. As well as the many case study applications carried out by members and students at Lancaster University, there are a number of readily available descriptions and guidelines for applying the methodology (notably and recently Naughton 1984). This has led to Naughton (1984:48-49) compiling a list of constitutive (those which must be obeyed) and strategic (not compulsory, but helpful) rules for "playing" the soft systems "game". I will elaborate on some of these in the following discussion.

Stage 1 is essentially self-disciplinary. It is believed important that the researcher not consider himself, or be considered by others, an "expert" in the field under investigation. Rather she is a catalyst or therapist who is there "to assist people to think rigorously about their difficulties" (Naughton 1984:19). Such a role is believed to require an attachment to the problem situation, an explicit awareness of one's own role, goals and involvement in the process of bringing about change. This is primarily because the inquiry process itself brings about a change, if only by adding a new awareness of the situation or of an additional actor (the researcher) in it.

Similarly the analyst should try to clarify the roles of those with whom he is dealing. A distinction which has been found useful in the past is that of "the client, the problem-solver, and the problem-owner" (ibid).⁸ I am not happy with these terms as they imply

⁸ "The client is the person who causes the study to happen in the first place. Without the client there would be no systems study. The problem solver is the person who hopes to do something about the situation which is perceived to be problematical. This could be the client, but need not necessarily be . . . the problem solver is unlikely to be the analyst . . . The problem owner could be a variety of different people in the situation. In many soft systems studies one should, at some stage, experiment by allocating this role to a number of different people (or groups)." (Naughton 1984:19-20)

the existence of "a problem" and this is directly contrary to another important guide for analysts: stage 1 involves a "problem situation". By using "situation" the analyst will hopefully avoid the premature definition of "a" problem as "the" problem. While encouraging the analyst to maintain an "as open as possible" approach, I have found the very action of making such a distinction promotes more rigorous thought than if it were not so made. In Naughton's view this open approach is important for at least three reasons

"In the first place, when you first encounter the situation it may not be at all obvious what is problematic about it. Secondly, even if it is clearly problematic, what you are dealing with may be a mess - a system of interrelated problems. And thirdly - and perhaps most importantly - the people involved in the situation will inevitably have different views about it, views which lead them to advocate their own candidates for the role of "the problem"."

(ibid:20)

Checkland (1981:14), however, argues that the underlying reason for considering it a "situation" is that human activity systems are "manifest only as perceptions by human actors who are free to attribute meaning to what they perceive". Thus they may be, or

they may be other, whereas "natural" systems according to Checkland can never be other than they are.⁹

During stage 1 it is also considered important by Naughton (1984:20-21) to make the practical and administrative arrangements necessary to ensure success with the research. For instance, those organisations and individuals involved in the situation should be informed of your intent, techniques (e.g. questionnaire or tape recorder) for researching should be determined, as should also your place of operation.

Most important during this stage, however, and (according to Checkland (1981) and Naughton (1984)) most difficult is the need for restraint. It is very important the analyst refrain from imposing her own structure upon the situation at this stage - failure to do so may result in a biased and/or inaccurate expression in stage 2. The difficulty of putting this restraint into practice is described by Naughton (ibid:20)

"... ignorance and uncertainty are very unpleasant feelings to have. Any real world problem situation will appear immensely complicated at first sight. You will feel intimidated by its complexity, and will long for some way of simplifying it - some way of imposing order on the chaos. You will feel

⁹ There is a strong positivist and anthropocentric aspect in Checkland's work which I consider unsupported by his argument.

threatened and inadequate, anxious about how you can demonstrate your competence, about how you can demonstrate that you are "on top of" the situation. But resist the temptation. Stick with the approach."¹⁰

It is important to continue restraining in the early part of stage 2, for just as stage 1 involves being introduced to the situation, stage 2 forms the basis upon which success or failure hinges. This is the crucial "finding out" stage. The objective is to provide as rich as possible a picture of the problem situation. "Picture" may be taken literally here, for such provides an "efficient, economical and illuminating way of summarizing or representing the situation in all its complexity" (ibid:21). It also, unlike text (which is sequentially linear), enables different readings and more holistic representation of the situation (ibid:22).

To be "rich" the picture should also contain at least two types of information; "hard" and "soft."¹¹ Hard information is essentially that which is statistical or otherwise quantitative, and includes formal

¹⁰ The feelings described by Naughton were all felt during this thesis research.

¹¹ To date there has been little discussion of these "pictures" in the literature, but I suspect that with the increasing refinements in computer graphics the day of n-dimensional pictures may not be far off. If this is the case, n-types of information could follow.

organizational structures and reporting channels. Soft information consists of the

"subjective interpretations of aspects of the situation. This involves both hunches and guesses about aspects of the situation for which no hard information exists, and summaries of the perceptions of the actors involved in the situation . . . include judgements about the helpfulness, competence, efficiency, etc. of individuals, plus subjective judgements and opinions about the situation of the people in it.

"This kind of information may also include gossip, information about friendships and hostilities, and so on."

(ibid:21)

Naughton (p.21) is aware researchers are often reluctant to commit some of the soft information to paper, but he argues that "it has to be done if you are to get a handle on the situation". He therefore suggests using two "pictures" - one for working and one, less "sensitive", for presentations.¹²

Bearing these aspects in mind, Naughton (p.21-22) provides eight "general rules . . . found useful over the years" for compiling rich pictures. Seven of these are essentially "do's":

1. Look for the elements of structure in the situation.

¹² Naughton does not discuss the ethical or methodological implications of this.

2. Look for the elements of process.
3. Look for ways in which structure and processes interact. Doing this will help to identify the climate or environment of the situation.
4. Include both hard and soft information.
5. Try to gain insight into the norms which operate in the situation. This may be achieved by looking at the social roles which are regarded as meaningful in the situation.
6. Annotate the picture with a set of terse footnotes.
7. Include the researcher in the picture remembering that she is not an objective observer.

The "don't" rule to some extent illustrates the difference between this approach and hard approaches:

8. Do not try to represent the situation in terms of systems.

The explanation for most of these rules should by now be clear. However the rationale for some may seem obscure.

Briefly:

- "structure" refers to those parts of the situation "which change relatively slowly over time and which are relatively stable" (e.g. physical layout).
- "process" refers to "the things which are in a state of change - the activities which go on within the structure".

Not to try to use systems in the representation may seem contradictory, especially given the elements of structure, process, and environment. However, the rationale is similar to that of using "situation".

"the word system implies organized interconnections and it may be precisely the absence of such interconnectedness which lies at the heart of the matter, and by assuming its existence (by the use of the word system) you may be missing the point."
(ibid:21)

Naughton then describes a rural transportation study which I find particularly pertinent to the case study on which this thesis rests. In Naughton's (p.20) case the researcher

"began by representing the situation by identifying on the one hand people's needs for transportation, and, on the other, the satisfaction of these needs, and linking them via a box labelled "Rural Transportation System". But of course it is the absence of such a system which is the key to our current difficulties with rural transportation."

In the Labrador fishery (cf Chapters Five, Six and Seven) one recent analysis (NORDCO 1983) focussed precisely on the absence of a rational transportation system as being the major problem. As my analysis shows in those chapters, I believe the real problems in Labrador were overlooked.

This failure illustrates the second and related problem, the problem of "tunnel-vision" (cf Robbins 1976, Pirsig 1974). A representation of the problem situation in systems' terms

"will channel you down a particular line of thought, namely the search for ways of making these systems more efficient . . . You may be helping to devise better ways of doing things that should not be done at all."

(Naughton 1984:22)

In other words, such attempts work against the openness of the approach, the continual radical element of

"questioning whether these tasks are worth doing or these objectives worth achieving."

(ibid.)

Despite Naughton's guidelines, no absolute criterion exists for determining when a picture is "rich enough". The fluidity of the methodology, however, means that no picture is final, but each may be (and usually is) subsequently enriched as the analysis proceeds.

Stage 3 marks the beginning of a new level of abstraction - it is also one of the most crucial stages in the methodology. There are no sharply defined techniques for identifying relevant systems - a problem

which some researchers consider a fatal flaw (cf Agnew 1984).

A relevant system is

"a system which is, in some way, relevant to the problem situation in the sense that it will yield insight into the situation when it (the system) is described more fully."

(Naughton 1984:32)

Though tautological, this seems the best definition available and essentially captures much of the mood of the methodology. The relevance for Naughton (p.32) lies in the system being "relevant to the process of improving the problem situation"; which leads to the logical question of how one knows that the chosen system is relevant until the entire analysis has been completed? The answer is that at this stage you can only conjecture, and you may have to repeat the process if you conjecture wrongly.

I find Checkland's (1981) advice (which Naughton notes is his experience also) that a relevant system be "insightful", of greater interest. It seems the essence of this concept is in the "newness" of the perception.

To illustrate this Naughton provides a hypothetical example of an English pub. A relevant system in such a case may be

"a drink-provision system. Another is an adult recreational system. Another is a neighbourhood social system. Yet another (if it is a tied house) is a controlled sales-outlet for brewery and distillary products. These are all examples of Relevant Systems, but they are not very startling. Suppose however, that you reflect on your picture of the pub situation a little more and come up with the idea of an adulthood-affirming system . . . This may not, in the end, be a very useful Relevant System, but at least it is an unusual way of looking at the situation."

(ibid:32)

Importance attaches, not so much to the strange systems that could be advanced, but to the fact that both more and less familiar systems are relevant. The serious search for a new perspective to aid in improving the situation is the important fact. This is not unlike the use of Husserl's "fancy" discussed earlier.

Checkland (1981) makes the point also that relevant systems should attempt to reflect the perceptions of different people within the problem situation, including the researcher. Perhaps the most important point is that of Naughton (1984:32)

"you can declare it irrelevant if, having gone through your analysis and held a debate with the people involved in the situation, they reject the ideas for change suggested by the analysis. What

such a rejection implies is that the actors in the situation did not regard your system as relevant."

I will return to the implications of Naughton's argument in Section 3.5.4.

Having named relevant systems it is important to "sharpen them up" to facilitate rigorous analysis. This is done by forming a "root definition" for each relevant system. A root definition is a "precise verbal description of the essences of the processes implied by the Relevant System" (ibid:36). The aim is to capture the "essence" of the system and doing so entails a battle between fulness and conciseness in describing the relevant system. Checkland's researchers have come up with an aid for evaluating the consequences of this conflict. It is the CATWOE checklist (Smyth and Checkland 1976, Checkland 1981). CATWOE is a mnemonic, the letters of which stand for:

Customers

Actors

Transformation (process)

Weltanschauung

Owners, and

Environment (constraints).

The object is to ask whether these factors are all present in the root definition.

"Customers" refers to "those who are on the receiving end of whatever it is that the system does. Who are its victims, or beneficiaries?" (ibid:37). "Actors" refers to the types of people required to carry out the system's activities.

The "Transformation process", which is considered by Naughton (p.37) "the most important single feature of the Definition", is "what the system does to its input(s) in order to transform them into output(s)". "Weltanschauung" ("world-view") was discussed in the last chapter and, I would argue, is the single most important feature of the Definition. The W asks whether or not the Weltanschauung which makes the system "relevant" needs to be specified, and if "yes" has it been?

The "Owners" are those who could cause the system to cease to exist if necessary, and the "Environment" refers primarily to the context within which the system exists. The context will invariably constrain the system. The constraints which are taken as given should be specified.

The fourth stage of the methodology, Conceptual Modelling, has led to some confusion (Rennie 1985). Some may infer a phase equivalent to that in hard systems and overlook the Weberian nature of the soft modelling. Checkland's modelling is intended to provide purely abstract models; they do not attempt to simulate any real world systems, but rather are built up (by deductive logic) from the root definitions. What is sought for each is a depiction of the "logical consequence of picking the system you have designated as being "relevant"". .

Once again there is no hard and fast way to undertake this stage of the methodology, although some guidelines have been developed (Naughton 1984:38-46). The first of these is summarised in Checkland's Law of Modelling:

"models of human activity systems must consist of structured sets of verbs specifying activities which actors could directly carry out"

(Checkland 1981:237).

This is so because the model is of an activity system and hence is represented by verbs. Thus

"the first thing to do is to scrutinize the Root Definition carefully and write down the list of verbs which you think are implied by it"

(Naughton 1984:38).

Next rearrange them "into a logically coherent order" (ibid). Then examine each activity "asking whether it logically implies its own set of subsidiary or back-up activities" (ibid).

This is followed by a grouping process in which activities with commonalities are grouped together. This is an important phase for the purpose of testing the model when it is built. During this phase, revision of the Root Definition may be required as the modeller's awareness of its implications grows. The important point here is that although the iterative nature of the methodology allows this, the modeller should not alter the root definition for illegitimate reasons (e.g. because it is difficult to construct a complex conceptual model it does not follow that the root definition must be simplified). It is also important, although difficult, to prevent the real world problem situation creeping into the model. To allow it in would hinder the development of an alternative, ideal reality and therefore restrict the value of this methodology.

Although you can never be sure the Conceptual Model is complete, Checkland (1981) has found a useful method of testing it by comparison with a Formal System Model. Such a model may be one borrowed from within the area of

application or a strictly theoretical one. The important thing is that it be general and provide a relevant basis for comparison. One of the advantages Checkland considers his modelling phase to have is the capacity for transposition (if necessary) into the language and format used by other models.

Stage 5, comparing the Conceptual Model with the Rich Picture, seems to have confused at least one geographer. The aim is not to compare predictions with actual occurrences, as Agnew (1984) implies, but to compare the idealist conceptual model with the rich picture. In other words, is the ideal identical to the real? It is highly unlikely that it will be, but by carrying out this comparison what is different should be highlighted. It may be that some of the essential processes that your conceptual model requires are not present and their lack may explain the unease felt in the problem situation. It may be that the real world contains factors superfluous to those that are necessary to the system according to the conceptual model. Perhaps even more significant, the rich picture may be identical (or very near) to your conceptual model, in which case whose perception of the problem situation has been modelled? Whose relevant system chosen? How well do models of other peoples' perceptions compare? Is the

unease indicative of the situation matching the perception of, say, an actor, but not the owner - a fact which the analysis has now highlighted?

It is obvious this comparison stage is crucial to those involved in the situation. This is the point where the methodology leaves the abstract world of systems thinking and becomes tangible once more for the actors. It is here where their "learning experience" should really be starting. How best to carry out this phase is therefore important. Once again there is no best method. A number of ways have been tried, ranging from the analyst going away to "think about" the rich picture and conceptual model in some undisturbed environment for an unspecified time, to much more structured approaches.

Among the techniques suggested by Naughton (1984:45-46) two I think are worthy of specific mention if only to attempt to avoid confusing those unfamiliar with the methodology while providing them with a more substantive understanding. The first is to

"imagine the Conceptual Model operating and look at something that would happen according to the sequence of activities in the model, and then compare that with how those activities (or their closest counterparts) would - or have - happened in the real situation."

I feel this technique should be used with considerable caution and probably not by those using the methodology for the first time. It would be all too easy for the unwary to transpose into a hard systems approach with all the inherent traps. Hence I think this should be reserved for simulating past events, the "systems failures" for which Agnew (1984) advocates using the methodology. I do not think the element of prediction should be allowed to enter Checkland's methodology at this stage except in very structured and controlled situations (i.e. those in which hard systems approaches may be used equally effectively).

The second and more interesting technique (if only because of resource geographers' assumed familiarity with McHarg's (1969) overlay techniques) is to

"construct, from the Rich Picture, a model of the real world situation which is structured - as closely as the situation will allow - in an analogous way to the Conceptual Model . . . [These two models] if drawn on transparent sheets, can then be overlaid on one another."

(Naughton 1984:45-46)

Naughton considers this likely to work in only the most structured situation, an assumption with which I disagree. I feel Naughton has inadvertently slipped into a linguistic trap. Advising that the drawing of stage 2

include elements of structure and process has led him to confuse physical structure with abstract structure. Thus he considers processes to be unstructured, and therefore it is less structured to simulate system activities than it is to abstractly transpose the rich picture to a form in which it can be overlaid on the model. I would argue that it would require a much more structured situation to allow activity simulation than it would to redraw the rich picture or the model to facilitate comparison.¹³

Whatever technique is chosen, the objective is to provide a suitable format for structuring the debate which follows (in stage 6). It is therefore advisable to try to facilitate this debate by available audio/visual aids (e.g. overheads, flip charts, videos, etc.). Naughton (p.48) considers it a given that the debate have an Agenda. He notes, however, that such an Agenda should focus on "whats" not "hows".

"Thus the Agenda could include a statement like "some systematic way of centrally processing order information seems to be necessary", but never statements like "you need a computer". The reason for this is that a computer is just one possible "how" for achieving the "what" which your comparison

¹³ Note that in this redrawing I do not intend the original picture to be changed in relation to the real world, but that I accept that the original picture could be drawn in a variety of ways/languages to reflect that real world. In redrawing I would transpose without loss of richness.

has highlighted. There may be other, non-computerized, ways of doing the same thing, and focussing on specific "hows" is the first step on the slippery slope towards recommending particular technical fixes."

(ibid.)

Having developed the Agenda we are now ready to move into stage 6, the debate. During this stage the objective is to identify possible changes which are "systemically desirable" and "culturally feasible". Our device for structuring the debate is the Agenda. Basically, in one or a series of open discussions, questions from the Agenda are put to the situation's actors in an effort to identify suitable changes. There are two criteria for "suitable". One is whether or not the change

"makes sense in systems terms: it must not violate, contradict, or run counter to the systems thinking that has gone into the formulation of the Root Definition and the construction of the Conceptual Model"

(ibid.)

(i.e. is systemically desirable).

The other is more subtle. It takes account of the reality of local and organizational cultures and the temporal constants that seemingly inhibit change. Therefore it asks that proposed changes be "feasible" - that is, that they could be implemented within the

cultural constraints imposed on the situation. It is important that the analyst not take these for granted, but present the questions to the actors and allow them to provide the answer.

"They, after all, are the ones who have lived through the situation, and who are to some extent responsible for it; they are also the people who will have to implement any changes that emerge."
(ibid.)

Assuming that changes have been agreed upon, the next and final stage of the methodology is the implementation of these changes. To my mind this stage is a nonsense. Checkland (1981 or indeed in any of his writings) provides nothing which extends this stage beyond its title. Naughton (1984:47) can do no more than suggest a typology of changes which might occur at the end of a soft systems study (a typology outlined by Checkland (1981) in stage 6!). This stage appears to be little more than a "period" emplaced for the purpose of ending a process which is avowedly always incomplete. This seeming contradiction is present because of the highly iterative nature of the methodology and the circularity of its reasoning, both of which are discussed below.

Primarily, however, the implementation stage seems to me to be a hangover of the early days of the methodology. It captures the systems engineering origins of Prof. Checkland (cf Checkland 1972, 1981) in which change has to be concrete. The real changes in the situation brought about by the methodology occur in stage 6, but as they have no formal physical expression Checkland has included a stage 7 to allow apparent change to occur. Essentially this final stage is beyond the methodology. As Checkland (1981:1982) himself says

"Once changes have been agreed, implementation of them may be straightforward. Or their introduction may change the situation so that although the originally perceived problem has been eliminated, new problems emerge. Or the activity of implementing changes may itself be problematic - and this new problem may also be tackled by means of the methodology."

If implementing the changes requires the use of the methodology then it is hard to argue that stage 7 plays any substantive role within the methodology. Hence I would argue stage 7 should be omitted (however, should someone suggest adopting a "monitoring" stage to see how well the methodology worked in the long-run I would probably revise my position).

Thus we have the substance of the methodology. Before discussing the criticisms of the methodology, two

ways in which using the methodology may be particularly fruitful for geographers will be considered.

3.5.3 Two Interesting Cases

The first case is one of historical analysis.

In one of six case studies given special mention by Checkland (1981) he was called upon to provide an analysis of the failure of one of his client's projects. The outcome of the research suggests (among other things) the utility of the methodology for historical analysis. In this case an historical narrative was developed from documents and interviews with the still-living participants. This was compared against a conceptual model developed from a root definition of the system perceived by the researchers as most relevant if the project had been conducted rationally. The possibility of reconstructing history on this basis is, I believe, not too different from that already employed by some schools of historical geography (e.g. Guelke 1971). What new insights might this methodology provide for, say, analysts using implicitly rationalist approaches in economic history? What light might be shed on major debates within historical geography if the different perspectives of idealists and structuralists were used

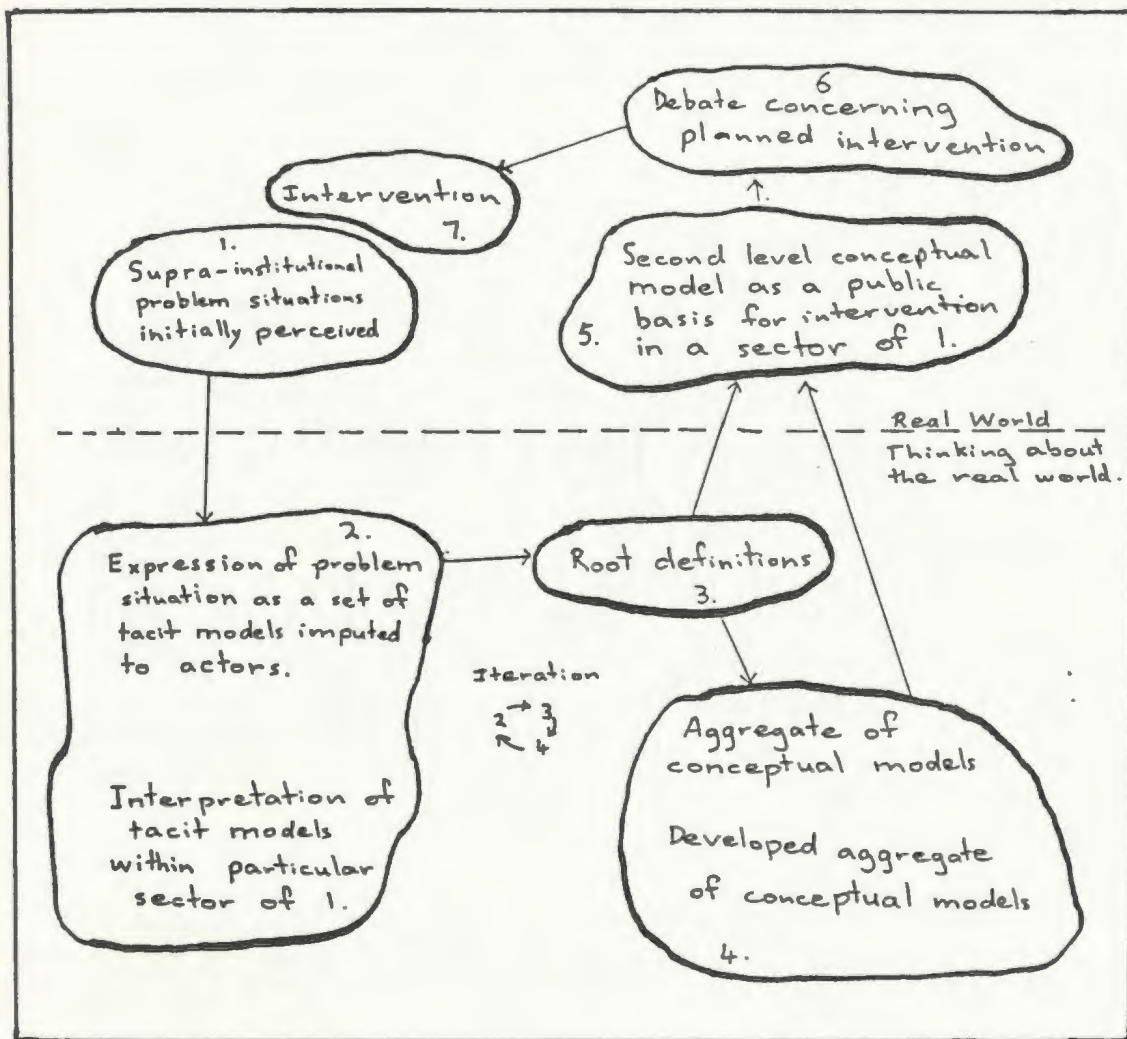
as the basis for root definitions within the methodology? These are questions I believe historical geographers should now be addressing.

The second case study I wish to mention here is Cornock's (1980) analysis of the art world. His research is crucially important for geographers wishing to use the methodology in that it tackled a largely unbounded problem situation. What, for instance, is "art"? Cornock discovered that his initial rich picture was in fact a conceptual model based on his own underlying and implicit root definition. Consequently he had used the methodology "out of order", as illustrated in Fig 3.2. Checkland's (1981) conclusion is that the methodology is a hermeneutic device and it is the relationship between the stages not the starting point that is important. I will return to this case in the next section; however, it is worth noting that Cornock has demonstrated a potential for the methodology for use in supra-institutional situations - the type geographers normally analyse.

3.5.4 Criticisms of the Methodology

Given that the so-called "quantitative revolution" occurred at a time when many of the present academic

Figure 3.2: Out-of-order use of Checkland's methodology
(After Checkland 1981:212)



staff of universities were undergoing graduate studies, and given the pervasiveness of positivism, it is not surprising that Checkland's methodology has come under fire from a number of quarters. The methodology does not, for instance, provide problem solutions. It does not praise the virtues of Popperian falsificationism,¹⁴ nor stress the importance of mathematics. It does not bow before the bureaucratic god "Repetition", nor consort with the hard-systemic master "Prediction". Instead it argues the phenomenologists' case; the case for creativity, originality and individuality. Therefore it might be surprising that Checkland's approach has been attacked for attempting to be too neutral, too objective, too rationalist - in other words too positivist!

On reading Checkland's (1981) book it is not hard to see where the problem lies. My analysis suggests the problem is two-fold: Checkland is reluctant to break free of his own background (or, as discussed below, is trying to be too clever) and the methodology leaves certain crucial questions unanswered.

As I have discussed above (with reference to stage 7), positivism and the desire for acceptance by the

¹⁴ Although Checkland draws support from much of Popper's writings.

scientific community still taint both the system's methodology and its originator. This problem is more pervasive than stage 7. Checkland, for instance, clearly argues for science as a human activity system (which my Chapter Two supports) governed by certain Weltanschauungen, particularly positivism, which are largely unquestioned by the participants. Although seemingly aware of his own biases

"Certainly I was consciously trying to carry out the work in the spirit of science, with some imprecise expectation of eventually deriving generalizations about systems of various kinds."

(Checkland 1981:284)

and of the problems of science

"an attempt was made to think out the basis of systems thinking. This led to a view of systems thinking as a response to difficulties which confront the method of natural science when it faces phenomena of great complexity, notably those of the social world."

(ibid.)

he shies away from the key issues.

Rather than confront the failure of natural science and consider that its methodology may be inappropriate for research in the "natural" world, Checkland continues

"This in turn led to consideration of the unsolved methodological problems of the social sciences . . . carrying out systems studies in real problem situations involved wrestling with the problems of social, not natural science."

(ibid.)

Thus Checkland resurrects a distinction between natural and social science. His criterion for so doing is that of complexity, based on concepts of emergence and self-knowing. Concurrently he explicitly accepts the existence of a real, natural world independent of observers:

"It is at least reasonable to assume that there is an unchanging physical, chemical and biological world "out there" and that we can find out about it by using the method of the natural sciences."

(ibid:185)

Whereas Checkland has developed "a methodology for finding out about the social world" (ibid), it is partly this positivistic element in Checkland's writing which leads myself and others to be suspicious of the claims he has made for his methodology.

Prévost (1976) has argued strongly that Checkland's methodology merely depicts a coherent structural-functional approach (as represented by Parsons (1951) and Merton (1967)). Checkland (1981:235-237) counters this by arguing that there is in stage 4 a similarity

between direct/consequent activities and manifest/latent functions, but that the functionalist strives for the richest possible model (i.e. includes latent functions) whereas the soft systems model excludes consequent activities. This is because the soft systems analyst is attempting to change a situation. He does this by generating "high quality discussion" and to achieve this he makes models of "possibilities", not "the most accurate possible, testable account of what a social system is".

Prévost's initial structural-functional description is, however, followed by the argument that the methodology has a "static and conservative" bias. This criticism may be able to stand without the structural-functionalism and hence deserves closer attention.

Although Checkland (1981:251) opposes Prévost's view with that of Jones' (1978) (that the methodology does not attempt to construct models of real world systems) there is an important similarity. Jones makes the point that the methodology operates on the basis of "a pre-formed set of concepts developed in experience". I think the case could be argued (see Chapter Two) that the language ceiling and the inability to remove oneself from experience via this methodology will tend towards a

conservative range of possible relevant systems and models.

This is a point Checkland (1981:283) tacitly admits with regard to stages 5 and 6.

"What I hear Habermas arguing is that the debate at stages 5 and 6 of the soft systems methodology will be inhibited by society's structure. I think that it is the nature of society that this will be so."

What I am suggesting is that such inhibitions will occur at a much earlier stage and I draw support for this from both the already mentioned reluctance of Checkland to criticise natural science, and from the discussion below of Cornock's study. The inhibitions are merely more apparent in stage 6 where "systemically desirable" and "culturally feasible" announce a level of conservatism abhorrent to radicals.

Habermas (1971) however, in arguing the illegitimacy of the political power of "experts" paves the way for Checkland's defence of his methodology. Habermas's "communicative competence"

"requires both equal participation in discussion, undistorted by power relationships, and unlimited scope for a radical questioning of societal structures and procedures."

(Checkland 1981:282)

Thus Mingers (1980) finds agreement between Checkland and Habermas in that

"both deny the inevitability of the divorce between rationality and values which characterizes natural science, and both try to bring the two together in rational communicative interaction. Habermas's communicative competence would enable social actors to perceive their social condition in new ways, enabling them to decide to alter it; Checkland's methodology aims at consensual debate which explores alternative world-views and has as criteria of success "its usefulness to the actors and not its validity for the analyst"."

(Checkland 1981:283)

Checkland therefore concludes that the soft systems methodology can be a vehicle for Habermas's "radical reformism". Hence the limitations imposed by the "nature of society"

"do not mean that the use of the methodology cannot in fact be emancipatory for the actors concerned, in a way which Habermas would approve."¹⁵

(ibid)

Checkland is on weak ground here. Although the methodology might be used in such a sense, I believe the "communicative competence" principle of "equal

¹⁵ In fairness to Prévost (1976), Jones (1978) and Naughton (1979) (who finds a "whiff" of functionalism in the approach) it should be added that it has only been since their papers appeared that the importance of developing many, as opposed to one "most", relevant systems and root definitions has become a firmly established constitutive part of the methodology.

participation . . . undistorted by power relationships" is violated. In the outline of the methodology presented here I drew heavily on Naughton because he was more specific about actual techniques for operationalising the methodology than is Checkland. It is quite clear that Naughton is aware of the manipulative role of the expert (the soft-systems analyst) in stage 5. The "expert" must attempt to "facilitate" the stage 6 debate and therefore structures the presentation of his findings in a certain way.

Checkland (1981) in his historical analysis also noted the important role that communicating results of consultancy could play in their acceptability. He unfortunately does not seem to recognise the impact this communicating may have within his own methodology.

Naughton's highly structured Agenda type presentation, combined with his subterfuge of using two rich pictures (one "less sensitive" than the other) suggests to me that at the very least the stage 6 debate can be (and probably invariably is) manipulated by the "expert". That there is a counter-manipulation, that of Weimer's "perceived audience" (as discussed in Chapter

Two) should not be discounted either¹⁶. Given the close involvement of the analyst with the problem situation, what subtle manipulation of the analyst might lead to the analyst in turn manipulating, perhaps inadvertently, the debate in a direction favourable to one or other particular party?

To this both Naughton and Checkland may reply "The iterative nature of the methodology and its criterion of success render such possibilities improbable". Checkland may go further to argue that the dialectical nature of the methodology ensures a critical approach if used properly (and a good tool cannot accept the blame for the bad workman). If we concede Checkland the latitude of his "societal limitations" argument and the argument that, properly used, the methodology is radically reforming (because it includes the generation of multiple

¹⁶ Checkland (1981:227) notes ". . . if the root definition is too radical, then at stage 5 an unbridgeable gap will be revealed between conceptual models and reality, and this signals that more constrained root definitions are required. This further illustrates that no stage of the methodology is complete or autonomous on its own".

root definitions and a dialectic debate)¹⁷ we should then look at its criterion of success.

Contrary to Agnew (1984), as should be clear by now, the criterion is not the methodology's ability to accurately predict the future. In fact the methodology is inherently untestable even in direct relation to specific problems

"If someone says to me: "I have tried the methodology and it works", I have to reply on the lines; "How do you know that better results might not have been obtained by an ad hoc approach?" This is an unanswerable question. If, on the other hand, the assertion is: "Your methodology does not work", I may reply, ungraciously but with logic, "How do you know the poor results were not due simply to your incompetence in using it?"."

(Checkland 1981:241)¹⁸

Checkland therefore argues that there is now a body of practitioners who, on the basis of ten years'

¹⁷ Naughton (1984) however presents a slightly different rationale for developing more than one relevant system and conceptual model. He sees it primarily as being an "insurance policy" to make sure you have not wasted too much time if your first choice is considered irrelevant by the actors. This is contrary to the spirit of Checkland's proliferation of definitions and models.

¹⁸ It is interesting to note that the same could be said about hard systems methodologies when applied to human activity systems. Checkland however, still considers them as failures and justifies this belief with his brand of phenomenology - i.e. that social reality is only a perception whose meaning we must seek.

experience, have faith and confidence in the methodology. Similarly there now exist a number of people who rate their former problems or problem situations as solved or improved.

This, of course, raises our old problem of the guarantor (a problem, incidentally, which Checkland attempts/wishes (?) to ignore with regard to natural science). Checkland's answer above (a Lockean consensus (Churchman 1971)) is less satisfying to me than his more phenomenological one; i.e. that the participants agree something has been learned. Now the important question that arises for Checkland is, who is it that has learned something? I would suspect that it is the dominant individual(s) in the discussion/debate (possibly the problem owner or the consultancy fee payer) for whose learning experience Checkland is most concerned. Otherwise how can he believe that the body of people with improved problem situations exist? Perhaps, more accurately, it is important that the analyst feel something has been learnt (without specifying for whom)! In either case the methodology's criterion of success does not necessarily involve "radical reform". Be this as it may, however, I would agree with Checkland that ideally the methodology is capable of emancipatory

utilisation for the individual. This belief is founded on the phenomenological connections.

Checkland (1981:283-284) sees the social reality implied by his methodology as being

"the ever-changing outcome of the social process in which human beings, the product of their genetic inheritance and previous experiences, continually negotiate and re-negotiate with others their perceptions and interpretations of the world outside themselves."

On the basis of the discussion in the last Chapter, it should be obvious from this root definition that Checkland's connections with phenomenology are somewhat diluted. Checkland is aware of this and considers himself more closely related to Schutz's (1962, 1964, 1966) sociological phenomenology than to Husserlian phenomenology. Thus, as noted above, he justifies the existence of a real world in essentially existentialist terms (somewhat after the fashion of Farber (1943)). If we consider Checkland's methodology as more existentialist than positivist¹⁹ (and ignore his apparent

¹⁹ A feat which on the basis of this brief discussion may require stretching the imagination, but which in a lengthy thesis devoted purely to the philosophy of Checkland I would have no trouble defending on the basis that Checkland has yet to resolve his own internal conflict between existentialism and positivism.

reverence of Popper) we can find some touchstones of commonality.

There is, for instance, the failure to accept the real (social) world as given. Then there is the attempt to collect perceptions of a situation and the inclusion of whatever glancing perceptions (e.g. gossip) happen by. This "standing out for the world" is very much in the mould of existentialism. The rich picture is thus an intended world which has yet to be phenomenologically reduced. The reduction to the essence may be equated with seeking the relevant systems in that one is trying to grasp the essences of particular Weltanschauungen.²⁰ The root definitions thus become an attempt to communicate the incommunicable essences.

But this is also the touchstone of difference. I have argued earlier that essences may indeed be communicable. Hence the public knowledge of stage 6 is not necessarily in contradiction to phenomenology.

However, Checkland did not reach this stage from a theoretical precept, but from practical experience. He grounds his communication (root definitions) in the

²⁰ This is my modification. Husserl might argue the relevant systems and root definitions are mere "psychologism".

strength that public knowledge, the general knowability of experiences to many people, has shown in supporting positive science. To him the fundamental difference between science and non-science is in repetition:

"The core of its (science's) structure . . . is the generation of repeatable experimental happenings which represent tests of hypotheses."
(Checkland 1981:54)

It is somewhat surprising that despite his understanding of the roles of Weltanschauungen and his grasp of the work of philosophers of science as disparate as Feyerabend and Wittgenstein, Checkland has been unable to dispense with or seriously challenge his own falsificationist view of the natural world. We have already seen that such a view is untenable, as repetition is impossible.

However, for Checkland science can only advance through repeated critical tests and hence may be considered public knowledge. Thus, given his scientific bias, it is not surprising to see in his methodology that the root definition, the communication of the essence,

is never considered incommunicable.²¹ This is not to say that Checkland is unaware of the arguments for the incommunicable nature of essences. However, for him the analogy of root definitions with essences does not seem to occur. If they did I believe he would dismiss the arguments as irrelevant in practice, just as he attempts to do with regard to communicating between Weltanschauungen. There his positivist Weltanschauung leads him to agree with Popper (1972) that critical discussion between people of different Weltanschauungen is always possible. Thus the methodology becomes also a way of bringing about such discussion. As we saw in Chapter Two, this may not be possible.

Similarly, Checkland (1981:271) explicitly acknowledges the tradition of Weberian idealism in his conceptual models and indeed his entire approach. This immediately raises the question of the validity of a rationalist base for his explanations of human behaviour (Naughton 1984). To argue the rationalist case is akin to the determinism which Checkland (1981:285) vehemently rejects. Checkland may attempt to argue that the idealism is extant only in the conceptual model stage,

²¹ Equally, we should not be surprised to see him justify his methodology by a Lockean guarantor. In contrast I have argued that the learning experience is a purely personal thing and the methodology's guarantor should be likewise.

but, as Naughton points out, the rationalist behavioural model is implicit in stage 7 and, I would suggest, underlying the entire methodology.

Naughton (1984:48-49) makes another interesting observation. The methodology may be redrawn in a hypothetico-deductive form. Thus

"the core of the process involves the analyst first of all in putting forward a conjecture or hypothesis and then testing it by deducing some consequences from it and seeing whether they are valid. The hypothesis in this context is that a particular notional system will be "relevant" to understanding or improving a given problem situation. The Conceptual Model and the Agenda represent the deduced consequences of the hypothesis, and the debate with concerned actors represents the acid test of the hypothesis, in the sense that if they reject the deduced consequences, they are effectively saying they do not regard the analysts's system as "relevant"."

However, he argues, although it resembles science it is not science. It is a "sort of social technology". It aims for "effective action", whereas the goal of the scientist is understanding". This raises a point I let pass earlier. Naughton believes the final test of an analyst's work is the relevance of his system, the relevance being assessed on the basis of whether or not the actors take action. Checkland, however, accepts as one of his criteria for the success of the methodology: "the readiness of people involved to agree that useful

insights have been gained" (Naughton 1984:51). He does not require that action be taken, noting instead that greater understanding is enough (Checkland 1981). Where then is Naughton's distinction between the methodology and science?

The final point I wish to make here derives in part from Cornock's (1980) study and in part from my own experience. Checkland's initial starting point is an unstructured problem situation, yet the majority of studies he describes are well-structured. They tend to be either intra- or inter-institutional problems. Occasionally there is an interesting divergence, as in the defining of a concept (Checkland 1979) or the design of a survey (Checkland 1981:198-202); however, even then the situation is rather structured. There is always someone who has requested the study or provided for it to be conducted.

Alternatively the problem situation has distinctive environmental boundaries (e.g. linguistic rules and Latin origin in defining "Terotechnology" (Checkland 1979) - would the same definition apply in, say, Chinese?). Also the tautological nature of the debate and of choice of success criterion restrict the methodology. These

strictures are clearly indicated by the C, A, O and E factors in CATWOE.

The geographer may be more interested in less well-bounded problems and hence the importance of Cornock's study. Given this it is interesting to note that Checkland has drawn strength from Cornock's research.

Cornock found that his stage 2 expression was in fact a stage 4 conceptual model of the Art World. He then (much as has Checkland in his root definition of social reality) "asked what root definition is implied by it". This identified a root definition representative of a particular Weltanschauung - one which, while defensible, was clearly only one of many possibilities. Consequently other models were generated representing various role-associated Weltanschauung. The models were then tested against the perceptions of individuals in the Art World. Subsequently this work was used as a basis for intervention in parts of the Art World.

The fact that the methodology could be continued in such a manner has led Checkland to stress the facility of the methodology for use "out of sequence". However he also states (1981:211) that he believed the questions

"What are the elements of structure? What are the elements of process? What is the relationship between the two? could be used to assemble what was certainly an explicit, but which was also hopefully a relatively objective account of a problem situation, even of a situation in which the analyst was also an actor. (I still believe this to be possible; but it is more difficult to do than I had imagined)."

The implication that the analyst's role as an actor had an effect, is a "red herring". After all, the whole basis of the methodology is that of active participation. Checkland, in almost the same breath (1981:206-210) describes studies carried out by actors in the situation - these he sees, presumably, as "objective". The problem must be elsewhere.

My own feeling is that the added complexity of the supra-institutional problem situation may have prevented the reduction of the whole to a simple picture. This in turn calls into question the very nature of the problems to which this methodology can be applied. Are supra-institutional geographical problems beyond its scope?

On the other hand, this study seems to have helped Checkland (1981:18) to conclude that Weltanschauung is "the most important concept in the methodology" and that the methodology teases out Weltanschauungen and examines

their implications. It must, therefore, have some potential for geographers.

I believe, however, that there is an even more important question here. Checkland's conclusion of out-of-sequence use is based on the assumption that a rich expression was in fact a conceptual model and that for each conceptual model there is a unique root definition. While the logic of the development of the conceptual model has not been seriously questioned (although I believe it could be, if only on the grounds that deductive logic is merely a suatory device founded on linguistic determinism), the assertion that a conceptual model implies a root definition which is unique may fly in the face of the Law of Equifinality. This is especially so, and crucially important, when the rich picture is considered to be a conceptual model, as in Cornock's case. To argue that it does not contradict the Law of Equifinality is to argue that a rich picture is a perception of a situation whose essence is unique, and hence that there can be only one relevant system and root definition which applies to the whole picture. Thus the conceptual model is merely a rich picture in a new language or form, both of which express an underlying essence called by the methodology a relevant system. To

obtain that relevant system without Husserlian phenomenology would appear impossible.

3.6 Conclusion

At the beginning of this Chapter I stressed a key distinction, between the theoretical and the applied, the ideal and the real. I have hinted in sections 3.2 and 3.3 at how the conflict between the two has influenced systems thinking. I have stressed the role of the positivist Weltanschauung and I believe it is now apparent that the mystical origins of systems thinking were devastated by this world-view during the 20th century. This occurred through the perceived alignment of positivism with systems thinking - a perception aided by attempts to generalise laws and by the successful technical application of systems thinking. The supporters of "the whole is greater than the sum", I believe, were essentially arguing the emergence concept, a feature which, combined with the concept of hierarchy, became acceptable to positivists.

Also involved was the battle between free-will and determinism, and I believe determinism won the day (through the communication and control concepts) in systems thinking. This in turn has forced those who

oppose the positivist movement to reject systems thinking and systems approaches as being unself-critical, and not emancipatory.

However, the perceived failure of hard systems methodologies when applied to human activity systems has led one initial positivist (Checkland) towards an existential phenomenology. Checkland has come in this direction through applied research in relatively well-structured problem situations. His methodology's apparent internal tensions and conflicts consequently lie in his inability to separate the positivistic Weltanschauung of his training and experience from the phenomenological Weltanschauung implied by his research and methodology - an interesting case of the a priori bias which can be brought into the expression of any situation and one which abounds in his major (1981) recapitulation.

It is not surprising therefore, that Checkland does not, as I would have anticipated he should, turn the methodology back on the human activity system called science (or "natural science"). To do so would lead to challenging many of his beliefs, notably the ability to communicate across/between Weltanschauungen and the existence of the "natural" world. This in itself would

have led him to questions that his methodology might not withstand²².

As the two cases I have cited illustrate, there seems to be potential for the soft systems methodology to be used for geographical research. There are, unfortunately, still a number of questions which must be asked of it. Is it really possible to use it in supra-institutional situations where complexity is large scale and boundaries are fuzzy? Does the out-of-sequence use of the methodology suggest a violation of the Law of Equifinality? Is it possible not to manipulate or be manipulated during use of the methodology? To what degree is it emancipatory? Is it possible to communicate between the Weltanschauungen in stage 6? Can a priori bias be removed during or by use of the methodology? Is the methodology phenomenological? To what extent can the methodology be used by geographers? The following application of Checkland's methodology to the North Labrador fishery attempts to address these issues.

²² There is a possibility that Checkland's (1981) expression is deliberately designed as a rhetorical device to attract positivists into his methodology, thereby persuading them to accept a phenomenological interpretation at least of human activities. If this is the case it is skilfully done and may succeed. Alternatively, he may be attempting to seduce phenomenologists towards systems thinking - in which case it is clumsy and unconvincing.

CHAPTER FOUR

Rich Picture of a Poor Coast?Expressing the Problem Situation4.1 Introduction

This chapter fulfils the first step in the Checkland methodology, the expression of a rich picture of the problem situation. It is the step which virtually everybody carrying out empirically-based research must undertake but seldom expresses, and as such it is the vital core of the Checkland methodology. Rather than structure the picture from the outset using literature reviews, statistical sampling techniques or assumptions (whether theoretical, "gut-instinct" or "common sense") of the nature of the problem, the methodology requires a naive mind which imposes no direction. In a well-structured situation this is not overly difficult. However, as discussed earlier, when dealing with an open system of the scale of the north Labrador fishery there is a potential problem in that the rich picture developed may in fact reflect a bias introduced by an implicit model held by the researcher (Cornock 1980). To carry out this part of the research requires considerable restraint and generates some difficulties, not the least

of which is how best to present the picture so as not to place inordinate emphasis on particular aspects or viewpoints, but still to reflect the relative strength of the views as held by those participating in the problem situation.

In structuring this expression of the rich picture I have opted for an order of presentation representing my response to the region. By following such an order of presentation I expect that any implicit models I may have held would be more perceptible. The chapter therefore commences with a description and analysis of the data gathering technique used and the problems experienced. It then moves into the expression phase which reflects my response to the fishery: physiography and biogeography; human utilisation of the region; the fishery itself and the rich picture as finally expressed. The conclusion to the chapter summarises the key points in the chapter and provides comment on future rich picture making.

4.2 Data gathering for a rich picture

The usual approach to research field work is to identify a setting or theory-based problem and structure the research on that basis. This means an almost

unavoidable carting of mental concepts, theories or prejudices into the field. This would be contrary to the objectives of my research. Of some advantage to my study was the fact that I had virtually no prior knowledge of north Labrador. What interest and knowledge I held were derived from looking at a globe as a child and noticing that Labrador was close to Greenland and was little known in my homeland, and from growing up with a Labrador retriever as my constant companion. I knew there was a potential problem situation only from comments by a NORDCO researcher to the effect that the fishery had real problems and that there was something "very interesting" in the development of the Torngat Co-op which might make a suitable thesis topic. While this naiveté (ignorance?) was of considerable value in limiting the amount of mental baggage I started with, I in fact found many similarities between issues, problems and attitudes in and about northern Labrador and those found in New Zealand (where issues of Maori rights were topical). My farming background also resulted in some recognition of analogous situations at times. When awareness of similarities arose I consciously analysed them and the way in which they may have led me to conduct my research. I then proceeded with the research, but consciously refrained from following those lines which I considered were generated by structures or knowledge from past

experience rather than from the situation at hand. Consequently I am confident the views and expressions gathered during the research reflect as nearly as possible the reality of the problem situation as viewed by respondents.

In similar vein, I consciously avoided imposing a structure during data gathering. This is an important point which I will return to at a later stage, but wish to flag here. It is not possible to consciously gather information without thinking about the content of that information. The very nature of the word information implies that some thought has been given by the "recorder" to his stream of consciousness. This thought has resulted in the classification and recording of some of that stream as "information". To structure the stream as little as possible I deliberately did not analyse any information I recorded except when required to do so to report to either my supervisors or my funders (see below). This runs contrary to the "ideal" of "reflexive monitoring" (the progressive focussing and refocussing of research on the basis of reviewing progress) advocated for this type of field research (Hammersley and Atkinson 1983:164-165). It was recognised that failing to make such reviews could result in omissions (possibly significant) in data collection, particularly given the

limited extent of available field time and the breadth of the area to be studied. However, my assessment of the methodology and my previous experience in attempting to apply it in other areas led me to the conclusion that the risk of oversight was not as great as might be anticipated.

The appropriate length of time to spend in the field, when to carry out the fieldwork, how to gather information (e.g. survey, tape recorder or video) and how to gain access to people and information were all factors with data-gathering implications. In most problem situations owners are often clients and readily identifiable. In my study any problem owner was unaware of my existence (and vice versa) and Cornock (op. cit.) was the only researcher whose work was comparable. In his case the research spanned many years in a field in which he was experienced as a practising artist. Rather than this prior knowledge being an aid to his research, it had resulted initially in a rich picture reflecting a model which was almost entirely his own. I was therefore cautious about acting on the views of those who had experience in the region. The variability of the advice I did receive reinforced this wariness. Of greater concern was the awareness that there would be a number of different actors involved and that it was

important I not be identified at the outset as belonging to or being supported by an inappropriate clique (i.e. a clique whose members would be denied access to relevant information).

With no easy answer at hand I opted to make at least two trips: essentially an initial appraisal visit and a subsequent trip or trips to carry out detailed fieldwork. As it turned out the initial appraisal visit was a useful fieldwork exercise in itself. It took place from 4 August to 20 August 1983 and involved travelling by boat, accompanied by my wife (an experienced geographer and historian who was about to commence an MA in Folklore), from Lewisporte to Goose Bay and subsequently, on the coastal ferry Bonaventure, a return trip to Nain. While travelling by boat we met and talked with a wide range of people, most of whom were from Labrador and their comments informed the rich picture. We also disembarked at all communities. On our return to Goose Bay we travelled by coastal ferry down the southern Labrador and northern Newfoundland shores to Lewisports. This provided a useful comparison of communities.

On arrival in Goose Bay we became friends with two teachers, Kathleen Crowe and John Hicks, who provided

accommodation for both this and my subsequent field visit. This proved a useful base halfway between the two parts of Goose Bay and Happy Valley and their generosity included use of a vehicle and day trips to Sheshatshit, North West River and Muskrat Falls (berry picking). This helped shape my understanding of Labrador's interior and its contrasts. Of greater significance however was that although both John and Kathleen were well-known in Happy Valley-Goose Bay, they were perceived as effectively neutral outsiders, at least with regard to the fishery and north Labrador.

They were also heavily involved in community activities which provided a range of insights into and opportunities for contacts which would otherwise have not been made (e.g. through coaching the school's table tennis team - in an attempt to broaden the range of my contacts and give something back to the community - I was able to gain insights into Torngat's operations from a student who worked for Torngat in summer). The angle for approaching people was also changed, as I met people in ways I would not have had my first contacts been purely those resulting from research on the fishery. For instance, an early rapport was established with one influential local woman whom I wished to interview, as a direct result of my having been one of the few males

to attend an anti-pornography meeting and video-screening at which she had been present. My overall impression was that the independence of action and perception of neutrality resulting from being hosted by Kathleen and John made a significantly important contribution to the accessibility of some of the data collected.

My first visit to Labrador also involved my first direct contact with Torngat. This in itself was informative. I contacted Torngat's General Manager, Alex Saunders, by telephone and indicated my interest in writing my thesis on the role of Torngat in the Labrador fishery. Initially cautious, he referred me to Leo Hanrahan, a Co-op development educational extension worker funded by the Donner Canada Foundation and operating from the Labrador Institute of Northern Studies (LINS). After an hour-long meeting with Leo, I was "given the green light" to meet directly with Alex. This meeting was conducted in a very positive light and I left Labrador with a clear understanding that the research would be facilitated by Torngat, that winter was the best time to carry it out (as that was the time which was least busy for fishermen and they would therefore be most prepared to talk with me) and that the problem situation was suitable for application of the Checkland methodology.

My second visit took place from 23 January to 22 March 1984 and included acting as recording secretary to Torngat for its Annual General Meeting (AGM). This meeting is held in all six north Labrador communities within a ten day period. Accepting the offer of the secretary's position for the AGM was not automatic. There were two main concerns. Of paramount concern was the degree to which my perceived neutrality would be compromised as I became clearly associated with Torngat's management. At the same time I was aware it would offer a unique opportunity to meet influential local players in the fisheries field, to attend community-based meetings devoted specifically to discussing the north Labrador fishery in its entirety and from a concrete knowledge base, and I might be able to see some of the inner workings and thinking of Torngat. The second factor influencing my decision was that of cost-effectiveness. If I did not accept Torngat's offer (which included free transportation and accommodation) the cost of visiting each community and staying for a time sufficient to establish contacts and carry out interviews would be considerable and might not result in data of any greater moment. Whereas being identified with Torngat could be expected to constrain some people I might wish to talk with, I would at least be associated with Labrador insiders and be privy to first hand

experience of views which would be expressed between Labradorians. As an outsider operating independently this was less assured, I would be more likely to be "fed a line" which suited the individual "feeding" it to me.

My participation at the AGM was approved by Torngat's Board of Directors in an in camera part of a Board meeting. Those whom I travelled with were Henry Broomfield (President and from Rigolet), Alex Saunders and Leo Hanrahan. We started in Nain and took a total of ten days to visit all six communities and held the AGM in each. We had good weather throughout, in marked contrast to previous years when bad weather had sometimes meant a ten-day stay in one community and even abandonment of the AGM until another date. The brevity of the stay in each township was a constraint on the fieldwork, and the accommodation frequently meant socially acceptable note-taking was not possible (due to lack of privacy, light).

In Makkovik the team were able to listen to a meeting held by Federal Government representatives who were promoting a salmon enhancement programme. This provided a useful opportunity to compare meetings and local participation. Participation from a predominantly

settler community like Makkovik however may differ from that in first people dominated communities.

The remaining time in Labrador was spent primarily in a mixture of interviewing people and reading Torngat's files and various other materials which people drew to my attention. The selection of interviewees arose from names mentioned either in writing or orally. It was interesting to note that almost without exception people were keen to talk and to give not only their own views, but those of others who might disagree with them. Their main opponents were usually mentioned and it was frequently suggested I talk with those opponents "to get their perspective".

To boost my finances I had also agreed to interview a number of identified people as part of a scoping survey of issues requiring research in Labrador. Some of the data from these interviews have been incorporated in this thesis.

While in Labrador I attended a meeting of Torngat's Board of Directors and a meeting of the Labrador Combined Councils. This was augmented by discussions with participants in informal settings. I was also given relative freedom to explore Torngat's office records and,

in Newfoundland, the Registrar of Co-operatives' file on Torngat.

Data gathered in Labrador were supplemented with material from the Memorial University Library and interviews with a number of people chosen on the basis previously mentioned. Specific data were also obtained from the Newfoundland Department of Statistics, the Department of Fisheries and Oceans (DFO), the Grenfell Society and the Royal Canadian Mounted Police (RCMP). These data were sought as a result of comments made by interviewees. Some of the fisheries data were provided on the basis that they would not be published in full. The agreement of all those currently involved in processing or fish purchasing in north Labrador was required to obtain these data. Where I have considered the data of use to present in this thesis I have done so in a way which ensures that the conditions on which I was granted the information have not been contravened.

Newspaper and radio reports augmented the above material. The extensive collection of unpublished reports and videos held at LINS provided useful material and insights.

Attendance at conferences, notably the Newfoundland Co-operatives' Conference and the 4th Inuit Studies Conference assisted the process of gaining a wider perspective on the problematic situation of Northern Labrador. Torngat co-hosted one seminar at the Co-operatives' conference.

The formal interviews were all unstructured and initiated through an opening statement to the effect that I was not an expert on the fishery, but wanted to learn. Being from New Zealand provided an excuse for my ignorance and my naive questions as well as adding to a perception of me as neutral (i.e. not from Canada, the Island or Labrador). I noted that I was, in particular, oblivious as to the role of Torngat as part of the fishery. The settings for interviews were usually the offices of the interviewees, but in one case a hotel room was used. Only two people whom I wished to interview were unavailable - one unfortunately died before I was able to arrange a meeting with him; the other never seemed to be in the same place at the same time as me and I did not consider a telephone interview would encourage frank or full answers. While this last person would have been a very useful informant, his views were expressed to me by a variety of interviewees (both by those in agreement and those who differed with him) at different

stages. The marked consistency between the descriptions of his views suggested it was highly probable that they were accurate representations.

There was one set of situations where the data gathering methodology was not followed. At some stages, to satisfy demands for progress reports and/or to present papers at conferences (thereby increasing my chances of obtaining funding) some of the rich picture was analysed before full completion of data collection. As this may have affected later aspects of the methodology, I have incorporated these analyses, where appropriate, in this chapter rather than hold them for inclusion in the comparison of conceptual models with the "real" world. Through including this information in this chapter a clearer understanding of the temporal relationship of the process of implementing the methodology is made possible. That I had undertaken such analyses was also borne in mind in all subsequent work. Eidetic reductions were used as a technique to assist my assessment of any subsequent data collected in an attempt to avoid consciously or subconsciously structuring further the data collected.

A number of photographs and slides were taken throughout the fieldwork. Unfortunately the camera was

stolen along with most of the films. Video was also considered, but the cost was prohibitive. These constraints on data gathering have not assisted the presentation of the rich picture.

4.3 Physiography and Biogeography

North Labrador is an area comprising approximately 900 km of indented coastline backed by a tilted, elevated plateau sloping upward toward the southwest. North of Nain, a mountain massif containing the Torngat and Kiglapait Mountains rises above the plateau to summits as high as 1700 m above sea level. To the south, near Cape Harrison, rise the barren Benedict Mountains. Between the two lies a heterogeneous surface ranging from lowlands dominated by glacio-fluvial material in delta, outwash, and kame terrace forms to deeply-incised or rolling upland areas of exposed bedrock. The coastal section between Smokey and Nain is predominantly

a barren peneplained plateau and associated offshore islands. The plateau is characterised by an irregular coastline that is incised by fjords extending well inland. Upland, surficial deposits are minimal except for local colluvium. Valleys may contain tills, outwash and marine depositions of varying thickness. Scattered organic terrain occurs and sizeable bogs exist south of Davis Inlet. Beaches are rare along the mainland coast; however, many of the islands have shallow beaches associated with their inlets. (Lopoukhine et al. n.d.:34).

Most of the region is rockland with limited soil development.

The topography of the sea bed can be divided into four main regions: coastal embayments, the Labrador Shelf, continental slope, and continental rise. The shelf can be subdivided as follows (Farmer, 1981; and PetroCanada, 1982):

- a) the inner shelf - a rocky submarine platform fringing the coast;
- b) the marginal trough - a longitudinal trough marginal to the coast, varying greatly in depth (exceeding 400 m in places), lying some 20 to 100 km offshore, and believed to be glacial in origin;
- c) the outer shelf - a number of large banks of depths up to 200 m (the Saglek, Nain, Makkovik, and Harrison Banks); and
- d) the transverse troughs or saddles - saddles and channels separating the banks and crossing the outer shelf from the marginal trough to the continental slope, and also believed to be glacial in origin.

Banfield (1981) describes three distinct climatic types in the region: tundra, continental, and coastal (Labrador). North of Nain, with a warmest monthly mean less than 10 degrees C, was considered to have insufficient summer warmth to support full tree growth. Annual precipitation is less than 850-1000mm (the least in the Province) and a frost risk is present throughout the short summer. The interior of Labrador (continental) has between 900 and 1100 mm of precipitation with a summer maximum. Winters are very long and severe, with heavy snow accumulation and extended periods below -15 degrees C. Short cool summers occasionally feature brief spells of daily maxima 23-27 degrees C. Coastal North Labrador differs primarily from the interior in having more frequent storminess and strong winds and a slightly later precipitation maximum.

Of particular importance to the region's residents is sea ice. The presence of the cold, low-salinity Labrador Current results in an extensive development of predominantly first-year, land-fast and pack ice. Ice formation begins north of Nain in November and progresses southward and seaward until, by the end of December, the entire North Labrador coast is ice-bound for up to 200 km offshore. Consolidated/fast ice remains until the end of May, but by the end of June only broken ice (five- to

seven- tenths of the sea surface) remains and it is restricted to north of Nain. Scattered ice (one- to four-tenths) is usually present for another month. First year ice (greater than 30 cm) suffers deformation by rafting and ridging, a process which results in mean thicknesses of one to three metres (Farmer 1981; PetroCanada 1982).

Icebergs are also present off the Labrador coast, most frequently from March to July and least frequently from November to January. They have "a median draft less than 225 m, a median waterline length of 100 m, and a maximum length less than 550 m. Estimated median mass is 0.5 million tonnes, with a maximum estimated mass of 25-30 million tonnes" (PetroCanada 1982:19). Icebergs move at speeds similar to those of sea ice, approximately 0.15 to 0.25 m/sec (mean); 0.5 to 1.2 m/sec (maximum) (PetroCanada, 1982, pp 17-18; Farmer 1981, p 76). More than 2000 icebergs a year are estimated to pass Cape Chidley, about 1600 of which also pass Hamilton Inlet (Farmer 1981:75).

Table 4.1 lists species of flora and fauna found in Labrador. Sea ice is of particular importance to the life cycle of the harp and hooded seals who migrate south from the Arctic before the pack ice. The ringed seal is

Table 4.1

Table 4.1 Selected Labrador Species of Flora and Fauna

Sea Mammals	Harp Seal (<u>Papophilus groenlandicus</u>)
	Ringed Seal (<u>P. hispida</u>)
	Hooded Seal (<u>Cystophora cristata</u>)
	Harbour Seal (<u>P. vitulina</u>)
	Bearded Seal (<u>Erignathus barbatus</u>)
	Grey Seal (<u>Halichoerus grypus</u>)
	Walrus (<u>Odobenus rosmarus</u>)
	Greenland Right Whale (<u>Balaena mysticetus</u>)
	Beluga Whale (<u>Beluga catadon</u>)
	Killer Whale (<u>Orea Gladiator</u>)
	Atlantic Bottlenose (<u>Hyperoodon ampullatus</u>)
	Fin Whale (<u>Baleoptera physalus</u>)
	Sei Whale (<u>Baleoptera borealis</u>)
	Minke Whale (<u>Baleoptera acutorostrata</u>)
	Pilot Whale (<u>Globicephala melaena</u>)
	White Beaked Dolphin (<u>Lagenorhynchus albirostris</u>)
	Harbour Porpoise (<u>Phocoena Phocoena</u>)
Fish	Cod (<u>G adus Morhus</u>)
	Capelin (<u>Mallotus villosus</u>)
	Herring (<u>Clupea harengus harengus</u>)
	Atlantic Salmon (<u>Salmo solar</u>)
	Brook Trout (<u>Salvelinus fontinalis</u>)
	Arctic Char (<u>Salvelinus alpinus</u>)
	Rock Cod (<u>Gadus ogak</u>)
Land Fauna	Turbot (<u>Reinhardtius Hippoglossoides</u>)
	Coloured Fox (<u>Vulges rubri cosus</u>)
	White Fox (<u>Alopex lagopus</u>)
	Black Bear (<u>Ursus americanus</u>)
	Polar Bear (<u>Thalarctos maritimus</u>)
	Caribou (<u>Rangifer tarandus</u>)
	Porcupine (<u>Erethizon dorsatum</u>)
	Arctic Hare (<u>Lepus arcticus labradorensis</u>)
	Varying Hare (<u>Lepus americanus</u>)
	Beaver (<u>Castor canadensis labradorensis</u>)
	Otter (<u>Lutra canadensis chimo</u>)
	Red Squirrel (<u>Glaucomys sabrinus</u>)
	Lemming (<u>Dicrostonyx Hudsonicus</u>)
	Labrador Vole (<u>Microtus enixus</u>)
	Lynx (<u>Lynx canadensis canadensis</u>)
	Marten (<u>Martes americana brumalis</u>)
	Wolf (<u>Canis Lupis</u>)
	Wolverine (<u>Grulo luscus</u>)
	Muskrat (<u>Ondatra zibethicus aquilonius</u>)
	Mink (<u>Mustela vison lowii</u>)

Table 4.1 (cont)

Invertebrates	Blue Mussel (<u>Mytilus edulus</u>) Soft Shell Clam (<u>Mya arenaria</u>) Scallop (<u>Chlamys islandicus</u>) Northern Shrimp (<u>Pandalus borealis</u>)
Birds:	Canada Goose (<u>Branta Canadensis canadensis</u>)
Migratory	Black Duck (<u>Anas rubripes</u>) Gulls (<u>Genus Larus</u>) especially saddleback (<u>L. marinus</u>) Terns (<u>Genus sterna</u>) Murres (<u>Genus Uria</u>) especially U. aalge and U. lomvia Black Guillemot ("pigeon") (<u>Cepphus grylle</u>) Common Eider ("eider duck") (<u>Somateria</u> <u>Mollissima borealis</u>) Harlequin Duck ("ducks/drakes") (<u>Histrionicus</u> <u>histrionicus</u>) Red-Breasted Merganser ("shellbird") (<u>Merganser</u> <u>serrator</u>)
Birds:	Willow Ptarmigans ("brookers") (<u>L. lagopus</u>)
Year-Round	Rock Ptarmigans ("barreners") (<u>L. rupestris</u>) Spruce Grouse ("spruce partridge") (<u>Canachites</u> <u>canadensis</u>)
Flora	Black Spruce (<u>Pices mariana</u>) Larch (<u>Larix laricana</u>) White Spruce (<u>Pacea glauca</u>) Balsam Fir (<u>Abies balsamae</u>) Juniper (<u>Juniperus communis</u>) Alder (<u>Alnus crispa</u>) Willow (<u>Salix argyrocarps</u>) Dwarf Birch (<u>Betula glandulosa</u>)

Selected and collated from Coady 1974, Farmer 1981, Kennedy 1982, Kleivan 1966, Macpherson 1981, Mednis 1981, Peet and Pratt 1972, Petro-Canada 1982, Pinhorn 1976, Williamson 1964

the most common resident mammal, while the bearded seals are more numerous in the north and may summer in the Arctic. A few walrus, once plentiful along the whole coast, occur in the extreme northeast, while harbour and grey seals are present in small numbers (Farmer 1981; Kennedy 1982; PetroCanada 1982).

The ringed seal is present year round, but is most commonly killed in winter and early spring. Harp seals avoid fast ice and migrate northward along the Labrador coast each spring and return south in the summer. The harbour seal seems to follow a similar pattern, although it can also be found in ice-free estuaries at the heads of bays in winter. Like the ringed seal, it usually travels up freshwater rivers in spring and spends the summer in estuaries and bays. Bearded seals prefer moving pack ice to fast ice, and are essentially non-migratory (Kennedy 1982:141-144).

Whales, much reduced since pre-European days, are still present. So also are the white-beaked dolphin and the harbour porpoise during the summer. Porpoises especially prefer inshore waters (Kennedy 1982:144-145).

Fish are particularly subject to the seasonal changes in their environment. Cod migrate inshore in

early summer following the capelin and herring. When they first arrive they are plentiful but thin; it is only by late summer that they are large and fat (Williamson 1964:87-88).

Labrador Atlantic salmon appear to be endemic and spend four or five years in fresh water prior to smolting, compared with three years for Maritime Canada salmon (Peet and Pratt 1972). In addition, the chemical composition of the river waters south of Davis Inlet (the "mud" rivers) differ markedly from those to the north (the "gin" rivers) and consequently few salmon appear to spawn north of there (Kennedy 1982:146-147). Salmon usually move into the area as the pack ice retreats. In bad ice years, when pack ice remains an unusually long time on the coast, "slinks" (kelt: spent salmon which after spawning re-enter the sea) may be trapped inshore while the migrating salmon have difficulty moving in. This results in high proportions of slinks in fishermen's catches.

The northward migration of salmon reaches at least as far as Nain and Okak. A second run reaches the coast in late August and a third in fall. The first of these runs contains primarily large salmon; the second, a

mixture; and the third contains small salmon and big males (Kennedy 1982).

Brook trout and Arctic char are the two other important anadromous species. Both stay close to their natal rivers, entering the sea in June and staying in nearby estuaries or bays. They prefer the northern, gin rivers and do not winter at sea. In August both species return to their natal rivers to spawn during September or October. This extremely localised movement limits their diet considerably. Consequent flesh colour differences between localities take on an added importance where human markets are concerned. Approximately 95 per cent of char caught north of Okak have the high-valued red flesh, while 90 per cent of the Makkovik to Nain char catch is the low-valued pale-fleshed variety (Coady 1974).

Other important species in North Labrador include the rock cod (which approach shallow water in March, apparently to spawn under the sea ice), capelin (which come ashore usually in July) and turbot (a deep-water fish found in the Hopedale channel) (Kennedy 1982:149).

North Labrador contains the northern or southernmost range limits for approximately 20 indigenous mammals

(Mednis 1981:240), reflecting the environmental factors already discussed. Some are important as furbearers (e.g. fox and marten), some as meat providers (e.g. caribou, porcupine, bear), and others (e.g. lemmings) as the basis for the food chain which supports the higher order creatures. Consequently their spatial distribution, seasonal cycles and migratory patterns are of some importance to humans.

Both black and polar bears may be found throughout coastal Labrador, although the latter is usually restricted to areas north of Nain. The wolf and wolverine may also be found on both barren and wooded land depending on food availability. According to Kennedy (1982:140) both species of foxes are more numerous in the Hebron region than elsewhere, but range over all Labrador. However, the coloured species prefers wooded areas, whereas the white frequent barren taiga or headlands. The latter also moves to offshore islands during winter and spring. Apart from foxes, most fur-bearing animals favour the interior.

Caribou are essentially in two groups: the few who inhabit the Double Mer mountains and the coast north of Groswater Bay in the winter and migrate to the Nipishish Lake area in the summer, and the George River herd on the

barrens west of Nain which numbered more than 200,000 at the beginning of the eighties (Kennedy 1982).

The vegetation varies considerably in North Labrador. The absolute tree-line occurs at Napartok Bay; however, the northern limit of the coniferous forest belt reaches only to Voiseys Bay, south of Nain. Thereafter, the forest is confined to the deep valleys up to a height of about 300 m. The forest tends to be largely black spruce and larch, with white spruce, balsam fir, and juniper also present. Alder, willow and dwarf birch occur as tundra shrubs (Kennedy 1982:139; Kleivan 1966:17; Macpherson 1981:192-195).

