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A TYPOLOGICAL ANALYSIS OF CANADIAN SCIENCE FICTION

by

Randy Woods, B.A. [Hon's]

A thesis submitted to the Faculty of
Graduate Studies and Research in partial fulfilment
of the requirements for the degree of
Master of Arts in
Canadian Studies

Carleton University

OTTAWA, Ontario

March, 1993

1993, Randy Woods

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Mathematics	40	Chemistry	154
Physics	154	Physics	154
Chemistry	154	Electronics	154
Computer Science	154	Electronics and Communications	154
Engineering Mathematics	154	Hydraulics	154
Engineering Physics	154	Engineering Mechanics	154
Engineering Chemistry	154	Materials	154
Engineering Drawing	154	Materials Science	154
Engineering Mathematics II	154	Materials Science II	154
Engineering Physics II	154	Materials Science III	154
Engineering Chemistry II	154	Materials Science IV	154
Engineering Drawing II	154	Materials Science V	154
Engineering Mathematics III	154	Materials Science VI	154
Engineering Physics III	154	Materials Science VII	154
Engineering Chemistry III	154	Materials Science VIII	154
Engineering Drawing III	154	Materials Science IX	154
Engineering Mathematics IV	154	Materials Science X	154
Engineering Physics IV	154	Materials Science XI	154
Engineering Chemistry IV	154	Materials Science XII	154
Engineering Drawing IV	154	Materials Science XIII	154
Engineering Mathematics V	154	Materials Science XIV	154
Engineering Physics V	154	Materials Science XV	154
Engineering Chemistry V	154	Materials Science XVI	154
Engineering Drawing V	154	Materials Science XVII	154
Engineering Mathematics VI	154	Materials Science XVIII	154
Engineering Physics VI	154	Materials Science XIX	154
Engineering Chemistry VI	154	Materials Science XX	154
Engineering Drawing VI	154	Materials Science XXI	154
Engineering Mathematics VII	154	Materials Science XXII	154
Engineering Physics VII	154	Materials Science XXIII	154
Engineering Chemistry VII	154	Materials Science XXIV	154
Engineering Drawing VII	154	Materials Science XXV	154
Engineering Mathematics VIII	154	Materials Science XXVI	154
Engineering Physics VIII	154	Materials Science XXVII	154
Engineering Chemistry VIII	154	Materials Science XXVIII	154
Engineering Drawing VIII	154	Materials Science XXIX	154
Engineering Mathematics IX	154	Materials Science XXX	154
Engineering Physics IX	154	Materials Science XXXI	154
Engineering Chemistry IX	154	Materials Science XXXII	154
Engineering Drawing IX	154	Materials Science XXXIII	154
Engineering Mathematics X	154	Materials Science XXXIV	154
Engineering Physics X	154	Materials Science XXXV	154
Engineering Chemistry X	154	Materials Science XXXVI	154
Engineering Drawing X	154	Materials Science XXXVII	154
Engineering Mathematics XI	154	Materials Science XXXVIII	154
Engineering Physics XI	154	Materials Science XXXIX	154
Engineering Chemistry XI	154	Materials Science XL	154
Engineering Drawing XI	154	Materials Science XLI	154
Engineering Mathematics XII	154	Materials Science XLII	154
Engineering Physics XII	154	Materials Science XLIII	154
Engineering Chemistry XII	154	Materials Science XLIV	154
Engineering Drawing XII	154	Materials Science XLV	154
Engineering Mathematics XIII	154	Materials Science XLVI	154
Engineering Physics XIII	154	Materials Science XLVII	154
Engineering Chemistry XIII	154	Materials Science XLVIII	154
Engineering Drawing XIII	154	Materials Science XLIX	154
Engineering Mathematics XIV	154	Materials Science L	154
Engineering Physics XIV	154	Materials Science LI	154
Engineering Chemistry XIV	154	Materials Science LII	154
Engineering Drawing XIV	154	Materials Science LIII	154
Engineering Mathematics XV	154	Materials Science LIV	154
Engineering Physics XV	154	Materials Science LV	154
Engineering Chemistry XV	154	Materials Science LVI	154
Engineering Drawing XV	154	Materials Science LVII	154
Engineering Mathematics XVI	154	Materials Science LVIII	154
Engineering Physics XVI	154	Materials Science LIX	154
Engineering Chemistry XVI	154	Materials Science LX	154
Engineering Drawing XVI	154	Materials Science LXI	154
Engineering Mathematics XVII	154	Materials Science LXII	154
Engineering Physics XVII	154	Materials Science LXIII	154
Engineering Chemistry XVII	154	Materials Science LXIV	154
Engineering Drawing XVII	154	Materials Science LXV	154
Engineering Mathematics XVIII	154	Materials Science LXVI	154
Engineering Physics XVIII	154	Materials Science LXVII	154
Engineering Chemistry XVIII	154	Materials Science LXVIII	154
Engineering Drawing XVIII	154	Materials Science LXIX	154
Engineering Mathematics XIX	154	Materials Science LXX	154
Engineering Physics XIX	154	Materials Science LXXI	154
Engineering Chemistry XIX	154	Materials Science LXXII	154
Engineering Drawing XIX	154	Materials Science LXXIII	154
Engineering Mathematics XX	154	Materials Science LXXIV	154
Engineering Physics XX	154	Materials Science LXXV	154
Engineering Chemistry XX	154	Materials Science LXXVI	154
Engineering Drawing XX	154	Materials Science LXXVII	154
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Engineering Drawing XXII	154	Materials Science LXXXV	154
Engineering Mathematics XXIII	154	Materials Science LXXXVI	154

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Behavioural	1384
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"A Typological Analysis of Canadian Science Fiction"

**submitted by Randy Woods, B.A.
in partial fulfilment of the requirements for
the degree of Master of Arts**

.....
Thesis Supervisor

.....
**Director
School of Canadian Studies**

Carleton University

Ottawa, Ontario

April 1993

ABSTRACT

Although a considerable body of science fiction has been written by Canadians, until recently this genre has been a virtually unstudied element of Canadian cultural production. This lack of critical attention to Canadian science fiction is disturbing given the centrality of technology to academic understandings of Canadian history and culture.

Eight works of English-language Canadian science fiction are positioned within two recently-established typologies of science fiction. It is concluded that Canadian science fiction, at least as it is reflected by the texts considered in this study, tends to acknowledge, rather than suppress, the incompatibility of spiritual and material epistemologies. Moreover, Canadian science fiction writers tend to invoke worlds created through extrapolation from existing realities, rather than through speculative leaps of the imagination.

The theoretical implications of the typological cohesiveness of Canadian science fiction are discussed, and connections between this cohesiveness and the role of science and technology in other dimensions of the Canadian reality are identified.

TABLE OF CONTENTS

Introduction	1
Justification and Definitions	6
Theory, Typologies and the SF Genre	18
The Typological Placement of Eight Works of Canadian Science Fiction	46
Discussion	114
Conclusion	145
Appendix A: SF Themes in Canadian Literature	150
Works Cited or Consulted (By Chapter)	151

INTRODUCTION

In 1989, Robert Runté observed:

Canadian [science fiction] tends to read as if written by a British author who had taken an American correspondence course from the Famous Writers' School, but failed for not including enough sex and violence.(1)

His comment is almost painfully Canadian in its self-deprecating irony and its appeal to foreign countries as a source for definition. It also, until very recently, marked the extent of critical commentary on science fiction (SF) produced by Canadians.

Early attempts at analysing Canadian SF focussed on the rarity of the genre in this country. Often these essays concluded with an exhortation to Canadian science fiction fans to begin writing SF that deals with "Canadian themes," often going so far as to define what "thematic elements" might qualify as Canadian. The first critical essay on Canadian science fiction was written by Donald Wollheim, an American editor and writer of SF and fantasy. His essay, "Whither Canadian Fantasy," was commissioned by Uncanny Tales, a Canadian pulp magazine that briefly flourished when imported magazines were embargoed during World War II. Without mentioning one title or author of any nationality, Wollheim manages to conclude that "for the most part there is not, and never has been, any large amount of Canadian fantasy [Wollheim treats SF as a subset of fantasy]."(176) In a comment that is as painfully American as Runté's remark is Canadian, Wollheim declares that "after this war when we settle down to really take this planet in hand for humanity, Canada will first come into her greatness."(179) And while he modestly acknowledges that "it certainly should not be my job to tell Canadians what they should write," he proceeds to declare that,

"Canadians should learn to express their dreams for the future in the terms of the actual future facing their land and their own selves and descendants,"(179) rather than relying upon the United States to supply dreams wholesale.

In the late-1970s, Christine Kulyk unknowingly repeats Wollheim's observations, albeit in a much less irritating tone. Kulyk delivered a lament for the "rarity of SF stories which deal with Canadian themes," followed by an extended discussion of the characteristics Canadian science fiction would have if it existed. Borrowing heavily from Margaret Atwood's Survival, and from government-sponsored definitions of multiculturalism, Kulyk develops a list of themes that fit the criterion of "Canadian," including "the ideas [sic] that universal peace could be achieved concurrently with the preservation of individual cultural and ideological differences,"(57) and a focus on "space being explored by explorers rather than conquerors."(58) She concludes her essay by stating: "it should be possible for SF writers to deal with the above-mentioned aspects of Canadian culture, and I for one would love to see them do it."(58)

While essays of this sort may reveal a good deal about Canadian culture in general -- Runté sees the fact that "most Canadian SF readers simply assumed that science fiction was something written by and about Americans" as evidence of a larger "national inferiority complex"(1) -- they say very little indeed about Canadian science fiction. This lack of serious critical insight began to change in 1979. In that year, John Colombo collected and edited the first anthology of "Canadian" science fiction, Other Canadas: An Anthology of Science Fiction and Fantasy, and co-authored the first bibliography of Canadian science fiction and

fantasy, CDN SF&F. Colombo's works provided a definitive rebuttal to those who had claimed Canadians had not contributed to the development of the genre of science fiction. Equally important, Colombo's anthology contained preliminary attempts by himself and David Ketterer to assign Canadian SF to specific categories, such as "near-future fiction," and "the national-disaster scenario." Following the publication of Other Canadas several additional anthologies of Canadian science fiction were published, including the on-going Tesseract series. In the 1980s, Robert Runté published three editions of The NCF [New Canadian Fandom] Guide to Canadian Science Fiction and Fandom, each of which contained an important introduction to Canadian science fiction and a list of recommended authors, in addition to information on upcoming activities planned by Canadian SF fans.

As this brief review of the literature on Canadian science fiction suggests, until very recently critical examination of Canadian contributions to the science fiction genre have either denied the existence of these contributions, or been limited to attempts to prove that Canadian SF does exist through the compilation of bibliographies. The critical environment improved in 1992, when David Ketterer published the first monograph-length study of Canadian science fiction and fantasy, entitled Canadian Science Fiction and Fantasy. This text is clearly the most important attempt at a critical understanding of Canadian science fiction, although critics quickly (and correctly) identified its major weakness: As one reviewer noted, a large portion of Ketterer's text consists of "a kind of bastard bibliography, lacking only complete publication data; many pages of Canadian Science Fiction and Fantasy are filled with paragraph after paragraph of authors' names

and titles, plus single-clause evaluations."(Barbour 420) Ketterer does attempt more extended critical examinations of the most important works of Canadian science fiction -- he provides provocative essays of between one and seven pages on several works -- but these attempts at criticism are undermined by his "attempt to cover everything."(Barbour 422)

To this point, academic researchers in Canada (Ketterer included) have focussed their energies on defining a body of work that could be considered Canadian science fiction. This study is an attempt to move beyond the straight-forward identification of Canadian SF to a consideration of the characteristics of the most important works of science fiction produced by Canadians. In metaphorical terms, this study is an attempt to establish the "lay of the land" of Canadian science fiction; to produce a "map" of the genre as it is understood by Canadian writers that places it in the larger context of the world-wide genre.

This study is structured following the classic pattern of justification, theory, application and discussion. In the first chapter I argue that a study of Canadian science fiction is not only justified, but long overdue. The second chapter of this study reviews current theoretical approaches to the genre of science fiction and identifies two dimensions in which Canadian SF might be valuably explored. This task is more complex than it might seem; critical consideration of the genre has not yet arrived at a consensus on many central issues and disagreements over definition continue to plague scholarship in the area. In the third chapter of this study I examine a number of the most important works of Canadian science fiction -- ranging from James De Mille's A Strange Manuscript found in a Copper Cylinder (published in 1888) to

Spider Robinson's 1987 novel, Time Pressure -- and attempt to position them according to typologies devised for each of the two dimensions proposed in chapter two. More specifically, I attempt to demonstrate that eight major works of science fiction written by English-speaking Canadians tend to foreground the co-existence of two competing epistemological world views -- spiritualism and materialism -- rather than suppressing the apparent contradiction between these two world views beneath a wealth of plot or technological gadgetry. Moreover, I argue that Canadian writers of science fiction tend to generate fictional worlds by extrapolating from the world surrounding them rather than through the process of speculation. In the final chapter, I discuss the theoretical implications of science fiction that simultaneously affirms and subverts materialistic epistemologies, and propose a number of connections between the character of science fiction produced in this country and the role technology has played in Canada, both in terms of the country's historical development and in terms of the philosophical treatment of technology by the Canadian intellectual community.

The conclusions of this study must be considered provisional -- a definitive description of Canadian SF is far beyond the scope of this work -- but they suggest that Canadian writers have responded to the "quintessentially American" (Runté 2) genre of SF by stretching the limitations of the genre so that Canadian understandings of technology might be presented. Canadian SF appears to share this ability to speak from within, but apart from, the dominant American discourse with the Canadian discourse on technology in general.

CHAPTER ONE: JUSTIFICATIONS AND DEFINITIONS

An academic study of Canadian science fiction requires more justification than is perhaps necessary for more traditional topics of academic inquiry. Two obvious questions about a study of this sort must be addressed: First, is there such a thing as Canadian science fiction? and, secondly, given that a body of Canadian SF exists, why is it worthy of academic investigation?

The first of these questions can be answered fairly simply. A considerable body of science fiction exists that has been written by authors with Canadian citizenship. John Colombo's 1979 publication of Other Canadas with its accompanying bibliography answered earlier doubts that Canadians had made any substantial contribution to the genre. As Colombo discovered, however, underlying the question, "is there such a thing as Canadian science fiction?" are two more fundamental questions: "what do you mean by science fiction?" and, even more difficult, "what do you mean by Canadian?" Most critics balked at the definition of "Canadian" employed by Colombo. In addition to works of SF authored by Canadian citizens, Colombo included in his anthology and bibliography science fiction written by foreign authors but set in Canada. For example, he included a chapter from Jules Verne's Les Aventures du Capitaine Hatteras in Other Canadas, arguing that the setting is undoubtedly Canadian (although he acknowledges that Verne's personal knowledge of Canada consisted of "60 minutes . . . admiring Niagara Falls." (16)) Colombo avoids a detailed examination of what constitutes science fiction by including both SF and fantasy in Other Canadas. The resulting anthology collects works that are distanced from our everyday

reality; the process of this distancing -- whether scientific or supernatural -- appears of little interest to Colombo.

In Canadian Science Fiction and Fantasy, David Ketterer considered problems of definition in somewhat more detail than Colombo. Although Ketterer does not explicitly set out the criteria he used to determine the "Canadianess" of the texts included in his discussion, all of the works he considers were written by individuals who live or lived in Canada, or who were born in Canada and emigrated elsewhere. For example, he includes in his discussion both Gordon Dickson, who left Canada for the United States at the age of 13, and Spider Robinson, who abandoned New York for Nova Scotia in 1973. In the conclusion of Canadian Science Fiction and Fantasy, Ketterer proposes a spectrum for measuring the "Canadianess" of a work of science fiction or fantasy (or, by extrapolation, any work of fiction). At one end of the spectrum are works that are "written by persons born and continually living in Canada," are "set in Canada and feature Canadian characters," and which "display a 'Canadian sensibility' [whatever that might be]."(165) At the opposite end of the spectrum he places works "written by persons not native to Canada who have lived in Canada for a short period of time . . . set outside of Canada and featuring non-Canadian characters, and . . . displaying no evidence of a 'Canadian sensibility.'"(165) Ketterer quickly (and correctly) observes that locating all works of Canadian SF and fantasy on the scale running between these end points would be a tedious and probably less than valuable chore. The very fact that such a spectrum exist, however, attests to the ambiguity that underlies all studies of "Canadian" literature.

Ketterer is somewhat more forthcoming than Colombo about the criteria he used to determine whether a work qualified as science fiction or fantasy. In Ketterer's view, science fiction is a subset of the larger category of "consequential worlds," an "embracing category that also includes such visionary works as The Divine Comedy and Paradise Lost." (5) Within the category of "consequential worlds," science fiction is "definable to the extent that whatever counterfactual situation obtains is domesticated by means of some form of scientific or pseudo-scientific rationalization." (5) As I suggest in the following chapter, this apparently clear-cut definition of science fiction, while useful to the anthologist, lacks theoretical rigor (the term "pseudo-science" is especially problematic). Most critics of science fiction acknowledge that there is as yet no stable consensus on the difference between science fiction, fantasy and mimetic fiction. Indeed, as is discussed in the next chapter, the difficulty that critics have had in defining SF reflects a fundamental debate over the ontology of the genre. Not only are the criteria used to define the genre the subject of controversy, but the dimension in which these criteria are to be applied remains contentious.

And yet with the "definition question" acknowledged, this study shares with Ketterer's work the need to accept a pragmatic, if blurred, definition of science fiction. The only alternative is to launch into a theoretical analysis of science fiction in general that would have different and broader goals than this study. For the purposes of this work, then, science fiction is loosely defined as fiction which makes no attempt to be mimetic -- that is, it has no pretense of re-presenting reality -- but which establishes its distance from reality through a

device or technique that draws its veracity through an appeal to the authority of the scientific epistemology. Thus space operas, evolutionary tales, and logically-derived dystopias qualify as science fiction; ghost stories, and lands of fantasy (such as found in The Lord of the Rings) do not.

The definition of "Canadian" I have used is narrower than that employed by Ketterer, although it too remains somewhat imprecise. The works examined in this study were all written while their authors resided in Canada. Thus works written by Canadian-born writers after emigration to the United States have been excluded. Furthermore, I have restricted this discussion to authors that have either produced the bulk of their work while residing in Canada, or who have become accepted figures in Canadian literature generally (such as Frederick Philip Grove) under the assumption that the former will have formed their literary skills under the influence of the Canadian "environment" (whatever that may be) and that the latter are of sufficient influence within the tradition of Canadian literature that their inclusion in this study is warranted. For example, William Gibson is included in this study in spite of his American birth because he did not begin writing fiction until after he had moved to Vancouver. On the opposite side of the immigration/emigration problem, I have excluded (except for brief remarks) Gordon Dickson and A.E. van Vogt. Although both were instrumental in the development of the genre of science fiction, neither spent much time in Canada after the inception of their careers.

Although this restriction of the definition of "Canadian" helped to reduce the "canon" of Canadian science fiction to a manageable size, further winnowing of the titles listed by Ketterer and Colombo was

necessary. The study of Canadian science fiction is at an interesting stage. As I remarked in the introduction, virtually all critical and semi-critical efforts in the area have been essentially bibliographic efforts; a self-conscious effort has been underway to establish the canon of Canadian science fiction. Ketterer's work marks the first attempt to determine the relative importance of each of these works and distinguish between minor and major works of fiction. To a large degree, I have relied on Ketterer's assessment of works of Canadian SF to select the works included in this study. In addition, I relied on my own judgement of the accomplishment of a given work. For example, I have included Atwood's The Handmaid's Tale and Grove's Consider Her Ways, but excluded Hugh MacLennan's unfortunate Voices in Time.

As a quick glance at the SF titles dealt with in this study reveals, French-language science fiction is conspicuously absent. That French- and English-speaking Canada remain two solitudes is even more painfully obvious today than when MacLennan borrowed the phrase from Rilke. Science fiction written by English speaking authors is generated within a different cultural context than that produced by French language SF writers. Ignoring this difference would result in a distorted view of the canon of Canadian literature; taking this difference into account would require a much more detailed study of Canadian SF than is possible in a work of this size. Except for some cursory remarks in the conclusion of this work, I have confined my study to English-language works of Canadian science fiction.

Clearly every work of English-language Canadian science fiction is not considered in this study. Some of the more obvious exclusions include Crawford Killian, Michael Coney, Donald Kingsbury, Candace Jane

Dorsey, Matt Cohen, Lesley Choyce and Tom Henighan. Nevertheless, the texts examined in this study do represent a chronological cross section of Canadian SF. That this body of work has not received any sustained critical attention is, in itself, a justification for the sort of "mapping project" that is undertaken here. More importantly, there is evidence to suggest that Canadian science fiction differs in important aspects from its American counterpart. John Colombo, Robert Runté and David Ketterer all remark on the ability of "Canadian authors [to] move easily from the mainstream to SF and back again." (Runté 1) In contrast, "few American mainstream authors attempt to write SF, and American SF authors often find it impossible to break out of SF ghetto [sic] and into the mainstream." (Runté 1) In Visions from the Edge, an anthology of Atlantic Canadian science fiction and fantasy, Lesley Choyce and John Bell note that a list of English-language Canadian mainstream writers that have "dabbled" in science fiction or fantasy includes: Duncan Campbell Scott, Sir Charles G.D. Roberts, Robert Service, Stephen Leacock, L.M. Montgomery, Frederick Philip Grove, Earle Birney, Margaret Laurence, Phyllis Gotlieb, Stephen Scobie, Margaret Atwood, Hugh Hood, Alden Nowlan and Susan Musgrave. (Choyce i) Even Hugh MacLennan, certainly among the most conservative of Canadian writers, found himself framing his last novel, Voices in Time, as a science fiction story. One can hardly imagine one of MacLennan's American counterparts -- Faulkner say, or Steinbeck -- attempting a comparable work.

The list of Canadian mainstream writers of SF compiled by Choyce and Bell requires some qualification; in many cases the science fiction written by these authors is limited to one or two short stories or, in the case of Birney, a poem. Nevertheless, it is quite clear that

Margaret Atwood's venture into science fiction, The Handmaid's Tale, is the most recent in a tradition of Canadian writers temporarily wandering from mimetic realism into worlds of otherness. Canadian mainstream writers accepted the legitimacy of science fiction at a time when their American counterparts deemed it a pulp genre beneath the dignity of the "serious" writer. Until the recent usurpation of the mainstream of serious fiction by such writers as Vonnegut and Pynchon, American writers of SF were confined to the "pulp ghetto." In Canada, mainstream writers apparently never cast the same aspersions on non-mimetic fiction as their American counterparts.

In addition to the prevalence of mainstream writers among Canadian authors of science fiction, superficial analysis of Canadian SF reveals at least one other distinguishing feature. In his initial essay on Canadian science fiction, Ketterer says:

What strikes me most forcefully is an almost total absence of 'hard' Canadian science fiction, that is to say works based on the so-called hard sciences such as physics, chemistry and engineering. Canadian science fiction draws on such soft sciences as sociology, anthropology and psychology, and hence, it may be hypothesized, its tendency to exist on the borderlines of, or mutate into, the 'softer' genre of fantasy."(Colombo 332-333)

Ketterer does not elaborate this point (indeed, he immediately goes on to ask, somewhat facetiously, if Canada itself is not a fantasy). There is, however, a marked epistemological difference between the assumptions of "hard" science fiction and "soft" science fiction, especially when the latter exists "on the borderline of . . . fantasy." As "'hard' SF is arguably an American genre"(Runté 1), its relative absence from the canon of Canadian SF indicates that this country's science fiction may embody an understanding of science and technology that differs from that in other areas of the world.