Only about 10 per cent of the 225 species of birds in North Labrador are year-round residents. Willow ptarmigans ("brookers"), rock ptarmigans ("barreners") and spruce grouse ("spruce partridge") are probably the most important permanent residents. Barreners stay in the high country: brookers migrate from high country summer feeding grounds to the willowed river valleys in the winter. Spruce partridge remain permanently in the dense coniferous forests (Kennedy 1982:145).

Amongst the migratory birds, those often found on fresh-water ponds include the Canada goose and the black

duck. The important migratory seabirds include the gulls, especially the saddleback, terns and murres (in particular Uria aalge and U. lomvia, whose eggs are gathered each summer) and the black guillemot ("pigeon"), common eider ("eider duck"), harlequin duck ("ducks/drakes") and red-breasted merganser ("shellbird").

Amongst important invertebrates are the blue mussel, the soft shell clam, and the scallop. In the offshore waters of the Labrador Sea and Davis Strait, large quantities of shrimp can be found.

It is within the context of this difficult physical environment that the history of Labrador's development has taken place. In the following discussion it is important to bear in mind not only the harshness of the environment, but also its seasonality and the consequent limitations and seasonal availability of resources.

4.4 Human Utilisation

4.4.1 Pre-historical balance

The pre-history of North Labrador is complicated, but there appear to have been three major periods of

occupance: the Early (around 8000 B.P. to 3800 B.P.), the Intermediate (3800 B.P. to 1000 B.P.) and the Late (1000 B.P. to 485 B.P.). The early period is dominated by a Maritime Archaic Indian culture which appears to have migrated into the region as the tree line pursued the retreating ice sheets northwards. Their resource use pattern is still not fully clear, but it appears they occupied outer coastal sites during the open water season while hunting marine mammals, birds and fish. Sites found on inner islands, bays and river valleys indicate a probable winter exploitation of caribou and small game. This balanced economic pluralism and settlement is generally categorised as an interior-maritime type (Fitzhugh 1977:2). They also appear to have had a well-developed trading system with local artifacts reaching as far as northern New England. The disappearance of these cultures seems to coincide with the arrival of the first Paleo-Eskimos (Fitzhugh 1977: 6-10).

The Paleo-Eskimos' period (3800 to 900 B.P.) has been broken down in Labrador into four groups: Early Pre-Dorset (3800 to 3400 B.P.), Late Pre-Dorset (3200 to 3000 B.P.), Groswater Dorset (2700 to 2200 B.P.), and Dorset (2400 to 900 B.P.). The Pre-Dorset cultures extended southward approximately to Hopedale and, like

their predecessors, probably typified an interior-maritime subsistence-settlement pattern. Further southward extension may have been prevented by the increasing presence of Intermediate Indian cultures (notably the Little Lake and Brinex). It is evident that overlapping use of the region between Hopedale and Cape Mugford, by both Indians and Eskimos, occurred during this period.

The Dorset cultures, however, extended as far south as Newfoundland and Blanc-Sablon and were more coast-oriented than previously, with the Groswater marking a transition from interior maritime to modified-maritime subsistence-settlement patterns. The Dorset culture apparently arrived from the north and its modified-maritime pattern is characterised by coastal year-round settlement with occasional forays into the interior. Winter settlements were located close to the sina (floe-edge) and were occupied from early winter through April or May. Their inhabitants subsisted primarily on seal, walrus, fox, hare and polar bear. Spring involved a shift to smaller outlying islands for harp seal and walrus hunting. Summer camps were in bays and islands at good fishing, bird-hunting and sealing sites. Some temporary camps inland possibly indicate a minor use of caribou. Despite extensive trade links

reaching as far as Southhampton Island (N.W.T.), population density was low with widely scattered, single dwelling units (Ibid:21-31).

During this period a number of Indian Cultural complexes cohabited in Labrador, but they restricted their annual cycle to the interior with only occasional summer occupation of the coast. During the winter their primary base was the caribou. Spring and fall caribou hunting was augmented by migratory birds and small game. The summer usually signified a more generalised hunting and fishing pattern on lakes and streams. Where coastal occupancy occurred, it was usually linked to the interior by a major river drainage system or a coastal inlet and it did not include extensive use of marine mammals. These typify the interior and modified-interior subsistence-settlement patterns (Ibid:2-14).

Between 1000 and 300 B.P., coastal Labrador was dominated by the Point Revenge Indian culture as far north as Saglek. Their arrival on the coast remains a mystery, but can be considered to signify the end of both the Intermediate Period of Labrador pre-history and the Dorset culture (although see Martijn 1980; and Taylor 1980). Their return to the coast also marked a return

for the Indians to an interior-maritime settlement-subsistence pattern (Fitzhugh 1977).

Shortly after 1300 A.D., the Thule culture reached North Labrador from the Arctic. They spread rapidly south into the whale-hunting areas between Saglek and Killinek and are considered the ancestors of the modern-day Labrador Inuit (Ibid:31-32).

Hence, prior to European contact, all the native successions in Labrador had followed semi-stable, dynamic-equilibrium exploitative patterns. The key features of this were dispersed and low density populations, pluralistic-seasonal resource use and racio-cultural segregation. Trade with the "outside" world occurred, but was of limited importance. Sustained European contact was to change this utterly.

4.4.2 Historical development and imbalance

As I have argued elsewhere (Rennie 1986), the history of North Labrador since first contact can be divided into four periods: Early contact, Moravian Dependency, Welfare Colonialism and Self-government (Table 4.2). Notable changes have taken place in

Table 4.2 Post-Contact Historical Events Impacting Labrador

A.D.

E A R L Y C O N T A C T

- c.1000 Vikings visit Labrador (Markland), Thorvald Eiriksson killed by natives in Hamilton Inlet.
- 1537 Spanish Basques in southern Labrador.
- 1566 Inuit woman and child exhibited in Europe.
- 1574 Two Basques killed by natives (probably Inuit).
- 1614 Joris Carolus maps Labrador and claims it for Holland. Dutch Northern Company granted trade and fishing monopoly.
- 1642 Northern Company's monopoly expires.
- c.1660 Grants of French Concessions leads to decline of Inuit on Straits of Belle Isle.
- 1699 Newfoundland Act - to discourage settlement in Newfoundland.
- 1702 Courtemanche granted concession from Kegaska to Kesesaskion (west of Mingan to Hamilton Inlet) by King of France.
- 1705 Fort Ponchartrain established at Brador by Courtemanche.
- 1713 Treaty of Utrecht, Labrador acknowledged as British.
- c.1716 Guns believed to have been introduced to Eskimos by French.
- 1728 Zorgdrager (Dutch) publishes book including trade in Labrador.
- 1733 Greenland Mission begun by Moravians.
- 1743 Fornel reports 400 Dutch and Eskimo corpses seen on ice, apparently killed in battle. Fornel claims North Labrador. First European wintering in Hamilton Inlet.
- 1752 Erhardt leads first Moravian Missionary expedition to Labrador.
- 1763 Treaty of Paris, Labrador British. Charter of Indian Rights.

Table 4.2 (cont)

- 1764 Palliser proclamation orders friendly treatment of Eskimos. Jens Haven contacts Eskimos.
 - 1765 Palliser proclaims: 1) "Rules and orders to be observed on the Coast of Labrador" in accordance with 1699 Act, tried to remove Quebec traders. 2) Support for Moravians. 3) Order forbidding French to "traffic" with Eskimos. 4) "Regulations for establishing a British fishery for cod, whales, seals, and salmon on the Coast of Labrador.
 - 1767 Eskimos sack Cape Charles post. York Harbour detachment kills 20 Eskimos and captures 9.
 - 1769 Moravians granted 100,000 acres and trade monopoly in North Labrador.
 - 1770 Moravians sign "treaty" with Inuit.
-

M O R A V I A N D E P E N D E N C Y

- 1771 Nain mission established by Moravians.
- 1772 British Board of Trade confirms year-round residence gives priority for seal and salmon fisheries.
- 1774 Quebec Act annexes Labrador to Quebec.
- 1776 Okak mission established.
- c.1779 Religious awakening begins amongst Inuit.
- 1780 Makko, French-Canadian Catholic, opens trade post Kaipokok Bay.
- 1782 Hopedale mission established.
- 1788 Marcoux, Quebec trader, builds post at Rigolet.
- 1809 Labrador transferred back to Newfoundland by Colonial Office.
- c.1820 Seal nets introduced. Moravian organised harp seal fishery.
- 1824 Court of Civil Jurisdiction on Coast of Labrador Act passed.
- 1826 Rigolet holds first meeting of Court of Justice in North.

Table 4.2 (cont)

- 1830 Fort Chimo established by HBC. Hebron mission established.
- 1831 Davis Inlet trading post established by A. B. Hunt and Company.
- 1832 Representative Government in Newfoundland, Labrador a "dependency".
- 1833 Labrador Circuit Court discontinued.
- c.1836 End of significant whale industry due to Peterhead and Dundee whalers. Postville trading post established.
- 1855 Newfoundland becomes a Dominion.
- c.1860 Inuit cod fishery boom begins, related to "floater" expansion.
- 1863 Labrador Circuit Court re-established.
- 1866 Mission tightens its credit policy.
- 1869 Davis Inlet post sold to HBC.
- 1870 Labrador Mail Service (steamer) introduced by Government.
- 1871 Ramah mission established in response to Nackvak and Saglek HBC posts.
- 1873 Zoar mission opened. Government sends medical student to vaccinate 200 Indians at North West River.
- 1874 Labrador Circuit Court discontinued.
- c.1875 Drop in seal oil market demand.
- 1883 Proclamation forbids fishing in rivers, lakes and streams.
- 1890 Zoar closes.
- 1892 Grenfell makes first visit to Labrador with Deep Sea Fishermen's Mission hospital ship.
- 1897 Makkovik mission opened.
- 1899 Makkovik school built.
- 1901 "Elders" established in Moravian church hierarchy. Lumber cutting begins in Hamilton Inlet.

Table 4.2 (cont)

- 1903 Okak hospital founded.
- 1904 Killinek mission opened.
- 1906 Labrador Boundary Dispute begins.
- 1907 Ramah closes.
- 1911 Lumbering operations finish.
- 1915 Government erects lighthouses at Nain and Hopedale.
- 1916 Naskaupi move to Davis Inlet area.
- 1918- Spanish influenza epidemic. Devastates Okak.
- 1919
- 1919 Okak closed. Makkovik boarding school opens.
- 1924 Killinek mission closed by Boundary Dispute.
- 1926 Moravian trading rights leased to HBC.
- 1927 Labrador Boundary Dispute settled by British Privy Council
- 1927 Roman Catholic missionary begins annual summer visits to Davis Inlet.
- 1929 Nain hospital (joint HBC - Moravian project) opened. HBC opens Nutak store.
- 1930 Airplane transportation begins.

W E L F A R E C O L O N I A L I S M

- 1934 Commission Government in Newfoundland. Digby report urges a Co-op societies law and registrar. Division of Co-ops established. Newfoundland Rangers placed in Labrador and take-over relief issuing.
- 1935 Newfoundland Rangers stationed at Nain.
- 1939 Newfoundland Co-operative Societies Act, Registrar established.
- 1941 Goose Air Base built, Canada given 99 year lease.
- 1942 Fishing Vessel Assistance Program (DFO) established. HBC gives stores to Government's Northern Labrador Trading Operations division.

Table 4.2 (cont)

- 1944 Goose Bay Agreement.
- 1946 Labrador delegate elected for National Convention on Newfoundland's future, chooses Confederation.
- 1948 First recorded participation by Labrador in General Elections. Naskaupi moved to Nutak, but walk back to Davis Inlet.
- 1949 Department of Fisheries and Co-operatives established Confederation.
- 1951 Indian Act enacted, but no treated natives in Newfoundland. Hopedale radar base begun. Northern Labrador Services Division of Department Public Welfare operates stores.
- 1952 Roman Catholic year-round mission established at Davis Inlet. USA leases Goose Base.
- 1954 First Federal-Provincial Agreement on Native Peoples.
- 1955 Fisheries Improvement Loans Act.
- 1956 Uranium deposits found at Kitts Pond, Kaipokok Bay by Brinex. Nutak closed.
- 1957 Unemployment Insurance Compensation extended to cod and char fishermen of North Labrador.
- 1957 Moravian headquarters moves to Happy Valley. Last Naskaupi shaman dies.
- 1958 Naskaupi enticed to North West River, but return to Davis Inlet. North West River incorporated.
- 1959 Hebron closed. Commissioner for Labrador appointed.
- 1960 Attempt to collect northern char with refrigerated collector boat fails.
- 1961 Naskaupi relief cut, given punts from which to jig fish. Labrador City, incorporated. Happy Valley elects first town council.
- 1962 Missionary provides first Naskaupi outboard in Davis Inlet.
- 1964 Smallwood renames province "Newfoundland and Labrador".
- 1965 Second Federal-Provincial Native Funding agreement. Royal Airforce commences training with Vulcan Bombers

Table 4.2 (cont)

over Innu territory (Ntesinan) in Labrador. Vulcans used until 1982.

1967 Naskaupi move to new Davis Inlet site and houses. RCAF phase down at Goose Bay. Wabush incorporated.

1968 Government provides cod traps at Davis Inlet.

S E E K I N G S E L F - G O V E R N M E N T

1969 Tom Burgess leaves Liberal Party to sit as Independent MHA, later forms New Labrador Party (NLP). Davis Inlet, Hopedale incorporated. Melville Pulp and Paper starts in Goose Bay.

1970 Makkovik, Nain incorporated. Government installs small community freezer in Davis Inlet, and subsidises air passenger service to coastal Labrador.

1971 Nain freezing and smoking plant built, 75% of char delivered to plant in first year caught within 30 miles. NLP fields candidates in all three Labrador ridings and holds balance of power briefly. RCAF returns in smaller numbers to Goose Bay. First Labradorian elected to Happy Valley Town Council.

1972 Northern Quebec Inuit Association visit coast. Memorial University Extension Service establish officer in Nain. Kinatuinamot Illengajuk (locally run newspaper) begins operating from Nain. Company of Young Canadians operating on coast.

1973 Total whaling ban in North Atlantic by Canada. Makkovik freezing plant opened. Federal Government freezes fishing vessel construction subsidies. Labrador Inuit Association (LIA) formed. Federal licensing review begins.

1974 LIA annual meeting recognizes rights of settlers as equal to Inuit in all Land claims settlements and accompanying hunting and fishing rights. Despite reported pressure from MUN extension Inuit decide not to join Innu in land claims submission.

1975 FM station opens at Makkovik. Them Days begins, published by Labrador Heritage Society. Commercial salmon and char licences restricted to permanent North Labrador residents. Eight families spend 1974/75 wintering north of Nain for first time since 1959. For the first time in other than homicide cases North Labradorians are represented in court by Legal counsel.

Table 4.2 (cont)

- LIA pays legal fees.
- 1976 USAF withdraw from Goose Base. Naskapi-Montagnais Innu Association formed. All fishery related facilities transferred from Labrador Services Division to the Department of Rural Development.
 - 1977 200 mile EEZ declared. Provincial Gear Supplement Program begins.
 - 1978 Nain Bay closed to all fishing. Provincial Department of Fisheries assumes responsibility of, and seeks to privatise, North Labrador fish plants. Fisheries Emergency Policy Committee formed, presents proposal to form Co-op and operate the plants.
 - 1979 Quotas imposed on Voisey, Anaktalik and Tikkoatokak Bays near Nain. Federal Government issues northern shrimp licences, reserves three for Labradorians. Northern fish plants transferred from Department of Rural Development to provincial Department of Fisheries.
 - 1980 Fishing Gear Supplement Program ends. Provincial Five Year Plan emphasises quality. Torngat Fish Producers Co-operative Society registered (4 December). Provincial Royal Commission to inquire into the Inshore Fishery set up. Luftwaffe commence low-level training programme over Ntesinan. Innu commence anti-low-level flights campaign.
 - 1981 Torngat begins operations. MV Arctic tests feasibility of year-round use of Lake Melville. Canada/Newfoundland Community Development Subsidiary Agreement for Coastal Labrador provides \$38,996,000 (\$33,800,000 Federal contribution). Okak Bay quota imposed. Provincial Government approves low-level flights.
 - 1982 Federal Kirby Task Force recommends NFDC formation.
 - 1983 NORDCO study (DFO and DREE) on Development Proposals for Labrador Coastal Fishery released. Innu National Council extends its campaign against low-level flying to West Germany, but Canadian and West German governments sign agreement for a three-year extension of Luftwaffe training activities in Ntesinan in return for \$20 million paid to Canada Province ends. Subsidies paid to first-time longliner fishermen moving from small boat operations and to Labrador fishermen to assist with purchase and repair of fishing gear.

seasonal exploitation, the type of resource exploited and the form of exploitation.

Europeans first arrived in Labrador some time between 1000 and 1030 A.D. These were the Greenlandic Norse travelling from Greenland, probably via Baffin Island. However, while their original voyage may have been one of exploration and trade, it seems likely that they continued to use Labrador (Markland) as a source of wood for their Greenland settlements, at least until 1347 A.D. (McGhee 1982).

The next Europeans to arrive are believed to be Bretons (Barkham 1982). Although at present less is known of their activities than those of the Norse, they probably exploited the cod fish and whales in much the same way as their successors, the Basques. The Basques began operating a cod and whale fishery around 1540 A.D., and enjoyed harmonious relationships with the Indians although possibly not so with the Eskimos (Barkham 1980). The Basque presence in the Straits of Belle Isle was strong enough to preclude competitors for 40 years. The fishery declined in favour of whaling and involved seasonal migration from Europe. The first recorded over-wintering of Europeans happened perhaps accidentally (due to early ice-up) in 1574 A.D. Following defeat of

the Spanish Armada, however, Spanish Basque strength waned and they were replaced by the French (Barkham 1982).

The French were seemingly less strong than the Basques as it has been argued (Clermont, 1980; Martijn, 1980) that with the departure of the Basques, Inuit moved into the Straits of Belle Isle as far west as Mingan (although this has been hotly debated: see Taylor 1980; and Martijn 1980). Relationships between the French and the Inuit were not good. Meanwhile, North Labrador was charted and claimed for the Dutch by Joris Carolus. The Dutch Northern Company was formed and granted a monopoly to fish, whale and trade in the region. This monopoly lasted until 1642 A.D. when lobbying by rival companies had it removed. The Dutch exploitive system was seasonal; however, trade with the natives became increasingly important with the fishery becoming more of a reliable staple to guard against major losses which might eventuate from the unreliable fur trade. A number of clashes between the Dutch and Inuit occurred, but the Dutch continued to fish and trade in North Labrador at least until 1733 (Kupp and Hart 1976).

The late 17th century saw a number of grants to French traders and in 1704 Courtmanche toured his

Labrador concession, which included the area between Mingan and Hamilton Inlet. He noted trading between Inuit and French in Hamilton Inlet and that a missionary should be able to implant Christianity. An anonymous memoir in 1715 suggested that to exploit fully Labrador's resources (which could be of considerable commercial importance), religion should be used to pacify the natives and that it was necessary to get them to settle in villages near the French (Zimmerly 1975:46-67)

In 1743, Louis Fornel explored Hamilton Inlet and left two men to build a trading post at North West River. Fornel also landed just east of Rigolet and took formal possession in the name of France (Zimmerly 1975). Settlement of North Labrador was still essentially precluded by hostilities with the Inuit. In 1752, Erhardt, sponsored by a British merchant house, led the first Moravian missionary expedition to Labrador where he disappeared (and was presumed killed) while seeking trade with the Inuit.

A second Moravian attempt began in 1764 when Jens Haven, working with the cooperation of Newfoundland Governor Sir Hugh Palliser, made contact with the Inuit in northern Newfoundland. The British hoped that the Moravians would be able to settle, Christianise, and

thereby pacify the Inuit, thus enabling British fleets to exploit successfully the Labrador cod fishery. To this end Palliser made a number of proclamations during his time as Governor, and in 1769 the Moravians were granted 100,000 acres to establish a mission in North Labrador (Whiteley 1964; Hiller 1977). This they did at Nain in 1771 (Hiller 1977), an action which essentially marks the beginning of the transition from independence to dependence for the Inuit of North Labrador.

From 1771 to around 1930, socio-economic and political life on the North Labrador coast was dominated by the Moravian missions. Their presence not only converted the Inuit, enabling the development of a substantial Newfoundland "floater" fishery in Labradorian waters¹ (see Black 1960), but it fundamentally altered the Inuit use of Labrador's resources (Kleivan 1966). In order to keep the Inuit near the Missions (and exposed to the Christianising influence of the Moravians), the missionaries promoted the cod fishery amongst the Inuit. However, it seems it was the lucrative fishing of the

¹ The Newfoundland Labrador fishery consisted of two types: "floater" and "stationer". Those fishermen who migrated to the region and set up a "station" or "room" in a particular light or cove and stayed there throughout the season were "stationers". Those who pursued the fish from schooners (between 30 and 300 tons, but rarely exceeding 40 tons) were the "floaters" or "green-fish catchers" (Story *et al.* 1982:191-192, 292, 530-531).

Newfoundlanders combined with the desire of the Inuit for European goods that led to a major expansion of the Inuit cod fishery in the 1860s and 1870s. The reliability of the fishery as opposed to fur trapping added to its attractiveness. By 1913, the Inuit were noted to be almost wholly dependent on the cod fishery to clear their seasonal debts at the mission stores. In bad fishing years this manifested itself in the increased demand on the Moravians' "poor fund" (Kleivan 1966:55-57).

This change in resource use combined with Moravian insistence on returning to the settlements for Christmas and Easter led to a decline in the relative importance of the caribou hunt. These were not the only features of the change in lifestyle in north Labrador. Since the 1840s there had also been a marked shift away from traditional, fuel-efficient dwellings to more inefficient European-styled ones. This shift also involved a change in fuel, from oil to wood, placing increased stress on local wood resources (Kleivan, 1964 and 1966). The Moravians also instituted mechanisms of social control (e.g. the choir) which essentially decreased the avenues for independent leadership to develop, and helped them maintain a virtual monopoly on year-round trade and supplies (Hiller, 1971). This monopoly, which the Hudson Bay Company (HBC) had long eyed enviously, proved quite

profitable for the Moravians until c. 1875. After that date it seems the combination of greater competition from independent traders, the increase in the Labrador "floater" fishery and the rising demand amongst the Inuit for European goods, led to a decline in the profitability of mission trade (Kleivan 1966:85-87). In 1926 the Moravians handed their stores over to the HBC on a 21-year lease, a change which effectively marked the end of Moravian economic dominance. In 1937 the Commission of Government of Newfoundland placed a police force (the Newfoundland Rangers) on the coast. It administered poor relief to the Labradorians - the beginning of Government sponsored welfare colonialism.

The HBC was on the coast as a private business with the aim of making profits. At the same time it had agreed, when taking over the stores, to provide social assistance to those in need. Logically, this made it difficult for on-the-spot administrators. The emphasis of the HBC was also on furs rather than on fish. This resulted in Inuit spending more time in the interior and the replacement of the staple seal meat by less nutritious and more expensive store-bought food. Thus the change from a subsistence to a market economy was greatly accelerated during the 1930s. This was also a period when the market value of cod fell so low that in

1931 fishermen could barely afford salt (needed for curing) and their summer's food, let alone stock up for the winter (Kleivan 1966; Brice-Bennett 1977a). However, despite its business orientation and northern experience (and the taking over of poor relief administration by the Newfoundland Government) the HBC, faced with mounting expenses and trade deficits, closed its stores (except at Rigolet) and handed over control of trade to the Newfoundland Government in 1942 (Brice-Bennett 1977a).

It should be noted that prior to 1934 the Newfoundland Governments, with the exception of Palliser in the 1760s, had shown little interest in the North Labrador region. There had been some desultory attempts at law enforcement in the early nineteenth century, but the only real involvement seems to have been sparked by the expansion of the floater cod fishery; i.e., to service Newfoundlanders visiting the coast rather than residents. Even then, such involvement was limited (a circuit court and a mail steamer were established). The 1942 store takeover marked a major shift in Newfoundland's attitude towards Labrador.

This sudden change is due partly to Newfoundland's recognition of Labrador's seemingly rich natural resources, but primarily to the 1941 construction of a

military base at Goose Bay. The presence of Canadian and American military personnel and the demand for labourers to work on airport construction drew a large number of people from the coast. These included both Inuit and Settlers (the descendents of Inuit/European marriages and by now a distinct, independent culture). Goose Bay's population was expected to reach 8000, more than ten times the previous population of Hamilton Inlet (Zimmerly 1975). The employment of Labradorians looked very promising, especially after the 1944 Goose Bay Agreement stipulated preferential employment for residents of the Province (Zimmerly 1975:232). The only previous major wage-labour opportunities in Labrador had been the brief lumber operations at Mud Lake at the turn of the century, and although the experience of that "boom and bust" employment caused some Mud Lake residents to hesitate, this hesitancy was short-lived (Zimmerly 1975).

In 1948, the Province made the first of a number of resettlement attempts. The Naskaupi, who had been living at Davis Inlet since a 1916 shift in caribou migration patterns led to near starvation at their interior base, were moved to Nutak. They were apparently expected to become fishermen and enable the closure of the Davis Inlet store while improving the viability of Nutak. Neither Inuit nor Naskaupi were happy with this and

during the winter the Naskaupi disappeared, reappearing five months later at Davis Inlet. Shortly thereafter, the Roman Catholics established a year-round mission there and came to dominate the Naskaupi much as had the Moravians and the Inuit (Henriksen 1971 and 1973).

Following Confederation, which immediately made Labradorians eligible for all the benefits and laws Canada had to offer (e.g. pensions), the Federal and Provincial Governments negotiated the first of a series of Native People's Agreements. Initially the Province took responsibility for the provision of socio-economic aid to the population between Makkovik and Hebron (Snowden, 1974). During the 1950s the building of a series of early-warning, military radar bases along the northern coast provided further wage labour opportunities, and the possibility of uranium mining and lumber development in the Makkovik/Postville area loomed. This, combined with the lack of wood for fuel and the difficulty of servicing them, led the Province, the International Grenfell Association (who administered health) and the Moravians to decide to resettle the communities of Nutak and Hebron to more southerly climes (Nain, Makkovik, Hopedale, North West River and Happy Valley) (Kennedy 1977). Significantly, the Inuit were given no say in the matter and subsequently, the

population of Nain has grown from a pre-resettlement 310 people to 938 in 1981 as the resettled slowly drifted northward (Kennedy 1982; Rennie 1984).

Attempts were also made during these years to entice the Naskaupi to shift from Davis Inlet to North West River. This occurred the year after unemployment insurance was extended to cover cod and char fishermen of North Labrador. The Naskaupi were excluded from the scheme and received only welfare payments. Despite this, of the seventeen families which moved to North West River, eleven returned. In 1967 the Province relocated (on community vote) the Naskaupi to a new town site within Davis Inlet, providing them with houses in the process (Henriksen 1973).

The year 1969 marks the beginning of a drive for self-government by the Labradorians. The formation of the New Labrador party and its subsequent brief, inept hold on the balance of provincial power led to an upsurge of interest in political organisation at both the community and regional level. Encouraged and aided by both levels of government, Memorial University's Extension Services and Native People's organisations, this upsurge was translated into Community Councils,

Fishermen's Committees, Native organisations and, in 1980, a regional fish-producers' co-operative (Torngat).

The operations and success/failure of both the Moravians and the HBC provide interesting models when considering the potential for local control of the fishery. That both looked on the fishery as a fall-back to sustain them in years of bad fur profits suggests that the perceived richness of the fisheries may reflect only the view of non-residents who were familiar with more year round "follow the fish" activities. The second major point to note in this discussion is the imbalance in population distribution and lifestyles as a result of Moravian and later HBC and Newfoundland activity. The third point is that at no time was a treaty established between Newfoundland and the native peoples of Labrador. An assumption of sovereignty was made and yet the actions of sovereignty were often peacefully resisted, as exemplified by the trek of the Davis Inlet Naskaupi. With such a background the arrival of another major player, Canada, sparked pro-self government ambitions. It is to the fishery that we now turn.

4.4.3 The North Labrador Fishery

As we have seen, the fishery was an essential part of the year-round resource use of the pre-contact peoples of Labrador, particularly for the Eskimo cultures. In the early contact period the fishery played a significant role in drawing Europeans to the coast on a seasonal basis, and companies were granted monopolies by their governments to exploit it. As an "incidental", the "ownership" of Labrador shifted from country to country on the basis of war or administrative factors up to the 20th century.

However, despite the presence of other nations at earlier times, the first concerted and effective government policies aimed explicitly at developing a fishery appear to be those of Palliser in the 1760s (Black 1960). Even here his goal was not so much to develop the fishery, but to provide training for potential British Navy recruits. For the fishery to develop, he used the Moravians to pacify the North Labradorians by encouraging Moravian settlements, a seeming reversal of his earlier policies to discourage settlement (Whiteley 1964). The crucial difference between his attitude towards settlement generally and

Moravian settlements was that the Moravians settled natives and were believed to be non-profit.

Although this did enable the North Labrador fishery to be developed, primarily by Newfoundland floaters, the Moravians encouraged the Inuit to increase their level of fishing. Their pattern of resource use was so altered by settlement and increasing European contact that the Inuit became dependent on both the fishery and the outside agencies (Moravians, HBC, governments). Meanwhile, the floater fishery was encouraged by bounties on fish caught by British subjects during the Napoleonic wars, and later by the return of the French to the island and the consequent expellings of Newfoundlanders from their shore. The growth of the Newfoundland-based fishery in the late 19th century was phenomenal. In 1863, six vessels were fishing at Hopedale and others were noted heading farther north. Five years later, 108 vessels fished at Hopedale and in 1870 over 500 schooners travelled farther north. In 1875, 400 passed north of Nain. By 1908 the number of vessels fishing the Labrador coast had reached 1400, employing over 8000 people as crew. However, by 1954 the floater fishery, suffering from loss of markets for heavy salt cure and labour market competition, had declined to 5 boats (Black 1960: 268-269).

During the operation of the floater fishery there was a degree of conflict between resident Labradorians and the visiting fishermen over the right to particular fishing berths (Kleivan 1966; Zimmerly 1975). However, the 1960s were to witness a major clash, not between floaters and residents, but by proxy between the inshore and the offshore foreign vessels. Severe overfishing of cod in the offshore during the 1960s was considered the cause of a major decline in cod landings during the 1970s (Fig. 4.1). This, in turn, led to a shift amongst residents from fishing the staple cod to the higher-valued salmon and char (Fig. 4.2). The 1977 declaration of a 200-mile Exclusive Economic Zone, however, seemingly resulted in a replenished cod stock. Consequently, the early 1980s have seen the appearance of a modern floater cod fishery: the nearshore longliners.

Before taking a closer look at the fisheries data it is important to bear in mind the difficulties mentioned earlier in obtaining a relevant data set. There are few fish purchasers operating in North Labrador in any one year and in some communities there may be only one purchaser. No North Labrador community had more than three purchasers during the period on which my research has focussed. Consequently specific community catch data

Figure 4.1: 2GH cod landings, 1953-1984
(Source:DFO)

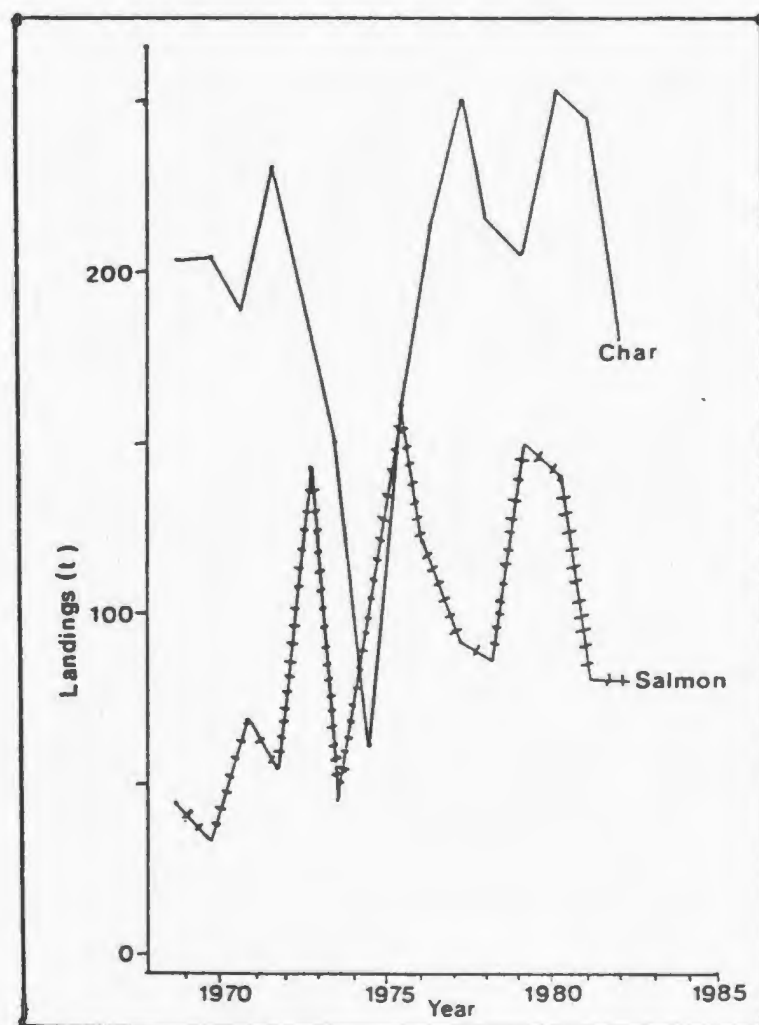
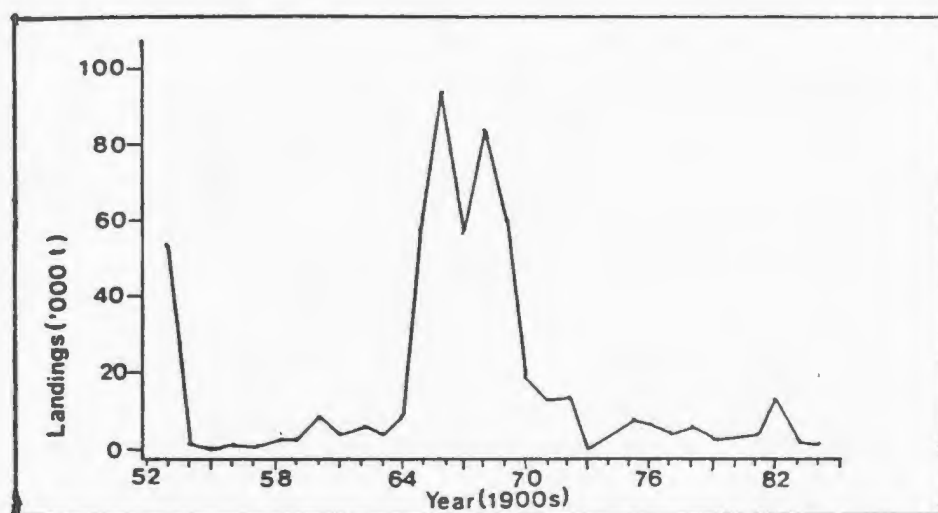


Figure 4.2: Section 53 char and salmon
landings, 1969-83 (Source:DFO)

are considered commercially sensitive and confidential. While I have been given access to data (through permission of all purchasers) held by the provincial Department of Fisheries and the federal Department of Fisheries and Oceans, it was on condition that the data would be used in such a way as to maintain confidentiality. Problems in gaining permission from a number of different buyers and my reasons for wanting the data (i.e. to look at Torngat) has constrained the community data to the 1980-84 period. It is also worth noting that while the community data are useful for looking at aspects of particular relevance to communities, they do not provide a picture of the North Labrador fishery as a whole.

Unfortunately the data is not available in an aggregated form for the North Labrador region as locally defined (i.e. including Rigolet and the areas north of Hamilton Inlet). The Northwest Atlantic Fisheries Organisation (NAFO) Divisions 2G, 2H and 2J include much, but not all of the Labrador waters (they also cover areas beyond the 200 mile limit). As can be seen from the map (Figure 1.1) Division 2J includes the area from Cape St. Charles to just south of Hopedale, thereby amalgamating Makkovik, Postville, Rigolet and Smokey's catch statistics with those of a sizeable portion of Southern

Labrador. While 2J data are therefore considered of little value for the purposes of examining North Labrador's fishery, 2G and 2H combined can provide some perspective on the fishery surrounding the substantially first-people settlements of Nain, Davis Inlet and Hopedale.

Canadian fisheries statistics are more relevant as Makkovik and Postville join the other 2GH fisheries in statistical section 53 (Figure 1.1) of Statistical Area 0 (the whole of Labrador). Rigolet and Smokey however are still aggregated with southern Labrador communities (e.g. Cartwright). To produce data or percentages of total catch taken by various North Labrador communities would therefore enable some companies to gain otherwise unavailable commercially sensitive information, a breach of the conditions under which the information was supplied. Some statistical analyses are possible and where their usefulness has been suggested by interviewees, and where confidentiality and data permit, these have been carried out.

These data constraints have implications for the thesis methodology and the use of Checkland's methodology which are significant. The analyst, me, is privy to information which informs the rich picture and yet cannot

be shared. This ethical constraint has not been addressed by Checkland and yet it seems probable that the broader the problem situation the greater the number of players involved. It is probable that the situation in which I found myself is not uncommon to researchers using the methodology; however in most cases one would expect the owner of the research (i.e. the person who has asked for it to be done) would establish the extent to which the research would be available to others. In this case I am to all intents the owner of the research, although Memorial University of Newfoundland would have a claim on the thesis produced. Had it been possible for me to convene a debate on the rich picture and the resultant models I would have expected an outcome to have been agreement on which information could be disclosed. However, as discussed in the introduction a debate was not logistically feasible and I have therefore based the rich picture primarily on the information I was permitted to disclose. I do not consider this is a constraint to the expression of the picture, as my assessment of the undisclosed data is that it merely provides some supportive evidence for perspectives already captured by the disclosable information. It does not generate any new perspectives and in fact would tend to be most appropriate for very low order system modelling. As

subsequent chapters discuss, this level of modelling was not required in this thesis.

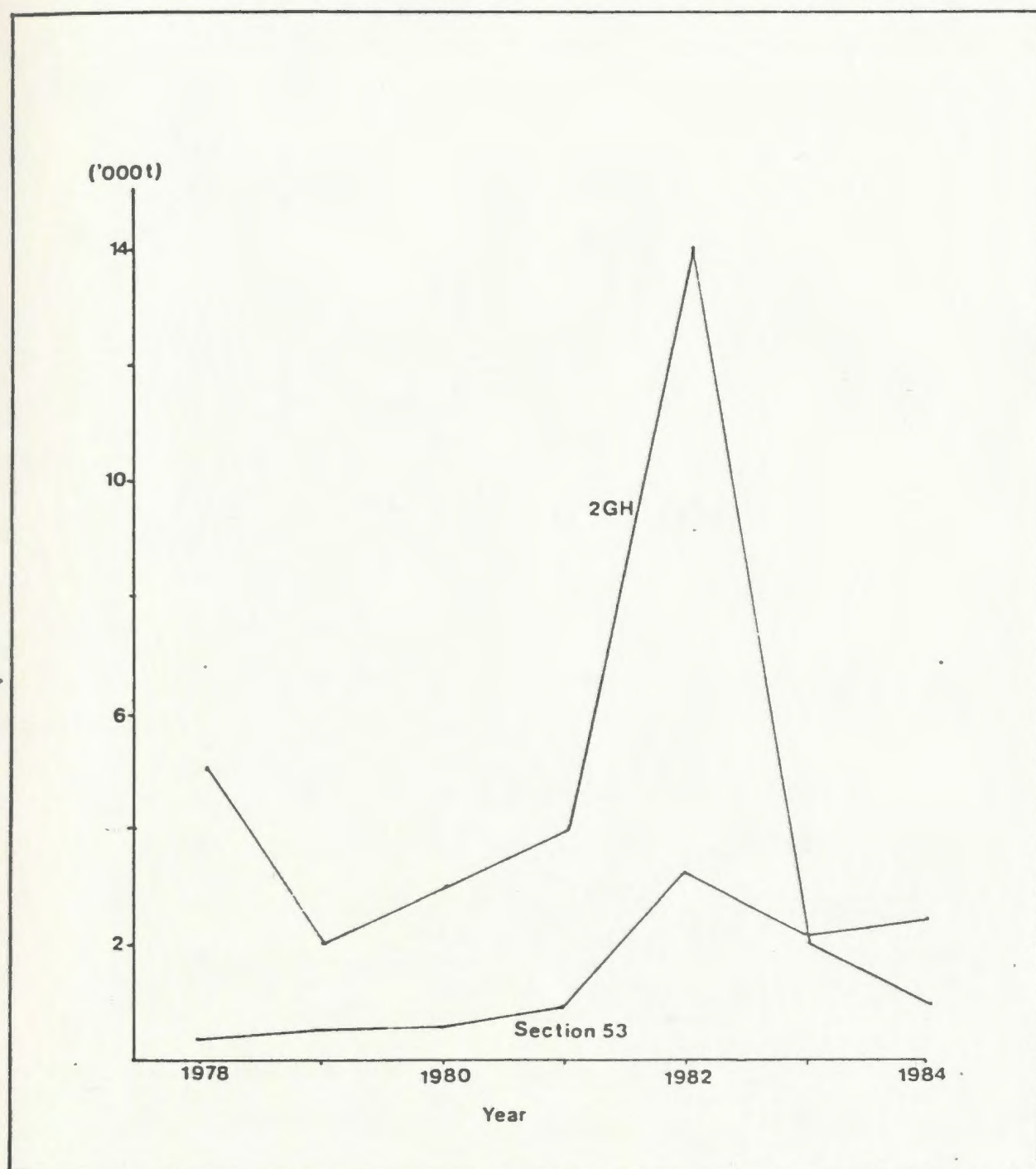
A second problem related to data disclosure is that by disclosing some "hard" (quantifiable) data this may give unwarranted validity to the perspectives the data support. This is a problem which will face most geographers who attempt to apply the methodology. As I have discussed in the second chapter, the technique I employed to assist me to balance the data was to perform eidetic reductions on them. I am confident that this has been successful. That the main conclusions reached in Chapter Seven do not rely on substantial quantitative evidence supports this view.

From a more pragmatic perspective it is useful to recall that the methodology deliberately eschews "hard" data approaches. One reason for this is that available hard data may be more directive in focussing research efforts and resultant solutions than the problem situation demands. It is my contention that the contrast between the results and conclusions of my research and that of the Kirby Task Force when compared with those of NORDCO (see Chapter 7) support this view. The contrast between NORDCO's conclusions and those of this thesis also lends support to the argument that my rich picture

and subsequent models were not biased by the "hard", "disclosable" data. The data produced in this chapter is therefore primarily to add context and a sense of "reality" to the expression of the rich picture.

Resuming consideration of the fishery, and looking first at the cod fishery, it is perhaps useful to provide context by comparing the data for Divisions 2GH with that compiled in this research for Section 53 (see figures 4.1 and 4.3; to enable the fifties and sixties data for 2GH to be included and thereby provide an historical comparison the graphs are vertically scaled in '000 tons). The generally low values for each year are readily apparent as is also the peak (for the last decade) in 1982. It should be noted also that the Canadian Atlantic Fisheries Scientific Advisory Committee (CAFSAC) adopted a Total Allowable Catch (TAC) of 20,000 tons in 1974 for 2GH and the Maximum Sustainable Yield is estimated by CAFSAC (1985) at 40,000 tons. That there is still a substantial foreign vessel effect and non-Labrador landings is apparent from the generally higher catches recorded in the early eighties by CAFSAC for 2GH in comparison with landings recorded for section 53. An analysis by Gavaris and Bishop (1983) of the countries reporting cod catches in 2GH indicated almost 75% of the 1982 catch was by foreign vessels (the Federal

Figure 4.3: Section 53 and 2GH cod landings, 1978-84
(Source:DFO)



Republic of Germany, Denmark, and the USSR dominating), 23% by Newfoundland vessels, and 2% by other Canadian vessels:

	1978	1979	1980	1981	1982	1983	1984
2 GH catch (1000 tons)	5	2	3	4	14	2	1
Section 53 Landings (000,000 lbs)	0.9	1.2	1.3	2.1	7.2	4.7	5.5

(from CAFSAC Advisory Document 85/14 and DFO. 1984 data is provisional as is also the 1983 CAFSAC data)

As the section 53 data is in my view the more relevant, it is expressed more fully in Figures 4.4 and 4.5. Tables 4.2 and 4.3 provide a context for the cod fishery over the years 1978-84. Two points are readily apparent; the decline in importance of salmon relative to cod as the major earner for Section 53, and secondly the rapid increase in the nearshore landings. That these two changes are interrelated is apparent from Table 4.4. Cod dominate the near and midshore catches. As the classification of in-, near-, midshore is based on boat length, it is reasonable to assume that the perceived replenishing of northern cod stock has drawn a number of near and mid-shore vessels from south Labrador and the Island. Salmon and char predominate in the inshore fishery and fetch a higher price per pound. They are

Figure 4.4: Section 53 all species catch value by sector, 1978-84 (Source:DFO)

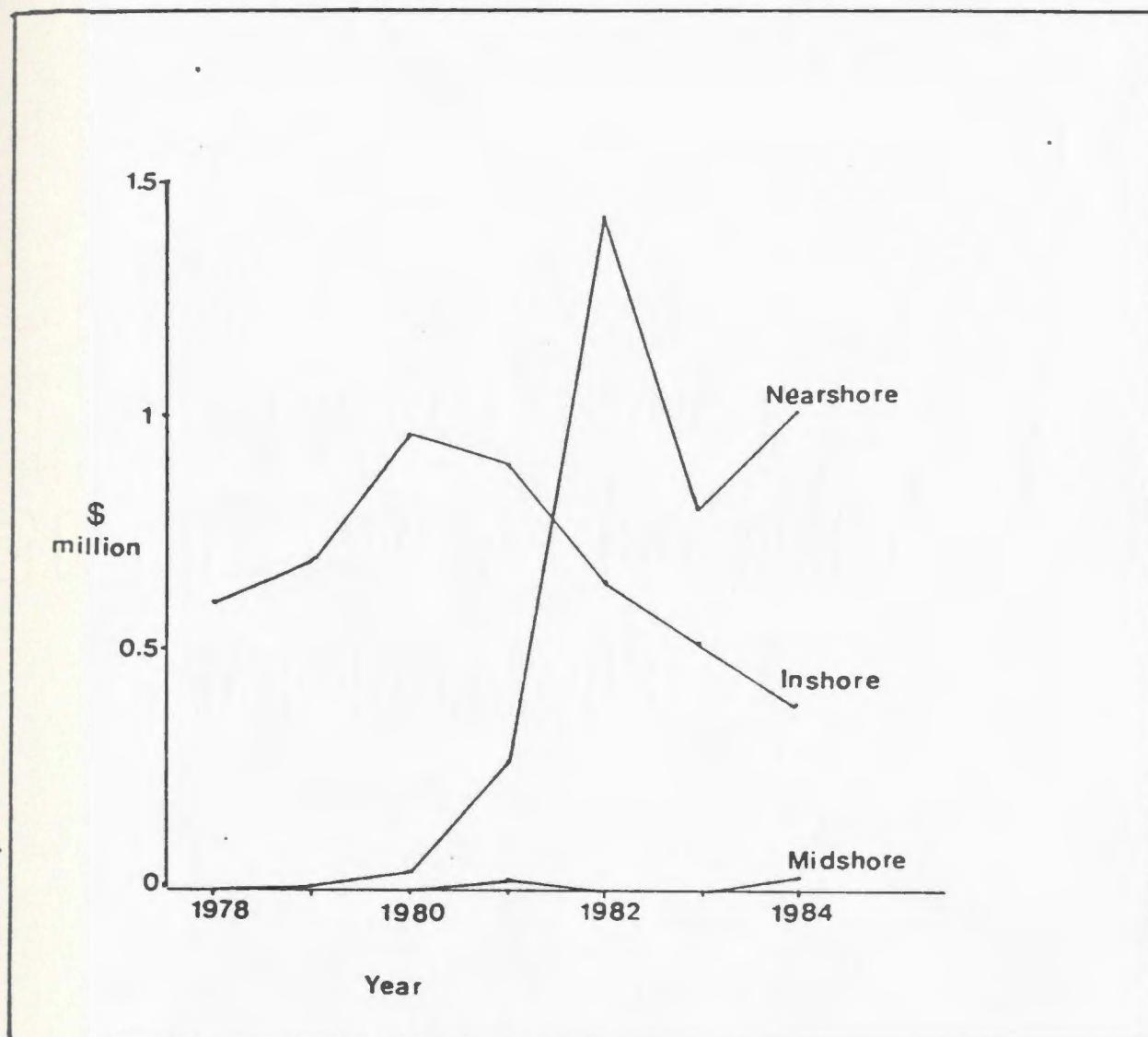


Figure 4.5: Section 53 Commercial fishery salmon landings, and catch per unit effort, 1969-84
(Source:DFO)

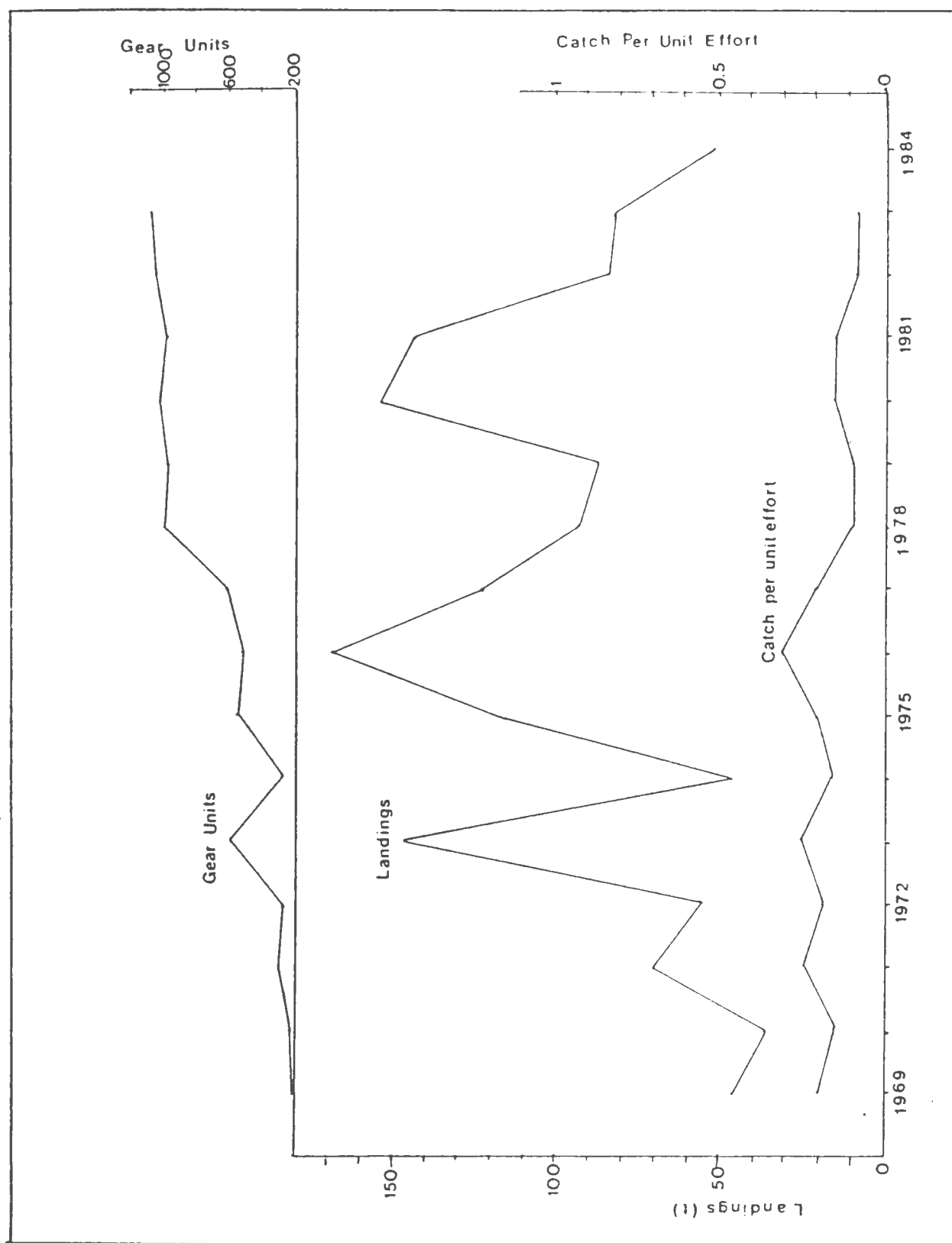


Table 4.3 Section 53 landing data for main species, 1978-84
 (Source: Department of Fisheries and Oceans - 1984 data is provisional)

	Landings ('000 kg)						
	1978	1979	1980	1981	1982	1983	1984
Cod	396	553	597	965	3,251	2,146	2,478
Salmon	151	88	153	143	84	81	51
Char	276	211	207	288	245	195	166
Turbot	-	-	-	77	874	19	379
Scallops	-	-	-	35	4	73	63
	Number						
	1978	1979	1980	1981	1982	1983	1984
Seals	1,947	1,847	5,537	1,900	1,664	99	1,891
	('000 \$)						
	1978	1979	1980	1981	1982	1983	1984
Cod	104	167	202	367	1,276	883	1,044
Salmon	299	256	446	449	264	207	125
Char	164	171	171	267	224	167	146
Turbot	-	-	-	25	301	7	118
Scallops	-	-	-	25	3	54	49
Seals	37	67	171	65	26	0	14
Main species Total	604	661	992	1,198	2,094	1,318	1,496
All species Total	604	692	1,005	1,199	2,096	1,320	1,503

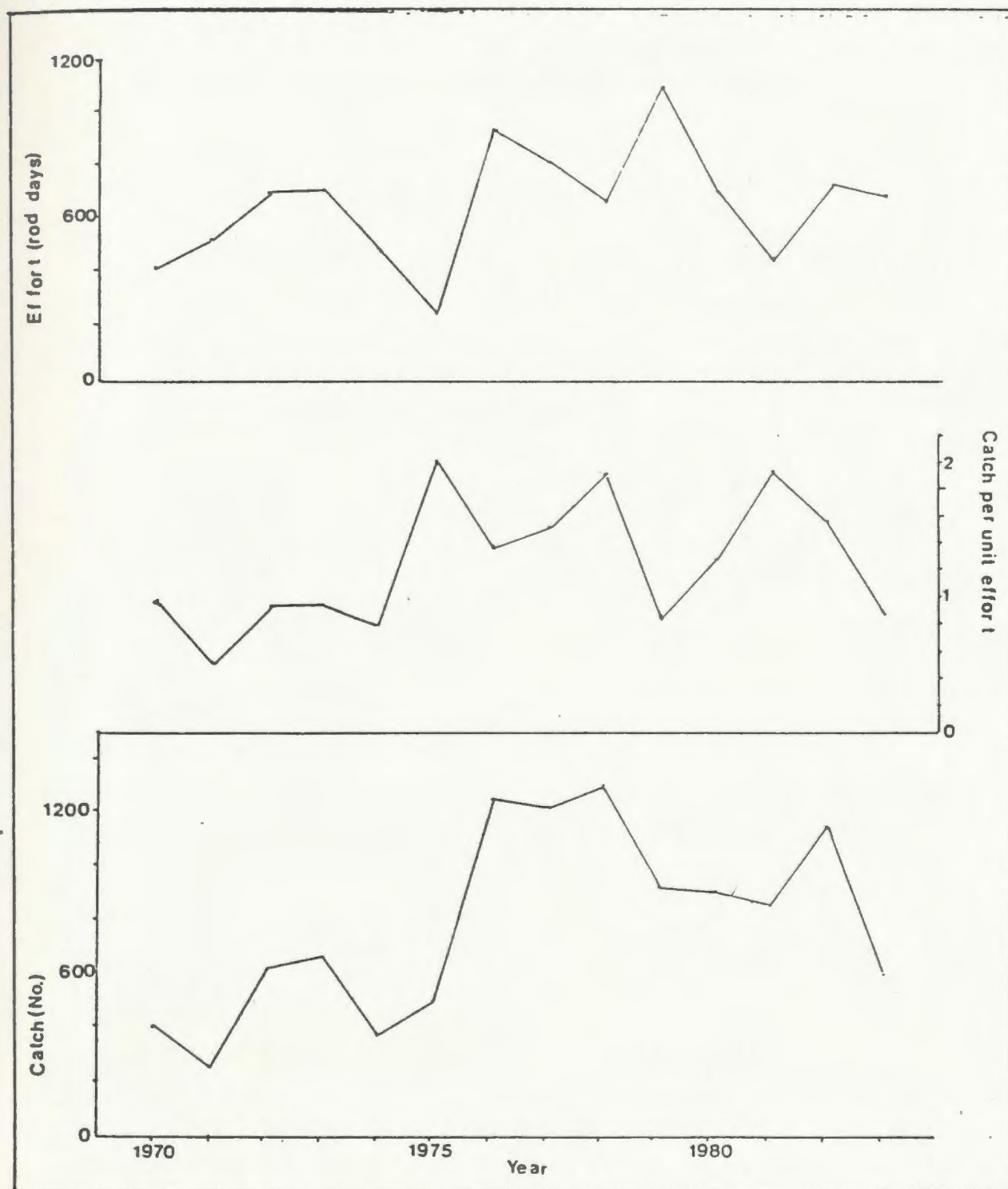
Table 4.4 Section 53 cod landing data by sector, 1978-84
 (Source: DFO; 1984 data is previsionsal)

	('000 \$)						
	1978	1979	1980	1981	1982	1983	1984
Inshore	104	256	161	121	138	139	76
Nearshore	-	-	40	224	1,138	744	953
Midshore	-	-	1	23	-	-	15
	% Value of each sector's landings						
Inshore	17	24	17	13	21	27	19
Nearshore	-	-	100	85	79	93	87
Midshore	-	-	100	77	-	-	82

therefore likely to be of greater importance to the coastal residents than are the cod. This was borne out by discussion with fishermen who referred to salmon (and, to a lesser extent char) as "the money fish". A final point worth noting is the increased diversification, with scallops and turbot both new fisheries playing a small but significant role.

Using data from O'Connell et al. (1983), Figure 4.6 illustrates that the landings of salmon fluctuate quite markedly (due probably as much to catch conditions as to the size of the stock), and while a general increase is apparent in the total landings, the 1984 catch is only marginally greater than the 1969 catch. Catch per unit effort (where effort was calculated on the numbers of gear units - 50 fathoms of gill net or salmon trap - licenced to prosecute the fishery) has remained relatively constant for the commercial fishery. Although the accuracy of effort figures prior to 1973 are considered questionable, (O'Connell et al. 1983) there appears to have been an increase in effort since the late seventies, with a levelling out at around the 1000 gear units mark. O'Connell et al. note however that not all gear licenced may in fact be used, particularly if catches early in the season are poor and other species are available to fish.

Figure 4.6: Section 53 recreational fishery salmon landings and catch per unit effort, 1970-83
(Source:DFO)



There is also some recreational fishing in North Labrador's interior, with both commercial and private camps being established. O'Connell et al. (1983) analysed the data available from these camps using rod days as a measure for effort. While the total numbers of fish caught are not large in the overall context of the Section 53 catch (the annual number of fish caught by recreational fishermen ranged between 253 and 1,307 compared with a commercial range of 9,352 to 44,467 for the 1969-83 period (O'Connell et al. 1983)), the economic impact may be significant. In 1981 the Goose Bay to Hunt River Camp (near Hopedale) round-trip charter cost for a single Otter aircraft was \$2,000. At the camp for every 2 fishermen there is a guide, and accommodation at the camp was about \$1,000 per person per week. With over 1,000 rod days clocked up in 1981 there was over \$100,000 in accommodation costs (assuming \$1,000 per week as a shadow accommodation price for non-commercial recreational fishing camps). In 1982 there were eleven fish camps in North Labrador with total accommodation for 78 recreational fishers (Anon. 1982). There is considerable potential for a full assessment of the socio-economic impact of North Labrador's recreational fishery, but this was beyond the current research.

As stated earlier, the char fishery predominates in the north of Labrador. Data, compiled by CAFSAC (1985a), are tabulated in Table 4.5. The locations referred to are mapped in Figure 4.7. The first records of commercial exports date back to 1860, but continuous data have been available only since 1942. The period from 1949-1966 represents char exports as opposed to landings, since no white or pink fleshed char were marketed. Catch statistics from individual areas have been available since 1974 and management of the fishery has been especially problematic in the Nain area. Production has generally increased from an annual average of 82 tonnes in the first ten years (from 1942) to 141 tonnes in the period 1953-72 to over 200 tonnes per year since 1972 (Dempson 1982a). Eighty-six per cent of the catch has been from the Nain region.

Concern over declining stock numbers and quality in the Nain region led to closure of Nain Bay in 1978 and the imposition of quotas on Tikkoatokak, Voisey and Anaktalik Bays in 1979 (Dempson 1981). These quotas were reduced in 1981, a quota was also placed on Okak Bay and fishing of regions further north was encouraged (Dempson 1982b, CAFSAC 1982). The result was an expansion of commercial fishing effort into the Hebron-Saglek region in 1981. In that year the 70 tonnes of char taken from

Table 4.5 Arctic char TACs and catches (t round), fishing effort (man-weeks) and catch rates (kg/man-wk) from regulated bays in the Nain area of Labrador, 1974-83

1974 1975 1976 1977 1978 1979 1980 1981 1982 1983

Tikkoatokak Bay

TAC	-	-	-	-	-	39.5	39.5	28.5	35.0	35.0
Catch	10.0	27.7	31.6	39.5	55.0	37.9	42.1	28.1	28.3	16.2
Effort	28	76	81	94	147	108	130	80	75	65
Catch/effort	356	364	390	420	374	351	324	351	377	249

Voisey Bay

TAC	-	-	-	-	-	22.5	22.5	16.1	16.1	16.0
Catch	20.0	0.2	12.2	22.5	33.6	21.9	11.6	16.3	7.7	3.0
Effort	64	2	45	56	85	59	52	53	38	17
Catch/effort	313	119	272	402	395	371	222	308	202	174

Anaktalik Bay

TAC	-	-	-	-	-	21.5	21.5	8.7	8.7	11.0
Catch	7.8	2.5	14.7	21.6	13.1	14.9	8.0	9.2	10.8	2.4
Effort	28	10	45	63	55	76	53	32	27	24
Catch/effort	279	255	326	343	238	196	152	286	401	98

Otak Bay

TAC	-	-	-	-	-	-	-	27.3	27.3	21.0
Catch	34.3	2.4	17.8	27.6	36.1	26.2	17.4	11.0	9.0	30.7
Effort	105	15	52	107	104	123	65	46	26	147
Catch/effort	326	157	343	258	347	213	268	240	347	209

Hebron Fiord

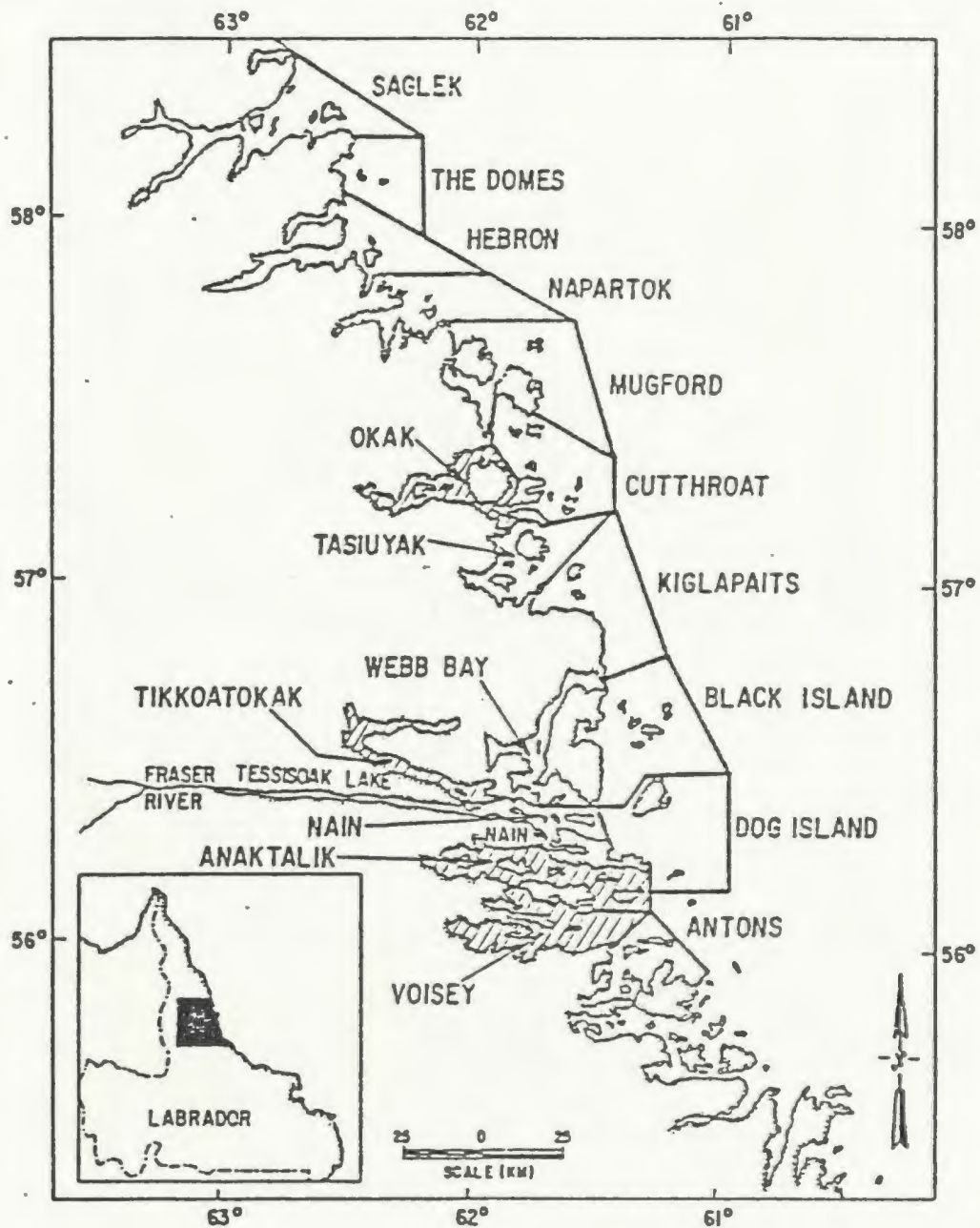
TAC	-	-	-	-	-	-	-	-	29.1	20.0
Catch	-	-	-	6.0	-	-	2.9	39.9	37.8	-
Effort	-	-	-	37	-	-	-	106	98	-
Catch/effort	-	-	-	161	-	-	-	376	386	-

Nain Bay

TAC	-	-	-	-	-	-	-	-	-	5.0
Catch	12.5	-	3.1	8.5	-	-	-	5.5*	-	0.5
Effort	37	-	10	28	-	-	-	29	-	8
Catch/effort	337	-	312	302	-	-	-	188	-	67

* Taken in immediate Nain area but outside restricted zone

Figure 4.7: Nain and north char fishery



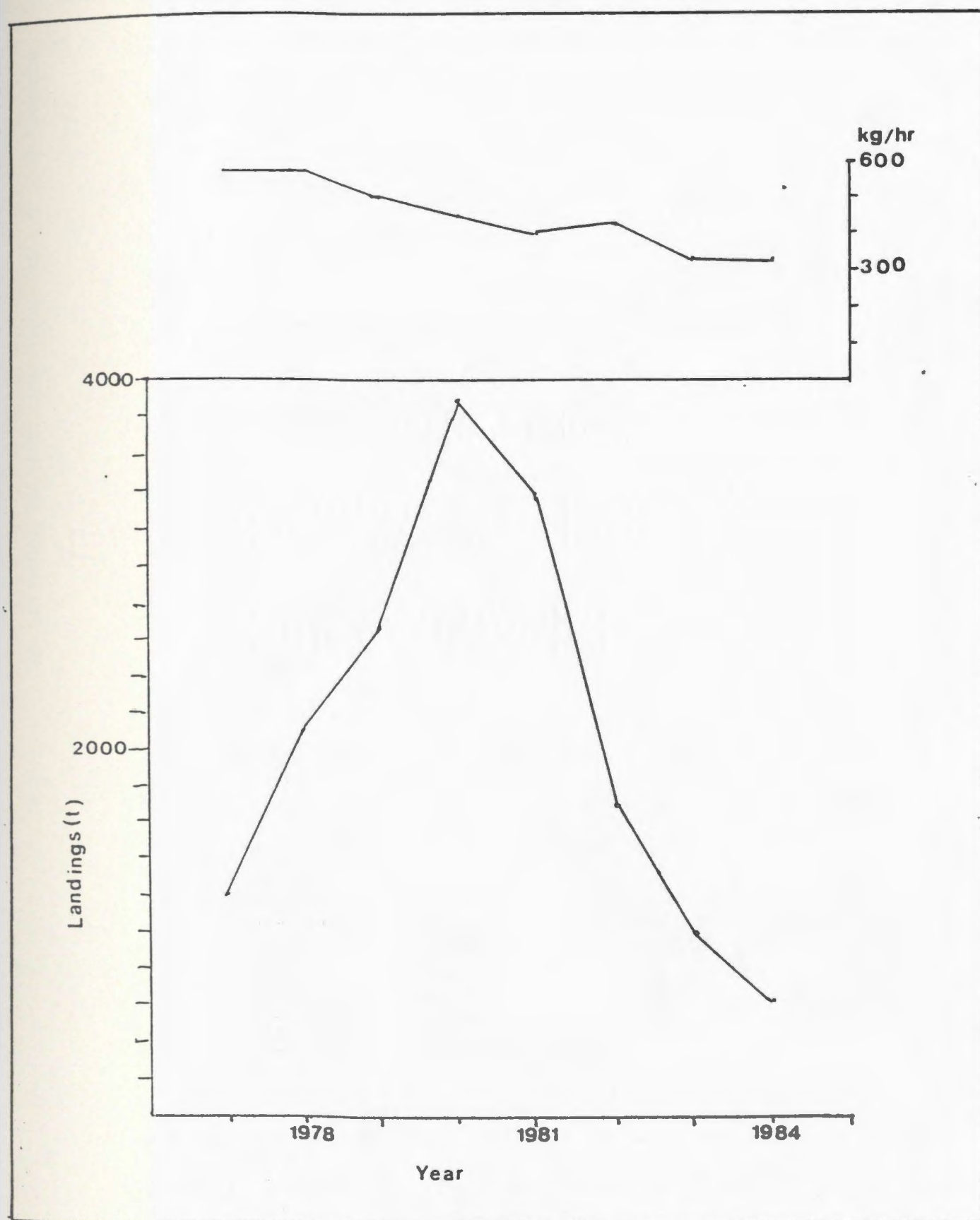
this region approximated 30% of the total northern Labrador catch and led to increased effort and catch (59% of the total Nain regions) in 1982 (Dempson 1983). For a detailed discussion of the north of Nain char fishery see Rennie (1984), Dempson (1983), Dempson, LeDrew and Furey (1984), Dempson, LeDrew and Myers (1984), and Dempson and LeDrew (1984). The salient points for the purposes of this discussion are that there was a Port Burwell-based fishery in the Napartok and north region in the 1960s (which averaged 19 tonnes per year from Hebron). There had not been a fishery since 1969 and the stock exploited in 1981 was essentially virgin. Concern over the sustainable yield that could be expected from this stock and the potential for increased effort with consequent overfishing resulted in Hebron becoming a regulated fishery in 1982. The fishery expansion into Hebron and Saglek was only made possible by Torngat's chartering of a freezer vessel. Financial constraints meant that this was not feasible in 1983, hence the low 1983 char catch. In addition, bad ice conditions in 1983 resulted in an estimated reduction in fishing time and collection services of about 30% (Dempson, LeDrew and Furey 1983). The Hebron region was fished again in 1984.

Overall the char fishery is one of the largest commercial fisheries in the world, but is suffering from

declining stocks in the traditional fishing areas. This has resulted in a redistribution of effort and catch northward and toward outer islands (ibid.).

Shrimp fisheries commenced in 1977 in two main areas off the Labrador coast, the Cartwright and Hopedale Channels. It is not a traditional fishery for Labrador and warrants a mention here only because, as discussed below, the cross-subsidisation of inshore operations by its offshore shrimp licence revenue is critical to Torngat's survival. Abundance of shrimp is, however, much harder to predict than that of other fish stocks. The total Hopedale Channel catch increased from 1977 to 1980 by three hundred per cent. As illustrated in Figure 4.8, since 1977 it has fallen in equally dramatic fashion to levels below those in 1977. The catch rate however has shown an almost uninterrupted decline since 1977 (CAFSAC 1985b). The story is similar for the Cartwright Channel, with the total catch declining from a high of 1,521 tonnes in 1978 to 3 tonnes in 1983. Catch rates have also declined from a high of 614 kg/hr in 1977 to 105 kg/hr in 1983. However, the 1984 catch showed a three fold increase in catch and the catch rate also improved (to 312 tonnes and 307 kg/hr respectively) (ibid). The difficulties in predicting shrimp abundance leave the future of this fishery in some shadow. A quota of 800

Figure 4.8: Shrimp landings and catch per unit effort, 1977-84
(Source:DFO)



tonnes was maintained for Cartwright from 1978 to 1983, but reduced to 700 tonnes in 1984. Hopedale's quota was set at 4,000 tonnes for 1978 and 1980-1983 inclusive. In 1979 and 1984 it was reduced to 3,200 and 3,500 tonnes respectively. Ungava Bay, the Eastern Hudson strait and Division 2G have maintained quotas of 100,750 and 500 tonnes respectively since they were set (in 1979 for the latter two, 1981 for Ungava Bay) (CAFSAC 1981).

Given the above context for the fishery and species of particular relevance to this thesis, it is useful to look now at the actual conduct of the fishery.

By the nineteen hundreds three categories of fishers were recognised on the north Labrador coast: livyers (Labrador residents), stationers (shore-based fishers who came from Newfoundland or south Labrador for the fishing season) and floaters (Newfoundland fishers operating from schooners) (Black 1960). The statistics describing fisher numbers in the following pages refer to livyers and thus understate the actual number of fishers on the coast (those registered outside of north Labrador are not captured by the data).

The traditional inshore product is salted fish, but there has been a growth in chilled and frozen fish with

the advent of better facilities and transportation. The facilities available on the north Labrador coast comprise: fish plants at Rigolet, Makkovik and Nain; salting facilities at Rigolet, Smokey, Postville, Makkovik and Hopedale; ice-making facilities at Smokey and Hopedale; and ice-storage facilities at Davis Inlet (Sandeman and Buchanan 1979). The Provincial Government operates all these facilities except Rigolet, which is operated by Torngat. Torngat also operates other communities' facilities at times depending on its particular strategy for the year and the willingness of the Provincial Government. Many times while in Labrador I heard comments to the effect

"The plants and facilities are ours (native peoples) because they were built with funds from the Native Peoples' Agreement. The Province should hand them over to us to operate."

This attitude is a key perspective in the analyses in the following chapters. Provincial officials maintained that the Province had primary responsibility for operating the facilities and that they were funded by the Province.

In addition to the above list there are private stages at the communities and summer stations along the coast. The summer stations are the locations from which

the fishers base their summer fishing operations and both livyers and stationers operate from them.

"At a salting facility . . . the fishermen sell their gutted catch to the operators, whose employees split and salt the fish, while a fish plant includes freezing and storage capabilities so that fish may be filleted, frozen and stored there. Thus, cod is sold gutted to any freezing or salting plant in the area, or is salted by the fisher himself. Salmon, however, is sold almost entirely in the fresh state. A system of collector boats subsidised by the Provincial Government [or Torngat] visits the summer stations and permanent Labrador communities regularly during the salmon season, picking up the salmon for delivery to the freezer plants and distributing ice from the ice-making and ice-storage facilities." (Sandeman and Buchanan 1979: 17 and 21).

With the exception of Nain, the fishery is largely split between the growing longliner fleet and the more common 20 foot or smaller speed boats (Tables 4.6 and 4.7). The smaller boats are usually operated on a one- or two-man basis; the longliners are five- or six-man boats. Salmon are caught using floating gillnets 91m in length, which are set perpendicular to the shore in berths drawn by lot or held by tradition. The nets are tended two or three times daily. Cod are usually jigged.

As Table 4.7 indicates, Nain has a high proportion of boats in the 20-35 ft category. This reflects largely the lack of other forms of sea transport to shift families northward to traditional fishing grounds.

Table 4.6 Number of registered boats by length category and number of full- and part-time licenced fishers in North Labrador communities, 1976-1984 (Source Newfoundland provincial statistician)

	Fishing Vessels		Fishers*			Ratio
	<35'	35-64'	F	P	T	F:P
1976	90	3	-	-	198	-
1977	123	5	-	-	181	-
1978	167	3	-	-	225	-
1979	224	12	-	-	319	-
1980	253	16	-	-	364	-
1981	240	18	244	120	364	2.0
1982	230	20	232	98	330	2.4
1983	218	22	206	95	301	2.2
1984			190	116	306	1.6

* F = full-time fishers, P = part-time, T = total

Table 4.7 Number of registered small boats by length category by community in 1981 (Source: Newfoundland Dept. of Fisheries)

	<20'	20-35'
Makkovik	60	9
Postville	37	3
Hopedale	23	6
Nain	23	37
Davis Inlet	7	3

Table 4.6 also describes an important distinction between part- and full-time fishers. While statistical data on this distinction have only been available since 1981, it is an important one for those wishing to qualify for Unemployment Insurance as fishers. It may also provide an indication of the state of the fishery. One would theoretically expect a greater ratio of full- to part-time fishers in good fishing years as the returns from fishing lead to longer participation in the fishery. The data available is not sufficient to support this hypothesis and there are intervening variables (e.g. ease of access to the fishery) which need to be considered. That there are about two full-time fishers for every part-timer for the whole coast is all that can be said at this point.

Smokey is worth a separate study in itself. However as it is somewhat of an oddity and almost entirely a longliner floater base with no permanent population, it was largely peripheral to my research and data were not collected on it. At the same time its mere presence was something that seemed to lurk at the back of the minds of all my interviewees. During summer it comprises three or four huts and a barge capable of processing 23 tonnes per day (ibid:31). The floaters use only gillnets, live on board the longliners and fish for cod and turbot.

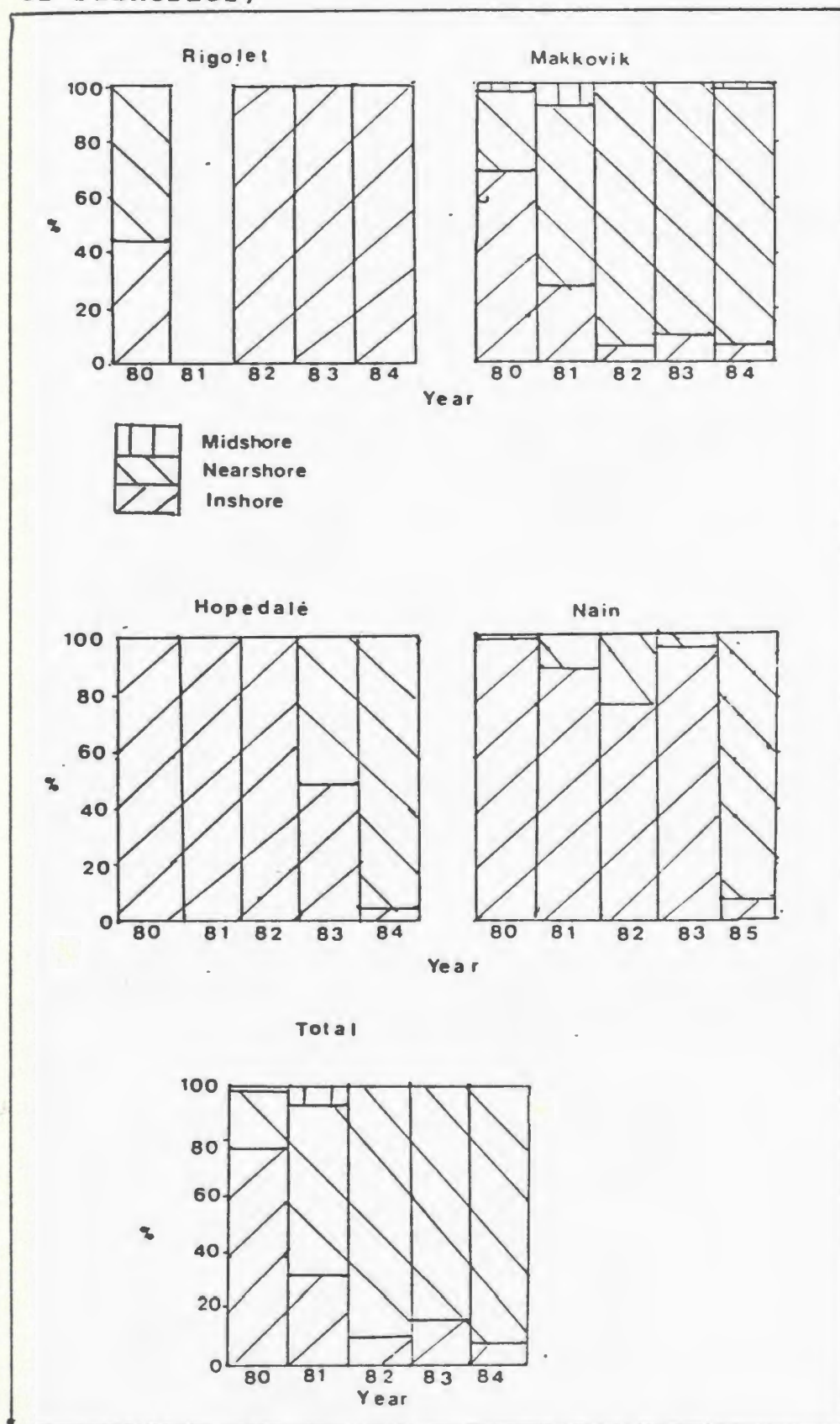
These longliners are crewed by 5-6 people and are generally 50 feet or more. During my visit in 1983 there were also a large number at Makkovik and the shortage of wharfage space was readily apparent with longliners tied several deep and some having to move to enable the coastal ferry to dock. Smokey was thus seen somewhat ambivalently as a symbol of the Newfoundlanders exploiting the Labrador fishery in competition with permanent residents and with the Rigolet plant (the Provincial Government's support was also noted). At the same time it was also grudgingly recognised as reasonably sensible and as lessening the degree of social impact that would occur if Smokey didn't exist (e.g. if all the floaters had to stay at Makkovik the stress on the town was perceived as unwanted - "too much drinking and too many men for a small town").

More detailed understanding of the use of the fishery can be gleaned from the Community Land Use Reports in Brice-Bennett (1977b). Specifically, for Rigolet and Postville (Ames 1977b and 1977a respectively); for Nain, Hopedale and the regions north of Nain (Brice-Bennett 1977a); and for Makkovik (Schwartz 1977). Additional information can be found for Makkovik in Kennedy (1982) and for Davis Inlet in Henriksen (1973). The data suggest that the total number of boats

less than 35 ft have increased over this period in a fairly uniform pattern for all communities. The notable exception is Nain, which had a substantial trough in 1978, a period when numbers were rising in all other communities. The ratio of fishers to boats suggests that there is overcapitalisation in the small boat area. The change from a ratio of 2.2 fishers to each boat in 1976 to less than 1.5 in 1977 would appear to reflect the sudden surge in boat numbers in 1977.

The data on boats mirror pretty much those on the number of fishermen in each community. Of particular note here are the Nain data, especially (for the purposes of this thesis) the inordinately low number of fishers in 1983 relative to the rest of the nineteen-eighties. This coincides with the failure to carry out the Hebron fishery in that year. Figure 4.9 illustrates some of the difference between the communities through a comparison of cod landings by inshore, nearshore and midshore vessel lengths. The increasing role of the longliners is readily apparent and there also appears to be something of a temporal change occurring as well. First Makkovik, then Hopedale and then Nain have become longliner-dominated in their cod catch. Rigolet, Postville and Davis Inlet (these last two not shown on the graph because of the low quantity of their landings

Figure 4.9: Cod landings by community and sector, 1980-84 (Source: Department of Fisheries)



and the total inshore dominance) remained inshore-dominated, but the size of their contribution relative to the other communities (especially Makkovik) is insignificant when amalgamated with them (as the total for all six communities shows). A 1980-1984 shift-share analysis of cod landings by community (which for reasons of confidentiality cannot be reproduced in detail here) indicated net positive shifts of 51, 37 and 12 per cent for Hopedale, Makkovik and Rigolet respectively, and net negative shifts of 85 and 15 per cent for Postville and Nain respectively.

The significance of the cod fishery to individual communities should be kept in perspective. Table 4.8 summarises the contribution of each of the major species to the recorded catch value to each community for the years 1980-1984. It can readily be seen that cod has displaced other species as the major value contributor in Makkovik, Hopedale and Nain. It has also increased its share (although not consistently) of the Rigolet catch value, but has remained insignificant in Davis Inlet. In Postville it showed substantial increases until 1983 when it dominated all other species combined, but fell back again in 1984 to only 21 per cent. This is the general pattern also in Nain, whereas in Makkovik cod has dominated the catch value of all other species

Table 4.8 Annual % composition of each community's catch value by species (\$) for the years 1980-1984

		1980	1981	1982	1983	1984
RIGOLET	Salmon	70.48	75.88	88.52	88.9	67.75
	Char	0.35	0.17	0.09	2.73	2.46
	Cod	1.29	-	5.19	0.1	14.96
	Seal	28.16	23.49	1.25	1.59	1.89
	Other	1.2	0.46	4.86	6.69	12.94
MAKKOVIK	Salmon	42.21	30.14	5.26	10.64	3.51
	Char	0.88	0.8	0.56	0.74	0.9
	Cod	40.17	62.4	74.15	88.49	83.67
	Seal	5.8	1.78	0.88	0.02	0.28
	Other	0.93	4.88	19.14	0.1	11.64
POSTVILLE	Salmon	50.23	53.52	44.05	29.67	42.36
	Char	2.81	8.52	14.2	17.9	21.71
	Cod	20.69	22.68	36.02	51.59	20.87
	Seal	11.57	13.96	4.7	-	10.53
	Other	14.7	1.34	1.01	0.88	4.52
HOPEDALE	Salmon	53.95	52.41	58.69	52.23	13.75
	Char	11.19	12.97	28.95	14.91	7.62
	Cod	8.69	7.38	6.71	22.9	75.35
	Seal	24.32	27.1	1.99	0.13	1.22
	Other	-	0.14	2.29	10.58	2.06
DAVIS INLET	Salmon	72.1	67.83	67.87	-	24.76
	Char	27.84	31.81	30.57	-	26.73
	Cod	0.06	-	1.31	-	-
	Seal	-	-	-	-	48.47
	Other	-	0.36	0.24	-	0.04
NAIN	Salmon	26.63	34.73	23.44	0.17	9.86
	Char	11.59	26.27	9.91	9.74	20.93
	Cod	10.29	6.71	26.92	84.35	43.56
	Seal	51.49	15.56	29.87	0.02	1.68
	Other	-	16.53	9.87	5.72	23.98

combined since 1981. Postville and Rigolet are largely reliant on salmon and Davis Inlet has shown an increasing reliance on char, although until 1982 salmon predominated. Seals can make a significant contribution to communities' catch value; however, it appears to have declined in significance in each community (with the notable exception of Davis Inlet - although the 1984 figure was probably a one-off result). The influence of diversification into turbot (Makkovik and Hopedale) and scallops (Nain) is captured in the increasing contribution of the "other species" category.

An attempt was made to assess the overall contribution of each species in terms of landed weight and this analysis is tabulated in Table 4.9. The dominance of cod is quite marked, however, as the analysis of total catch value by species (indexed to cod = 1,000 in 1980) indicates, cod has only exceeded salmon since 1982 (see Table 4.10) and salmon continues to contribute a substantially greater value to the region's catch than its percentage of weight would indicate. The scale of change in the proportion of different species landed in different years is also apparent from Tables 4.8 and 4.9.

Table 4.9 Annual % composition of total landings (kg) by species for all communities in North Labrador (excluding seals)

	Salmon	Char	Cod	Other
1980	17.28	8.31	70.89	3.52
1981	12.71	5.92	71.96	9.41
1982	1.27	1.15	74.49	23.07
1983	3.6	1.43	93.65	1.31
1984	1.48	2.69	79.33	16.43

Table 4.10 Index of annual total catch value by species for North Labrador communities (Cod = 1980 = 1,000)

	Salmon	Char	Cod	Seals
1980	2,078	821	1,000	110
1981	3,031	403	2,067	782
1982	1,747	237	7,168	640
1983	1,295	172	5,190	9
1984	787	461	6,260	90

Table 4.11 Range of average annual value (cents) per kg of each species total catch for each community 1980-84

	R	M	P	H	D	N
Cod	30-35	35-42	31-51	33-43	29-30	31-43
Salmon	300-393	244-315	256-317	269-315	278-314	257-320
Char	92-136	78-100	75-96	85-98	81-109	82-106
Trout	87-130	12-95	76-134	74-140	68-73	-
Turbot	31	29-34	-	22-42	-	19-39
Scallops	-	-	-	-	-	17-80

The average value by weight (the price paid per kilogram) for the landings provides a point of comparison between communities of the quality of the catch in different species (Table 4.11). A large proportion of No. 2 salmon or smaller (less than 5lb) fish would be expected to lower the overall price per kilogram paid. Unfortunately the difference between smaller size and quality is not recorded at appropriate data levels for each community. There may also be differences between the prices paid and in the grading practises adopted by different operators. That Torngat was considered more favourable in terms of both price paid and the skill of its graders was apparent from the Annual General Meetings I attended in 1983. This was considered a consequence of the training funded by Torngat.

The analysis (Table 4.9) of total community catch value by total community landings for each species indicates that the Torngat operation in Rigolet did result in higher returns to fishers in salmon, char and trout. While it is not so readily apparent from the aggregated data in Table 4.10, the higher cod landing values coincided with an increase in longliner activity in the relevant communities.

From Table 4.12 the differences between communities with respect to the fishery is quite apparent. Makkovik and Postville consistently have ratios of full-time fishers to part-time less than 1.7. Rigolet has ranged between 0.81 and 2.83. Davis Inlet, Hopedale and Nain tend to have many more full-timers than part-timers (reaching 7:1 in Hopedale). The Nain and Hopedale ratios are declining, while the Makkovik and Rigolet ratios are on the rise. The ratio of full-time fishers to boats less than 35 ft in Makkovik is relatively low and suggests a degree of overcapitalisation by full-time fishers. Until further research is completed on the dynamics of full and part-time fishers, there is little further to add here.

4.4.4 Current Socio-economic context

A perspective emphasised by most interviewees was that the north Labrador fishery was a "social fishery". What this meant differed from interviewee to interviewee. However I frequently had data on social aspects of Labrador drawn to my attention. It is perhaps useful to look briefly at some of the broadbrush data indicative of the current social conditions which people drew to my attention.

Table 4.12 Ratios of full- to part-time fishers and of fishers to small boats by community, 1976-1984 (Source: Provincial statistician)

Full-time to Part-time Fishers

	R	M	P	H	D	N
1981	0.8	0.9	1.6	7.0	2.0	6.3
1982	1.9	1.3	1.1	6.0	3.0	5.5
1983	2.8	1.2	1.3	3.3	3.3	4.1
1984	2.8	1.4	1.7	3.1	0.6	1.3

Full-time Fishers to Boats <35'

	R	M	P	H	D	N
1981	0.5	0.7	0.8	1.5	1.4	1.9
1982	0.7	0.7	0.7	1.2	1.3	1.9
1983	0.7	0.7	0.8	1.0	1.3	1.7

Total Number of Fishers to Boats <35'

	R	M	P	H	D	N
1976	1.6	2.7	5.0	1.6	2.0	2.6
1977	1.0	1.3	1.1	1.6	0	2.2
1978	1.1	1.2	1.1	1.8	0.9	2.3
1979	1.3	1.3	1.4	1.7	0.8	2.1
1980	1.2	1.4	1.1	1.6	1.3	2.1
1981	1.1	1.4	1.2	1.7	2.1	2.2
1982	1.1	1.3	1.2	1.4	1.7	2.2
1983	0.9	1.2	1.4	1.3	1.6	2.1

4.4.4.1 Population growth

The vital statistics and age-sex population pyramids presented in Tables 4.13, 4.14, 4.15 and Figure 4.10 indicate quite clearly the major problem for Labrador - the large proportion of each community's population under 15 years of age. When considered alongside the region's high crude live birth rate (CLBR), crude death rate and crude rate of natural increase (CRNI), which are more than double the provincial rates, then unless there is a major change to the patterns of population growth the youthful character of each community is likely to continue. In the two years 1981-1983 the increase in the total number of children 0-17 years for whom family allowance was paid was 1.4 per cent for north Labrador. This low overall figure hides significant decreases in Postville (16 per cent) and Makkovik (10) and substantial increases in Rigolet (14 per cent), Davis Inlet and Hopedale (8 per cent each) (data source: Dept of Statistics). These variations may reflect cultural factors, as the ethnic composition of the communities (Table 4.16) indicates a predominance of settlers in Makkovik and Postville. Certainly, cultural factors were frequently invoked by interviewees to explain differences between communities over a wide range of aspects: e.g., type of employment - it was suggested that fishing was

Table 4.13 Comparison of North Labrador, Labrador and Newfoundland vital statistics for 1981

	Pop.	% of total Prov.	Live Births	Deaths	CLBR	CDR	CRNI	VI
N. Labrador	2,444	0.43	82	20	33.6	8.2	25.4	410
Labrador	31,318	5.5	682	115	21.8	3.7	18.1	593
Newfoundland (incl. Lab.)	567,681	100	9,120	3,230	16.1	5.7	10.4	282

CLBR = Crude Live Birth Rate

CDR = Crude Death Rate

CRNI = Crude Rate of Natural Increase

VI = Vital Index (ratio of live births to deaths x 100)

Table 4.14 1981 Crude Birth, Death and Natural Increase and General Fertility Rates for each community in North Labrador

	Pop.	Women 15-44	Live Births	Deaths	CLBR	GFR	CDR	CRNI	VI
R	271	65	4	7	14.8	61.5	25.8	-11	571
M	347	90	10	1	28.8	111.1	2.9	25.9	1,000
P	223	50	3	-	13.5	60	-	13.5	-
H	425	105	23	1	54.1	219.1	2.4	51.7	2,300
DI	240	60	17	3	70.8	283.3	12.5	58.3	567
N	938	200	25	8	26.7	125	8.5	18.2	313
N. Labrador (all communities)	2,444	570	82	20	33.6	143.9	8.2	25.4	410

CLBR = Crude Live Birth Rate per 1,000 people

GFR = General Fertility Rate per 1,000 people

CDR = Crude Death Rate per 1,000 people

CRNI = Crude Rate of Natural Increase per 1,000 people

VI = Vital Index (ratio of live births to deaths x 100)

Data Source: Calculated from 1981 Census of Canada data provided by the Newfoundland Department of Statistics

Table 4.15 Population Under Age 15 years in 1981 by Community
(Source: Dept. of Statistics)

	R	M	P	H	D	N	Total
Actual	100	125	90	140	95	380	920
% of Community Population	37	36	40	33	40	41	38

Table 4.16 Percentage of Population of Communities by Ethnicity
(Source: Onchiota Corporation, Messer 1985)

	<u>Indian</u>	<u>Inuit</u>	<u>Settler</u>
Rigolet		50	50
Makkovik		25	75
Postville		20	80
Davis Inlet	95		5
Hopedale		85	15
Nain		85	15
Total	10	70	20

Figure 4.10: Age-sex population pyramids for North Labrador communities, 1981 (Source:Census)

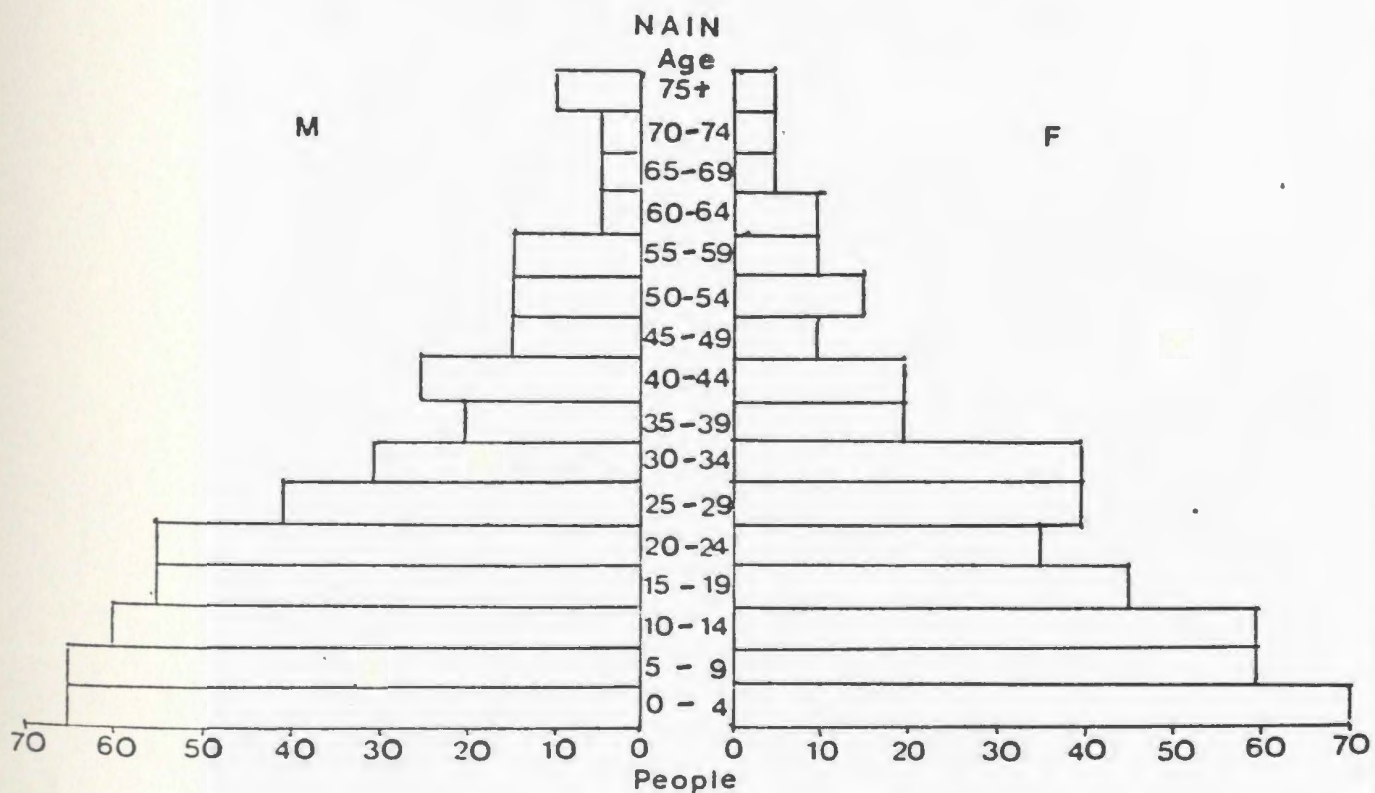
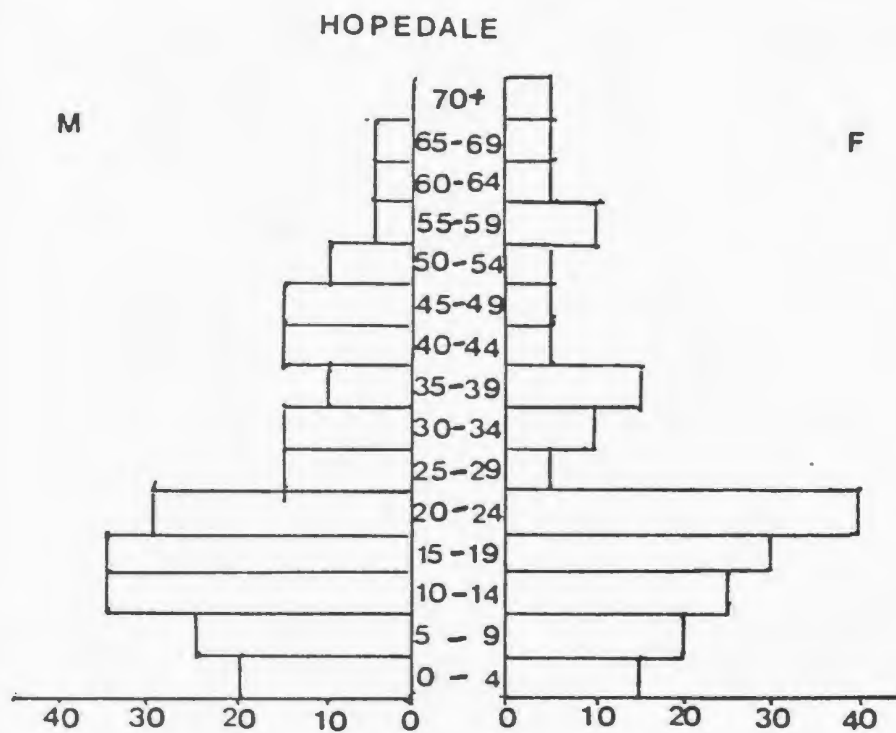


Figure 4.10: (Cont.)

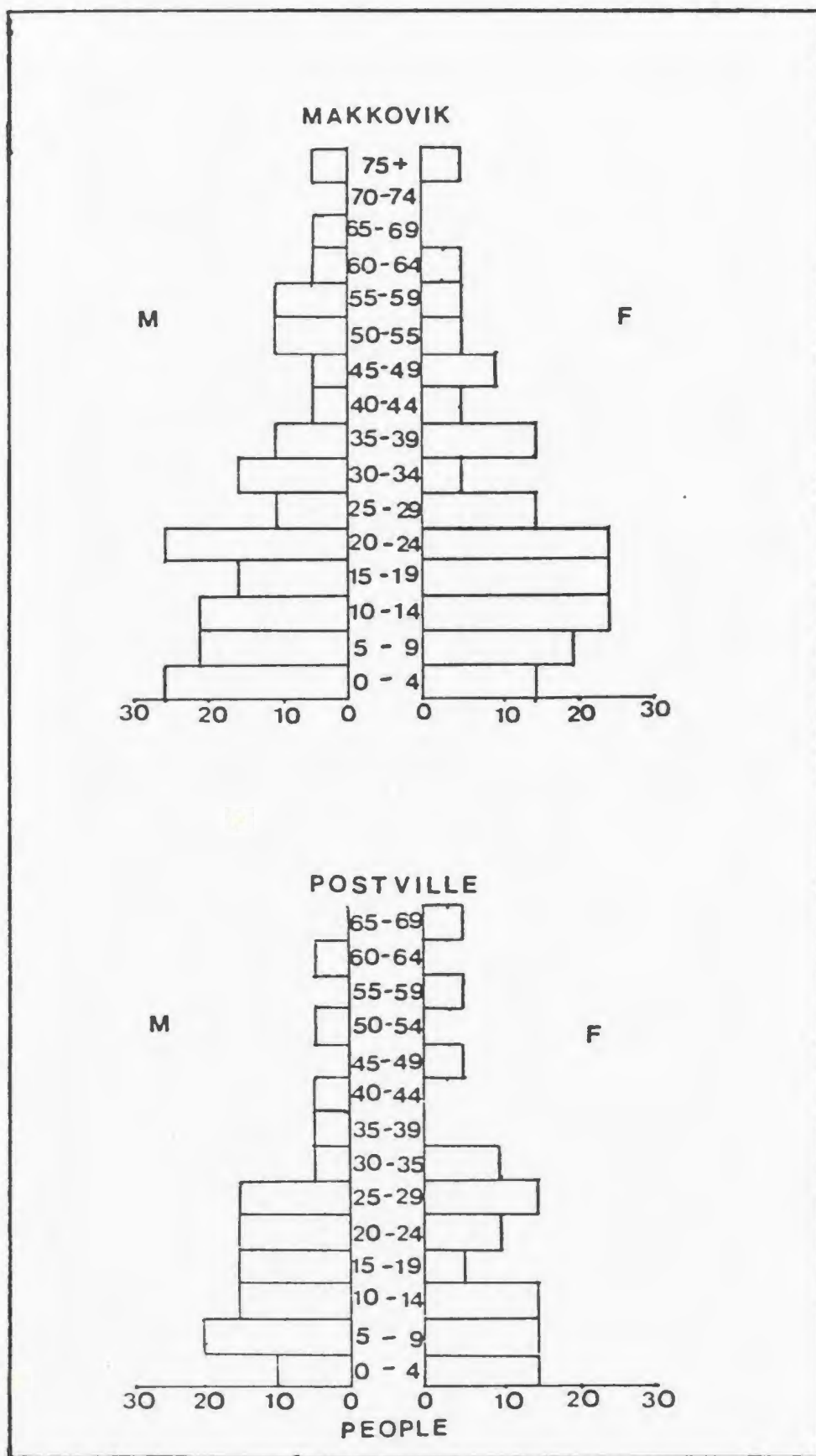
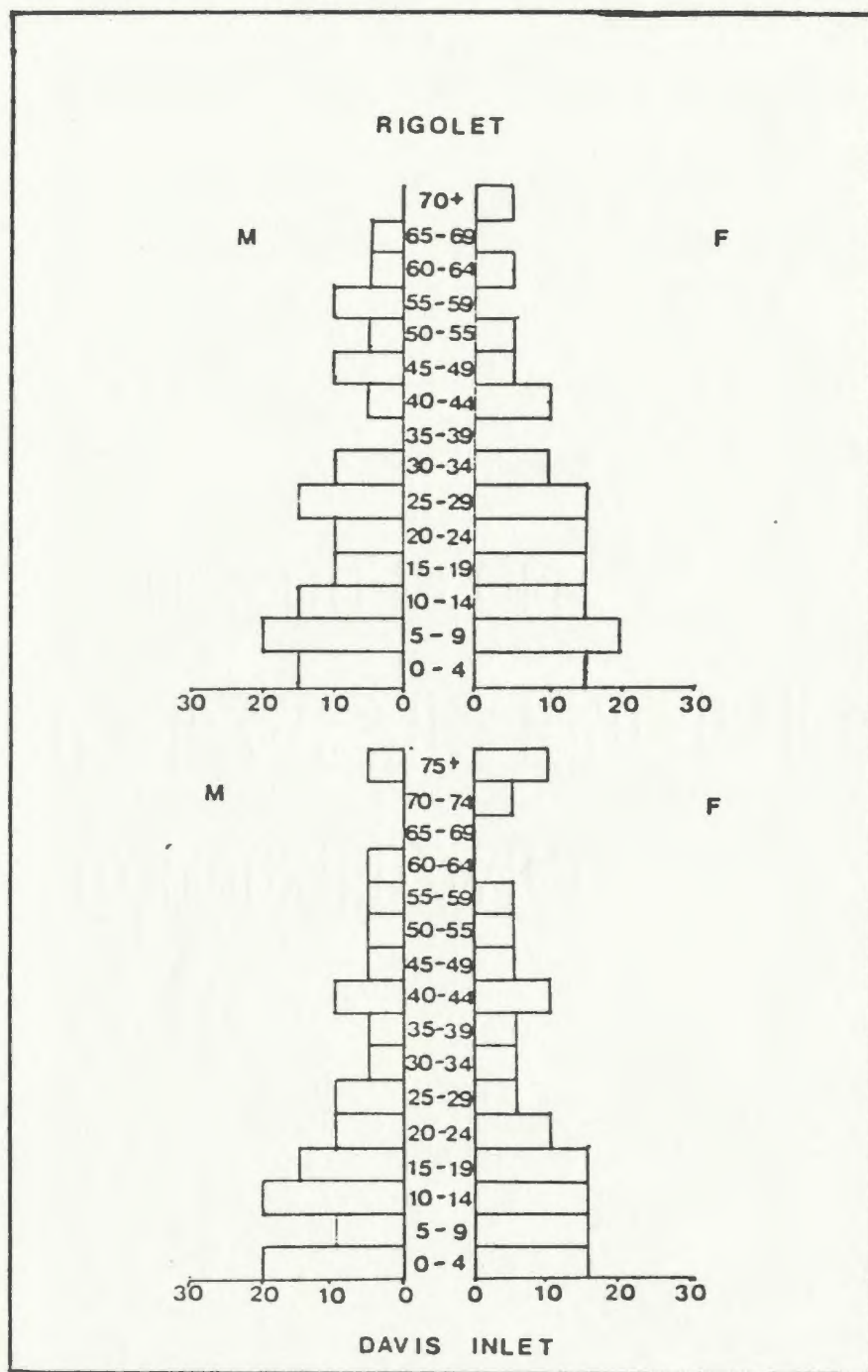


Figure 4.10:(cont.)



alien to the culture of Davis's Inlet residents (Indian)
- and health status.

4.4.4.2 Employment and community economics

What then are the employment opportunities in the communities? As already indicated traditional resource use may have altered, but the diverse and seasonal nature of the environment has resulted in a pluralistic economy. Even those primarily employed in one activity are likely to engage in the use of other local resources.

"Fishing, hunting, trapping, food gathering (berries), production of local clothing items, crafts, lumbering, firewood collection are all components of the total economy for both real and cash income. In a real sense, wage employment, transfer payments and UIC are seen as the precursors necessary for individuals to pursue other aspects of the economic cycle."

(Onchiota 1985:4)

As Table 4.17 shows, the fisheries/trapping category (in census year 1981) was the predominant occupational category for those 15-64 in North Labrador. In terms of actual employment, however, it ranked fifth (although this would have been affected to a small degree by the anomalously low Makkovik data). It is also apparent that the community by community employment patterns differed considerably. The data for Makkovik, Postville and Davis

Table 4.17 Occupation and employment as a percentage of the population aged 15-64 years in each community in 1981
(Source: Derived from census data)

Percentage classified by occupation and community

	R	M	P	H	D	N	Total
1	12	7	7	8	14	9	9
2	9	12	4	9	10	8	9
3	6	-	-	4	-	1	2
4	6	-	-	4	4	5	4
5	12	7	4	11	7	14	10
6	15	18	18	11	4	12	13
7	9	21	4	9	14	13	12
8	9	9	18	8	14	9	11
9	9	2	4	4	4	2	4

Percentage employed by occupation and community

	R	M	P	H	D	N	Total
1	12	5	7	8	14	9	9
2	6	9	4	9	10	9	8
3	3	-	-	2	-	1	1
4	6	-	-	2	4	3	2
5	9	5	7	8	10	13	9
6	12	-	-	8	-	8	4
7	9	-	-	8	10	8	6
8	12	5	7	9	7	7	8
9	6	-	4	4	-	2	2
Total	75	23	29	57	55	59	51

Categories: 1= Man Admin/Cler, 2= Com Serv, 3= Forestry/
Farm, 4= Handcrafts/Art, 5= Services/Sales, 6=
Fishing/Trapping, 7= Processing, 8= Other, 9= Unclas

Inlet are suspect as no fishers or processors are recorded in 1981 despite the Makkovik plant being open and fishers being active from each community. By comparison, the statistics available on fishers from the Provincial Department of Statistics records 70 fishers from Makkovik in 1981. This is 30 more than the total number who could occupationally be categorised as fishers according to census data.²

It is interesting to note that the closest relationship between activity and occupational category is in the management/administrative/clerical, community services and services/sales categories. All of these occupations are available on a year-round basis and are much more fully integrated into the "formal economy" than those of the primary producers and related fields (i.e. fishers/trapping, processing, forestry/farming/others). That these more formal sector occupations predominate in terms of those actively employed is also worth noting. This is indicative of the extent of government and

² There is no consistency in the discrepancies between the data obtained from the census and from Newfoundland Statistics, consequently when discussing the fishery I have used the Newfoundland data which I consider more reliable. When comparing the fishery with other occupations I have used the census data to be consistent between occupational categories.

service-oriented organisations' (e.g. the International Grenfell Association) involvement in coastal communities in North Labrador. It is also suggestive of a significant cash input to the communities through the salaries of people working in these occupations. The level of employment deriving from handcrafts is also notable and suggests a potential yet to be exploited in Makkovik and Postville. In other isolated northern communities such occupations have been significant contributors to local incomes (Quigley and McBride 1987).

It is also worth noting that the formal sector employment does not record the input of the informal (traditional) subsistence sector to productive activity. The input of such systems is well documented in Canada's north (e.g. Usher 1976, 1982, and Quigley and McBride 1987). In July 1980 the Labrador Food Study commenced with the objective of recording all country food (that food caught or grown for their own consumption by households) and imported food (that brought in from outside the household) consumed by households in selected Labrador communities. The communities chosen included Nain, Davis Inlet, Rigolet and Makkovik (Mackey n.d.) and a draft copy of the report on country food use in Makkovik (Mackey n.d.) was provided to me in 1984. The reports on imported foods and economic impact of each

were not made available during the course of this research. The data collected indicated that country food is an important contributor to the diet of much of Makkovik's population. In a year-long survey of 296 people (89 percent of Makkovik's population at the commencement of the survey) comprising 63 of the 70 households in Makkovik, a total of about 8,600 kg of fish, 3,400 kg of seals and dolphins/porpoises, 11,000 kg of land mammals and 5,336 kg of birds were caught and consumed.

Annual household volumes of country food ranged from 6 kg to 1,313 kg, with the lowest household volumes reported by recent immigrants in full-time employment (e.g. teaching). Mackey (n.d.) also noted that income, number of potential hunters, knowledge of the hunting area and occupation of household head appeared to influence country food harvest. With regard to occupation and income she comments:

"Harvest activities require a heavy capital investment in equipment (e.g. boats, ski-doo's), repairs and maintenance, fuel, weapons and ammunition, and other gear (e.g. fishing nets, sledges, tents and camping supplies). An active fisherman and hunter must have a sizeable cash income, usually obtained from the summer fishery, to meet these capital costs."

(ibid:63-64)

And,

"Full-time employment opportunities are limited in Makkovik and are generally not desired by active, committed fishermen and hunters who see themselves as fully employed in seasonal subsistence harvesting activities . . . Hunting and fishing are time consuming occupations and . . . a source of cash income is important to a hunter's ability to pursue subsistence activities. The households that produced the highest volumes of country food during the study year, over 1,000 pounds (455 kg), were those headed by a fisherman, hunter, fish plant worker or a householder with full-time employment whose income range from \$13,000 to \$24,000 per year. Fully employed householders could accumulate the same volume of country food as fishermen, whose cash income is earned mainly in summer months by having jobs that have flexible working hours (e.g. shift-work) or that allow extra time off at critical harvesting periods (e.g. in spring for caribou hunts).

(ibid:64-67)

In relation to family size Mackey concluded:

"Thus large families with a median income tended to produce more than small families with a median or low income. The per capita consumption of country food in the 26 households with large harvests, and large families, was almost twice the rate of the 32 households with small harvests, and small families."

(ibid:69)

In the study year caribou accounted for almost forty per cent of the country food harvest with fish (30 per cent, predominantly cod, char and trout) the next most significant contributor. The commitment to hunting caribou and the freedom to hunt provided by fishing

employment were evident in the casual conversations I was party to during my time on the coast with the AGM. The topics to dominate non-business conversations were invariably those concerned with when, where and by which route access had been gained to caribou herds in the previous year. These were usually followed by cagey discussions concerning when and where they proposed to go in the coming season. During my previous visit to the coast I had spent some time with a young Inuk who I will call "Jack" (for purposes of confidentiality) and who will be referred to again at later stages. Jack spoke long and enthusiastically about caribou and when I met up with him again in the Nain public bar they again featured in his accounts of his exploits. In most cases these hunters spoke with an almost spiritual reverence about the hunting and yet this was interlaced with a heavy dose of pragmatism and a certain amount of pride in both their skill and quick-thinking.

These were typified by comments which Jack made on the "wonder" of the time when a "250,000-beast" caribou herd walked through Nain and how "full with meat" the people were afterwards. On another occasion a hunter told of outwitting a wildlife officer, while yet another told of being caught with too many caribou by a particularly able officer. Jack recounted with pride the

speed with which he skinned a caribou (in half an hour). He had killed the caribou while labouring for some archaeologists near Saglek. It had taken them two and a half hours to skin a caribou and so he taught them how to do it and how to carve up seal. In this case the caribou seemed to have provided in his mind an opportunity for him not only to establish with the archaeologists his worth as someone more than just their labourer, but to meet a craving for caribou that he had felt for 2 weeks prior to finding their rifle. My observations support Mackey's conclusion (ibid:78) that as well as being an integral part of community life, "foods have meaning which not only relates to their eating, but to the procurement, distribution and preparation as well".

Mackey's study, however, did not set out with the main intent of proving or disproving patterns of internal community harvesting relationships. The prime purpose of Mackey's study was to assess the degree to which country food contributed to the diet of people in Labrador. This interest arose from concerns over the health of Labrador residents and the contribution which poor nutrition may be making to increases in observed health problems. A "drastic change in nutritional habits" (ibid:4) had been noted over the previous decade,

with increased incomes resulting in a dramatic increase in consumer demand for imported foodstuffs in all communities. Previous work had established that a combination of factors (e.g. the short shipping season, weather conditions, and government policies on tendering requirements for stock purchased by its stores) meant that "on average, only half as much milk and dairy products and a quarter as much fruits and vegetables were shipped as were needed by [Labrador] residents to meet the dietary recommendations of Health and Welfare Canada" (ibid:5). The price for imported foods was also estimated at about 15 per cent higher than for similar foods on the island of Newfoundland. Those travelling the coast could readily observe the off-loading of cans of soft drink and other non-essentials at every community. (In 1983 The Daily News reported that Rigolet consumed 24,804 litres of soft drink in seven months, a cost of \$694 a household or \$43,041 for the community as a whole). Mackey's study (n.d.), while demonstrating substantial variation within the community, found that the per capita volume of country meat, fish and birds consumed by 51 per cent of Makkovik's population was close to or above the national average for meat, fish and poultry. Only 7 per cent (5 households) of the population harvested less than 23 kg per capita and two households harvested over 227 kg per capita.

The relatively high cost of living in the coastal communities and the need for cash to fund the non-cash side of the local economy throw light on the nature of problems of employment and income in the region. As discussed above, the fishery did not represent the major source of employment in terms of occupational category in 1981, although it did comprise the largest number in terms of experience. In addition, in 1981 70 per cent of North Labrador's population was not recorded as employed. Taking the age structure of the various communities into consideration this figure reduces to an unemployment level of about 50 per cent for those aged 15-64 years (Table 4.17). The Onchiota Corporation in carrying out an analysis for the Native Economic Development Program of the federal Department of Regional and Industrial Expansion estimated that "approximately 80% of Inuit, Indians and settlers over the age of 15 are without salaried work during most of the year" (Onchiota n.d.:4). The few full-time salaried jobs in the region were nearly all held by "outsiders".

The average annual income estimated from tax returns has risen from about \$7,000 in 1979 (ibid.) to about \$13,400 in 1982, or about \$6,200 per capita (source: Newfoundland Department of Statistics). There were 727

taxpayers in 1982³, a ratio to population of about 0.34:1. Not all communities were receiving the same levels of income. Data supplied on taxable returns by the Newfoundland Department of Statistics for the three communities with fish plants, Rigolet, Nain and Makkovik indicated both the increase in income over the late seventies and the disparity between these communities (Table 4.18).

Two ratios are also of interest here. The ratio of taxpayers to total population in 1981 in Makkovik was 0.4:1 and in Nain 0.24:1. This represented a substantial improvement for Nain from the 0.18:1 in 1976 (comparable Makkovik data were not available). When taken as a proportion of the population aged 15-64 years the ratios improved substantially, but still over 55 and 35 per cent of Nain's and Makkovik's (respectively) working-aged population was not earning a taxable income in 1981. The per capita income also indicates the substantial differentials between communities with Makkovik's population earning about 1.5 times that of Nain's. From comments made by residents and interviewees Davis Inlet

³ This figure includes Mud Lake, a small community near Happy Valley. For reasons of confidentiality Mud Lake could not be separated from the figures for the rest of the north coast.

Table 4.18 Taxable Returns by Community (Source: Newfoundland Department of Statistics)

Community	Year	No. of Tax Payers	Total Income (\$000)	Average Taxpayer Income \$
Makkovik	1977	107	821	7,679
	1978	112	904	8,079
	1979	116	1,041	8,975
	1980	127	1,328	10,460
	1981	140	1,591	11,366
Nain	1973	116	625	5,395
	1974	134	873	6,516
	1975	137	994	7,257
	1976	148	1,228	8,300
	1977	187	1,624	8,689
	1978	221	1,925	8,714
	1979	215	1,961	9,121
	1980	223	2,219	9,953
	1981	228	2,774	12,170
Happy Valley, Goose Bay, Mud Lake, Rigolet	1973	2,951	23,195	1,860
	1974	3,161	28,457	9,003
	1975	3,295	33,830	10,267
	1976	3,241	37,383	11,534
	1977	3,028	35,922	11,863
	1978	2,934	38,228	13,029
	1979	2,888	40,254	13,938
	1980	2,772	42,748	15,421
	1981	2,983	52,730	17,677
		Average per capita income		Average per capita 15-64 years income
		1976	1981	1981
Makkovik	N/A	4,585	7,332	
Nain	1,512	2,957	5,407	
		Ratio of taxpayers to population		Ratio of taxpayers to population 15-64 years
		1976	1981	1981
Makkovik	N/A	0.40:1	0.65:1	
Nain	0.18:1	0.24:1	0.44:1	

(for which data were not sought) probably had a lower per capita income and taxpayer-to-population ratio than Nain. Otherwise all communities were expected to have higher ratios with settler-dominated and southerly communities expected to have the highest. The 0.4:1 taxpayer-to-population ratio for Makkovik compared with the estimated (1982) 0.34:1 ratio for the region supports this perspective. As would be expected from the greater range and opportunity for higher paid employment in Happy Valley-Goose Bay the per capita 1981 income for Happy Valley-Goose Bay/Rigolet was calculated at about \$7,200 with a taxpayer-to-population ratio of 0.41:1. In other words with the same taxpayer ratio the residents of these communities enjoy more than 1.5 times the income.

Within the individual community there are also likely to be substantial differentials. Mackey found during her 1980-81 study that there were 10 males with incomes more than \$20,000 each (but only 5 females with incomes more than \$15,000) compared with 25 males and 30 females with incomes which were less than \$4,000 each (out of a total of 115 and 85 males and females respectively over 15 years with incomes). When looked at in terms of household income, of 75 private households with incomes, 10 were less than \$10,000 per year and 10 had more than \$30,000. In terms of economic families and

unattached individuals the percentage of low-income families and low income unattached individuals was 22.7 and 52.9 respectively.⁴

The above analysis might lead at first glance to the conclusion that if purely financial considerations were the main motive governing the behaviour of North Labrador residents then migration would be predominantly southwards toward Happy Valley-Goose Bay. However as the data in Table 4.18 illustrates, the number of taxpayers in Happy Valley-Goose Bay/Rigolet/Mud Lake has dropped from almost 3,300 in 1975 to levels similar to those of 1973. This suggests formal sector employment opportunities in Happy Valley-Goose Bay are more unstable than those on the North Labrador Coast, at least in recent times. When taken into consideration with the advantages of being able to have ready access to country food and traditional resources that the northern communities enjoy, the rationale behind individuals and

⁴ Low income is calculated on the basis of the total income of a family unit adjusted for federal Child Tax Credit, size of family unit and size of the area of residence. The position of each unattached individual and economic family is determined in relation to low income and cut-offs based on the 1978 Family Expenditure Survey and updated by changes in the Consumer Price Index. The percentage rates given here were calculated from unrounded data (after Mackey n.d.:99-100).

households remaining on the coast and/or moving north to Nain is apparent. At the same time the cost to residents of living in an increasingly over-populated Nain with few income earners and over-stretched local resources may be expected to show through in the most basic of indicators - health.

Before addressing health, however, it is useful to touch briefly on the impact of transfer earnings. While these are quite difficult to estimate, the number of beneficiaries does give some indication of the scope of their impact. In June 1981 a total of 1,133 people aged 0-17 years received family allowances in the six northern communities (source: Newfoundland Department of Statistics). This equated to 46 per cent of the total population (in Davis Inlet the total number of people 0-17 receiving family allowance exceeded by 30 per cent the number in that age group recorded in the 3 June 1981 census). This benefitted about 45 per cent of the population in each of Rigolet, Hopedale, Nain and Postville, 65 per cent in Davis Inlet, but only 40 per cent in Makkovik. In June 1983 the total number receiving family allowance had increased by 1.4 per cent, but there were marked differences between communities. Nain had shown no growth in the number of recipients, Davis Inlet and Hopedale had each had an 8 per cent

increase and Rigolet a 14 per cent increase. Makkovik and Postville however had shown substantial declines of 10 and 16 per cent respectively.

Unemployment Insurance is also a major player in North Labrador's income. For the five communities from Makkovik north (data for Rigolet is aggregated into a different statistical division) there were a total of 225 beneficiaries in 1983 (source: Newfoundland Department of Statistics). Of these 172 were regular beneficiaries. Fishing provided 98 beneficiaries receiving benefits for an average of 5 months. Of the regular beneficiaries 16 were classified by earnings into the processing occupation category. Based on 1981 census data it was estimated that in 1983 at least 15 per cent of those over the age of 17 in those five communities received Unemployment Insurance at some stage during the year. Of these about 44 per cent were primarily fishers and a further 7 per cent were involved in processing.

In summary then, it is apparent a substantial proportion of North Labrador's residents are transfer payment beneficiaries of one sort or another. The number of those receiving unemployment insurance is, however, substantially lower than I would have anticipated on the basis of the tenor of comments received during

interviews. Several interviewees, for instance, commented to the effect that "the fishery only exists to give residents the opportunity to earn enough stamps to qualify for UI". In fact the number of fishers receiving benefits only comprised 38 per cent of the total number of fishers in 1983, or 57 per cent of full time fishers.

4.4.4.3 Health and social wellbeing

One recurring theme throughout my time in Labrador was the emphasis placed on the health, both mental and physical, of North Labradorians. As mentioned above, this was seen by many as a basic indicator of the social stress being experienced in North Labrador and especially in Nain. More than once interviewees commented to the effect that if I wanted to know about the social impact of government policies and/or the stress of life in the coastal communities, I should look at the problems of alcoholism, crime, suicide and assaults. They drew attention to these also as indicators of the break-down of traditional society and on several occasions the need to relieve the stress on Nain was cited as the rationale behind Torngat's north of Nain char operations (see below, also Rennie 1984 for details of this operation). Wotton (1983) provides a useful review of information on the health of native Labradorians, Roberts (1985) has

carried out detailed analysis of suicidal behaviour in Nain, and Onyett (1985) contains a useful potted history and overview of health services in the region. Criminal code, assault and liquor related offences data were obtained during the course of this research from the Royal Canadian Mounted Police. The following discussion is based largely on these sources with other data referred to where relevant. Wotton's figures are based on the period 1971-80, except for suicides (1978-83) data.

Health services in North Labrador are the responsibility of the Grenfell Regional Health Services Board (the provincial government's successor to the International Grenfell Association which commenced its interest in Labrador about 1900). The service is based on nursing stations, travelling specialists and the back-up and support facilities at base hospitals at Goose Bay and St. Anthony. As can be seen from Table 4.19, the nurse to population ratio is quite high, a point which has not escaped the notice of Newfoundland politicians and media who note the ratios compare "favourably with a provincial average of one health worker for every 5,000 population" (The Daily News 1983).

Table 4.19 Ratio of nurse practitioners to population (after Onyett 1985)

	R	M	P	H	D	N
Ratio	1/290	1/425	1/450	1/450	1/325	1/150

Table 4.20 Collector boat costs, 1979-1982 (Source: Dept. of Fisheries)

	Nain			Makkovik		
	Total Cost (\$000)	No of Boats	c/lb	Total Cost (\$000)	No of Boats	c/lb
1979	109	3	43	92	3	91
1980	138	2	62	84	3	65
1981	60	2	23	98	3	55
1982	62	2	50	65	2	60

Yet despite these high ratios no one doubts the health problems being faced in North Labrador where several key health indicators are substantially higher than elsewhere in Canada and have been labelled "Third World" (Baikie 1985, Roberts 1983, Armitage 1983, Wotton 1983). Approximately 50 per cent of Innu and Inuit are less than 15 years of age and in Davis Inlet 20 per cent of the population are pre-schoolers (Onyett 1985, Firth 1985). Studies in Davis Inlet have shown that 44 per cent of the children were breastfed for 2 months or less with the remainder receiving evaporated (Carnation) milk. Peri-natal, post neo-natal and infant (up to 2 years) mortality rates of 34.4, 33.8 and 65.2/1000 respectively are 1.2, 2.4 and 2.7 times the rates for other indigenous peoples of Canada (Wotton 1983:11). Tuberculosis incidence rates of 729.7, 136.1 and 10.46/100,000 for North Labrador Innu, Inuit and others respectively compare with equivalent Canada national figures (for those groups) of 266, 128.3 and 12.1/100,000. The rate in Davis Inlet is 1666.7/100,000 (Baikie 1985:38) and Firth (1985) notes that over 5 per cent of children had been treated for advanced tuberculosis.

Suicide rates of 80 and 337/100,000 for North Labrador's total population and for those North Labradorians aged 15-24 years respectively are almost 300

per cent higher than for other indigenous peoples in Canada (the figures for all Canadians are five and sixteen times less for the respective populations). Accidents, violence and poisonings resulting in death were almost five times the national rate and 1.5 and 2.2 times the rates for Canadian Amerindian and Inuit populations respectively. Death by fire and by drowning rates were three and six times those of other indigenous peoples in Canada. Childhood accidents as a percentage of childhood deaths (0-16 years) for Northern Labrador were slightly higher than for other indigenous peoples and nine times greater than the Canadian average (Wotton 1983:11-12).

As Roberts (1985) notes, rates for populations as small as those for Davis Inlet or North Labrador generally have to be treated with some caution in view of the effect single occurrences have on the overall rates. However the ten- and five-year averaging techniques employed by Wotton and Roberts respectively compensate for this to some extent and at the very least signal a "problem". In Nain Roberts notes that "suicide and attempts thereof are the single most common emergency" (ibid:70) in the 1980s. In her retrospective study of the period 1980-84 she showed suicide to be an increasing problem and drew attention to the negative

role of alcohol in serious suicide attempts. Men were increasingly suicidal and more successful at completing their attempts. The mean age remained the late teens.

Suicide and rates of violent death are considered by both authors as indicators of mental health and both authors have noted a probable involvement of alcohol in many of these events. Solvent abuse has also been noted as on the increase (Wotton 1983). On my first visit to the coast Jack, the young Inuk referred to earlier, had spent some time impressing on me how boring had been the time he spent "waiting" for the job with the archaeologists. From his description it had really eaten into his soul and the lack of ready employment or something worthwhile to do had caused depression.

During my second visit to Nain with the AGM I was present when Jack was talked out of a potentially suicidal depression by an older Inuk. It had commenced with a few drinks in the bar and I have no doubt this contributed to the onset of his rapid depression. A close relative of his had committed suicide and this also seemed a contributing factor.

On another occasion I witnessed an older Inuk and his wife deteriorate from having a pleasant supper time

discussion to drunken verbal and physical assaults on each other after imbibing what I would have considered a minimal amount of alcohol. All this happened in their home and would not appear in official statistics. My companions assured me this was not infrequent. My other visit to Labrador, in summer 1983, also brought the suicide issue to my attention. When the ferry was coming into dock several people commented on the lack of attention it received. We learned later that someone had attempted suicide by jumping off the dock not long before our arrival. (It should be noted that this was not the same as the more or less ritualistic feats of daring performed by the children who wait until the ferry has actually left the dock before literally taking running jumps to reach the dock - a seemingly unavoidable, but potentially fatal part of the routine of ferry visits in northern communities.)

My visits to Nain were brief and yet on both occasions the ever present risk of suicide was apparent. The observations I made tended to confirm those of Wotton and Roberts as to the underlying causes of premature mortality. Both Wotton and Roberts were general practitioners who spent two years each in Nain. Roberts' analysis is the more conservative, but perhaps sums the situation up best. Noting that settlers are generally

a little better off and share the problems with alcohol, she points out that they contribute little to observed wife and child beating. She concluded:

"This is an artificial community, far to the south of more traditional sites . . . Work is scarce and a traditional livelihood is no longer possible (or desirable) . . . A dispirited people are having trouble adjusting to the 20th century and are drinking to blunt misery and confusion. It is a small step from chronic intoxication to the easily observed poor parenting and parental disrespect. Traditions are not being passed along. Self esteem is in short supply, and many young people have feelings of hopelessness which lead to rash acts."
(Roberts 1985:72)

Interestingly, both Roberts and Wotton join other experienced medical and non-medical people in noting the positive effect and role of native peoples associations in addressing these fundamental health problems and have called on the "establishment" to support a community voice and community-initiated health care solutions (see also Armitage 1983, Brice-Bennett 1983, Sarsfield et al 1983, Artiss 1983 and Fouillard 1983). This issue of community or Labradorians versus the "establishment" (meaning broadly the provincial and federal governments and any quasi-government "private enterprise" based outside Labrador) is a theme which will be picked up later in this discussion.

As noted above assault and alcohol are considered closely related, at least in Nain. The problems of law and order were ones raised a number of times by various interviewees. Comments included reference to Nain as "a real wild west town" and being "tough", to law and order being a "real problem". Once again statistical data relating to individual communities on the North Labrador coast were not readily available. Rigolet is included within the area covered by the RCMP base at Happy Valley-Goose Bay. Makkovik, Postville, Hopedale and Davis Inlet are covered by four regular RCMP officers based in Hopedale. Nain is served by three regular RCMP officers and one special constable (pers. com. from Sergeant R. E. Holdright, 25 February 1985). Data for these three regions for the period 1977-1984 were collected during this study. Two points are readily apparent from these data: the incidence of actual criminal code offences in 1980 is anomalously low at all three locations, and the number of actual and charged liquor offences has fallen considerably for both Nain and Hopedale areas since 1980. Neither I nor the RCMP can account for the 1980 figures. However, the low number of liquor offences compared with the numbers detained reflects local policy in Nain and Hopedale not to lay charges for liquor violations (pers. com. from Sergeant R. E. Holdright to me 1 February 1985, file reference

B.1510-23). Sergeant Holdright also commented that the general policy followed by the RCMP in recent years had been to encourage charging individuals with assault. This combined with public interest to bring family violence to the forefront had in his view contributed to the data. A comparison of Newfoundland and Labrador data for 1981 indicates actual criminal code incidents in Nain were 3.6 times more than those for Newfoundland; almost 7 times as many incidents of assault were also reported in Nain. By comparison the actual number of criminal code offences recorded by Hopedale was a little under twice the Newfoundland per capita rate; the per capita rate of assaults was a little under 5 times that of Newfoundland. The total cost of maintaining the Nain unit in the 1984-85 financial year was \$392,945 of which 43 per cent comprised salaries and allowances and a further 9 per cent comprised travelling and transfer expenses. A further 20 per cent was spent on casual labour (to guard prisoners and for a janitor service). In other words the RCMP contributed over \$280,000 in salaries, wages and allowances to the taxable earnings of Nain during that year (source:RCMP).

4.4.4.4 Education/Training

Before moving to look specifically at Torngat there is one area which deserves passing comment. The methodology resulted in very little data being gathered on education. In general very few residents were educated beyond secondary level and yet this was not a burning issue in any of the discussions or interviews I had, with one notable exception. That exception was in Davis Inlet where relationships between the Innu and the Roman Catholic school principal were somewhat strained at the time of the AGM. The cause of the dispute was the principal's proposed dismissal of one female teacher whom the Innu supported. The underlying problem appeared to be one of what was considered the appropriate level of social contact between teachers and the community. During the two nights which we stayed in Davis Inlet the views and counsel of both Alex Saunders (General Manager of Torngat) and Leo Hanrahan (Co-op education worker working with Torngat) were keenly sought by both sides. This largely reflected the standing of both men in the community (Alex's home; Leo had spent several years there as a teacher some time previously). While I was never confident that the "true" story was told in full to us, it once again demonstrated the demands being made by permanent residents for a greater say in matters

affecting their community and the difficulties they faced in achieving this input.

Davis Inlet aside, the most common complaint was that there was a need for technical training, particularly in practical matters such as fish grading, but also in the area of management and co-operatives. Leo Hanrahan's presence (funded primarily by the Donner Canada Foundation) was addressing the latter two issues.

4.5 Government Policies and Roles

"The shattered society that Dr. Wotton describes is the outcome of government administration of native affairs"

says Brice-Bennett (1983) in arguing for greater independence for native people. This view predominated in almost all interviews I carried out. That I did not include a question regarding the roles of the federal and provincial governments in my standard interview was an oversight which resulted in few direct statements on their roles. Instead their role was one identified more by inference than deliberate implication. It was apparent in comments like that made by one interviewee that Torngat "had to start by competing with government wastefulness" and that "people will choose the government because of a lack of alternative employment. There is

a lot of pressure to hire more people because the Province gets money through UIC from the feds., but not for welfare payments". One interviewee questioned the expansion of freezing facilities in North Labrador. He drew attention to the high costs and stated that "the potential would always be limited by geography and ice" which meant a maximum three-month fishery. This interviewee then commented that the question for government was "how much to maintain it [the fishery] and at what cost? If you maintain it as a social thing, and Torngat can't do that on its own . . . It might take \$1m/yr to create 100 jobs, but people are entitled to a living". Two interviewees, from almost completely opposed sides commented that "government patronage" had led to the establishment of a "vested interest in opposing Torngat amongst recipients [of that patronage]".

However those who responded more directly on the role of government raised a major conflict in perspectives, which may be a key to the resolution of North Labrador's problems. The conflict is between those who argue that "there's not much of a problem between federal and provincial governments over the North Labrador fishery" and those who state quite categorically that the northern fish plants are just pawns in a bigger game between the two levels of government: "The Province

wants to maintain a presence. It wants control of the offshore, major control - shrimp licence allocation, over-the-side-sales - and they want federal money for it . . . Federal money hits the Province and gets all mixed up with the political power play."

Aspects of this second perspective are shared by most analysts of the North Labrador fishery. Both NORDCO (1983) and Kirby (1982) have called for greater co-operation and co-ordination of both levels of government programmes in North Labrador. The Kirby task force recommended a Northern Fisheries Development Corporation using the Canada Saltfish Corporation as the main vehicle and yet by mid-1985 no progress had been made. This was perceived by local media to primarily reflect the Province's intransigence over the issue of control of the resources. As one broadcaster commented "\$13-15 million was put aside for the NFDC to go to the Saltfish Corporation . . . the Province objected to the amount of Federal control . . . further negotiations have produced nothing and now it may be very hard to get the money back [for fisheries development in the north]" (CBC Radio, Fisherman's Broadcast, 29 November 1984). In a discussion held on CBC Radio's "Fisherman's Broadcast" on 17 June 1985 the editor of the Northern Pen (a St. Anthony based newspaper) commented that the Province's

"P.C. government had no intention of letting the NFDC form while the Liberals were in Ottawa". He went on to suggest that "The problem is still that no one is saying who will control it" and noted that the major plants on the Labrador coast would be operated by the NFDC. However, another commentator in the discussion took the view that "the current [P.C.] Ottawa government may not be interested in anything resembling a crown corporation".

To some extent this latter view of political power games within which North Labrador has become enmeshed is the more generally accepted view of the fishery. It has been fuelled by the ongoing disputes in the early eighties over Newfoundland's offshore mineral resources. At the local North Labrador scale however it has been fuelled by simple pragmatic problems for which the Province appears to hold equally simple, pragmatic solutions which it has not used. These include the nature of government funding of development in North Labrador, the failure to resolve land claims, the lack of clear and consistent policies for North Labrador fish plants, and the Province's performance in public relations with North Labradorians. The Federal government is also not entirely blameless although, with the notable exception of the low-flying issues (see

below), it appeared generally better thought of by Labradorians than by other interviewees. Land claims, public relations, and its handling of the northern shrimp allocations were all points that were the focus of strongly expressed viewpoints during the research.

The most fundamental of these issues is that of land claims. North Labradorians are well aware that no treaty has ever been struck with them over their land (see above). Mineral exploration in the seventies did much to bring the land claims issue to public attention in Labrador. As Lester (1977) points out in his contribution to the LIA's Our Footprints are Everywhere (Brice-Bennett 1977) a 1973 Supreme Court of Canada decision marked a major turning point in the degree of indifference to which non-treatied Canadian aborigines' land claims could be treated by the various levels of Canadian government. Consequently on 8 August 1973 the federal government announced it was prepared to negotiate on aboriginal rights (previously, unless such rights were recognised, they did not exist). Provincial governments however have tended to "cleave to the old view of the law, that before aboriginal rights can be said to be legal rights, they must have been recognised" (Lester 1977:353).