The initial surveys of Canadian science fiction performed by Colombo and Ketterer, therefore, provide reason to think that a more thorough investigation of these works may reveal facets of the Canadian treatment of this genre that are uniquely Canadian. There is, however, a more pressing reason for undertaking this study, a reason grounded in the dynamics of Canadian studies in general. The relationship of Canadians to science and technology has always been somewhat ambiguous. While unhesitatingly accepting the material wealth that has accompanied the rise of technology in this country, Canadians have been much more hesitant in accepting the ideological premises of domination and exploitation that are often associated with the use of technology, especially by our neighbours to the South. (Consider your own reaction to Wollheim's proposition that "we really take this world in hand for humanity.") The study of this ambiguous relationship is a dominant strain of thought in attempts by English-speaking Canadian academics to understand their own country. These attempts have studied many different dimensions of Canadian life and have taken place in virtually all academic disciplines. Arthur Kroker, in his landmark work Technology and the Canadian Mind, claims that "Canada's principal contribution to North American thought consists of a highly original, comprehensive, and eloquent discourse on technology." (7) Kroker supports this contention by examining the works of three of the major figures in the history of Canadian academics, Harold Innis, Marshall McLuhan and George Grant, concluding that "a sustained and intensive reflection on the meaning of the technological experience is the Canadian discourse." (12) The work of more recent Canadian academics supports Kroker's observation. In the realm of political philosophy,

Charles Taylor continues his attempt to "roll back the galloping hegemony of instrumental reason [the epistemological correlative of technology]". "(Taylor 112) Suzanne Zeller has developed an historical interpretation of Canadian confederation that claims inventory sciences -- "the tasks of identification, inventory and mapmaking" -- gave "form to the idea of a transcontinental national existence." (9) A number of scholars have connected the "communitarianism" of Canadian society with a refusal of the hegemony of technological existence.¹ In her 1990 Massey Lecture, Ursula Franklin examined the role of technology in our society from both philosophical and pragmatic perspectives, arguing that "the development of redemptive technologies ought to be part of the shaping of a new social contract appropriate to the real world of technology." (130) This list could be continued, but I believe the point is clear: technology continues to be central to the way in which academics understand the Canadian reality.

In light of the dominance of technology in Canadian academe -- Kroker goes so far as to define "the Canadian discourse" as "a way of seeking to recover a voice by which to articulate a different historical possibility against the present closure of the technological order" (12) -- it is surprising that so little critical attention has been paid to Canadian science fiction. The sizeable body of Canadian science fiction represents a sustained reflection on the relationship of science and technology to the human. Even in works in which technology is not foregrounded -- such as Atwood's The Handmaid's Tale -- the underlying epistemology of science is used to "create" a world that serves as an alternative to our own. In this way, all science fiction is inextricably linked to the philosophical underpinnings of science. If,

as Kroker claims, "the Canadian discourse . . . represents a courageous, and creative, struggle to think outside of and against the closed horizons of technological society," (Kroker 13) then in overlooking Canadian SF, the academic community has ignored a rich, and potentially revelatory dimension of the Canadian discourse on technology.

Moreover, although Kroker's study of the "Canadian mind" is a seminal and insightful work, it takes a very narrow view of what constitutes the Canadian mind. Kroker assumes in some undefined way that Canadian intellectuals are important to, or relevant to, or representative of, the collective Canadian mind. He acknowledges that "a general fascination with the question of technology extends like a brilliant arc across the Canadian cultural imagination, from cinema to music to literature to philosophy,"(8) but elects to focus on the Canadian intellectual tradition, rather than the world outside of the university. Science fiction is popular literature; the growth of the genre since the second World War is one of the most important, (and in academic circles, least recognized) changes in the dynamics of fiction publishing. The discourse that takes the form of genre SF is not only accessible to the public, but is to a large extent determined by the demand generated by the public. As Albert Wendland points out, a complex relationship exists between the creator of a science fiction text -- who envisions new possibilities that modify the genre -- and readers, who inform the writer (by purchasing or not purchasing a book) what modifications are acceptable.(Wendland 22) As a result, an examination of the discourse on technology embodied by Canadian science fiction has the potential to uncover that discourse as it is understood by the populace at large.

It appears that a study of Canadian science fiction is overdue. The preliminary bibliographic work has been performed by Colombo, Runté and Ketterer. What remains to be accomplished is a methodologically rigorous examination of the most important Canadian SF works, and a consideration of their relationship to other aspects of the Canadian discourse on technology. Before proceeding with an attempt to categorize the principle works of Canadian science fiction, however, it is necessary to consider in some detail the various typologies proposed by theorists of science fiction in general.

NOTES FOR CHAPTER ONE

- ¹ This perspective is discussed in Howard Asker's "Nationalism and Communitarianism," and Wallace Gagne's "Technology and Canadian Politics," both of which are found in Nationalism, Technology and the Future of Canada, Ed. Wallace Gagne, (Toronto: Macmillan Company of Canada), pp. 9-51 and pp. 52-74 respectively. George Grant, of course, understood Canadian nationalism from a similar perspective.

CHAPTER TWO: THEORY, TYPOLOGIES AND THE SF GENRE

Although serious academic study of science fiction literature has been underway since the early 1960s, there is as yet no consensus on the form that criticism of the genre should take. While there exist several landmark critical efforts -- such as Kingsley Amis' New Maps of Hell -- no single approach to the genre has been accepted as definitive. This lack of consensus is especially evident when considering what one would suppose to be a pre-requisite for criticism of science fiction, a widely accepted definition of the subject itself. Indeed, the difficulty in developing a formal definition for science fiction that encompasses all of the works that readers intuitively define as SF, while remaining useful in differentiating these works from other genres and mainstream novels, reflects a more fundamental debate about the nature of the science fiction genre. Underlying the "definition question" is a deeper debate about the "dimension" in which a definition of science fiction is possible. It is possible to identify at least three "dimensions" in which definitions of science fiction have been attempted. As Carl Malmgren points out, all "fictional universes" whether science fictional or otherwise, consist of two major components, a world and a story. "The former includes the total repertoire of possible fictional entities, that is, the characters, settings and objects . . . that occupy the imaginal space of the fiction."(Malmgren 6) The latter "connects and combines the various entities that make up the world."(Malmgren 6) In essence, Malmgren argues that a fictional universe can be described in terms of two dimensions: a "horizontal" dimension that contains the "materials" of the fictive universe, and a

vertical dimension of story or plot that orders and arranges these materials. To illustrate the connection between these two dimensions, consider "The Shortest Science Fiction Love Story Ever Written" and "Prologue to Knock," the world's seventh and eighth shortest science fiction stories, respectively.¹ The "Shortest Science Fiction Love Story" is essentially a common science fiction theme stripped of its horizontal dimension so that nothing remains but "story":

Boy meets girl.
Boy loses girl.
Boy builds girl.

Clearly this "story" could be drawn out over several hundred pages without losing its coherence. For the most part, the horizontal dimension of this "micro yarn" remains unspecified; the reader knows only that a boy, a girl and an artificial girl exist in a world that is distanced from our own by the ability to artificially create life. A more complex portrayal of the same story would necessarily contain a more elaborate world.

"Prologue to Knock" provides a different kind of information than that provided by "The Shortest Science Fiction Love Story":

The Last Man on Earth sat down in a room.
There was a knock on the door . . .

Here the horizontal dimension of world is elaborated at the expense of the vertical dimension of story. The reader knows a surprising amount about the world in which "Prologue" takes place -- the world has ended, aliens exist (indeed, aliens that know enough to knock exist), there is only one person left on the planet and that person is a man -- but the entire vertical dimension of the story is contained in the word "knock." The (surprising) power of "Prologue" stems from its implied vertical dimension. Almost nothing happens and as a result the reader is forced

to consider what might possibly occur given the world described. The stage is set, but the reader invents the drama. In contrast, "The Shortest Science Fiction Love Story" elaborates the vertical dimension of story and relies on the reader to "fill in" the horizontal dimension of world. The reader knows what happens, but knows almost nothing about who it happens to, or the world in which it happens.

The terms that I am attempting to define may appear to reduce to the traditional understanding of fiction as a combination of setting and plot. A fictive "world," as I understand the term, includes a much broader range of fictional functions than are normally associated with the term setting. To begin with, as Carl Malmgren points out, a fictional "world" includes both characters and settings, or in the terms he adopts "to avoid the implicit assumption that the characters are human and the settings terran,"(7) "actants" and "topoi." His definition of "topoi" includes:

not only the settings through which the actants move, and the social order that structures their interactions, but also the implicit time frame (historical, futurological, etc.) of the action and the operative laws that govern the topological domain.(Malmgren 7)

"Story" as I wish to use the term, includes not only the plot developed in a text, but everything that happens in that text, and includes thematic conclusions drawn on the basis of this action. My introduction of the vocabulary of "vertical dimension" and "horizontal dimension" is thus intended as an extension of traditional understandings of plot and setting, and as a visually appropriate way of suggesting the relationship of "story" to "world" in a fictional universe.

As Malmgren suggests, "a marked tendency in the critical analysis of SF has been to define it on criteria essentially based on story."(17)

As is elaborated below, Malmgren proposes an alternative system of categorizing science fiction texts based on the "world" contained in the work. Both the horizontal and vertical dimensions delineated by Malmgren are essential elements of all texts, and as such they can be identified or examined on the basis of evidence present in the texts themselves. It is possible, however, to undertake definition and criticism of science fiction on the basis of a third, extra-textual dimension of the genre. Rather than focussing on the "form" of science fiction -- that is, on the vertical or horizontal dimensions of a given work -- some critics have examined the "function" the genre has in modern society. In other words, rather than examining the nuts and bolts of science fictional worlds, or delineating the various SF plot possibilities, these critics attempt to articulate the various ways in which a reader may relate to a work of science fiction, arguing that the essence of the genre lies in this relationship rather than in the form of any given SF work. The relationship these approaches to science fiction criticism have to each other is suggested by the diagram below.

DIAGRAM ONE: TYPOLOGICAL DIMENSIONS OF SF

If one were to place the most widely known recent attempts to create typologies of science fiction on this diagram, the "iconic" typology of

Gary K. Wolfe would lie in the vertical dimension, the "novum" analysis of Suvin and Malmgren would lie in the horizontal dimension, and the reader-response analysis of William Sims Bainsbridge would span the gap between the text and reader.

The difficulty critics have experienced in arriving at a suitable definition of science fiction, therefore, reflects a fundamental debate over the "deep structure" that underlies the genre as a whole. The debate, rather than being textually oriented (in the manner of the New Criticism), is ontological in perspective. A formal evaluation of the various methods of approaching science fiction criticism is outside of the scope of this paper; however, it is necessary to examine in some detail several recent attempts at heuristic categorization of science fictional works, if only to provide some framework for the ensuing discussion of Canadian SF.

A TYPOLOGY OF SF IN THE VERTICAL DIMENSION

Traditionally (if thirty-odd years of criticism can be said to have established a tradition), criticism of science fiction has been based on an examination of its customary themes or story-types. The thematic approach to genre criticism has come under attack from several quarters: in the case of science fiction, the movement away from thematic criticism appears to have been initiated by Darko Suvin's pioneering theoretical work. Much early science fiction criticism created a typology of science fiction based on the numerous "conventionalized" plots that dominated, and to a great extent continue to dominate, the genre. Thus science fiction works were systematically examined and allocated to categories such as "alien-encounter SF," or "time-travel

SF." The most sophisticated of this approach to SF criticism attempted to identify these "categories" with archetypal myths. The first science fiction collection to both contain a Canadian-authored SF story and be published in Canada -- SF: Inventing the Future -- takes this approach. The anthology is intended as an introduction to science fiction for use in Canadian schools. The first third of the anthology, entitled "Science Fiction as Myth Reinterpreted," concludes with a series of questions designed to lead students into a greater appreciation of the "narrative patterns" shared by the short stories included in the text and Greek or Christian myths. For example, it asks students to "account for the differences between Clarke's 'History Lesson,' and Biblical accounts of the flood," and argues that "an awareness of story pattern can be a first step to literary insight and judgement." This 1972 anthology reflects the tone of the science fiction criticism of the time, if not its level of sophistication.

Suvin attacks this approach to SF in a 1972 article entitled "On the Poetics of the Science Fiction Genre," later expanded and reprinted in his exhaustive study of Victorian SF, Metamorphoses of Science Fiction. Suvin undermined the mythological/thematic approach to SF by critiquing attempts to identify fictional texts ("texts in time") with myths ("supertemporal fictions"), and by proposing an alternative approach to the study of science fiction, one which I discuss in the following section on typology in the horizontal dimension.

Carl Malmgren points to a more fundamental problem with considering science fiction texts as a function of their plot. He contends that "the various plots of SF, once divested of their alien, other worldly or futuristic appurtenances, tend to coincide with the plots of realistic

fiction."(7) The implication of his argument is that analysis of this dimension of SF has very little to do with a study of genre at all. In fact, as its appeal to archetypal myths suggests, it is actually an attempt at universal literary analysis that happens to focus on texts that contain science fictional elements. The very point of identifying underlying archetypes in fiction is to demonstrate their fundamental unity with other works of the human imagination and, implicitly, to demonstrate both the possibilities and limits of the human mind itself. To employ the vocabulary adopted above, Malmgren demonstrates that the vertical dimension of science fiction -- the dimension of story or plot -- is shared by all literature. Any study that takes the genre of science fiction as its subject, rather than literature as a whole or literature as theory, must focus on some other dimension of the SF genre.

It is perhaps not surprising, given the dearth of commentary on Canadian SF, that the little which does exist primarily takes the form of thematic criticism. It is the most straight forward approach to examining a literary genre, requiring as it does very little theoretical preparation. In addition, as Frank Davey has suggested, until very recently, thematic criticism formed the horizon of critical understandings of Canadian literature in general. Colombo's brief attempt at analysis in the preface to Other Canadas focuses almost exclusively on the "vertical" dimension of the works included in the anthology. His one consideration of the horizontal dimension of world -- an observation of that Canadian science fiction and fantasy tends to be set in the polar world -- is something of "a self-fulfilling prophecy

in that practically anyone writing about the North Pole was considered by Colombo to be writing 'Canadian' science fiction." (Runté 1)

In Canadian Science Fiction and Fantasy, David Ketterer emphasizes that "it is not easy to draw conclusions from the very disparate material in English and French that this book surveys," (165) and finally concludes that "monolithic conclusions applying to everything that might be covered by the terms Canadian SF or Canadian fantasy are simply not possible." (166) To the extent that Ketterer is referring to thematic criticism, I would agree that any attempt to identify monolithic characteristics of Canadian SF must end in futility. Appendix A suggests the variety of SF themes represented by the works I consider in this study.

Theoreticians, such as Suvin, Rose and Malmgren argue that the uniqueness of science fiction does not, and cannot, reside in what I have called the "vertical" dimension. An analysis of SF that fails to recognize this seems constrained to identifying connections between SF and other forms of literature, rather than studying SF itself. Frank Davey claims that thematic criticism is especially inappropriate when dealing with a "national" literature, noting that the thematic critic "chooses to work with materials -- literary themes -- that are, because of their limited number, international in nature. The paradox creates a dilemma from which there appears to be no scholarly escape." (Davey 5) A final, and perhaps conclusive argument against pursuing a critique of Canadian science fiction based on the vertical dimension is Ketterer's perception that it is virtually impossible to draw any credible conclusions about Canadian SF from such a study. The diversity of thematic considerations evident in Appendix A suggests that the best

that could be hoped for from thematic criticism of the science fiction of this country is an historical or bibliographical study, such as those already published by Ketterer and Colombo.

SCIENCE FICTION IN THE HORIZONTAL DIMENSION

Fortunately, alternative forms of science fiction criticism have been advanced and provide viable alternatives for a study of Canadian SF. In a recent monograph, Carl Malmgren proposes a singularly useful typology for science fiction. One reviewer of the monograph observes that Malmgren's typology "cogently systemizes, in generally lucid prose, many of the insights of other SF theoreticians." (A Typology of SF 116) Much of Malmgren's work is essentially an elaboration and application of Darko Suvin's theoretical studies. Given the overwhelming density of Suvin's theoretical work, however, the distillation of his approach to science fiction and the development of that approach into a typology of SF is a valuable contribution.

As suggested above, Malmgren argues that the essential nature of science fiction resides in the worlds employed in SF texts, rather than in story or plot. Following Suvin, Malmgren locates the uniqueness of the science fiction genre in the "distance" between the worlds of science fiction and the "'zero world' of empirically verifiable properties around the author." (Malmgren 8) The dimension of world in any SF text differs from the everyday world of the reader and author; indeed, it is this "distancing" from "authorial reality" that qualifies a work as science fiction. Again following Suvin, Malmgren considers the mechanism by which science fictional texts distance themselves from our empirical reality as the most fundamental characteristic of the

genre. Science fiction, he suggests, is "characterized by a fictional world. . . [that] contains at least one factor of estrangement from the narrative world of the author, but which naturalizes that factor by rooting it in a scientific episteme." (10) Malmgren adopts Suvin's vocabulary for this factor of estrangement, referring to it throughout his study as a "novum."

Malmgren's theoretical discussion of novums in science fiction involves two elements: the "category" of novum, and the "mode" of novum. Based on the work of Roman Jakobson, Malmgren argues that "any particular SF world can be classified according to the type of novum which generates it, serves as its dominant, and establishes its typological identity." (17) Following this logic, he establishes a typology of science fiction which is repeated, in part, in Figure Two. As this figure suggests, Malmgren argues that the factor of estrangement that determines a science fiction world may be located in one of several categories: the actant or characters of the text, the social order detailed in the text, or the "topos" of the world. This last category includes both novums which involve "objects" in the fictional universe (such as technological innovations or scientific discoveries) and novums based on the physical setting of the world (that is, the planet, space ship, etc, which forms the physical location of the story). Many works of "alien-encounter" SF fall into the first of these categories. Most dystopias fall into the second category of novum, and many "gadget SF" stories into the third category.

In addition to these categories of estrangement, Malmgren spends considerable time discussing "science fantasy" in which the factor of estrangement occurs in natural law. The concept of science fantasy lies

Figure Two: Malmgren's Typology of Science Fiction

World Component	Novum	Genre	Representative Examples	
		SF Types	Extrapolative	Speculative
ACTANT	Alien/Monster	Alien Encounter	<i>Frankenstein</i>	<i>Solaris</i>
SOCIAL ORDER	Utopia/Dystopia	Alternate Society	<i>We</i>	<i>Dhalgren</i>
TOPOGRAPHY:				
OBJECT	Invention/Discovery	Gadget SF	<i>I, Robot</i>	<i>Roadside Picnic</i>
PLANET	Catastrophe/Alien Landscape	Alternate World	<i>Ringworld</i>	<i>Ubik</i>

beyond the area approached in this study as it involves texts in which the the basic empirical assumptions of science are either directly challenged or summarily ignored, and which, therefore, are much closer to fantasy than to science fiction.

The provisional analysis of the "canon" of Canadian science fiction presented in this study will identify the category of novums employed in Canadian texts, but considerably more effort will be devoted to examining the mode of novums employed by Canadian SF authors. As Figure Two indicates, Malmgren suggests novum categories can exist in one of two modes, extrapolative and speculative. He differentiates between these two modes on the basis of the "mental operation the author employs in generating"(12) a novum. When developing an "extrapolative" novum, Malmgren argues, an author creates "a fictional novum by logical projection or extension from existing actualities."(12) This mode of novum is derived from the zero world of the author's reality through a logical or linear process. Consequently, the reader is expected to recuperate novums generated in this fashion through a logical, linear

process that parallels "the process upon which science as a cumulative discipline relies." (Malmgren 41) In contrast, speculative novums are generated through "a kind of quantum leap of the imagination, itself the product of poetic vision or paralogic, toward an entirely Other state of affairs." (12)

While the easiest way to discuss the difference between an extrapolated novum and a speculative novum is in terms of the mental operation used by the author to develop the novum, the more fundamental importance of these terms is the relationship they reflect between the "worlds" of SF and the world of the author and reader. SF worlds based in an extrapolative novum stand in a metonymic relationship to the zero world of the author and are recuperated by the reader through a linear process of comparison with the "real" world; a speculative novum creates a world which is metaphorically or analogically related to empirical reality and which is recuperated through "an intuitive reading capable of oneiric twists and transformations." (Malmgren 50) Extrapolative SF has linear, comprehensible connections to the mundane reality of the authorial present. Speculative SF, by definition, involves a radical disjunction with the empirical reality of the writer, a disjunction which must be accepted by the reader rather than logically internalized.

An example may clarify the difference between these two modes. Arthur C. Clarke's Childhood's End is a classic of science fiction in part because it simultaneously employs both extrapolative and speculative novums. The world of Childhood's End differs from that of empirical reality in the existence of two orders of extraterrestrials, one generated through extrapolation, one through speculation. In this novel, the presence of the "Overlords," -- "creatures of pure intellect,

rationality extrapolated and perfected, and hence . . . knowable," (Malmgren 70) -- has become a part of everyday life. The Overlords shroud themselves in mystery, hiding from humans the reason for their appearance and, as a result, the reader's knowledge of them is obscured. But there is never any doubt that they are ultimately knowable. As the plot of the novel progresses, it is revealed that the Overlords serve a different order of alien, "a virtually omnipotent entity of extreme Otherness." (Malmgren 70) The Overmind, an "unknowable" order of alien, represents the next stage in human evolution and as such is inherently beyond the grasp of humans prior to evolution. As a result, "the Overmind is not at all susceptible to rational explanation, not even that of the hyperrational Overlords." (Malmgren 70) The Overlords are linear extrapolations of the rational faculty in the humans of today. Thus their actions can be logically understood and have a meaning which we are capable of interpreting. In contrast, the Overmind cannot be recuperated through rational understanding. The relationship of the Overmind to present-day humanity is radically disjunctive and can be approached, if approached at all, only metaphorically. In Clarke's words, the Overmind "bears the same relation to man as man [bears] to the amoeba." (205) Just as the actions of humans would (one supposes) be "quintessentially alien" (Malmgren 70) to the amoeba, so the actions of the Overmind are defined by an "irreducible strangeness." Childhood's End uses an alien-encounter to provide a degree of estrangement from empirical reality, but the aliens encountered are of two different orders of otherness: one comprehensible and one incomprehensible, one an extrapolated factor of estrangement, and one a speculative factor of estrangement.

A major concern of this study will be the demonstration that the works of Canadian science fiction considered here are generated through extrapolation rather than speculation. And as I hope becomes clear in the Discussion chapter of this thesis, this tendency to generate worlds through extrapolation has interesting theoretical implications, given the social function performed by these works of Canadian SF.

TEXT, THE READER AND SOCIETY

The third dimension in which a typology of science fiction might be proposed is that of the relationship of text to reader, or, more generally, of the genre of science fiction to society. This dimension is more ambiguous and hence more difficult to discuss than either the horizontal dimension of world or the vertical dimension of plot. It is also, however, the dimension of greatest relevance to a discussion of Canadian science fiction. As I have already suggested, virtually all of the works of science fiction produced by Canadian authors perform the social function of mediation between spiritual and material world views in a similar fashion. Placing this observation in an academically acceptable context, however, requires considerable discussion of the various functions ascribed to the genre.

Several critics have analysed science fiction in terms of its social function, usually from a sociological standpoint. The work of Mark Rose is a valuable alternative to these sociological studies of the function of SF. Rose shares with the sociologists an understanding of the science fiction genre as "a set of [social] expectations rather than as something that resides within a text," (Rose 5) however, he bases his analysis on the epistemological underpinnings of the social functions of

science fiction, rather than on a quasi-empirical analysis of its readership. Rose's analysis of science fiction is compatible with the sociological approaches of at least two other critics, Robert Biezenski and Albert Wendland. Indeed, by grounding his work in epistemology rather than in the (somewhat suspect) "empiricism" of sociology, Rose provides a deep structural foundation for the work of Biezenski and Wendland.

According to Rose, "one of science fiction's principal cultural functions appears to be to produce narratives that mediate between spiritualistic and materialistic world views."(45) In his view, science fiction embodies the central contradiction of the modern world, a desire "to believe both in the priority of spirit and in the priority of matter, both in free will and in determinism."(44) Rose demonstrates that science fiction performs this function of "mediation" in one of two ways: through a suppression or concealment of "the incompatibility of the spiritualistic and materialistic world views," or through a "questioning of the validity . . . of the contradiction [of the two views]."(47) There are two kinds of SF that use distinctly different methods to resolve the contradiction between a spiritual world (epistemologically based in the human response to reality) and a materialistic world view that finds its epistemological foundation in empiricism (and which, as Jacques Ellul and others have demonstrated, is ultimately grounded in the concept of efficiency.)

Rose argues that SF either disguises the apparent incompatibility of material and spiritual world views, or it acknowledges this incompatibility and works toward its reconciliation. It strikes me quite forcefully that Rose unnecessarily restricts this second type of

SF. It appears to me that its actual basis lies in its acknowledgement of the opposition of epistemologies in this world, not in the reconciliation of this opposition. The essential difference between the two kinds of science fiction lies in the "first step" of mediation between spiritual and material world views -- either denial or acknowledgement -- rather than in the second step of attempted reconciliation. The either and the or in the opening sentence of this paragraph are critical elements of definition. The and is supplementary.

Of course, as Rose is quick to point out, science fiction is not the only form of literature that attempts to mediate spiritualistic and materialistic world views. Science fiction, however, carries out this mediation within a unique "semantic field" which delineates both the boundaries and possibilities of the genre. SF texts "are composed within the semantic space created by the opposition of human and nonhuman. Indeed, "this opposition . . . constitutes what we may call the genre's paradigm." (Rose 32) At the simplest level, of course, this opposition forms the foundation of all Romantic literature. Rose argues, however, that science fiction "is concerned with science in a way that romanticism as such generally is not," and thus "represents an independent semantic system." (38) Rose argues that as a result of this "concern" with science, "the paradigmatic opposition of science fiction generally intersects with a secondary opposition between science and nature." (38) He depicts this relationship using the diagram reproduced below.

DIAGRAM TWO: THE OPPOSITIONS OF SCIENCE FICTION

Rose does not dwell on the association between the semantic space that defines SF and the social function which SF performs -- his theoretical work is designed to serve as an introduction to his survey of modern SF -- but the association is easily developed. When a science fiction work is constructed such that the opposition between human and non-human, or between science and nature is clear and unequivocal then in all likelihood that work does not focus on the contradiction between material and spiritual world views. A work that treats human and non-human (or science and nature) as bi-polar opposites necessarily ignores the central contradiction that humans are made of the same materials and operate under the same physical laws as the non-human universe, necessarily fails to acknowledge the intersection of the two categories. Contrarily, an SF work in which the division between human and non-human (or science and nature) is brought into question necessarily confronts the central contradiction between spiritualism and materialism embodied in any assumed opposition between the two categories.

For example, consider two science fiction works that are developed around the proposition that humans become capable of creating artificial intelligence. One way to generate a plot from this novum is to invoke the motif of the computer or robot that runs amok. A world could be developed in which the remnants of humanity battle a non-human force of intelligent robots. In such a work the opposition of human to non-human would be quite clear; no one would have difficulty locating the central tension of the work on Rose's matrix. It is equally clear that such a plot would be unlikely to deal with the contradiction between the spiritual world view represented by the humans and the materialistic world embodied by the robots. This is especially true if, as is common in this type of SF, the resolution of the conflict between human and non-human hinges on some quality that is supposedly unique to humans, such as superior "emotionalism" or "morality" or "stubbornness."

In contrast to this playing out of the impact of artificial intelligence, consider a work that is based in a world where it is possible for humans to store their memories in advanced computers. Upon their death, these computers can continue to perform, react and make decisions that are indistinguishable from the way that the original human would perform, react or decide. The plot in this world could evolve in any number of ways: a person might find themselves continuing a love affair with a dead lover through the auspices of a computer, or the story could revolve around the duplication and dissemination of a single "person" in several computers, effectively allowing "someone" to be in any number of places at the same time. Obviously the conflict between human and non-human in this world is complicated by the difficulty in separating the two concepts. Indeed the focal point of

any story based in such a world would have to be the ambiguity of the division between human and non-human. Locating the central tensions of such a text on the matrix proposed by Rose would be difficult. The corollary to this is that the text necessarily involves an investigation of the "interpenetration, or even identity, of matter and spirit." (Rose 46) One way, therefore, of identifying the way in which a science fiction work mediates between spiritualistic and materialistic world views is to examine the central tensions of the work. If the opposition of human to non-human and/or science to nature is clear-cut, then the work in all probability disguises or suppresses the incompatibility of these two world views. If, however, the central tensions of the work are ambiguous, that is, if the work is difficult to "slot" into the matrix developed by Rose, the work almost certainly confronts the incompatibility of spirit and matter.

Rose approaches the social role of science fiction as a function of the "semantic space that the genre inhabits," (48) and in doing so he suggests that SF "operates within the space of a basic contradiction in modern culture," (45) a contradiction that is fundamentally a question of epistemology. In contrast to Rose, Robert Biezenski analyses the social role of SF in terms of the sociological make-up of its readership.

In an unpublished doctoral thesis submitted in 1981, Biezenski examined the growth of the genre of science fiction in terms of its historical relationship with the technocratic and scientific portion of American society through a study of the social make-up of its readership from the 1920s through to the 1980s. He concluded that science fiction can function either to subvert existing power relationships through the presentation of fully-envisioned alternatives, or to reinforce existing

power structures by implying that they form the natural state of affairs and are therefore not subject to historical change. He recognizes that superficial examination might conclude that all science fiction is subversive; by presenting alternative worlds all SF appears to remind readers of the temporality of the world as it exists. He argues that on closer examination, however, some works of science fiction project "existing values into the indefinite future" and thereby "preserve the illusion of change while denying its reality." (11) He labels this "ideological SF."

In contrast, he categorizes a story as "subversive" science fiction "if it depicts values radically, or at least significantly, different from the present." (12) Biezenski traces the evolution of the genre of science fiction in terms of these two categories and argues that the changing popularity of subversive and ideological science fiction reflects changes in the social role played by the technological or scientific elite in the United States. Based on the social composition of the readership of SF magazines, he argues that this sub-culture formed the majority of readers of science fiction during much of the genre's history, and, equally important, contributed directly to the evolution of the genre by contributing to SF magazines. Biezenski concludes that when the technological or scientific elite believed they had political power, or thought themselves about to gain power, more "ideological" science fiction was published. And, Biezenski argues, during periods when the power and influence of this group declined, the incidence of "subversive" science fiction increased.

In Biezenski's opinion, the clearest way of discerning ideological science fiction from subversive science fiction is to examine the

central novum of the work. "To be subversive, the novelties portrayed by SF must be value-informed, not merely 'value-neutral' gadgets." (11) Clearly similarities exist between this conception of science fiction and the matrix developed by Rose. A work of science fiction that is premised on a "value-neutral" novum necessarily presents human and non-human spheres as independent. By definition, the constitution of a "value-neutral" gadget is independent of any value-structure; it is simply a material object unconnected to such human concerns as ethics. Ideological science fiction reinforces the power of the status-quo by assuming existing power structures are natural and therefore free from historical change. This form of science fiction must hide the contradiction between spiritual and material world views on which it is based, because foregrounding the relationship of such spiritual concerns as morality to such material concepts as efficiency and power implicitly recognizes that the entire concept of an object being "value-neutral" is problematic.

In contrast, science fiction based on "value-informed" technology, necessarily recognizes the blurring of the lines between the human and non-human spheres, natural and scientific spheres. Subversive science fiction acknowledges that science and technology (and, hence, the epistemology of materialism) must be considered in light of the sphere of human values and moral structures ("spiritual" concerns). In other words, subversive SF is premised on the relationship of materialistic and spiritualistic world views because, by definition, it offers alternative relationships between such spiritual considerations as values, morality and justice, and the material concerns of power, economy and efficiency.

As elaborated in the Discussion chapter of this study, Biezenski's perception that SF may reinforce or subvert existing power structures can be formulated as the reinforcement or subversion of the hegemony of technologically-derived values that Jaques Ellul labelled "technique." Indeed, I will argue that the canon of Canadian SF examined here is subversive in the context of this second formulation.

Like Biezenski, Albert Wendland examines the social function performed by science fiction in North America. In his monograph-length study, Wendland categorizes science fiction works as either "conventional" or "experimental" on the basis of their social function. Conventional science fiction, he suggests, employs the conventions of the genre of SF to create narratives that reinforce the understanding of the world held by the social subgroup that purchases "genre" science fiction. It is, in Biezenski's terminology, ideological. In contrast, works of experimental science fiction employ the estrangement that is central to SF as a means of investigating the human condition. While experimental SF functions as a probe to construct "an extrapolated future society that compels us to examine the trends in our own society" and forms a 'thoughtful dialectic between what we are and what we might be,' (Wendland 31) conventional SF "tries to provide a salable commodity, an 'entertainment' that appeals more to reader's subjective longings than to objective analysis." The division, finally, reduces to the difference between science fiction as genre and science fiction as literary technique, or, alternatively, to the difference between science fiction as a popular literary form (the content and style of which is designed to please a specific population subgroup) and science fiction

as a technique employed by authors who aim to understand the position of humans in the universe, free from the constraints of genre conventions.

Wendland's system of categorization can be attacked on the basis of several shortcomings, not the least of which is the unacknowledged subtext of his system: a desire to separate "bad" science fiction from "good" science fiction. Nevertheless, his work is of some importance because it provides a direct link between the theoretical analysis of Rose and the sociological analysis of Biezenski. Wendland argues that the values of the social group that reads "conventional" science fiction are fundamentally contradictory -- "objective reality . . . does not always coincide with the subjective belief in individualistic free will"(48) -- and that "to support its reader group," conventional SF "does not reconcile the contradiction but simply hides it."(48) Clearly there is a parallel between this tendency of conventional SF and Rose's observation that some SF mediates between materialistic and spiritualistic world views by disguising or suppressing their incompatibility. In addition, Wendland defines the readership of conventional SF ("the scientific and technological middle class"(44)) in terms that parallel Biezenski's understanding of the "technological and scientific elite."

All three authors perceive a central division of SF into works that present the universe as a neutral, external object, and works that consider the interrelatedness of the material universe, with the spiritual or human universe. In Wendland's terminology, conventional science fiction "tries to see the universe and the future as objects, as 'apart' from human subjectivity."(50) Biezenski argues that this type of SF is ideological because it is premised on novums that are

"value-neutral," a term that implies they are 'apart' from the realm of the human. Rose claims that SF of this sort attempts to hide or suppress the contradiction between the materialistic world view of science and the spiritualistic world view of humanity. In contrast, Wendland claims that experimental science fiction understands "itself . . . as a product of subjective factors which are psychological" and involves a "two way perception of the object, plus the subject, plus the interaction between them." (55) Biezenski labels SF of this sort "subversive" because it is based on novums which are "value-informed" and thus presents fully-realized alternatives to existing power structures. In the terms developed by Rose, this form of SF "mediates between the spiritual and the material" by focussing "directly on the contradiction [between the two viewpoints]." (46) Rose, Biezenski and Wendland share a central perception that SF can be divided into two categories on the basis of its social function, one of which is marked by clear-cut, unequivocal, situations and tensions, the other by an acceptance of ambiguity, and the acknowledgement that straight forward divisions (between self and other, writer and text, human and non-human, truth and non-truth, and so on) are misleading.

As will become obvious in the next chapter, these two categories of science fiction have parallels with modern and post-modern understandings of the scientific project. Science fiction that envisions the universe as "value-neutral," apart from the realm of human subjectivity, embodies something of "the strong empiricist view that the facts can be unproblematically read off of nature" that dominated the understanding of science "until well into the 20th century." (Nickles 149) Both assume that the observer and observed do not interact, and

that observations of the universe can be made "objectively," apart from the values of the observer. SF works that accept ambiguity and acknowledge the interpenetration of human and material spheres have much in common with postmodern philosophies of science. The work of Thomas Kuhn and Paul Feyerabend has resulted in a re-thinking of the relationship between the "rational," "objective" scientist and society as a whole. Early in this century, relativity theory, quantum mechanics and wave mechanics undermined the epistemological foundations of empiricism. The implications of the "new physics" are just now being felt in other realms of academic life. The result is a new understanding of the world that accepts that "interactions between scientists and nature construct a necessarily double or complementary view of sub-atomic processes" that prevents the possibility of "Newtonian clarity"(Strehle 13) that formed the basis of modernist views of science.

Because it is difficult to apply the analysis of Biezenski and Wendland to individual texts -- their conclusions are based on the readership of SF texts rather than on the text itself -- the social function of Canadian science fiction will be examined using Rose's theoretical approach to SF. It is important to remember, however, that the two types of SF envisioned by Rose represent different readerships as well as different epistemic assumptions. Much of the Discussion portion of this paper revolves around this connection.

In the following chapter, eight major works of English-language Canadian science fiction are categorized according to the way in which they mediate between spiritual and materialistic world views. This task is complicated by the mutable nature of "spiritualism." Rose argues

that the tension between materialism and spiritualism initially "took the form of fierce debates between proponents of science . . . and the proponents of religion,"(44) but that today this tension is most often found in "displaced form." Rose points to "the antipathy between humanistic and behavioristic psychology"(45) as one manifestation of the tension between spiritual and material world views in the academic community of today. The shift from religion as the locus of spiritualism to humanism as a spiritual response to the human reality is readily apparent in works of Canadian SF. Indeed, I will argue that two recent works of Canadian science fiction partially escape from the paradigmatic dichotomy perceived by Rose. Rather than mediating spiritual and material world views, these works emphasize the "provisionality" of both epistemologies, thus bringing into question the relevance of the concept of contradiction.

CONCLUSION

This rather lengthy assessment of the state of science fiction criticism is made necessary by the lack of agreement among SF critics over what constitutes the central core of the genre. As I hope I have made clear, there are two dimensions in which a study of Canadian SF can profitably be undertaken, what I have called the "horizontal" dimension of the "world" created by a text, and the external dimension of the text's relationship to society. The central tenet of this study as a whole is that when Canadian science fiction is considered in these two dimension very distinct patterns are evident. As I hope the next chapter makes clear, the canon of Canadian science fiction works considered here is

dominated by works that contain wor'ds developed through "extrapolation" rather than "speculation," and which mediate the incompatibility of spiritualistic and materialistic world views by making this incompatibility a central issue of the work.

NOTES FOR CHAPTER TWO

¹ For the record, the six shortest SF stories ever written are (in reverse order):

6. "The Shortest Science Fiction Story Ever Told" by Roger Deely
Time ended. Yesterday.

5. "Sign at the End of the Universe" by Duane Ackerson

THIS IS A SHORT

4. "Cosmic Report Card" by Forest Ackerman

F

(Note: Because this needs the context of the magazine in which it first appeared to be fully appreciated, Ashley refuses to give it "first" place.)

3. "Atomigeddon 2419 A.D." also by Forest Ackerman

The End.

2. "If Eve Had Failed to Conceive" by Ed Weller

.

1. "Why Booth Did Not Shoot Lincoln"

(This "story" consists of a blank space. Like "Prologue to Knock," this "micro-yarn" is surprisingly powerful in spite of its brevity. If you disagree, try substituting "Kennedy," "Lennon," or "King" for "Lincoln," and the appropriate assassin for "Booth.")

As collected by:

Mike Ashley, The Illustrated Book of Science Fiction Lists,
(London: Virgin Books), 1982.

CHAPTER THREE: THE TYPOLOGICAL PLACEMENT OF EIGHT WORKS OF CANADIAN SCIENCE FICTION

This survey of Canadian science fiction is structured chronologically, beginning with the first Canadian work of SF, A Strange Manuscript found in a Copper Cylinder, written in the mid- to late-1860s and published in 1888, and continuing through to the current "renaissance in Canadian SF." (Runté 1) In order to bring some sense of clarity to this study, the analysis of each of the major works of Canadian science fiction is structured in a similar fashion. Before launching into an analysis based on the theoretical considerations raised in the previous chapter, a general outline of the plot, setting and characters of each work will be presented. Each short summary is followed by a discussion of the work in terms of the typology established by Malmgren. This analysis of the text in terms of its "horizontal" dimension of "world," will be followed by an examination of the social function performed by the text in the context of Rose's thesis that the primary social function of science fiction is the mediation of spiritual and material world views. As this discussion progresses, certain patterns will become increasingly obvious. Most of the works of Canadian science fiction discussed here are premised on novums developed through a process of extrapolation rather than speculation. In addition, most of these works acknowledge the contradiction identified by Rose as central to science fiction -- that between materialistic and spiritualistic world views -- rather than suppressing this contradiction through an unequivocal opposition of human and non-human or science and nature.

A STRANGE MANUSCRIPT IN A COPPER CYLINDER

There is some controversy over the exact date of composition of A Strange Manuscript found in a Copper Cylinder. The novel was published in 1888, but Malcolm Parks has uncovered convincing evidence that James De Mille initially wrote the book in the mid- to late-1860s. What is certain is that A Strange Manuscript ranks as the first English-language work of Canadian science fiction. It has also been lauded as "not only the best nineteenth-century Canadian novel but one of the best Canadian novels period." (Ketterer 8)

The novel interweaves two time frames. The primary narrative of the novel details the adventures of Adam More following his shipwreck in Antarctic waters in 1843. De Mille provides a frame for this narrative in the form of a group of bored aristocrats, yachting in early 1850, who discover a copper cylinder containing a manuscript describing More's tribulations. As a mechanism for moving between the two time frames, De Mille has one of the aristocrats read the text aloud. Adam More's story unfolds in his own voice (or at least his own words) in short episodes, in between which the aristocrats argue over the meaning, plausibility, importance and literary accomplishment of the strange manuscript. The manuscript begins with More's survival of a shipwreck and quickly progresses to his discovery of a tropical world located at the South Pole. It is a world inhabited by the Kosekin, a people whose society is, at least by More's standards, insane. The Kosekin live by a set of values that at first appear to be the absolute reverse of those held by More. The society, More discovers, is characterized a by "love of darkness," and an "equally strong . . . love of death and dislike of life." (135) This orientation toward darkness and death translates into

"a passionate self-denial, [and] an incessant effort to benefit others at their own expense."(135) The rich are pitied, while the poverty stricken are esteemed. The Kosekin spend a great deal of their time attempting to force their possessions on others, and stripping themselves of all access to comfort. As a result of this near-reversal of European values, More has difficulty in understanding the Kosekin society, and conversations between More and the Kohen (a wealthy Kosekin, and hence the lowest figure in the land) only lead him into greater confusion. When More states that he fears death, the Kohen replies, "I cannot comprehend your meaning. It seems as though you actually dislike death; but that is not conceivable."(127) To which More exclaims "Do you not understand . . . that death is abhorrent to humanity?"(127) The Kohen is suitably outraged by this suggestion: "Who is there who does not long for death? Death is the greatest blessing." Eventually More sums up the moral position of late-nineteenth century Western society: "poverty, sickness and death . . . are evils; but the worst of all evils is unrequited love,"(130) to which the Kohen replies "death is our chief blessing, poverty our greatest happiness, and unrequited love the sweetest lot of man."(130) More seems quite unable to comprehend the Kohen's words and this form of confused conversation dominates the first chapters of A Strange Manuscript. Indeed, a large proportion of the book (and one entire, rather pedantic chapter) are dedicated to working out the implications of the Kosekin's reverence of death, poverty and misery.

Eventually More encounters a woman, Almah, who is also a stranger to the land and shares More's horror of Kosekin society. They fall in love, and, of course, the Kosekin seek to ensure their happiness by

separating them. After a variety of adventures -- including More's near seduction by a different woman -- More and Almah are awarded the honour of being sacrificed and eaten as part of a ceremony acknowledging the end of "the loved season of darkness"(256) and the beginning of the six-month Antarctic day. Almah and More stumble over the obvious solution to their difficulty, killing the "Chief Pauper" as he is about to do them "the honor" of a public execution, and then selflessly offering to "undergo the pains of light and splendor" and "endure all the evils of luxury, magnificence and boundless wealth, for the good of the Kosekin nation."(265) The tale ends with More's proclamation that "a new era begins for the Kosekin, in which every man may be as poor as he likes, and riches shall be unknown in the land."(266)

De Mille uses the enframing conversation of the English aristocrats to provide a scientific foundation for More's story. For example, one of the aristocrats, Dr. Congreve, provides a "scientific" explanation for the existence of a tropical world at the South Pole. In accordance with the scientific knowledge of the mid-1800s, he explains that the poles are "thirteen miles nearer to the centre of the earth"(69) than the equator, and hence are closer to the "mass of fire" that forms the interior of the globe. To the objection that there is no comparable tropical North Pole, Congreve observes that the land described by More is isolated from the floating ice that surrounds the North Pole and moderates the effect of its relative closeness to the centre of the earth. Similar "scientific" rationalizations are provided for the language of the Kosekin, their existence at the South Pole, and the ocean currents that propelled the copper cylinder to the place where it was found. Although several critics have pointed out the similarities

between De Mille's work and the "fabulous voyages" envisioned by Swift, Poe and More, A Strange Manuscript's appeal to science as a means of rationalizing the "counter-factual" world of the Kosekin clearly qualifies the work as science fiction.

A Strange Manuscript found in a Copper Cylinder is an example of what Malmgren would call alternate society science fiction. The central narrative of the work, the adventures of Adam More, takes place in a world that is estranged from the "zero world" of De Mille by the existence of a society structured around principles that differ radically from that of the author's society. A societal novum is central to the novel, although in this case it is difficult (and perhaps inadvisable) to reduce the societal novum to either a utopia or a dystopia as Malmgren suggests. As will be discussed, the relationship between Kosekin society and the society of De Mille is fundamentally ambiguous.

As Malmgren notes, the "majority of [alternate society] fictions are extrapolative in nature, perhaps because it is difficult to imagine a society that is quintessentially Other." (17) A Strange Manuscript is no exception to this observation. The culture of the Kosekin -- their rules, mores, values, etc. -- are clearly derived from aspects of De Mille's own society. What gives the work its power is that by linearly extrapolating one aspect of his society -- the other-worldly ideal of Christian charity and selflessness -- De Mille creates a society that holds values that are the reverse of those held in his world. De Mille demonstrates that the most Christian virtues, when extrapolated to their extreme, undermine the context of Christianity itself, and it is this

contradiction which makes De Mille's work so difficult to read as a "straight" satire, and so attractive to the post-modern sensibility.

I suggested above that most Canadian science fiction does not attempt to suppress the contradiction between spiritual and material world views, but instead foregrounds the problematic co-existence of spirit and material values or epistemologies. A Strange Manuscript is a particularly good example of the kind of rich ambiguity that characterizes works that acknowledge this epistemic contradiction. As Ketterer notes, critical attempts "to discover the precise object or objects of the satire or to interpret De Mille's satirical and/or allegorical intentions, if any"(11) have ended in frustration. For example, one commentator concluded that "the novel can be taken as a satire on Christianity, British society, the aristocracy, the new age of science, Darwinism, all of the above -- or something entirely else."(Moss 61) Examples of the critical confusion surrounding the work are abundant. One critic claims that although A Strange Manuscript is difficult to interpret, "it is certain . . . that the book is not a positive utopia,"(Bossier 44) while another entitles their analysis "A Strange Manuscript: Source, Satire, A Positive Utopia."(Hughes 112)

This inability of the Canadian critical community to arrive at a consensus on the meaning of A Strange Manuscript stems from the work's dual nature. In many ways, the land of the Kosekin is both dystopian and utopian simultaneously. Attempts to read the book as a straight forward utopia encounter the same difficulty as attempts to read the book as a straight forward satire; the work is constructed so as to avoid any form of simplistic interpretation. Ketterer notes that a "reader's dystopian appraisal of the Kosekin world is disturbed by

flickering hints of a utopian subtext,"(9) and goes so far as to conclude that, as a result of the intentional contradictions in De Mille's work, "an irreconcilable contradiction opens up that subverts all attempts at determining meaning."(9)

As noted in the chapter on theory, one of the chief characteristics of science fiction that refuses to hide or suppress the contradiction between material and spiritual world views is a degree of ambiguity. As Ketterer's remarks suggest, the ambiguity in A Strange Manuscript occurs at a "deep" structural level. De Mille overtly challenges both "religious" and "scientific" understandings of the world, and in doing so brings to the forefront the difficulty of "real" understanding in general. If it is true that A Strange Manuscript demonstrates "the variety of ways in which irony can be deployed to subvert the totalizing tendency of critical analysis,"(Lamont-Stewart 1) it is equally true that this "radical ambiguity" subverts the totalizing tendency of all systematic approaches to knowledge.

In providing a scientific framework for More's journey through the device of the English aristocrats, De Mille challenges the usefulness of science itself for arriving at "correct" interpretations of the world. Following Doctor Congreve's explanation of the scientific plausibility of the tropical world of the Kosekin, Melick replies that "there is no theory, however wild and fantastic, which some man of science will not be ready to support and to fortify by endless arguments, all of the most plausible kind."(70) The enframing discourse of the aristocrats serves not only to provide a scientifically acceptable explanation for More's adventures, but also to make explicit the difficulty in establishing truth in general. The aristocrats anticipate the difficulty of the

reader in discovering a final meaning in the text by suggesting a variety of mutually contradictory "explanations" for the strange manuscript's existence. In cynically satirizing both religious and scientific approaches to understanding the world (and quite possibly satirizing the whole concept of satire as well) A Strange Manuscript destabilizes all assumptions of truth. As Ketterer notes, "a version of the absence of reality and truth at the heart of deconstruction is also 'present' in A Strange Manuscript." (10) In other words, the text as a whole is informed with what might today be labelled a postmodern cynicism about the possibility of truth.