The settlement of "comprehensive claims" based on aboriginal rights in neighbouring Quebec (the James Bay and Northern Quebec Agreement of 1975 and the supplementary Northeastern Quebec Agreement of 1978) added impetus to the formation and claims of the Labrador Inuit and Naskapi-Montagnais Innu Associations. Both claims have been accepted by the federal government and the Newfoundland government has agreed to enter tripartite negotiations. The two claims each have significant aspects. The LIA claim includes "native settler people" and this will be a point of some difficulty during the negotiations as the federal responsibility for non-native settlers is not the same as for natives. The NMIA claim demands an autonomous native political community. Separate political status is unacceptable to the federal government (Morrison 1983, Crowe 1979). As Morrison (1983:94-95) notes:

"Given the centrifugal nature of Canadian society, no government could agree to what amounts to an abandonment of sovereignty over huge tracts of the country. It is also easy to see why the Dene and other groups [e.g. NMIA] demand autonomy. They are afraid that settlement, despite all its promises, will leave them with little or nothing when the payments stop and will deny them essential control over their lands and their lives."

There are a couple of dramatically opposed concepts within the land claims issues which need to be teased

out. On the one hand there is an emphasis on greater native participation in the decision-making process - a very strong grassroots drive. The other, as Morrison (1984) has identified, requires sovereignty be demonstrated by administrative control. Thus native participation should be in such a manner as to make it clear their participation is on government terms. Similarly both levels of government could be expected to show an interest in exercising their administrative muscles during a period when there was debate between them on ownership of particular resources. In Newfoundland's case the pretensions to sovereignty in practise if not in fact could be seen as more soundly based than in many other provinces given its relatively recent confederation with Canada (in 1949).

These perspectives were clearly evident in some of the written material as well as some limited interviewee comments. In an unpublished report that received wide distribution MacIntyre (1976:8-9) comments:

"It is hard for an outsider . . . to realize the depth of feeling people have towards the importance of being considered "Labradorian" . . . For the most part it is reserved for those who have been born and raised in Labrador. Until recent times (1940s) Labrador residents were almost exclusively fishermen, hunters and trappers. It is not surprising then that their feelings about being called "Labradorian" are closely tied to their identification with the land . . . They feel forgotten by their fellow Canadians (unless some of

their resources are to be exploited) and neglected by the "Island" and in some respects consider themselves full citizens of neither. Given this situation, their identification with the land and sea must be treated with absolute dignity. Whether or not people actually depend on these for their livelihood to the extent they once did is not important. They identify strongly with it and expect those feelings to be treated with respect, especially by "outsiders".

An unpublished 1970 MUN Extension Services report noted:

"There appears to be a considerable difference in attitude among the young people of Northern Labrador from that of those in Southern Labrador. In the south many of the young people now are ashamed to admit that they are fishermen, if, indeed, they are fishermen, and for many the ambition is to get enough education to leave.

"In Northern Labrador, despite the advantage now of schooling up through high school and even to university, most of the young people are proud to be northerners and show considerable ambition to make a good life and living in Northern Labrador. This is as true for the young settler population as it is for the Indian and Eskimo population."

(MUN Extension 1970:16-17)

The remarks regarding the North Labrador young are echoed by current observers (Onchiota Corp. 1985) and my own observations. This has been placed specifically within land claim contexts by the LIA and NMIA on several occasions. Their briefs to the Province's Cabinet when it met in Happy Valley-Goose Bay on 16-17 June 1980 are useful examples. Commenting that the then Newfoundland Premier rejected their 1977 Statement of Claim with the

words "Prove it in court" without having read the claim, the LIA commented:

"We have never signed any treaties, have never ceded, sold nor relinquished, in any act of conquest, the control of the land we have known and used for countless millenia . . . The Labrador Inuit are . . . attempting to protect their cultural and economic identity within Newfoundland".

(LIA 1980:3)

As indicated above, the NMIA claim is more radical than that of the LIA and its brief to the cabinet while making the same points as the LIA, was far less accommodating. The brief commenced with a statement of appreciation in a sovereign-state-to-sovereign-state-like manner regarding the Brinex Uranium mining proposal for North Labrador:

" . . . although we do not relish the knowledge the responsibility for our fate in this matter . . . as in others, rests not in our own hands but in a far away government of a different cultural and ethnic background, of a different nationality to our own, we are sincerely grateful and appreciative for what you have done for us and the other rural people who live within Ntesinan . . ."

(NMIA 1980:1)

It then proceeds to state that there is an:

"overriding consideration: which is the fact that this land Ntesinan, and its people, the nation of the Innut, remain sovereign. That is: the idea that adventurers from Europe could, by planting the flag of a foreign people upon the soil of Ntesinan,

unilaterally declare our national rights out of existence, and appropriate what has been our Homeland for 8,000 years, this idea, this concept is not recognized by us nor acknowledged today as valid among the international community . . . The territorial dispossession and colonization of sovereign people is no longer acceptable international practice. Yet here in Ntesinan this did not happen hundreds of years ago: it is happening now."

(NMIA 1980:2-3)

International awareness of the NMIA's views has been heightened by their recent campaigns against the increase in low-level flying in Labrador.

There has been progress by administrators within both federal and provincial governments to improve the relationships and understanding between the North Labradorians and government departments. Community-based Fishermen's Committees have been encouraged and have a role in the decisions over quotas and licences. There are community meetings with government representatives to discuss the implementation of new policies, e.g. quality grading and inspection, the Salmon Enhancement Project. However at higher levels administrators interviewed expressed concern at the politicization of Torngat. One interviewee commented "we're getting a lot of LIA stuff through Alec these days. That's not really relevant to Torngat".

In 1983 and 1985 these problems became very public with the closure of the North West River hospital in 1983 and the renegotiation of the Canada-Newfoundland Native Peoples of Labrador Agreement which was due to expire in March 1986. The LIA and NMIA were members of a committee co-ordinating spending of funds from the Agreement. Both groups walked out of the meeting after learning that federal and provincial administrators had already agreed on a funding item without consulting the native representatives. In walking out both groups made it clear that they were not concerned with the projects on which the money would be spent, but with the principle involved. William Anderson III, then president of the LIA was reported by local media to have pointed to the token nature of their involvement:

"Although native people representatives have been members of the advisory board for years, their suggestions are always vetoed by government members, said Anderson."

(The Evening Telegram, 10 August 1985:3)

Newfoundland Premier Brian Peckford responded four days later, reportedly saying that the argument was between the provincial and federal governments:

"It is taxpayers' money we're talking about here" - and "it is not possible", to include native people representatives in discussions. The premier said . . . if that is what they want, it is "more than they have ever asked for before".

(The Evening Telegram, 14 August 1985:3)

In his analysis Lester (1977) presented his thesis that the legal arguments reflected underlying philosophies of the civilised and primitive societies. Certainly my research threw up examples of very racist attitudes based largely on ignorance. A classic example was the Goose Bay-based Newfoundlander who travelled up the coast with my wife and me on the coastal ferry. He was especially scathing when talking of the Innu at Davis Inlet, commenting on their being lazy ("they would rather lie down and die than do some work") and on their smell. He also made a particular point of telling fellow passengers how the houses provided at Davis Inlet by federal and provincial funds had fallen into disrepair and been vandalised by the Innu who lived in them. A Davis Inlet resident put quite a different light on this issue. According to him the CMHC housing that had been provided was too hard to heat and the Innu were not yet used to living in houses. The result was they "remodelled" the insides in a rough and ready manner to enable the heat from a central fire to reach all corners. This perspective was supported by interviewees and other people with whom we discussed it. If, however, the views of our first informant as to the Innu are widely held by Newfoundlanders (on our trip it was openly shared by some crew members and other (white) people based in Goose Bay) then it is likely to underly provincial attitudes toward

the area. That at least some politicians share this perspective is clear:

"[Health Minister Wallace] House, whose department is responsible for native health in Newfoundland, also said in an interview that the natives themselves must accept more responsibility for their own living conditions . . . natives do not always take advantage of what [self help programmes] is offered, he said."

(The Daily News, 4 October 1983:5)

This view was strongly criticised by Brice-Bennett (1983:14):

"The fact that Inuit and Innu are reluctant to involve themselves in government programs tells of their attitude toward government intervention in their lives. On the one hand unemployment insurance officials offer people assistance, but on the other hand, this assistance comes with a demand to remain in the community available for work. Thus Naskapi at Lavis Inlet are intimidated against hunting on the land to provide fresh food for their families, and men at Rigolet feel they must sneak out of their village to cut firewood. What appears to be government largesse in the unemployment insurance and other programs is actually a form of bondage."

Brice-Bennett (ibid:15) provides specific examples of positive actions taken by Labradorians to address local problems. She also argues:

"Native leaders and elders are convinced that the solution to their problems will be found only when their societies regain the measure of independence and self-determination they once enjoyed before government administrators intervened in their affairs. To achieve this end, acquiring legal or

political recognition of their claim to customary rights over lands and waters on which they depend for their livelihood is necessary."

Returning to the Labrador Native Peoples Agreement, it was quite apparent that the failure of the Province to provide adequate transparency in its public accounts was a particularly sore point with Labradorian interviewees. "Any time people are not well informed they are suspicious", said one interviewee. Another drew a distinction between Torngat's open books approach and that of the Government. "Criticisms of the Government are based on innuendo; criticisms of the Co-op are based on fact." Not fully accounting for its operations and its use of the money received through the Agreement is not necessarily to the Province's advantage. Torngat is determined to take control of the fish plants at Nain and Makkovik (see below) and the provincial failure to detail its expenditure of Agreement funds has given the Labradorians a very simple and effective slogan or battle-cry "The plants were built with money from the Native Peoples Agreement, our money, so they are our plants."

The Labradorians argue that they have tried to get the information. As one pointed out, "the fishery is not viable, but we can operate the plants more efficiently

than the Province does - we've proved it, but we can't prove it because they have our figures and their figures, so they know, but we don't have their figures". What this respondent is essentially saying is that Torngat believes it has demonstrated it can operate the plants with lower losses than the Province, even though it is operating in off-peak seasons. He believes the data available to the Province proves his view, but without having the data he cannot himself prove it.

The problem with the accounting of the Agreement's funds is that Ottawa gives the money to the Province, which then includes it in its general revenue fund and charges an administration fee. It was suspected by most of my interviewees that the Province overcharged for the administration fee and it provided a regular source of income to the Province. This adds to their overall concern, frustration and fears that the money will not be made available for the purposes for which it was intended.

"Native groups have been trying unsuccessfully for years to find out how the money is spent on native people, said Anderson [LIA] . . . He fears what is not spent from the agreement by March 1986 . . . will go back to the provincial treasury."

(The Evening Telegramme,
10 August 1985 p.3)

The Agreement in effect during the course of this thesis provided \$38.8 million for native peoples from the Federal Government spread over a five-year period ending in March 1986. (March being the end of the provincial government's fiscal year). I was also unsuccessful in my attempts to obtain information as to the extent to which the Nain and Makkovik plants were funded by Native Peoples Agreement funds, for the reasons outlined above. The Province's Department of Fisheries however did provide me with useful plant operating costs and landings data (which are described below) and advised that from 1981 to 1984 inclusive \$420,000 had been received by the Dept. of Fisheries to defray losses incurred in the operations of the North Labrador plants.

If inadequate financial disclosure is one source of aggravation for Labradorians in their dealings with the Province, its handling of its involvement in operating the fish plants has been sufficiently inconsistent and imprecise as to strongly reinforce the attitudes described above - i.e. that Newfoundlanders were only interested in Labrador as a resource to exploit and this thinking governs its actions. "They simply ignore us until they need something" (MacIntyre 1976:11). It was in fact a combination of Provincial and Federal Government manoeuvres that led to formation of Torngat.

The subsequent failure of the Province and Federal Government to state their policies in sufficient clarity and depth has hindered its performances in some interviewees' eyes.

All interviewees were quite clear and consistent in their recollections of the origins of Torngat as a result of three factors:

- (i) the declared intention of the Province to sell the Nain and Makkovik fish plants;
- (ii) the setting aside of one northern shrimp licence for the use of North Labradorians, and
- (iii) the upsurge in interest and enthusiasm of native people to take control of their resources.

This third factor has been discussed already although it is worth noting that both levels of government encouraged the development of fishermen's committees and the Labrador Resources Advisory Council (LRAC). By 1976 North Labrador had several fishermen's committees and these have played an especially significant role in the management of this resource. It is beyond the scope of this thesis to discuss these committees, their input and

their effectiveness, although this is an area for potentially fruitful research by geographers and/or political scientists. The major outcomes relevant to aspects of this thesis are their involvement in licencing procedures, resolving conflicts with floaters (over, for example, setting nets too close to traditional fishers' berths - notably in the Makkovik area), and in operating the shrimp licence while assisting with the creation of Torngat. Their involvement in the licencing process has been especially effective in keeping the area north of Cape Harrison closed to other than residents for the fishing of salmon and char.

4.5.1 The Province's Policies and Role

Let us look first at the Province's recent (since 1976) policies with regard to the fish plants. Briefly the "policies" developed as follows:

In 1978 the Province announced its intention to tender the ownership of the fish plants at Nain and Makkovik. While not totally unexpected, previous rumours of the tendering had been the focus of some concern. In its annual report for 1977-78 the LRAC noted that the LIA

"is alarmed at talk that Labrador Services may want to dispose of its plants at Makkovik and Nain. Fishermen have not been totally happy with the

running of these plants and have been extremely dissatisfied with the fish collection system for years, but they want to be fully consulted on the solution of these problems . . . The LIA has resolved that there be no change in the ownership and responsibility until fishermen are fully consulted and satisfied with the changes proposed."
(LRAC 1978:8-9)

The LRAC supported the LIA's stand. Underlying the concern felt on the coast were the attitudes and past performance of the Newfoundland-based companies that had shown interest in operating in Labrador. The LRAC (1978) argued that communities should have the right to determine who would operate their plants. They drew attention to the "helplessness" of the local fishers: "they have no control over the price of their product, they have very limited opportunity to shift their effort to other species if their principle catch declines in price or volume, and they can never be sure how much they will produce" (ibid:9). The LRAC solution was a combination of more competitive marketing of fish and a lengthening of the fishing season to provide greater employment. In commenting on the latter they noted "the tendency of buyers in some areas to pull out right after the peak of the salmon run, but long before the run is finished. This lets these buyers make the maximum profit on the minimum investment, and with minimum service to fishermen . . . In Rigolet, for example, the market lasts only three or four weeks, though salmon are

available in lesser numbers for about twice that long" (ibid:12). It was somewhat ironic given subsequent events, that the previous year the LRAC had made a muted protest over the absence of Northern Labrador representation at a meeting in October 1976 with the Province's Minister of Fisheries.

"Does the jurisdiction of the provincial department of fisheries stop at Hamilton Inlet? Certainly the maps they used on that occasion did, and officials seemed either reluctant or unable to talk of anything connected with Labrador Services Division."
(LRAC, 1977)

In late June 1978 the decision was made to transfer the responsibility for the northern plants from the Provincial Department of Rural Development to the Department of Fisheries and the Department of Fisheries tendered the plants to the fishing industry. To the fishermen of North Labrador the reasons behind such a move and the interest of Island-based fish companies were quite clear. On the one hand the declaration of the 200-mile EEZ was expected to lead to better cod stock management and a resurgence in the cod fishery was expected. On the other

"The Provincial Government was seeking the agreement of the Federal Government to allocate three of the eleven licences for the newly established Labrador shrimp fishery to these plants. . . . it is only the prospect of the riches of shrimp that is attracting proposals from industry for the fish plants."

(FPEC 1978:2)

The response of the fishermen was swift and unequivocal. With the backing of the LIA (and assistance from MUN Extension) the Fishery Policy Emergency Committee of Northern Labrador (FPEC) (also known as the Fisheries Emergency Policy Committee (FEPC)) was formed from representatives of community fishermen's committees. On 22 September 1978 the FPEC submitted a management and development proposal for the North Labrador fisheries. The basis of their claim was straightforward:

"... because the plants, facilities, equipment and gear [of the Nain and Makkovik plants and Davis Inlet, Hopedale and Postville holding facilities] were provided with funds from the Federal-Provincial Agreement specifically allocated for the development of native people in Labrador, these facilities rightfully belong to the people of Labrador . . . We believe the Government has managed the fisheries in Northern Labrador on our behalf as trustees, but we are now prepared to exercise our right of control and assume responsibility for the operation and management of our fishery."

(FPEC 1978:1)

The FPEC's proposal for a management structure was a Northern Labrador Fishermen's Co-operative which would apply to the Federal Government for three shrimp licences. The proposal also argued:

"The cost of operating the Northern Labrador fishery has been paid for on a cost-sharing basis through the Federal-Provincial Agreement. The revenue from the sale of fish has helped defray operating expenses, but the fishery has always run at a loss. Because annual losses have been covered by funds from the Federal-Provincial Agreement, the variety

of services and projects in Northern Labrador is reduced each year by the amount of the loss caused by the Government's operation of the fishery. The native people, for whom the funds are intended, have suffered the losses in the fishery because of the reduction in services available to them, and therefore pay themselves for each annual loss. It is likely that continued subsidies will be necessary to operate and develop the fishery, whoever assumes responsibility and control of it, but we have a greater incentive than any private company to ensure that losses are kept to a minimum because we would be rescued with our money."

(ibid:4)

The FPEC also proposed a phased takeover which in the first year would include a "management fee" which "is our price for liberating the Government from the burden of doing things which it admits it has done badly for years" (ibid:5). Any losses would be met by the Agreement's funds.

The Province subsequently withdrew its tender and the Minister

"gave us the assurance that the Provincial Department of Fisheries would maintain the responsibility for the operation and management of the fishplants until a body of Labrador, a body which had legitimate origins in Labrador, could demonstrate that it was capable of competently operating and managing the fish plants themselves. If by a certain time we were unable to demonstrate this, the Province would have no choice but to pursue some other alternative . . ."

(LIA 1980:4)

Three key points should be noted in the Minister's response:

- (i) The issue of whose money built the facilities and/or who has ownership rights was not addressed;
- (ii) the criteria for taking over the facilities are not stated in terms of measurable standards - they comprise the Co-op being a body of legitimate Labradorian origins and proving itself capable and competent to operate and manage the plants;
- (iii) no time frame was adopted for the handover.

In the 1980s the criteria subtly shifted to Torngat having to prove its long-term viability as a business. No time frame and no monitoring procedures to assess capability and competence were established. The failure to clearly define time frames, measures and monitoring procedures suggests the Province may never have seriously intended to hand over the plants.

This raises an important issue. If the understanding expressed earlier that the Province is

playing political games using the fish plants as its pieces is correct, how well managed are these plants? Is it possible to use their performance as a yardstick against which to measure the performance of Torngat? What are the reasons given by supporters of the Province's continued operation of the plants for their performances, and their continued operation by the Province? If they are being used for political purposes one might expect that they would be poor performers.

Unfortunately it is difficult to ascertain the performance of the Department of Fisheries' North Labrador operations. Annual "activity reports" provided by the General Manager for Labrador Operations provide broad overviews, but not the detail or format required to enable plant operations to be measured by the standards of either private sector companies or those suggested by Kirby (1982). An undated internal report providing a comparison of the first two years of the Department of Fisheries operations (1979-80, 1980-81) is the most useful in this respect; however the comparison is incomplete. (Additional information provided by the Dept. of Fisheries noted that the number of people employed in the plants from 1980 to 1985 have remained relatively stable. Makkovik usually had 100-125 employees serving 100-150 fishers. Nain had 75 to 100

employees serving 90-120 fishers.) Figures published in the Province's annual Budget are generally uninformative and are sufficiently inconsistent with each other to render comparisons of limited strength. A second undated (but probably 1983) internal Department of Fisheries' paper made available gives the appearance of attempting to compare performance over time of the North Labrador operations and in one place covers a full ten years (up to and including 1982). Aside from discrepancies between its data and that of the previously mentioned two-year comparison, the document provides a useful perspective, but not from the point of view of being able to assess the management performance (using standard business tools). This in itself suggests that the Department of Fisheries was not overly concerned with the management and viability of its plants up to that time (a point confirmed by the report:

"There is no doubt that to date the operation of the northern fish plants has not received near the attention or the degree of supervision required to make for an efficient operation. This is certainly evident in the lack of accounting and administrative controls placed on the operation especially for the period prior to 1981."

(Dept. of Fisheries, n.d. (1983?):2)).

It appears to have reached a conclusion which makes their requirement for Torngat to prove itself as a viable operation somewhat curious:

"Historically the operation of the northern fish processing plants has never been viable. Under the operation of both the Department of Social Services and the Department of Rural Development the plants were operated on an ad hoc basis in conjunction with the operation of the northern supply stores. The fish plants purchased available amounts of fish species that were caught in the area and sold all production by public tender. There was (sic) no attempts to streamline the operations or to further expand the operations or to establish any degree of viability."

(Dept. of Fisheries, n.d. (1983?):1-2)

If this was the situation, one might be tempted to ask why Torngat was asked to perform in a business-like way in an area which had not been shown to be viable. A cynic might suggest that the intention was always to ensure the failure of any attempt by North Labradorians to take over the plants. However, at least in the 1983 retrospective there had been a more positive aspect to their 1979 approach

"In an endeavour to reduce the level of losses and possibly achieve some measure of viability, it was thought more appropriate that the facilities be operated by the provincial Department of Fisheries. It was because of this that the Northern Fish Plants were transferred to Provincial Fisheries in 1979. It was envisaged at the time that pending federal-provincial funding agreements, the northern fish processing facilities would be further developed and expanded and that a major effort would be made to more effectively operate and manage the plants in a business-like manner."

(ibid.)

While this last point seems to run contrary to the tendering of the plants, it might explain the decision not to tender or to hand the plants over to Torngat. (It is interesting to note also the implied continued federal funding input - a point which suggests long-term subsidisation by Native Peoples Agreements was clearly a Provincial consideration.) Unfortunately, according to the data provided in the report, there was a 357 per cent increase in the cost of the fish plants operation in the two years immediately following their takeover by the Department of Fisheries. There was a slight improvement in 1982, but the costs were still double those recorded under the previous operators. There was also some speculation, while I was undertaking my research, that the Province's interest in improved performance since 1981 was a consequence of concerns that it might be embarrassed by Torngat's performance.

There appears, however, to have been a substantial shift in attitude toward the plants and their operation with the takeover by the Department of Fisheries. The reports, while giving limited recognition to the social roles of the plants, are oriented toward demonstrating an improvement in the efficiency of the operations. This is most notable in the attempts to reduce the costs of collecting fish.

While many fishermen bring their catch directly to the plants there are also well-established collector boat routes from each plant to the summer stations where the fish are being caught. From the Nain plant a collector boat delivers ice and collects fish from as far north as Okak Bay. This amounts to a round-trip distance of over 240 miles and takes about 60 hours to complete and involves at least 5 stops. Makkovik has two separate collector runs - the Cape Harrison run and the Hopedale run. The Cape Harrison run involves a round trip of about 114 miles, taking about 30 hours involving about 11 stops. The Hopedale run has a round trip of about 194 miles, taking about 52 hours and involving 14 stops.

Collector vessels were chartered through the Newfoundland Public Tendering System, but with a policy to accommodate vessels located in Labrador if at all possible. The charters were usually awarded on a per day basis plus fuel costs with a minimum guarantee, which in 1982 amounted to 50 days. Charter costs were not related to the quantity of fish purchased, but the cost per pound of fish collected is directly related. Thus a good fishing season would show as a reduction in the weight cost of fish, bad fishing seasons would result in a higher weight cost. As can be seen from Table 4.20 (p. 247), the collector weight cost remained about 40-60

cents per pound and the main form of cost reduction attempted was by reducing the number of collector boats. While this policy may have reduced overall expenditure and the service to the fishers, it had not resulted in real cost per output reductions. The prognosis was not favourable:

" . . . in all probability this [cost] factor could increase further if salmon landings continue to decline and if the collector boats have to go further north [of Okak] to service char fishermen. In all likelihood, per drum rates will increase somewhat and as well, we can expect, a percentage increase in the cost of fuel."
(Dept. of Fisheries n.d. (1983?):3 of unnumbered section "Overview of Collector Service")

In 1983 NORDCO proposed a specially-built vessel designed to cut collector costs. As discussed in Chapter Six, NORDCO's report focussed very much on the need for a technical "fix" to the cost of fish operations which it saw as primarily constrained by transport costs. NORDCO's perspective, while meeting with support from some interviewees: "I think NORDCO's got something there", was criticised by others: "There's a social role which the NORDCO flyer can't fill".

If the collector boats' costs are difficult to substantially reduce, there is a second problem - the plants themselves and the seasonality of the fish supply.

While one interviewee commented on the "lack of experience" and absence of advisory boards as contributing to the problems with the fish plants, others pointed more to historical/structural factors. "The fish plants in Nain and Makkovik are inadequate. They were designed for salmon, which has low volume" commented one Torngat supporter. This view was shared by officials from both levels of government:

"I can't see the plants making a profit or even breaking even . . . the plants need, say, \$5 million to improve . . . they have 8,000 lbs/day freezing capacity and there's 70,000 lbs/day coming in during gluts. So we're buying Number 1 (Grade of fish) and it ends up Number 2; buy Number 2 and we sometimes have to reject it."

"There is more to Nain's fish plant problems than grading . . . Char is high quality. The problem is the bulk of the landings are in one month. You can maintain the high quality if you have a ship on site, but the glut floods production . . . A good ice supply is needed . . . pickling is best, but for pickling fat content has to be 13 per cent and it's too low early in spring."

"You have to ask the question "what kind of processing is possible on a viable basis?". With a short season you have to move produce before freeze-up. There is no obvious solution in onshore processing. Its either got to be got out fresh or tied to the Island."

The problem with handling the glut situations has led to two responses - salting the fish and over-the-side sales (OTSS). "Salted cod is the history of Labrador" commented one federal interviewee and, building on

history, an extension to the Makkovik plant included a new salting facility which met with general approval and performed up to expectations from the Province's perspective:

"Saltfish cod broke even pretty well (in 1984) with the Province acting as a direct agent for the Salt Fish Corporation."

Over-the-side sales, however, have not met with quite the same enthusiasm. The Newfoundland Food Fishermen and Allied Workers Union (the NFFAWU) was given the licence to operate OTSS in the first two years, primarily at Smokey and Makkovik. Locals noted that rather than sell to local plants, longliner fishermen were selling to OTSS purchasers and "wouldn't sell to collector boats". This resulted in a clash between Torngat and the NFFAWU which clearly left bitterness on both sides.

". . . one year [OTSS] were a goldmine [in 1982] . . . Torngat thought the money was always as good as in that good year . . . in that year [NFFAWU] paid 6 cents per pound more than anyone else [so that it could] return profits to fishermen."

Government officials tended to support OTSS

"Portuguese over-the-side sales can handle what a lot of plants probably couldn't"

and

"Torngat feels it should have control over the over-the-side sales north of Groswater Bay. Last year [1984] they did get a vessel operating under their supervision north of Makkovik [at Hopedale] . . . It's not Torngat members catching the fish, but they see it as their territory. If there were no fishermen from the Island, there would be no need for over-the-side sales."

One observer however saw the issue more from Torngat's perspective. Noting that competition between the NFFAWU and Torngat was a big issue, especially with the profit being made, he commented:

"Torngat wants it (OTSS) to subsidise the land operations. If they had over-the-side boats they would have gone much further ahead . . . Over-the-side sales should only exist where local needs are met and Labrador has lost a lot of money there."

This observer also noted a "major social impact" as a result of both longliners from the Island and OTSS sailors.

"You get a sudden influx of 150 longlinermen on a community of 400 - more males . . . it has to have a big impact . . . Portuguese sailors and their impact on bootlegging of liquor, another 100 or so come ashore regularly - like women as well and there's only a small pool."

This debate over who should have the benefits of the resource, or access to those benefits, is discussed in the model-building chapters to follow. The point relating to the use of resources by the floaters is one I will return to shortly. First, however, if the OTSS do not adversely affect their business (and government officials appear to think that they do not) and with additional facilities for salting cod at Makkovik, how has the Province performed in managing the fish plants?

Table 4.21 presents a summary of the data made available to me during this research. It is clear, as one federal interviewee said, "the Province is losing its shirt". For the year in which I consider the data most reliable (1980) the gross margin was -18 per cent (in 1979 it was a healthy 13 per cent). It should be noted that collector boat costs amounted to only 11 per cent of the total costs of the operation (or 13 per cent of the costs of the Nain and Makkovik operations). There were no upgrading costs included and indeed a provincial employee interviewed commented "Maintenance [cost] never comes out of the operation". There does not appear to have been any improvement in the economic viability of the plants while under the management of the Department of Fisheries. However a Provincial employee commented that with improved facilities the loss could be reduced to \$1-200,000 per year.

Table 4.21 Summary of the Province's North Labrador Operations
1980-1984 (in \$000)

Item	1980	1981	1982	1983	1984
Revenue*	1,650	1,800	920	1,090	1,000
Fish Purchases	850	946	630	718	417
Breakeven Revenue	1,985	2,023	1,612	1,846	1,357
Gross Profit (Loss)	(335)	(223)	(692)	(756)	(357)
Loss as a % of Revenue	20	12	75	69	36

* Revenue includes the amount provided under the Native Peoples' Agreement by both levels of Government. The gross loss is met by additional funds provided by the Province separate from the Agreement. Gross loss is an underestimate of the total loss of the operation.

This brings us back to our earlier question; why does the Department of Fisheries continue to operate these plants, especially with a private company (Torngat) prepared to take over? It is perhaps best to leave this question with a range of answers provided by interviewees:

- (i) "The fish plants are being kept going at a basic minimum to have a claim on the shrimp licence."
- (ii) "Operating the fish plants is a government role because government can absorb heavy losses. You don't have private business there because they can't afford to lose heavily."
- (iii) "The Government has no role or right to operate fish plants . . . privatisation or an outside operation is needed."
- (iv) "The Provincial Government is operating the fishery as a service."
- (v) "The fish plants are losing \$6-800,000 per year. Torngat's looking for bigger subsidies than that . . . you have to put something into the operation as well and the Government is willing to pass over the operation to anyone willing to have a real go at it."
- (vi) "The Co-op's approach to the fish plants has been to present a proposal which has the Province putting in the funds without any control and no definite commitment to finance from the Co-op."
- (vii) "The Province's refusal to hand over the plants to Torngat is definitely a jurisdictional matter [between the Province and the federal government]."

The key points to note for future discussion are that there is general acceptance of the non-profitability of the plants coupled with a concern that Torngat would not be able to meet the financing requirements. At another level there are those (not necessarily sympathetic to Torngat and certainly well-informed) who argue that this is the excuse for the Province to keep the plants, while the underlying issue is one of who has jurisdiction over the offshore resources.

This returns us to a point raised earlier, that the Island is only interested in Labrador when there are resources involved which might benefit the Island. This has been hinted at again in the discussion of over-the-side sales where the point was made above that OTSS were for floaters primarily. This concern was raised in some interviews, with one interviewee commenting "There is a low-level animosity toward the longliner fleet as people see funds being set aside for facilities primarily for the longliner fleet instead of Labrador". Another commented that

"The fishery north of Groswater Bay is underfunded. The longliner fishery has been subsidised for years by various agencies . . . there are \$6-700,000 per year in hidden subsidies."

The perspectives being presented are basically:

- (i) that the funds provided under the Agreement are provided to aid the "Native People" and should be made available to a native people's organisation virtually as a matter of right;
- (ii) at present the funds from the federal government go into the Province's general account. If these funds, which include those pledged by the Province, could be separated from the costs of the operation as a whole, the Province would be seen to be contributing a much lesser amount than is often claimed (the contribution to the Agreement's funds often appears to be counted as part of the Province's operations commitment);
- (iii) if the Agreement's fund for fishing is a matter of right for native people, then Torngat could be considered justified in expecting these funds to continue to flow through to them. Hence the jurisdictional problem must be considered at this level as well, that of native people's claims.

4.5.2 The Government of Canada's Policies and Role

The federal policy was clear on the shrimp licences. Three of the eleven issued were for Labradorians; two went to the Union Shrimp Company of Southern Labrador and one to the FPEC. In issuing the licences, the Hon. Romeo Leblanc (1979) commented that:

"This licence must primarily benefit Labrador communities . . . arrangements must be made to make sure that Labrador communities will benefit to the maximum from this fishery."

(Leblanc in Torngat 1982:frontispiece)

The only conditions were that the licence would be reissued annually and that those companies that were awarded licences were to obtain their own shrimp vessel. In 1981 Torngat, on the basis of a NORDCO report commissioned by them, concluded that it was not economically feasible for them to purchase and operate their own shrimp vessel.

This view has yet to be formally accepted by the federal government. The need to lobby annually for a renewal of their licence has become a major constraint on Torngat's time and capacity to forward plan on a firm footing. As one interviewee commented

"The federal government is against foreign charters . . . [and so the licence allocating system means Torngat operates] year to year without knowing whether he will get it or not, Alex can't plan ahead . . . vessel ownership and cross-subsidisation are contradictory and banks wouldn't go for it . . . IMAPAQ got their own ship, but didn't take the time to look into it . . . and lost \$2 million in three years."

The Co-op has received support from the NFFAWU in its attempts to renew its annual licence and gain acceptance of the use of foreign charters. This is primarily because the NFFAWU is involved with southern Labrador fishers in the operation of their two licences through the Labrador Shrimp Union (the vehicle

established by the NFFAWU with fishermen on the south coast to access/use two of the three licences).

Both federal and provincial employees interviewed were keenly aware of the dependence of Torngat on the shrimp licence and of the implications of these licences possibly being reallocated to the proposed NFDC (Kirby 1982, see also Chapter Seven).

One interviewee commented:

"Could Torngat operate without the shrimp licences? It was not envisaged when they were handed out that they would be a permanent structure and if the shrimp licence goes it goes . . . The roles [Torngat's] attempted would not be needed if the NFDC goes ahead."

The role which the NFDC will attempt is the one some would argue Torngat has filled in the early eighties - cross-subsidisation from the lucrative offshore to the social inshore. The NFDC however would be on a grander scale, covering the entire area north of 50 degrees Latitude (i.e. including St. Anthony). The rationale for forming it is primarily one of greater efficiency through a more co-ordinated approach to the fishery.

"North of 50 degrees is very special in itself; administratively, economically, advice and in terms of funding. The main concern is Labrador and the major duplication of effort, transportation, etc.

NFDC might rationalise this, using, say, two to three people to service the works (equipment breakdown is a major problem) . . . NFDC would be an umbrella organisation. All provincial facilities are committed . . . The NFDC will recognise special groups like the Shrimp Union and Torngat."

Noting that "the NFDC is a concept - it's not alive and not dead", another interviewee commented "interest groups know that the aim is to get plants turned over [to NFDC] outright". However other interviewees were not convinced it would be quite so cut and dried. An alternative perspective which focussed on community ownership was also being floated:

"Public funds should create a core company to provide managerial and technical expertise to coordinate community owned enterprises and they in turn might collectively own the central NFDC . . . [The federal government officials were receptive but] the Province did not agree because of jurisdictional things."

What is clear is that officials in both levels of government expect the NFDC to be established and to own the fish plants in North Labrador and the shrimp licences previously reserved for Labradorians. However the NFFAWU and Torngat are arguing for the NFDC to operate in a supportive role to their operations. Let us now turn to Torngat to complete the rich picture of this stage of Checkland's methodology.

4.6 The Torngat Fish Producers' Co-operative

The Torngat Fish Producers' Co-operative Society Ltd. was registered in December 1980, but, as discussed above, it was conceived two years earlier. It resulted from Labradorians with renewed political awareness and a wish to take some control of their own destiny, responding to proposals by the Province to put its North Labrador operations up for tender and the decision by the federal government to allocate potentially lucrative shrimp licences for the benefit of Labrador communities. With the assistance of MUN Extension Studies and the drive of the LIA and Local Fishermen's Committees, the aforementioned Fisheries Emergency Policy Committee (FEPC) representing the six North Labrador communities was established in 1978. This committee successfully operated a shrimp licence for two years, using a foreign charter vessel, and also submitted a proposal to take over the operation of the fish plants. It also commenced an "emergency" operation at Rigolet and where the Hudson Bay Company had advised its intention to turn its holding unit into a warehouse.

The outcome of the speed with which much of this took place and the actual processes involved are both clear and cloudy. Torngat was established with a

membership (shares) fee of only \$20, a nest egg of profits from the FEPC's operation of the shrimp licence, an existing commitment and strong base at Rigolet, a requirement to obtain a shrimp fishing vessel, an objective of taking over the plants at Nain and Makkovik and, perhaps most importantly, a commitment to North Labrador. It has consistently operated at Rigolet and with Native Peoples Agreement funds has expanded the facility there. It has also operated a char fishery in the Saglek and Hebron regions in 1981, 1982 and 1984 (not in 1983). It has processed turbot and cod at Makkovik in 1981, 1982 and 1984 and turbot/cod at Hopedale in 1982, 1983 and 1984. It operated two longliners (the Miss Makkovik and the Wendy Sherrill) in 1983, but only the Wendy Sherrill in 1984. It also operated an over-the-side-sales vessel in 1984. During the period 1981-1984 it lost a total of \$1,355,512 on its inshore operations with only the 1984 OTSS venture showing a profit (\$24,800). The gross margin of its inshore operations in each of the years 1981-1984 was -57, -58, -32, -35 per cent respectively (calculated using the method provided by Kirby 1982). Over the same period it received a net commission from its shrimp licence of \$1,587,283. It has not shown a net profit in any year. It is clearly dependent on income from its shrimp licence to cross-subsidise the inshore fishery. It appears on

the basis of its gross margin figures to be less efficient than the Province (but see below).

Through its operations Torngat has extended the length of the fishing season at each of the communities in which it has operated. Its main mode of operation is to take over from the Makkovik fish plant operators (the Province) at the end of the main fishing season and keep the plants operating for a further few weeks. Operating in the less profitable periods would certainly contribute to a worse gross margin performance than if it operated at the same time as the Province. At Saglek and Hebron it has operated a floating freezer vessel which has made the northern char fishery an option again for Nain residents - the first time since they were relocated to Nain and places further south (see above). It has attempted to develop new fisheries (notably char in the Saglek/Hebron region, and turbot in Makkovik/Hopedale). The performance of its marketing programme was noted as exceptional by several interviewees and has resulted in new products being placed on the market (see Rennie 1984). It has also provided training in grading and handling of fish, in shrimp fishing and in longliner fishing. Through the structure and operation of its Board of Directors, Annual General Meeting and specific educational projects, Torngat has been a vehicle for

encouraging the development of leadership and management skills. It has also greatly enhanced awareness of co-operatives. This last point was particularly emphasised by one Labrador interviewee.

"You can't see this, but I think Torngat Co-op has got people thinking more co-operatively. I know I can see it in the areas I'm more familiar with. I have been a fieldworker for eight years in Northern Labrador - community developer - and it's only since Torngat has been there that they [the North Labradorians] started to think co-operatively . . . Torngat being there and surviving is giving them something tangible which enables them to grasp the concept."

Perhaps most importantly Torngat has facilitated greater community input to decisions which directly affect their livelihood. This has enabled them to demonstrate their responsibility, especially in making hard decisions. Residents of Makkovik voted to forego an extended turbot season at their plant one year in order to enable the Saglek and Hebron operations to proceed. Their rationale was the social problems faced by Nain and the social benefits (declining crime, suicides, alcohol abuse) resulting from taking 40 or so families back to traditional fishing areas. Rigolet supported the appointment of an "outside" manager for their plant to break the inefficient management of a community elite. However, the point which Torngat has found most useful in promoting its cause has been the

upwards of 200 people employed in the fishing industry each year by Torngat (directly or indirectly; i.e. including fishers). The proportion of those who have gained sufficient "stamps" to qualify for Unemployment Insurance Benefits as a result of Torngat's operations could not be determined during this research, but was probably significant given the shortness of the total season. Thus although it has not achieved its primary objective of taking control of the fish plants, this should be seen in the context of the reasons for Torngat wanting to take over the plants in the first place. This was mainly to keep them from being taken over by outside companies because:

"Fishermen felt that companies would only keep the plants open as long as they are making money and close them as soon as it starts to level off, leaving the people high and dry."

(Torngat 1982:1)

In terms of meeting this objective it has been successful.

The importance to Labradorians of keeping the plants open as long as possible, thereby giving them greater potential to qualify for unemployment insurance benefits, should not be underestimated. In North Labrador "economic pluralism" can be simplistically interpreted

to include "chasing the necessary number of stamps to be eligible for UIC during the winter". It was interesting to note that UIC "wages" were seen as being a legitimate "resource", in contrast to Welfare payments, which were seen as handouts to relative failures.

If the above points seem reasonably clear, there are a number of cloudy elements in the formation, role and operation of Torngat, some of which are relevant in the context of this thesis.

While some interviewees described Torngat as a "model co-op" where the community was involved from the outset in choosing by vote between Torngat and other possible options, others considered it a "model of how not to set up a co-op". The critics pointed to the way in which the co-op was "dropped on the region". There was an almost unanimous opinion that education as to what a co-operative is and how it operates was not undertaken to a sufficient level beforehand and some felt strongly that the late Don Snowden and MUN Extension championed the Co-op choice. Snowden's involvement in writing the first draft of the constitution was also criticised by one interviewee as counterproductive. Torngat is one of the first to admit the need for greater education on co-operatives and has supported the provision of a

co-operative educationist (Leo Hanrahan) funded by the Donner Foundation and MUN Extension.

The second major cloud was over the role and performance of Torngat's General Manager, Alex Saunders. While some praised the concept of appointing a General Manager from North Labrador, others would have preferred a "more professional manager". As one person put it

"The dealings I've had with Alex have been beyond any possibility, beyond anything I could have dreamed of . . . in some 20 years in the business this was the worst . . . of any experience."

The same interviewee went on to add, however, that there was "no question he hasn't done something for the northern people". An ambivalent view of Saunders was shared by all, although most commented very favourably on the progress he had made and the improvement in his management and political awareness. His sheer energy, no-nonsense style and commitment to Labrador may have contributed to the bad image some have of him. As one interviewee said "Alex in the first couple of years turned out more ideas and contacts than anyone else would have tried. He produced good proposals and he listened . . . The Province's Department of Fisheries had a smug attitude . . . they stereotyped Labradorians . . . It hasn't helped that Alex went for their throat. It's more

political now". Another commented "Alex has been busy doing things and now realises he has to do more thinking". One interviewee with whom Alex has had significant conflict showed more understanding of Alex's situation than many: "The battle with Alex revolved around his paranoid attitude towards non-North Labradorians. I understand because I'm paranoid to non-Newfoundlanders, culturally". From my own contacts with Alex I assessed him as energetic (tales of his energy and irresistible nature when he sets his mind on something are legion) and entirely committed to North Labrador. The relationship Leo Hanrahan has established with him, however, has been in my view a critical determinant in broadening Alex's perception of what needs to be done and how. By 1985 some of his strongest earlier critics were noting a "marked change" in him and his attitude (it may also be that their attitudes have changed somewhat as they have followed Torngat's fortunes). One went as far as to comment that the head of the NFDC would "have to have a touch of Alex Saunders". As a settler with quarter Inuit blood, brought up in Davis Inlet, a fisherman, teacher, world traveller, former alcoholic and with a criminal record for assault, Alex epitomised much of Labrador and certainly understood it as well as most. His role has been and is critical to the future of both Torngat and,

I believe, Labrador. Those he is dealing with are aware of his background and this may have influenced the early skepticism toward both him and Torngat, which I believe is now giving way to grudging respect.

The remaining cloudy area is the role of Torngat. Despite a membership of over 400 (drawn from the six communities) which comprises about 15 per cent of the total North Labrador population and about 50 per cent of the taxpaying population, one powerful interviewee sums it up quite well:

"I don't know who exactly they represent quite frankly . . . They claim to be a producers' co-op, but frankly, and Saunders says this himself, they are really creating on-shore employment . . . They have some connection with the LIA. We tend to see more and more of the LIA's land claims appearing around and through Torngat . . . more and more in the past 12 months (1984-85) . . . mainly because Alex Saunders is on the Board (of the LIA)"

Another interviewee (popularly considered opposed to Torngat) commented:

"Torngat has an important local role and long range . . . the Co-op is the body through which local fisheries should be run . . . Torngat's mandate has broadened and it has closed ranks with the LIA in all areas . . . land claims as well. There needs to be a spearhead . . . a closer welding together could only enhance Torngat's presence."

While I have heard Alex Saunders and the Board state categorically that Torngat is a business, the objectives of the business are by no means clear, having had the prime one, taking over the fish plants, stymied. In an interview with an MBA student at MUN, Alex commented "If this was a private company I'd want to make money . . . Consultation wouldn't occur" (Robert Thompson pers. com.). But if the business is social, what then? The concern all members had over conditions in Nain stood out as a social concern and the social objectives of Torngat's north of Nain fishery were clear to everyone. An analysis I carried out using Kendall's τ , a non-parametric rank correlation test for limited frequency data, showed statistically significant (at the 10 per cent level) inverse correlations between the number of suicides (attempted and completed) in the period 1980-84 and the total number of fishers and/or the total number of full time fishers. This bore out analyses by Board members that suggested the major role of the North of Nain fishery was the improvement of mental health. If Torngat is able to increase the number of full-time fishers this analysis would suggest the number of suicides (attempted and completed) would decrease.

The need for Torngat to enhance its presence on the coast is a factor commented on by several interviewees and this again has role implications, primarily because some would like them to take over the operation of the Government-owned stores on the Labrador coast. While others acknowledge the added presence this or a takeover of the fish plants would give Torngat, they also view such developments as heralding the death knell of the Co-op. In short they consider its problems would be substantially increased given the social roles of the stores and the power cliques that have developed around them. Torngat's success in having communities take hard decisions over operations and in breaking up local power cliques (notably at Rigolet where it managed to get an outside manager in who reduced labour costs from over 60 cents per pound to 16 cents per pound) was not considered sufficient proof of its ability to resolve the problems faced by the stores.

Perhaps the final word on Torngat's role and objectives should go to Alex Saunders: "yes, no question, the main concern is to stay alive." The importance attached to Torngat's survival has been mentioned in several places above. In particular, its

significance in terms of changing attitudes should be remembered.

"The odds are 3 in 10 that they will make it . . . This is a last-chance one-shot effort . . . if it fails other [government] departments will run them [the North Labradorians] down."

4.7 Conclusion

This chapter has painted a rich picture of the North Labrador fishery which exemplifies both the reasons for using the Checkland methodology and the reasons why it will not fit easily with geographers. In a regional study such as this the traditional geographic approach could be to identify the parameters by which the region would be described. This would be followed by a well-planned data collection and analysis programme. The Checkland methodology, however, starts from the assumption that identification of the parameters is in itself a problem. The result of using the methodology is a picture which to my mind leaves a number of gaps and questions in relation to various aspects of the data.

Its great strength however is that it allows aspects to emerge which may not otherwise. These are issues seen by the people of the region as really important in understanding the problem situation or region. While

this may lead to insufficient detail in places and more detail than would have been required in others, I consider the final picture gives a reasonably accurate expression of the data I collected. That picture is produced in Figure 4.11 (back pocket) as the summary of the discussions in this chapter.

The other aspect worth noting from a methodological standpoint is that in this research the Checkland methodology produced an overload of data. This may be a problem for any attempt to apply the methodology to regions (e.g. the Sahel, cf Agnew (1984)), but it does not mean the attempts should not be made. It is perhaps more important to ensure enough time and resources are at the researcher's disposal to ensure the data can be readily handled.

In the next two chapters macro- and micro-models based on relevant systems implied by the rich picture will be constructed.

CHAPTER FIVE

Models of the Labrador Fishery

5.1 Introduction

This chapter presents the conceptual models developed from the Checkland methodology for the North Labrador fishery. The methodology for developing these models was described in Chapter Three; however a brief summary of the experiences in implementing the methodology is included here to assist in explaining differences between theory and practise which might not at first be obvious. In the process of doing this a key concept, the existence of macro and micro models, is identified. This is followed by a discussion of each conceptual model generated for the North Labrador Fishery. These set the scene for a similar approach to the role of Torngat and the models developed for it in the next Chapter.

5.2 Technical Lessons

Having developed the "rich picture" of Torngat's role discussed in the preceding chapter, I set out to develop the Root Definitions of the problem situation described. My initial focus was on Torngat and I

satisfactorily generated a number of systems and drew out root definitions. At this stage the iterative nature of the methodology was brought sharply into focus. In developing the rich picture I had felt comfortable in isolating factors which might introduce bias into my approach and had become skilled at deliberately shutting out preceding information. In the development of root systems and definitions almost the opposite is required of the analyst. I found on several occasions that my initial root system was written in the form of a root definition at the first attempt. While this might appear to be of more assistance than hindrance, I was concerned that too sharp a focus in the initial system statement might result in the omission of possibly important non-functional or latent aspects of the system (see Prévost's (1976) criticism). Thus almost all of the systems and root definitions were assessed and reassessed several times and to assist in this process I deliberately left substantial temporal gaps (one or more days) between each look at a system and its definition. In the end, however, I found the generating of systems and root definitions perhaps the simplest and most speedily accomplished component of the methodology.

It was through this device of a deliberately measured approach to finalising root definitions and the

need to look at latent functions that one of the most important concepts for this thesis emerged: that of the macro and micro nature of the modelling required. It is only honest to admit that the need for this distinction arose from my concern over the degree of difficulty of conceptually modelling some of the definitions developed. To assist in developing root definitions I had drawn up a CATWOE table (see Smyth & Checkland 1976). In the iterative nature of the methodology CATWOE forms both a useful tool for analysing the adequacy of root definitions and a guide to assist the expression of root systems as root definitions. In applying CATWOE it became apparent that a number of key items could be interpreted differently from different perspectives. Key to the definition of perspective was the scale at which one applied CATWOE.

For instance, let us examine CATWOE's "A" (Actors) using the following root definition of the fishery:

"a system obtaining for North Labradorians, through methods promoting Labradorian aspirations, resources (financial and capital, fishing access, expertise, etc.) held and/or controlled by non-North Labrador based organisations/individuals."

The key actors such a root definition throws up can vary depending on scale. At a macro scale there are the

non-North Labrador based organisations/individuals who hold/control resources, there are the North Labradorians and there is the organisation which undertakes the work described by the definition (i.e. Torngat). At a more micro scale, e.g. a Torngat scale, this same definition suggests different actors. My assessment suggested at least the following roles:

- a General Manager to keep the organisation functioning to its objectives
- a researcher, to identify resources and competing organisations
- a marketer, to identify ways and strategies for promoting their independence
- expertise in a range of financial, legal and technical fields.

The difficulty in resolving the scale which should most correctly be applied to the models led to a re-examination of the starting point of the thesis. Throughout I had approached "gaining an understanding of the problem situation" by investigating the role of Torngat. By examining the root definitions I had developed to describe Torngat's role, I became aware of the need to step back and clarify the environment within which Torngat operated as a system. Until the contexts

of Torngat were defined models of Torngat itself would remain problematic because the role of Torngat could not be divorced from its environment. While this may seem self-evident it had not been my intention at the outset to examine the North Labrador fishery as entirely separate from Torngat; however to work at the two scales would mean examining the "without Torngat" universe. This is because when stepping back to examine the fishery as perceived, it becomes apparent that a number of relevant systems are not predicated on the existence of Torngat. Torngat is merely one mechanism by which the macro-system could achieve its ends. This situation was then a truly super-institutional one and Torngat became a construct of the super-institutional system; in other words, its existence was determined by the environment (social, historical, physical, etc.).

As a mechanism within the North Labrador system, however, a two scale approach offered possibilities of testing out the total system by the performance of the system component "Torngat". The existence of Torngat suggested a falsification point for any total system definitions. For Torngat to exist as a consequence of the system it must be indicative of the state of the real system at a point in time.

It was at this point that I first read Cornock's 1980 thesis. While I had been aware throughout the research that Cornock was the only published analyst who had applied Checkland's methodology to supra-institutional problems and claimed success (Agnew 1984 claims to have applied it unsuccessfully; however as argued in my 1985 and in this thesis I consider this failure reflects an incomplete grasp of the methodology rather than a failure of the methodology), I had avoided reading Cornock's thesis until now because I did not want to be biased toward his approach through an awareness of it. It was with pleasant surprise that I noted he had followed a similar approach to mine in developing his research. Substantive differences in the approaches were primarily that whereas I had used the methodology on a subject and in a region of which I was largely ignorant, Cornock was an artist who found his research on the Art World constrained because he had commenced his work with the mental baggage of his experience. Hence his initial rich picture embodied a root definition of a tribal system perspective on the Art World.

Recognition of this had led him to develop an increased number of supra-institutional root definitions. He then returned to the particular to assess the value of the perceptions developed of the Art World in an

actual intervention case. He had, in other words, established a macro-micro split. In my case the use of this distinction would be different as no deliberate intervention was planned.

A further suggestion emerged from the comparison of Cornock's and my own research. The possible existence of a general set of relevant systems and root definitions, that is, the similarity between some of Cornock's root definitions and my own, suggested that at the supra-institutional level the dominance of process and structure over substance is sufficient for situation specific systems to exist which depict features entirely unrelated to the products of the systems. Thus while a world of difference may characterise the substance of the production of art as art-decor from that of the production of fish as marketable food, the actual root definitions of the two may be very similar. An investigation into the potential for the existence of a general set of relevant systems was beyond the scope of this thesis. However, I found the models presented by Cornock were useful for developing some of my own, and consequently there are some models which are derived from his.

A further conceptual modelling point which required careful consideration was the degree to which the supra-institutional models should be developed. Obviously models of too expansive a form would be of minimal interpretive value; however too detailed a reduction would be time consuming and of minimal value in the context of this thesis. Cornock's modelling was of little assistance in terms of establishing a standard level of development for models. His implicit approach appeared to be one of developing the models to a comparative level. That is, he would continue to reduce models while there appeared to be a significant degree of learning to be gained. Cornock did not define his criteria of significance. My modelling used as its criterion for reduction beyond first order models the degree to which I considered the reduction might be both unambiguous and elucidatory.

As a final point, when developing the conceptual models I found a number differed not at all in structure. These were aggregated for simplicity.

5.3 Macro Conceptual Models - The North Labrador Fishery

i) The fishery as a vocational system.

Three of the relevant systems' root definitions gave rise to a model which closely paralleled that of Cornock's "vocational system".

RD1: A community-owned system of social support available as an entitlement to those who elect to devote themselves to fishing in North Labrador waters.

RD2: A Province of Newfoundland and Labrador-owned system of creation and maintenance of employment opportunities for provincial fishers and related industry persons.

RD3: A nationally-owned system of social support available as an entitlement to the first peoples of North Labrador (who elect to become fishers).

As illustrated in figure 5.1 the structure of the model is identical for each of the above three, thus

Figure 5.1: Vocational systems model,
RD1 and RD2

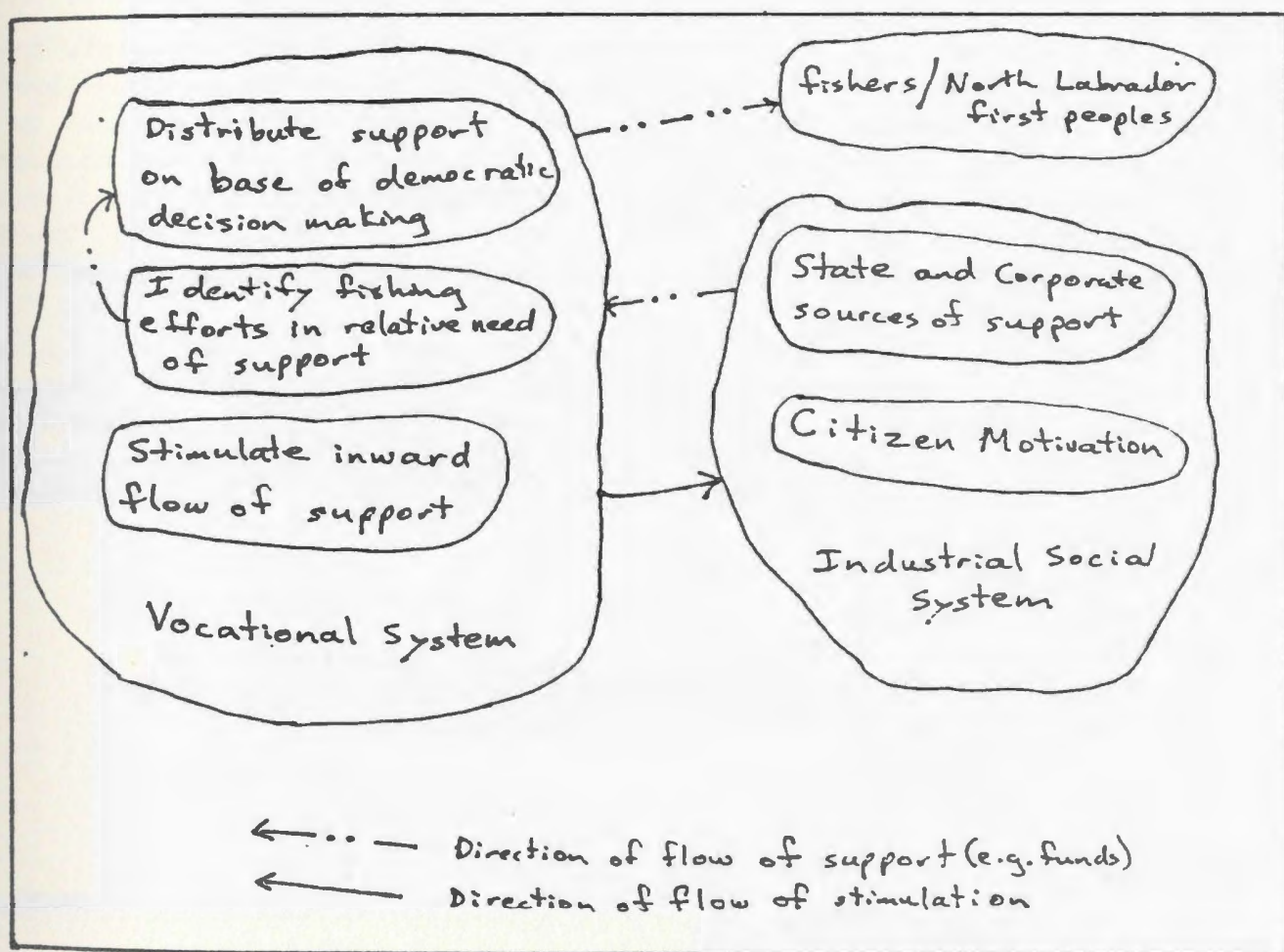
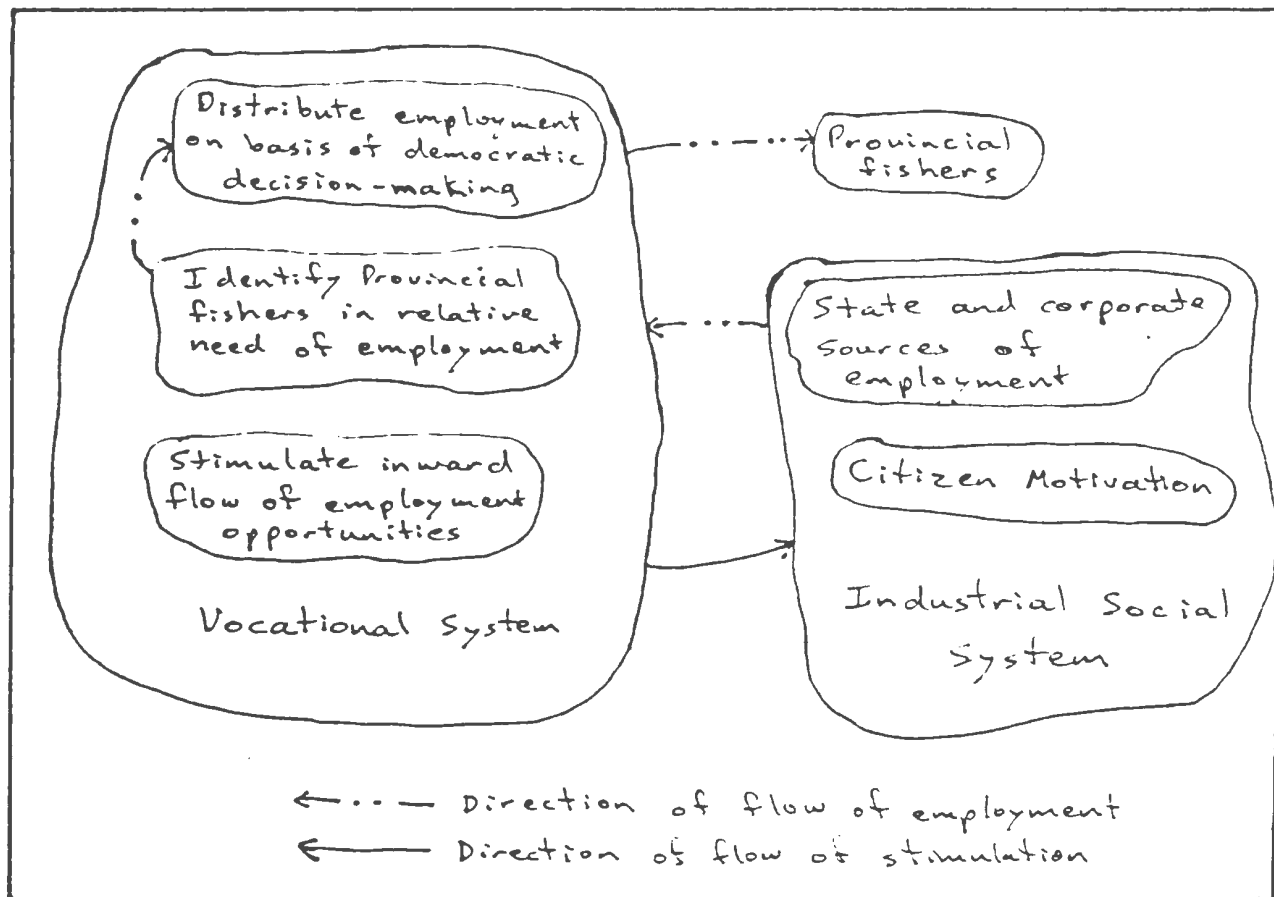


Figure 5.1:(cont.) Vocational system model,
RD3



implying a commonality of transformation process and actors.

Significantly different, however, are the variation in the owners, clients and environment of each root definition. The definitions each incorporate a single Weltanschauung. Namely, that the clients are, as an unalterable right, entitled to social support regardless of what they produce. What is important is that the clients have elected themselves to the group which is entitled to support.

This may not at first be obvious with regard to First Peoples in RD3. However it can be argued that it is self-identification as being a member of the First Peoples, which overrides the actuality of genetics/ancestry. At the same time it is recognised that to belong to any of the groups identified requires that certain criteria be met. In the First Peoples case there are fairly clear criteria, although arguments could be envisaged as to the degree of ancestry at which the criteria is set. For instance, is someone who has 14/16 inuit ancestry more entitled to being considered a First People member than someone with 2/16 inuit ancestry?

If the 14/16 inuit lives an entirely non-First Peoples lifestyle and has become completely divorced in all other senses from the inuit, does this disentitle him from First People status? What if the 2/16 inuit lives an entirely traditional inuit lifestyle? It is in the sense that an individual elects to be considered, and is accepted as, a member of the First Peoples, that the Root Definition is couched. This applies similarly to RD1 and RD2.

Cornock (ibid:44) described his vocation-as-an-art system conceptual model as one which:

"sets out to distribute resources for [support]. The conceptual model analyses that transformation into three component activities: first, the stimulation of some sense (among members of the wider industrial social system) of responsibility for and motivation to assist those who have found their vocation in art, by supporting a flow of state and corporate finance into the art-as-a-vocation system; second, the identification of those whose artistic efforts have been pursued at the expense of self-interest and we are in need of support; and finally the rendering of decisions on the distribution of support."

Substituting the relevant words for art and artistic, the same description largely applies to RD1, RD2 and RD3. It should be noted that "the expense of self-interest" phrase is not to be

interpreted as absolute, but as relative foregoing of self-interest. It should probably also be considered in fiscal and facility terms - i.e. artists or fishers may be totally self-interested in pursuing their vocation, but in so doing may be foregoing monetary reward.

ii) Fishery as a cultural leavening.

RD4: "a society owned system which stimulates and support the development and enrichment of the resources of North Labrador as a cultural "leavening" which will enhance the quality of life of society".

This Root Definition draws from Cornock's art-as-cultural-leavening-system. It is based on the Weltanschauung that society might support various activities within the region which would serve to "leaven" the society's culture. To paraphrase Cornock (ibid:101), the system has two main objectives: a) to stimulate resource development and enrichment activities, and b) to make manifest the results of those activities.

To achieve these objectives it must provide a set of support services. A first order conceptual model appears in figure 5.2 and this is elaborated in second order models (figure 5.3) of the three main sub-systems: support, development/enrichment and amplification.

While the models flow logically from the initial root definition, it may not be readily apparent why I have used the term "culture" in this instance. The term arose from considering some of the concepts implicit in descriptions of Labrador and its fishery. Where economic analyses are believed by participants to mitigate against supporting a fishery, why is so much activity devoted to maintaining it? A number of root definitions (covered elsewhere in this chapter) could be advanced, however a basic point of reference in all was "why does society not apparently condone complete depopulation of North Labrador?" One of the most charitable Weltanschauungen is that drawn from the "cultural mosaic" perspective on Canadian society. Canada deliberately supports as a sort of cultural leavening the maintenance of various ethnic/cultural groups in society. It also attempts to diversify its

Figure 5.2: Cultural leavening system model,
RD4

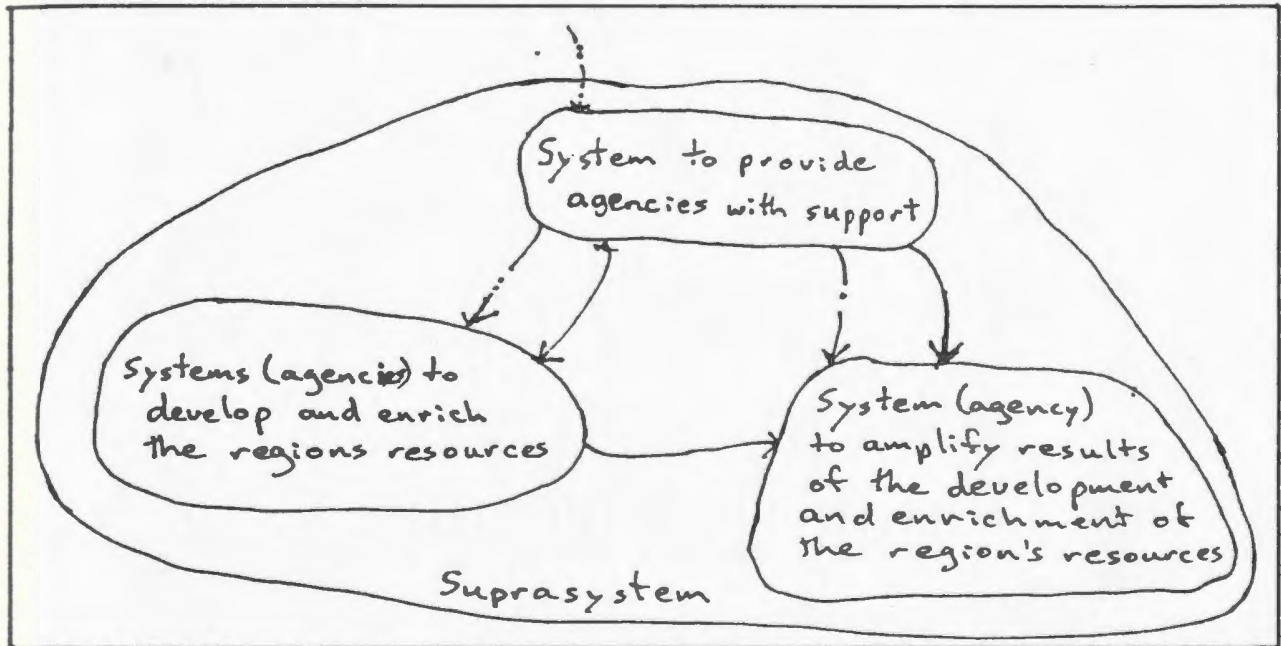
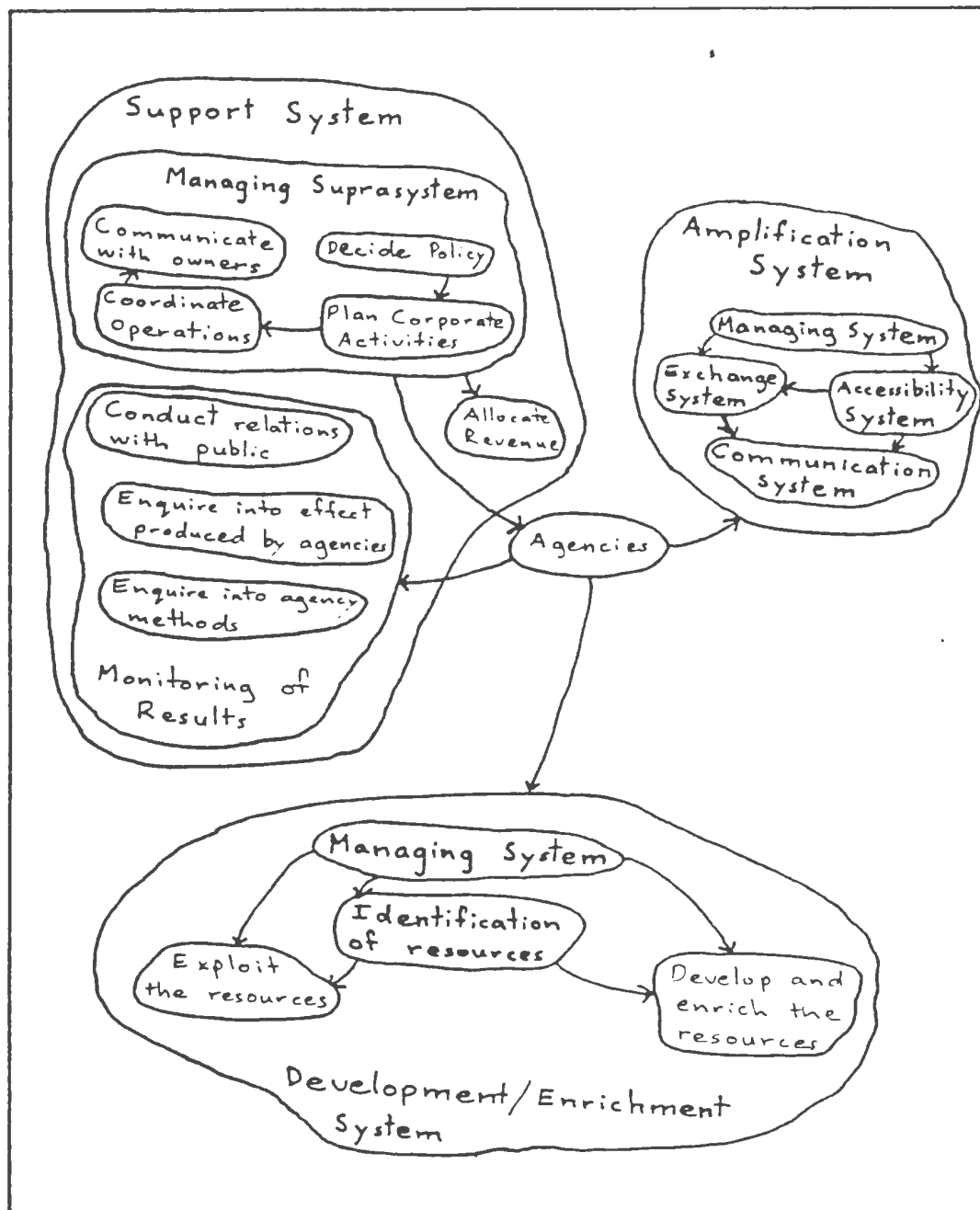


Figure 5.3: Cultural leavening system,
second-order model, RD4



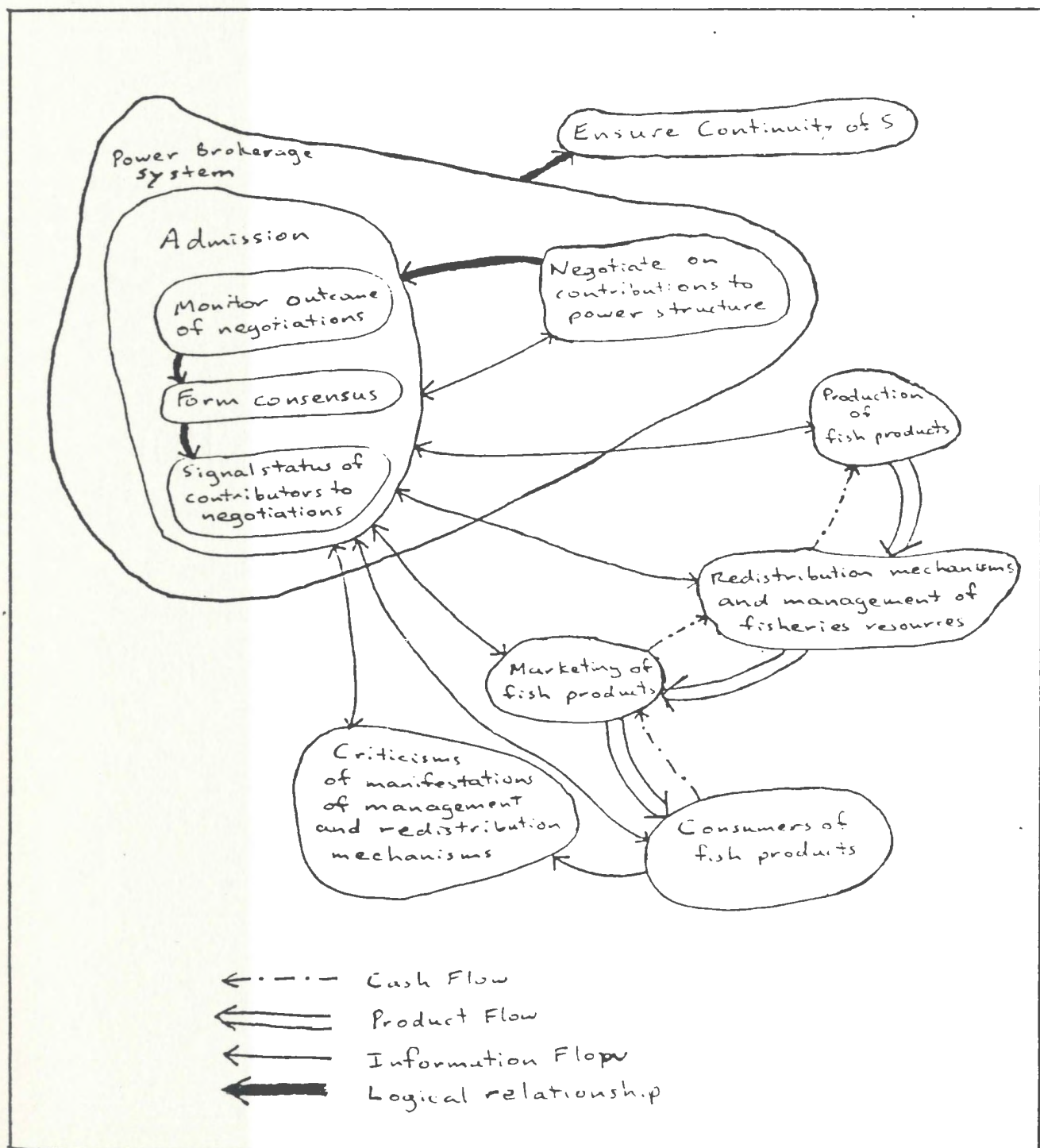
resources and resource use and again this can be seen as a cultural leavening. Why "Atlantic" salmon or char caught by "intrepid" Inuit? The promotion of these foodstuffs is targeted at particular socio-economic groups and can therefore be interpreted as cultural items. Maintenance of a diverse resource base, while primarily strategic, also captures in this instance part of the pioneer ruggedness of Canadian culture. Thus the term "cultural leavening" as used by Cornock seemed appropriate in the context of this research.

iii) Power Brokerage system.