As part of this destabilizing of all global Truths, the novum of the Kosekin society directly raises the contradiction of material and spiritual world views. The Kosekin society operates on principles that are identical to those of the Christian world familiar to De Mille -- self-abnegation, charity, and generosity, -- but created from these virtues is a dystopian "world." This reversal of oppositional relationships foregrounds the issue of human nature. Indeed, the arguments of More and the Kohen often reduce to More's assertion that to fear death is sane because "it is human nature," and the Kohen's astonished reply that "we are so made that we cannot help loving death; it is a sort of instinct." (131) Both More and the Kohen are clearly humans; however, their spiritual understandings of what that entails are direct opposites. They share the same anatomy, but hold radically differing spiritual positions. Each perceives his spiritual understanding of what it means to be human as stemming directly from his physical existence; conversations between More and the Kohen inevitably falter on their differing conceptions of human nature. Because both

More and the Kosekin people understand their conception of the unity of spiritual and material world views as self-evident, they are unable to understand the logically-coherent, but paradigmatically estranged position of the others. This inability to communicate is a central theme in the novel: Camille La Bossiere identifies fifteen separate occasions on which More concludes that understanding the Kosekin society is an impossibility. (La Bossiere 45) Each society's unquestioned assumption that their spiritual world view is inseparable from their material world view is undermined by this confrontation of cultures. In turn, the novel forces the reader into a consideration of the relationship of material human nature and spiritual human nature in his or her own society. The confrontation of More with the Kosekin society, therefore, foregrounds the contradiction between material and spiritual that is at the centre of science fiction in particular and the modern world in general.

There is a second sense in which More's encounter with the Kosekin foregrounds questions of materialism and spiritualism. At least two critics see A Strange Manuscript as a double-edged satire. Parks proposes that the lead character "is not really De Mille's spokesman but a simple-minded and naive representative of Western culture propounding values as they are commonly practiced in his corrupt society." (Strange 74) He suggests that A Strange Manuscript, like Gulliver's Travels, holds as an object of satire both the land voyaged to, and the voyager. In his view, the novel is best seen as "opposing two sets of extremes rather than one -- extreme self-denial and consequent life-denial as in Kosekin society, and extreme self-indulgence and consequent denial of transcendence and moral idealism as in Western society." (Strange 74)

Parks bases this interpretation of A Strange Manuscript on De Mille's biography. The author was a devout Christian who made the difficult choice to leave the (fundamentalist) Baptist Church of his father and become an Anglican. Camille La Bossiere arrives at a similar interpretation through an examination of the "internal logic" of A Strange Manuscript. La Bossiere believes the novel forces its readers to make one of two choices:

Either act on the strict logic of your principles and become kin to the Kosekin . . . or give up your principles and be unlike them. But if you do not abandon your principles, at least know yourself for what you are in fact, hypocrites; on the other hand, if you do abandon your principles, then know yourself for what you are, self-serving materialists.

By criticizing the extremes of both spiritualism and materialism, De Mille raises the reader's awareness of their apparent incompatibility. Both Parks and La Bossiere see De Mille's ultimate purpose as a rejection of both extremes and an implied acceptance of a median position. In other words, the implied moral of De Mille's works is that we should strive to balance the demands of two competing world views without accepting either as the final "True" way of being. A Strange Manuscript foregrounds the contradiction between spiritual and material world views, but rather than moving to reconcile this apparent contradiction, it critiques the extremes of both positions, implying that a pragmatic acceptance of the contradiction is the appropriate response to the human reality.

It has been said that A Strange Manuscript is "as much the originator of Canadian SF as Frankenstein is of world SF,"(Ketterer 10) and this observation is certainly borne out by this study. As I have suggested here, this novel is premised on a novum that is generated through extrapolation as are most of the SF works written in its wake.

Perhaps more importantly, the novel performs the social function of reconciling spiritual and material world views, not by suppressing these views beneath a clear-cut, unequivocal discourse, but through an ambiguous recognition of the necessary co-existence of these two (logically-incompatible) epistemologies. This willingness to eschew "easy" solutions to the central contradiction of modern culture and to explore the tensions between matter and spirit through ambiguity are key characteristics to Canadian SF as a whole.

IN THE MORNING OF TIME

In the Morning of Time was Charles G.D. Roberts final novel; he was working on a sequel, Overlords of Time, when he died. It is an evolutionary fable detailing the ascent of true-humans from their pre-human ancestors. Like A Strange Manuscript, the work was initially written for serial publication and like that earlier work it contains a degree of repetition that is frustrating for the modern reader accustomed to more integrated novels. The first episode of the work, entitled "the world without man," describes a battle between a dinosaur and pterodactyl and concludes with the death of both animals. The second chapter, which takes place "a little later in the Morning of Time [when] the supremacy of the Giant Reptiles had passed,"(25) describes a battle between a pre-human "man-creature" and one of the few remaining dinosaurs. The victory of the proto-human symbolically marks the initiation of a new world order (as ironic as that phrase has become) and the beginning of the reign of Man [sic]. The remainder of the book is somewhat more cohesive, examining the plight of the People of the Little Hills, who had "climbed higher from the pregnant ooze than

any other of the man or half-man tribes at that time."(43) These people encounter a variety of dangers, including, most importantly, the threat of extinction from the more plentiful and physically-stronger tribe of "Bow-legs"[pre-humans]. The People are also plagued by a variety of animals. In order to survive, the People of the Little Hills are forced to repeatedly abandon their homes in search of more secure dwellings. The survival of the tribe in spite of continuous threats to its existence is made possible by the curiosity and intelligence of the work's primary characters, Grom and A-ya. During the course of the novel, these two characters discover fire, compassion ("a ridiculous dislike of hurting anyone unnecessarily"(!19)), the bow and arrow, cooking, and the notion of Romantic love.

Almost by definition, evolutionary fables are based on a societal novums and represent one conventionalized variation of alternate society science fiction. Unlike much social science fiction, however, evolutionary fables do not provide a vision of an alternate future or present, but a vision of our possible past. This aspect of evolutionary tales led some early SF commentators to exclude pre-history tales from the genre of science fiction. Using Ketterer's definition, however, it is clear that In the Morning of Time meets the criteria of science fiction. Roberts makes it clear that he has taken pains to create a world that corresponds to scientific knowledge of the pre-historic world. In an author's note introducing the book, Roberts expresses his belief that the writer's "imagination must be held under curb by a vigilant regard for the results of the painstaking investigations of the scientists."(5)

Evolutionary fables are not necessarily extrapolative in nature. A well known example of a speculative evolutionary fable is 2001: A Space Odyssey. The guidance of human evolution by an inscrutable black monolith and human kinds eventual evolution beyond our understanding mark both Arthur C. Clarke's novel, and Stanley Kubrik's movie as works of speculative SF. In most cases, however, and in the case of In the Morning of Time in particular, evolutionary fables are linearly connected to the society of the author. This is obvious in Roberts' work in a number of dimensions. The reader is expected to see a linear connection between the birth of "mental and moral evolution" (In the Morning of Time 5) in Grom and A-ya and the moral and mental state of the present society. In a sense Roberts generates the world of Grom and A-ya through a process of reverse extrapolation; rather than creating a world by pondering "what will happen if this goes on?" Roberts asks "how did we get here." Nevertheless, the linearity of the connection between the world depicted in In the Morning of Time and Roberts' authorial world is indisputable.

Roberts' evolutionary fable is a rarity in Canadian science fiction, a "conventional" SF work that suppresses, rather than acknowledges, the contradiction between spirit and matter. Although the topic of evolution provides a perfect platform for examining the interpenetration of matter and spirit -- indeed the point of evolutionary theories is to explain the ascent of matter into spirit -- Roberts elects to present the human/non-human dichotomy as an unequivocal, uninvestigated opposition. Rather than examining the similarities between Grom and A-ya, and their less-evolved counterparts,

the "Bow-leg" tribe, Roberts simply establishes animosity between the two "peoples." Moreover, he is careful to portray the Bow-legs in negative terms, describing them as "hideous," and "pig-eyed." In one scene, the Bow-legs are described as having "squatted down on the turf and scratched themselves like monkeys" before beginning to "play with a dreadful red ball which had some wisps of [human] hair yet clinging to it." (47) The effect of Roberts' characterization is to irretrievably distance the "non-human" bow-legs from the human People of the Little Hills.

This unequivocal opposition of human to non-human is accompanied by a similar unequivocal opposition of science (or, more accurately, technology) to nature. Each discovery -- fire, the bow and arrow, cooking -- is portrayed as valuable in terms of its power to subdue nature. Technology is good; nature is bad. The evolution of "man," in Roberts' view, begins with the discovery of a technique for conquering nature.

As suggested earlier, these types of clear-cut, unambiguous oppositions mark a work as conventional, as "hiding" the opposition between spiritual and material world views. Roberts does not consider the shared heritage of both the People of the Little Hills, and their proto-human counterparts. He simply asserts the moral superiority of the former and reduces the latter to an obstacle to be overcome. Human is good; non-human is bad. There is little evidence that the two categories overlap. In a similar fashion, Roberts unproblematically equates moral development with material advances. Inventions such as compassion and love are presented in the same fashion as technological innovations such as the domestication of fire and the invention of the

bow and arrow. In the Morning of Time does not so much suppress the contradiction between material and spiritual understandings of what it means to be human as attempt to ignore this contradiction out of existence.

Although Roberts' novel is like most other major works of Canadian science fiction in that its central novum is generated through extrapolation, it is unlike other works in this provisional "canon" in its failure to acknowledge the contradictory coexistence of material and spiritual understandings in our society.

FREDERICK PHILIP GROVE'S CONSIDER HER WAYS

Consider Her Ways was first published in 1947, but it was written much earlier. Grove finished a first draft of the book in 1925, and claimed that "the plan of the book went back to 1892 or 1893." (Ketterer 23) The title plate of Consider Her Ways introduces the story as a "narrative of an expedition from the tropics into the Northern regions of the continent undertaken by order of her majesty ORRHA-WEE CLXVI compiled by WAWA-QUEE, R.S.F.O." What the title plate does not reveal is that the expedition is made up of ants. Indeed, both Orrha-wee and Wawa-quee are, for all of their intellectual prowess, ants. The primary narrative of the novel, ostensibly written by Wawa-quee, is a recording of a round-trip by a scientific expedition of more than 10,000 ants from Venezuela to the United States. The expedition, containing 162 scientist ants accompanied by 10,000 soldier ants, is given a mandate to:

complete such a survey of all antdom as to enable [the Queen]
to trace the evolution of the nation Atta from the humblest

beginnings of all ants and to make it possible to arrange the whole fauna of the globe . . . in the form of a ladder leading up to [the species of Wawa-quee]."(4)

The results of the expedition are set out on 813 "scent trees" of which the narrative compiled by Wawa-quee is a summary.

The adventures of the great scientific expedition are introduced by the human writer who was fortunate enough to have learned of its existence. While studying the Gigantean Attas ants of Venezuela, an amateur myrmecologist is approached by a group of three ants who hypnotize him. He claims that upon awakening, he "walked and acted like a human being" but his mind remained "that of the ant." The author disavows any credit for the remainder of the text, acknowledging it as "the work of Wawa-quee, the ant"(xxxi) which he "merely set down . . . under compulsion."(xxxi)

Grove is careful to maintain the "perspective" of the ant throughout the record of the scientific expedition. The adventure of Wawa-quee stretches through almost 300 pages and encompasses nine years, during which time the ant expedition overcomes a variety of dangers including hostile tribes of ants, automobiles, and treason by the military. With every obstacle overcome, the expedition loses some of its members. For example, a single automobile kills "sixty-six great scholars, every one a leader in her field" and decimates the soldier core. By the time the military insurrection is subdued, only three ants remain, Bissa-tee (a scientist), Azte-ca (a linguist) and Wawa-quee. These three escape to New York via a "space machine" (a train) where they winter in a library, learn to read and vastly expand their knowledge of human society. Finally, pest control exterminators kills Azte-ca (who is too absorbed in a detective novel to notice) and force

the other two into the streets. Bissa-tee is killed on the final leg of the return trip, and Wawa-quee alone survives to tell the story.

Consider Her Ways attempts simultaneously to be both a satire and a heroic adventure story. The work is surprisingly successful in both aspects, especially as Grove could easily have opted to ridicule the "heroism" of the ant leaders. It is also a work of science fiction. As Ketterer notes, it is the "compelling realization of ant society and its peculiar perspective"(24) that makes Consider Her Ways SF. Although Ketterer points out parallels between the satire in Grove's work and that in Gulliver's Travels, the differences between these two satires are at least as interesting. The major sources of satire in Swifts' work -- the Lilliputians, Brobdingnagians, Houynhms, Yahoos -- were created for their satirical potential, not for their scientific plausibility. In contrast, the ant society depicted by Grove corresponds with the scientific knowledge of his time except, of course, for the intelligence of the ant. And the possibility of this novum is fully rationalized according to scientific principles in the introduction to the work. Grove attempts to ensure that the source of his satire -- the Atta society -- is scientifically plausible; He goes so far as to include an appendix of scientific material at the end of the book. As a result of this commitment to scientific accuracy, Consider Her Ways may be profitably studied as a work of early science fiction, as well as a work of satire in the tradition of Gulliver's Travels.

Grove's novel is the earliest work of Canadian science fiction to be premised on a novum of alien encounter. Although it is possible to

view the society of Wawa-quee as an alternate human society, it is more valuable to understand the work as centred on an alien encounter, although in this case humans are the aliens, and ants (paradoxically) the "humans." Clearly, however, this novum is generated through extrapolation from Grove's world. The emotions, desires and treachery of the ant population are identical to those of the human population, even if Grove is careful to ensure that the display of these characteristics corresponds to the observations of careful observers. Indeed, to the extent that Consider Her Ways is a satire there is a necessary linear connection to the zero world of the author. Satire as a form is necessarily linked to the author's reality. If the reader is not able to recuperate the fictional world through a linear comparison of that world to their own, then they are unable to discover the objects of the author's satire in the "real" world, and the satirical function of the world is missed. The success of Consider Her Ways as an adventure story also derives from its linear relationship with Grove's authorial world. Wawa-quee is admirable because she embodies those characteristics considered admirable by Grove's society: intelligence, loyalty, and perseverance (among others). Grove makes no attempt to portray the inner life of Wawa-quee as truly "alien," nor does he attempt the "quantum leap of the imagination . . . toward an entirely Other state of affairs"(Malmgren 12) that would mark the work as speculative SF.

In the terms developed by Rose, Consider Her Ways confronts the contradiction between spiritual and material world views. Indeed, the confrontation of these two epistemologies parallels the dual nature of the book. Repeatedly in Consider Her Ways, "interest in the life of the

ants competes with Grove's satiric intent."(Ketterer 25) The scientific knowledge of ant society that sets the boundaries of Grove's work necessarily treats ant societies as objects of a materialistic understanding of the universe. Grove's provision of a scientific appendix that explains in detail the scientifically-observed life of the *Atta Gigantea* emphasizes the centrality of empiricism in this work. At the same time as Grove provides a guided tour of the scientific knowledge of ant society, he weaves an adventure story and a satire of human society. For both of these purposes he is forced to focus on ants as spiritual beings rather than material objects of study. The "personalities of the major ants [are] all convincingly individualized,"(Ketterer 24) and this individualization focuses attention on the "spiritual" qualities of the ants. Grove simultaneously presents ants as matter and as spirit; this combined focus foregrounds the interpenetration of the two realms. While it is true that inner life of the ants is essentially that of "small human-beings," the physical actions and limitations of the characters correspond to those of the physical structure of the ant. Grove chooses to write a work of satirical science fiction rather than a work of "pure" satire, and as a result of this choice he is forced to "place" a spiritual world view inside an object which is known only through the scientific epistemology. And as a result, the reader is forced to acknowledge both forms of knowledge simultaneously.

This occurs in a curious fashion. Grove ensures that the actions taken by his ants correspond to the empirical knowledge of his time, but the inner "spiritual" life of *Atta Gigantica* requires a radical reorientation of the myrmecologist's perception of ants as neutral

objects. In a similar fashion, Wawa-quee's empirical study of human society arrives at an equally inadequate understanding of the inner spiritual life of humans. Neither humans nor ants are able to discover the inner nature of the other species through the use of science. Indeed, in a novel otherwise meticulous in its scientific detail, Grove invokes telepathy as a means for humans to learn something of the true nature of *Atta Gigantica*. As Salvatore Proietti points out, Grove seems to suggest that "only by feeling directly and from the inside, the Other's experience . . . can a real knowledge be attained." (369) I would modify Proietti's assertion slightly; it is only through telepathy that a real knowledge of the ants' "spiritual" existence can be obtained. Grove's meticulous attention to scientific detail suggests that he does not reject the power of science to explain the world. The work as a whole, however, suggests that both spiritual and material epistemologies are needed for a full understanding of reality. The implication of Consider Her Ways is that although material and spiritual understandings of the world may be incompatible, they operate in separate, distinct spheres and hence the question of compatibility is moot.

That Grove considers both spiritual and material world views becomes clearer when Consider Her Ways is compared to novels that employ similar novums but ignore or suppress the contradictory nature of spiritual and material epistemologies. As Ketterer notes, "the ant model -- whether in the form of threatening giant ants, hive societies . . . or hive minds -- has been popular in SF." (Ketterer 23) In many, perhaps most cases, ants or ant-modelled creatures are simply presented as the enemy of the human species (a classic example is Robert Heinlein's Starship Troopers). The opposition of humans to ants or

ant-like creatures or societies is normally paralleled by a series of bi-polar oppositions: good versus evil, human versus non-human, spirit versus material. At its worst, this simplistic xenophobia may result in such spectacularly bad movies as Attack of the Killer Ants in which gigantic ants invade a tropical island. The subtext of this movie (and of most of the fiction involving a confrontation between humanity and, say, a hive-minded alien) is that humans are, well, human and therefore good. Ants, or ant-like creatures, are non-human, alien, and therefore bad. Rarely do these works examine points of coincidence between the human spirit and the objectified matter of the alien ants or ant-modelled creatures (Olaf Stapledon's Last and First Men is a notable exception). In works of these kind, reality is reduced to a black and white world of spirit (represented by humanity) versus matter (represented by ant-modelled creatures); that humans are formed of the same debased matter as the ant-creature is generally ignored, the contradiction suppressed.

Compare this type of unambiguous treatment of human/ant relationship with the reverse alien-encounter on which Consider Her Ways is premised. As I suggested above, Grove has created a world in which the ant assumes the neutral ground that is usually reserved for a human narrator. As a result, readers are forced to identify with Wawa-quee and are, correspondingly, forced to view human society as "non-human" in the sense that it is alien or foreign to the point of view held by Wawa-quee. This technique of "distancing" the reader from society allows the work to function as satire but it also complicates any attempt to position the central tensions in Consider Her Ways on the matrix proposed by Rose. Grove creates a world in which the non-human

Wawa-quee is portrayed as "human," and humans, such as the narrator, are portrayed as "non-human," and as a result the "paradigmatic opposition of science fiction," (Rose 44) that of human to non-human is subverted. Moreover, the ant society is employing science as means of investigating nature (an action that apparently coincides with Rose's matrix), except that the "nature" they are investigating is human nature. As a work of science fiction, Consider Her Ways confronts the apparent contradiction between spiritual and material world views; the novel's power as a work of satire stems from this confrontation.

THE MISSING GOLDEN AGE OF CANADIAN SCIENCE FICTION

Most histories of science fiction begin with the "Golden Age of Science Fiction," the years when such writers as Isaac Asimov, Robert Heinlein and Arthur C. Clarke began contributing to the genre. Almost invariably the "Golden Age" is said to begin with the hiring of John W. Campbell as editor of Astounding Magazine in 1938. Opinions on when it ended are rather more varied, with common "endings" including the conclusion of World War II and the enormous growth in science fiction publishing in the 1950s. In terms of Canadian science fiction, the period from 1938 to 1950 is deemed by Ketterer the "expatriate interval." "For a lengthy period, which includes the Golden Age, surprisingly little SF was published by residents of Canada." (Ketterer 27) It seems that anyone who considered themselves a competent science fiction writer left Canada to get closer to the action south of the border. Two significant SF writers who have been claimed for Canada, Gordon Dickson and A.E. van Vogt, fall into this category. Dickson left Canada at the age of

thirteen. Van Vogt abandoned Canada for the United States soon after publishing his first work of science fiction, and subsequently accepted American citizenship, symbolically cutting his ties with this country. Excluding these figures, Canada produced no significant writers of science fiction from 1930 to 1959.¹ To a very large extent, Canada missed the Golden Age of SF.

PHYLLIS GOTLIEB'S SUNBURST

Phyllis Gotlieb's special position in the canon of Canadian science fiction is not solely attributable to the fact that she is the first major SF writer to appear in this country following an "expatriate interval." She is also among the most stylistically accomplished SF writers produced by this country. In recognizing her pre-eminence among Canadian SF writers, David Ketterer went so far as to say "Phyllis Gotlieb is Canadian science fiction." (Colombo 332) He made this claim in 1979. By 1992, he felt a need to shift tenses. In Canadian Science Fiction and Fantasy he says "Phyllis Gotlieb was Canadian science fiction." (Ketterer 67)

Gotlieb began publishing short science fiction stories in the early-1950s, but her first significant work of SF, the novel Sunburst, was released in 1964. Before she began writing science fiction, however, Gotlieb was (and continues to be) an established poet. Given the long absence of significant Canadian science fiction prior to her arrival it is hardly surprising that Gotlieb once described herself as "a Canadian poet, but an American science fiction writer." (Ketterer 67) At any rate, her work shares the qualities which, I am arguing, form a

trend in the major works of Canadian SF; as I will suggest through an examination of Sunburst, Gotlieb bases her work on novums generated through extrapolation and is among the most skilled Canadians at bringing the contradiction between spirit and matter, human and non-human, to the attention of the reader.

Sunburst is set in the fictitious American town of Sorrel Park. Years before the story takes place, Sorrel Park is placed under martial law and isolated from the rest of the country after an explosion occurs at a nearby nuclear power plant. The government and military do not allow news of the explosion to spread to the rest of the country for fear of wide-spread panic and an ensuing back lash against the use of atomic energy. Years after the explosion, the government is considering "opening up" Sorrel Park when a second calamity occurs. As a result of the nuclear explosion some children in Sorrel Park develop extraordinary psychic abilities (known almost universally in SF literature as "psi powers.") The children discover their power at an early age and begin playing vicious and extraordinarily violent games. As the book unfolds it is revealed that psychic power appears almost exclusively in developmentally-delayed children who lack any form of moral sensibility. The military is able to imprison the psi children in an electronic prison known as "the Dump." One child, Jason Hemmer, develops psi powers but does not join in on the violent rampage of the others. The army uses Hemmer to watch for any new development of psi powers amidst the citizens of the town, and to check on the other psi's imprisoned in the Dump.

Shandy Johnson, the protagonist of the work, is born into this environment without psychic powers, but with the attribute of

"imperviousness." The psi children cannot read her mind. She is 13 years old, an orphan, and superbly competent at looking out for her own welfare. Shandy is co-opted by the military (through Jason, who gradually emerges as a heroic figure, rather than simply a military dupe). The central action of the plot involves the escape of the "Dumplings" ("psi-children") from their prison, and the ensuing attempts to recapture them, attempts in which Shandy plays a central role. One of the Dumplings -- Doydoy -- suffers from spina bifida and was virtually unable to move prior to his discovery of his power. He has the strongest psi power of any of the Dumplings and is the only one with the ability to levitate. During a critical moment in the Dumplings' attempt to escape, Shandy intervenes to give Doydoy the choice of rejecting the amoral world of the other Dumplings. He uses his powers to remain with Shandy while the psychic children manage to escape to Detroit to one of the central computer systems that controls "maybe half the world." (142) As the only known "imperv," Shandy must lead Doydoy, Jason and a newly discovered psi-child in an attempt to recapture the Dumplings. The attempt is successful, in part because of Shandy's ability to out-wit the Dumplings.