RD5: "A power brokerage system derived as a relict of a history of competitive resource use and power manipulators and which is owned and maintained by current power brokers for the purpose of achieving the continuance of their regime. It functions to prevent the rise of or to harness (to existing power brokers) the strength of potential power wielders outside the existing power brokers' set."

A model expressing this root definition (RD5) is illustrated in figure 5.4. It is interesting to

Figure 5.4: Power brokerage system model, RD5



note that the actual product (fish) is unimportant to the essential aspects of the system. The production, redistribution and marketing of fish products and the management of fisheries resources are essentially byproducts or manifestations of the system's real business. The critical component is the existence of a group of power brokers and the nature of the negotiations in which its members engage to gain or maintain membership.

The admission of individuals to the power broker elite is based on a monitoring of their performance in influencing the debate over management of the fishery. The reality of the fishery is not so important here as the ability of would be brokers to present it in a manner which results in their enhanced prestige. This does have concrete results however, as data from the fishery can be fed into the power play and the performance of a broker in attaining his objectives can have a critical bearing on his successful admission. Logically then a broker will have an impact on the management of the fishery and this impact will in turn be a vitally important ingredient in subsequent power plays.

The question of who decides admission is an open one. To a large extent it is other power brokers, but a skilfull power broker draws strength from the breadth and depth of his non-power broker support. It is conceivable that power brokers might not recognise the existence or validity of such a power base. For instance, it could be argued that for a period Torngat distanced itself from potential power bases like the NMIA and LIA and yet at the same time was recognised in some quarters as being in effect another vehicle for first peoples and consequently was vested with a broader political power base and greater status than it perhaps deserved. The more probable situation however is one in which the would-be power broker gains recognition and support from a sector of the community, but is not admitted into the power brokerage elite. The extent to which the would-be power broker can maintain his status in the eyes of his supporters without being able to produce concrete achievements toward his objectives may in effect be an initiation rite - a necessary test to attain power brokerage status for the would be power broker who does not gain automatic entry to the elite. (Automatic entry may come purely through

being in a particular position acknowledged as having significant power).

- iv) An acquisition of sovereignty system. Three root definitions lent themselves to the description of being sovereignty acquiring.

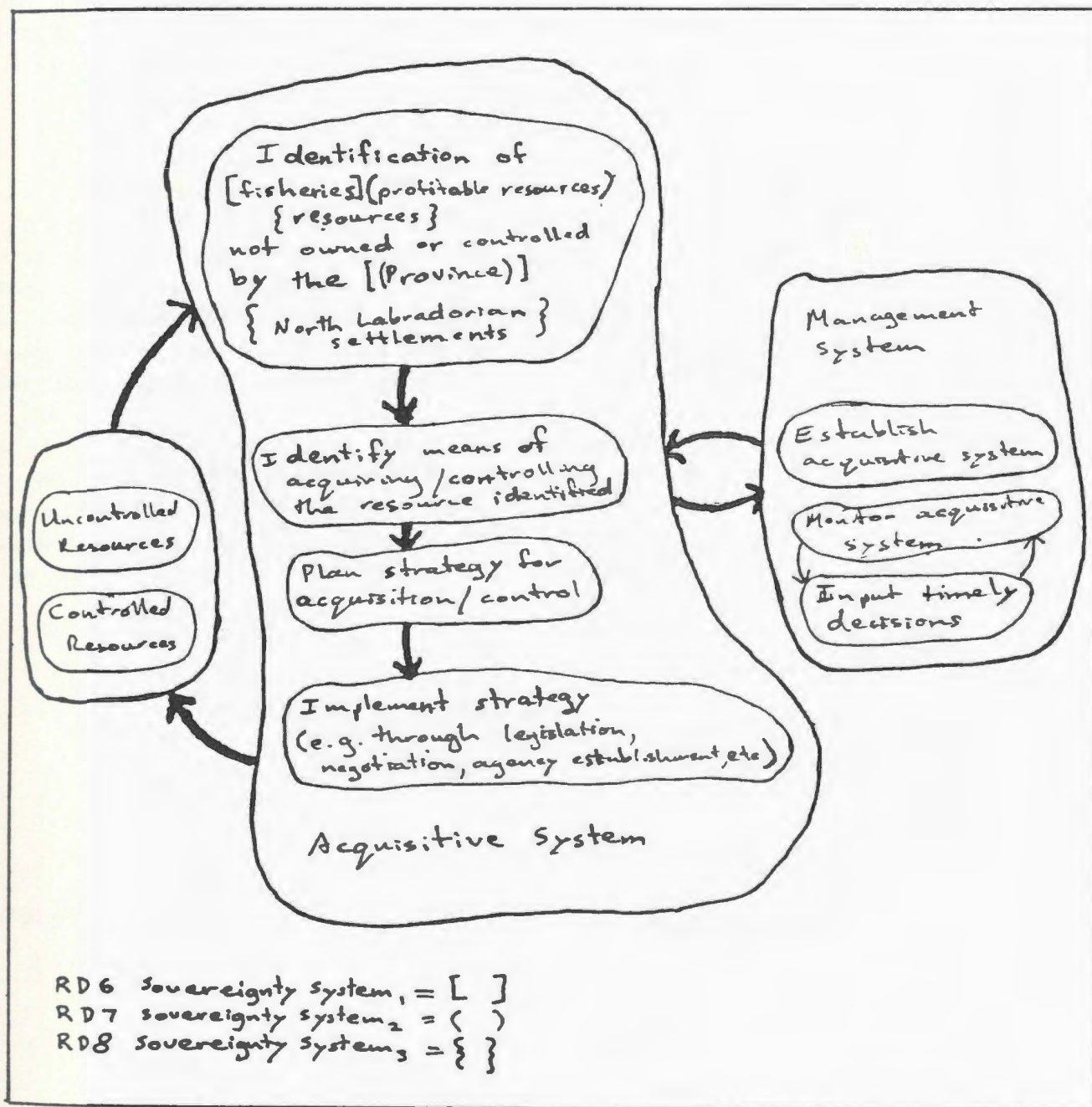
RD6: "A Province of Newfoundland and Labrador owned system of fisheries resource acquisition and control for the benefit of the Province."

RD7: "A Province of Newfoundland and Labrador owned system for potentially profitable resource acquisition and control for the benefit of the Province."

RD8: "A North Labrador settlement owned system for the acquisition and control of resources for the benefit of settlement residents."

The variation between these definitions is slight and consequently all three have been illustrated in the same conceptual model (figure 5.5). Between RD6 and RD7 the difference is the boundedness of the problem area. In RD6 sovereignty

Figure 5.5: Sovereignty systems models, RD6, 7, 8



is sought over the fisheries resource only, in RD7 over potentially profitable resources. RD8 however alters the boundary again. Potential profitability is no longer required, the existence of a resource is all that is necessary to include it within the system. In addition, the owner is no longer the Province but has been narrowed quite specifically. It should also not be taken that there is not a higher order model available. A model could be constructed to depict the Labrador Fishery as a system resolving sovereignty conflicts. However, this did not appear as fruitful an RD as ones which more clearly identified different logical constructs of key sovereignty actors.

Looking at the model itself, the components are the resources - these are essentially acted upon; recognition of their existence starts the ball rolling. Recognition is more sharply defined in keeping with the RD as a proactive process - identification. Identification however is only the first step within a set of activities I have labelled "the acquisitive system". Other steps, in logical order, include identifying means, planning strategy and implementing a strategy for control. To ensure the acquisitive system is functioning

effectively however, the owners will have set up a management system.

The underlying theme is that sovereignty is in itself good for those for whom sovereignty is claimed. The important distinction between this model and that of the power brokerage system is that the individual power brokers are non-important. A power broker may use sovereignty arguments to further his/her ambitions; the objective of sovereignty in itself implies power - but the brokerage aspect is not essential for the sovereignty system. Consequently the Province and the settlements are seen as individual actors indivisible in their own right. In addition, the goal sought clearly differs; in one it is power (and power may be gained through bargaining away sovereignty) and in the other it is an uncompromising sovereignty.

An interesting point is that sovereignty for the first peoples of North Labrador only did not emerge from the research. In the context of the fishery as a whole, settler rights were clearly recognised. Consequently, for the North Labrador region as a whole the settlement's search for

control in effect became a movement striving for sovereign rights. The distinction was more a livyer/floater distinction, with Provincial sovereignty being seen as a threat to livyer sovereignty.

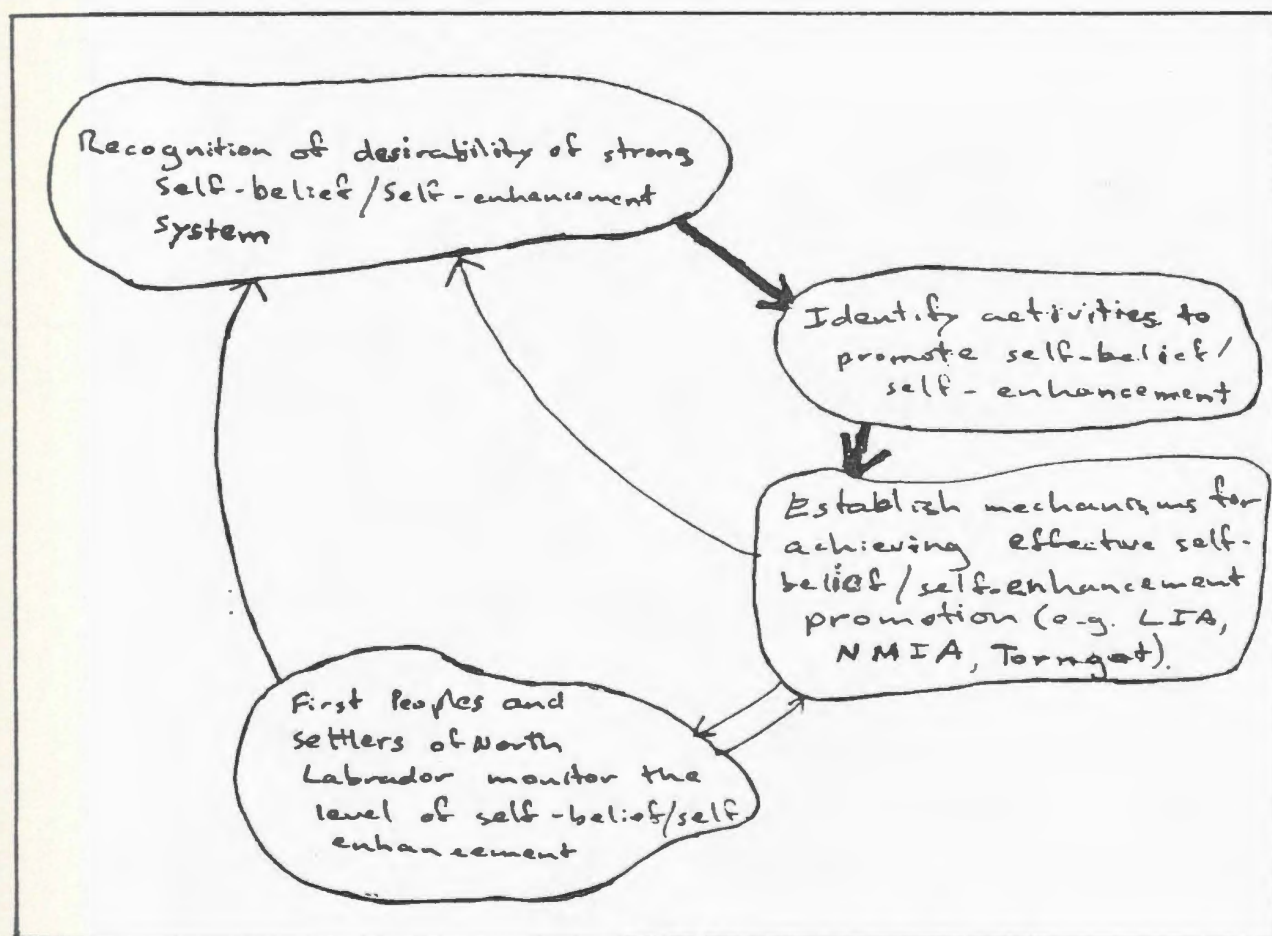
The federal government also did not emerge as seeking to acquire sovereign rights. Rather it seemed these rights were assumed and not actively sought. In a root definition where the fishery was a system achieving conflict resolution between competing sovereign rights, the federal involvement would have been significant. However, this root definition did not emerge from the research.

v) The emancipatory system.

RD9: "A first-peoples and settler owned system of self-belief maintenance and self-enrichment through enabling its owners to undertake a set of activities that support this end."

Whereas the sovereignty system focussed on the attainment of sovereignty as an end in itself, the emancipatory system (figure 5.6) sidelines issues

Figure 5.6: Emancipatory system model, RD9



of sovereignty and focusses on the attainment of freedom in all senses. In this viewpoint the fishery is seen as an enabling mechanism, providing opportunities for political economic, social and cultural emancipation. The participation of non-owners in the system (e.g. Newfoundland Islanders) is seen as providing the skills, capital and conflicts essential for the development of self-belief and self-enrichment systems.

A key component is a recognition of the attainment of self-belief/enrichment as a worthwhile, desirable end and consequently the need to establish a system which achieves this. Once the activities and mechanisms to achieve this have been established, a major activity is to promote recognition of the goal amongst relevant people (federal and provincial government, academics, business people and, of course, the first peoples and settlers). This in turn requires a feedback monitoring system. This system has not been developed in detail in the conceptual model, but is envisaged as being feedback from the native peoples and settlers. This may be fed through a variety of channels - direct to the enabling mechanisms or to

those within whom recognition of the desirability of a self-belief/enrichment system is sought.

It is important to note that the objective measurable output of the system - fish, additional time in traditional camps, etc. - is only important in so far as it contributes to the subjective outcome, self-belief/enrichment for first peoples and settlers.

vi) A craftsperson system.

RD10: "A community-owned system attempting to maintain desired trappings and benefits of traditional fishing industry lifestyles in the region in the context of economic and technological changes which could result in the termination of those lifestyles."

The key concept underlying this RD is that of resistance. This root definition again parallels that of Cornock (ibid:106-112) and the conceptual model is based on his craft-system model (ibid:111). In Cornock's case, however, his tacit model identified a minority population which formed a community of craftsmen resisting the normative

pressures of a majority, the majority being defined as the population which subscribed to "a body of values associated with industrial processes that are material, progressive and equalitarian" (ibid:106-108). The resisters, on the other hand, "assert instead an independent set of values, in which a premium is placed on individuality, craft technology and any means of reflecting the natural (as opposed to the artificial)".

In the context of the Labrador fishery the basis for distinction is substantially different. Traditional uses of the fishery have incorporated distant water fleets (whether from Europe or the Island floaters is irrelevant), coupled with scattered independent or small community based inshore fisheries. This has resulted in distinctive lifestyles which accord with the characterisation of people being "floaters" or at "summer camp" or "fishing camp". The normative pressure being resisted is essentially economic. Technological changes have been incorporated into the lifestyles of both fisher types without substantive alteration to those lifestyles. However, economic pressures have greatly affected these lifestyles, with settlements being relocated and government policies

on unemployment insurance substantially affecting inshore fishermen.

There is also no majority/minority resistance factor within the region. Both traditional fisher lifestyles are to some degree in conflict one with another, however they are similarly resistant to pressures imposed from the "outside" to change their lifestyles.

While the conceptual model (figure 5.7) would be better labelled a "tradition maintenance system", for ease of comparison Cornock's original name has been retained at this stage.

vii) Modern Living Standards system.

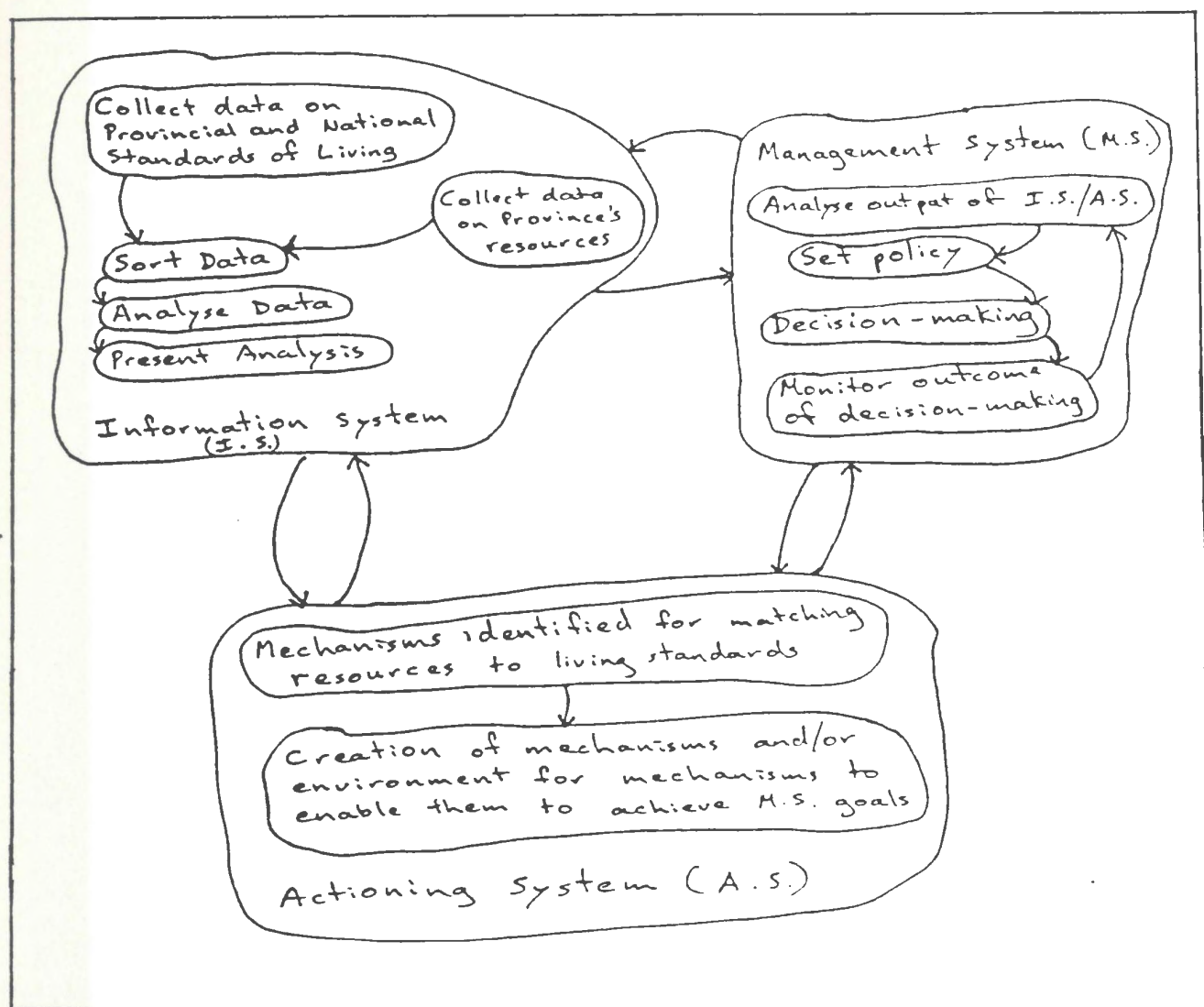
RD11: "A Province of Newfoundland and Labrador owned system for the promotion of standards of living in the Province which would equate at least with those enjoyed by the average Canadian".

This RD, modelled in figure 5.8, differs substantially from that of RD9, although the theme of lifestyle would seem to be common to both. In

Figure 5.7: Craftsperson system model, RD10



Figure 5.8: Modern living standards system model, RD11



fact during its formation the RD11 conceptual model was for a period labelled the Modern Lifestyle System. The difference between the two models however reflects the substantive differences in the RDs each represents. RD9 is drawn from traditional people of the region resisting modern economic pressures, whereas RD11 defines a state imposing its will on the region's people. In a sense then, the two definitions may be seen as diametrically opposed. This is ameliorated however by the distinction between life style and living standards. The former represents an experiential, subjective state of existence which may not be quantifiable; the latter, as its name suggests, is focussed on standards and these are generally quantifiable and readily comparable because of their sharper definition. It follows therefore that if the living standards sought harmonised with the lifestyle sought, then RDs 9 and 11 would not be diametrically opposed in outcome, merely in operation.

The RD11 conceptual model is largely self-explanatory. It is a three component system: (1) an Information System (IS) which presents an analysis of data collected on existing Newfoundland living standards with those of the average Canadian;

(2) a Management System, which analyses the data input from the IS and Actioning System (AS), sets policies, makes decisions and monitors the outcome of these; and (3) an Actioning System which identifies suitable mechanisms for matching resources to living standards and creates the mechanism and/or an appropriate environment for the desired mechanism to flourish.

In the context of this system, the fishery is seen as embodying parts (or possibly all) of the three components through which the Province seeks to attain desired living standards. Note that it is the Province as a whole that inputs to the system and receives the system's output. There is no automatic spatial or other differentiation within the Province, however policies may be made within the system which do differentiate. For example, a policy may be established by the MS whereby native people of Labrador are treated differently from non-natives as a means of matching resources to living standard objectives. It might for instance have been perceived by the Province that Provincial native people were obtaining a substantially lower income than the average Newfoundlander, who may in turn have a lower income - due in part to the poor

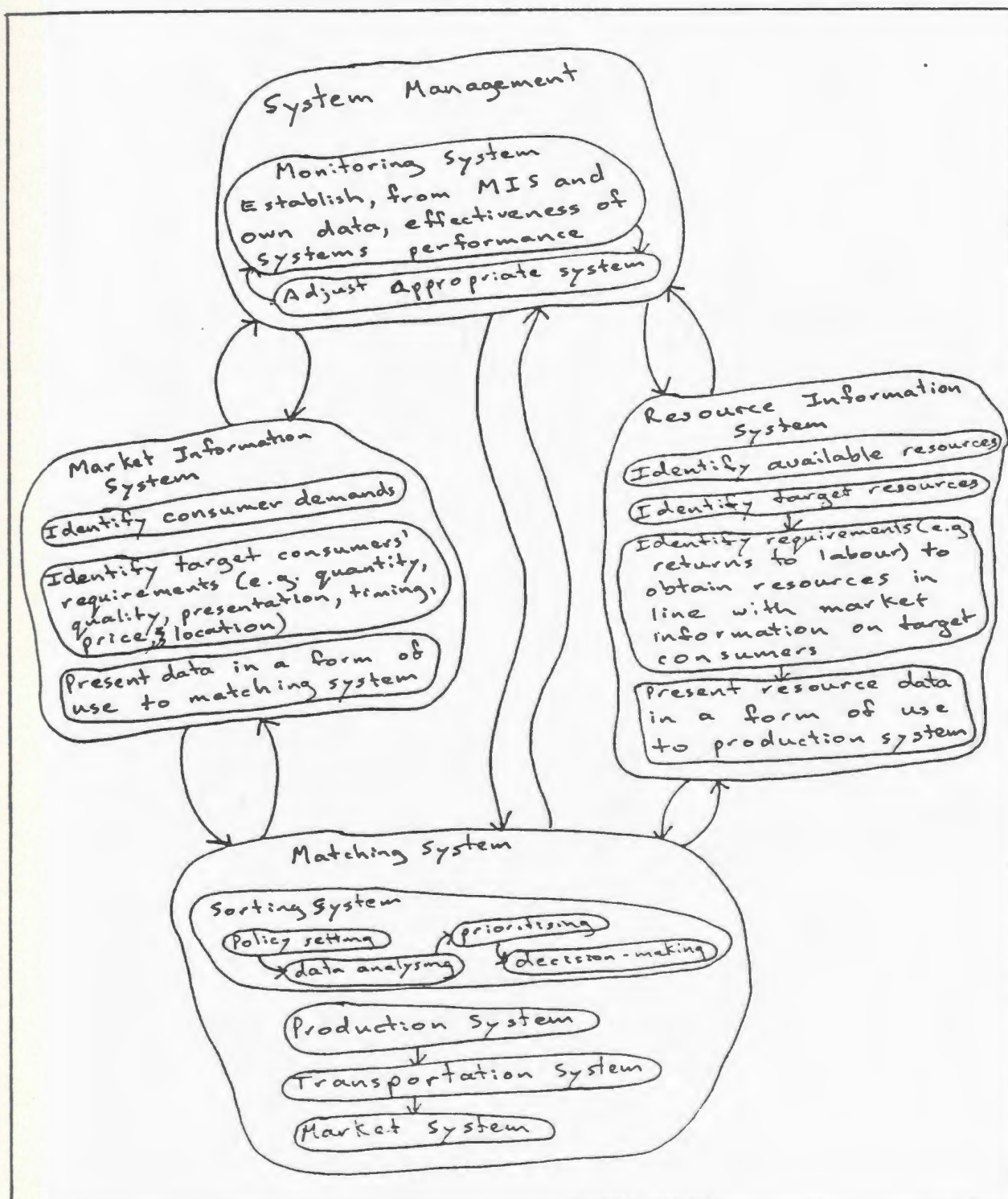
performance of the native people - than other Canadians. The system might then consider a policy of affirmative action for native peoples would best improve average Newfoundland living standards.

viii) The fishery as a commercial market matching system.

RD12: "A system which encourages the production of particular fish products at a quantity, quality and price in line with buyers' requirements, while also meeting Canadian producers' minimum return requirements."

To some people the Labrador fishery is simply a system to match market demand with production at a level which ensures both production and the market are maintained. The model (figure 5.9) illustrating this RD comprises two distinct information systems (market and resource) linked by a matching system. The complex of these systems is monitored by the management systems through a monitoring system. In this model the matching system plays a key role and incorporates within it the components which manifest to the casual observer: the production system (e.g. fish plants, fisher fleets, etc.), the transportation system (e.g. collector boats), the

Figure 5.9: Commercial market matching system model



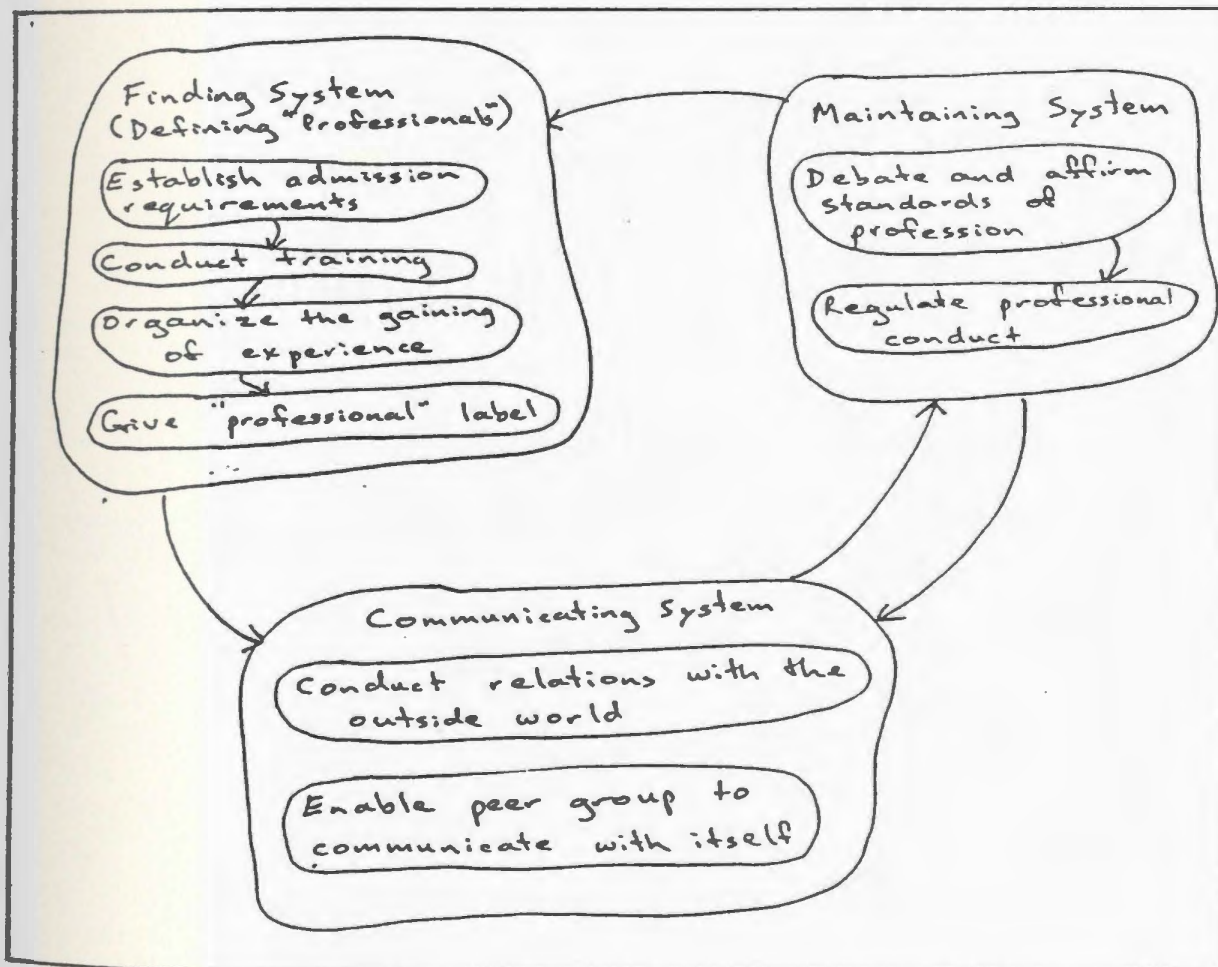
market system (e.g. promotion material, redistribution centres, wholesalers) and, most importantly, a sorting system. The role of the sorting system is critical. It sorts and matches and prioritises the data from the two information systems in an iterative fashion. The outcome of this sorting process is a matching of production to market which considers lifestyle, living standards, sovereignty, etc. only in terms of their impact (potential) on resource procurement for markets. In a sense this model provides the best approximation (arising from the research) of a system within which centre/periphery and Marxist analysts might find the most grist for their mills.

ix) The fishery as a profession.

RD13: "A system which skills people in particular techniques to enable the extraction and redistribution of a resource to a professional standard."

The model (figure 5.10) of this RD again is drawn from and parallels Cornock's art as a profession root definition and model (ibid:115-117). The three key components are: a system to define a

Figure 5.10: Profession system model, RD13



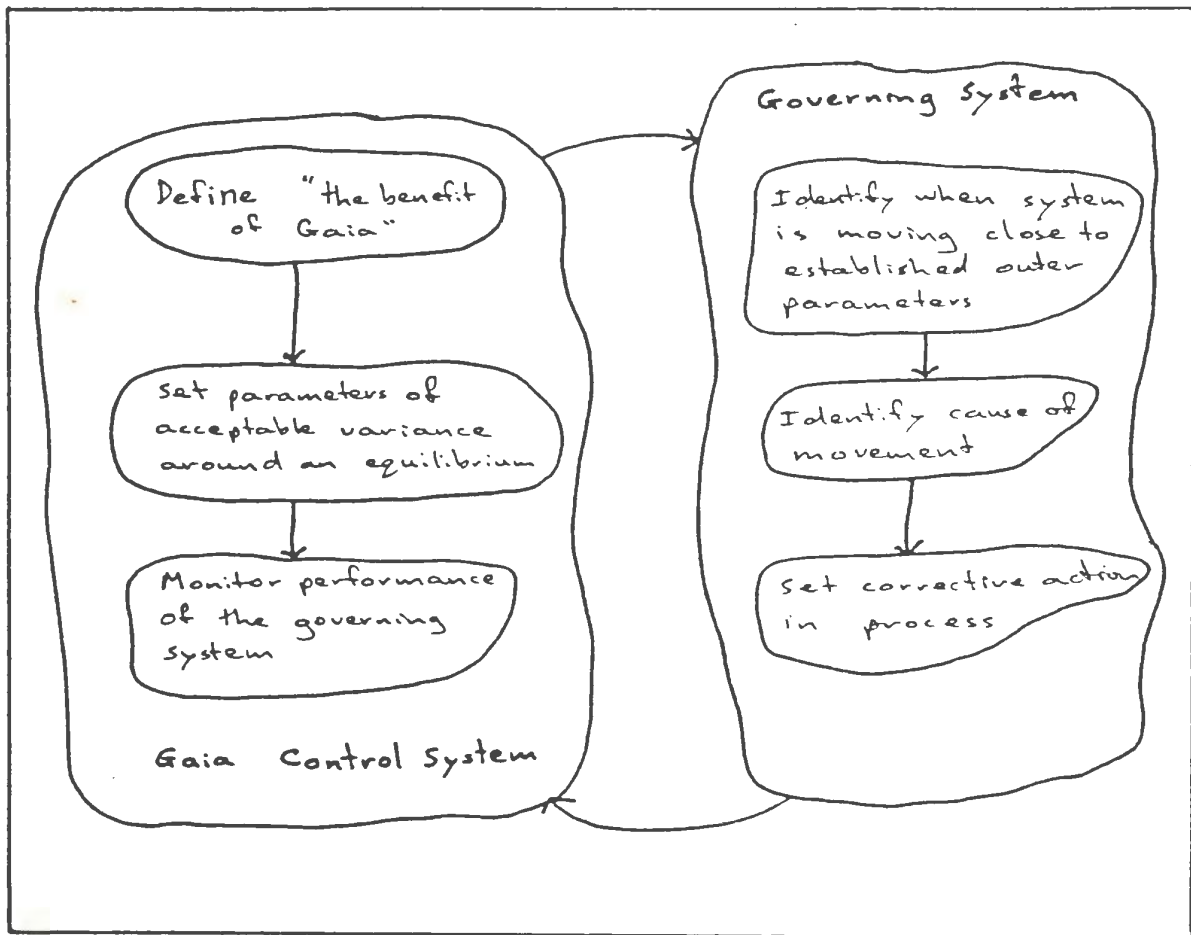
professional fisher, processor, etc.; a system to enforce the standards and performance of members of the profession; and a system for communicating within the peer group and to the outside world. Emphasis is placed on the individual and on the standards of the profession. In the fishery there are a number of different occupational groupings, some of which (e.g. fish processing) show a greater degree of professionalism than others (e.g. managers). The fishery as a whole however can be seen as groups of profession systems which are connected by the common "resource extraction" thread.

x) The fishery as an ecological system.

RD14: "A Gaia owned ecological system to generate and maintain an equilibrium between the biota of the region and other biota for the benefit of Gaia."

The Gaia system model (figure 5.11 is essentially a self-maintaining ecological system model which is derived from the theories of Lovelock (1979). Surprisingly, because it does not appear to have been noted in previous soft-systems work,

Figure 5.11: Gaia system model, RD14



comments which led to the generation of a Gaia root definition were recorded frequently during the research. Clear causal relationships were drawn a number of times between the relationship of human population growth rates and/or distribution and the environmental and policy and management responses. These were sufficient to suggest a degree of fatalism which might be construed as indicative of a non-directive, self-maintaining Gaia system. The close relationship of the non-human created environment to the habitation strategies of humans is perhaps more self-evident in Labrador than in many other climes. This may have contributed to the identification of a Gaia system. In looking at the model it is important to note that while we may speculate on the definition of Gaia's "benefit", human research is as yet too fresh in this area to provide established benefit defining criteria. It should also be noted that both environmental determinism and possibilism are compatible with the model. The difficulties in analyses posed by such a model are considered beyond the scope of the present research. Allusions will be made from time to time in this thesis to the Gaia model; however its main value will likely be to serve as a reminder of the anthropomorphism of the other models.

5.4 Macro-model Comparisons

Description of the above models has been brief. For the present, this section will focus on an interrogation and comparison of the models with a view to clarifying some structure and process aspects of each and the implications of each to the fishery and Torngat.

Table 5.1 lists the key questions asked of the models during the interrogation phase. One of the more important aspects revealed was that several of the systems may coexist. The crux of evaluating the models is Popper's falsificationism, but if more than one model can coexist the key may be to structure the testing of the models in hierarchical order. In other words, some of the models may be mutually exclusive and some may nest. This latter nesting feature of supra institutional models was noted by Cornock, who explored it with regard to his Profession and Art-decor systems. In the current context, to narrow the field to a manageable size the particular structure we are seeking must be able to include Torngat. This suggests sovereignty systems 1 and 2 should be removed from contention.

Only two of the systems (Gaia and Profession) were able to coexist with all other systems. Testing of these

Table 5.1 List of questions used to interrogate the
macro models and root definitions

1. Who has control over the fishery resources?
2. What is the benefit distribution ethic?
3. Does the system reconcile the objectives of local people and the state?
4. What are the main objectives of the systems?
5. Does the system of necessity provide for the survival of the resource base?
6. Could a local people's fish producers' co-operative fit in the conceptual model?
7. Which, if any, of the other systems can the system exist with simultaneously (i.e. inputs and outputs are not necessarily incompatible)?

systems may be neither profitable or relevant. If one was to test each individual system, the system to start with would be the Emancipation system. However, the key to understanding the use of Checkland's methodology is to recognise that the perceived systems may or may not exist. Consequently, mutual exclusiveness does not mean that the "facts" of the real world system exclusively relate to one root definition. What the methodology does imply is that the same data may be interpreted to fit a wide range of conceptual models, some of which will be drawn from mutually exclusive root definitions.

The utility of the methodology in the supra-institutional situation is that it clarifies thinking on the subject - it helps to structure the debate for future action. By clarifying the key components required for a system to actualise a root definition, the methodology renders transparent some of the logical outcomes of the root definitions. In other words, it enables contradictions that may have been hidden in the rhetoric (and possibly the thoughts) of people discussing the fishery to be made explicit. This in turn provides a framework for an intervention to improve the situation. In the next chapter we will consider Torngat from the perspective of it being an

intervention. For the moment, however, let us focus on the macro-models, the fishery as a whole.

Looking first at the conceptual models of the vocational systems, it could be argued that only RD2 is genuinely applicable. That the fishery provides employment for fishers is almost tautological, as fishers must be defined by their occupation. The distinction in this case is really that between formal employment and those who fish but are not recognised formally, or who would fish if given the opportunity.

There is strong evidence to support RD2. By all counts the Province's fish plants are running at a loss and will continue to do so for the foreseeable future. The main purpose of maintaining them appears to most to be to ensure a reliable selling point for inshore fishers and a source of employment for local people. That it is for provincial fishers as opposed to Labradorians is also clear from the encouragement of provincial fishing ahead of other provinces and other countries. If the focus was to benefit Labradorians then one would expect encouragement of Labradorians ahead of provincial fishers (which is only true for char and salmon).

Those who would be fishers stimulate the provision of employment through pressuring the state to input employment opportunities. When or where the provincial fish plants are not open, firms (e.g. Torngat) put in the employment opportunities. Citizen motivation is seemingly fairly easy to achieve as most of the Province's citizens (Innu excluded) are fishing oriented. To motivate them to provide employment opportunities may be more difficult however if the employment is to be through private firms as opposed to the Province or State.

Where the model falls down, however, is in identifying fishers in relative need of employment. The sorting mechanism here appears to be one of economics. The fishers in relative need of employment would seemingly be those who are least able to obtain it without assistance. The fishers who are based in Labrador appear the most disadvantaged and the limitations placed on fishing salmon and char through licences is designed to give them the best access to employment in the fishery.

It is fairly easy to see that this system functions best when coexisting with a system like the professional system. In such a system admission to the category of fisher (or fish processor) requires achievement of a

particular level of skill and approach/attitude. This essentially provides a sorting system to enable society to identify those fishers who deserve employment through the vocation system. The hypothesis is that the fisher who sees fishing as a vocation will pursue it with sufficient skill and dedication to become a fisher as defined by the professional system.

This, however, requires a fairly broad setting of standards by the professional system. Should the professional system be captured by a power broking system then conceivably the standards set might reflect those of the power-brokerage elite. Thus when the professional system fits with the vocational system defined by RD2, it must be governed by democratic decision-making.

Other important points to be taken from the vocation/employment system are that sovereignty and ecological matters are significant. Control of the resources must be seen to be with the province, otherwise the fishers who benefit would be primarily those of other disadvantaged groups as determined by other communities. To take an extreme, it could be argued that were Ontario to own the resource the government of that province might see the disadvantaged fishers as being Ontario professional sport fishermen. Consequently the money

being put into fish plants might be diverted into providing cheap airfares for flying sport fishermen to key Labrador fishing rivers. Similarly, if owned by the Danes, the equivalent funds might focus on providing employment for Danish fishers who the Danish population considered were disadvantaged.

Ecologically, ample evidence has been presented to demonstrate the impact of humans on the North Labrador environment. The role of the environment on North Labrador fishers has also been elaborated. It can be seen that damage is occurring to the environment through the concentration of population centres. This however has resulted in humans imposing structures and regulations which attempt to counter-balance these problems. The return of fisher employment to North of Nain and the return of a floater fleet in North Labrador, reflect the employment opportunities and constraints (e.g. overfishing in Nain area) of the environment. Unfortunately too little is known about the North Labrador environment in the context of the Gaia hypothesis to determine the extent to which the employment of fishers affects Gaia, or vice versa.

That the fishery can also be seen in a broader sense (as defined by RD1) and a narrower one (RD3) has been

explained earlier. It is important to recognise the fundamental differences in otherwise identical systems and to note that the same "real" world situations appear able to be explained by systems which contain substantive differences. In both RD1 and RD3 the fishery becomes a prop to be used to obtain support and to support fishers or North Labrador first peoples respectively.

To obtain support it is held up as an industry which the "industrious" fishers and North Labradorian first peoples would exploit more ably and at less cost to the country than alternatives "if only" there was more support. The type of support supplied varies, but includes access to health and welfare, transportation, fish plants, religious support, schools, training, aesthetic values, information and communication services, police and other regulatory enforcement officers, ice machines and cool storage, wharves and slips, and unemployment insurance. RD3 differs only in that it narrows the target group substantially, thereby targeting special assistance which may be forthcoming from private or state sectors (e.g. through the Federal Department of Northern and Indian Affairs).

It is interesting to note that if VS1 and VS3 could exist at the same time, then friction would occur through

the overlap of the two target sets. Not all North Labrador first peoples are fishers, but some are, and vice versa. Consequently those who might belong in both groups may have difficulty determining which group they prefer to identify with and whichever group they chose it could be expected that other members of the non-chosen group might feel at least piqued at the apparent disloyalty to them. The logical response of members in the overlap is to play a win-win game, trying to ensure both groups' goals are in harmony so that they do not run the risk of losing and to have the potential of accumulating greater benefits through gaining those of each group.

Key to this is the question of co-existence of the two systems. My argument is that they cannot coexist successfully because their transformation process is fundamentally altered by the nature of the different target groups. While it might be suggested that in the context of a model of the fishery, RD3 has a weak case for existence, due to the long presence of non-first people, my assessment is that it can exist. Those people who proffered the view that the fishery was for the benefit of first peoples noted that by themselves the first peoples would not be sufficient to maintain a fishery which was always going to be a money losing

venture. It requires the presence of non-first peoples to generate a sufficiently broad base for the first peoples to gain the attention needed to get the support they seek. The problem thus becomes one of whether the two target groups can successfully present the fishery as a tool for their joint ends; and as one of the fundamental questions which the first peoples are grappling with is sovereignty, this cannot be done unless the fishers accept first peoples sovereignty. This they cannot do because the system defined by RD1 requires that they are seeking support for fishers. This would include recognition of fishers' rights to the resource, which contravenes the first peoples' rights. A compromise must logically entail relinquishment of one or other of the RDs.

That sovereignty should loom so large in these models and in this research as a whole has been one of the surprising features of the research. I have discussed the three vocational systems because it seems to me they express the RDs most commonly found in discussions of the North Labrador fishery and because of their similar systemic structures. Of the remaining RDs I will focus only on those which struck me with the most surprise and therefore offer a fresher perspective, a learning perspective. These are the emancipatory,

craftsperson, power broker and market systems. While the last was not a surprise in itself, that the only systems it is not able to coexist with are the emancipatory and craftsperson systems makes it worthy of some closer attention.

The power broker system (RD5) has been well defined earlier and I will not discuss it in much detail here, except to point to two of its facets as relevant for considering the other systems and root definitions. Firstly, sovereignty is relevant only as a byproduct or as a factor for providing automatic entry to the elite. In theory, the sovereignty of the resource could be in anyone's hands, it is the capacity to influence others which is most significant and the holding of sovereignty does not, in this model, mean that one is able to more than superficially influence people. In the Labrador context the following power brokers were identified: Members of the Legislative Assembly of Newfoundland, Cabinet ministers of the Canadian Parliament, settlement leaders/representatives, the managers of associations/unions/co-operatives (e.g. the NFFAWU, NMIA, LIA and Torngat) and one or two provincial officials (e.g. the Registrar of Co-operatives).

Secondly, the power broker system does not support any particular ideology - it is entirely pragmatic and designed to have as its prime beneficiaries the individual power brokers. Thus there is no necessary requirement to maintain the fishery resource, to provide social security, etc., except as to the extent these reflect the ideologies/philosophies of individual power brokers. The byproduct (e.g. employment) of the power system can be seen as tokens of the particular power holders who control the flow of those particular tokens. The status of the individual power broker can be seen as measured by his control of tokens.

That the power broker system does not coexist with the emancipatory system should by now be readily apparent. The power broker system relies on a hierarchical structuring of power; the emancipatory system seeks an egalitarian distribution with the benefits accruing to the North Labrador people. The two outcomes are structurally incompatible.

The relationship of the power broker system with the craftsperson system is less clear cut. The craftsperson system's prime beneficiary is an amorphous mass of resistors. The power broker system reflects an individualist energy. This distinction is furthered by

the pragmatic attitude toward what I have referred to as "tokens" by the power brokers. Some of the tokens would probably be referred to as "traditions" by the craftspeople and their desire to retain them would override a tokens approach.

5.5 Summary

This chapter has focussed on the fishery as a whole and has drawn attention to the elaboration in conceptual models of fourteen Root Definitions, which were identified as underlying the perceptions of people dealing with the fishery. To what extent these models represent the real world is considered largely irrelevant, although real world examples have been used in places to clarify the meaning of the text. What is important is the degree to which the models provide an insight into assessing the role of the Torngat Co-op. Further comment cannot be made on this until after the next chapter's discussion of root definitions of Torngat. However the general lessons of the macro/micro split when dealing with supra-institutional situations have been identified and some key comparisons between macro models made. These have identified the crucial role of sovereignty. In the next chapter micro models will be explored.

CHAPTER SIX

Models of the Torngat Fish Producers' Co-operative

6.1 Introduction

This chapter presents the relevant systems, root definitions and conceptual models of Torngat derived and constructed from the rich picture of the North Labrador fishery and Torngat. Recognition of the need for and basis of the micro-modelling of Torngat is discussed in the preceding chapter.

The methodology used to construct the micro-models is also identical to that used for constructing the macro-models and will not therefore be repeated here. One point however should be noted. In recognising the need for a macro-micro modelling split, I had initially believed that the micro-models would provide a much greater degree of definition to the model components. I had therefore, in the example given there, anticipated the following roles would emerge from the modelling of Torngat: a general manager, a researcher, a marketer, and expertise in financial, legal and technical fields. When I commenced the modelling process I found that such refinements were not necessary. Models could be produced

at a lower level which could be equally informative, might undertake the same constituent processes, but would not necessarily require those particular individuals. Whether such individuals were required would depend on the scale of the organisation and its resources, and even then the component roles might be achieved in a variety of ways. Specifying a general manager, a researcher and a marketer would be less appropriate than specifying an organisation which included management, research and marketing components. By acting in accord with the perceived resources of the organisation rather than focussing on the transformation processes, unnecessary rigidities might be imposed which would not assist the comparison of the conceptual models with the real world. Accordingly the micro-models are not as specific in defining "actors" as the preceding chapter has indicated was my expectation.

6.2 Micro Conceptual Models - The Torngat Fish Producers' Co-operative.

Each model is presented after a statement as to the relevant system and root definition. To avoid confusion I have short-handed descriptions of micro-models and their root definitions and identify them during text discussion by the Relevant System number. Macro-models

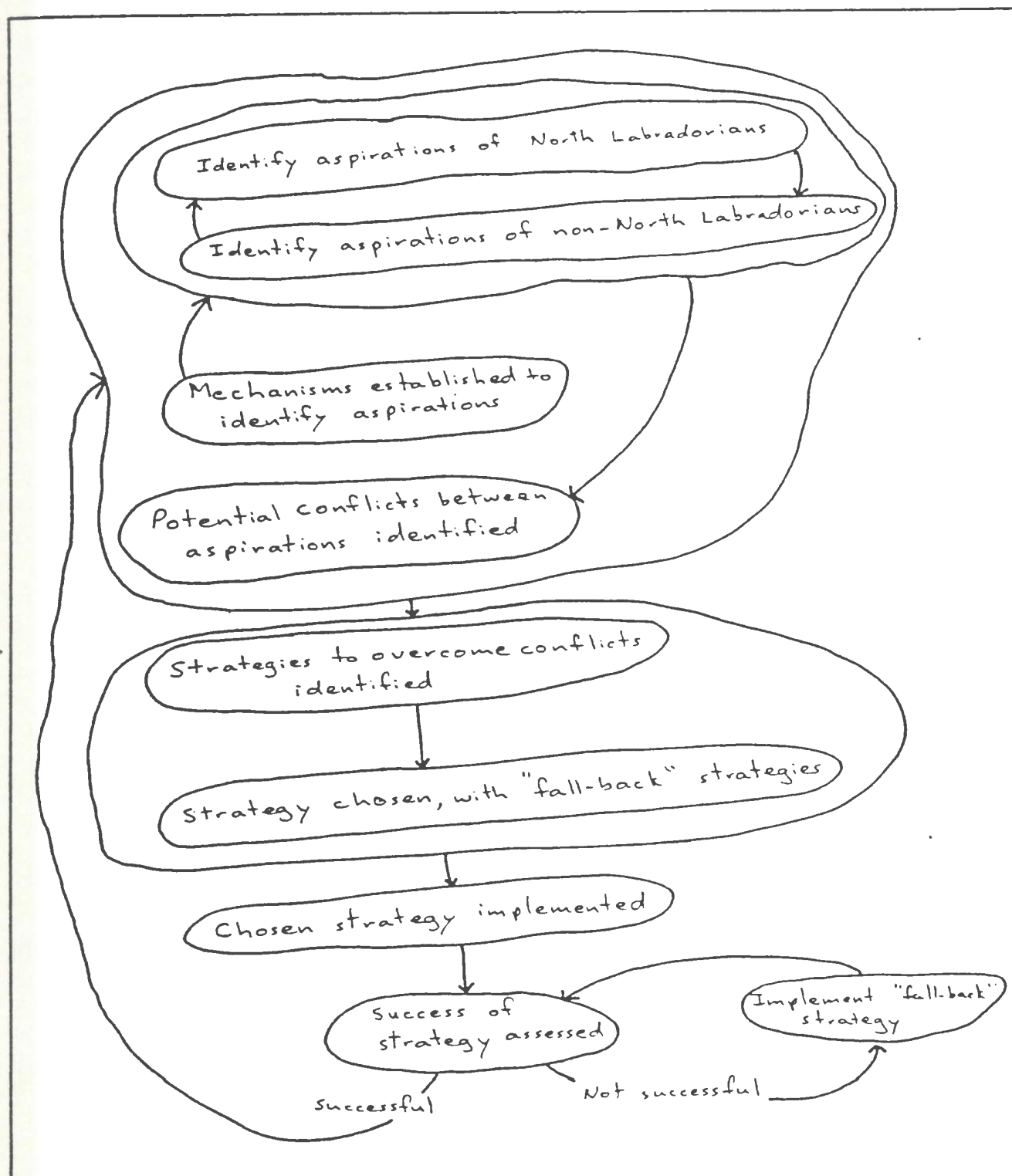
are identified by their Root Definition number. Thus the first micro-model is identified as RS1 and the first macro-model as RD1.

i) RS1: Torngat as a Conflict Mediating System.

Root Definition: A system in which Co-op members and employees engage in activities which balance North Labradorian aspirations of self-determination against those of individuals or groups with competing interests. The levels and types of activities are determined by the degree to which they maximise the fulfillment of North Labradorian self-determination within the limits considered acceptable by the major situation controllers (e.g., the Federal Government). Acceptability will reflect the effectiveness of pressure from those individuals or groups (e.g., non-North Labradorian fishers) who have interests which are directly affected by, or have an effect on, the co-op's activities.

RS1 tries to resolve conflict between the aspirations of North Labradorians and non-North Labradorians. The interchange between aspirations is recognised and both sides are seen as legitimate claimants (figure 6.1). The conflicts are

Figure 6.1: Conflict mediating system model, RS1



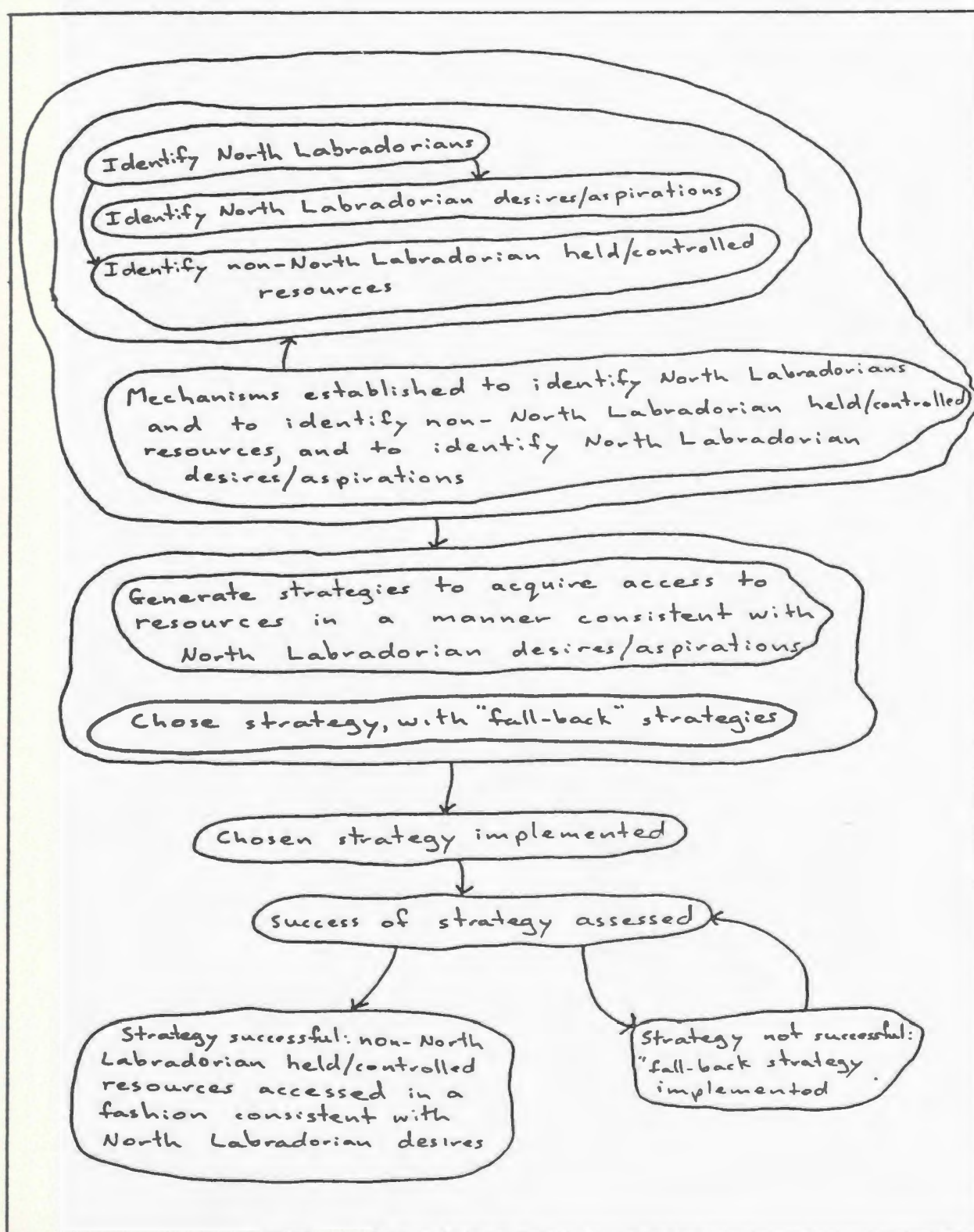
deliberately identified and strategies are identified (this may require some generation, but it may not - i.e. the system doesn't have to produce a strategy, but may adopt one, e.g. that of the Government or LIA or NMIA). It may also generate them. When the strategy has been successful the system continues to function to look at the new situation - i.e. it is not looking for a perfect solution.

- ii) RS2: Torngat as a Resource Access Acquisition System for North Labradorians.

Root Definition: A system for obtaining access to resources (e.g. financial, capital, environmental, expertise) for Labradorians. The methods used to access the resources must promote amongst Labradorians a greater desire for Labrador self-determination and resource control. The resources to which access is sought are currently held, and/or controlled by non-North Labrador-based organizations/individuals.

RS2 however, while similar (figure 6.2), has a specific purpose built into it which does not comment on the legitimacy of non-North Labradorian

Figure 6.2: Resource access acquisitioning system model, RS2



claimants. It is not concerned with identifying conflicts but with access to resources and the appropriate fashion of access - the strategies do not therefore recognise a continual feedback but a perfect end point. Resources may be very broadly defined, ranging from fish plants to markets, to cash (e.g. UI, welfare, banks, DNIA) to fishing time, to recognition of land claims. RS2 could be designed by RS1 as part of an RS1 strategy or all of it. RS1 could form part of an RS2 strategy, but could not form all of it, and would be a strategy without legitimacy in that RS1 requires recognition of both claimants whereas RS2 ignores one claimant (unless it suits it to do otherwise). It is also worth noting that strategies must be generated in RS2 because it is assumed they don't already exist. The temporal problem is apparent here also in that we could say Torngat was established to resolve a specific conflict, if we look at Torngat's genesis. Otherwise we could say Torngat has become purely RS2 and is no longer part of the RS1 system.

iii) RS3: Torngat as a Power Distributing System.

Root Definition: A North Labradorian system to further the political influence wielded by i) Alex

Saunders or ii) the Co-op or iii) an elite group of Goose Bay-based individuals.

RS3 is similar to RS2 in that no legitimacy is recognised for anyone (figure 6.3). The mechanisms for identifying individuals could perhaps be elaborated; however the focus on indiscriminate power gathering with no attention to the manner in which this occurs means that this could form only a mechanism of a very small part of a strategy of one of the other systems. Either RS1 or RS2 could be a strategy of RS3. The "tokens" could range from position, to cash, to fish plants, to air time on the radio.

iv) RS4: Torngat as a Core/Periphery Balancing System.

Root Definition: A system for balancing and rejuvenating at levels acceptable to the world system, the dynamism of exchanges of influence, goods, services, people, information, ideas and material resources between the peripheral area known as North Labrador and local Canadian core areas.

RS4 (figure 6.4) is theoretically based and may be an artificiality. Its purpose is creative and

Figure 6.3: Power distributing system model, RS3

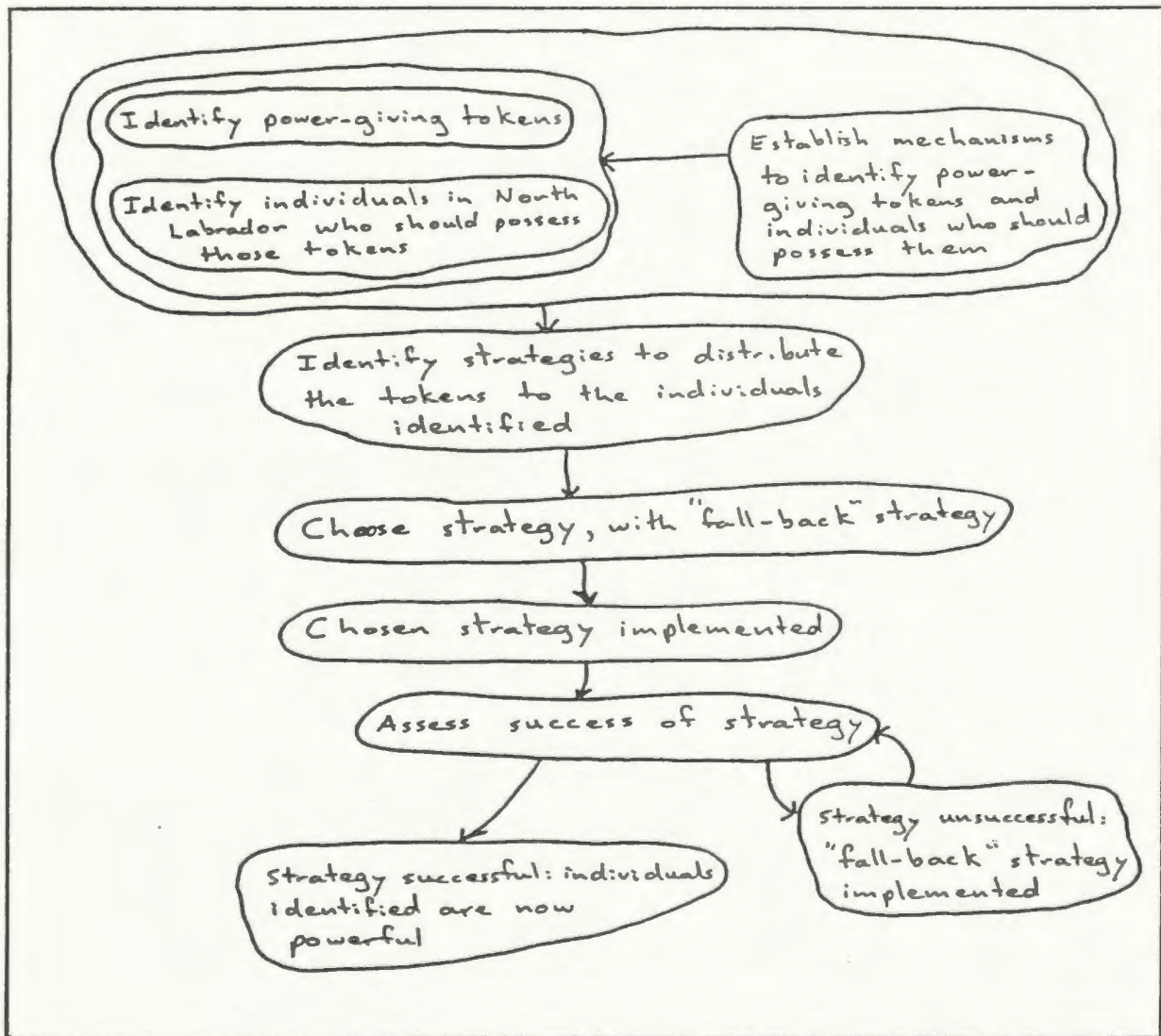
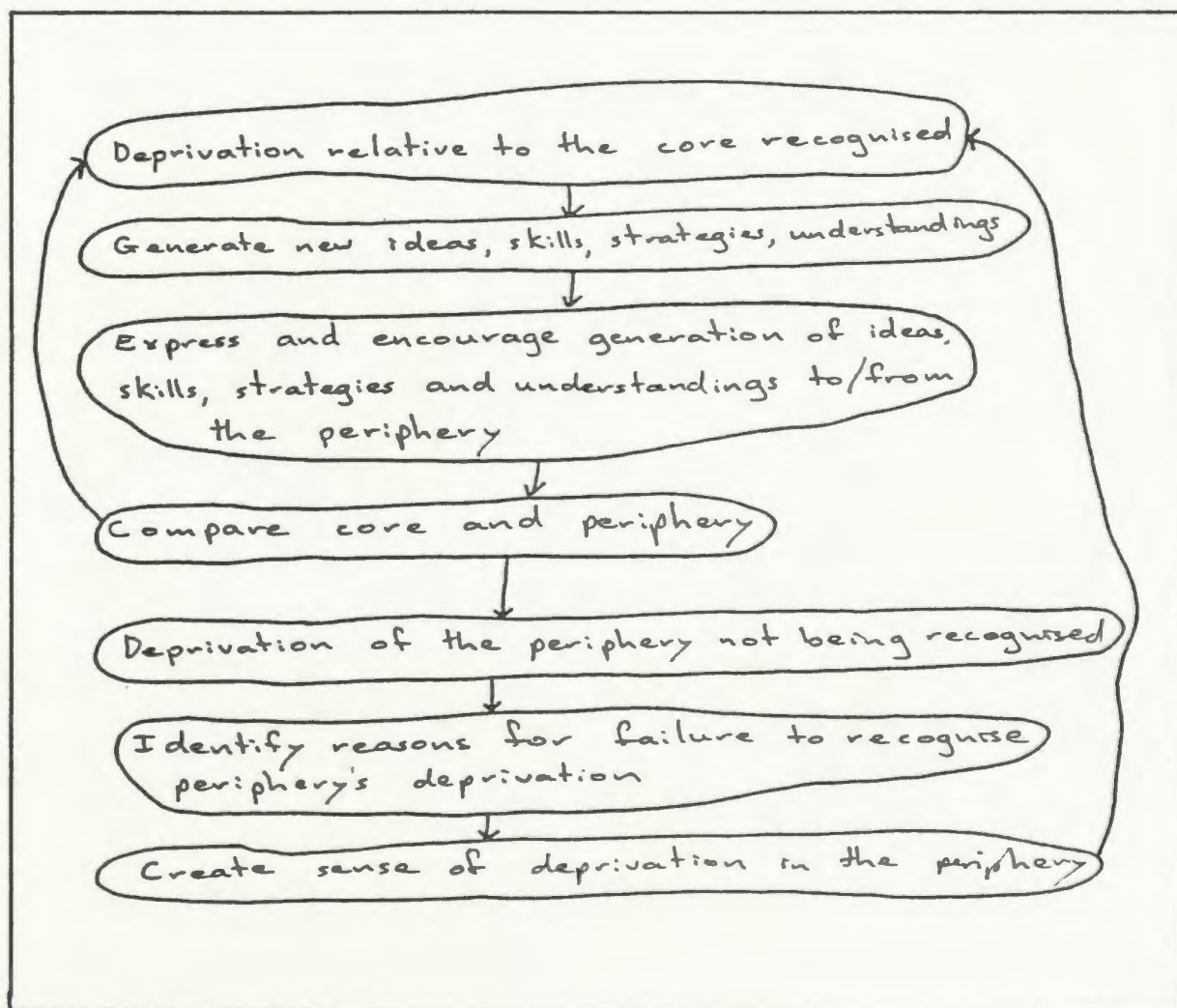


Figure 6.4: Core-periphery balancing system model, RS4



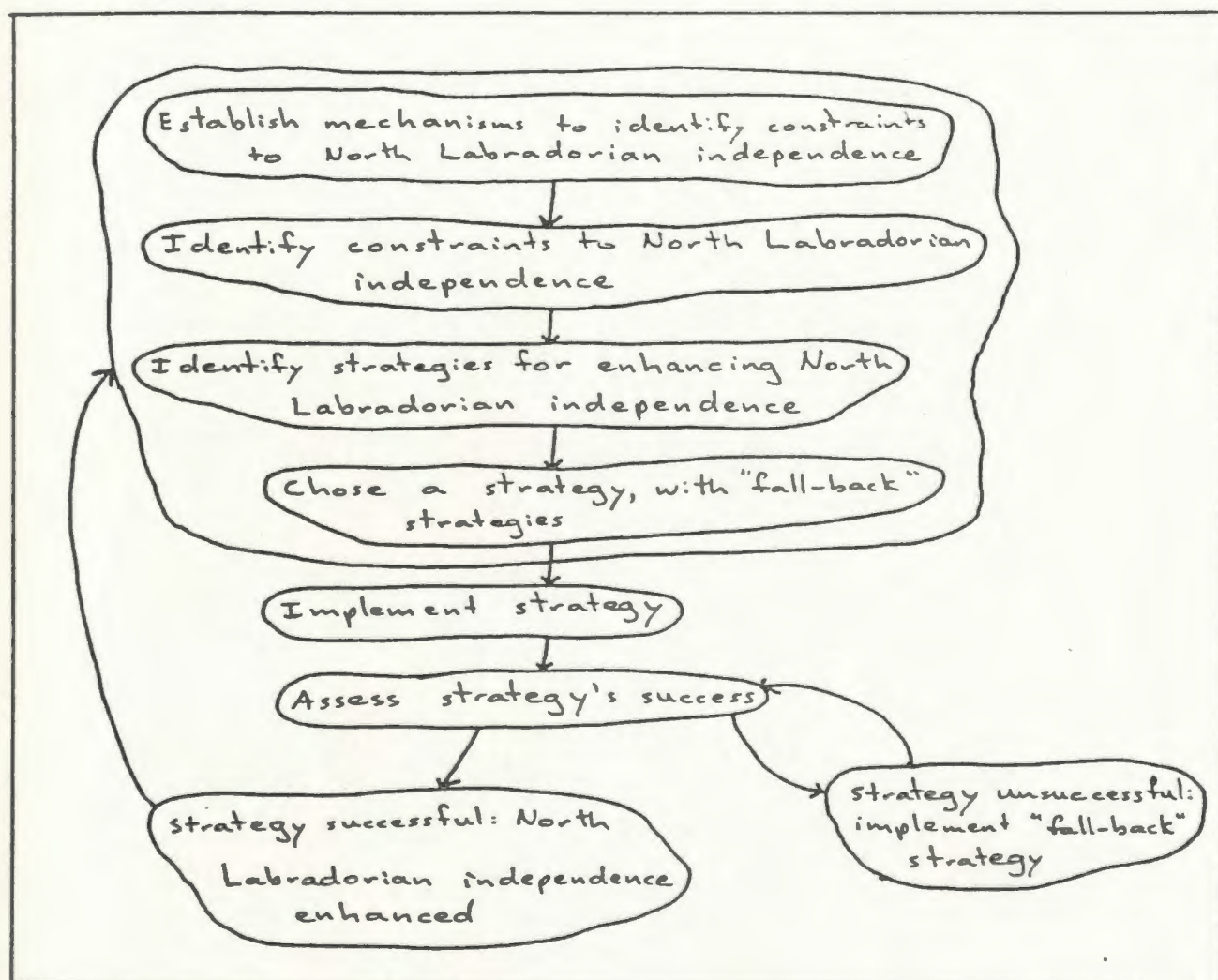
it arises from recognition of disparities and deprivation (of the periphery relative to the core). It is capable of coexisting with all three of the other RS as all of them address the same disparity. To coexist however they must be generative, they must encourage growth in the periphery, but in encouraging a sense of deprivation in the periphery they may feed material to the core to ensure the dynamic is maintained. As long as they contribute to the dynamic tension between core and periphery they are successful. The RS4 system recognises the legitimacy and desirability of a core and a periphery.

v) RS5: Torngat as an Independence Enhancing System.