The novel ends with Shandy's sudden understanding that the psychic children are not super-human, but sub-human; they represent a regression from human to animal. This critical moment in the book occurs after the primary action -- the chase after the Dumplings -- is complete. Shandy's insight is followed by a more important discussion of what a "true" super-human would be like. Shandy finally concludes that a "true" super-human would develop into a moral human being no matter what the conditions of his or her birth, would be intelligent, curious, and

able to protect him or herself against the world: a "modest superman." (155) In short, as is pointed out to her, a super human would have the same characteristics that Shandy herself possesses. At this point the reader realizes that the battle between the Dumplings and Shandy has actually been a battle between sub-humans and a super-human. Almost paradoxically, the super-human is defined in such a way that it represents not additional power (the Dumplings have almost unlimited amounts of that), but additional humanity. A super-human is not more than human, only more human.

Clearly the primary difference between the world of Sunburst and the world surrounding Gotlieb in 1964, is the appearance of psychic powers as a result of nuclear mutation. In Malmgren's terms, this is an "alien novum;" Sunburst is alien-encounter science fiction. As Malmgren himself recognizes, determining whether "fictions which employ as their dominant novum telepathy or other 'psi' powers" (14) are extrapolative or speculative is problematic. One of the few critical commentaries on Sunburst is useful in this regard. Douglas Barbour claims that "Ms. Gotlieb's success as an sf writer partly hinges on her extrapolative ability," (75) and examines the linear connections between the world of Sunburst and that of the zero world of the author. Indeed, he concludes that "the world of Sunburst is still definitely possible." (75) In doing so, he suggests that the novel successfully envisions "the consequences of certain trains of thought, or social movements, when carried to their logical conclusions." (75) In Barbour's opinion at least, the world of Sunburst is connected to the "real" world through linkages that are both linear and logical. Barbour, however, is speaking of the "fully

realized . . . background to the story," and not the psychic powers themselves. Malmgren suggests that psi powers can be either extrapolative or speculative novums depending on whether or not these powers are "treated as logical extensions of human faculties or are . . . seen as a radical departure from existing actualities." (14) The Dumplings in Sunburst have a wide range of psychic powers, including the ability to disappear from one location and reappear in another; however, the powers are almost always used in parallel with, or as a replacement for, established human faculties. The best example of this is Doydoy's replacement of the human faculty of walking -- a faculty he lacks -- with the psychic ability to float. Shandy, herself, draws the connection between the Dumpling's psi-powers and normal human faculties by arguing that telekinesis and teleportation "are just extra physical power," and telepathy "is a way of communicating if you don't have speech." (153) For the most part, psychic powers in Sunburst are logical extensions of existing human powers and the novum, therefore, can be classified as "extrapolative."

In Sunburst, Gotlieb skillfully foregrounds the problematic coexistence of both materialistic and spiritualistic epistemologies in the modern world. The central tension in her novel initially appears clear-cut -- humans versus superhumans, or, in Rose's terminology, the human versus the non-human -- but the reader is forced to re-examine this apparently unequivocal opposition by Shandy's insights in the final chapter of the text. Sunburst is premised on the concept of the super-human, but it is a different super-human than one normally finds in SF. As Barbour notes, "psi-powers have often been linked with 'the

superman] concept in sf . . . [but] Ms. Gotlieb comes at the question from a totally new perspective." (75) Developing dramatic tension in a science fiction work premised on the advent of a super-human figure normally relies on one of two tactics: making the super-human a humane figure and providing obstacles for him or her to overcome; or having the super-human obtain some power that "real" humans lack, and then establishing conflict between humanity and the super-human. To some extent Gotlieb has it both ways -- Shandy is more than human through an excess of humanity, the Dumplings are simultaneously more and less than human -- and as I hope to demonstrate, it is the ability of Sunburst to simultaneously invoke these two concepts of the super-human that forces the contrast between material and spiritual views of humanity into the foreground.

As I hope is clear by now, the subtext of the conflict between the Dumplings and Shandy is a conflict between two opposing views of what it would mean to be super-human. These conflicting views have their roots in two different epistemologies, one materialistic, the other spiritualistic. The Dumplings are more than human because they have the power to physically alter the world. They are superior in their ability to manipulate the external environment. A number of philosophers, including George Grant and Charles Taylor in Canada, and Jacques Ellul and Martin Heidegger abroad, have suggested that the materialistic epistemology of science and technology is fundamentally based on a concept of efficiency, and efficiency, of course, is always efficiency to do something, that is, to manipulate the external world. The Dumplings are superior to the regular run of humanity on this scale; their "super powers" allow them to affect their surroundings far more

efficiently than "normal" humans, even when these normal humans are equipped with advanced technology.

In contrast, Shandy is superior to the average human in terms that only make sense in the context of a spiritualistic epistemology. Shandy is super-human not in terms of "power" (which can be easily quantified and explained using a materialistic epistemology, witness $\text{Power} = \text{Force} \times \text{Velocity}$ or $P=Fv$), but in terms of curiosity, intelligence, passion and, above all, morality, concepts which escape quantification, and thus are dismissed as illusory by strict materialists. If the universe can be defined wholly and sufficiently in terms of a materialistic epistemology then the terms in which Shandy is superior are, essentially, meaningless (as B.F. Skinner explained to anyone who would listen to him). Moreover, Shandy's superiority to "normal" humans is incapable of being tested using scientific methods: "nobody can prove it, one way or the other." (158) It is a "belief," rather than a fact. Gotlieb goes to some lengths to demonstrate that Shandy's "super-humanity" is outside of, indeed opposed to, a materialistic view of the world.

Sunburst is structured in such a way that the reader is forced into a recognition of the incompatibility of materialistic and spiritualistic world views. Through much of the novel the reader can "coast," thinking the work is a straight-forward science fiction adventure story (in which the contradiction between spirit and matter is ignored). In the final pages, however, the reader is forced into a reconsideration of the work by the introduction of Shandy's "spiritual" super powers. Suddenly the central conflict of the book, which had appeared to be a simple competition of good and evil, is revealed as a competition between two

competing and irreconcilable ways of seeing the world: materialism and spiritualism. In terms of the matrix established by Rose, the reader drifts along comfortably understanding the story as a conflict between sharply-defined forces of human and super-human, between nature (as represented by non-mutated humans) and science (which allowed the mutations to take place.) Shandy's insights throws these bi-polar oppositions into chaos by revealing that the super-human Dumpings are actually sub-human, the "human" Shandy is super-human, and the same forces that allowed the Dumpings to devolve into psychopaths with psi-powers allows Shandy to make a small leap toward true spiritual evolution. This sudden complication of the story in terms of Rose's matrix reflects the novel's sudden acknowledgement of the contradiction between matter and spirit.

To express this observation in a slightly different vocabulary, Shandy's moment of insight brings the subtext of the entire work into the foreground. As David Ketterer notes, the subtext of Gottlieb's "conflict between good and bad psi's" is not an "American-style power fantasy." (70) Instead it is a debate over the aspects of the human reality that are worth preserving. The subtext of the conflict between two types of super-humans is a conflict between two visions of value: the first privileging power, the second giving primacy to morality. And this debate over value is based in two opposing ways of judging human actions, the former based in a materialistic vision of the world, the latter in a spiritualistic world view. With the triumph of Shandy, Gottlieb eventually resolves the conflict in favour of the spiritual world view, but in doing so she retains a certain level of ambiguity. The power of the mutant Dumpings is overt and unmistakable. Its

existence is undeniable. In contrast, Shandy's understanding of her power "may not be exactly true," being only a "belief" that "nobody can prove . . . one way or the other." (158) Gottlieb's novel may read as an argument for the spiritual understanding of humanity at the expense of materialistic approaches, but she recognizes the ambiguity at the heart of all spiritual understandings. As one character says to Shandy, "we know you're Good, we just don't know what you are good for." (159) "Goodness," a spiritual term, and "being good for something," a materialistic concept, remain distinct through the conclusion of the work. While Gottlieb is prepared to argue for the benefits of a spiritualistic world view, she also seems prepared to accept the difficulting of "proving" its epistemic value.

MARGARET ATWOOD'S THE HANDMAID'S TALE

The Handmaid's Tale is probably the most widely read Canadian science fiction novel, and it is almost certainly the Canadian SF novel most read by people who generally do not like science fiction. In The Handmaid's Tale Atwood envisions a North America in which the birth rate has plummeted due to toxic waste and environmental degradation. A radical fundamentalist religious group has taken control of a part of America, which was renamed Gilead, and is waging war against the remaining liberal strong holds. After attaining control of the government the fundamentalist authorities begin classifying women. Wives of powerful religious or military leaders are given the (appropriate) title of Wives. Single women with functioning ovaries

become Handmaids who bear the children of religious or military leaders whose wives are barren (or who are, themselves, infertile, however this is not officially acknowledged as a possibility). Thanks to the less-than-accomplished movie based on Atwood's novel, this is the most publicized aspect of the plot; Handmaids are impregnated by their assigned V.I.P. while lying between the legs of the wife. A variety of other classifications exist, including Marthas (essentially maids), Econowives (who perform the functions of both Wives and Marthas), and Un-women (who are "cast out" and condemned to clean up toxic waste dumps). The story is presented by "Offred," a "handmaid."

There are two main narrative streams in central text of The Handmaid's Tale, both of which are narrated by Offred (which is not her real name of course -- she has become the Handmaid "of Fred.") Much of the novel details the day-to-day life of Offred, but of equal importance are her recollections of pre-Gilead life. Offred spends most of her nights either recalling what life had been like prior to the fundamentalist uprising and her own attempted flight to Canada, or reconstructing the early days of their rule and her indoctrination. Offred's description of the day-to-day life of the Handmaid is structured as a series of rituals: she shops, attempts to be impregnated by the Commander to whom she has been assigned, attends a salvaging where women actively assist in the execution of what we would call political prisoners, and attends a "birth day" ritual in which all area Handmaids gather to witness one Handmaid give birth. Offred shares these rituals with all Handmaids, but as the story develops she begins a secret life that includes learning of an underground resistance movement, meeting secretly with her Commander (who eventually takes her

to a brothel), and having an affair with Nick, the Commander's chauffeur. The Commander's Wife discovers that her husband and Offred have been meeting and immediately calls the secret police to dispatch the handmaid. Just prior to the arrival of the police, however, Nick tells Offred that he has arranged for the resistance to stage a mock arrest, that the police are actually resistance members. At the conclusion of Offred's narrative, the reader is uncertain whether the chauffeur had been telling Offred the truth, or deliberately misleading her to save himself. As I shall argue, this uncertainty is a central aspect of the work as a whole.

Offred's recollections of the pre-Gilead past serves to contrast the dystopian world around her with that of the reader, while at the same time providing a realistic explanation of how America developed into Gilead. Her recollections include descriptions of her life in University, her affair and subsequent marriage, the day the fundamentalists attained control of the government and banking systems, and her unsuccessful attempt to escape to Canada with her husband and daughter. Offred also spends considerable energy in reconstructing her period of indoctrination by dedicated "Aunts" who instruct and discipline potential Handmaids. The key event in these recollections is the escape of Offred's pre-Gilead friend, Moira. Throughout most of the main narrative of the book, Offred holds Moira as a symbol of hope, a figure to be admired. These perceptions are undermined when she meets Moira at the brothel she attends with her Commander. Atwood is careful not to have Offred over-react to her realization that Moira's escape was unsuccessful; indeed, her acceptance of Moira's plight and her respect for the women's choice to enter the brothel rather than clean up toxic

waste, reinforce the theme of survival that forms the foundation of much of the novel.

The main text of The Handmaid's Tale is followed by a chapter entitled "Historical Notes." These notes have been the subject of much of the critical attention paid to the work. They purport to be a "partial transcript of the proceedings of the Twelfth Symposium on Gileadean Studies"(281) held in the year 2195, long after the passing away of the Gileadean empire. This chapter performs many functions, and as critics gnaw away at it, more and more functions are being "discovered." There is little doubt that it is a satire of the academic community; the "humour" of the keynote speaker is painfully flaccid and some of the questions addressed by the academics are, in light of the emotional power of the Handmaid's story, inconsequential. A more important function of the historical notes is that they radically alter the frame of reference for the reader. As Ketterer notes, the reader is suddenly apprised of the fact that he or she has been situated in post-Gilead society all along, and has in fact been reading a "tale" reconstructed from fragmentary tape recordings made by Offred. As I will discuss in more detail below, these historical notes serve to undermine the veracity of Offred's story -- a story the reader had been accepting as "true" -- and thereby emphasize the artificial nature of all narratives.

As Ketterer points out, The Handmaid's Tale is "sociological not technological SF."(148) In Malmgren's terminology, this is clearly a work of alternate-society science fiction; it is premised on a dystopian social novum. It is also fairly clear that the society of Gilead is extrapolated from that of America in the 1980s. Atwood posits two

social factors -- a declining birth rate and a "pendulum swing away from the feminism of the 1980s"(Ketterer 153) -- and extrapolates one way in which our world might evolve under these conditions. It is quite clear that Gilead is directly related to the U.S. of the 1980s; it would be difficult to argue that Gilead represents "a social order that is quintessentially Other."(Malmgren 17) Atwood claims that The Handmaid's Tale involves "nothing that hasn't happened, or isn't happening now, or for which we haven't got the technology."² In the view of the author at least, Gilead is a logical, if not linear, extrapolation from the world of today.

Determining the social function of The Handmaid's Tale in the terms proposed by Rose is difficult for it does not appear to adhere to Rose's general assumptions. One of the primary functions of The Handmaid's Tale appears to be to demonstrate that certitude is problematic. Both the tentative quality of Offred's narration and the structural form of the novel emphasize the difficulty in establishing a final, definitive vision of reality. Almost every time Offred relates her recollections of the past, she qualifies her memories. Typical of these qualifications is her warning that the story as she tells it is only "a reconstruction. All of it is a reconstruction. It's a reconstruction now, in my head, as I lie flat on my single bed."(126) And she follows this with a reference clearly designed to undermine the veracity of her story. "If I am ever able to set this down in any form, even the form of one voice to another, it will be a reconstruction too, at yet another remove. It's impossible to say a thing exactly as it was."(126) The reader reconstructing the story from Offred's fragmentary accounts is

reminded that they are one more step removed from the "reality" of her world, their reconstruction yet one more step away from the "thing exactly as it was."

This position is reinforced by Offred's presentation of things that happen to her, or her recollection of things that have happened to her. Her initial description of the beginning of her relationship with the chauffeur is subsequently revealed as fantasy. For several pages, Offred describes an idealized encounter -- a description the reader accepts as true -- only to admit to having "made up" that version of the truth: "it didn't happen that way." (245) Although Offred follows her fantasy with a description of how the encounter actually did take place, the reader is left wondering if the text being read is to be accepted as "truth" or a fantasy of the narrator. The episode renders the reader suspicious of Offred's subsequent revelations. Because of this suspicion, the reader becomes aware that Offred's account can only be accepted provisionally -- new information may be acquired at any time that will force a wholesale revision of her "true" story -- and as result the reader is made aware of the act of continuously reconstructing Offred's account.

In a similar fashion, the "Historical Notes" chapter forces the reader to once again reconsider what he or she "knows" about Gilead. These notes reveal that the reader has not been reading a integral text at all, but only a provisional reconstruction of Offred's story developed from several unlabelled, un-marked audio tapes. The "Historical Notes" consist largely of a keynote speech entitled "Problems of Authentication in Reference to The Handmaid's Tale." (282) The title of the speech suggests to the reader that authentication is

both necessary and problematic. The speech dwells on the difficulty future historians have had in assembling the text of The Handmaid's Tale. When the tapes containing Offred's account were discovered, "they were arranged in no particular order . . . nor were they numbered." (284) Researchers were forced to "arrange the blocks of speech in the order in which they appeared to go," but as the speaker emphasizes, "all such arrangements are based on some guesswork and are to be regarded as approximate." (284) Clearly the position of the researchers parallels the reader's own position; both are restricted to "approximate" conclusions based to some extent on "guesswork." Perhaps more importantly, this revelation about the origins of Offred's tale retroactively brings into question the integrity of the text as a whole. The tentative story reconstructed by the reader from Offred's often ambiguous account is radically undermined by the revelation that the text from which the reader has been working has actually been "arranged" on the basis of "guesswork." In this light it is appropriate that the keynote speaker conclude his address (and the novel) by inquiring "any questions?" A major function of this work is the demonstration that questions are all that exist; answers, such as they are, can only be approximate and hence subject to review and reconstruction.

As I have suggested, the acknowledgement of the contradiction between spiritualistic and materialistic epistemologies is related to the post-modern cynicism about the possibility of a global truth that appears in Atwood's work. The Handmaid's Tale, however, does not acknowledge the contradiction between empiricism and humanism so much as question the usefulness of the concept of contradiction. The idea that there is a contradiction between spiritualistic and materialistic world

views, has as its basis the assumption that, because the two views are mutually exclusive, both cannot be correct. Atwood does not directly consider questions of spiritualism and materialism in the same way as the other works examined here, but The Handmaid's Tale suggests there is no reason why two contradictory ideas cannot be simultaneously correct. To some extent, The Handmaid's Tale extends Whitman's claim: "Do I contradict myself? Very well, I contradict myself, I am large, I contain multitudes," from the internal world of the individual to an external world that includes Offred, the future historians, and, most importantly, the reader. And this attack on contradiction is quite deliberate. In a central chapter, Offred longs for her husband, from whom she was separated while attempting to cross the border. She begins the section by stating "Here is what I believe," and in the first paragraph describes her husband as "face down in a thicket . . . what is left of him," and prays that at least one of the bullets that she heard killed him quickly. In the next paragraph she declares "I believe that Luke is sitting up in a rectangle somewhere" where he is tortured for "know[ing] something they want to know." (99) A third paragraph contradicts both of these other beliefs. Offred declares "I also believe that they didn't catch him . . . that he made it" and that "any day there may be a message from him." (99) In the absence of assured knowledge, Offred believes all three scenarios simultaneously. She acknowledges "the things I believe can't all be true But I believe in all of them, all three versions of Luke, at one and the same time," and concludes, "this contradictory way of believing seems right to me, right now, the only way I can believe anything." (100) Given that a central thrust of the work is to remind the reader of the

provisionality of all knowledge, and especially in light of the problematic historical notes, it appears Atwood is suggesting that we are all in the same position as Offred. A capital-T truth is not available; we must content ourselves with a multitude of small-t truths and an acceptance that this "contradictory way of believing" is "right" given the nature of reality.

Rather than mediating between spiritualistic and materialistic epistemologies, The Handmaid's Tale questions the need for mediation by questioning the nature of truth. As a result, this novel is one step removed from most science fiction novels, and perhaps points in the direction in which all SF must move. As I discuss in the following chapter, there has been considerable speculation that science fiction as it has traditionally been known is disappearing. Indeed, Rose suggests that "the whole system of genres which has defined science fiction as a distinct form may be in flux,"(23) and, as Malmgren points out, the reason for this "flux" quite possibly stems from recent research that has "called into question some of the basic givens of the scientific world view including the nature of change and the explicability of the universe at both the macro and micro levels."(175) The treatment of truth in The Handmaid's Tale parallels the uncertainty that forms the foundation of the philosophy of science in the late-twentieth century. To some extent, therefore, Atwood's work functions outside of the generic paradigm proposed by Rose and serves different social functions than traditional SF.

Although The Handmaid's Tale does not directly correspond to Rose's view of SF, it can be argued that it preserves the central essence of the genre. Rose argues that "particular genres may exhaust themselves

but, frequently, the corresponding mode, an abstraction from the genre, will survive and will lead to the appearance of new generic forms."(23) The Handmaid's Tale undermines the importance of the contradiction between spiritual and material world views, but this act of undermining indicates that the work maintains a central concern with epistemological questions. In the context of recent developments in the "hard" sciences, linguistics, and philosophy that question the integrity of the concept of truth, SF clearly cannot continue to mediate between spiritual and material world views in the same way that it has in the past. Atwood's novel represents one way in which "the movement from the specificity of 'genre' to the vague and more generalized status of 'mode'"(Rose 23) is taking place.

WILLIAM GIBSON'S NEUROMANCER

If The Handmaid's Tale represents one direction in which science fiction may be moving, William Gibson's cyberpunk trilogy certainly represents an alternative option for the genre. The 1984 publication of Gibson's Neuromancer launched the so-called cyberpunk school of science fiction; a group of novels and short stories by a variety of writers that share a dark vision of the future in which advanced computer technology blurs the divisions between machine and flesh, technology and soul. Although Gibson has published several works that have been labelled cyberpunk (a term he rejects), his first novel, Neuromancer, is generally considered his finest. Gibson wrote the work while living in Vancouver with his Toronto-born wife. In Canadian Science Fiction and Fantasy, Ketterer raises the question "should Neuromancer . . . be coralled for Canadian SF."(141) Gibson was born in the United States

and moved to Canada at the age of twenty without any idea "that it would be such a different country." (McCaffery 123) He completed a Bachelor of Arts at the University of British Columbia and, as Ketterer points out, "identifies with Canadian SF to the extent that he is a founding member of SW(AC)ES [the Speculative Writers Association/Association Canadienne des ecrivains speculatif, later renamed SF Canada]. (142) Gibson's writing career did not begin until he had resided in Canada for a considerable portion of his life; in terms of the definition of Canadian adopted for this study, this qualifies him for inclusion in this analysis.

Stripped to its bare bones, Neuromancer is the story of a down-and-out crook who is given one last chance to make a big heist and get himself back into the big time. Obviously, the originality of this work does not lie in its plot. Gibson creates a future world in which computers play at least as large a role in a person's daily life as do other people, and in which the streets have found their own uses for high-technology developed for military and corporate use. Case, the aforementioned crook, had been a "computer jockey" before his fall from grace. In the vocabulary of Neuromancer, a computer jockey or a console cowboy is a computer operator who operates illicitly in the "consensual hallucination" (Neuromancer 51) of cyberspace. Cyberspace is a "graphic representation of data abstracted from the banks of every computer in the human system." (Neuromancer 51) Computer jockeys link directly with this virtual reality by literally plugging themselves into a computer. Once jacked in, a cowboy has direct mental access to the mass of information stored within the world's linked computer systems. They can steal data from other computers in the "matrix" or "network," but to do

so they must counteract defence systems that may kill them if they are unsuccessful. Case had been one of the hottest "cowboys" until he tried to cheat his employers. In revenge, they destroyed the portion of his brain that allowed him to interact with the matrix. As the novel begins, Case is a low-life criminal, half-heartedly struggling to survive in the ultra-violent black market world of "Chiba."

The plot progresses quickly as Case is swept off the streets by a "street samauri" named Molly who has had her body altered to enhance her fighting ability. His unknown "employer" arranges to have his brain repaired so that he is once again able to resume his life as a computer jockey. In exchange, Case is required to perform an undefined robbery. To ensure his continued cooperation, his employer implants drugs in Case that will reverse the healing process if he does not receive the appropriate treatments. Before attempting this unspecified theft, however, it is necessary for Case, Molly and their "superior" (for lack of a better word), Armitage, to steal the Dixie flat-line. Dixie is a dead computer jockey, one of the best to ever live. His personality and skills were recorded and preserved in a computer program. Gibson's adoption of the term "flat-line" as the name of this type of program is a good example of the startlingly different yet recognizable vocabulary he develops throughout Neuromancer.

The Dixie flatline provides Case with the benefits of his/its experience and together with Molly and Armitage they "make a run" on the straylight station, an orbiting hotel and leisure world owned and controlled by one very wealthy and exceedingly eccentric family. As the novel progresses, Case and Molly discover that their employer is actually an intelligent, self-aware computer. In the world envisioned

by Gibson, artificial intelligence is a technical possibility but the operation of "AI"s is closely constrained by strictly enforced, world-wide agreements. "The run" that Case and Molly undertake has as its goal the freeing of their employer from these constraints. Case and company succeed in their mission, set the computer free, and separate to pursue their own careers.