Root Definition: A system engaged in activities generating an enhanced level of independence for North Labradorians.

RS5 (figure 6.5), like RS2, has a clearly defined outcome, but recognises like RS1 that this outcome can always be improved. The outcome differs from RS2 in that the manner in which this is achieved is not significant - only the outcome is important. It is not emancipatory either; it seeks

Figure 6.5: Independence enhancing system model, RS5



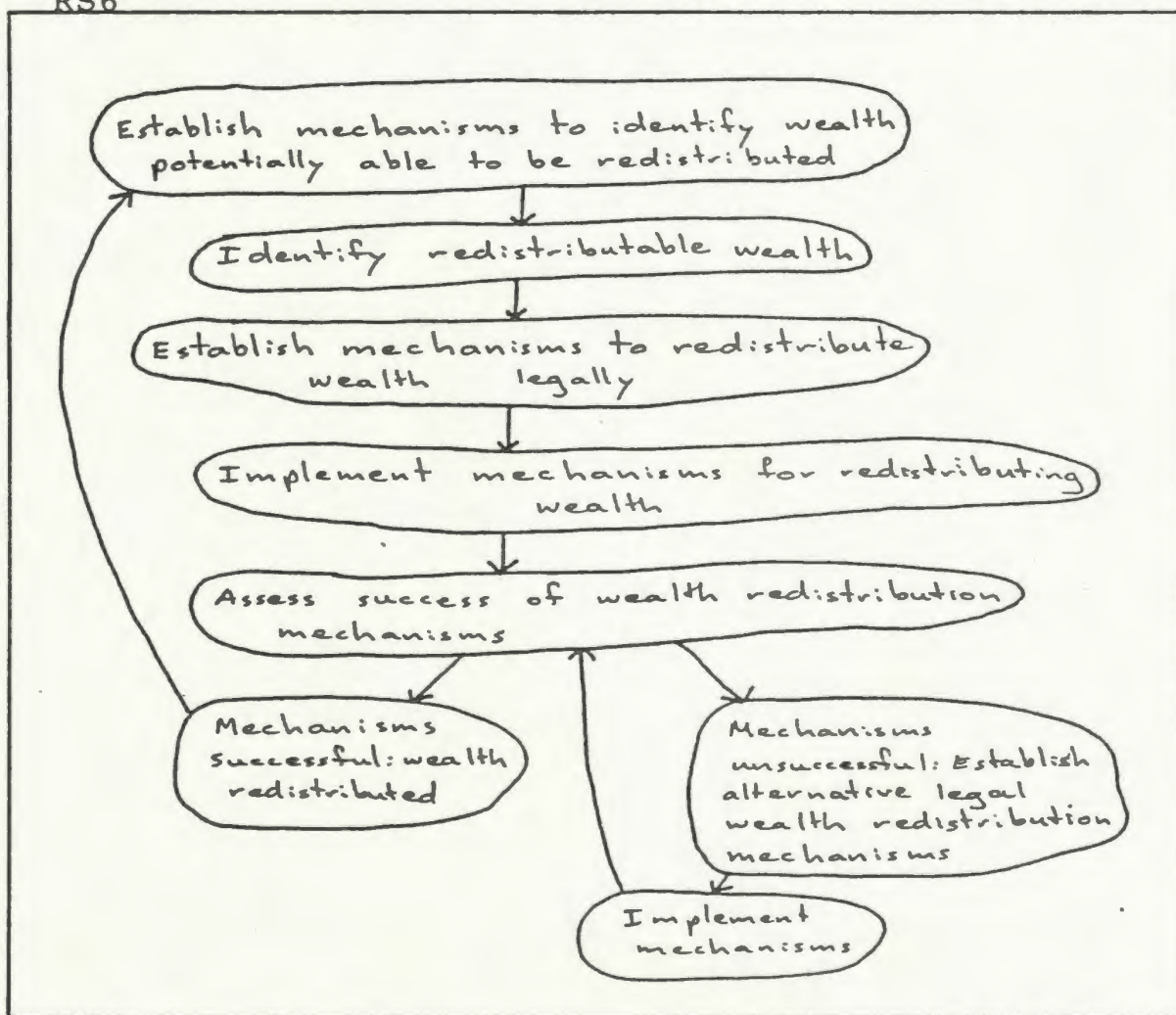
only independence; true emancipation would recognise also the validity of dependence (?). To the extent to which any of the other systems are compatible with its outcome, RS5 is not exclusive. RS1 is consequently the only incompatible system.

- vi) RS6: Torngat as a Legal, Wealth Redistributing System.

Root Definition: A Canadian system to generate wealth from, and redistribute wealth generated by the fishery resources of North Labrador and the taxpayers of Canada and Newfoundland. The wealth being generated and redistributed would be to North Labradorians as a substitute for Newfoundland-based businesses.

RS6 (figure 6.6) has no direction, it exists purely to redistribute wealth. Where those who receive the redistributed wealth are compatible with those of the other systems then this system may fit comfortably as a subsystem. It is mechanically oriented, having no other driving philosophy. The difficulty for this system is the identification of redistributable wealth and establishing mechanisms to achieve redistribution.

Figure 6.6: Wealth redistributing system model, RS6



vii) RS7: Torngat as a Shrimp Licence Acquisition System.

Root Definition: A system bringing activities of North Labradorians under a cohesive structure and then bringing the levels up to standards set by the Federal Government in order to gain a shrimp licence.

RS7 (figure 6.7), Torngat as a shrimp licence acquirer, is largely different from the other systems discussed in that the objective is clearly defined and the nature of the objective is such that there is only one source of provision of the key good, the shrimp licence. Accordingly, actual licence utilisation is separable from a licence allocating system. However it may be that the mechanism established to obtain the licence requires a utilisation system to exist under its performance standards. The feedback loop could be enlarged diagrammatically to illustrate either a full feedback or a monitoring system. Similarly the utilisation system could be expanded - neither adjustment however is required for the main focus of the Root Definition. In certain circumstances this system may be a subsystem of all other models.

Figure 6.7: Shrimp licence acquisition system model, RS7

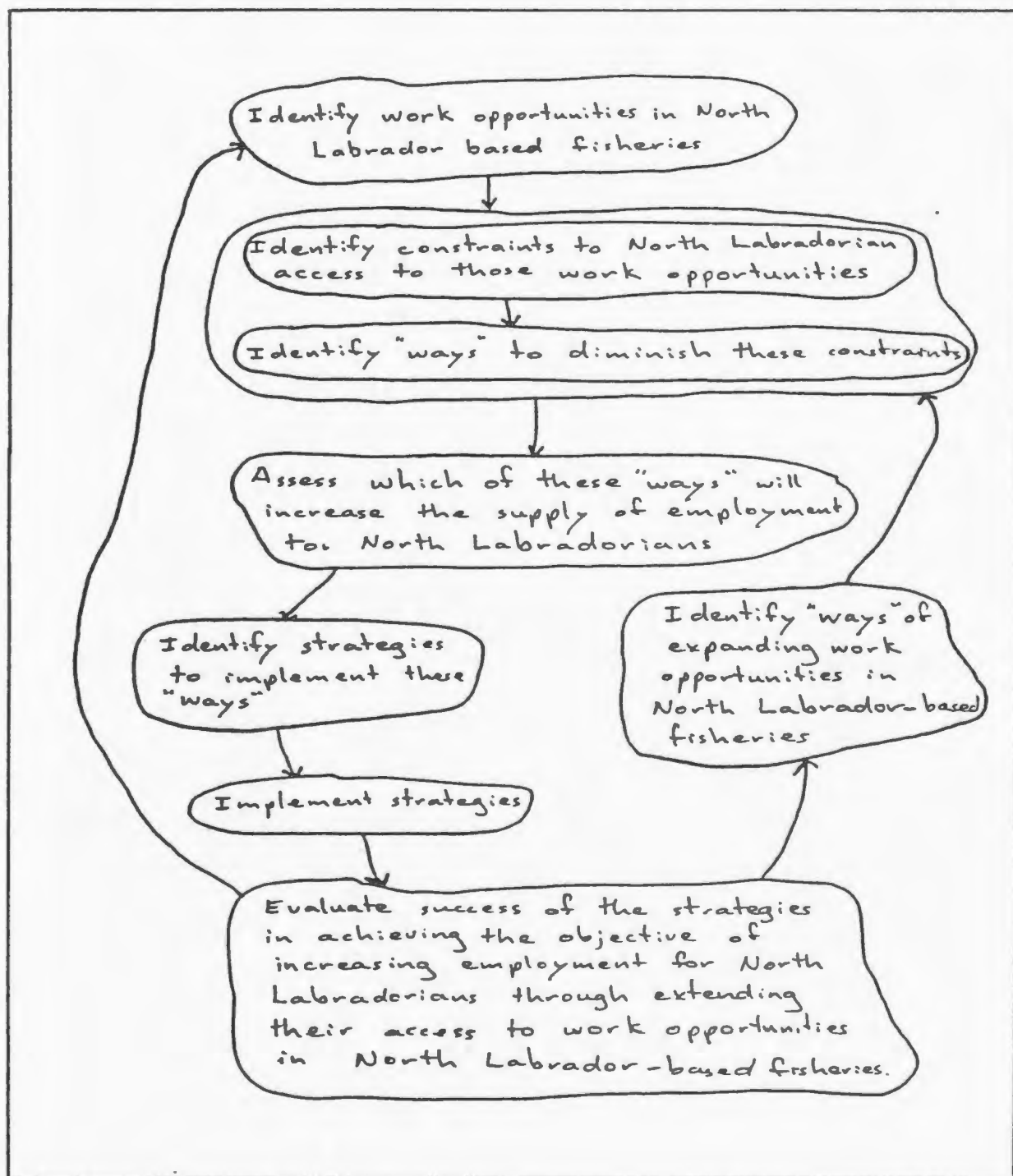


viii) RS8: Torngat as an Employment Generating System.

Root Definition: A system which supplies an increased amount of employment to North Labradorians through extending their access to work opportunities in North Labrador based fisheries.

RS8 (figure 6.8) has a specific measurable outcome - increased employment for North Labradorians through extending their access to work opportunities in North Labrador-based fisheries. It is only concerned with conflicts and ideologies which might constrain this. It does not require that Torngat undertake the expansion of fisheries, but does require Torngat to implement strategies to achieve the objective. These in turn may or may not involve Torngat undertaking fishing expansion. There is no requirement for a distributive emphasis (i.e. creating more opportunities for Inuit vis-à-vis settlers) other than the requirement for North Labradorians to be the beneficiaries. The extent to which this objective is able to become a strategy of one of the other models is constrained only by those models' own objectives. The mechanisms it employs to implement identified strategies could be substantially elaborated. This is not necessary at

Figure 6.8: Employment generating system model, RS9



this stage for this thesis. Suffice it to say that the strategies might include lobbying governments, creating companies to employ people, etc. It is in essence a creative-matching system.

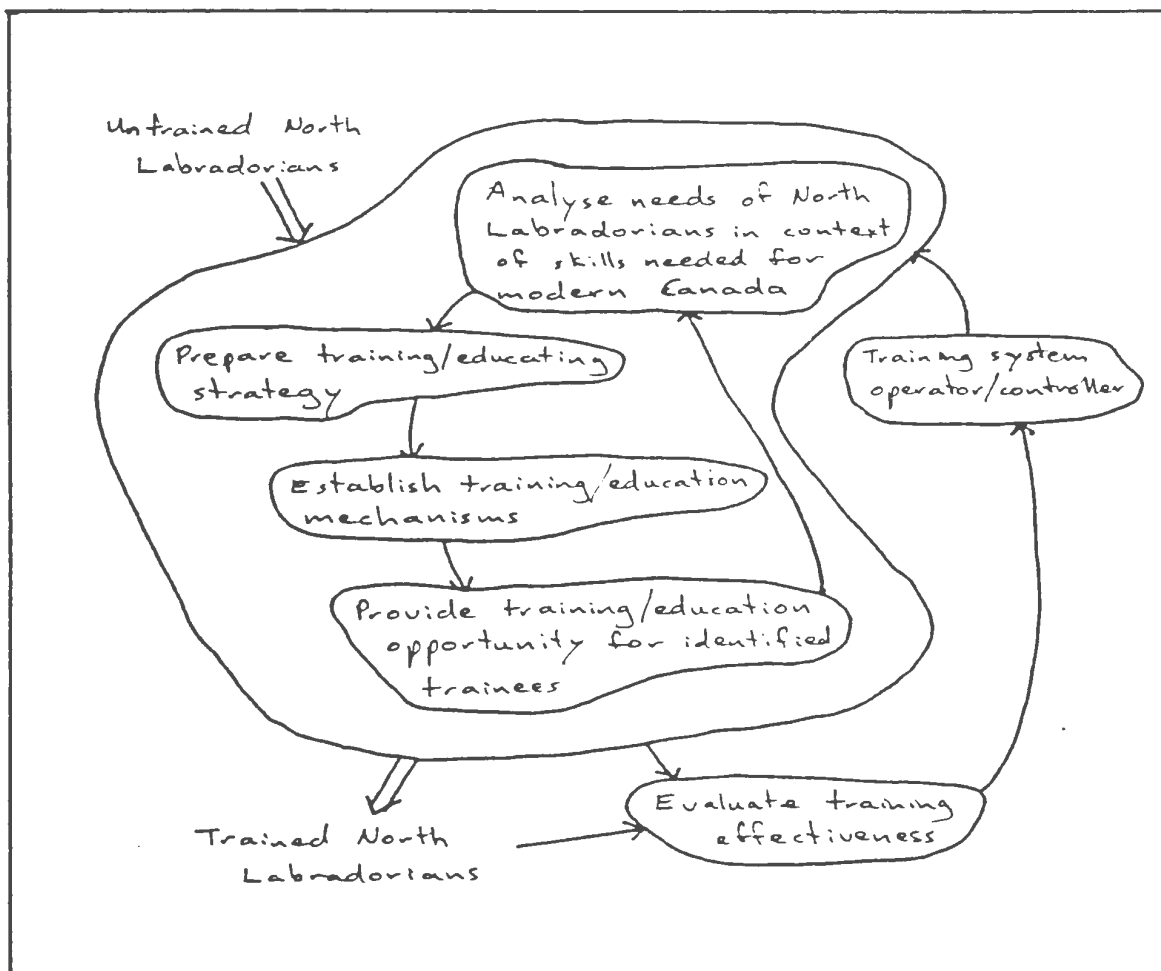
It should also be noted that employment is considered in the general sense of being employed (i.e. "doing work"). It does not relate to rigid statistical definitions and could include the husband, wife or child of a formally employed fisher, provided that they are doing work directly connected with the fishery (i.e. unpaid net mending or boat cleaning). The definition thus captures the informal workforce as well as the formal.

ix) RS9: Torngat as an Educating and Training System.

Root Definition: A system for educating and training co-op members, and those who deal with the co-op, in the skills needed for participating fully in modern Canadian society.

This model (figure 6.9) differs significantly from the others in that the output is trained North Labradorians and people dealing with Torngat. Two points of particular significance are the evaluation

Figure 6.9: Educating and training system model, RS9



system which feeds into the training system's controller/operator and the deliberate vagueness of the type of training. It can be argued with ease that the whole co-operative is in fact a training programme set in place by non-North Labradorians on the principle that one way to provide appropriate training for North Labradorians in modern business skills is to create a business which they can operate, feed in appropriate training and stimulate and resources, and allow them to learn from their mistakes. In such a situation the evaluation mechanism is crucial because the system operators/controllers are not necessarily part of Torngat. Consequently, should they decide Torngat is no longer an appropriate training mechanism then they can discontinue support or even actively dismantle it. On the other hand, if the training is very effective the control of the system may pass to North Labradorians because of the nature of the system itself (i.e. a self-resourcing co-operative). Such a transfer of control may or may not be desired by the original initiators/controllers. However, the very manner in which Torngat carries out its business may be an education for those who have contact with it. Where other models' activities provide appropriate learning

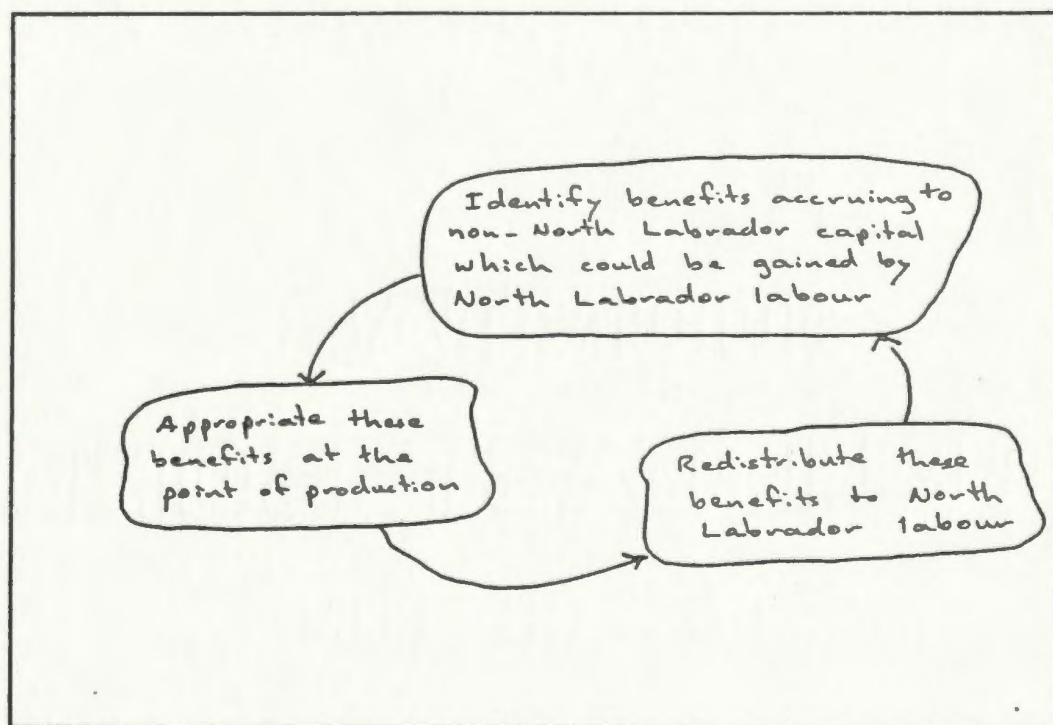
opportunities this model is potentially quite compatible.

- x) RS10: Torngat as a Production Appropriation System for North Labrador Labour.

Root Definition: A system to gain for North Labrador labour the benefits which would otherwise be appropriated by non-North Labrador capital.

This model (figure 6.10) is drawn from articulation of modes of production theory which is a derivative of Marxist/structuralist theory (Needs 1988). The significant points to note are that the benefits accruing to non-North Labrador capital may be produced by non-North Labrador labour. However the system identifies where these benefits might be able to accrue from the use of North Labrador labour. It recognises that the accrual of benefits from North Labrador labour is to be to North Labrador labour. Having intervened to have North Labrador labour involved, it then intervenes to have the benefits accrue to North Labrador labour. The ultimate outcome may be that North Labrador capital replaces the non-North Labrador capital. However this is not part of the system (and may be its

Figure 6.10: "Production appropriation for labour" system model, RS10



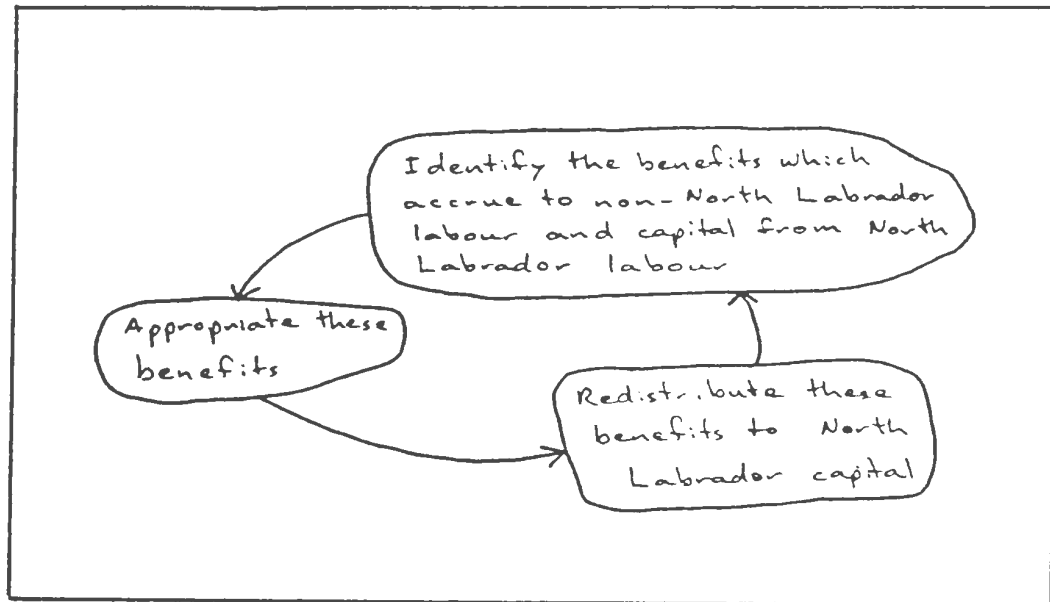
failing if the model accurately represents the real world situation).

- xi) RS11: Torngat as a Production Appropriation System for North Labrador Capital.

Root Definition: A system to appropriate for North Labrador capital the benefits from North Labrador labour which would otherwise be appropriated by non-North Labrador labour or capital.

This model (figure 6.11) differs from RS10 in that it considers appropriation to North Labrador capital rather than labour. It also explicitly seeks to appropriate from non-North Labrador capital and labour the benefits of North Labrador labour. The degree to which North Labrador labour is to be a beneficiary is not specified, but may derive to some extent from the mechanisms set up to appropriate the benefits. The use of the word "might" also indicates a degree of defensive forward planning; a recognition that outside interests may appropriate benefits currently accruing to North Labrador if preventative action is not taken.

Figure 6.11: Production appropriation for capital system model, RS11



xii) RS12: Torngat as a Profit Earning System.

Root Definition: A system to generate for its owners a minimum sustainable level of financial profitability sufficient to ensure its continuity as an operating entity.

This model (figure 6.12) is purely concerned with money and not the activities or distribution of benefits, employment, etc. The activities however do not need to be profit maximising, but do require action by Torngat to ascertain the minimum level of profit it is required to generate.

xiii) RS13: Torngat as a Gaia Actualising System.

Root Definition: A system balancing environmental constraints to the development of humans and the catching and redistribution of fish in North Labrador against the requirements of sustainable, viable, living North Labrador human communities.

This model (figure 6.13) is at a very broad scale and to some extent is sufficiently general to enable all other models to be accommodated within it. The crunch is to identify the environmental

Figure 6.12: Profit earning system model, RS12

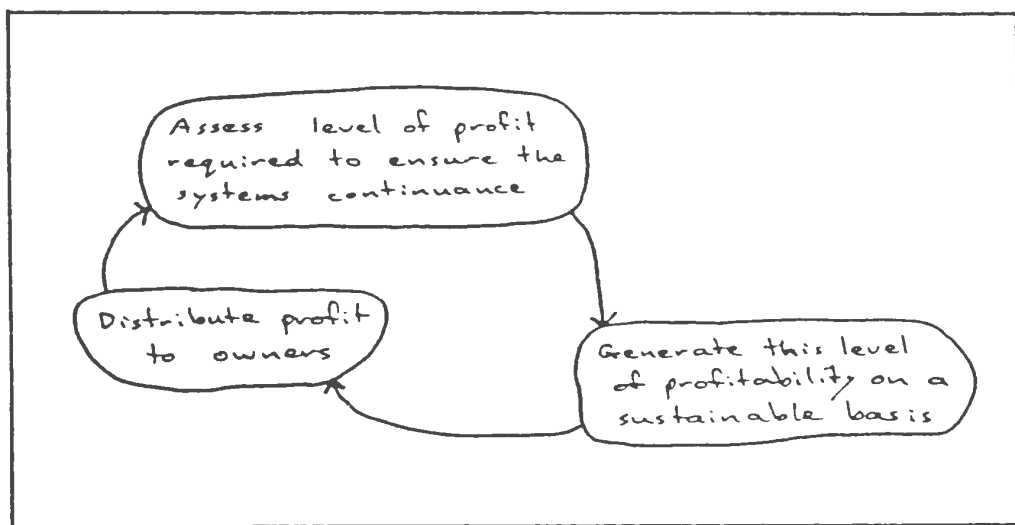
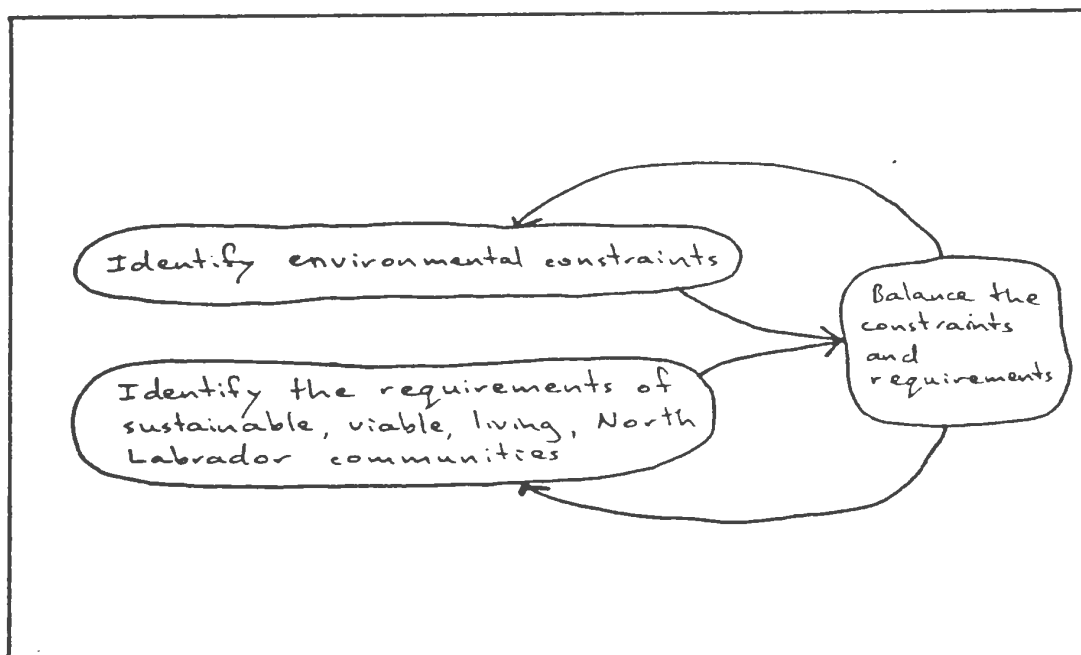


Figure 6.13: Gaia actualising system model, RS13



constraints and the communities' requirements. It is interesting to note that the location of the communities is not specified and the focus is on the communities, not the North Labrador community as a whole. There could be a number of reasons for this, ranging from the non-existence of a North Labrador community to the irrelevance of the concept for the tasks of the system (which is focussed on individual communities).

6.3 Micro-model Relationships

The preceding comments about the various models and their relationship to each other suggest a number of options for the structure and functioning of the Torngat Co-operative. At this stage, none of these options has been compared with the real world situation; they are logical constructs derived from root definitions derived from conceptions of the real world situation which were expressed in the rich picture. In the next chapter the models will be compared with an analysis of the existing structure and processes of Torngat and the Labrador fishery. Before doing so however, to aid an analysis of that comparison it is worth taking a look at the implications of the micro-models with respect to each other and with the macro-models of the preceding chapter.

This discussion will focus on four questions which I consider pertinent to the relationship between the models and the North Labrador fishery. These are the following:

- Are there general primary goals which the micro-models suggest are the purpose of their existence?
- Do the micro-models of necessity require an involvement in fisheries?
- Are the customers of the micro-models able to be one and the same as their owners?
- Are the micro-models able to be compatible with the macro-models?

The first of these questions is particularly interesting in that it indicates clearly the distinction between this methodology and more traditional approaches to business analysis. The latter usually commence from an accepted mission statement, goal(s) or objective(s) (Etzioni 1960; Grusky and Miller 1970; Duncan 1983) and build a logical structure and process model from this basis.¹

¹ Some would argue, as do Etzioni (1960) and Katz and Kahn (1966) that the systems approach goes beyond single-goal oriented analyses. My readings of the literature suggest that the methodological change is merely an explicit recognition of the existence of more than one goal in an organisation. These additional goals are often implicit and/or derive from perceived constraints, usually environmental, on the primary goal of the organisation.

In Checkland's approach this may be one part of the process. The key point for Checkland is identifying what the system does and then comparing it with the perceived existing structure.² It follows therefore that it may be useful to use the primary goal/mission implied in the root definitions and conceptual models as a grouping technique. Traditional analysis would require that if Torngat has a primary goal then this needs to be formulated and expressed. If it has conflicting "primary" goals then the relationship among them needs to be explored. Checkland's approach should tease out these goals and enable the debate to be more informed. The grouping of the conceptual models and root definitions in relation to implied goals may facilitate this process.

A number of the root definitions made no specific reference to fisheries and yet Torngat is a company involved in fisheries, and the focus of this research has assumed from the outset an explicit role for Torngat in the North Labrador fishery. Making a clear distinction between those models which by definition require a fisheries role and those which do not was considered

² The difference between Katz and Kahn's (1966) open-systems theory approach and Checkland's is their apparent uncritical acceptance of a real world.

potentially useful, if not an absolute necessity. The second question reflects this requirement.

Given that some of the macro-models had raised sovereignty as a key issue and this issue has arisen again in the micro-modelling, the ownership of the situation is of considerable importance. As Torngat is a co-operative, the relationship of the clients/customers of the system to the owners must be considered, and the capacity of the models to consider customers and owners to be one and the same promised to be fruitful. This is captured in the third question. The remaining question used to interrogate the models relates to the compatibility of the micro- and macro- models. Many of the micro-models had not specified the nature of their relationship to the fisheries, hence it was difficult to specify the degree or probability of compatibility. The question then focussed on whether there were models which were not conceivably compatible.

The results of this interrogation are set out in Table 6.1. The primary goals which emerged were:-

- (i) Enhanced self-reliance of North Labradorians;

Table 6.1 Forngat Micro-model relationships

General Goal		Fisheries											
Enhance self-reliance of North Labradorians	Enhance the beneficial returns of a specific group of North Labradorians	Encourage disequity	Balance existing or potential disequities	Specifically requires fisheries	Does not by definition require fisheries involvement	Are the clients and the owners able to be one and the same (Y/N)							
RS 2	+				+	Y							
RS 5	+				+	Y							
RS 8	+			+		Y							
RS 9	+				+	Y							
RS 7	+			+		N							
RS10	+				+	Y							
RS11	+				+	Y							
RS 3	+				+	N							
RS 4		+			+	Y							
RS12		+			+	Y							
RS 1			+	+		Y							
RS 6			+		+	N							
RS13			+	+		N							
RD1	RD2	RD3	RD4	RD5	RD6	RD7	RD8	RD9	RD10	RD11	RD12	RD13	RD14
C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	I	I	C	C	I	I	C	C	C	I	C	C	C
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C	C	C	C	C	C	C	C	C	C	C	C	C	C
C	C	C	C	C	C	C	C						

Compatible(C), Incompatible(I)
with North Labrador Fishery
General Relevant System
(see preceding chapter)

- (ii) Enhanced beneficial returns to a specific group North Labradorians (e.g. fishers);
- (iii) Encourage disequity; and
- (iv) Balance existing or potential disequities.

Basically, the category (i) models each maintained a specific requirement to benefit North Labradorians as a whole as opposed to individual groups within North Labrador. In the case of RS8 the emphasis on self-reliance may be unjustified since it could be argued that the term "employment" implies a reduction in self-reliance in that a person becomes employed in an industry where he or she is dependant on other links in the fishing industry chain. However, as I have pointed out previously, employment has been used not in rigid statistical terms, but in the broader definition of undertaking work (either as an employer, employee or self-employed) in the industry. In including this as contributing to self-reliance I have assumed that work brings its own rewards of greater returns, skill development, etc. and that those undertaking work in the fishery are able to shift their work to other industries or activities if they so desire and if these alternatives exist. By providing increased employment in fisheries, Torngat under this root definition must make such a situation occur, otherwise it would not be increasing

employment, merely substituting one form of employment for another.

Category (ii) represents a minor variation on category (i), but one which in the context of North Labrador and of co-operative and development theory is significant. Essentially, both RS10 and RS11 draw distinctions between labour and capital, employees and employers. They therefore differ from the category (i) definitions in that there is no self-reliance emphasis and not all North Labradorians are treated equally. The focus is on benefits to either North Labradorian labour or North Labradorian capital.

Category (iii) is more teleonomic than teleologic and accordingly RS12 is the less comfortable of the two models within this "goal". Whereas RS4 is based on a theoretical construct of opposing forces which create and maintain a core/periphery character to a world system, RS12 is much less deterministic in nature. It is an ordinary business/profit-making organisation model. Its existence depends on being able to generate a predetermined amount of money. If it is a profit-making business however, it is essentially in the general area of creating a disequity in an existing situation. Because businesses can make profits in a

variety of different ways, I considered it would not be appropriate to try to define a general goal beyond that of "encouraging disequity". My reason for differentiating RS12 from RS10 and RS11 is that there is no requirement in the definition for North Labradorians to benefit from the system (although it would appear probable that North Labradorians would be prime beneficiaries).

Almost as an unforeseen counter to category (iii) is the goal of "balancing existing or potential disequities" which emerged from the models which comprise category 4. The models and root definitions of this category appear to have the least in common, at least in their secondary goals. It could be argued that RS1, with its concern with the wishes and aspirations of North Labradorians, would be best placed in category (i). Similarly RS6 in much the same manner as RS12 could be placed in category (iii). Alternatively it might also fit snugly in category (ii) or (i), given its emphasis on redistributing wealth to North Labradorians. In placing RS6 with the clearly balancing and redistributive Gaia based RS13, I was recognising the environment within which RS6 was generated. In this context the redistribution of wealth by RS6 can be seen as a balancing of wealth disequities extant between North

Labrador and Canada as a whole. The redistribution of wealth however does not equate with enhanced self-reliance or the benefits of any group and the system does not therefore lend itself to category (i) or (ii).

The conflict resolution system (RS1) as defined is primarily a balancing system and cannot necessarily be seen as enhancing self-reliance or benefits for North Labradorians.

One of the most revealing questions for me during the interrogation process was whether there was a requirement for fisheries involvement. Quite surprisingly, only four of the thirteen root definitions of a system formally known as the Torngat Fish Producers' Co-operative actually specify a need for fisheries involvement. It should however be noted that the fisheries are seen as a major resource in North Labrador and with very few exceptions the strategies developed to implement the various systems will generally require fisheries involvement. Therefore the significance of the response to this question is possibly overstated by the tabular analysis. This does not mean that the response is not very significant in individual cases and the issue will be discussed as appropriate in the following chapter.

It was interesting to note that the analysis indicated nine of the models could respond positively to the third question "are the clients/customers and the owners able to be one and the same?". I am not aware of a similar analysis having been carried out by soft systems practitioners, however I would have anticipated that in most businesses the clients/customers are not the same as the owners of the situation. This however may not be the case where the problem situation is as open as it is in this instance and where the organisation is a co-operative where the customers/clients are potentially able to be members and, therefore, owners of the co-operative. In addition, the beneficiaries (customers/clients) of the system are in some cases the residents of the region and it could be considered the problem situation is regionally owned. Given this context, it is perhaps more interesting to look at the instances where the customers/clients and owners are not able to be the same.

RS7 defines a system which would cease to exist if the Federal Government chose not to allocate shrimp licences. The Federal Government are the owners of the situation. In RS3 the clients/customers are those seeking power. The owners are North Labradorians, while the customers/clients of the system are one of three

groups, one of which is not North Labradorian. RS6 is more akin to a business situation in that sources of capital are drawn on to finance a system (which will continue to draw on those sources) to meet a specific end. In this context the owner is Canada and the clients/customers are North Labradorians. In RS13 the system owner is Gaia and the clients/customers are the living species of North Labrador.

As a final comment on the ownership and client/customer question, I would note that in most definitions the system owner is ill-defined and a major outcome of the debate which this thesis structures may well be a clear definition of the owner of this problem situation. This may be a feature common to many open-systems of the type dealt with by geographers (see, for example, Agnew 1984).

Compatibility with the macro-models identified in the preceding chapter was generally possible. Out of the 182 comparisons between the definitions only 15 (8.2%) were assessed as being wholly incompatible. Of these, RS5 and RS11 were most frequently incompatible with macro-models (with 5 and 3 incompatibilities recorded respectively). In the case of RS5 the incompatibility derives from the outcome of the system which is seen as

an enhanced level of independence for North Labradorians. This brings it into conflict with systems where the opportunities made available to North Labradorians are dependent on the favourable paternalism of non-North Labradorians. This paternalism is evident in the concepts of social-support being provided by non-North Labrador owned systems (e.g. RD3) and the use of North Labrador for the benefit of other societal groups (e.g. RD2, RD6, RD7, RD11).

Similarly for RS11 and RS10, the concept of the benefits of the North Labrador fishery accruing to the province as opposed to their own designated beneficiaries renders them incompatible with RD6 and RD7. RD11, with its emphasis on returns to capital, is also incompatible with RD3, which focuses on social support as an entitlement for a subgroup of North Labradorians. RS3, with its emphasis on the political influence of individuals and elites, could also not fit with systems which provide social support as an entitlement, although it should be noted the participants in this system may use such rhetoric to further their ends. A group actually being entitled to something as of right would remove the legitimacy of power seeking, for it could have power to remove the entitlement. Similarly, an entitlement is not legitimate if it is subject to the

whim of power seekers. RS12 has a similar difficulty with social support and entitlement.

An interesting clash occurs between RD10 and RS4. Here the maintenance of traditional fishing industry lifestyles (RD10) is not compatible with the dynamism required of the RS4 system. This type of clash is one which could occur throughout the world and which is of interest in particular to development theorists (see, for instance, Rimmer and Forbes 1982 on circulationism).

Looking at the relationships from the macro perspective, no model is incompatible with more than three micro-models. RD3, RD6 and RD7 each are incompatible with RS5 and RS11. RD6 and RD7 are also incompatible with RS10. RD3 and RD1, on the other hand, find RS3 and RS12 incompatible. RD11 and RD2 have difficulty only with RS5, and RD10 alone clashes with RS4. These incompatibilities have been explained above and reflect underlying weltanschauungen. In terms of structuring the debate, recognition that these concepts of the fishery and Torngat are incompatible is useful. From an analytic perspective it also suggests that if Torngat fits one of RS3, 4, 5, 10, 11 or 12 either the respective incompatible views of the North Labrador Fishery are irrelevant or Torngat's presence is a relict

of a previous situation. For Torngat to survive further would require systemic change to a form which is compatible with the macro-model.

A point which is not readily apparent from the table is that while six micro-models and seven macro-models are recorded as compatible with all other macro-micro models, this does not represent the degree of compatibility. Some, for instance RS9 and RD13, may have a high degree of compatibility in that they are essentially providing the same outcome (in this case skilled people). However others (in fact most) of the micro and macro models are incompatible, except in particular complementary forms or in pursuit of particular complementary strategies. Thus RD1, which emphasises social support as an entitlement, might be seen as clashing with RS11's returns to North Labrador capital. However in a situation where the community-owned system of social support also owns the capital, then it can be seen the two are compatible. Such a situation is hard, but not impossible to visualise in reality, and at a larger scale the recommendations of the Kirby Task Force (Kirby 1982), if put into practise, could result in a model for such a system.

Stepping beyond Table 6.1, there is one other interrogative procedure which was applied to the micro-models. Essentially the compatibility of these models one with another was explored. The basic conclusions of this analysis were included in the earlier description of the models. Overall it appears there are no wholly incompatible models; however each one would be constrained to some extent if it were to be placed in a situation where it was an implementing strategy of one or more other models. Again there are one or more systems which could fit more easily with each other than others. RS10 and RS11 with their class structure analysis could fit very well with RS4's core/periphery dialectic. However RS10 and RS11 could only be compatible with each other in a co-operative which incorporated both capital and labour as owners.

Finally, the RS13 and RD14 which are both Gaia derived theoretical models are compatible with all micro and macro models, provided those models adopt appropriate strategies of biota use and spatial distribution. If these two micro- and macro-models are not incorporated into the other models' strategies then those models will not be sustainable.

6.4 Conclusion

This chapter has presented the relevant systems, root definitions and conceptual models of the Torngat Fish Producers' Co-operative as derived from the Rich Picture of the North Labrador fishery and Torngat. The models have been analysed through a system of interrogation based on five specific questions. These identified the primary goals of each system, the requirement for fisheries involvement, the capacity for clients to be owners and the compatibility of micro- and macro- and micro- and micro-models.

The methodology has provided a basis for structuring a debate over the role of the Torngat co-operative and the fishery. In particular, it has drawn attention to perceptions of the fishery and of Torngat which reflect incompatible Weltanschauungen and it has clarified the basis for these incompatibilities. Of interest has been the explicit recognition that for Torngat to actualise some of the perceptions, then its involvement in fisheries is not essential. In the next chapter some of the more informative and useful models will be selected for comparison with the "real world" situation of Torngat. With this achieved, we will proceed to assess

the fishery system and strategies which might be most appropriate as context for the Torngat model.

However, as this chapter has illustrated, an analysis of Torngat as a lens on the wider fishery is not necessarily determinate. Many concepts of the wider fishery may be compatible with the "real world" Torngat. Consequently this research has already indicated that much more work may be required on the methodology before it can be utilised as a historical research technique as suggested at the outset. Similarly, it throws doubt on Agnew's (1984) implication that the methodology may be of more use in hindsight in open system situations. A hindsight or historical analysis of necessity will be constrained by the information available. Any extrapolation from an initial model to a general situation will encounter the same problems as those identified here. However such an analysis should enable logical model construction and the exposure of underlying Weltanschauungen. As this chapter has illustrated, this may be appropriate for identifying critical points for further analysis (i.e. those where Weltanschauungen are incompatible). This in itself may be of some use for historical geographers. However the analysis in this chapter suggests that the main use of the methodology will be for structuring a participative debate.

CHAPTER SEVEN

The "Real" World Revisited:

Conceptual Models Versus The Rich Picture

7.1 Introduction

This Chapter constitutes step 5 of Checkland's methodology - the comparison of the conceptual models developed in step 4 with the rich picture of step 2. However it will not only compare the rich picture with the conceptual models developed in chapters four and five, but will broaden into an assessment of the "out-of-order" claims made for the methodology. The implications of these analyses for further stages of the methodology and its potential utility for geographers are also touched upon.

7.2 Conceptual models and the "real" Torngat

7.2.1 Which Models?

Step 5 of Checkland's methodology requires the analyst to move back into the "real" world and establish a basis for debate. This is achieved through a comparative analysis of the real world situation and the models developed from root definitions of perceptions of that situation. However, an analysis of all the

conceptual models generated is not required. The criterion set down by Checkland for selecting a system is essentially the gut feeling that the system will offer a learning experience. It will have the element of "surprise".

For Torngat, I have selected eight of the thirteen models for the comparative analysis. The systems chosen were:

- RS2: a Resource Access Acquisition for North Labradorians System,
- RS5: an Independence Enhancing System,
- RS7: a Shrimp Licence Acquisition System,
- RS8: an Employment Generating System,
- RS9: an Educating and Training System,
- RS10: a Production Appropriation System for North Labrador Labour,
- RS11: a Production Appropriation System for North Labrador Capital and
- RS12: a Profit Earning System.

From Table 6.1 we note these systems include all category (i) systems (those whose primary goals fall under the general heading of enhanced self-reliance of North Labradorians); two category (ii) systems (enhancing

beneficial returns to a specific group of North Labradorians) (RS10 and 11); and one category (iii) system (encouraging disequity) (RS12). There were no category (iv) systems selected, however this should be interpreted more as an "instinctive recognition" that these would be less "useful" in terms of the thesis methodology than those chosen.

Of the ones selected, RS10 and RS11 were chosen largely to elucidate the degree to which standard geographical approaches could be accommodated by the methodology. Modes of production theory (with and without Marxist interpretations) are now commonplace in geographic literature. If the suggestion (in Chapter One) that this methodology could be a tool capable of being utilised by all geographers is to be examined in this thesis, then it is important to step beyond the particular of "Torngat-as-case-study" to the theoretical level. Modes of production theory is one area which has emerged from two root definitions. Circulationism has also been noted specifically at least once (e.g. RS4). Circulationism however has long had a systems base and thus the modes of production theory has been identified for this study as a more significant "test" of the methodology.

The decision to examine the category (i) systems (RS10 and RS11) represents largely the factor of "surprise":- of a new insight for the analyst. Co-op theory has long identified co-operative formation as having frequently been a response to a perceived external threat. However, in the Labrador context, the feature of Torngat which struck me as most surprising was the degree to which key players ascribed to it an historical context. Whether the co-op model was appropriate to native peoples was not apparently as relevant as the meaning the co-op has in terms of Labradorian independence. The rhetoric used to support this view, however, varied significantly. As has been illustrated, the overall view of Torngat as "enhancing the self-reliance of North Labradorians" is subject to a number of different interpretations which give rise to often compatible relevant systems models. Exploring these models may assist North Labradorians to develop and debate their options. I had also noted that this aspect of Torngat appeared to disquiet some decision makers. An analysis of the issue would be of value to them.

In addition, RS5 incorporates the greatest number of incompatibilities identified with models of the broader Labrador fishery. Indeed, coverage of these models and RS12 will mean that only two conceptual

models, RS3 and RS4, with potential incompatibilities with Labrador fishery models will remain.

RS12 was selected because of the frequency with which the rhetoric of Torngat as a "business" (by which was usually implied a profit earning system) recurred during interviews and participant observation. Although the outcome of an analysis might confirm that Torngat is a business, this in itself would surprise many who do not believe in Torngat as a profit-earning system (see Chapter Four).

7.2.2 How to Compare?

In undertaking the comparison between the rich picture and the individual models we are basically seeking similarities and differences. There are a number of ways to go about this and it is interesting to note that Cornock eventually did not carry this step through. Instead he focussed on using the perceptions of the Art World to shape an intervention. Naughton (1984:45-46), however, has outlined three structured ways of doing the comparison. Basically these involve

- (i) questioning the real world, using the conceptual model as a tool for identifying questions. Thus

processes and components present in the model may be looked for in the rich picture; specifically, the constituents of these processes, their history and purpose, may be identified in the rich picture.

- (ii) comparing an actual event or activity between the model and the rich picture to see if events unfolded in reality the same way they would if the model were appropriate and reflected the real world.
- (iii) transforming the picture into a model analagous to the conceptual models. Naughton (ibid) notes

"If this can be done successfully, one winds up with two models which, if drawn on transparent sheets, can then be overlaid on one another. This method, however, will only work for situations which are already fairly well-structured, and is probably best left for those."

Naughton also describes one "least structured, most intuitive, technique". This involves reflecting on how both the real world and conceptual models function.

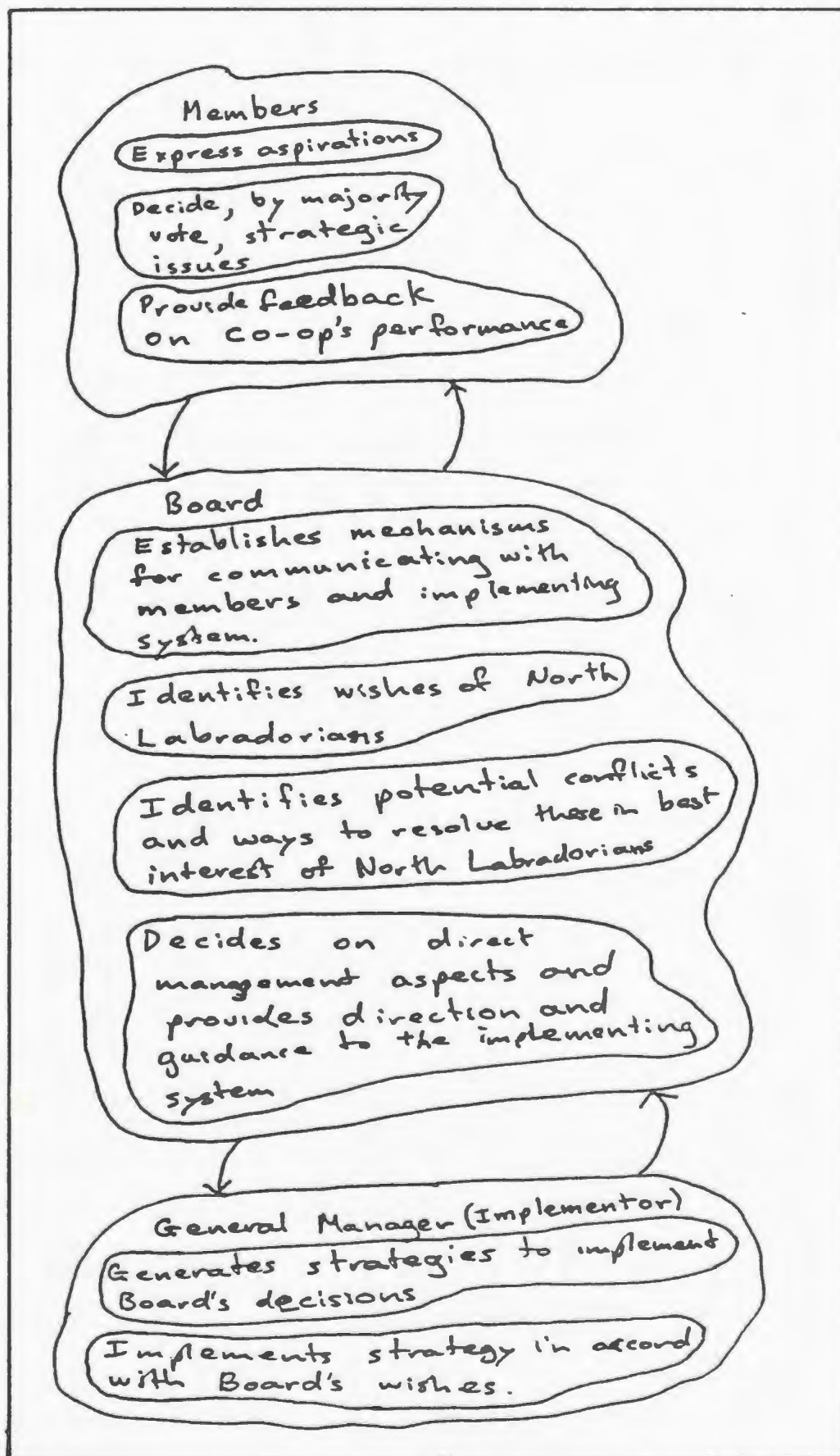
This last, intuitive method I considered least useful in this instance. Given the complexity of the situation, I considered it important to be able to follow and retrace my footsteps as and when necessary to ensure that those factors which had and had not been considered

could be identified (if not by me then by some other person). The nature of the rich picture I had expressed in figure 4.11 also did not lend itself to the construction of a model of Torngat from the real world expression. However I considered a useful overlay of the structure and process of Torngat as derived from the text might be helpful¹. This model is depicted in figure 7.1 and has been cast in close approximation to the language and form of the conceptual models that were described in Chapter 5.

It is readily apparent that the model is compatible with all those generated in Chapter 5. This supports Naughton's views regarding the usefulness of the third comparative technique he has identified (i.e. the overlay technique is perhaps most useful in cases where the situation is well-structured). In terms of the structures and processes of decision-making, Torngat is reasonably well structured. Because the actual needs/aspirations of the members are not defined in the model most of the models can be overlain on it to a greater or lesser degree. However, what it does make

¹ A preliminary analysis of the structure of Torngat was produced in brief for an MBA course (Business 8105) at MUN in November 1983 in an endeavour to obtain direct and critical feedback from organisational structure specialists. The response indicated a sound analysis.

Figure 7.1: Torngat structure and process



clear is that the co-op is structured as more than simply a profit-earning system (RS12), a production appropriation system (RS10 and RS11), an education and training system (RS9), an employment generating system (RS8), a shrimp licence acquirer (RS7), a legal wealth distributor (RS6), and a power distributing system (RS3). This primarily reflects the need for member involvement in determining most aspects of the structure, process and activities. It most nearly approximates RS1 (a conflict mediating system), RS2 (a resource acquisition system for North Labradorians) and RS5 (an independence enhancing system). The first group (those which the real world model suggests are less than the real world) can all be incorporated as strategies within the real world and might therefore exclude each other. It is also worth noting that RS4 (the core-periphery balancer) and RS13 (the Gaia model) are both conceptually bigger than the real world model of Torngat. As presently structured, then, Torngat may be a non-self-recognising instance of components of these two.

It should also be noted that the real world model of Figure 7.1 could be redrawn in a number of different forms to emphasise particular processes. Alternatives to the decision-making process which dominates this thesis' expression of the problem-situation, for instance

a model based on the co-op's financial process, might have more closely approximated RS12 (a profit earning system). My point is, however, that as far as current structure and process are concerned the level at which Torngat is modelled here is the highest order. Second, third, fourth, etc. level models depicting particular activities or strategies might easily imitate the other (smaller concept) conceptual models. However, they would not capture the bigger existing picture of Torngat which was evident in the data gathered during step 2 of the methodology

This last comment applies also to the power distribution system concept. It should be recognised, however, that a model of the real world informal structures and processes may indicate the actuality of Torngat as a power distribution system based on particular ethnic, location, socio-economic or psychologically based power groupings which very closely approximate in structure and process the power distributive system conceptual model. The legal situation of Torngat however in my view ultimately overrides this informal aspect. That is, the informal power structure is constrained to operate within the framework of the formal structure/process situation. To remove the ultimate right of control by the members would

be to remove the legal basis for the co-op's existence. As also indicated previously, while the power distributive system is intellectually stimulating and has a significant reality it is not considered a useful focus for this research.

In determining how to compare the real world with the conceptual models I have settled for the most part on a combination of the first two structured techniques - asking questions of the real world based on the conceptual model suggestions and, where appropriate, comparing actual events and what happened with what the conceptual model(s) suggest would have occurred. In order to simplify the following discussion I have undertaken the analysis within the broad heading of "questioning the "real" Torngat".

7.2.3 Questioning the "real" Torngat

As the preceding section's discussion has indicated, a key question which remains unanswered is which of the three systems (RS1, RS2 and RS5) models which most nearly approximate the structure and process of the real Torngat, is in reality the closest? Equally important is the identification of which key activities are done in both and which are not, and whether the differences

are significant and at what scale. Why have the other perceptions of Torngat arisen and what are the implications of the answers to these questions in the context of the larger fishery of North Labrador?

The first of these questions is especially significant in relationship to the last. If RS5 is the closest to the real Torngat and the differences are not significant and/or are potentially resolvable, then this is of major import - RS5 had the most (5) incompatibilities with the macro-models of the North Labrador fishery (Table 6.1). RS1 and RS2 are compatible with all macro-models. As discussed earlier (Section 7.2.1) it is not considered useful to examine RS1 in detail and this will not be undertaken here.

The fundamental question in comparing RS2 and 5 with the real Torngat is whether Torngat is a resource access acquisition system or an independence enhancing system, or something other. If it is not other, what are the significant real differences? It is important here to recall the distinctions between RS2 and RS5 as set out in the preceding chapter in the discussions of the root definitions of each. There were basically two differences. RS2 had a sharply defined endpoint - the acquisition of access to resources; RS5 also had a clear

if not so well defined and very different outcome - the enhanced independence of North Labradorians. However RS5 had no concerns as to the means by which this might be achieved whereas RS2 was concerned to ensure that access to the resources was achieved in a manner consistent with North Labradorian desires and aspirations. Thus the objectives of each are different and the means of achieving the ends are more constrained in RS2.

Looking at the outcomes of Torngat in the real world we can say that there has definitely been an increase in access to resources. The fishing season has been extended, resulting in increased access to UI payments in the off season, and greater access to fisheries, fish processing employment and fishing generated income. The fishing and spiritual resources of the region North of Nain (Saglek and Hebron) have been made available again. Nets have been provided at low cost and Rigolet opened up. Training opportunities have been increased and a shrimp licence obtained. New species (turbot) have also been fished and the resources of co-operatives (including government assistance to co-ops - e.g. advice of the registrar of co-ops) have also been accessed.

That their independence has been enhanced is also clear. From a history of having very little say in the

main economic aspects of their life, North Labradorians now have an economic vehicle to support the various political vehicles they have developed to enhance their independence. This was illustrated especially through the members exercising their rights to determine major economic decisions impacting on their lives. The standout example is the decision to continue to fish North of Nain. This perception was also apparent from the Board and Annual General Meetings I attended. The co-op members had a definite say in events - far more so than at meetings run by government departments. At the same time it is also clear that Torngat, while providing enhanced economic independence, was completely dependent on the good will of its creditors.

As the constraints on means to achieve these independence outcomes are solely on RS2, it is the only system which this analysis will discuss. It is noteworthy that the real world structure/process model requires a referral system to ensure members and Board are comfortable with the strategies employed to achieve their goals. The nature of a co-op, where capital does not dominate voting rights, makes it more or less certain that if there is a free exchange of views and information and interaction between members and management, then the constraints of acting in a manner consistent with North

Labradorian desires/aspirations is virtually assured. The caution to this is when the data on co-op activities is manipulated in accord with the will of management. If this occurs also in the management of formal decision-making sessions then this constraint may be subverted. In the time that I was a participant observer I was struck by the freeness and frankness of some of the exchanges. The co-op management (President and General Manager) allowed ample opportunity for member inputs and their preplanning of meetings was based around the need to provide enough time to enable all members to talk on issues they were likely to consider important. The AGM meetings were lengthy and on one occasion included a discourse from the floor on an incident of alleged fish stealing in which the General Manager was alleged to be the culprit. The event discussed related to a teenage incident for which the General Manager had a quite different perspective (in private). It was, however, used to express the concern some members of that community felt over the handling of Torngat and appeared to be an effective reminder of the need to build an honest relationship with members.

It was also noteworthy that on the one occasion where the management expressed a preference for a new board member this was ineffective in manipulating the

outcome of the vote. This case was interesting also in that the reason the management wished to see someone else on the board was based on the representativeness and perceived limited level of competence of the member who was eventually successful. This member was well known to them and a personal friend and able fisher. His presence on the board however was not considered as likely to benefit the ethnic majority of the community concerned as would one of the alternative candidates. This was in turn seen as weakening the co-op's strength and capacity to perform to the best interests of its members.

The most striking feature of Torngat's attempts to act in accordance with members' views is the incredible trek to provide access to its meetings for all members. Holding an AGM in six parts and at six different venues is a major exercise for a small company and yet it has persisted - in my view effectively.

In terms of key activities being present in the systems, RS2 does not have as complete a monitoring system as that in the model of the "real" world. However this difference is considered insignificant. There are no real differences between RS5 and the model of the real world.

The question of how the other perceptions of Torngat might have arisen, given that they are not predicated on the RS2 and RS5 models, appears answered by two factors - the personal style of the General Manager, and the variety of actors with their own agendas who could impact on the achievement of Torngat's objectives. The General Manager's style has been discussed elsewhere (Chapter Four), as have also the varying views of the other major players. It is quite conceivable that actors in either of RS2 or RS5 in certain circumstances could employ rhetoric in support of the co-op's strategy but could thereby give rise to perceptions of Torngat as something other than either model. One further point should be noted; RS3 could form a strategy of RS5.

Having questioned the specific structure and processes of the models, let's look at the actual outcomes achieved from the context of the models produced.

7.2.3.1 Profitable Business

RS12 suggests Torngat is a profit-earning organisation. However a profit-earning organisation or a business may appear under a number of guises. Critics of Torngat's performance frequently commented on the

losses it made on its operations. They also pointed to what they considered were inefficiencies in the system. Supporters argued that Torngat's losses were paper losses only and were almost entirely due to the North of Nain operations. They argued there were improvements in efficiency over the years. It was also noted that a profit is not generated overnight and that most businesses have budgeted losses in their first one or two years of operation. By the fourth year however they should be showing signs of improvement. The key questions which the RS12 model suggested needed to be asked of the real world therefore were:

- i) is Torngat making a profit?
- ii) what trends are apparent in its financial performance?

Meigs et al. (1976:646-647) have provided a summary of a variety of commonly used analytic tools for assessing the performance of businesses. The most reliable data available to me were the audited annual financial statements and it was therefore decided to analyse Torngat's financial performance using some of the tools suggested by Meigs et al. It should be noted however that the "financial statements" are essentially summary records of the past and we must go beyond the financial

statements and look into the nature of the company's industry, its competitive position, its product lines, its research expenditures and, above all, the quality of its management (ibid:630). The period for which the analysis was undertaken comprises the 1981-1984 financial statements. Although additional statements are now available it was considered most appropriate not to use statements for years subsequent to my fieldwork as these would reflect occurrences of which I would have little readily available knowledge. The analysis appears in Tables 7.1-7.5.

The analysis confirms that Torngat is not a profit making business. As Table 7.1 indicates, the only year Torngat made a profit was in its first year, 1981. However even this is misleading in that about 42% of Torngat's income is derived from funds passed on to Torngat from the Fisheries Emergency Policy Committee (Table 7.5). If this income were subtracted from Torngat's balance sheet Torngat would show a loss of \$374,509 for 1981. Thus all the financial performance indicators for 1981 paint a more rosy picture than Torngat's actual performance warranted. This is clearly illustrated by the analysis of the net income as a percentage of net sales for operations which shows an actual improvement from -56.8% to -34.6% in the four

Table 7.1 Financial Performance Indicators for the Torngat Fish Producers Co-operative 1981-1984

	1981	1982	1983	1984
Profit/Loss \$	331,705	(126,501)	(64,265)	(199,971)
Earnings per Common Stock	851	(315)	(143)	(402)
Operating Expense Ratio	3.34	1.78	1.19	1.16
Net income as a % of net sales for operations	(56.8)	(57.9)	(31.7)	(34.6)
Return on Total Assets	0.78	(0.15)	(0.09)	(0.54)
Equity Ratio	0.4	0.27	0.4	(0.14)
Debt Ratio	0.6	0.73	0.6	1.14
Current Ratio	1.55	1.29	1.65	0.59
Quick (acid-test) Ratio	1.06	0.54	1.21	0.44
Inventory Turnover (Average days to turnover)	2.32 157	2.69 136	1.54 237	N/c N/c
Accounts Receivable Turnover	1.37	2.5	2.58	6.61
Average age of receivables	266	146	141	55
Operating Cycle	423	282	378	N/c

N/c = Inventory is taken as that related to fish sales and in 1984 is not able to be calculated on available data as no fish inventory was recorded in 1983 and 1984.

() = Negative values.

Table 7.2 Key Financial Performance Indicators for the Torngat Fish Producers Co-operative 1981-1984 excluding North of Nain Operations

	1981	1982	1983	1984
Earnings per Common Stock	1287	438	(143)	(103)
Earnings per Common Stock (before income tax)	not relevant	24	(143)	43
Operating Expense Ratio	2.97	0.69	1.19	0.46
Return on Total Assets	1.63	0.22	(0.09)	(0.2)
Return on Total Assets (before income tax)	not relevant	0.16	(0.09)	(0.61)
Equity Ratio	1.67	0.44	0.4	0.21

Table 7.3 Percentage annual change in assets, income and expenditure items 1981-84

	1981/82	1982/83	1983/84
Shrimp Commissions Income	2.2	(32.1)	(40.2)
Fish Operations Income	(119.3)	69.9	(105.6)
Government Grants Income	426.2	92.1	1338.1
Interest	(61.7)	17.2	(66.9)
Construction Projects Income	67.1	(8.6)	(0.2)
Administrative Expenses	9.0	(14.7)	(4.5)
Other Income	(2353.3)	(1819)	4490.2
Assets	(7.3)	(100)	(6.7)

Table 7.4 Percentage Share of Torngat Fish Operations
Expenditure 1981-1984 by geographic and functional
items

	1981	1982	1983*	1984	Total
A) Total					
Expenditure**	1,062,033	1,720,153	816,935	1,683,980	5,283,701
Hopedale	-	2.2	10.2	4.5	3.7
Makkovik	11.7	12	-	24.4	14
Rigolet	22	23.9	35.1	15.5	24.4
North of Nain(a)	33.9	26.6	-	21	22.2
(b)	-	11.5	-	-	1.4
Over the side	-	-	-	13.2	4.2
Longliners	-	-	10.3	3	2.6
Goose Bay Office (Administrative expenses)	32.4	22	39.6	18.3	25.6
B) Functional Items***					
(i) Production Expenses	44.3	56.4	39.6	46.1	48.1
(ii) Fish Purchases	23.3	21.6	20.8	35.6	26.3
(iii) Wages, UIC, Benefits, Workers' Compensation	21.7	26.7	22.2	24.5	
(iv) Charters, collector boats, freight, fuel	20.7	23.3	7	17.3	

* 1983 and 1982 total expenditure figures include expenditure on clearance of the large 1982 and 1981 inventories. The expenditure amounted to 4.9% of the total 1983 expenditure and 1.8% of the total 1982 expenditure. However as one-off non-geographically relevant expenditure items these were not included in the breakdown in this table except within production, charter, freight and wage expenses. They are not included as fish purchases as they are already accounted by geographic unit in the 1982 and 1981 figures.

** Total Expenditure comprises the total of fish purchases, production expenses and administrative expenses.

*** Functional Items selected are those with the most potential to feed funds back on a geographic basis to residents in the coastal communities and those relating to the transportation costs and charters. Production expenses include those items listed as (iii) and (iv) under Functional Items.

Table 7.5 Percentage Share of selected Torngat Income 1981-1984 by geographic and functional items

	1981	1982	1983	1984	Total
Total Income \$	1,685,881	1,640,148	720,226	1,484,980	5,531,235
Sales Total %	27.1	48.56	40.07	68.82	46
Hopedale	-	1.49	7.58	3.32	2.3
Makkovik	3.4	7.73	-	28.81	10.5
Rigolet	12.5	17.29	31.59	14.49	16.8
North of Nain(a)	11.3	17.56	-	7.11	10.4
(b)	-	4.5	-		1.3
Over the side	-	-	-	16.67	4.5
Longliners	-	-	0.9	0.43	0.2
Shrimp licence	25.2	27.14	40.92	11.87	24
Government Grants	1.9	10.97	3.93	16.33	7.4
Share capital sales	0.5	0.01	0.13	0.07	
Recoverable income tax	-	10.41	12.63	1.82	12.2
Gear sales	-	0.5	-0.98	-0.56	
Construction projects	0.2	0.39	0.79	0.38	0.4
Other	45.1	2.6	4.61	3.09	14.2

41.9% of the total 1981 income of items selected here derives from the funds handed to Torngat by the Fisheries Emergency Policy Committee. This comprises the net income of Federal Government Local Employment Assistance Programme funds (provided to the FEPC) and the net income from the shrimp licence and interest (operated by the FEPC) after all expenses had been deducted. The FEPC income is derived from the 18 months ended 31 March 1981. This income has been included under the "other" category in the above table.

Inventories have been recorded as income in the year in which they have been produced as these are able to be allocated by catch location.

years 1981-1984. Despite the improvement however the performance is still dismal.

If the performance as a profit-making company is so bad, what then can be made of the management of the company by analysing the financial statement? In general management has greater control over operating expenses than over revenues and consequently the "operating expense ratio" (operating expenses divided by net sales) is commonly used as an indicator of management performance. A low or decreasing operating expense ratio if taken in context would be a sign that the problems may not be entirely management ability. As Table 7.1 clearly indicates, Torngat has shown a dramatic improvement in its operating expense ratio, down from 3.34 to 1.16. Moreover this has been a steady improvement. It is still, however, a high ratio which needs to fall below 1.0 for Torngat to have a chance of profit-making.

The steady increase in the accounts receivable turnover rate is also indicative of improved management. However, this is counter-balanced by the increasing debt ratio and the particularly sharp decline in the equity ratio. A low debt ratio (or high equity ratio) is particularly important for creditors as it means the shareholders have contributed most of the business's

funds. In other words "the margin of protection to creditors against a shrinkage of the assets is high" (ibid:640). Torngat is clearly undercapitalised by its shareholders (bearing out points made by interviewees when developing a rich picture) and is not a good long term investment.

Short term creditors are more likely to be interested in Torngat's short-run debt paying ability and its short-term liquidity. Commonly used indicators of both these capacities are respectively the current ratio (which measures the relationship between current assets and current liabilities) and the acid-test ratio (which relates the highly liquid current assets to current liabilities). In Torngat's case these ratios both show declines of already low ratios. As would be expected, the level of bank credit comprising current liabilities has decreased from 28% in 1982 (none was recorded in 1981) to 19% in 1984. Accounts receivable are the largest component of current assets in each year and their turnover is improving. However an acid test ratio of at least 1.0 would still be required for it to be considered satisfactory. Thus only two of the four years (1981 and 1983) show a satisfactory acid-test ratio. The fluctuation of the ratios however indicates they should be treated with some caution. The relatively good

performance in 1983 is quite marked and the reasons for this will be discussed further below. A final and related point which can be derived from table 7.1 is the lengthy operating cycle. This probably reflects the seasonal nature of Torngat's main product (fish), but it is unfortunate equivalent information is not available from DFO against which to compare Torngat's performance in this respect, as the operating cycle indicates the time it takes to convert inventory to accounts receivable and then accounts receivable to cash. As Meigs et al explain (p.645) "a trend toward a longer operating cycle suggests that inventory and receivables are increasing relative to sales and that profits may be hurt because of lower sales volume and an increasing investment in current assets". There is however no discernable trend in the operating cycle.

It is quite clear from the above analysis that the figures need to be looked at in more detail. Of particular interest are the relatively good performances recorded in 1983. The current and acid-test ratios have already been discussed and a close examination reveals that on most indicators 1983 was a better year than 1982 or 1984. An obvious explanation is the cutting out of the North of Nain exercise in 1983. The data in Table 7.2 indicates the radical changes which might occur when

the North of Nain fishery is not undertaken. In all cases the improvement is dramatic, especially for 1982. The trend however is for a worsening on most factors. This indicates the North of Nain fishery certainly is not the only contribution to the financial problems faced by Torngat. If anything a steady decline in all factors is apparent.

If the North of Nain operation can be discounted as the only contributor to Torngat's poor financial performance, other aspects which should be considered (and which may also throw light on other conceptual models) are the geographical and functional item spread of expenditure and income. These data are assembled in Tables 7.4 and 7.5.

From Table 7.4 it is readily apparent that the key money spending items are the production expenses. These comprise between about 40 and 55 percent of the total expenditure on fish operations each year, with the lowest year (1983) being not much lower than the production expenses of years when North of Nain operations were carried out. The interesting point to note here is that the large proportional increase in fish purchase expenditure in 1984 is at the expense primarily of Administrative Expenses incurred by Goose Bay. Wages,

etc. are fairly constant proportionally throughout all years, and the impact on charters, etc. of not going North of Nain in 1983 is clear.

While the proportional expenditure incurred by the Goose Bay office may appear disproportionately large, having a quarter of the annual budget spent on administration in an area like Labrador (where socio-political and physical environment factors add considerably to costs) may not be unexpected.

The income data in Table 7.5 confirm the importance of the shrimp licence to Torngat.

That 70 percent of Torngat's income is derived from its operations and only 7 percent from direct government grants reflects a better income generating performance than many of those questioned would have anticipated. That the proportional amount of grants grew substantially to 16 percent in 1984 would be cause of some concern in a business evaluation. However it must be remembered that in business terms government grants, if planned for in advance, are a legitimate source of income. If not planned for they are at least a windfall. From the field research it was apparent that potential government grants

were taken into account when planning each year's activities.

Given the substantial proportion of Torngat's expenditure incurred by the Goose Bay office, an assessment of trends in percentage expenditure by item was undertaken (Table 7.6). This revealed the major expenditure component to be wages and employee benefits. As the actual expenditure on the Goose Bay office declined, the proportion spent on wages and employee benefits remained relatively constant. However as professional and consultants' fees declined (reflecting perhaps the initial high cost phases of setting up the co-operative and/or the increasing skill level of Torngat's management), doubtful accounts were showing a substantial increase. Education expenditure, which is often a good indicator of the forward planning of an organisation, declined substantially.

A comparison between the financial data published by the Kirby Task Force (Kirby 1982:114-119) and that collected for this thesis is presented in Table 7.7 and reinforces the foregoing analysis. (In looking at this data it should be noted that Kirby's data are provided by plant, whereas the Torngat data is for the entire Torngat operation.) It is interesting to note that

Table 7.6 Torngat Administrative Expenditure Composition in Percentages for 1981-1984

	1981	1982	1983	1984
Communications				
Travel - Board	10.38	4.66	2.71	2.42
- Office	4.17	3.91	1.14	0.77
Telephone	6.21	6.79	7.69	7.14
Annual General Meeting	1.24	2	1.18	1.64
Other communication costs	0.84	1.73	1.54	2.31
Per diem	4.48	1.72	2.36	2.28
Professional Fees and Consultants	28.34	21.49	11.78	9.23
Wages and employee benefits	26.65	30.4	34.58	33.91
Doubtful Accounts	4.17	4.03	8.05	14.11
Education	0.15	2.84	3.46	0.24
Office and vehicle costs	5.31	7.81	7.74	7.9
Bank and insurance	1.68	2.91	7.32	6.05
Depreciation	4.17	5.91	10.11	10.4
Other	2.21	1.29	0.34	1.6

Table 7.7 Comparison between the financial performance of Torngat Fish Producers' Co-operative and the Kirby Task Force data* and targets

	Kirby Task Force Indicators						Torngat's Performance		
	Average Inshore Plants		Very Un-successful		Actual Sample Average		Target Inshore Plants	1981	1984
	1978	1981	1978	1981	1978	1981			
(T)	6.0	4.0	4.5	3.3	4.9	3.3	6.0	4.4	6.9
(EF)	0.72	0.03	0.42	neg	0.63	0.1	1.0	6.12	neg
(DE)	0.96	30.0	1.72	neg	1.23	8.75	0.8	0.6	1.14
(L)	0.54	1.17	0.49	0.93	0.5	1.13	0.4	-	0.34
(CR)	1.15	0.73	1.15	0.67	1.18	0.75	1.3	1.55	0.59
(ROE)	0.35	neg	neg	neg	0.34	neg	0.19	0.4	neg
(SGA)	10	10	9	10	8.5	9.9	9	334	116
(d)	0.12	0.11	0.09	0.08	0.11	0.09	0.1	0.23	0.61
(t)	0.34	neg	neg	neg	0.34	(1.2)	0.34	0.46	(0.12)
(DI)	63	51	69	67	72	64	70	157	26
(ACP)	40	36	46	42	40	39	35	266	55
Cost of Sales (as % of sales)					80.9	88	82.7	54	58.6
Gross Margin (as % of sales)					19.1	12	17.3	46	41.4
(T)	Fixed asset turnover = Sales divided by net fixed assets								
(EF)	Equity to fixed asset ratio = Shareholders' equity divided by net fixed assets								
(DE)	Debt equity ratio = Long term debt divided by shareholders' equity								
(L)	Loan ratio = Short term bank loans divided by inventory and accounts receivable								
(CR)	Current ratio = Current assets divided by current liabilities								
(ROE)	Return on equity = After tax income divided by shareholders' equity								
(SGA)	= Selling, general and administrative expenses (% of sales)								
(d)	Depreciation rate = Depreciation expense divided by net fixed assets								
(t)	Tax rate								
(DI)	Days in Inventory = Average annual days based on recorded end of year value in 1983 and 1984 financial statements of gear and packaging inventories. No fish inventories were recorded in either year for Torngat								
(ACP)	Average collection period								

* After tables 5.31, 5.33 and 5.34 in Kirby (1982)

Torngat's performance is close to the targets in terms of fixed asset turnover and loan ratios. In all other aspects it is far from the targets established by Kirby (as the 1984 Torngat days in inventory is based on gear and packaging only, it is considered too suspect for comparative study to be fruitful). The comparison of 1981 figures also indicates that with the exception of the high levels of selling, general and administrative (SGA) expenses, Torngat in 1981 was, relatively speaking, in pretty good shape. The high SGA expenses have however been decisive in Torngat's overall business performance.

Overall the picture from a business perspective relevant to the model suggests the perception of Torngat as a business is not supported by the real world picture. The qualification which should be added however is that Torngat as a co-op needs only to provide for the needs identified by its members and to do so on a sustainable basis. It may not need to be profitable, just sustainable. The key question which the above analysis raises is that of sustainability. It is clear that Torngat is largely dependent on cross-subsidisation of its inshore operations by its off shore shrimp licence. The use of that licence is not secured and the actual earnings have declined. Government grants are also substantial, and by their very nature are dependent on

political factors. The future of Torngat is not secure even from a non-profit business perspective. It is however possible that the Government could consider using Torngat as its agent in managing Government fish operations along the North Labrador coast. If this were agreed to it might provide the stability required for Torngat. While comparable data for other companies operating in North Labrador were not available, the improvement noted above in some performance indicators suggests effective management capabilities. The vulnerability to loss of either the shrimp income or government grants provides adequate justification for a high priority being accorded by management to political lobbying. We will now look at the production appropriation models.

7.2.3.2 Production Appropriation

The production appropriation root definitions (RS10 and 11) should have quite different outcomes. In assessing the outcomes of Torngat from either perspective it is necessary to assess the structure of the modes of production on the Labrador coast and identify to what extent Torngat is instrumental to them. In short, a complete assessment would require a full before- and after-Torngat analysis of modes of production. This is

beyond the scope of this thesis. However a brief summation based on data acquired during this research is provided here.

Before the creation of Torngat, the Labrador fishery was dominated by non-Labrador capital through the annual floater migration. It is probably fair to say also that Labrador capital predominated over Labrador labour in some settlements (e.g. Makkovik), through the use of crewed vessels. The lion's share of the value of production was taken by the boat owner. However there was in most communities a predominance of petty bourgeoisie (i.e. owner-operators of fishing vessels/gear and traditional fishing sites or grounds) operating primarily as commodity producers. The value of their production was almost entirely appropriated by middle-men en-route to market. On the one hand the middle-men comprised the government, on the other private fish companies. These middle-men were not the producers of the goods, but provided the conduits to bridge the gap between fishers and markets. In the period of 5 to 10 years immediately preceding Torngat's formation the low level of fish stocks resulting from over fishing (i.e. primarily a non-Labrador labour and capital appropriation of the resource) had led to a decline in fishing interest to the point where it could be argued that the presence

of government owned fish plants operating at a loss on the Labrador coast essentially reflected a reverse appropriation of non-Labrador labour and capital by Labrador labour and capital. The establishment of these non-Labrador owned fish plants also assisted the growth of a permanent wage-labour working class in the coastal communities (as opposed to the relatively impermanent labourers associated with radar and similar construction efforts).

The co-op's formation thus represented a joining together of Labrador labour and capital to prevent the re-establishment of non-North Labrador labour and capital's appropriation of the value of the revitalised Labrador fish stocks. Most co-ops are readily identifiable as either worker, consumer or producer co-ops; however Torngat does not fit any of these categories. Its membership is open to all North Labrador-fisheries-involved residents.

This unusual combination of labour and capital places Torngat in a difficult position in terms of modes of production analysis.

The degree to which Torngat meets the requirements of RS10 and RS11 is therefore in the complementarity of

the two models. It is clear that the source of conflict would be who (Labrador labour or Labrador capital) appropriates the value which would otherwise be appropriated by outsiders. It seems fair to suggest that Torngat was the only feasible mechanism by which either could attain its objectives. Therefore the two would need to share equally in the appropriation of value from the fishery.

To assess the outcome of these systems requires identification of the distribution of Torngat benefits, the level of these benefits, and an assessment of the extent to which these benefits would have been appropriated by non-North Labrador labour and capital. An analysis of Torngat's records indicated that the petty bourgeoisie dominated the co-op's individual fish purchase books in dollar value terms. Thus it could be argued that the co-op's higher prices for fish and longer season, compared to its competitors, represented capital's success in creating a system which appropriated surplus value primarily for capital's benefit. The board itself was dominated by small commodity producers with few wage workers.

On the other hand Labrador labour had gained access to UI and to longer employment through the co-op

structure. It is also now able to appropriate the value of the production of non-Labrador labour and capital (the floaters) through operating over-the-side-sales and by means of its fish plant operations.

At a more Marxian analytic level, however, the data produced from this research clearly support Overton's analysis of the role of the middle-class intelligentsia in the expression of neo-nationalism through a populist perspective of rural development. Essentially Overton's (1979) thesis is that embryonic neo-nationalism can be analysed within a framework of:

1. conditions and forces which produce such movements;
2. the form that the movement takes;
3. the initiators and facilitators of the movements;
4. the theoretical basis of the movement; and
5. the implications of such movements.

His analysis of Newfoundland can be readily transposed to Labrador (with a change down in scale). Resettlement, cultural differences and the difficulties of the fishery controlled the development of the conditions for an independence movement in North Labrador. The Newfoundland reaction against "changes that are seen as being imposed from outside" (Overton 1979:227) was

clearly felt from a Labrador perspective by all those I spoke with. Overton (ibid) notes the "control of resources" as a central issue in the debate over development in Newfoundland, with the view that the resources were appropriated by outsiders. Just as neo-nationalist positions were seen as advantageous in terms of getting Newfoundland a better deal in its relationship with Canada, the same applies to North Labrador.

The need for development to take a form compatible with "traditional values and way of life" of native peoples in North Labrador was advocated by the middle class elite (academics and intellectuals). The theoretical basis of this approach grew from dependency theory and comprises the four basic ideological components noted by Overton (p.230):

"(1) An emphasis on economic, political and cultural independence and autonomy. (2) An emphasis on lifestyle solutions to problems of underdevelopment . . . restricted consumption patterns be combined with traditional patterns of "occupational pluralism" . . . (3) Concern with small-scale industry using local resources . . . (4) Community development - i.e., grass-roots, bottom-up decision-making rather than top-down decision-making and large-scale development schemes - as a strategy for progress. Associated with this are the ideas of self-sufficiency, self-help and self-reliance . . . (5) An emphasis on obtaining more revenue from resource development and on using income . . . to help maintain, develop or revitalise industry that will fit in with local culture".

In other words a "diffuse populism" with two main strands - nationalism and "economic romanticism".

In Labrador the role of a "middle-class" of "traditional intellectuals" has perhaps had a greater impact than that ascribed in Newfoundland by Overton (p.236). This group was represented by the intellectuals of the Snowden Commission, MUN extension and lawyers and others working with the Labrador Inuit Association. These were supported by the socially conscious elements of the provincial government (especially in the co-operatives area). On the opposition side, allying with the dominant culture, were the "organic intellectuals" largely employed by Fisheries.

The problem with this analysis however is that the actual division of Labrador fishermen (as opposed to fish plant workers) into classes is not easy. The research here tends to confirm Williams' (1979) view that they play different roles in the productive cycle at different times.

"Contrary to prevailing Marxist approaches, this writer has concluded that straightforward delineations between petit bourgeois, independent commodity producer and proletarianised worker are not necessarily useful in trying to understand the political economy of inshore fishing today. The simple fact is that most inshore fishermen operate within all of these relationships to the production process through the course of a year, or most have had substantial experience with the range of

positions. They own their own capital, and their income comes from exchange. However, they frequently move in and out of the wage-labour market, are regularly unemployed, and have very unstable incomes . . . if they do not do all of these things themselves, other people around them do and these experiences are all part of the culture of the inshore fishermen . . . Any particular consciousness of class interest is qualified by contradictory objective and subjective factors." (Williams 1979:172)

Williams goes on to point out that co-operatives have offered the potential for control over markets and processing. These co-ops tend to disparage unions while seeking the support of the petty-bourgeois and independent-commodity producers. These aspects were certainly part of the rhetoric in evidence amongst Torngat supporters. However the prime motivation was that of a community of communities, a drive for Labrador independence. It could be argued then that in Labrador an emergent mode of production is that incorporated by the ideological superstructure, relations and forces of production generated by Torngat. This may reflect the ruling classes' capture of North Labrador, but as indicated earlier there is not sufficient space to discuss the full articulation of modes of production which the soft-systems methodology has suggested applies in North Labrador.

The real significance of these particular models is therefore that they are generated by the soft-systems methodology and when assessed against the existing situation are found to represent the relations of production. These in turn illuminate the forces of production, the ideological superstructure and the possible capture of North Labrador by the dominant socio-economic class (à la Overton 1979). Thus Overton's (1988) claim of the usefulness of the modes of production approach is supported by this analysis. However, it is also apparent that similar conclusions with regard to the structuration of this region can be achieved using Checkland's methodology.

7.2.3.3 Educating and Training System

This system has to be looked at from two perspectives when compared with the real world. On the one hand there is the education and training purposefully carried out by Torngat. On the other, and much more relevant to the root definition, is the role of Torngat as a training tool. To illustrate this concept I shall discuss briefly a project undertaken by the New Zealand

Government in Papua New Guinea in the mid-nineteen eighties².

Briefly, New Zealand had been asked to fund a diesel power replacement programme in Papua New Guinea. The programme involved the building of a number of micro/mini-hydro electric power stations in rural areas of Papua New Guinea to replace the "expensive" diesel power stations. The New Zealand Ministry of Foreign Affairs (in which I was working at the time with full responsibility for our aid programme to Papua New Guinea) commissioned a project appraisal, the upshot of which was that we offered to fund the establishment and operation of a Mini Hydro Development Unit within Papua New Guinea's public service. The Unit would comprise Papua New Guinea nationals with relevant basic skills (e.g. engineering, economics, social impact assessment) who would learn how to appraise the socio-economic viability and implementation of mini-hydro power projects. To this end we were prepared to provide expatriate trainers skilled in the relevant areas, and, where a proposed project had been assessed as socio-economically feasible, we would be prepared to fund the building of the power station, dam, etc. The key benefit we saw arising from

² Relevant details relating to this project can be found in the New Zealand Ministry of External Relations and Trade's file 118/13/54/30.

this was the development of a skilled cadre of Papua New Guinea nationals able to fully appraise, develop and negotiate contracts for mini-hydro schemes. Part of their role was to act as a resource to others wishing to develop power schemes. It was considered that such an approach would be of most benefit to Papua New Guinea as a whole in that it would help mitigate the influence of those wishing to press for mini-hydro developments which might have intuitive economic appeal but in fact be more of a long term economic burden for Papua New Guinea than existing diesel power schemes or other options. The need to actually build one or two mini-hydro schemes was recognised as essential to develop the unit's practical skills in the application of the theory they could be taught.

In the Labrador context if a similar strategy were followed, that is, if there were a number of players who saw the development of business management skills amongst Labradorians as desirable, then they would seek a tool by which to achieve this end. The best such tool is one which those being trained would see as useful to themselves; and consequently, the development of a business which could provide direct benefits to the majority of the Labrador residents, and which would also have the potential for training them in techniques

relevant to their role in Canada and the Province, would receive wide support. There are few conceivable mechanisms which could play this role better than Torngat. Consequently, both explicitly and implicitly it has developed as a training/learning system. Its board and members comprise the people of Labrador. It has received assistance from professional trainers/educators (e.g. MUN Extension and the Donner Foundation - the latter via Leo Hanrahan). The Registrar of Co-operatives has also assisted, as have a number of other government departments and personnel. The skills which have been developed through having to apply the theory of co-operative and business management have led to an empowering of North Labradorians in a way which has in turn meant those involved elsewhere in the North Labrador fishery have had to learn and acquire new skills. This is evident especially in the areas of negotiating and dealing with North Labradorians. As with all such learning systems there is some resentment and resistance from conventional or established systems. This tension may reflect the attempt by North Labradorians to control the system and is notable in the debates over the role of Torngat. When for instance Torngat showed interest in running the stores on the coast the Registrar (as teacher) made it clear this was "not on".

It is not the purpose of this thesis to argue that the interpretation of Torngat as a learning/training/educating system is its prime purpose for existing. Nor is it intended to analyse the success of Torngat as such a system. It is sufficient here to say that for the purposes of structuring the debate required of Checkland's methodology, a comparison between the model and the real world indicates the model's components are present and can be illustrated through an examination of Torngat's operating as a learning system. A needs identification system has been informally established within Torngat through practical experience and the needs have been met through Torngat itself operating as a T-Group. That is, Torngat operates as a mechanism within which the participants learn from their own experience in operating the mechanism. This is tautological, but such systems can be deliberately designed. The outside input for Torngat has been informally established, but is no less real for its informality. Within Torngat, co-operative business management skills have been developed by the Board, the General Manager and members, and in addition specific skill development projects have been put in place to meet needs in shrimp fishing (at least three North Labradorians annually are trained on the shrimp vessel which Torngat contracts to use), fish grading (Torngat sponsors North Labradorians on grading

courses) and long-liner fishing techniques (again in a T-group type operation Torngat has hired long-liners specifically to develop the long-liner fishing skills of North Labradorians). The monitoring systems are largely external to Torngat, but informally linked to it both through direct contacts between Torngat and those monitoring its performance (e.g. the Province's Registrar of Co-operatives) and through activities related to Torngat's performance targets (e.g. ownership of the fish plants and use of the shrimp licence). Corrective action is undertaken when required; however it could be argued that a more formal and explicit recognition of Torngat as a learning/training/educating system might result in a more focussed approach to needs identification and monitoring. These are the type of issues which the Checkland structured debate would facilitate being addressed.

7.2.3.4 Shrimp Licence Acquisitor

That Torngat has been formed to bring activities of North Labradorians under a cohesive structure is clear from the rich picture. That it has successfully identified standards of performance which result in it receiving the shrimp licence on an annual basis is also clear. That in some quarters Torngat's claim to the

licence was not seen as very solid is also clear. There is pressure from a number of sources attempting to have the licence reallocated. This pressure is perhaps an indicator of the degree of refinement of Torngat's system for identifying the performance standards required of it. Recognising the political processes involved in awarding shrimp licences, Torngat has managed to circumvent the standard supposedly required of a holder of the shrimp licence. This standard is essentially that the organisation awarded the licence actually own its own shrimp vessel. In other words the standard is established to support existing Canadian capitalist power brokers by ensuring that the shrimp licences are used by Canadian vessels. Torngat does not own a vessel nor does it seriously consider obtaining one. At one time this was considered a possibility, but instead Torngat contracted an economic appraisal of purchasing a vessel. This report basically concluded it would not be financially viable for Torngat to operate its own vessel. Armed with this knowledge Torngat successfully pressed on government its case for an exemption to the general requirement. That they were able to establish a direct link with the Federal Minister (which proved successful) is also a testament to the effectiveness of their implementation systems. That the shrimp licence also plays a crucial role in cross-subsidising (from the

off-shore) the inshore fishery is also clear from the financial analyses earlier in this chapter. As long as Torngat can show that North Labradorians are the prime beneficiaries of its inshore fishing operation, then it will be effectively meeting the criteria of the Minister.

The question which remains unanswered is whether this represents a long term acceptance of the Torngat viewpoint of the use of the shrimp resource and also recognition of the non-viability of Torngat purchasing and operating their own vessel. This is perhaps Torngat's most vulnerable point. Torngat could be put out of business simply by loss of the shrimp licence. This is beyond the scope of this thesis to explore. The point that this analysis does make is that the structures and processes required by the model are in existence in the real world (if somewhat informally defined).

7.2.3.5 An Employment Generator

My assessment of the rich picture in comparison with the RS8 conceptual model suggests that if Torngat's role is as an employment generating system then there are a number of components missing. With the exception of the North of Nain fishery there has been no formal or informal structure established to implement a number of

key stages of the model. Of critical importance is the lack of a system for identifying work opportunities in North-Labrador based fisheries. Although the employment opportunities have often been voiced as justification for a particular course of actions, Torngat has usually raised these issues as supporting arguments. Providing work and employment is seen as secondary to providing benefits to its members. As it happens most of the benefits (e.g. UIC) it can provide are linked inextricably to the provision of work.

Thus while it could be argued the North of Nain fishery fits the model fairly well, I would not necessarily accept that employment was the main purpose; rather it was to relieve the pressure on Nain and its surrounds. Torngat's appeal for government support also took on strong emancipatory language (e.g. the "right to return to the ancestral domain").

Torngat modelled as an employment generator has shown divergences on key points between the theory and practise. This is the strength of the methodology as a tool to assist diagnoses of businesses. Should it be decided that Torngat should in fact be focussed on employment generation, then the items discernable in the rich picture are key focal points.

7.2.3.6 Independence Enhancing System

As a system where the end essentially justifies the means, the components of this system may be difficult to identify in the real world. This is because it may not assist the achievement of the end (enhanced independence) if those who constrain the Labradorians are apprised of the true purpose. This was demonstrated by the coolness with which one interviewee (a "Fed") regarded the "increasingly LIA type sentiments coming through Torngat's material". Enhanced economic independence was seemingly supportable for this official, whereas enhanced political independence was not.

Despite the relative lack of specific statements to support an independence enhancing system, and indeed the plethora of statements to the effect that Torngat is "a business", there is no doubt in my mind that for at least some of those who helped establish and/or develop Torngat there was at least an implicit commitment to increased economic independence and thereby enhanced total independence. As one person who had been involved with Torngat for some time commented, "I got involved because it was something real I could do for North Labrador, put food on the table of the people, not the theoretical stuff they (LIA) were talking about". Others, mostly

outsiders, drew attention to the need for North Labrador to attain economic self-reliance in order to achieve overall independence. I gained the clear impression in some of my interviews that Torngat was conceived originally as a counter to the threat of loss of economic independence rather than as a system for enhancing independence. Thus as long as there existed a North Labrador-owned company with a significant role in the fishery, it provided North Labrador with a credible voice in the management of the fishery. Torngat was for these people a tool for implementing an independence maintenance or enhancement strategy.

The closer ties between Torngat and the LIA which began to be established with the election of Torngat's General Manager to the LIA Board in 1985 had a slightly different flavour. The General Manager saw his role on the Board as offering the opportunity to: (a) bring a greater degree of accountability to the LIA (through using his business skills); and (b) to use the LIA to support Torngat at political and policy levels. The latter marks a major strategic change for Torngat. The extent to which this reflected a considered strategic development by Torngat's Board was not clear, although I am certain from my field work that the General Manager and his main advisors had identified the concept as a

useful, but not essential, adjunct to the campaign for Torngat's survival.

The RS5 model of the real world therefore receives ambiguous support from this analysis. While the enhanced independence concept undoubtedly drives Torngat's supporters and is a common piece of rhetoric in their debates, the outcome does not appear to have been achieved. The structure of Torngat has not been formalised to support this role concept. However, there is a possibility that the structure is in place, but that it has not been made explicit or public for strategic reasons.

7.2.3.7 Resource Access Acquisition

This model is very well reflected in the real world. The criteria to be met to be considered potential members of the co-op have been clearly established in its rules, and these essentially define all North Labradorians as potential members. Non-North Labrador controlled resources such as the shrimp fishery have been identified, and mechanisms to continue to identify these resources, through sub-committees, the Board and its meetings, the Annual General Meeting, and the individuals who are elected to the Board from each community, also

give it access to the desires and aspirations of North Labradorians. As far as I could ascertain, there is no mechanism to attempt to optimise the mix of the resources (and such a mechanism is not required by the model). However the constraint on the means to attain the end is the qualifying condition that whatever strategies are adopted they must be consistent with North Labrador desires and aspirations. These desires and aspirations are expressed through individuals at AGMs and quite evidently govern the choices which Torngat members make with regard to particular strategies. For example, the choice of the North of Nain fishery clearly fits with the aspirations of North Labrador people as a whole. The establishment of Torngat itself represents a major strategic tool in keeping with the model.

The Board also very carefully reviews the success or failure of resource accessing efforts. At the meeting I attended the policy on providing fishing gear as a strategy to acquire greater access to the fishery was examined. The problem was noted that those in charge of the gear in individual villages have friends and relatives and that some of the gear invariably gets given away. There are numerous ways to prevent such stock losses, but they may not fit with the social aspirations

of North Labradorians and therefore they were not adopted.

That the co-op has obtained funding and expertise from a variety of non-North Labrador sources is also supportive of the model. Finally it is also worth noting in this context that Torngat has looked beyond fishing as the only activity it can be legitimately involved in. Thus it is looking at resources as a whole, quite in keeping with the point noted earlier that this model does not restrict Torngat to a fishing role. I will discuss the implications of this for the future of Torngat below. The key concept here is that the outcomes are being achieved

7.3 Implications for and from macro-models

The above comparisons of the conceptual models with the real world are summarised in Table 7.8. It is clear from this analysis that RS2 and RS5 withstand the comparisons best and that the other models and relevant systems tested are subsets of one or other of these two. The data discussed also appear to be on the side of RS2.

As noted earlier, RS2 is compatible with all the macro-models generated in this research. As a tool for

Table 7.8 Micro Models compared with the Real World

Conceptual Model	T e s t T y p e		
	Overlay	Questions	Outcomes
RS2 Resource Access Acquisition	=	=	=
RS5 Independence Enhancing	=	?	=
RS7 Shrimp Licence Acquisition	<	x	=
RS8 Employment Generating	<	x	=
RS9 Educating and Training	<	x	=
RS10 Production Appropriation by Labour	<	x	=
RS11 Production Appropriation by Capital	<	x	=
RS12 Profit Earning	<	x	x

Where: < means that the test indicated the conceptual model and thereby the root definition captured less than was contained in the rich picture of the situation

= means that there was close congruence between the model and the analysis of the rich picture

x means that there were clear difficulties between the model's structure and process and/or its outcome and those identified in the real world

? means that the process may not be clear, but that the intentions and outcomes suggest the processes are in fact present.

ascertaining the nature of the Labrador fishery the focus on Torngat is therefore not as successful as anticipated. However, the results could also be interpreted to mean that the peculiar nature and characteristics of Torngat represent a viable and fully determined intervention in a region where a number of different perceived systems are vying for dominance.

This in turn suggests firstly that should Torngat wish to maintain its present form of existence then it should adopt strategies which ensure the continued existence of the competing perceptions of the Labrador fishery. If it is successful in this then it will be able to adopt a range of strategies (which are perhaps illustrated by some of the other root definitions) to achieve its primary function of accessing resources. It will thereby be able to draw support for these strategies from those who ascribe to the particular perceptions of the Labrador fishery encompassed in the macro-model root definitions.

Secondly, as RS2 does not by definition require fisheries involvement, power brokers may wish to consider Torngat within a multi-resource regional planning context. No longer should it be considered purely in terms of its role in fisheries.

At the same time if RS5 is more applicable than RS2, then those who hold the RS5 viewpoint would be well-advised to give careful consideration to its incompatibilities with RD2, 3, 6, 7 and 11 and to the degree to which coming into the open with the objectives of RS5 might jeopardise the continued existence of Torngat. As the final outcome is all that is of interest under RS5, any subterfuge in means is quite acceptable.

7.4 Out of order usage

The preceding discussion suggests that while the fishery is the major physical/biological resource for the North Labrador region, it is most appropriate to give priority to the socio-political factors in its utilisation rather than to economics. This in turn suggests a recognition of the role of sovereignty as being fundamental, but even more significantly the concept of Torngat as a residual of the dialectic between different perspectives on the inter-relationship of the fishery and the communities who economically are dependant upon a combination of fisheries production and government largesse.

In the normal course of using the Checkland methodology these models would now be taken back to

structure a key player debate leading to a progressive solution-to-existing-problems-thereby-creating-a-new-problem situation. This would not have been feasible for this research, either logistically or financially. However a preliminary presentation was made to a forum of interested people as part of Memorial University's Institute of Economic and Social Research (ISER) seminar series, "Beyond Kirby". The presentation took place in 1985 and essentially took the line of RS2. Feedback during and after the seminar was positive; however the nature of such a seminar is vastly different from the debate envisaged as part of step 6 of the methodology. Nevertheless, sufficient progress has been made to attempt a comparison between the models generated here and those which might eventuate from an out-of-order use of the methodology. In attempting this, two studies were analysed using the out-of-order approach suggested by Cornock (op.cit.). These studies were those of NORDCO (1983) and Kirby (1982).

NORDCO's model was of the entire Labrador coast and was based on an approach "designed to achieve a realistic and objective assessment of the development requirements of all (fishery) regions of the Labrador coast" (ibid:5). It was also concerned with ensuring that the Canada Fisheries Development Programme (CFDP) investment formed

"part of a well-defined strategy of development which, because of its recognition of local conditions, will encourage private investment". It concluded that "the single most important issue in the development of the Labrador fishery is the fish handling and transportation systems currently in use" and that "standardization and containerization of fish handling and transportation, where possible, is absolutely essential if maximum benefits are to be reaped" (ibid:6).

This does not mean that socio-political aspects were ignored. Extensive research was carried out on the utilisation of the fishery by the various fishers and communities. It was also noted that "the CFDP was concerned with the objective of increasing the level of self-sufficiency of Labrador fishermen" (ibid:73). Despite this, NORDCO argued that the implementation of the CFDP

"comes at a time when growth and stabilization of resources and the cost of supporting the present fishery are liable to impose such extreme strains on the existing buying, processing and transportation systems as to cause complete disruption to the fishery if the program does not establish a direction for development"

(ibid:73)

NORDCO also noted the need for coordination; the potential role for public investment to provide "a

leadership role in a move to set the fishery up in a way which will give the maximum returns to (Labrador) residents" (ibid:74); the need to treat fish stock extraction in an integrated fashion; and the need to increase self-sufficiency of Labrador.

The report did not address sovereignty issues and noted in its closest acknowledgement of the issue that it was undecided on "whether priority should be for developments to serve the mobile longliners or those specifically designed to directly improve the conditions for the Labrador coastal fishermen". This clearly indicates that for NORDCO sovereignty was not the issue, a central authority had the right to determine the direction of the fishery. Consequently the regions used by NORDCO were based on transportation patterns rather than community identification (resulting in Rigolet being separated from the other Inuit communities of Northern Labrador) and existing companies were expected to accept the transportation-efficiency based changes proposed.

"All in all, it is envisaged that there will be changes for the Labrador fish buying companies, but NORDCO argues that centralization and avoidance of duplication will help the companies avoid most of the problems that they may face if coordinated development to handle future resource levels is not undertaken"

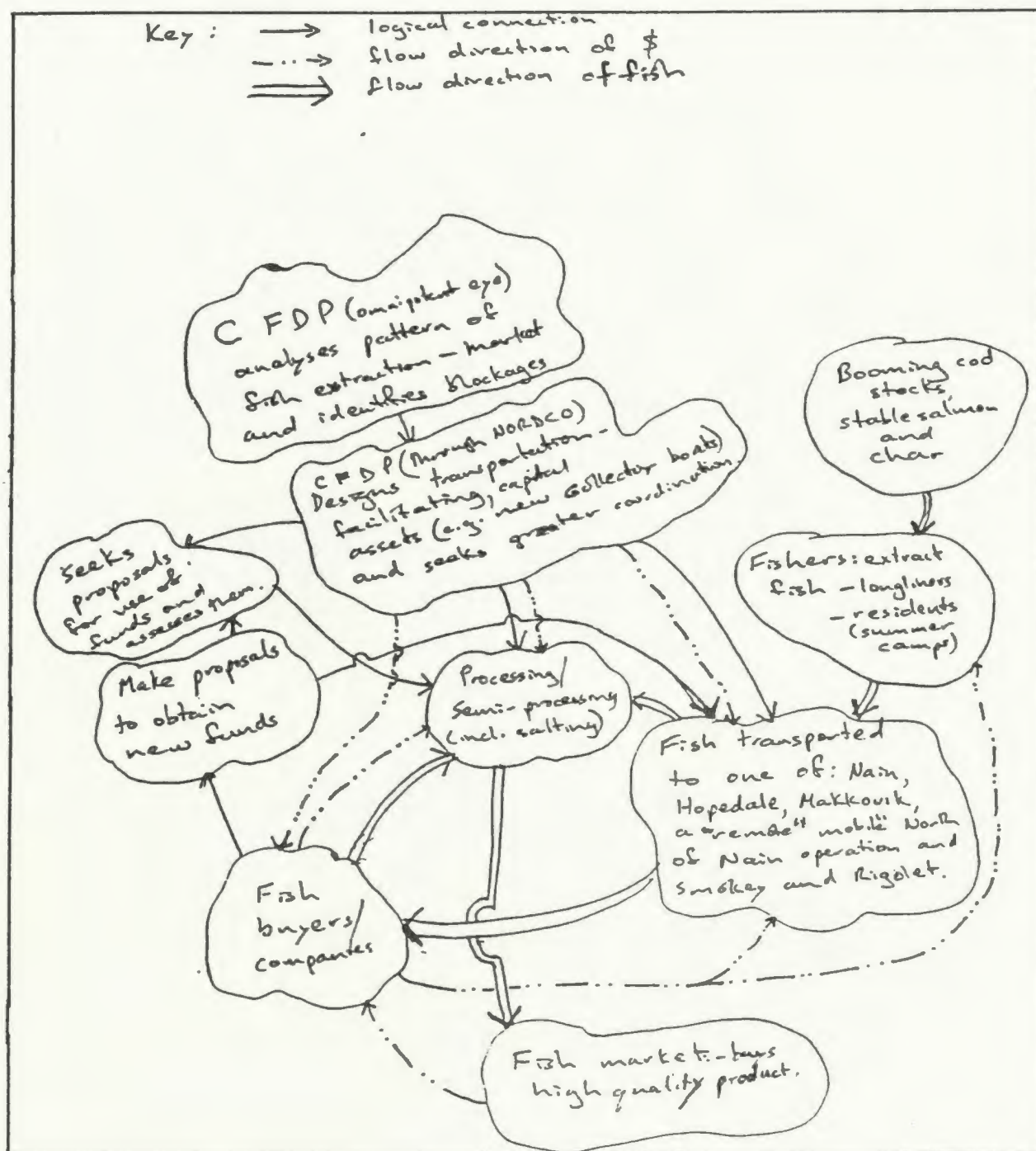
(ibid:76).

The model which emerges from NORDCO's study is therefore one which rests on the implicit assumption that there is a direct causal link between dollars and self-sufficiency. Rather than linking self-sufficiency (the stated objective) with decision-making and self-determination, NORDCO has basically argued that self-sufficiency is a function of efficiency, at least in Labrador. This is reflected in Figure 7.2. This figure is an attempt to put the NORDCO model into a form similar to that used in earlier chapters. It should be noted however that the NORDCO model is not systemically illustrated in the NORDCO publications and this is therefore my interpretation of the model at the centre of NORDCO's plan to develop the future potential of the Labrador fishery (ibid:56-79).

The root definition implied by the model is seemingly:

NORDCO's root definition (RDN): "A system owned by the Canadian government which maximises the sustainable yield of the fishery through minimising quality loss in the relocation of fish from their natural stocks to the fish markets. This will be achieved through the allocation of CFDP funds in accordance with the CFDP plans for infrastructural development."

Figure 7.2: NORDCO's implicit conceptual model of the North Labrador fishery



The usefulness of following this out-of-order approach to using Checkland's methodology is readily apparent. Here we have an example of research conducted and a logical plan for development advanced. However, I would argue that the failure by NORDCO to systematise their "model" has left the actual proposal somewhat blurred. In reading through their main publication on this topic (ibid) it would be fairly easy to find enough "common sense" statements and examples of inefficiencies coupled with "seductive" technological "solutions" to satisfy most participants. Consequently a fuller understanding of the implications of NORDCO's proposals may not be achieved by most of those likely to be affected. As a result any debate over the implications is substantially constrained. For instance, the root definition implied by the model has a very narrow perspective on the needs of the Labrador fishery. There is for instance no causal or logical connection established between maximising stock transfer efficiency and the improvement of the lot of North Labradorians. The implication is that the modernisation theory of development (Rostow 1960) is applicable to North Labrador. There is sufficient doubt over the validity of modernisation theory (Needs 1988) to lead one to suspect that it does not apply in North Labrador. At the very least NORDCO should address this issue explicitly.

Secondly, by failing to address the questions of resource ownership and funding distribution, the NORDCO report may be advocating an ineffective and economically inefficient solution to the problems in Labrador. For instance, funding a solution for Labrador fish stocks which in effect may be an incentive to fishermen to fish more (because they can rest assured there will be less wastage and therefore greater individual marginal returns) is likely to encourage fishing at maximum sustainable levels, as opposed to the optimal fishing level for those stocks. The resultant system is economically inefficient from either national or provincial perspectives (for a discussion on the economics of maximum sustainable yield versus optimum see Anderson 1977).

Looking at the model and the root definition it is clear also that the main direct beneficiary of the money available through CFDP will be fish buyers/companies. If this perception is shared by significant key people in North Labrador then they might conceivably argue against this way of using Canadian funds allocated for boosting self-sufficiency. These arguments and debates may lead to additional costs.

In the context of this thesis's methodology it is important to note also that the model of NORDCO has not arisen from using the methodology in its original sequence. However, it might be argued that this model could be a subset, secondary level model, within a broader framework, and had I moved to lower level models from those developed in Chapter Five I might have produced one like NORDCO's. Consequently the broader framework provided by the models generated in earlier chapters may be implicit. This is not overly important. As the iterative nature of the Checkland methodology proceeds, one would assume that other models would be generated to compare perspectives and to structure the ensuing debate. In essence this has happened here. In other words, the failure of the methodology in this instance to provide the same root definition (when working backward from NORDCO's model) as those generated when following the more usual sequence, cannot be considered a failure of the out-of-order use of the methodology. Indeed the comparisons between the root definitions and models generated through the normal step sequence and the model and root definition implicit in NORDCO's work point toward a major future application of Checkland's methodology as a test of proposals. We can therefore, as Agnew (1984) argued, use the methodology to analyse in hindsight system failures. The results of

this thesis's work however indicate that we can also analyse proposed changes to the existing situation. Through such an approach to assessing proposals, system failure may be more readily avoided.

The report of the Kirby Task Force on Atlantic Fisheries (Kirby 1982) is somewhat problematic for a comparative analysis (Fig. 7.3). Like NORDCO, Kirby has an objective which encompasses a broader region than that addressed by this thesis. Unlike NORDCO, Kirby has subdivided his region into subregions which also encompass areas greater than North Labrador. Despite this constraint, an analysis of the models and root definitions implied by Kirby's analysis of "the Northern Fisheries" - the region "north of approximately 50 degrees latitude" (ibid:249) - was assessed as a potentially useful comparison. If NORDCO's model was seen as a narrow technical interpretation of the real Labrador, Kirby's report might reflect a broader, more socio-politically aware perspective. The broader scope of the Kirby Task Force was also expected to result in a less detailed, but higher level analysis of the situation relevant to North Labrador. The requirement for the Task Force to "present options . . . in particular with respect to . . . alternative models for

Figure 7.3: Kirby Task Force's implicit conceptual model of the North Labrador fishery

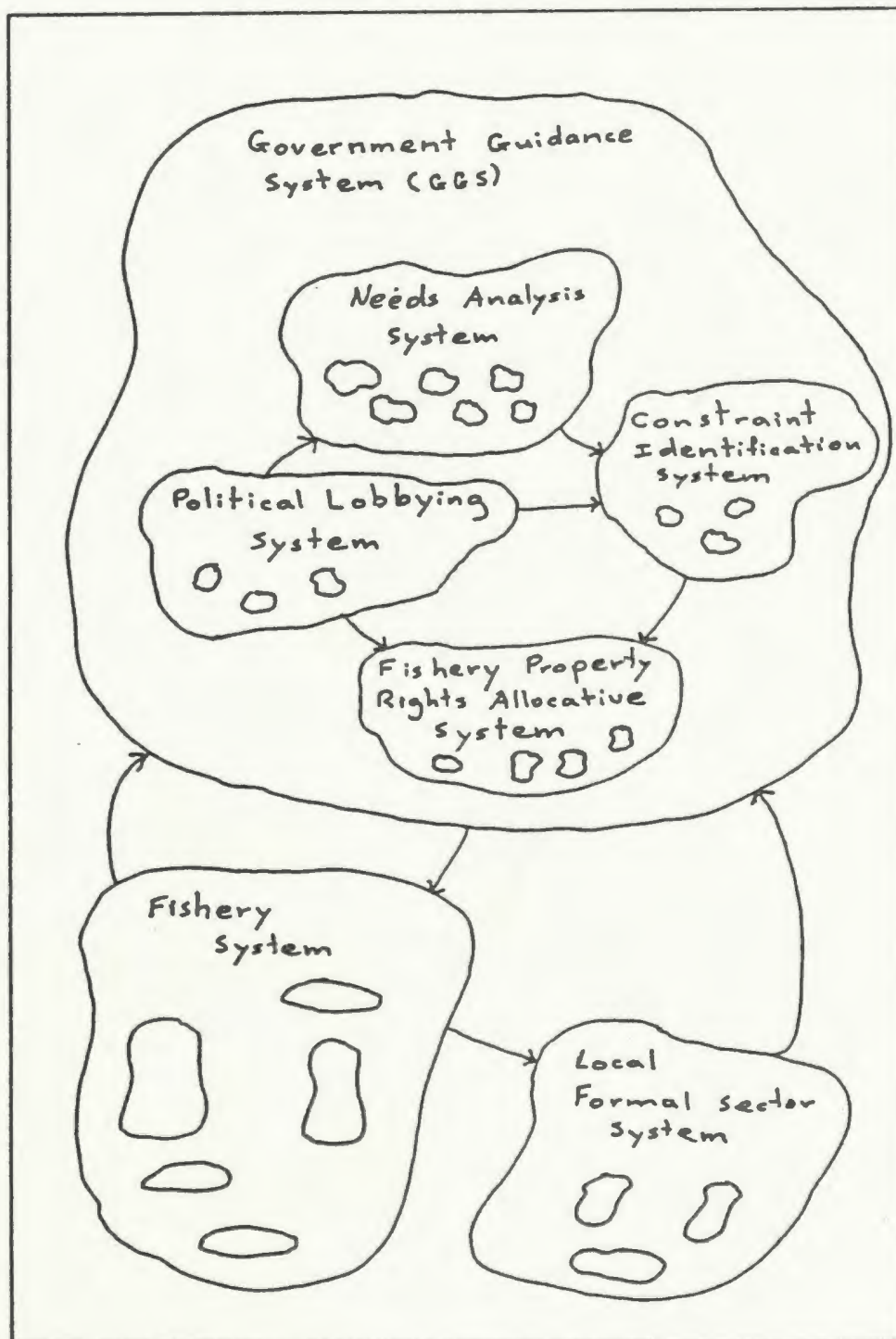


Figure 7.3: (cont.)

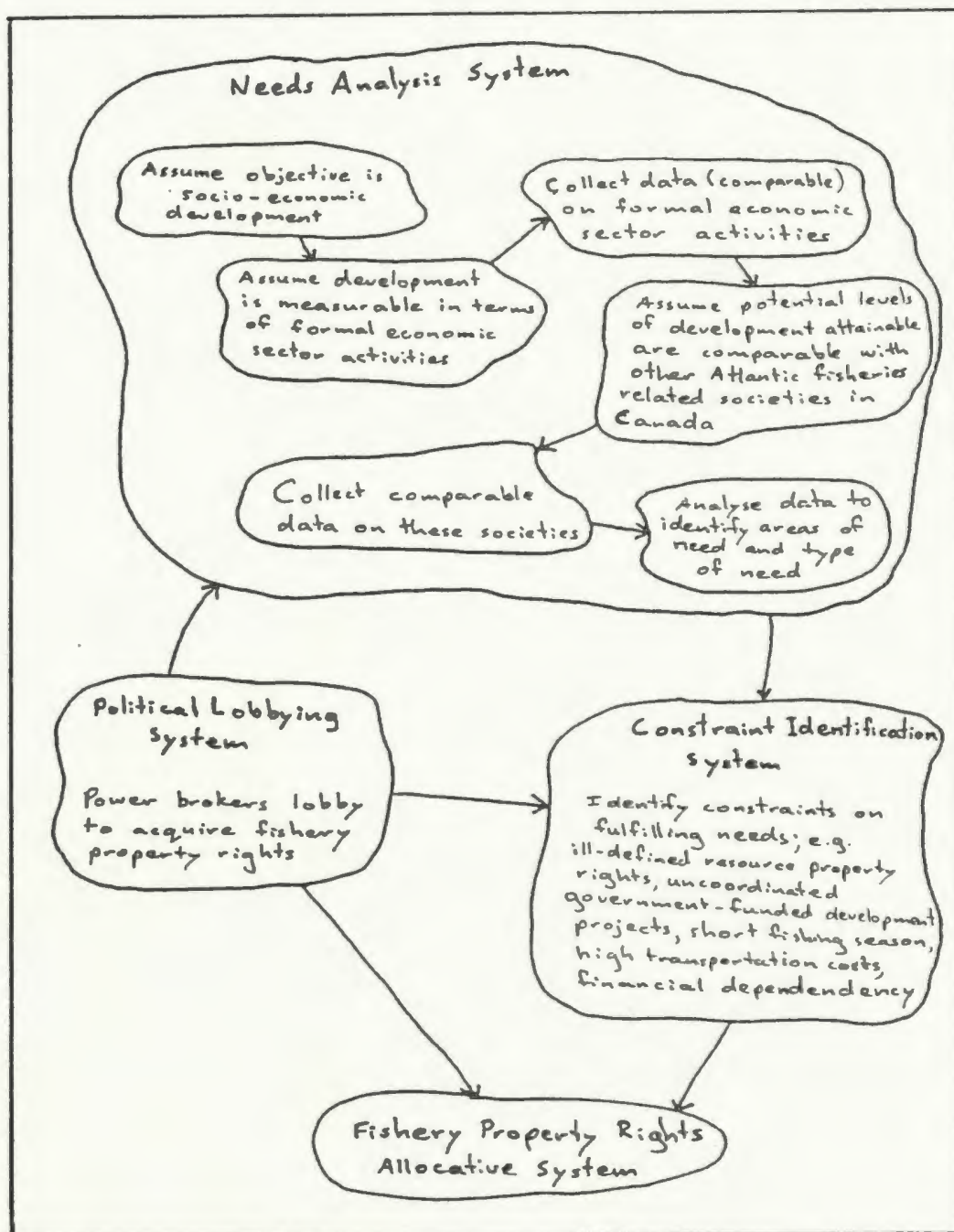
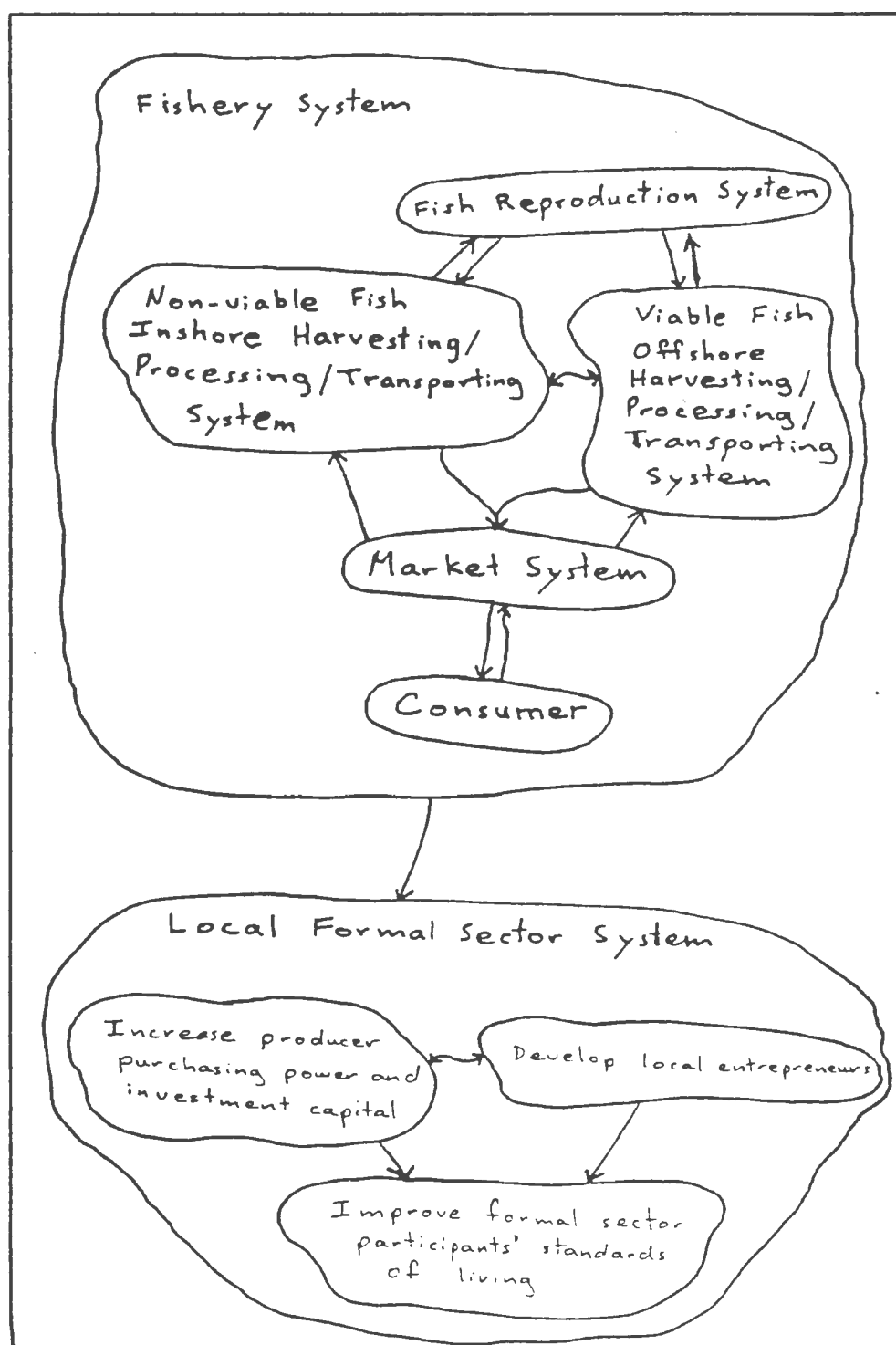


Figure 7.3: (cont.)



the structuring of the fishing industry" (ibid:363) also offered the potential for an enhanced comparison.

Kirby provided four options for the northern fisheries and recommended one. The options presented were (ibid:251-253):

"Option 1: Enhanced Status Quo

The present mix of private sector, provincial and federal government programs would continue, but allocations and licensing (especially for northern cod and shrimp) would be used to manage economic development in the area. Allocations and licences would contain terms and conditions (for example, a contractual relationship between the government and the licensee) to ensure that there would be a degree of cross-subsidization between profitable and marginal operations to achieve social and economic development goals. For instance, shrimp licences could be linked to the continued operation of groundfish processing facilities and further cod allocations to the acquisition and processing of inshore caught fish . . .

Option 2: Use of a "designated instrument"

In return for undertaking to implement the government's fisheries, social and economic development plan for the area, a private sector entity (either an existing processing company, a union, or a new company) would be identified and given specified offshore groundfish allocations and shrimp allocations/licences. These allocations would be necessary to achieve economies of scale and a broader resource base to lend greater stability. In addition, these allocations would provide the basis for a high degree of internal cross-subsidisation by the designated instrument . . .

Option 3: A fisheries Crown corporation

Such a Crown corporation, set up with parallel federal and provincial legislation, along the lines of the Canadian Saltfish Corporation, would have exclusive buying rights in the area. It would be given allocations/licences for northern cod and shrimp which it could exploit as appropriate to generate revenues for social and economic development. It would operate, directly or through agents, all fish plants in the area. The agents could be existing private enterprises, including co-operatives, or be community-owned. The extent of the corporation's social and economic goals, as well as its area of mandate, would be clearly spelled out in legislation . . .

Option 4: A fisheries-related northern development corporation

Such a corporation, modelled after the Cape Breton Development Corporation, would have a broad mandate to promote economic development in Labrador and the Great Northern peninsula of Newfoundland north of 50 degrees. It would be established jointly by the federal government and the province of Newfoundland and Labrador, and would have two interconnected areas of responsibility: policy and program coordination of existing federal (DFO, DRIE, CEIC and DINA) and provincial economic development initiatives in the area; and an operating mandate to manage specific allocations/licences of northern cod and shrimp and to engage in business activities in support of the economic development of the area, including, but not necessarily restricted to, the fishing industry. These business activities would include the marketing of fisheries products produced by co-operatives and other businesses wishing a marketing partner; the provision of investment and working capital loans at competitive rates; the running of fish plants in the absence of any viable corporate or community operator; and the operation of fish collection and transportation facilities."

Option 3 was the one recommended by the Task Force primarily because it would not take time to set up, would

not create "another level of bureaucracy", and had existing expertise and presence in the area (ibid:254-255). In arguing for this option the Task Force was clearly influenced by the success of federal government intervention at St. Anthony (in Newfoundland) in 1982. It considered this intervention, which involved the re-opening of a fish plant that had been closed by its non-St. Anthony-based owners, owed its success to appreciation by all concerned that they were working "for themselves and their community, rather than for the benefit of a distant head office". This was brought about by "the close link between the management of St. Anthony Fisheries and the CSC" and this "should be strengthened and expanded by modifying the mandate of the Corporation in this area" (ibid). The Task Force made it clear that it was not recommending the CSC be given a monopoly over fish processing or marketing for the region.

For each of the options it outlined the Task Force provided a brief summary of the main "pros" and "cons". Before looking at the root definitions and models implied by the options it identified it is useful to analyse these "pros" and "cons" to clarify the rich picture the Task Force held in its mind when identifying the options and in making its recommendations. This analysis,

combined with an analysis of the additional background information provided by the Task Force, should confirm the implied root definition held by the Task Force of the fishery as it was at that time.

The common threads running through the pros and cons were that:

- there should be no long term government financial commitment/risk and that government involvement be at arm's length;
- the solution should be politically acceptable (and not precedent setting);
- bureaucracy should be minimised;
- community stability should be enhanced and social distress minimized;
- there should be flexibility to capture and reinvest resource rents for generating jobs and improved incomes;
- there should be productivity incentives;
- local labour should be used; and
- dependency on government should be minimal.

The emphasis is clearly on economic issues, but this is balanced by a recognition of socio-political aspects. This balance was one of the rhetorical features of the

Task Force report, which noted at one point

"We were struck by the number of people who seem to believe that somehow the economic problems of the fishing industry and the social problems of fishing communities can be neatly separated and shunted off into adjacent cubbyholes for examination and solution. Almost from the beginning of our work, we rejected this notion. To try to create an economically efficient industry as an end in itself without regard to social values, or to attempt to preserve a way of life without part of that life being meaningful, self-supporting work, is like trying to separate body and soul. Our approach therefore recognises explicitly the inseparability of economic and social issues in the fishery."
(ibid:8)

In arguing that fishing communities should be maintained, the Task Force also made it clear that

"maintenance does not mean the automatic preservation of the status quo or the mummification of coastal communities as quaint tourist attractions" and "any society, by its nature, must change over time, but social or community change must be evolutionary rather than revolutionary"
(ibid).

This understanding of the Task Force's approach and its explicit incorporation into its assessment of the options for the northern fisheries must be tempered by an appreciation of the philosophic basis for their projected change. This was assessed almost entirely in terms of economic development with a strong modernisation theory

underpinning it. Thus it characterised the region as having:

- low capital investment;
 - an untrained work force;
 - unstable local economies;
 - the transport out of the area of raw and semi-processed fish;
 - high transportation costs;
 - inadequate basic infrastructure (e.g. 3-phase power is not available in coastal Labrador); and
 - chronic dependence on government subsidies.
- (ibid:254)

Having noted earlier (ibid: 250) that "one indication of the area's under-development is the fact that only 33 of these communities have community water supplies" the Task Force concluded that "this area is one of four or five in the country that can truly be described as grossly under-developed" (ibid:254).

The Task Force then went on to argue that if the region

"is ever to emerge from the dependency trap, it will be only through government programs that generate jobs related to the exploitation of local resources. The only economic resource base in the area is the fishery . . . The key to economic development in the area is to ensure that the fishery is organised for

the benefit of local participants, and that cross-subsidization takes place internal to the local area."

(ibid:254)

The point to note in these passages is the subtle shift from social to economic determinants in the perspective. Under-development is defined (as it is throughout the Task Force report) in terms of formal sector economics with apparently no consideration of economic pluralism (an attitudinal problem noted elsewhere in Canada by Brody (1981)). No regard has been given to socio-political under-development, and the criteria of under-development appear to relate to an implicit assumption of relativity to a Canadian norm (e.g. 3-phase power and community water supplies). It is assumed the region is in a "chronic dependency trap" because of the government subsidies. (As I have indicated earlier, from a different perspective, the acquiring of these subsidies could reflect the skill of the residents in accessing what they see as a resource - government funds.) Consequently the solution is discussed solely in terms of economic development without any discussion of negative social impacts.

Similarly the sovereignty of Canada is unquestioned and sovereignty issues are not addressed. This is despite a large portion of the report focussing on

property rights. Provincial claims to the marine resources and first peoples' calls for the recognition of their rights are ignored. The distinction between a common property resource (which in reality recognises a number of traditional rights) and that of an open-access resource is not recognised either and this results in a recommendation for licence allocation along economic optimising lines (i.e. individual transferrable quota licences).

The models which derive from the above discussion of the Task Force's analysis do closely approximate some of those generated from using the Checkland system. The differences between some of my models and those generated by the Task Force are, however, quite substantial. The degree of significance which should be attached to these differences would depend on the viewer's perspective. In the Checkland methodology this would be a focal point of the debate which should take place at this point.

The root definition of the current situation which is implied by the models is:

A Government of Canada owned system for transforming fish located in Labradorian waters into material living standards for local communities that are

below those of a developed country. The critical components of the system are low capital investment, an untrained workforce, unstable local economies, export of fish with little value added, high transportation costs, inadequate infrastructure, economic dependence on the government, an expectation of a profitable off-shore and non-profitable inshore fishery, and non-productive conflict between existing political interest groups.

This is not dissimilar to the modern living standards definition in Chapter Five.

7.5 Conclusion

This chapter has provided step 5 in the Checkland methodology. Logistical problems ruled out the completion of step 6 (a structured debate with the relevant participants in the system). However, the comparison of the conceptual models generated through the normal sequence of the methodology with both the rich picture, other people's perceptions (through seminars and conference presentations) and with models and root definitions drawn from two other major contemporary studies (NORDCO's and the Kirby Task Force's) has provided substantial useful findings on both the

methodology and the future development of the fishery. These findings fall into two categories: those relevant to the theory and practise of the methodology and those which shed light on the fishery itself.

In terms of the methodology, this research has shown that the Checkland methodology can be useful both in normal sequence and out-of-order usage. The two different techniques may be useful for different purposes, but are useful for the same reason. Use in a normal sequence is best for analysing a situation from the "naive mind" starting point. It enables the gathering together of a number of diverse perspectives on the region into a rich picture which can then be analysed through the generation of models from root definitions. For the geographer these models can result in analyses of relevance to the particular ideological or philosophic interest she or he holds. This has been illustrated by the use of a structuralist perspective to explore the rich picture. At the same time the methodology provides the user with a clearer understanding of the myriad of potential alternative interpretations. Where a geographer wishes to apply this information the methodology helps identify key interventionist requirements.

At the same time the comparison stage has helped to validate some models while calling others into question. It has been particularly useful in narrowing the field of models, two of which appear to most nearly provide approximations of the real world situation. For the geographer seeking real world objectivities this is particularly useful.

Perhaps more significantly, in the context of this thesis, the claims for the potential for out-of-order use of the methodology have received some qualified support. The research has shown that root definitions, and systems which were implicit within the work of other analysts, can be analysed using the methodology out of order. Using it in this way however may only provide one angle or perspective of a particular situation. It is therefore at its most useful in defining the implicit constraints on the perspective of those whose views are being modelled. It is perhaps at its most dangerous if it is claimed by the out-of-order user that the root definition defined by the out-of-order model is a true representation of the real world problem. It is only a representation of the view of the person whose perspective has been modelled. It would therefore be wise to generate (perhaps artificially) a number of different perspectives and test each accordingly.

From an applied point of view, out-of-order usage assists critical examination of intervention proposals. It may find its most functional use in future in this role rather than as a tool for hindsight analysis of system failure as advocated by Agnew (1984).

In terms of the Labrador fishery itself, this chapter has contributed to the identification of two root definitions and relevant systems as being accurate reflections of the real world Torngat. This in turn has suggested the need for careful handling of Torngat as an intervention in the Labrador fishery. If there is no hidden agenda then Torngat fits well with all of the definitions of the Labrador fishery. If however there is a hidden agenda then some models of the Labrador fishery could be discarded (on the basis of analyses in the two preceding chapters). Logistical problems prevented the gathering of the information needed to determine whether this is the case, and consequently it can not be determined with certainty, using Torngat as a lens, which is the most accurate perspective on the fishery.

In the next chapter the implications arising from the findings of the analyses carried out in this chapter will be drawn together with those derived from the rest of the thesis.

CHAPTER EIGHT

Conclusion: The New Problem Situation8.1 Introduction

This thesis has discussed a broad range of issues, from the philosophic to the "real" world. I have drawn attention to the most interesting, useful or significant findings of each chapter in its conclusion. It is not the intention to repeat those findings in this chapter. Instead, in the spirit of Checkland's methodology, the intention is to set out the new problem situation which has resulted from this thesis. Put simply, what can we now say about the methodology, what are the implications and where should we go from here?

In general, my conclusion is that the methodology should form the focus of a progressive Lakatosian research programme for geographers. That is, a programme where the core concepts of the methodology are temporarily accepted and used to generate empirical "knowledge" without a dogmatic decision having been taken on the validity and veracity of the methodology. It is progressive because it enriches the empirical content of the research programme (Wheeler 1982).

8.2 Checkland's Methodology Revisited

From the discussions in Chapters Two and Three it is apparent that Checkland's methodology has a potentially deeper philosophical background than he appears to have realised. In his major treatise, Checkland (1981) drew a distinction between natural and social science predicated upon his doxic positing of a real and knowable physical world. Working within the context of that real world Checkland (ibid: 283-84) has concluded:

"social reality is the ever-changing outcome of the social process in which human beings, the product of their genetic inheritance and previous experiences, continually negotiate and re-negotiate with others their perceptions and interpretations of the world outside themselves."

In other words, social reality is not objective, whereas the natural/physical reality is.

The argument that this thesis has presented is that the methodology, as an extension of Husserlian phenomenology, is especially powerful effectually, because belief in reality is suspended. It is at this point that Checkland's positivist view of the "natural" world has artificially constrained the potential use of the methodology (a point implicit in Morgan 1977).

In other words there is a branch of philosophy, Husserlian phenomenology, that is operationalised through the methodology and that branch is sufficiently strong to emancipate the methodology. From this perspective we can also recognise that many of the difficulties inherent in Checkland's thesis are the consequence of his attempt to justify the methodology to a perceived audience of positivists and non-positivists. Through recognising the rhetorical nature of rationality (and therefore science/research) we no longer need to attempt a line of argument which seeks to gain conventional acceptance. Instead the methodology should be considered justified as a Lakatosian research programme. No other guarantor of it or its findings is required. It will survive if there are researchers who consider there are some insights or benefits to be gained from using the methodology that they consider are greater than those offered by alternative approaches. I would argue that insights will be most readily gained through accepting the Husserlian base to the methodology. As Checkland considers that the "prime value" embodied in the methodology is that "continuous, never-ending learning is a good thing" (Checkland 1981:285), then there is no substantive difference in the outcome of this thesis's research and that which Checkland seeks to encourage. Only the potential domain of the methodology's

application has changed: it has expanded. A full rational reconstruction of the philosophical arguments surrounding Checkland's methodology along the lines of methodological pluralism as suggested by Caldwell (1982) would be a useful next step.

From a purely instrumentalist perspective, if the methodology is to be useful it needs to be readily applicable. While I would not argue with the weight of empirical studies which have built up using the methodology over the last ten to fifteen years, the paucity of supra institutional applications and the difficulties experienced by both Cornock (1980) and the present writer suggest that substantial opportunities exist for improving the methodology. The comparison of the outcome of the methodology with NORDCO's results is indicative of its capacity to enrich traditional approaches to supra institutional problem situations. To achieve this outcome a phenomenological commitment was required which has resulted in an overload of data which, in positivist terms, are often of poor quality. This occurred in a sparsely populated region, and in areas of greater population the methodology is likely to be even more constrained. Research needs to focus on ways in which to implement the methodology without data overload. In doing so, however, it is important also to bear in

mind the need to avoid pre-structuring the problem situation.