Neuromancer's plot is exceedingly complex and any summary is unfairly reductive. Malmgren's perception that plot is of little consequence when examining science fiction is especially true when applied to this work; Neuromancer's considerable achievements are found in the fully realized and thoroughly believable world created by Gibson, and in the jump-cutting, montage style that he brings to the genre of science fiction. In Malmgren's opinion, cyberpunk as a school of SF "uses as its dominant novum technologies spawned by the incredible advances in cybernetics,"(104) and as a result he labels the school as a whole, and Neuromancer in particular, as "valuable gadget SF [which] explores the interface between humanity and its technologies." In a review of Malmgren's book, Ketterer argues that the dominant novum in Neuromancer is the society in which Case and Molly operate. He proposes that this book should be considered "speculative alternate society" SF, rather than gadget SF. There are a number of difficulties with Ketterer's position. In the first instance, it is difficult to see the world of Neuromancer as "a social order that is quintessentially Other."(Malmgren 17) Danny Rirdan argues that "what Gibson does is straightforward extrapolation."(39) He "takes a certain scene from our everyday life and extrapolates it, inflates it so we can see its disturbing point in a clearer way."(Rirdan 36) Gibson certainly feels

that the world of Neuromancer is directly connected to our own. In one interview he says "when I write science fiction, I write about the way 'technology' has already affected our lives." (McCaffery 140) In another, the interviewer asks if he feels that real-world technology is catching up with his novels. Gibson replies "No, it's not like it's catching up; it's just that other people are starting to realize that it's already here." (Fischlin 2) In the view of the author at least, this work is an extrapolation (and intensification) of the world of 1984.

Ketterer's perception of the importance of society in Neuromancer is well taken, but the work's central novum does not involve social rules, customs or structures (as is the case in, for example, The Handmaid's Tale); instead, it involves the interpenetration of the human and the computer, and the possibility of escaping "the meat" (Neuromancer 25) of the human body into the artificial realm of cyberspace. Indeed cyberpunk as a whole "is centred on mind-invasion motifs of brain-computer interfaces, artificial intelligence, neurochemistry -- techniques radically redefining the nature of humanity, the nature of self." (Suvin 42) The society of Neuromancer and the virtual reality "gadgets" that provide for the interpenetration of human and non-human are connected. As I will suggest below, the extraordinary level of violence in this work is quite possibly connected to the estrangement from reality that the characters undergo as a result of abandoning the 'real world' for cyberspace. It appears to me that the society of Neuromancer is a result of the technology that informs it, rather than the other way around as Ketterer suggests. The dominant novum in this work is technology extrapolated from that which exists today, rather than a fundamentally "Other" society.

As is probably evident from my description of the work above, Neuromancer dramatically foregrounds the gulf between spiritualistic and materialistic world views; indeed its dominant novum -- the existence of direct human-computer interfaces and a computer-generated reality indistinguishable from "real" life -- explicitly embodies the conflict between these two epistemologies. Certainly Neuromancer plays havoc with Rose's description of the semantic field of science fiction. The opposition of human to non-human that Rose suggests characterizes the genre of science fiction is thoroughly ambiguous in this work. Indeed, this text is built around technologies that allow the interpenetration of human and non-human. For example, Molly is equipped with artificial eyes, a neural implant, and retractable steel blades in her fingers. Moreover, she has had her reflexes surgically boosted to give her the fighting skills her built-in weapons demand. It is difficult to determine where Molly ends and technology begins. This blending of human and non-human elements is even more clear in the example of the Dixie flatline. The flatline is a computer; it is non-human, but it embodies the personality and skills of a deceased human being. Matter and spirit are irretrievably intermingled. I could continue in this vein, providing example after example, but I think the point is clear; Neuromancer is constructed around the unification of the human and non-human, not their opposition. Similarly, the opposition of nature and science is subverted in this work. For the most part, the natural world as we know it does not exist. The eastern coast of the United States has become one large city known as "the Sprawl." The one appearance of the pastoral world in Neuromancer is in a computer-generated reality into which Case is "pulled." In the future envisioned

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by Gibson, nature as we know it exists only within technologically-created realities, not in the "natural" world at all.

As I suggested in an earlier chapter, the absence of clear-cut oppositions between human and non-human, nature and science, suggest that a work acknowledges the relationship between spiritual and material world views. The idea that human consciousness can directly interact with a computer-generated reality without loss of the "information content" that makes the human an individual directly addresses the apparent opposition of matter and spirit. A recurrent motif in Gibson's work is the "interpenetration . . . of spirit and matter"(Rose 46), the spiritual transcendence of the human body through technological intervention. The novel as a whole is permeated by "a certain relaxed contempt for the flesh"(6) that is most obvious in the computer cowboy term for the body, "meat." Indeed, Gibson equates the movement from a mental engagement with cyberspace to "real" life as a fall from spiritual freedom: "Case fell into the prison of his own flesh."(6) It is a fall from technologically-achieved spiritual transcendence into the material reality of the human body. The reverse is also true. Sexual ecstasy is expressed as a strange mixed metaphor that invokes both cyberspace and flesh:

his orgasm flar[ed] blue in timeless space, a vastness like the matrix, where the faces were shredded and blown away down hurricane corridors, and her inner thighs were strong and wet against his hips.(33)

Gibson emphasizes the capacity of material technology to provide spiritual options. At several points during the run on Straylight station, Case's interaction with the cyberspace matrix is co-opted by an artificial intelligence. In the last of these scenes, Case finds himself walking down a fully realized beach, real enough for the sand to

sting his cheek and for him to shiver from the cold. More importantly, one of his murdered girl friends inhabits a hut on the lake shore, and she is real enough that they make love. The computer, in the persona of a little boy, later explains: "I call up the dead I am the dead, and their land. . . . If your women is a ghost she doesn't know it."(244) It is probably not necessary for me to belabour the obvious connections between this piece of technology and traditional visions of an afterlife. The point is driven home when Case escapes from the scenario and discovers that during the time he was linked with the computer he had "flatlined." While in the technologically-generated afterlife, Case had been dead in this world.

Far from "suppressing" or "hiding" the apparent contradiction between spiritual and material world views, Neuromancer is built upon the resolution of this contradiction. The technology proposed by Gibson allows not only the physical interpenetration of matter and spirit, it allows a spiritual realm to be created through technology. The appropriate use of matter by humans creates a means for spiritually transcending the human form. In fairness to Gibson, it should be said that this description somewhat distorts the vision of technological transcendence he presents. Gibson has stated that his "feelings about technology are totally ambivalent"(McCaffery 136) and this ambivalence is reflected in his fiction. The Dixie flatline asks as the price for its cooperation that it be destroyed; the personality that transcended death through technology rejects that transcendence in favour of human mortality. Similarly, Case rejects the AI's offer of spiritual transcendence and choses instead his own disease ridden, chemically-dependent body. Although technology may make a form of

spiritual transcendence available to humans, it seems that some humans at least chose to retain their bodies in spite of the disadvantages of "the meat."

Because computer-generated realities are in some sense as "real" as the reality outside of the computer world, Neuromancer undermines certitude in a way that is analagous to the provisionality that characterizes Atwood's Handmaid's Tale. Gibson emphasizes the difficulty his characters have in clinging to reality. In fact he creates a minor character, Riviera, whose sole importance to the work lies in his computer-enhanced ability to create illusions that are indistinguishable from reality. This ability allows Riviera to confuse his adversaries and leads to the injury of Molly. In another instance, Case jacks out of a virtual reality and the features of those around him are "overlayed with the bands of translucent hieroglyphs." (245) The two kinds of "reality" become confused. In the first sequel to Neuromancer, Gibson has one of his characters articulate this difficulty:

The sinister thing about [artificial reality] . . . was that it carried the suggestion that any environment might be unreal, that the windows of the shopfronts she passed now . . . might be figments. (Count Zero 139)

The writing style of Neuromancer, filled with jump-cuts and undefined vocabulary, reinforces this undermining of reality. Gibson often introduces situations without giving the reader the background information necessary to understand what is happening; the reader is forced to provisionally construct an interpretation and revise it as the novel unfolds. In one interview, Gibson explained that he intentionally introduces new vocabulary without a context from which the reader can infer its meaning. He is careful, however, to provide sufficient context for a term the second time that it is used. The effect of these

stylistic techniques is to de-stabilize the reader's relationship to the text; like the characters within the work, the reader has difficulty discerning where reality lies. Gibson asserts an identification of matter with spirit, but he simultaneously undermines the epistemological stance from which these categories gain their meaning.

At the same time as Gibson generates an ambiguous reconciliation of the apparent contradiction between spiritual and material world views he undermines the usefulness of either of these views by destabilizing the concept of reality. As I have already suggested, it seems likely that the arbitrary and gratuitous violence in this book is connected to this destabilization. What sense does the word "morality" hold in a world where, depending on your perspective, nothing is real, or everything imaginable is real? Without some foundation on which to base a code of values -- be it shared humanity, the dignity of the individual, or an unquestionable metaphysical reality -- "right" and "wrong" become matters of opinion. Nihilism is the logical social norm given the technology that is the world of Neuromancer. (In the broader perspective, of course, this is the epistemic/ethical problem that human kind has been struggling with since science replaced religion as our primary way of comprehending the world.)

Both The Handmaid's Tale and Neuromancer undermine the concept of certitude but they do so in very different fashions. Atwood foregrounds the concept of uncertainty by building a degree of contingency into the structure of the novel, most obviously through the inclusion of the "Historical Notes" section. In Neuromancer, uncertainty is a result of the central novum of the work; the technology of cyberspace undermines the concept of reality by providing new realities in which anything can

happen. In speaking of these two works, Ketterer says "if Neuromancer was the decade's best genre SF novel, The Handmaid's Tale was arguably the decade's best mainstream SF novel." (121) One could argue that the difference between "genre" status and "mainstream" status is the technique used by the writers to address the question of certitude. What makes both of these works stand apart from many other SF works of the 1980s is the postmodern tenor of their stance toward truth.

ROBERT C. WILSON'S MEMORY WIRE

In the opinion of one reviewer "when we look back twenty years from now . . . William Gibson will be one survivor of the 80s and 'Robert' Wilson . . . another (This is . . . a decade for Canadians.)" (Ketterer 146) Wilson has not been as influential as William Gibson, but he shares the latter's writing skill and brings to science fiction an unusual depth of emotional sensitivity. Memory Wire, published in 1987, was obviously influenced by Gibson's work. One of the book's central characters, Raymond Keller, is equipped with a "memory wire" that records everything that he sees, making him, in effect, a human video recorder. The wire is directly linked to Keller's brain in a fashion that recalls Gibson's vision of the human-machine interface involved in cyberspace; a small socket is installed in the back of Keller's skull that allows the computerized-equivalent of video tapes to interface with the memory wire that lies within his brain. Keller's decision to "take the wire" took place during a military expedition during which he watched the death of a woman he loved. Keller feels responsible for her death, and takes the wire because one of its side effects is the loss of the capacity for emotion. As one medic warns Keller prior to surgery,

"you won't be Raymond Keller anymore. What you want, what you care about, you have to . . . leave it behind. You're a pair of eyes, a pair of ears. That's all."(14) After the war, Keller leaves the military but chooses not to have the wire removed; he begins freelancing for a global television network, "recording" a variety of underground activities. The network is interested in obtaining "footage" of some mines in Brazil, and in order to obtain these visuals, Keller accepts the invitation of a second character, Bryan Ostler, to join a smuggling expedition to Brazil. Also involved in the smuggling expedition is a woman named Teresa. She has no last name and its absence is symbolic; at an early age she was found wandering following a massively destructive fire. She has no memory of the time before the fire. As the novel begins, she is recovering from drug dependency and working as artist on the margins of society.

The mines in Brazil operate in search of oneirolith "dream" stones. These stones had been discovered in the depths of Brazil years before the story takes place (their discovery precipitated the war in which Keller took the wire.) The oneirolith stones were buried in the earth by an extraterrestrial civilization as a gift to humanity. The stones have a variety of capabilities. Connected properly to a computer they can download information. Or, if placed in the proper solution, they can replicate themselves. In Memory Wire their most important function is the strong psychological effects they have on some individuals. In some cases, simply touching the stone allows an individual to re-experience memories of his or her past. In Teresa's case, the stones do not allow her to recall her own memories, but she can "re-live" memories of other people that she touches while holding a dream stone.

The three characters plot to smuggle a new type of oneirolith out of Brazil, one that is reputed to be more powerful than those previously discovered.

The characters in Memory Wire clearly reflect Wilson's interest in the alienated individual. To varying extents almost all of the characters in this work are alienated from their society or from themselves. The "redemption" of Teresa forms the core this book. Using the new more powerful dream stone, she manages to regain her memory of childhood. Indeed, Teresa does not simply remember the past. she re-lives it. The dreamstones provide eidetic access to a person's past, a re-experiencing rather than a remembrance. Thus when Teresa touches the oneirolith, she re-experiences everything she felt during her childhood, which included episodes of sexual abuse for which she felt responsible. During the huge fire that destroyed most of the floating ghetto in which she lived, Teresa's personality splintered. The dream stones allow Teresa to arrive at an acceptance of herself and this allows a reintegration of her personality. The reintegration of Teresa's fractured personality forms the symbolic moral of the book.

The author reveals a theory about the purpose of the stones through a fourth character. Wexler, who had dedicated his life to studying psychological effects of the stones, had arranged and funded the smuggling expedition to Brazil. He suggests that the aliens were shocked to find that human beings are "broken things. Fractured. Divided." Wilson's aliens see humanity as divided "not only collectively, but individually," each "mind against itself." In the most profound sense, his aliens are "whole in some way that we are broken."(183) Wexler theorizes that the aliens gave the dream stones to

humanity as a gift designed to assist in the healing of the mind. As the character of Teresa makes clear, the oneiroliths enable humans to assemble "whole minds" in spite of the limitations of the fractured human psychology. Her acceptance of her past and the reintegration of her radically fractured (even by human standards) personality are symbolic of the potential the stones hold for the reintegration of all human personalities.

Keller's relationship to technology forms the polar opposite of Teresa's relationship to the oneiroliths. The memory wire embedded in Keller's head reduces him to his function as a video recorder. Its installation requires him to give up his humanity in exchange for the "Ice Palace" of "vision apart from judgement, vision without desire."⁽¹³⁾ When Wexler laments that humans have chosen to use technology to further fracture the mind, to "train our psychoses as if they were dogs, to do tricks for us,"⁽¹⁸³⁾ rather than to unify the human mind, he is referring specifically to Keller. Before the end of the novel, Keller redeems himself and leaves his withdrawal into the "Ice Palace" to live in the world of the human. He sacrifices his memory wire out of love for Teresa, restoring himself to humanity, and beginning the healing of his fractured personality. Teresa requires technology to become truly herself; Keller must reject the domination of technology to regain his humanity. Symbolically, the oneirolith and the memory wire represent two categories of technology. The first expands the boundaries of what it means to be human; the second reduces humanity to function.

As this plot summary probably makes clear, there are two candidates for the dominant novum in this work: Keller's memory wire and the alien

oneirolith stones. Malmgren argues that "within an SF world, one set of transformations, by virtue of its precedence, instrumentality or centrality, takes priority over the others." (16) The title of the novel aside, the dream stones hold the central position in Memory Wire. Keller's memory wire serves a symbolic role in the plot; the oneiroliths define the possibilities and limitations of the novel. Although the oneiroliths are of alien origin, and their powers border on the super-natural, Williams clearly intends the stones to be seen as a form of technology. In Malmgren's terms, a work of SF qualifies as "gadget SF" if "estrangement occurs . . . when a new and revolutionary object is postulated." (15) The oneiroliths clearly qualify as "new and revolutionary objects." Memory Wire is gadget science fiction.

Determining the mode of this novum is complicated. Given Wilson's understanding of humans as fundamentally fractured, the oneiroliths do appear to offer new possibilities routed in "the Other." On first inspection they may be labelled a speculative novum. It is important to recognize, however, that Wilson's understanding of what it is to be human is not shared by most of the social sub-group that forms the "hard core" readership of science fiction. Albert Wendland argues that SF readers are characterized by a belief in "the perfectability of man through rationality" and "in individual action and free will." (43) In other words, the dominant ideology of much of the readership of SF still perceives humans from a Lockian perspective, still has faith in "the marvelous old free-willed, free-enterprising, autonomous, independent, isolated island of the Self." (Goodheart i) To some extent the oneiroliths offer a means of restoring this vision of punctual individuality to fractured humanity. Memory Wire can be read as an

attempt by one SF writer to restore to his reader the image of the punctual self that has been undermined by the works of modern psychology (beginning with Freud and continuing through to Lacan) and post-modern philosophy (particularly Foucault.) Through the oneiroliiths, Wilson simultaneously challenges SF readers to reconsider the image of the individual as "whole" and proposes that technology (used properly) has the potential to bring integrity to this vision of the self. From this perspective, the oneiroliiths do not involve a speculative leap of the imagination, but are developed through an extrapolation of the ideological stance of most SF readers. The dream stones do not provide a metaphorical alternative to current intellectual understandings of the self, but a metonymic extension of the individual as perceived throughout much of Western history. Wilson accepts recent developments in theoretical and psychological understandings of the self, but maintains the value of earlier visions of the punctual self. In Memory Wire he unifies these two understandings of the self.

In terms of its social function, Memory Wire mediates between spiritual and material world views by invoking two very different forms of technology; one which reduces the human potential for spiritualism to matter, and one which frees the human spiritual potential from its material limitations. The major thrust of Wilson's work is to suggest that humans are simultaneously both spirit and matter and that the use of material technology has the potential to alter the relationship between these two aspects of human existence. Although Wilson never directly addresses the contradiction between material and spiritual world views, it is clear that he sees the fractured nature of human existence as preventing a clearer view of spiritual possibilities; the

apparent contradiction, it would seem, stems from the material limitations of the human psyche. The memory wire embedded in Keller's head robs him of the spiritual dimension of his humanity and reduces him to his function. As Wexler points out, Keller substitutes "what he does" for the demands of the "soul." He becomes defined in the terms of technology -- not for what he is, but for what he does -- and as a result his success is measured in the vocabulary of efficiency rather than morality. He becomes a "better" person by "looking where he has to" rather than "where he wants to," by "recording" rather than "acting," even when this means watching mass carnage rather than acting to stop it.

In contrast to the memory wire, the alien technology embedded in the dream stones provides a means of lifting fractured human minds to a new level of spiritual wholeness. The oneiroliths give humans the capacity for eidetic memory and this gift forces humans to "confront the past, really confront it." (162) Wilson clearly believes that this sort of confrontation with the past would force humans to accept moral responsibility for their actions, and he presents the alien technology in spiritual terms. The aliens left the dream stones in the hope that they would "cure . . . our tragic failure . . . [our] failure of memory." (162) The character of Wexler equates this mental failure with "a failure of conscience." (162) Wilson sees the human "capacity for . . . inflicting pain" as connected with our ability to suppress the past. In other words, the oneiroliths not only restore the promise of the Lockian conception of man, but also restore humans to a state of grace. The novel traces the moral redemption of a handful of characters but Wilson makes clear the effect the new dream stones will have on

society as a whole. The novel concludes with Keller standing on the beach and meditating. Wilson symbolically associates the ocean with memory and then allows Keller to observe how "the ocean stood calm and seemed to augur on its tides some bright Millenium."(219)

Memory Wire is similar to Neuromancer in that both books propose that technology may make possible a spiritual transcendence of human limitations. Unlike Gibson, however, Wilson is anything but ambiguous about the position of technology in our society. He clearly presents two different perspectives on "our skill at making tools." Technology can be used to reinforce the fractures of the human mind, and in doing so reduce us to our functions. In other words, technology can be used to foist the concept of division of labour onto the individual, a move that would undoubtedly make society more efficient (and forms the logical conclusion of Jaques Ellul's vision of the world defined by technique). The alternative is to use technology to create a sense of spiritual wholeness, to escape the limitations of matter rather than taking those limitations as a model for human existence. Memory Wire suggests that technology itself may be the key to reconciling materialistic and spiritual world views. If our physical make-up, our "material self" is such that we cannot simultaneously embrace both material and spiritual truths, then Wilson suggests that technology be employed to change the human condition. Technology, properly applied, may allow the unification of material and spiritual humanity.

SPIDER ROBINSON'S TIME PRESSURE

Spider Robinson has played an important role as a critic and as a writer of science fiction. He published his first novel in 1973 (and his detractors claim -- with some justice -- that he has been re-writing it ever since.) Time Pressure was published in 1987, and although the novel takes place in 1973, it is written from the perspective of the mid-1980s. It can be argued that Time Pressure is the most Canadian of Robinson's novels; it is entirely set in Nova Scotia, and its plot invokes such details as Canadian immigration policy ("one of the few really backwards things about Canada: its civil servants are astonishingly hard to bribe"), and the bitterness of the Canadian winter. Although Robinson was born American, he is considered a Canadian by Ketterer, Choyce and Bell, Runté, and Colombo. He moved to Nova Scotia at the age of 25 in 1973 (after several years of ranting with Immigration Canada), and now lives in Vancouver. It is clear that Robinson considers himself a Canadian; he has taken Canadian citizenship, and one of his anthologies, Melancholy Elephants, is dedicated to "Canadian science fiction writers past and present." Time Pressure clearly draws on Robinson's experience as an ex-patriot American living what has become known as an "alternative lifestyle" in rural Nova Scotia.

Time Pressure opens with the protagonist, Sam Meade, stumbling from his house into a blizzard looking for a misplaced trinket and finding instead a naked, bald, female time traveller. Sam takes her to his house and, while waiting for her to regain consciousness, phones a friend. He tells "Snake" of the presence of the time traveller as a means of ensuring the story would survive his own death if the woman turns out to be unfriendly. It is important that Sam's initial fear is

that the women may be telepathic. The threat of telepathy propels the plot of much of the novel. The reader learns in very short order that Sam Meade is deeply disillusioned with life and has retreated to the remotest corner of Nova Scotia (actually the North Mountain of the Annapolis Valley) to avoid contact with other humans. When the time traveller recovers, she reveals that her name is Racheal and allows that she is from the future. She claims to be in the year 1973 in order to collect data for future historians. After growing a full head of hair in a matter of minutes, Racheal is introduced to the inhabitants of the area both "Hippie" (Snake, his commune, and a variety of American draft dodgers) and "local" and proceeds to interview them for her "records." These records are stored in a golden tiara she was wearing when discovered by Sam.

The reader learns that Sam's obsession with the dangers of telepathy parallels his fear of intimacy. He acknowledges that the move from the United States to Canada forced him to "take off several layers of [emotional] armour"(128) but claims "enough is enough; I have reached my limit."(128) In Sam's mind, too much intimacy is evil, and this translates into his belief that "if . . . some dedicated researcher does stumble across true telepathy, the race will be extinct in a generation."(129) As in most works by Robinson, this resistance to intimacy/telepathy is a manifestation of a "hang up" of the main protagonist, and although the story is propelled by Sam's fear of telepathy, it culminates in his acceptance of himself, and hence of intimacy.

As soon as Sam introduces Racheal to the Nova Scotia inhabitants, she has a variety of sexual encounters (with Sam, with Snake, with Sam

and Snake, and with almost everyone else in the area) and wins the unqualified love and admiration of everyone except Sam. He never abandons his initial fear that Racheal is telepathic, and as the story progresses, he begins to discover evidence that someone has tampered with his memories. This culminates in his realization that he never did recover the trinket he had initially left the house for in the midst of a blizzard. Nor had he collected the maple sap from the trees in that area. As he suspects, he had not merely forgotten about the area, but had it blocked from his memory by Racheal. Sam immediately goes to the area and finds a new time machine, one which produces a tiara that allows him to become telepathic. His ensuing suicide attempt is interrupted by a friend who has been co-opted by Racheal. After a struggle, Sam escapes to his house where he attempts to kill Racheal with an axe. Snake is forced to kill him in order to prevent her death.

Following his death (and to his great surprise and chagrin) Sam finds himself floating down a long tunnel toward a green light, contemplating the failures in his own life. This is where the story becomes complicated. Robinson acknowledges that "you're not supposed to drop a long lecture in near the end of your story"(192) but does so anyway. Sam's dead father explains to the dead Sam that they are not inhabiting a supernatural after life, but one that is technologically created. It turns out that in the mid-1990s, a researcher living in Nova Scotia discovers a method of telepathy, a computer program that permits humans to escape "the meat-wrapped bone boxes" of their skull and commune with others. It allows humans to survive their own death. This technology is made available to everyone in the world and as a result a super-human mind evolves that is greater than the sum of the

individuals involved in the spiritual communion of telepathy. After many years of existence, "The Mind" discovers a way to move backwards in time, and decides to use this ability to rescue humans who had died before the advent of The Mind. This is to be accomplished by placing "somewhere in the spinal fluid of every human being that had ever lived a . . . descendant of a microchip which would copy every memory that brain formed" and allow those memories to be stored until they could be brought into The Mind. Racheal's visit to Nova Scotia is a pilot project designed to test the idea. Sam (or at least Sam's memories -- Robinson assumes they are the same thing) is the "first" (although time-travel renders that term obsolete) to be resurrected through the project. He is speaking to his father in the far future, not in the after life.

It turns out that Sam cannot stay "dead." His death was not supposed to happen and it threatens the existence of the universe. Thus The Mind sends him back to Nova Scotia circa 1973 (in a brand new, vat-grown body) where he appears the instant after his death. The real story behind Racheal's existence is spread to other "Hippies" and they disperse to live the best lives possible as the promise of the after life frees them from fearing death or rejection by society. As Robinson admits, "they all lived happily ever after." (215)

Robinson's novel is premised on two novums: the existence of time travel and the possibility of transcendence through technological telepathy. Clearly, however, the dominant novum is the presence of a telepath in 1973. According to Malmgren, it is possible for a novum to evolve, to change from a ground-breaking idea into a conventionalized

device that serves "as a means to an end, namely, the introduction of the dominant or foregrounded novum in the fiction." (13-14) He gives time-travel and faster-than-light travel as examples of novum that have become conventionalized. The capacity for time-travel in Time Pressure is a means to introducing the novum of telepathy. Robinson's main character anticipates Malmgren's position: "there are certain conventions of sf that are, in light of what we think about physics, preposterous . . . but which sf readers are provisionally willing to accept," (18) and also names time-travel and faster-than-light travel as examples.

Time Pressure consists of two separate "worlds," one set in 1973 and one in the "after-life" of *The Mind*. The concept of telepathy is central to both narratives but it functions differently in each one. In the primary narrative containing Sam, Snake and Racheal, the novum of telepathy acts as a "gadget," a mechanical device that alters the human perception of reality. In the world described by Sam's dead father, telepathy has created a society that differs radically from that surrounding Robinson in 1987. This later section of the text can be considered alternate world science fiction, or, more accurately, utopian SF. This dual function of the same novum also complicates the identification of the mode of novum on which Time Pressure is premised. Certainly *The Mind* described by Robinson qualifies as a "quantum leap of the imagination . . . toward an entirely Other state of affairs," (Malmgren 12) and hence as speculative science fiction. Robinson describes the Mind as "utterly unknowable . . . indescribable in a pre-existing language." (199) In the year 1973, however, Racheal's powers are treated as simple extensions of the power of empathy found

among several of the hippies. For example, Sam's complaint that a member of Snake's commune "is telepathic, a little bit"(126) begins his first sermon on the dangers of intimacy. In this context, Racheal's power is a technologically-enhanced version of the human talent for empathy. In Malmgren's terms, this portion of the novel treats telepathy as a logical extension of a human faculty. Time Pressure is a divided work of science fiction. Its primary narrative is gadget SF, premised on an extrapolated novum; a secondary narrative is alternative world SF developed through speculation centred on the same novum.

In terms of literary quality, Time Pressure is certainly not the "best" work of recent Canadian science fiction -- it lacks the subtlety of Gotlieb's Sunburst, the stylistic accomplishment of Gibson's Neuromancer, and the philosophical depth of Memory Wire -- but it considers the relationship between spiritual and material epistemologies more explicitly than any other work of SF written by a Canadian. Ben Bova once described Robinson as "a humanist by damn,"(Bova ii) but he is a very strange type of humanist. Virtually all of Robinson's novel-length fiction deals with the gap between spiritual and material understandings of what it is to be human and Time Pressure is no exception. As Rose notes, works of SF that acknowledge the apparent contradiction between materialistic and spiritualistic world views often "take the form of a progressive discovery of the interpenetration, or even identity, of spirit and matter."(46) Both the primary and secondary narratives in Time Pressure follow this pattern.

The primary narrative is essentially the story of Sam's reconciliation of his internal conflict. In Sam Meade, Robinson gives

us a character who simultaneously pays affiliation to both spiritual and material world views. In the first chapter, Sam speaks of the two parts of his mind: the part "which thought of itself as rational" and the part "that perceived and believed in magic." (9) In one paragraph he describes himself as a "spiritual seeker" (14) and then affirms his belief in "mathematics and the force of gravity and the laws of conservation of matter and energy." (15) And he is lonely because he is caught between two worlds, one which recognizes only materialistic world views and one which recognizes only spiritualistic world views. He complains, "the hippies frowned on me because I didn't abandon the rational part of my mind, while the straights disowned me because I didn't abandon the irrational part." (15) In other words, the central character of Time Pressure embodies the contradiction between matter and spirit that Rose sees as the basis of all science fiction.

By the conclusion of the novel Sam has managed to come to terms with his past, but only through the auspices of technology. Indeed, telepathy, as Robinson envisions it, combines the two parts of Sam's mind; it is simultaneously "magical" or "spiritual" because it allows humans to transcend the limitations of the flesh, and rational as it is an outgrowth of technology. This is not a coincidence; Robinson carefully equates spirit and matter in a number of instances throughout the story. The most obvious example of his assertion of "the interpenetration of matter and spirit" is The Mind. In the secondary narrative describing the events that lead to The Mind coming into existence, Robinson invokes theology. The conspirators that invent telepathy announce the existence of this technology by telepathically forcing all of the world's news sources to open with the statement:

"THOU ART GOD. As God does not appear to exist . . . it became necessary to invent Him/Her. . . . The Kingdom is at hand."(195)

Robinson identifies technology with spiritualism. Humankind invents a "God," and the result is the arrival of the Millenium. The appropriate technology brings about an end to war, to crime, to pain and to death. It also (almost coincidently) allows the re-birth of Sam (literally and figuratively) as a spiritually whole individual.

Robinson is not subtle -- he baldly asserts a belief that there is no fundamental difference between matter and spirit while acknowledging that they do appear contradictory -- nor is his consideration of the topic philosophically rigorous -- he blithely assumes that people are their memories, nothing more, and that the true essence of those memories can be recorded and stored in the same fashion as any other data. There is little doubt that this work has many flaws (perhaps the most grating of which is that everyone is always "literally falling down" from laughter) some of which stem from the bi-furcated structure of the book. Nevertheless, Time Pressure is an unambiguous example of an SF work that foregrounds the apparent contradiction of matter and spirit, and which, moreover, tries to demonstrate that this contradiction is illusory.

CONCLUSION

The analysis of Canadian science fiction performed here obviously cannot claim to be exhaustive. Nevertheless, I believe these eight works of Canadian SF are representative of the bulk of English-language science fiction produced by citizens of this country. One of the problems that any analysis of Canadian literature must face is an expectation that any finding be defined in terms of the literature produced either in the United States or the United Kingdom. For many critics, simply identifying a commonality in works of fiction produced by Canadians is insufficient; there is an expectation that that commonality not appear in the literature of other nations. In other words, there is a sense that for something to be an element of Canadian literature, it must be unique to Canadian literature (an expectation that is thoroughly ironic given our claim to multiculturalism.) Thus, for example, Atwood defined her proposed interpretation of Canadian literature as a myth of survival comparable to, but distinctly different from, the American myth of the frontier, and the British myth of the Island. It has been suggested, with some justification, that this expectation is itself a uniquely Canadian form of academic parochialism. It is perhaps time that Canadian scholars judge patterns in the Canadian reality in terms of their existence, rather than in terms of their uniqueness. At any rate, one of the advantages of the form this study has taken is that it circumvents this expectation of comparison. The typologies employed in this study are typologies developed to reflect science fiction as it exists throughout the world. That Canadian SF tends to be grouped in distinct areas of these typologies does not mean

that those features are unique to Canadian science fiction, but it does imply that Canadians have a tendency to view the genre of science fiction from a common direction. In the next chapter I hope to make some connections between this "common direction" and other aspects of the Canadian reality.

NOTES FOR CHAPTER THREE

- ¹ One expatriate Canadian contributed significantly to early science fiction as an editor. H.L. Gold, who edited several of the most important SF magazines including Galaxy, was born in Canada, but emigrated to New York at two years of age.
- ² This quotation is taken from June Callwood's interview with Margaret Atwood, televised on the Oct. 9, 1992 episode of "National Treasures" on the Vision Television Network.

CHAPTER FOUR: DISCUSSION

Given the state of critical consideration of Canadian SF, locating Canadian science fiction within the various typologies proposed for science fiction is a necessary first step toward an understanding of how the genre is manifested in this country. It must be emphasized, however, that it is only a first step. Having "mapped" the landscape of science fiction in Canada, it is possible to attempt the more interesting and ultimately more valuable task of relating Canadian SF to other dimensions of the academic study of this country. The following is not an attempt to develop a definitive explanation for the typological cohesion of Canadian SF; that would be both premature given the preliminary nature of this study and foolish in light of the growing critical disdain for global explanations. Instead I am trying to identify similarities between the pattern formed by Canadian SF and other patterns in this country's past and present.

Initially I would like to examine the theoretical implications of science fiction that is generated through an extrapolative novum -- a process that parallels the scientific "method" -- but acknowledges the competition between spiritual and material epistemologies. As I hope becomes clear, there are considerable similarities between the theoretical nature of Canadian SF and the academic examination of technology that Kroger claims forms the Canadian discourse. Following this theoretical discussion I undertake a short historical examination of Canadian SF in light of Biezenski's division of American SF into "subversive" and "ideological" categories according to their relationship to the technological elite. This sociological sub-group

has not played the same role in Canadian history that it has in American history, and as a result, Canadian science fiction appears to be subversive in a different way than its American counterpart. Finally, I want to integrate my theoretical and historical discussions through an examination of the noticeable gap in the history of Canadian SF between what might be called pre-modern science fiction -- the work of De Mille and Grove -- and the postmodern SF of Atwood, Gibson, Robinson and Wilson. It appears that Canadian science fiction moved from a pre-modern conception of the world to a postmodern view of reality without ever experiencing the modernist view of reality that forms the core of the technological empire to our South.

I have argued throughout this study that the most significant works of Canadian SF tend to fulfill the social role of mediating between spiritual and material world views by acknowledging that the two views appear incompatible and then representing what that incompatibility means for living human beings. It strikes me that the acknowledgement that a contradiction exists between spiritual and material world views necessarily subverts the technologically-based values which play such a large role in modern Western societies. The subversion implicit in the foregrounding of the intersection of matter and spirit is perhaps most easily discussed when it is contrasted with the treatment of technological values in works which "hide" or "suppress" the difficulty of simultaneously holding material and spiritual world views. Works that do not address this contradiction accept as unproblematic the relationship of spirit to matter.

Biezenski defines science fiction that projects today's power relations into the future as "ideological" because, in suggesting that

the power structure of the authorial world do not change, they lend these power structures a sense of "naturalness" or "immutability." The same is true (perhaps more true given the context of SF) of science fiction that simply accepts the relationship of technology and humanity, or, alternatively, of matter and spirit, that exists in the "zero world" surrounding the author. Works that suppress the contradiction of spiritual and material world views beneath a wealth of plot and create "futures" in which this contradiction is maintained, contribute to a continued lack of reflection on the relationship between spiritual and material world views. In accepting the relationship of spirit to matter as unproblematic, and in projecting into the future the current relationship, "ideological" science fiction suggests that this contradiction is natural, is, in fact, part of the "fabric of things."

In contrast, when a science fiction work acknowledges that the current understanding of the relationship of the realm of technology and the realm of human values is problematic, it acknowledges that other understandings of this relationship must be possible, that the current relationship of matter to spirit is not the only possibility. In raising the possibility that other relationships are possible, these works necessarily subvert the hegemony of the current "unquestioned" relationship between spiritual and material world views. Moreover, they illustrate the contradiction at the centre of Western society today, and by "highlighting" a perception that our society is structured on an irrational simultaneous acceptance of two contradictory world views, force the reader to either attempt a new resolution of these two world views, or accept that "reason" may not be the final arbiter in human affairs.

Considered in this light, the primary difference between ideological and subversive science fiction is that the former contributes to a continued unquestioned acceptance of the understanding of the epistemological underpinnings of our increasingly technological society while the latter raises questions, illustrates difficulties, and emphasizes the inadequacy of our understanding of the world, thus destabilizing this understanding and calling for a renewed examination of the role of materialism and spiritualism in our society.

To this point I have assumed that the current relationship between materialism and spiritualism in Western society is self-evident and I recognize this is certainly not the case. The past 500 years have seen a radical change in the way that the Western world perceives reality. The dominance of unquestioned (indeed, unquestionable) metaphysical explanations of the universe has declined to be replaced with a materialistic understanding of the world grounded in reason and the "scientific method." Although the intellectual community in the Western world, and to a growing extent the populace as well, has abandoned religious explanations of the world in favour of "science," elements of Judaeo-Christianity have been preserved. This is most apparent in the continued wide-spread acceptance of liberal concepts such as individualism and free-will as indisputably true, in spite of the fact that these concepts take their meaning from spiritual understandings of the world. B.F. Skinner is only the most influential of a group of theorists who have demonstrated that these concepts have no meaning when the human condition is examined from a strictly materialistic viewpoint. This is the contradiction of which I have been speaking throughout this study. And it is this contradiction that Alfred North Whitehead among

others identifies as the paradox that forms the foundation of modern culture.

There seems to be a growing perception that the spiritually-based dimension of this contradiction is losing strength in the late-twentieth century. Perhaps because many individuals in the Western world no longer have recourse to the epistemological underpinnings of such concepts as individualism, free-will, and altruism, they appear to be losing their power as tools for understanding the world. This perception has been expressed in different ways by many thinkers. George Grant, one of the most eloquent spokespersons for this position, concluded that "a great change has taken place in the public conceiving of goodness"(Technology and Justice 30) as a result of which "our liberal horizons fade in the winter of nihilism, and . . . the dominating amongst us see themselves within no horizon except their own creating of the world."(Defence 40) In a similar fashion, Goodheart speaks of the "reality of modern nihilism," Charles Taylor of the "features of our contemporary culture and society that people experience as a loss or a decline, even as our civilization 'develops'"(1) and, in a similar vein (if from a radically different perspective), Arthur Kroker describes our practical situation as "technology without a sustaining and coherent ethical purpose; and ethics, public and private, without a language by which to rethink technology in the late twentieth-century experience."(Kroker 127) The result of the declining authority of spiritual and ethical considerations, is the quiet triumph of materialism as the sole foundation of Truth in our society.

To the extent that our society has refrained from examining the central contradiction underlying modern culture, to the extent that we

have not questioned the compatibility of material and spiritual world views, we have been complicitous in the slow atrophy of the authority of humanism as a way of explaining the world. It is against this background that I speak of science fiction as "ideological" and "subversive." As I tried to suggest, "ideological" SF simply accepts the relationship of matter to spirit as unproblematic, and by projecting this acceptance into "future" societies, contributes to the perception that the unexamined co-existence of spiritualism and materialism is a "fixed," unquestionable element of reality. In contrast, "subversive" science fiction destabilizes the status quo by foregrounding the contradiction between material and spiritual world views. In some cases it may attempt to reconcile these two views, in others it may simply acknowledge that a contradiction exists. In either case the work is subversive because it acknowledges that our current way of viewing these understandings of the world is problematic.

As I intimated above, a "subversive" social function and a world generated through extrapolation force a work of science fiction in two directions at once. The primary characteristic of "subversive" science fiction is the undermining of the unacknowledged dominance of materialism as an epistemology in our society. "Extrapolative" science fiction necessarily reinforces the legitimacy of the materialistic because it is by definition informed by the extrapolative process that forms the foundation of modern science and technology. In developing his definition of "extrapolative" science fiction, Malmgren emphasizes that:

Even when extrapolative SF critiques the models, projects, or rationales of science, its relation to science and the scientific method remains fundamentally ambiguous. The logic informing extrapolative SF rests

on the a priori acceptance of the virtues of the scientific method even when the objects and projects to which that method is applied are being interrogated.
(Malmgren 41)

Not only is extrapolative SF informed by the epistemology of materialism, but in order to "de-code" or "recuperate" a work of extrapolative SF, the reader is forced to use a process based in this epistemology. "The reader confronted with an extrapolated world must proceed patiently, drawing on logic, system and method, and maintaining always the proper scientific detachment and objectivity." (Malmgren 40) Indeed, the reader must have faith that "the scientific method will eventually discover systems of relations . . . between the extrapolated world and the basic narrative world." (Malmgren 40) Part of the process of reading a work of science fiction consists of constructing the "absent paradigm." By definition, a work of science fiction differs from the world of the author but has consistent rules that may be "de-coded" by the reader. In extrapolative SF, the reader uses a process of trial and error, of hypothesis, experiment, and conclusion, that parallels the scientific method, in order to uncover the paradigm on which the work is constructed. As a result, an extrapolative work reinforces the legitimacy of this epistemology by providing the reader with a "puzzle" that is solvable only through its use. The direct opposite is true of speculative science fiction. "Because it cannot be recuperated or naturalized using linear or extrapolative models, speculative SF tends to subvert such models." (Malmgren 51)

It is the basic tenet of this study that Canadian SF tends to be written in the extrapolative mode, and thus, following Malmgren's logic, it necessarily reinforces the scientific epistemology that forms the basis of our materialistic understanding of the world. But Canadian

science fiction also tends to acknowledge the fundamental contradiction between material and spiritual world views and this, as I have been arguing, means that it necessarily subverts the growing hegemony of materialistic world views. The "horizontal" dimension of Canadian SF supports materialistic understandings of the world, but the external dimension of SF -- its relationship to reader and society -- tends to subvert this same understanding. The result of this simultaneous affirmation and subversion is a deep structural irony.

As Linda Hutcheon has made a career of observing, the use of irony allows a writer to speak "within prevailing discourses, while . . . finding a way to articulate doubts, insecurities, questionings and perhaps even alternatives"(Hutcheon 15) to that discourse. Hutcheon has demonstrated in a number of places that irony, as it is used by postmodern writers, involves the holding of two meanings in stasis simultaneously. Hutcheon has illustrated this characteristic of irony through analogy with the well-known optical illusion in which a line drawing can be interpreted as either a rabbit or a duck. Irony, she argues, "is not a case of seeing either a duck or a rabbit; we must see both at once or we are not dealing with irony."(Hutcheon 12) In an analagous fashion, the works of Canadian science fiction discussed here ironically maintain in stasis an affirmation and a subversion of the epistemology of materialism. By doing so, they co-opt the authority of the materialistic epistemology as a support for their subversion of that same epistemology. They destabilize the reader's understanding of the role of materialism and spiritualism in the world, but this destabilization takes place through a process that duplicates the materialistic epistemology being questioned.

The ability to "speak within the prevailing discourse" is critical to any attempt to examine the relationship of spiritual and material understandings of the world. A number of theorists have argued that while materialistic understandings of the world (variously formulated as "technology," "technique" and "instrumental reason") have provided material benefits to our society, these benefits have been accrued at the expense of our freedom of choice. Indeed, the debate today seems to revolve around the question of whether, given the pervasiveness of technology in our society, it is possible to articulate values "outside" of the hegemony imposed by technology itself. Is it possible to judge the effects of technology on society on a scale that is independent of, or at least isolated from, technology itself? Different answers have been suggested by a range of philosophers. George Grant, Arthur Kroker and Jacques Ellul share what is perhaps the most extreme position; all three conclude that technology determines the "horizon" in which human thought can take place. Kroker claims that we lack "a language by which to rethink technology in late twentieth century experience,"(127) and that this absence of useful language stems from the incarnation of technology as "the deepest of politics, economy, advertising and desire."(127) Grant anticipates Kroker (indeed, much of Kroker's thesis is a rearticulation of Grant's analysis of technology in a postmodern vocabulary) pointing out that "our political and social decisions are interwoven with the pursuit and realization of technological ends."(Thinking 15) He demonstrates that technology does not create "neutral instruments in the sense that the morality of the goals for which they are used is determined outside them."(Thinking 20) Indeed, he argues that all technology is created within a moral framework, and

that this framework is that embodied by technology itself. The result, he argues, is that:

when we represent technology to ourselves as an array of neutral instruments . . . we are expressing a kind of common sense, but it is a common sense from within the very technology we are attempting to represent. (Thinking 32)

Grant concludes that in the modern age we are condemned to "apprehend our destiny by forms of thought which are themselves the very core of that destiny,"(32) because "there is no other language available which does not seem to be the irrational refusal of the truths of scientific discovery."(33) Jacques Ellul arrives at a similar conclusion in his more influential (although I think less cogent) Technological Society. In a parallel to Grant's recognition that "technology is the ontology of the [modern] age,"(32) Ellul argues that "when technology enters into every area of life, including the human, it ceases to be external to man and becomes his very substance."(6) If Kroker, Grant and Ellul are correct then we are left only with the choice of lament; it is no longer possible to consider technology in terms that are not its own.

This position may be overstated; Charles Taylor takes the more moderate position that although within the Western world "there is a bent or slide"(89) toward the dominance of materialistic understandings of the world, it remains possible to struggle against this "slide." But whether or not "the closed horizons of technology"(Kroker 18) prevent a direct examination of the role of materialistic considerations in our world, or simply makes the process more difficult, the use of irony allows an indirect examination from "within the prevailing discourse." The structural irony that underlies most of the works of Canadian science fiction considered in this study suggests that they are

undertaking just such an indirect examination. Arthur Kroker claims that:

The Canadian mind seeks to preserve, if only in memory, those valuable aspects of experience which have been obliterated by the technological experience; or alternatively, to emancipate technology from within by rethinking the meaning of science and technology.

(Kroker 13)

Grant, Ellul, Taylor, and Kroker himself all attempt the former -- an articulation of the dominance of technology in our society and an explication of the cost of this dominance (although, paradoxically, three of these four academics declare such an articulation impossible.) It seems to me that Canadian science fiction attempts the latter -- an ironic reconsideration of the role of materialism in our society from within the "horizons" established by materialism itself.

Consider the way in which William Gibson's Neuromancer has been received by the marginal sub-culture popularly known as "computer hackers." Although intimately involved with the very technology that thinkers such as Grant believe is leading to a hegemony of technological values, this social group seized on a minor comment in Gibson's work -- "Information wants to be free" -- and turned it into a rallying cry. A recent TVO program quoted an American police officer assigned the duty of finding and arresting computer hackers as describing a worst case scenario as an adolescent with a computer, a modem, and a copy of Neuromancer.² Bruce Sterling, an American cyberpunk writer, claims that the F.B.I. "really do believe . . . that [William] Gibson . . . and the other cyberpunks have created a generation of monsters." (Fischlin 5) The term "cyberpunk" is changing from a description of a movement in science fiction to a designator of computer crime perpetrated by teenagers. Sterling notes that "the number of references to cyberpunk

as a literary phenomenon are now outnumbered by its use as a synonym for computer criminal" and predicts that "if you go out and look in a university card-catalogue under 'cyberpunk,' you're going to see books about computer crime."(Fischlin 5)

Neuromancer was acceptable to "computer hackers" because it draws its authority from an appeal to the epistemology of science. One could hardly imagine a work drawing its authority through an appeal to religion being so readily accepted by these "hard-core techno-freaks"(Fischlin 6). Although it gains its authority through an appeal to science, Neuromancer has clearly influenced at least some individuals to subvert (in the most political sense) the dominance of this epistemology. While the computer theft and electronic vandalism undertaken by computer hackers may not appear directly related to Kroker's vision of an emancipation of technology from within, these actions clearly work to subvert Grant's vision of a technologically-induced "universal and homogenous state"(Lament 67) in which "indigenous voices" cannot be heard, indeed, in which indigenous voices no longer exist.

Neuromancer's ability to simultaneously support and subvert the power of technological values is only the most dramatic example of the irony embodied by the most significant works of Canadian science fiction. This tendency to ironic subversion of the materialistic paradigm that threatens to silence alternative understandings of the world clearly places Canadian SF within the "discourse on technology" that Kroker claims is a central component of this country's identity. Indeed the theoretical implications of Canadian science fiction suggest

that it forms the literary counterpart to academic attempts to reconsider technology from within science and technology itself.