Finally the discussion on macro/micro models suggests considerable potential for future research. It may prove useful to combine studies of the level of application in supra institutional situations with studies into the possibility of there being a universal set of root definitions/systems for upper level models.

8.3 Fisheries: Implications for Labrador and Torngat

A structured debate on the models presented here did not occur. However the potential is now there for those with interests in the fishery to build on the outcomes of this research. Should such a debate not take place, there remains potential for adherents to one or other viewpoint to look carefully at their model and identify incompatible and compatible alternative models. Once such an exercise has been completed there is opportunity to plan strategies and build coalitions which will strengthen the likelihood of favourable outcomes. In this context it is interesting to note that Torngat's suggested position as a residual of a number of larger models' interactions lends support to the argument that

it is acting entirely rationally and proving itself successful in attaining key objectives.

In this context a key feature to emerge is that the North Labrador fishery is only viable as part of a pluralistic economy. Any attempt to segregate this economy and integrate those segregated components with other similar components of Newfoundland's economy must take into account the nature of the local economy. In other words, attempts to treat the North Labrador fishery as part of an economically rational, integrated formal-sector provincial fishery will not be beneficial to Labradorians. However, if the offshore is integrated with the inshore and the whole operation is owned by North Labradorians, then Torngat has demonstrated the potential for the resource to benefit North Labradorians in fundamental socio-economic ways.

That Torngat has survived as long as it has in an environment where it is in competition with the province and, to some extent, the NFFAWU, and has been able to produce significant innovations in a number of areas (from management to marketing) is a testament to both the management skill of its Board and General Manager and to the support it has engendered amongst key federal and provincial officials and representatives. It has to be

recognised that the Torngat model may not be the most economical way to run the fishery, but the costs and benefits have to be stacked up against such non-market values as the quality of human life. In this respect the inverse correlation of the number of fishers with suicidal behaviour for Nain is supportive of the positive impact Torngat claims to have had on North Labrador. This correlation needs further monitoring and research.

The third major point to note from the research in the North Labrador context is that Torngat is not dependent on the fishery. It is in fact dependent on the drive for sovereignty, or at least control over local resources. In this context it could be working in a number of different areas if its resources could cope. (The fishery focus is merely an historical accident resulting from the coincidental combination of a number of political issues in fisheries in the late 1970s.) That Torngat has partly recognised this reality is implicit in the closer relationship it is establishing with the LIA and in its restrained interest in the northern stores and salmon enhancement.

The research suggests there are at least three other areas in which Torngat may become involved. These areas represent the potential to enhance the social and

economic life of Labradorians, and also to provide the political benefit of keeping Torngat firmly placed within the political tensions of native peoples' sovereign rights and Canada/Newfoundland sovereign rights. These three areas are recreational fishing, caribou harvesting and local handcraft (artifact) production. All three draw extensively on aspects of traditional life and culture which could be effectively blended within a formalised pluralistic economy for North Labrador. The first two also offer considerable opportunity for Torngat to lend its resources and experience to and gain strength from the NMIA. Conflicts over the military's low flying and native rights in a wilderness like North Labrador have the potential to gain significant political support from non-native peoples, as the NMIA has demonstrated. If Torngat could add a clearly economic aspect to these issues, as it has with the fishery, then it could maintain a status of operationalising native rights. It would need to tread with caution, however, as a greater political role, unless soundly based on research which gathers broad support (e.g. showing social benefits) and is incontestable (e.g. its NORDCO report on the viability of owning a shrimp vessel), will mean greater exposure to loss of government patronage (e.g. the shrimp licence and government grants). The promotion of handcrafts, on the other hand, is less politically obvious, but is

capable, nevertheless, of enhancing its lobby amongst the increasingly powerful women's electorate in Canada (most handcrafts being produced by women) and engendering greater awareness of traditions and culture within its North Labrador base. Any attempt to broaden its activities in either direction may be handicapped by legal factors incorporated in its Constitution and the requirement to convince the Registrar of Co-operatives that such moves would not overstretch Torngat. The argument would again need to draw on the concept of formalising economic pluralism. Alternatively Torngat could identify other forms/mechanisms for strengthening its relationship with politically significant activities (e.g. supporting politically motivating arts and crafts through its advertising allocation).

The major political issue that Torngat needs to resolve, and which both levels of Government might try to exploit, is the degree to which Torngat promotes or contains native sovereignty claims. There is a fine line between providing socio-economic benefits to people and pacifying them. In some respect government support for Torngat could be seen in the same context as the original support for the Moravian missions. It is in the interest of both levels of government to ensure a reasonably strong Torngat-like structure to contain local political

pressure. The degree to which Torngat can gather further strength and move beyond dependency without becoming a clearly defined threat to existing provincial or Canadian political structures is an issue beyond the scope of this thesis, but certainly one worthy of further research.

8.4 Implications for Geography

Reasons for the limited attention which the work of geographers has received in this general context were set out in the Introduction to this thesis, and implications for existing or past geographical research will not be discussed further here. The more important issue here is to identify the implications this research has for future geographical work. I suggest there are four main areas for subsequent research: emancipation, regionalism, historical analysis and the purely methodological.

The emancipatory application has three aspects: the individual researcher, the discipline of geography, and the people within the study domain. From an individual perspective my use of the methodology has assisted me to come to a greater understanding of the nature of science, research and geography. In my view all those who wish to use the methodology effectively will need to become familiar with the underlying Weltanschauungen governing

the search for knowledge. It is interesting to note that this is not the case for practitioners of "hard" systems methodology, because that methodology is built on the received view of knowledge predominating in western society. Soft systems is a direct challenge to such a view, and that practitioners have consequently had to re-examine their backgrounds and Weltanschauungen is already apparent from the development of thought and argument by such practitioners as Morgan, Checkland and Cornock. In this context it is interesting to note that two of them (Morgan and Checkland) and the present writer (whose search for a guarantor of knowledge on which to base the methodology is evident in Chapter Two), have backgrounds in physical science. There also appears to be scope for phenomenologists to re-examine the basis of their antipathy toward systems thinking. I would suggest that such phenomenologically oriented individuals would also find the use of the methodology personally emancipating.

This is the basis also of the argument for the methodology as an emancipatory tool for the discipline of geography. My impression, from experience as a geographer and through reading geographical literature, has been that too frequently artificial boundaries are placed on the overall domain of geography, the practise

of geography, and the internal divisions of geography. This methodology has now been applied in at least two quite distinct areas of geography (biogeography (Morgan 1977) and fisheries management (this thesis), and the discussions and debates it has engendered suggest it is able to provide a method for communicating between different geographical Weltanschauungen. By providing the discipline's practitioners with a basis for enhanced communication, the methodology holds the potential to assist the continued unification of the disparate parts of the discipline.

Thirdly, the methodology has been criticised as being non-emancipatory, an exercise in conventionalism. This has been fuelled to some extent by the arguments for conventionalism as a guarantor presented by Checkland. As I have argued in this thesis the methodology does not require such a guarantor. Conventionalism is, in fact, an outcome of the last two stages of the methodology as promulgated by Checkland (i.e. the identification and implementation of "feasible" changes in a problem situation). Up to and including the process of debate, there is no conventionalist guarantor in the methodology, only a phenomenological one. Consequently, the methodology can, as Checkland has also suggested, be emancipatory through the exposure of Weltanschauungen to

the subjects in the research domain. The outcome of the methodology is fundamentally an enhanced understanding of a problem situation by participants. It therefore contributes to their empowerment. This was a point clearly understood in North Labrador. During my research the people in Torngat provided considerable assistance. When asked, they gave as the reason for assisting that they were confident the information I would disclose and the independence of my perspective would lead to a strengthening of their position vis-à-vis the federal and provincial governments. Had it not been for a change in my personal circumstances, which delayed completion of this thesis, I am confident their assessment would have been realised. However, for those geographers seeking to assist in the emancipation of others, this methodology has been demonstrated as useful. There is, therefore, a basis both for using the methodology and for further research into its use to evaluate whether the claims I have made for its emancipatory powers can be further enhanced at the three levels suggested.

The second area suggested as useful for further research is that of regionalism. I suggest that this thesis has demonstrated a possible rebirth for regional research. The use of a phenomenological field technique, while somewhat discomfiting at times, resulted in

substantial collection of data which were structured by the people of the region. This enabled an empirically-based generation of parameters of regional significance for a variety of different definitions of the regional systems. This is a substantially different perspective and approach from the "top down" theory-driven data-collection strategies employed in most regional studies. Such studies tend to take a "hard" systems approach to identifying parameters and, as Checkland and Morgan have argued, to open the systems approach to criticism on the basis of irrelevance and non-empowerment. The research here broadened a fairly narrow initial approach, that of looking at the fishery, into one of looking at the region more holistically. The distinction between the methodology employed here and that which gave rise to NORDCO's (1983) outcome has, I believe, determined the different perspectives each study has on the problems of the North Labrador fishery. As argued in Chapter Seven, NORDCO's study is subsumed within the picture and models of Labrador's fishery produced here. This is not therefore a denial of the NORDCO approach or of other methodologies for undertaking regional studies. (The argument is more one of methodological pluralism.) What is advocated is further research into the lower order systems suggested by the models developed in this study, and additional

applications of the methodology in other regions to further assess the generality of my conclusions.

The third implication for future work is the application of the methodology to historical analysis. Comment has already been made on the out-of-order use of the methodology; however I am not satisfied that the issue has been satisfactorily resolved. The methodology has shown a facility for drawing the past into an exercise in assessment of a modern-day situation, and for identifying a range of historical data sources as a consequence of fieldwork (some references cited here appear little known in the historical literature on Labrador - e.g. Kupp and Hart (1976) and several unpublished documents). Whether the methodology can be used to assist in the identification of parameters for historical research on a particular area/subject, or whether its role is to generate alternative logical or ideal types against which historical events can be reconstructed remains an open question, but one which appears, nevertheless, to be a stimulating research frontier. The Marxist/mode of production analyses attempted here suggest the potential exists.

Finally there is the potential for the methodology to form the focus of a Lakatosian research model of the

type advocated by Wheeler (1982). For it to form such a focus requires that geographers assess it as being potentially useful in their area of endeavour. Agnew (1984) has called this potential into question in that it theoretically would not have assisted identification of certain environmental factors of major significance to the Sahel. I have discussed the theoretical aspects of Agnew's argument elsewhere (Rennie 1985). I would now suggest that this thesis has shown that relevant environmental systems models can be generated from the methodology (e.g. the Gaia model), and their overriding importance has also been emphasised. In other words the empirical evidence provided by an application of the methodology confounds the theoretical criticism.

At the same time the empirical application has shown that other theoretical approaches can be applied to the rich picture (e.g. modes of production). I would argue that the facility of the methodology to generate modes-of-production/Marxist models has been demonstrated here and that because the data were apprehended phenomenologically and not through use of an a priori mode-of-production model, the analysis gains strength. The methodology could, as I have argued above, therefore prove useful to geographers.

The application of the methodology has, however, revealed some problems. Notable among these is the amount of data obtained. The sheer quantity of data was at times overwhelming. I suspect that this problem was the source of Agnew's (1984, 1985) concern and am prepared to accept that, until more work is done on the methodology, it will continue to be problematic for geographers. It is, however, for this reason that I would advocate research on the methodology as a Lakatosian research programme for geographers. In particular, I would argue that there is a need for less theoretical analysis of the methodology, at its present state of development, and for more attempted supra institutional applications. This goes against my own preferred research mode and to a large extent reflects the major insight which I have derived from this thesis: the need for empirical application of theoretical developments. It is only through the pooling of the experiences of a number of geographers in the application of the methodology that we will be able to mould and develop it for use in the suprainstitutional situations which tend to be the focus of geographical research.

APPENDIX: ONE

The North Labrador FisheryRelevant Systems and Root Definitions

i) The fishery as a vocational system.

Three of the relevant systems' root definitions gave rise to a model which closely paralleled that of Cornock's "vocational system".

RD1: A community-owned system of social support available as an entitlement to those who elect to devote themselves to fishing in North Labrador waters.

RD2: A Province of Newfoundland and Labrador-owned system of creation and maintenance of employment opportunities for provincial fishers and related industry persons.

RD3: A nationally-owned system of social support available as an entitlement to the first peoples of North Labrador (who elect to become fishers).

ii) Fishery as a cultural leavening.

RD4: "a society owned system which stimulates and supports the development and enrichment of the resources of North Labrador as a cultural "leavening" which will enhance the quality of life of society".

iii) Power Brokerage system.

RD5: "A power brokerage system derived as a relict of a history of competitive resource use and power manipulators and which is owned and maintained by current power brokers for the purpose of achieving the continuance of their regime. It functions to prevent the rise of or to harness (to existing power brokers) the strength of potential power wielders outside the existing power brokers' set."

- iv) An acquisition of sovereignty system. Three root definitions lent themselves to the description of being sovereignty acquiring.

RD6: "A Province of Newfoundland and Labrador owned system of fisheries resource acquisition and control for the benefit of the Province."

RD7: "A Province of Newfoundland and Labrador owned system for potentially profitable resource acquisition and control for the benefit of the Province."

RD8: "A North Labrador settlement owned system for the acquisition and control of resources for the benefit of settlement residents."

- v) The emancipatory system.

RD9: "A first-peoples and settler owned system of self-belief maintenance and self-enrichment through enabling its owners to undertake a set of activities that support this end."

- vi) A craftsperson system.

RD10: "A community-owned system attempting to maintain desired trappings and benefits of traditional fishing industry lifestyles in the region in the context of economic and technological changes which could result in the termination of those lifestyles."

- vii) Modern Living Standards system.

RD11: "A Province of Newfoundland and Labrador owned system for the promotion of standards of living in the Province which would equate at least with those enjoyed by the average Canadian".

- viii) The fishery as a commercial market matching system.

RD12: "A system which encourages the production of particular fish products at a quantity, quality and price in line with buyers' requirements, while also meeting Canadian producers' minimum return requirements."

ix) The fishery as a profession.

RD13: "A system which skills people in particular techniques to enable the extraction and redistribution of a resource to a professional standard."

x) The fishery as an ecological system.

RD14: "A Gaia owned ecological system to generate and maintain an equilibrium between the biota of the region and other biota for the benefit of Gaia."

APPENDIX: TWO

Torngat Fish Producers Co-operative
Relevant Systems and Root Definitions

- i) RS1: Torngat as a Conflict Mediating System.

Root Definition: A system in which Co-op members and employees engage in activities which balance North Labradorian aspirations of self-determination against those of individuals or groups with competing interests. The levels and types of activities are determined by the degree to which they maximise the fulfillment of North Labradorian self-determination within the limits considered acceptable by the major situation controllers (e.g., the Federal Government). Acceptability will reflect the effectiveness of pressure from those individuals or groups (e.g., non-North Labradorian fishers) who have interests which are directly affected by, or have an effect on, the co-op's activities.

- ii) RS2: Torngat as a Resource Access Acquisition System for North Labradorians.

Root Definition: A system for obtaining access to resources (e.g., financial, capital, environmental, expertise) for Labradorians. The methods used to access the resources must promote amongst Labradorians a greater desire for Labrador self-determination and resource control. The resources to which access is sought are currently held, and/or controlled by non-North Labrador-based organizations/individuals.

- iii) RS3: Torngat as a Power Distributing System.

Root Definition: A North Labradorian system to further the political influence wielded by i) Alex Saunders or ii) the Co-op or iii) an elite group of Goose Bay-based individuals.

- iv) RS4: Torngat as a Core/Periphery Balancing System.

Root Definition: A system for balancing and rejuvenating at levels acceptable to the world system, the dynamism of exchanges of influence, goods, services, people, information, ideas and material resources between the peripheral area known as North Labrador and local Canadian core areas.

- v) RS5: Torngat as an Independence Enhancing System.

Root Definition: A system engaged in activities generating an enhanced level of independence for North Labradorians.

- vi) RS6: Torngat as a Legal, Wealth Redistributing System.

Root Definition: A Canadian system to generate wealth from, and redistribute wealth generated by, the fishery resources of North Labrador and the taxpayers of Canada and Newfoundland. The wealth being generated and redistributed would be to North Labradorians as a substitute for Newfoundland based businesses.

- vii) RS7: Torngat as a Shrimp Licence Acquisition System.

Root Definition: A system bringing activities by North Labradorians under a cohesive structure and then bringing the levels up to standards set by the Federal Government in order to gain a shrimp licence.

- viii) RS8: Torngat as an Employment Generating System.

Root Definition: A system which supplies an increased amount of employment to North Labradorians through extending their access to work opportunities in North Labrador based fisheries.

- ix) RS9: Torngat as an Educating and Training System.

Root Definition: A system for educating and training co-op members and those who deal with the co-op, in the skills needed for participating fully in modern Canadian society.

- x) RS10: Torngat as a Production Appropriation System for North Labrador Labour.

Root Definition: A system to gain for North Labrador labour the benefits which would otherwise be appropriated by non-North Labrador capital

- xi) RS11: Torngat as a Production Appropriation System for North Labrador Capital.

Root Definition: A system to appropriate for North Labrador capital the benefits from North Labrador labour which would otherwise be appropriated by non-North Labrador labour or capital.

- xii) RS12: Torngat as a Profit Earning System.

Root Definition: A system to generate for its owners a minimum sustainable level of financial profitability sufficient to ensure its continuity as an operating entity.

- xiii) RS13: Torngat as a Gaia Actualising System.

Root Definition: A system balancing environmental constraints to the development of humans and the catching and redistribution of fish in North Labrador against the requirements of sustainable, viable, living North Labrador human communities.

REFERENCES

- ACKERMAN E. A. 1963: "Where is a research frontier?" Annals Assoc. Am. Geogrs. 53(4):429-440
- AGNEW C. T. 1984: "Checkland's soft systems approach - a methodology for geographers?" Area 16(2): 167-74
- AGNEW C. T. 1985: Reply to Rennie (1985) Area 17(4): 338
- AMES R. 1977a: "Land use in the Postville region" pp 205-237 in Brice-Bennett (ed.)
- AMES R. 1977b: "Land use in the Rigolet region" pp 279-308 in Brice-Bennett (ed.)
- ANDERSON L. G. 1977: The Economics of Fishery Management Johns Hopkins Univ. Press: Baltimore
- ANON 1982: Alluring Labrador: A Journey Through Labrador (1982 reprint and update) Them Days: Happy Valley-Goose Bay, Labrador
- ARMITAGE P. 1983: "Introduction" The Indian and Inuit Supporter 3(2): 1-3
- ARTISS P. 1983: "Cottage hospital more than a hospital to the people of coastal Labrador" The Indian and Inuit Supporter 3(2): 23-28
- BAIKIE M. 1985: "Tuberculosis in northern Labrador" Grenfell Clinical Quarterly 1(2): 37-39
- BANFIELD C. E. 1981: "The climatic environment of Newfoundland" pp 83-153 in Macpherson and Macpherson (eds.)
- BARANOV T. I. 1918: Nauch. Issledoviktiol Inst. Izv. 1:81
- BERRY B. J. L. 1964: "Cities as systems within systems of cities" Papers and Proceedings of the Regional Science Association 13: 147-63
- BILLINGE M. 1977: "In search of negativism: phenomenology and historical geography" J. Hist. Geogr. 3: 55-67
- BLACK W. A. 1960: "The Labrador floater codfishery" Annals Assoc. Am. Geogrs. 50: 267-295
- BOHM D. 1977: "Science as perception - communication" pp 374-391 in Suppe (ed.)

- BOULDING K. E. 1956: "General systems theory - the skeleton of science" Management Science 2(3): 197-208
- BRICE-BENNETT C. 1977a: "Land use in the Nain and Hopedale regions" pp 97-203 in Brice-Bennett (ed.)
- BRICE-BENNETT C. (ed.) 1977b: Our Footprints are everywhere Labrador Inuit Assoc.: Nain
- BRICE-BENNETT C. 1983: "Native people need their independence" The Indian and Inuit Supporter 3(2): 14-16
- BRIDGMAN P. W. 1927: The Logic of Modern Physics Macmillan: New York
- BRODY H. 1981: Maps and Dreams. Indians and the British Columbia Frontier Penguin: Harmondsworth, Eng.
- BRYM R. J. and SACOUMAN R. J. (eds.) 1979: Underdevelopment and Social Movements in Atlantic Canada New Hogtown Press: Toronto
- BUB J. 1977: "Reply to Professor Causey" pp 402-408 in Suppe (ed.)
- BUCK R. and COHEN R. (eds.) 1971: PSA 1970: In Memory of Rudolf Carnap. Boston Studies in the Philosophy of Science Vol III D. Reidel: Dordrecht, Holland
- BUNGE M. 1973: Method, Model and Matter D. Reidel: Dordrecht, Holland
- BUNGE M. 1974: Treatise on Basic Philosophy V.1 and II D. Reidel: Dordrecht, Holland
- BUTTIMER, A. 1974: Values in geography. Association of American Geographers, Commission on College Geography, Resource Paper 24
- BUTTIMER, A. 1976: "Grasping the dynamism of lifeworld" Annals Assoc. Am. Geogrs. 66(2): 277-292
- CAFSAC 1981: "Advice on some invertebrate stocks" CAFSAC Advisory Doc. 81/3 CAFSAC
- CAFSAC 1985a: "The status of Arctic Char stocks in Labrador and advice for their management in 1985" CAFSAC Advisory Document 85/8 CAFSAC

- CAFSAC 1985b: "Advice on the management in 1985 of shrimp stocks in NAFO Subarea 2 and Division 3K, Ungava Bay and Eastern Hudson Strait" CAFSAC Advisory Document 85/11 CAFSAC
- CALDWELL, B. J. 1982: Beyond Positivism: Economic Methodology in the Twentieth Century George Allen & Unwin: London
- CAPRA F. 1976: The Tao of physics; an exploration of the parallels between modern physics and eastern mysticism Fontana/Collins: London
- CARNAP R. 1966: Philosophical Foundations of Physics Basic Books: New York
- CAUSEY R. L. 1977: "Professor Bohm's view of the structure and development of theories" pp 392-401 in Suppe (ed.)
- CHAPMAN G. P. 1977: Human and Environmental Systems. A Geographer's Appraisal Academic Press: London
- CHECKLAND P. B. 1972: "Towards a systems-based methodology for real-world problem-solving" J. Sys. Eng. 3(2): 87-116
- CHECKLAND P. B. 1976: "Science and the systems paradigm" International J. of General Systems 3(2): 127-134
- CHECKLAND P. B. 1979 "A systems approach to terotechnology: defining the concept" Terotechnica 1: 83-88
- CHECKLAND P. B. 1981: Systems Thinking Systems Practice John Wiley & Sons: Chichester
- CHORLEY 1962: "Geomorphology and general systems theory" U.S. Geological Survey, Professional Paper 500-B
- CHORLEY R. J. 1967: "Models in geomorphology" pp 57-96 in Chorley and Haggett (eds.)
- CHORLEY R. J. (ed) 1973: Directions in Geography Methuen: London
- CHORLEY R. J. and HAGGETT P. (eds.) 1967: Physical and Information Models in Geography Parts I, II and V of Models in Geography Methuen: London
- CHURCHMAN C. W. 1971: The Design of Inquiring Systems: Basic Concepts of Systems and Organisation Basic Books, Inc.: New York

- CLERMONT N. 1980: "Les Inuit du Labrador meridional avant Cartwright" Inuit Studies 4(1-2): 147-166
- COADY L. 1974: The Arctic Char Fishery in Northern Labrador Envt. Canada Fisheries Services (Progress Report No. 104): St. John's, Nfld.
- COHEN R. S. and WARTOFSKY (eds.) 1965: Boston Studies in the Philosophy of Science: Volume II
- CORNOCK J. S. 1980: "The concept of system as a paradigm in the domain of the artist" unpub. M. Litt. thesis, Univ. of Lancaster
- CROWE K. J. 1979: "A summary of northern Native claims in Canada: The process and progress of negotiations" Etudes Inuit 3(1): 31-39
- DAY D. (ed.) 1986: Public Policy and the Coastal Zone (Studies in Marine and Coastal Geography No. 5) Saint Mary's University: Halifax, N.S.
- DEMERATH N. J. and PETERSON R. A. (eds.) 1967: System, Change and Conflict Free Press: New York
- DEMPSON J. B. 1981: "Assessment of several Northern Labrador arctic char stocks" unpub. CAFSAC Res. Doc. 81/14
- DEMPSON J. B. 1982a: "Summary of catch statistics and change in size characteristics of northern Labrador Arctic char populations" unpub. CAFSAC Res. Doc. 82/7
- DEMPSON J. B. 1982b: "Rationale for establishing a TAC in Hebron Fiord during 1982" unpub. CAFSAC Res. Doc. 82/38
- DEMPSON J. B. 1983: "Evaluation of the 1982 commercial Arctic char, Salvelinus alpinus fishery in Hebron Fiord, Northern Labrador" unpub. CAFSAC Res. Doc. 83/7
- DEMPSON J. B. and LEDREW L. J. 1984: "Assessment of Voisey Bay, Anaktalik Bay and Okak Bay Arctic char stocks in 1983 and projections for 1984" unpub. CAFSAC Res. Doc. 84/8
- DEMPSON J. B.; LEDREW L. J.; FUREY G. 1984: "Summary of catch statistics for the Northern Labrador Arctic char fishery in 1983" unpub. CAFSAC Res. Doc. 84/5

- DEMPSON J. B.; LEDREW L. J.; MYERS R. A. 1984: "Assessment of the Tikkoatokak-Nain Bay Arctic char stock in 1983 and projections for 1984" unpub. CAFSAC Res. Doc. 84/4
- DEPT. of FISHERIES N.D. (1983?): "Historical Overview" unpub. collection of internal reports made available by the Dept. of Fisheries (courtesy of Mr. Brett Wareham)
- DRAPER D. L. 1977: "Resources management, socio-economic development, and the Pacific North Coast Native Cooperative: a case study" unpub. Ph.D. thesis, Univ. of Waterloo
- DUNCAN W. J. 1983: Management: Progressive Responsibility in Administration Random House Business Division: New York
- ETZIONI A. 1960: "Two approaches to organizational analysis: a critique and a suggestion" Admin. Sc. Quarterly (Sept): 257-78
- FARBER M. 1943: The Foundation of Phenomenology: Edmund Husserl and the Quest for a Rigorous Science of Philosophy Harvard Univ. Press: Cambridge, Mass.
- FARBER M. 1967: "The ideal of a presuppositionless philosophy" pp 37-57 in Kockelmans (ed.)
- FARMER G. H. 1981: "The cold ocean environment of Newfoundland" pp 56-82 in Macpherson and Macpherson (eds.)
- FEYERABEND P. K. 1965: "Reply to criticism" pp 223-61 in Cohen R. S. and Wartofsky M. W. (eds.)
- FEYERABEND P. K. 1970: "Against method: outline of an anarchistic theory of knowledge" pp 17-130 in Radner and Winokur (eds.)
- FEYERABEND P. K. 1970: "Consolations for the specialist" pp 197-230 in Lakatos and Musgrave (eds.)
- FEYERABEND P. K. 1975: Against Method: Outline of an Anarchist Theory of Knowledge NLB: London
- FIRTH C. 1985: "Preventive health care of Indian preschoolers in Davis Inlet, Labrador" Grenfell Clinical Quarterly 1(1): 4-7

- FISHERIES POLICY EMERGENCY COMMITTEE (FPEC) 1978: "A proposal for the management and development of the fisheries in northern Labrador" unpub. proposal submitted to the Hon. Walter Carter, Minister, Department of Fisheries, Government of Newfoundland and Labrador.
- FITZHUGH W. W. 1977: "Indian and Eskimo/Inuit settlement history in Labrador: an archaeological view" pp 1-41 in Brice-Bennett (ed.)
- FOUILLARD C. 1983: "The women's health education project: field work in Labrador" The Indian and Inuit Supporter 3(2):29-33
- GAVARIS S. and BISHOP C. A. 1983: "Analysis of the cod stock in Divisions 2GH" unpub. CAFSAC Research Document 83/20
- GREGORY D. 1978: Ideology, Science and Human Geography Hutchinson: London
- GREGORY D. 1980: "The ideology of control: systems theory and geography" Tijdschrift voor economische en sociale geografie 71(6):327-343
- GREGORY D. 1981: "Human agency and human geography" Trans. Inst. Br. Geogr. NS6:1-18
- GRUSKY O. and MILLER G. A. (eds.) 1970: The Sociology of Organisations: Basic Studies The Free Press: New York
- GUELKE L. 1971: "Problems of scientific explanation in geography" Canadian Geographer 15: 38-53
- HABERMAS J. 1971: Toward a Rational Society Heinemann: London
- HAMMERSLEY M. and ATKINSON P. 1983: Ethnography Principles in Practice Tavistock: London
- HARVEY D. 1969: Explanation in Geography Edward Arnold: London
- HENRIKSEN G. 1971: "The transactional basis of influence: white men among Naskapi Indians" pp 22-33 in Paine (ed.)
- HENRIKSEN G. 1973: Hunters in the Barrens: the Naskapi on the Edge of the White Man's World ISER, MUN: St. John's, Nfld.

- HILLER J. K. 1971: "Early patrons of the Labrador Eskimos: the Moravian Mission in Labrador, 1764-1805" pp 74-97 in Paine (ed.)
- HILLER J. K. 1977: Moravian land-holdings on the Labrador Coast: a brief history" pp 83-94 in Brice-Bennett (ed)
- HOOS I. R. 1972: Systems Analysis in Public Policy: A Critique Berkeley: University of California Press
- HOOS I. R. 1976: "Engineers as analysts of social systems: a critical enquiry" J. Sys. Eng., 4(2): 81-88
- HUGGETT R. 1980: Systems Analysis in Geography Oxford Univ. Press: Oxford
- HUGGETT R. 1981: "A hard line on soft systems" Area 13(3): 224-227
- HUSSERL E. 1967: "On eidetic reduction" pp 105-117 in Kockelmans (ed.)
- HUSSERL E. 1967b: The thesis of the natural standpoint and its suspension" pp 68-79 in Kockelmans (ed.)
- JACKSON P. 1981: "Phenomenology and social geography" Area 13: 299-305
- JONES L. M. 1978: "The conflicting views of knowledge and control implied by different systems approaches" Journal of Applied Systems Analysis 5(2): 143-147
- JONSSON S. 1981: The development of the Icelandic Fishing Industry 1900-1940 and its Regional Implications The Economic Development Institute: Reykjavik
- KATZ D. and KAHN R. L. 1966: "Open-Systems Theory" reprinted in Grusky and Miller (eds.) 1970 pp 149-160
- KENNEDY J. C. 1977: "Northern Labrador: an ethnohistorical account" pp 264-305 in Paine (ed.)
- KENNEDY J. C. 1982: Holding the Line: Ethnic Boundaries in a Northern Labrador Community ISER, MUN: St. John's, Newfoundland
- KIRBY M. J. L. 1982: Navigating Troubled Waters. A New Policy for the Atlantic Fisheries. Report of the Task Force on Atlantic Fisheries Canadian Government: Ottawa

- KLEIVAN H. 1964: "Acculturation, ecology and human choice: case studies from Labrador and South Greenland" Folk 6(1):63-74
- KLEIVAN H. 1966: The Eskimos of Northeast Labrador: A History of Eskimo-White Relations 1771-1955 Norsk Polarinstitutt (Skrifter Nr. 139): Oslo
- KOCKELMANS J. J. (ed.) 1967: Phenomenology: The Philosophy of Edmund Husserl and its Interpretation Doubleday: New York
- KOCKELMANS J. J. 1967b: "What is phenomenology? Some fundamental themes of Husserl's phenomenology" pp 24-36 in Kockelmans 1967 (ed.)
- KOCKELMANS J. J. 1967c: "Intentional and constitutive analyses" pp 137-146 in Kockelmans (ed.)
- KOCKELMANS J. J. 1967d: "Husserl's phenomenological philosophy in the light of contemporary criticism" pp 221-236 in Kockelmans (ed.)
- KOLAKOWSKI L. 1972/1968: Positivist philosophy; from Hume to the Vienna circle (Trans by N. Guterman) Penguin: Harmondsworth pub. in 1968 and 1972 under same title (both versions used here)
- KOLAKOWSKI L. 1975: Husserl and the search for certitude Yale Univ. Press: New Haven
- KUHN T. S. 1962: The Structure of Scientific Revolutions Univ. of Chicago Press: Chicago
- KUHN T. S. 1977: pp 409-412 of the "Discussion" in Suppe (ed.)
- KUHN T. S. 1977a: "Second thoughts on paradigms" pp 459-482 in Suppe (ed.)
- KUPP J. and HART S. 1976: "The Dutch in the Strait of Davis and Labrador during the 17th and 18th Centuries" Man in the Northeast 11: 3-20
- LABRADOR INUIT ASSOCIATION 1980: "Statement/Brief to Right Honorable Premier, Honorable Members, Ladies and Gentlemen" unpub. submission to the 1980 Newfoundland provincial cabinet meeting held in Goose Bay.
- LABRADOR RESOURCES ADVISORY COUNCIL (LRAC) 1977: First Annual Report 1976-77 LRAC: Happy Valley

- LABRADOR RESOURCES ADVISORY COUNCIL (LRAC) 1978: Second Annual Report 1977-78 LRAC: Happy Valley
- LAKATOS I. 1970: "Falsification and the Methodology of Scientific Research Programmes" pp 91-196 in Lakatos and Musgrave (eds.)
- LAKATOS I. 1971: "History of science and its rational reconstructions" pp 91-139 in Buck and Cohen (eds.)
- LAKATOS I. and MUSGRAVE A. (eds.) 1970: Criticism and the Growth of Knowledge Cambridge University Press: Cambridge
- LESTER G. S. 1977: "Primitivism versus civilisation: A basic question in the law of aboriginal rights to land" pp 351-374 in Brice-Bennett (ed.)
- LEY D. and SAMUELS M. S. (eds.) 1978: Humanistic Geography: Prospects and Problems London
- LOPOUKHINE N.; PROUT N. A.; HIRVONEN H. E.; n.d.: The Ecological Land Classification of Labrador Lands Directorate, Fisheries and Environment Canada: Halifax
- LOVELOCK J. E. 1979: Gaia. A New Look at Life on Earth Oxford Univ. Press: Oxford
- MACINTYRE A. 1976: "Labrador report: a field trip" unpub. report produced for Parks Canada
- MACKEY M. G. n.d.: "An Evaluation of Household Country Food Use: Makkovik, Labrador, July 1980-June 1981" (Draft copy) unpub. MUN: St. John's, Nfld.
- MACPHERSON A. G. and MacPHERSON J. B (eds.) 1981: The Natural Environment of Newfoundland, Past and Present Dept. of Geography, MUN: St. John's, Newfoundland
- MACPHERSON J. B. 1981: "The development of the vegetation of Newfoundland and climatic change during the Holocene" pp 189-217 in Macpherson and Macpherson (eds.)
- MARTIJN C. A. 1980: "The Inuit of southern Quebec-Labrador: a rejoinder to J. Garth Taylor" Inuit Studies 4(1-2): 194-198
- MASTERMAN M. 1970: "The nature of a paradigm" pp 59-90 in Lakatos and Musgrave (eds.)

- MATTESSICH R. 1978: Instrumental Reasoning and Systems Methodology: An Epistemology of the Applied and Social Sciences D. Reidel: Dordrecht, Holland
- MATTESSICH R. 1982: "The systems approach: its variety of aspects" J. of the American Society for Information Science 33(6): 383-394
- MCCANN L. D. (ed.) 1982: A Geography of Canada: Heartland and Hinterland Prentice Hall: Scarborough
- MCGHEE R. 1982: "Possible Norse-Eskimo contacts in the Eastern Arctic" pp 31-40 in Story (ed.)
- MCHARG I. L. 1969: Design with Nature Natural History Press: Garden City, N.Y.
- MCKENNA W. R. 1982: Husserl's "Introductions to Phenomenology": Interpretation and Critique M. Nijhoff: The Hague
- MEDNIS R. J. 1981: "Indigenous plants and animals of Newfoundland: their geographical affinities and distributions" pp 218-249 in Macpherson and Macpherson (eds.)
- MEIGS W. B., MOSICH A. N., JOHNSON C. E., BLAZOUSKE J. D. 1976: Accounting: The Basis for Business Decisions (Second Canadian Edition, Revised) McGraw-Hill Ryerson Ltd: Toronto
- MEMORIAL UNIVERSITY OF NEWFOUNDLAND (MUN) - Extension services 1970: "Community Needs on the East Coast of Labrador" unpub.
- MERTON R. K. 1967: "Manifest and latent functions" pp 10-75 in Demerath N. J. and Peterson R. A. (eds.)
- MESSER J. G. 1985: Dental caries prevalence in school children from two ethnic groups in Labrador: 1969 and 1984 surveys Circumpolar Health 84: 298-300
- MINGERS J. C. 1980: "Towards an appropriate social theory for applied systems thinking: critical theory and soft systems methodology" Journal of Applied Systems Analysis 7: 41-49
- MORGAN R. K. 1977: "The influence of anthropogenic activities on the regeneration of the open woodlands of the New Forest, Hants." unpub. Ph.D. Thesis, Univ. of Birmingham

- MORGAN R. K. 1980: "The application of the systems approach in geographical research - a discussion of certain problems" Occ. Publ. 10 Dept. Geog., Univ. of Birmingham
- MORGAN R. K. 1981a: "Systems analysis: a problem of methodology?" Area 43(3): 219-223
- MORGAN R. K. 1981b: Reply to Huggett (1981) Area 13(3): 227-230
- MORRISON W. R. 1983: A Survey of the History and Claims of the Native Peoples of Northern Canada Indian and Northern Affairs Canada: Ottawa
- MORRISON W. R. 1984: Under the Flag: Canadian Sovereignty and the Native People in Northern Canada Indian and Northern Affairs Canada: Ottawa
- NAGEL E. 1961: The Structure of Science: Problems in the Logic of Scientific Explanation London: Routledge and Kegan Paul
- NASKAPI MONTAGNAIS INNU ASSOCIATION (NMIA) 1980: "Statement/ Brief for the meeting of the Provincial Cabinet in Goose Bay" unpub.
- NAUGHTON J. 1979: "Functionalism and systems research: a comment" Journal of Applied Systems Analysis 6:69-73
- NAUGHTON J. 1984: Soft Systems Analysis: An Introductory Guide The Open University Press: Walton Hall, Milton Keynes, Eng.
- NEEDS A. P. 1988: New Zealand Aid and the Development of Class in Tonga Dept. of Sociology, Massey University: Palmerston North, N.Z.
- NORDCO 1983: The Labrador: A Summary of Development Proposals for the Coastal Fishery in Labrador NORDCO Ltd: St. John's
- O'CONNELL M. F.; DEMPSON J. B.; REDDIN D. G.; ASH E. G. M. 1983: "Status of Atlantic salmon stocks in Newfoundland and Labrador, 1983" unpub. CAFSAC Research Document 83/80
- ONCHIOTA CORPORATION 1985: "Torngat Fish Producers' Coop" unpub. report prepared for the Native Economic Development Program, Department of Regional and Industrial Expansion

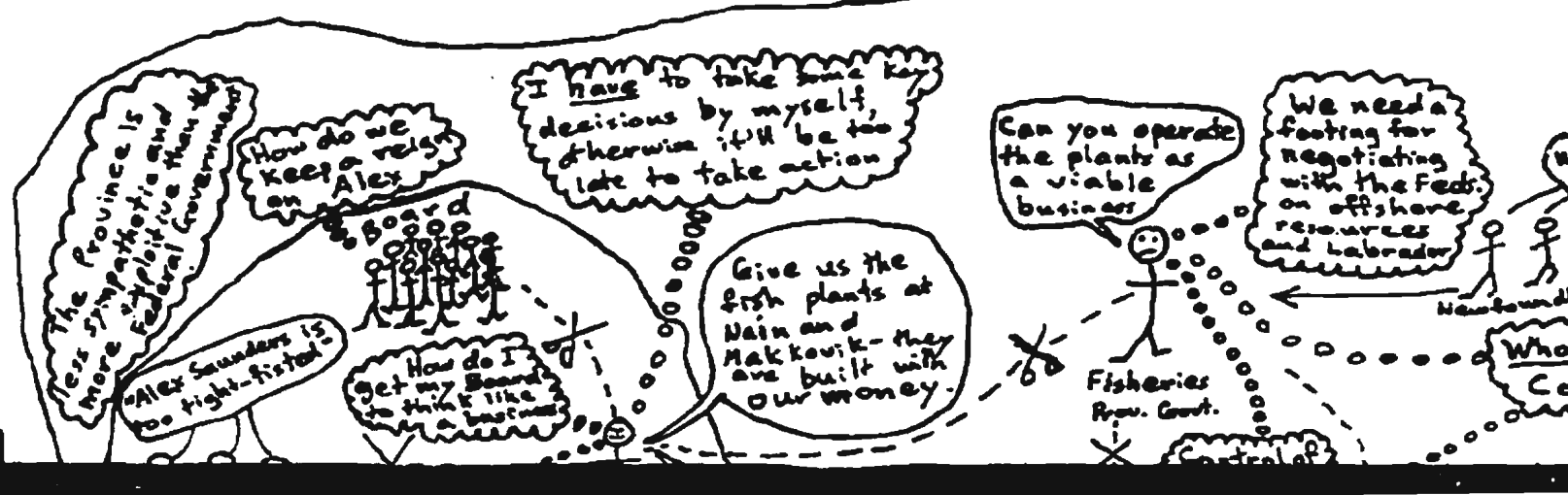
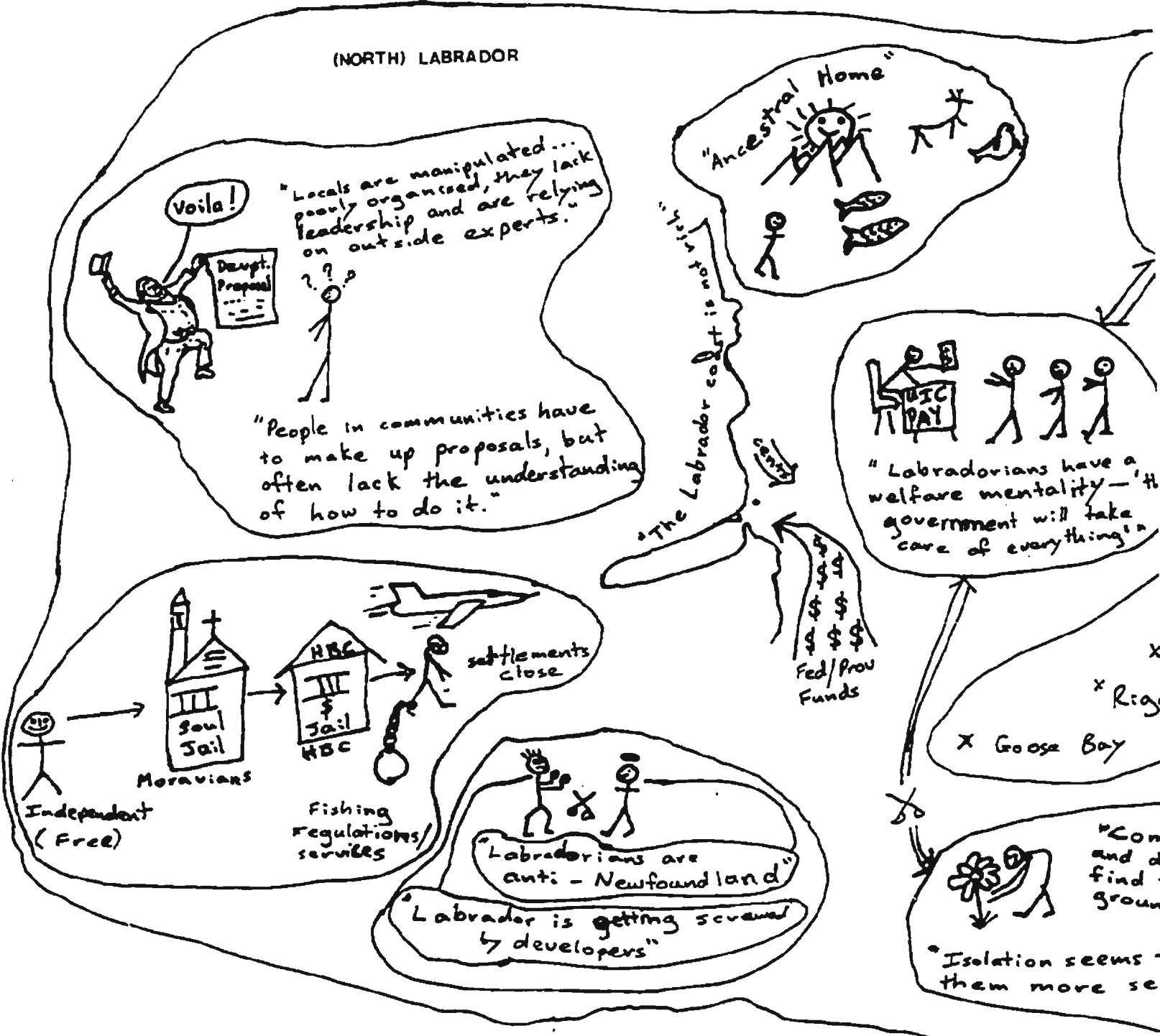
- ONYETT H. 1985: "Pediatric health care in the Grenfell Region" Grenfell Clinical Quarterly 1(1): 1-4
- OPTNER S. L. (ed.) 1973: Systems Analysis Harmondsworth: Penguin Books
- O'REILLY S. and RENNIE H. 1983: "Implications arising from a partial application of "soft"-systems methodology to water resource management: Rennie's Mill River, St. John's Newfoundland" unpub. paper presented to the Canadian Association of Geographers Annual Meeting, Winnipeg
- OVERTON James 1979: "Towards a critical analysis of neo-nationalism in Newfoundland" pp 219-249 in Brym R. J. and Sacouman R. J. (eds.)
- OVERTON John 1988: "Modes of production and human geography: A diagrammatic scheme" NZ J. Geography 85 (April): 7-12
- PAINE R. (ed.) 1971: Patrons and Brokers in the East Arctic ISER, MUN: St. John's, Nfld.
- PAINE R. (ed.) 1977: The White Arctic: Anthropological Essays on Tutelage and Ethnicity ISER, MUN: St. John's Nfld.
- PARSONS T. 1951: The Social System Free Press: New York
- PEET R. F. and PRATT J. D. 1972: "Distant and local exploitation of a Labrador Atlantic Salmon population by commercial fisheries" p 65-71 in International Commission of Northwest Atlantic Fisheries Redbook
- PETRO CANADA 1982: Offshore Labrador Initial Environmental Assessments Summary Petro-Canada: Calgary
- PIRSIG R. M. 1974: Zen and the Art of Motorcycle Maintenance Corgi: London
- POINCARÉ H. 1952: Science and Method Dover: New York
- POPPER K. R. 1972: Objective Knowledge: An Evolutionary Approach Clarendon Press: Oxford
- PREVOST P. 1976: "'Soft" systems methodology, functionalism and the social sciences" Journal of Applied Systems Analysis 5(1): 65-73

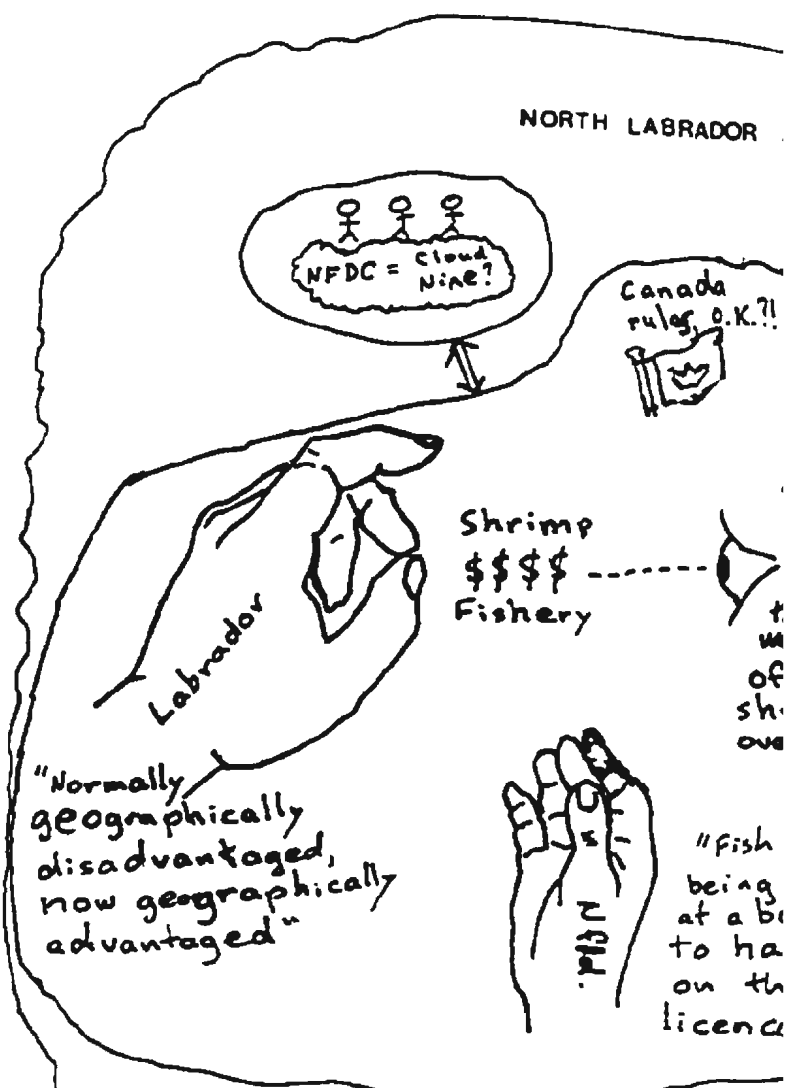
- QUIGLEY N. C. and MCBRIDE N. J. 1987: "The structure of an Arctic microeconomy: the traditional sector in community economic development" Arctic 40(3): 204-210
- RADNER M. and WINOKUR S. (eds.) 1970: Minnesota Studies in the Philosophy of Science Vol. IV Univ. of Minnesota Press: Minneapolis
- RENNIE H. G. 1984: "The Torngat Fish Producers' Co-op and the North of Nain fishery: who pays?" unpub. paper presented to the 4th Inuit Studies Conference, Concordia University, Montreal
- RENNIE H. G. 1985: "Systems methodologies: the "soft" alternative" Area 17(4): 336-338
- RENNIE H. G. 1986: "Northern Labrador fisheries development in the eighties: the "Feds", the Province and the people" pp 24-58 in Day D. (ed.)
- RIMMER P. J. and FORBES D. K. 1982: "Underdevelopment theory: a geographical review" Australian Geographer 15: 197-211
- ROBBINS T. 1976: Even Cowgirls Get The Blues Corgi: London
- ROBERTS A. 1985: "Suicidal behaviour in a northern Labrador community: A five year retrospective study" Grenfell Clinical Quarterly 1(14): 70-72
- ROSTOW W. 1960: The stages of Economic Growth: A Non-Communist Manifesto. Cambridge Univ. Press: London
- SANDEMAN M. R. and BUCHANAN R. A. 1979: A Review of the Labrador Fisheries (OLABS Program Report) OLABS
- SARSFIELD P.; ANDREW B.; RAWIYK R. P. 1983: "Local control of health care amongst indigenous people" The Indian and Inuit Supporter 3(2): 17-22
- SCHMITT R. 1967: "Husserl's transcendental-phenomenological reduction" pp 58-79 in Kockelmans (ed.)
- SCHUTZ A. 1962, 1964, 1966: Collected Papers Vol I, II, III Nijhoff: The Hague
- SCHWARTZ F. 1977: "Land use in the Makkovik region" pp 239-278 in Brice-Bennett (ed.)

- SMITH, S. J. 1981: "Humanistic method in contemporary social geography" Area 13: 293-98
- SMYTH D. S. and CHECKLAND P. B. 1976: "Using a systems approach: the structure of root definitions" Journal of Applied Systems Analysis 5(1): 75-83
- SNOWDEN D. (Chairman) 1974: Report of the Royal Commission on Labrador The Commission: St. John's, Nfld.
- STORY G. M. (ed.) 1982: Early European Settlement and Exploration in Atlantic Canada: Selected Papers MUN: St. John's, Nfld.
- STORY G. M.; KIRWIN W. J.; WIDDOWSON J. D. A. 1982: Dictionary of Newfoundland English Univ. of Toronto Press: Toronto
- SUPPE F. (ed.) 1977: The Structure of Scientific Theories (2nd edn.) University of Illinois Press: Urbana, Ill.
- SUPPE F. 1977a: "Afterword - 1977" pp 617-730 in Suppe (ed.) 1977
- SUPPE F. 1977b: "Critical introduction - The search for philosophic understanding of scientific theories" pp 3-241 in Suppe (ed.)
- TAYLOR J. G. 1980: "The Inuit of southern Quebec-Labrador; reviewing the evidence" Inuit Studies 4(1-2): 185-194
- TORNGAT 1982: "Submission to Atlantic Task Force on the Commercial Fishery" (unpub.)
- TUAN Yi-Fu 1968: The Hydrologic Cycle and the Wisdom of God Toronto: Univ. of Toronto Press
- TUAN Yi-Fu 1974: Topophilia. A Study of Environmental Perception, Attitudes, and Values Prentice Hall: Englewood Cliffs, New Jersey
- USHER P. J. 1976: "Evaluating country food in the northern native economy" Arctic 20(2): 105-120
- USHER P. J. 1982: "The North: metropolitan frontier, native homeland" pp 411-456 in McCann (ed.)
- WARNTZ W. 1973: "New geography as general spatial systems theory - old social physics writ large?" pp 89-126 in Chorley R. J. (ed.)

- WEIMER W. B. 1979: Notes on the Methodology of Scientific Research Lawrence Erlbaum Assoc.: Hillsdale, New Jersey
- WHITELEY W. H. 1964: "The establishment of the Moravian Mission in Labrador and British policy, 1763-83" The Canadian Historical Review 65(1): 29-50
- WILLIAMS R. 1979: "Inshore fishermen, unionisation and the struggle against underdevelopment today" pp 161-175 in Brym R. J. and Sacoumen R. J. (eds.)
- WILLIAMSON H. A. 1964: "Population movement and the food gathering economy of northern Labrador" unpub. MA thesis, McGill University
- WOLDENBERG M. J. and BERRY B. J. L. 1967: "Rivers and central places: analogous systems?" J. Regional Science 7: 129-139
- WOTTON K. A. 1983: "Mental health of the native people of Labrador" The Indian and Inuit Supporter 3(2): 4-12
- ZIMMERLY D. 1975: Cain's Land Revisited: Culture Change in Central Labrador, 1775-1972 ISER, MUN: St. John's, Nfld.

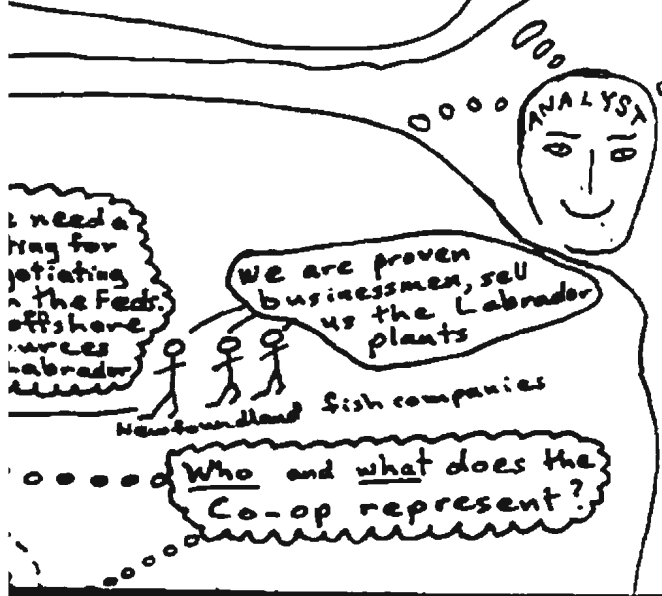
(NORTH) LABRADOR



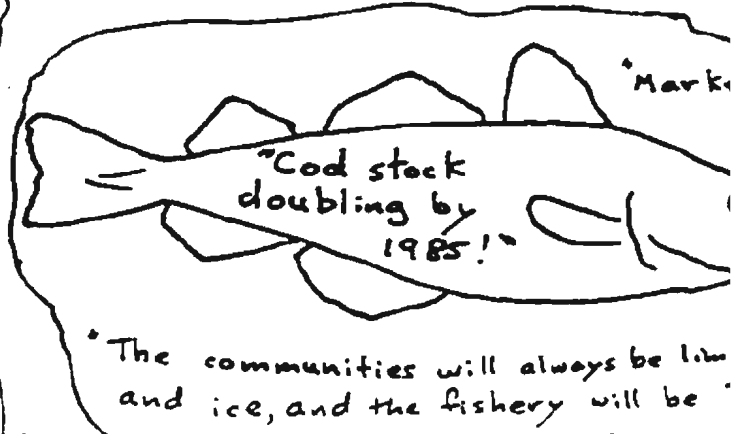


"Community ownership and democratic institutions find their most fertile ground in the north"

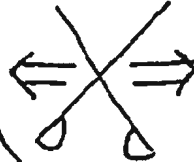
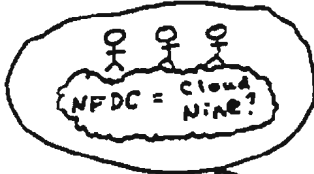
ation seems to make in more self-reliant"



"Over-the-side-sales should only exist where local needs are met... fish are not being sold to local plants. Fish plants in Nain and Makkovik are inadequate as they were designed for salmon... (O.T.S.S.) has a major social impact... influx of 150 longlinermen on a community of 400... portuguese sailors bootlegging liquor..."



NORTH LABRADOR FISHERY



"Fish plants are losing \$6-800,000/year"



It may not be to have any kind commercial fishes will employ a lot of river weir with a co be the best bet and run into problem politics where on UIC"

"I can't see th making a profit breaking even... say, \$5 million to per day freeze: during char coming in. So and it ends sometimes h

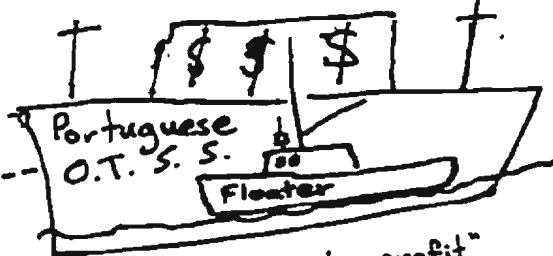
Shrimp \$\$\$\$ Fishery

"The Province wants to maintain its presence through the fish plants. It wants control of the offshore, major control, shrimp licence allocations, over the side sales"

"Fish plants are being kept going at a bare minimum to have a claim on the shrimp licence"

"Normally geographically disadvantaged, now geographically advantaged"

"Over-the-side-sales should only exist where local needs are met... fish are not being sold to local plants. Fish plants in Nain and Makkovik are inadequate as they were designed for salmon... (O.T.S.S.) has a major social impact... influx of 150 longlinermen on a community of 400... portuguese sailors bootlegging liquor..."



"Never a fantastic profit"

"Floaters do mainly one are getting the float are de. problem Makkovik Hopedale Harvison on alter 70c-\$1.2

"Marketing is the big thing"

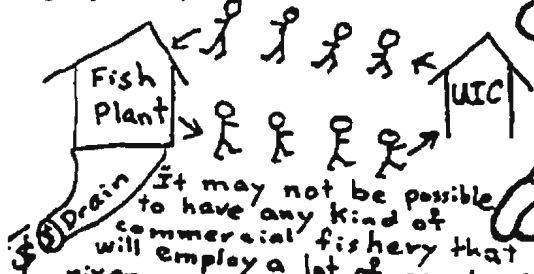
"Cod stock doubling by 1985!"

"You have to ask if of processing is po a short season before freeze-u in onshore proc got out fresh o fish is the his

"The communities will always be limited by geography and ice and the fishery will be 3 months at the extreme"

"Labrador is a social fishery. I don't think it's ever been economic. HBC and Moravians made their living from fur. The Provincial Govt. is operating the fishery as a service."

fish plants are losing
- 800,000/year"



"The Govt. has no role or right to operate fish plants"

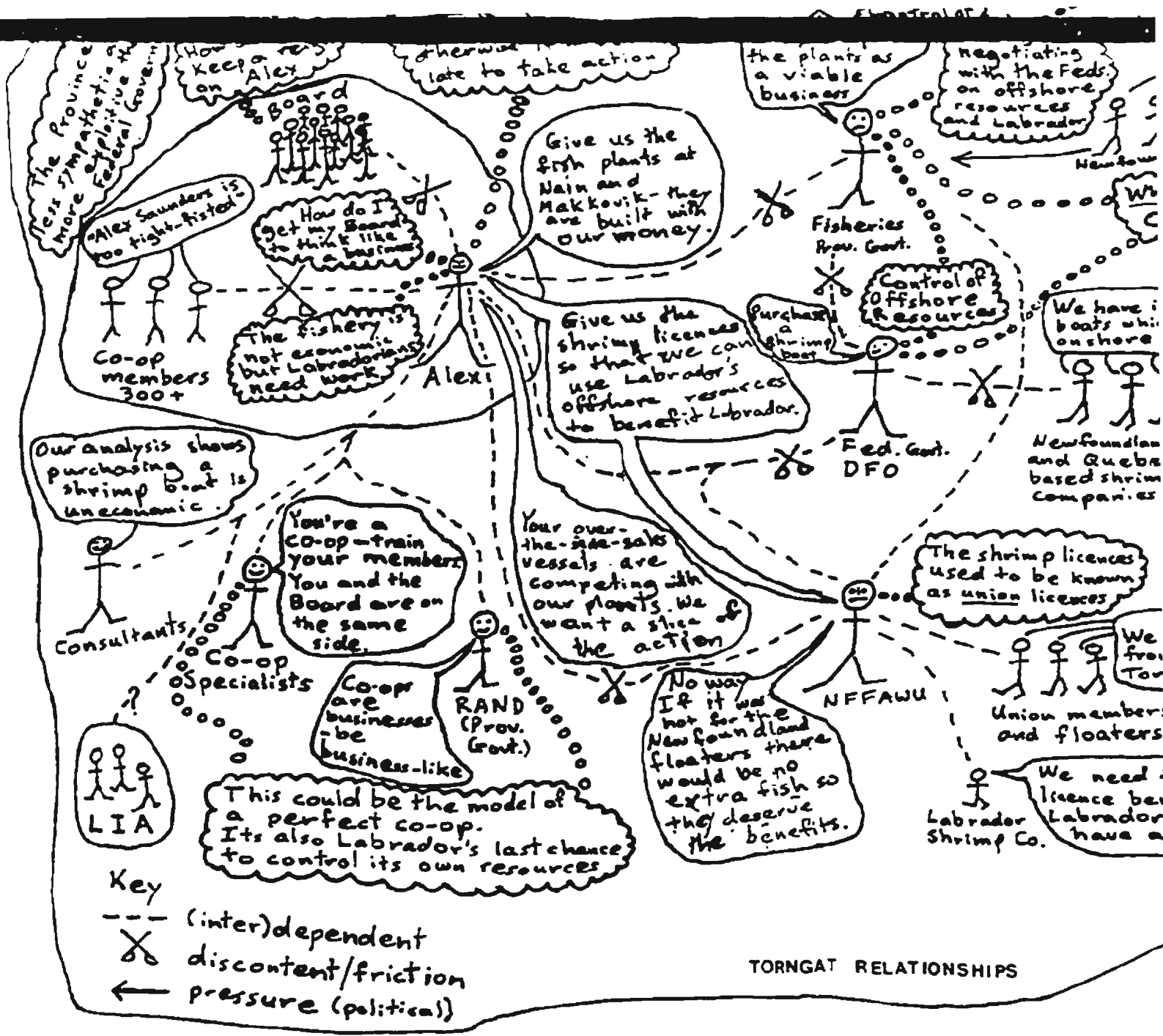
It may not be possible to have any kind of commercial fishery that will employ a lot of people. A river weir with a collector might be the best bet and that would run into problems with Nain politics where people depend on UIC"

"Catch 22 maybe? If it's a social fishery someone has to support it... if it takes \$1 million/yr to create jobs it may not be worth it. On the other hand, people are entitled to a living."

"I can't see the plants making a profit, or even breaking even... the plants need, say, \$5 million to improve... 8000 lbs per day freezing capacity and during char gluts you get 70,000 lbs per day coming in. So, we are buying at No. 1 grade and it ends up No. 2; buying at No. 2 and sometimes have to reject it."

"Floaters don't provide much at all to plants, mainly over-the-side-sales... local fishermen are getting bigger boats, an increase in the floaters, char and salmon stocks are declining, costs are fixed... main problem is the collector boat system. Makkovik has one going north to Hopedale and one south to Cape Harrison. Nain has two going north on alternate days... collector fees 70c-\$1.25/lb and \$1.60-\$1.65/lb."

"You have to ask the question 'What kind of processing is possible on a viable basis?' With a short season you have to move produce before freeze-up. There is no obvious solution in onshore processing. It's either got to be got out fresh or tied to the island... Salted fish is the history of Labrador."



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We are businessmen, sell us the Labrador plants

Newfoundland fish companies

Who and what does the Co-op represent?

We have invested in shrimp boats which support Canadian onshore processing and Canadian employment, give us the Labrador shrimp licences.

Newfoundland and Quebec-based shrimp companies

licences
e known
ences

We get best value from over-the-side-sales. Torngat's anti-Newfoundland

members
floaters

We need the shrimp licence benefits for Labrador, and we have a boat

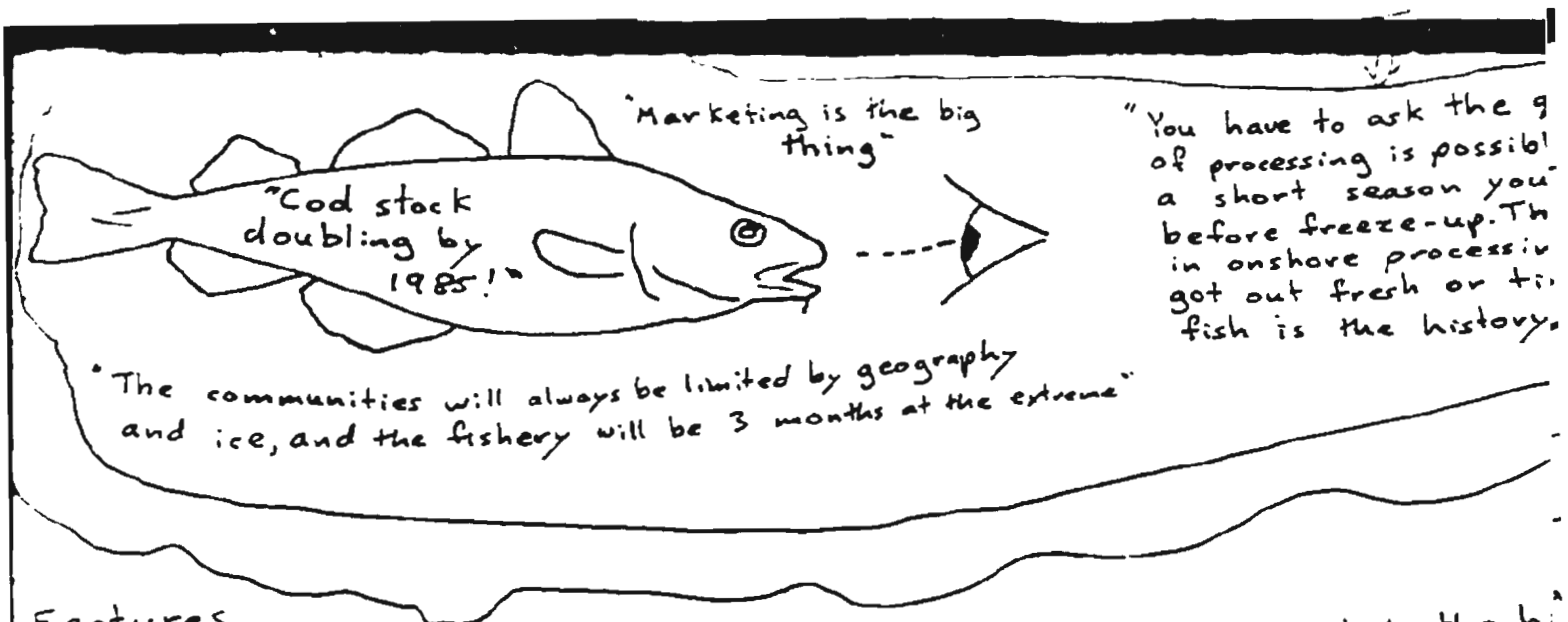
"Cod stock doubling by 1985!"

The communities will always be limited by land and ice, and the fishery will be 3 mo

Features

- There is a shortage of reliable environment, but more so to the
- There is agreement that Labrador maintain a living standard equ
- There is agreement that the Labro increasingly large cod fishery which and economic, proximal offshore labour-force type and distributic
- There is disagreement as to which are available.
- There is disagreement over over the role and ability
- There is agreement that the particular sovereignty over

FIGURE 4.11: THE 'RICH PICTURE' OF THE NO



Features

- There is a shortage of reliable 'hard' data; due in part to the harsh environment, but more so to the different boundaries used to define the environment.
- There is agreement that Labradorians are largely dependent on outside sources to maintain a living standard equitable with those of modern-day Canada.
- There is agreement that the Labrador-based inshore fishery is non-economic, and that the increasingly large cod fishery which is attracting Newfoundland long-liners and economic, proximal offshore shrimp fishery; and that geographical location, labour-force type and distribution, and markets, are all critical components of the fishery.
- There is disagreement as to who should control/receive the subsidies, which are available.
- There is disagreement over what the Torngat Co-op is and should be, and over the role and ability of Alex Saunders as General Manager.
- There is agreement that the entire problem situation is politically charged with particular sovereignty overtones.

FIGURE 4.11: THE 'RICH PICTURE' OF THE NORTH LABRADOR FISHERY AND TORNGAT

What kind of
We have to ask the question "What kind of processing is possible on a viable basis?" With a short season you have to move produce before freeze-up. There is no obvious solution in onshore processing. It's either got to be got out fresh or tied to the island... Salted fish is the history of Labrador.

in part to the highly competitive business in dairies used to collect data sets.

dependent on outside subsidies if they wish to of modern-day Canadian society and standards. fishery is non-economic; that there is an Newfoundland long-liners; that there is a sizeable and that geographical factors of climate, are all critical constraints.

receive the subsidies and the resources

at Co-op is and who it represents, and as General Manager.

situation is politically charged, with

HERY AND TORNGAT