In his examination of Technology and the Canadian Mind, Kroker apparently felt no need to ground his observations in a study of the historical role of technology in this country. He supports his claim that "a sustained and intensive reflection on the meaning of the technological experience is the Canadian discourse"(12) through a comparison of "emblematic figures in Canadian thought,"(15) rather than through an historical appraisal of the role of technology in this country. "Explanations" for Canadian science fiction, or rather, for the paucity of Canadian SF, have tended to take the opposite tact. Robert Runté claims that because Canadians "are relative newcomers to industrialization, . . . it is only recently that Canadian writers have embraced the [technological] mainspring of science fiction."(1) John Colombo claims that "the low priority Canadians give to research and development and the movement towards de-industrialization" has contributed to "the tenor of our science fiction."(Colombo 2) Ketterer maintains that the Canadian "tendency to rely on the research and development of others . . . has surely discouraged the production of Canadian SF."(3) Although these observations are of the "superficial 'mythic' fashion"(Colombo 327), the historical role of science and technology in this country, or rather, the contrast between the role played by the technological elite in this country and in the United States, provides a strongly suggestive background to the subversive capacity of much Canadian SF.

As many economic historians have noted, and as today's economists continue to lament, research and development have never played a

governing role in the Canadian economy. This is in stark contrast to the central role science and technology have played in the development of the United States where technological development has attained the status of a defining myth.² As previously discussed, Robert Biezenski examines American science fiction in terms of its relationship with the social position held by the technological and scientific elite of that country. It is important to recognize that the Canadian counterpart to the American technocratic elite played a much smaller role in this country's history, and never attained a position where holding political power was a possibility. Glen Williams has traced Canada's on-going dependency on foreign sources of technology to the import tariffs installed by John A. Macdonald's National Policy. In his 1979 article, "The National Policy Tariffs: Industrial Underdevelopment Through Import Substitution," Williams argues that prior to World War I, "the establishment of Canada's modern industrial structure was almost completely dependent on US manufacturing for reproduction (through patents, licences and machinery) of its means of production"(352) and connects this dependence on American manufacturing technology to the Canadian economy's continued inability to become a competitive force in the world capitalist economy. Indeed, he concludes that "an extreme dependency on foreign technology was to preclude from the beginning any serious attempt to move into foreign markets."(368)

J.J. Brown develops a parallel thesis concerning the Canadian ability to industrialize innovation. Based on a "popular history of technology in Canada,"(4) he concludes that although "Canadians have made contributions to world science and technology out of all proportion to their small number,"(2) almost all of the innovations

developed in Canada -- such as the jet airliner, the variable propeller and the electric organ -- have had to "be taken abroad to find investment,"(2) hence the title of his book, Ideas in Exile. Chris Debresson has taken issue with this reading of Canadian history, arguing that the failure of Canadian industries to industrialize innovation is the result of an economic infrastructure that makes it difficult for "innovative small firms" to make "the transition from producing for a client to producing for a market."(21) Regardless of the explanation for the lack of industries based on native innovations in Canada, the social effects are the same; the Canadian technocratic elite has never held the political influence or power that it has wielded in the United States. The government of the United States has a tradition of embarking on technological or scientific megaprojects -- the Marhatten project, Kennedy's decision to go to the moon, and Nixon's "war on cancer" are just a few examples -- and there is growing evidence that the scientific elite have had a hand in convincing politicians of the desirability of these projects.³ In contrast, the scientific and technological intelligentsia's lack of political power in Canada is apparent in the history of Canadian industrial policy. Until very recently, "Canadian government policy on industrialization was based on attracting technology from a more advanced area rather than indigenous technological development."(Debresson 19) This industrial policy either reflects or a resulted in a larger societal disdain for indigenous Canadian technology. As Bruce Sinclair expresses it:

instead of single-mindedness, or whatever it was that made it easy for Americans to think of themselves as technically competent, the history of Canadian technology seems characterized by contradiction and a sense of incompetence.(109)

If Biezenski's perception that the social function of American science fiction evolved in step with the political power of the technological and scientific elite in that country is correct, then it is hardly surprising that Canadian science fiction does not represent the entire typological range represented in American science fiction. The relatively small size of this group in Canadian society, and its virtual absence from the political arena, suggest that the social dynamics underlying Canadian SF must have taken a different form.

Moreover, as I suggested when justifying this study, Canadian SF has traditionally been written by "mainstream" writers rather than by "converted" scientists and engineers. This is clearly of some importance. As the debate surrounding the definition of science fiction suggests, the concept of "genre" has multiple meanings. When it is seen as a "set of expectations," as it is by Rose, Wendland and Biezenski, then it involves a blurry-edged contract between writer and reader about what will and will not appear in the text, a "set of 'rules' for narrative construction that both the [artist] and the audience know." (Bordwell 97) It seems likely that individuals trained in literature would interpret this "contract" differently than individuals who come to the genre with a background in science or engineering. In addition, it seems reasonable that Canadians respond differently to portrayals of American technological imperialism than do Americans. A science fiction work which emphasizes the "supposedly eternal strength of the traditional [American] values of individual courage, strength, individualism, . . . fair play and . . . private property, capitalist free enterprise and U.S. . . . supremacy over aliens," (Biezenski 74) or which explicitly emphasizes the "all-American frontier spirit" (Wendland

43) would in all likelihood alienate Canadian readers (while perhaps inspiring envy). Canadian readers of science fiction might be expected to respond emotionally to the genre in the same way that Canadian society as a whole responded to the televised landing of Apollo 11: a mixture of excitement, envy, and profound alienation. For most Canadians, technology is something that happens elsewhere, even if its effects are felt here. In this context it seems reasonable to assume that Canadian readers of science fiction relate differently to the "contract" between American SF writers and American readers that has historically defined the science fiction genre. Together, the different training of Canadian writers and the experience of existing on the margin of a technological imperial power may explain the relative absence of "hard" Canadian science fiction, and the almost total absence of tales of galactic empire.

This reading of the writership of Canadian science fiction is supported by the significant "gaps" in the history of the genre in this country. As the selections considered in this study suggest, Canadian science fiction has flourished during two separate time periods, the turn of the century, and the mid- to late-1980s. In contrast, American science fiction developed into a self-conscious genre during the years in which little or no indigenous science fiction appeared in this country. The much-praised "Golden Age of science fiction" is missing from annals of Canadian SF, as is the "space opera" period of American SF -- characterized by galactic empires, strong (if simple-minded) male heroes, and the prevalence of super-scientific weapons -- which preceded the Golden Age. Biezenski argues that the dominance of the space opera in American SF in the 1930s "promote[d] dependence on that social group

which [was] its representative, the scientific/technological intelligentsia,"(74) and that during the 1930s, this social group perceived itself as increasingly important to the future of the United States. He ties this perception of self-importance to the treatment of the social issues spawned by the Depression as "engineering" problems. This perception increased in the years leading up to World War II, and Biezenski claims that while the "technocratic ideology, the value structure of a large section of the scientific/technical stratum, has found expression down the years in the pages of SF" this occurred "most predominantly in Cambell's 'Golden Age' of the late 1930s and early 1940s."(84) In Biezenski's vocabulary, prior to the second World War. American science fiction was ideological; it attempted to preserve the position of the technological elite by reinforcing the status quo.

The "scientific/technical stratum's" confidence of its political relevance was undermined following World War II. Albert Wendland argues that from the late 1940s through the mid-1960s, the prestige of the "technologically-oriented middle class" declined as a result of the "seizing of its technical efficiency into the bureaucratic structure of 'Big Science' or 'Big Government'."(48) William H. McNeill has demonstrated how "the application of deliberate, planned invention of new weapons and machines"(331) and the "rational and deliberate division of labour in economic affairs"(334) that occurred in the United States during World War II resulted in a post-war "society dominated by a new symbiosis of public and private administrators,"(364) and a world in which "managed economies became normal."(363) This change displaced the political relevance of individual members of the technological elite by reducing each individual to a replaceable element in a bureaucratic

structure. American science fiction became subversive, attempting to re-establish (at least fictionally) the importance of the former technocratic elite. The result, as Wendland demonstrates, was the development of a "consensus future history" in American SF, characterized by a "resemblance to the Roman Empire, [an] all-American frontier spirit and imperialistic and capitalistic fervor." (36) This "future history," which forms the background to much of the SF work of the late-1940s and 1950s, "restores" technical efficacy to "SF's social class" (Wendland 45) by envisioning a future in which that class plays a critical role. In essence, American science fiction during these years reflects an attempt to "establish for SF's group the position it craves and believes it should have." (Wendland 48)

Most SF critics, including Wendland and Biezenski, consider science fiction to have developed into a "self-conscious" genre in the late-1920s or early-1930s. Works written before this time are usually treated as hybrids or bridges between science fiction and earlier genres, most importantly the utopian tradition. In the mid-1960s, the genre of science fiction was challenged by a group of primarily-British writers who initiated the "New Wave" of SF. This "movement" is difficult to define satisfactorily, but it was characterized by "an experimental writing style . . . a key-note of despair," (Biezenski 115) and a profound questioning of the value of science and technology. Although neither Biezenski nor Wendland examine New Wave writers in detail, it is clear that these writers held a different perspective on the value of technology than had the Golden Age SF writers. By attacking concepts that had earlier been articles of faith in the SF community -- such as "the faith in man's eventual understanding of a

rational universe"(Wendland 38) -- these writers undermined the direct relationship between science fiction and the self-interest of the American technological elite.

It is probably not a coincidence that almost all Canadian science fiction was written either before or after the genre was an exclusive instrument of the American technological elite; given the relative absence of this social group in Canada, it is hardly surprising that the period when this group's concerns dominated world science fiction is the same period in which Canadian-production of science fiction is noticeably absent. De Mille, Grove and Roberts all wrote their works of SF before science fiction developed into a self-conscious genre with conventions and an established readership. Gotlieb published her first novel after the influence of New Wave science fiction was being felt throughout the genre. Atwood, Gibson, Robinson and Wilson published their novels in the 1980s after the New Wave orientation had itself become established as a science fiction convention. That the "gap" in the history of Canadian SF occurs during the same years that the American technological elite dominated the genre world-wide suggests a connection between the pattern of technological development in Canada, and the characteristics of science fiction as it is written by Canadians. It appears likely that the same forces that prevented the rise of a politically-influential technological elite in this country -- whether those forces are geographic (as Innis would have it), result from political decisions (as Williams suggests), are part of Canada's colonial legacy (as Sinclair argues), or stem from "a conservatism carried to the extreme of idiocy" (as Brown claims) -- have influenced the evolution of SF in Canada.

This gap in Canadian science fiction can also be viewed from a more philosophical perspective, one which parallels the historical role of technology in Canada. In his study of science fiction, Mark Rose reviews current thinking on how genres evolve and considers the evolution of the SF genre in light of genre theory. He argues that genres develop through three phases. "By combining and transforming earlier forms, the genre complex assembles and the idea of the genre's existence gradually appears." (Rose 10) Texts created during this primary phase use earlier forms as models. In the secondary phase of a genre's development, texts are modeled on works created during the primary phase. For example, he argues that More's Utopia is representative of the primary phase of utopian writing because it was created through a combination and adaptation of "earlier forms such as the Platonic dialogue and the voyage narrative." (Rose 10) In contrast, Gulliver's Travels is a work of the second phase of utopian writing, taking earlier utopian works (including More's Utopia) as models. In the case of science fiction the "genre complex" assembles through the adaptation of the conventions of the utopian genre. Rose argues that H. G. Wells' "The Time Machine represents both a late phase of utopian writing and an early phase of science fiction." (10) Second-generation science fiction authors -- such as Arthur C. Clarke, Robert Heinlein and Issac Asimov -- "had all read widely in earlier science fiction from Verne and Wells to Burroughs and E. E. Smith" (Rose 12) before writing their own works. Thus they were aware of the conventions established during the first phase of the genre's development, and their works exhibit a generic self-consciousness that is lacking in earlier SF works.

Rose argues that the formative phase of the science fiction genre began in the late-1800s and extended into the 1930s. The ensuing secondary phase of science fiction lasted until the early-1980s, the time when Rose was writing his work; however, a radical shift in the orientation of the genre took place during this phase. According to Rose, "the range of any genre is limited" and as a result "writers are always in danger of exhausting the form's potential." (15) During the last part of the secondary phase of a genre, writers turn away from physical action, replacing it with spiritual or psychological correlatives. For example, Rose argues that the movement away from the physical and towards the psychological in Wordsworth's Prelude marks the last phase of the epic genre. This "interiorization" allows the "temporary revitalization of the entire generic field." (15) In the case of science fiction, Rose argues that this interiorization takes place in the New Wave science fiction of the 1960s and 1970s.

Rose shares with many critics the perception that science fiction entered a third phase of development in the early-1980s, a phase that may culminate in the disappearance of the genre as it is known today. In his view, science fiction's "generic boundaries" are becoming "increasingly problematic as the genre's quest for new material leads into this tertiary phase." (17) Indeed, the recent publication of "radically problematic texts . . . suggests that science fiction's history as a distinct genre may be approaching its end." (Rose 23) Moreover, he argues that "the recent shift of the mainstream of narrative fiction away from psychological realism . . . perhaps indicates that the whole system of genres which has defined science fiction as a distinct form may be in flux." (23)

This second comment is important because it highlights the fact that SF exists as a distinct genre only through comparison with other genres. Its distinctiveness lies in its presentation of worlds that are different from our own, but which differ in ways that can be reconciled with our scientific understanding of the universe. Science fiction as a genre is beginning to break down because it is becoming increasingly difficult to identify a reality against which an SF world may be defined as different, (indeed, this seems to be one of the points of Pynchon's work); our "tools" for establishing certitude have been rendered problematic. As Malmgren notes "developments in science . . . have called into question some of the basic givens of the scientific world view, including the nature of change and the explicability of the universe (at both the macro and micro levels.)"(175) As a result of these developments the "narrative imagination has . . . begun to take another look at the nature of Here," a look that "has taken the form of oxymoronic genres such as science fantasy and magic realism."(175) Theoretical predictions of the end of SF as a genre are lent credence by the decline in sales of science fiction in the late-1980s and a corresponding growth in sales of novels written in the fantasy genre.(Zentz xxvii)

The Canadian science fiction considered here fits conveniently into the three phases proposed by Rose. The early works of James De Mille, Frederick Philip Grove and G. D. Roberts were all written during the period that Rose deems the primary phase of the genre. The roots of the SF genre in the utopian tradition is especially clear in De Mille's novel; however, Grove's work also reveals its indebtedness to earlier works of utopian satire such as Gulliver's Travels. Like The Time

Machine, A Strange Manuscript and Consider Her Ways can be understood as either late-utopian fiction or early science fiction. The gap in the history of Canadian SF corresponds almost exactly to the secondary phase of science fiction's development. Gottlieb's work stands alone in this time period, and it is clearly part of the process of interiorization that marked the end of the second phase. The novels of Robinson, Gibson, Atwood, and Wilson were all published after critics began proclaiming the end of science fiction as a distinctive genre. Paradoxically, the most important works of Canadian science fiction have been published before the appearance of the genre, and after the disappearance of the genre, but not during science fiction's existence as a distinct genre.

Is this pattern of publication related to the tendency of Canadian science fiction to explore the co-existence of spiritual and material world views? It would seem likely there is some connection, although determining a causal link is far outside of the scope of this study. The three phases in the development of science fiction that Rose identifies correspond to changes in the authority of science in our society. Although he avoids an in depth discussion of the origins of science fiction, Rose notes that an adequate historical discussion of the birth of science fiction:

would include a history of the crisis of religious faith in the nineteenth century, a discussion of the idea of progress, a consideration of the remarkable technological developments of the latter half of the century and an account . . . of the growth of popular interest in science. (Rose 7)

Albert Wendland provides a more explicit explanation of the relationship of science to religion during the years when Jules Verne and H. G. Wells began writing "scientific romances." He argues that scientism arose

"amid the collapse of traditional values that occurred in the nineteenth century with Darwin and Marx"(19) as an alternative to discredited metaphysical conceptions of the world. "If determinism destroys the old glories then the solution is to glorify determinism."(Wendland 19) In other words, the first science fiction was written in an environment in which science was in the process of replacing religious faith. The primary phase of the science fiction genre -- its birth from earlier Romance forms -- took place at a time when the authority of science was not yet established. In other words, it took place during a crisis of authority, a crisis in which authors of all sorts "lobbied" for understandings of the world. Much of the science fiction written during this time consists of thinly-disguised polemics arguing in favour of empiricism and against religion as processes for understanding the world. For example, in H. G. Wells' The War of the Worlds, a curate goes mad in the face of an invasion his religious world view cannot explain. Symbolically, the narrator of the novel is forced to kill the curate to preserve his own life. "The curate's fate is the text's way of categorically rejecting superstition and . . . affirming a scientific view."(Rose 38)

As Malmgren recognizes, we are undergoing a similar crisis of authority today. Indeed, it is this crisis of epistemology that (arguably) forms the background to the "recent shift of the mainstream of narrative fiction away from psychological realism" identified by Rose. This crisis of authority is appearing in all areas of academic inquiry; "reality has changed . . . for thinkers in every field, and the shift has been described and theorized variously in different disciplines."(Strehle 7) It is amidst this crisis that science fiction

has entered what Rose deems its "tertiary phase." In the years of science fiction's self-conscious existence as a genre -- from the 1920s through to the late-1960s -- science was unproblematically accepted as the grounding for all truth by a large portion of the population. This period was marked by a general "acceptance of the rationalist tradition of science, the scientism convinced that reality exists and that man [sic] has the ability to observe and describe it accurately." (Wendland 19) The SF written during this period parallels this faith in science as the ultimate source of certitude; Patrick Parrinder claims that the between 1929 and 1979 most science fiction "simply endorsed and propagated scientific values on the assumption that they embodied a coherent, challenging and imaginatively satisfying world-view." (87)

It seems that science fiction as a genre was born with the ascension of science as our primary source of certitude, and is disappearing with the late-twentieth century recognition that "the new physics has reimagined reality" and that this reimagining has resulted in a universe that "may be described as relative, discontinuous, energetic, statistical, subjective and uncertain." (Strehle 13) It is significant that the most important works of Canadian science fiction exist as "book ends" to the genre rather than as part of the continuum of American science fiction. The provisional canon of Canadian SF considered in this study consists of works written during periods of epistemic uncertainty; that is, during the genre's birth following the religious crisis of the nineteenth century, and during the current reimagining of reality that has been labelled postmodernism. Perhaps more impressive than the appearance of Canadian SF during these periods of uncertainty is the silence of Canadian authors during the years in

which "determinism was glorified" by the general public. As previously noted, the first essay on Canadian science fiction was written by an American during World War Two. It is symbolic that this essay both laments the rarity of Canadian science fiction and criticizes Canadians for not fully accepting "the basis of our present civilization -- which is that science is real, the world is real, and that nothing (whether known or unknown) is beyond the boundaries or borders of universal law." (Wollheim 177) Although Wollheim's essay is hardly an example of critical acumen, its author may have accidentally identified a key element of Canadian science fiction: its reflection of a general Canadian unwillingness to accept the universality of the scientific epistemology. The tendency of Canadian science fiction to foreground the disparity between material and spiritual epistemologies is less surprising in light of the crisis of authority that has characterized the two periods of its creation.

The type of epistemic uncertainty that characterizes Canadian SF of the first phase differs in tone from that of tertiary phase Canadian science fiction. A Strange Manuscript and Consider Her Ways are overtly concerned with the coexistence of materialistic and religious approaches to understanding the world; indeed, Grove's work has been deemed an oxymoronic attempt at secular transcendentalism, "a lay escape from history." (Prioretti 368) In contrast, Neuromancer and The Handmaid's Tale (and to a lesser extent Time Pressure and Memory Wire) are concerned with the possibility of understanding the world at all. In effect, the canon of science fiction discussed in this study falls into two categories that might be deemed pre-modern SF and postmodern SF. The former is informed by the same world view that characterizes George

Grant's "pre-modern" critique of technology: a perception that technologically-defined values are replacing (and perhaps silencing) metaphysically-based systems of value. The novels of Gibson and Atwood are informed by a world view that is closer to that of Lacan, Foucault, Derrida and Prigogine; a perception that all understandings of reality are fundamentally "relative, discontinuous . . . subjective and uncertain." (Strehle 13)

Others have suggested that Canada may be the only nation in the world to have moved from being pre-modern to being postmodern without ever becoming thoroughly informed by the tenets of modernism. The science fiction created in this country certainly supports this vision. Canadian writers appear set to usher the genre of science fiction into the next century, a movement that will undoubtedly involve the radical alteration of the genre. Rose argues that "particular genres exhaust themselves, but, frequently, the corresponding mode, an abstraction of the genre, will survive." (23) This movement to mode may be what is occurring in the works of Atwood and Gibson. Both maintain science fiction's paradigmatic concern with epistemology, but alter the framework in which it is considered. Rather than mediating competing epistemologies, they challenge the concept of epistemology itself. In the final chapter his 1991 examination of science fiction, Carl Malmgren concludes that "new scientific paradigms" are requiring SF to turn away from inter-galactic exploration, and tales of alien encounter, and towards:

the frontiers of the solar system, . . . recent developments in technology (as has been the case in the appearance of cyberpunk) . . . [and] to alternate society SF situated in the near future (as has been the case in recent fiction by Margaret Atwood). (175)

It is probably not simply coincidence that two of these three options for the continuation of science fiction have been developed by Canadian science fiction writers (Gibson in the case of cyberpunk, and, as Malmgren notes, Atwood in the case of near-future SF). The "recent renaissance in Canadian SF"(Runté 1) has taken place just as some critics have declared the genre exhausted. Arthur Kroker concludes that Canada's European heritage and geographical adjacency to the "technological dynamo" of the United States have positioned "Canadian thought . . . at the forefront of the modern mind in thinking through the deepest meanings of technological society."(12) Perhaps as a result of these same conditions, Canadian writers are on the leading edge of ongoing attempts to redefine science fiction as a postmodern form.

Historically and philosophically, Canadians have been less willing than Americans to whole-heartedly adopt technology as an end in itself. In light of this background it is perhaps unsurprising that Canadian writers of science fiction tend to create works that mediate between spiritual and world views by foregrounding the apparent incompatibility of these world views, rather than suppressing this incompatibility beneath a wealth of plot. The silence of potential Canadian writers of science fiction during the period in the genre's evolution in which it "simply endorsed and propogated scientific values"(Parrinder 79) may be indicative of the difficulty Canadians in general have had in accepting scientific epistemology as the sole source of certitude. Indeed, an intimate understanding of provisionality is something of a Canadian birthright. Arthur Kroker claims that "the Canadian [academic] discourse on technology is . . . privileged" because the Canadian "intellectual condition" is to be simultaneously "fully implicated in

the 'spearhead of modernity' of the United States" and "by virtue of historical circumstance and geographical accident" forever marginal to the American "technological dynamo."(8) Canadian writers of science fiction are faced with the similar difficulty of existing simultaneously within and without the American discourse on technological existence, forced to accept "as their model for SF writing the American SF books and stories which they have seen"(Kulyk 56) while attempting to express a different perspective on questions of technology and empire. It is at least possible that the silence of Canadian SF writers between the 1930s and the 1960s was an enforced silence; the rigid boundaries of the genre, and its absolute faith in the value of science and technology, may simply not have allowed for the expression of a Canadian world view. Given that Canadian SF writers have always been forced to publish in American magazines -- Canadian SF magazines flourished only during an import embargo during World War II -- and thus had to meet American editorial standards, it is hardly surprising that the majority of the works reviewed in this study are fundamentally ironic. Canadian writers of science fiction have managed to conform to American standards and expectations while subtly undermining these same expectations, and by doing so they are emblematic of the most fundamental facet of Canadian political and cultural existence.

NOTES FOR CHAPTER FOUR

- ¹ This interview was televised on January 24, 1993 edition of the Television Ontario program, "Prisoners of Gravity."
- ² The role played by science and technology in the history of the United States is the subject of a substantial body of literature. For an historical examination of the "increasing emotional relevance of science as a source of authority" in America see Charles E. Rosenberg's No Other Gods: On Science and American Social Thought, (Baltimore: The Johns Hopkins University Press), 1976. For a different approach to the subject see Harold Vatter's "Technological Innovation and Social Change in the United States, 1870-1980," in Technology, the Economy and Society, Eds. Joel Colton and Stuart Bruchey.
- ³ The role of the scientific community in the policy making process in the United States has been the subject of considerable academic attention. Anton G. Jackin's Science Policy Making in the United States and the Batavia Accelerator, (Carbondale: South Illinois University Press), 1975; and Sanford Lakoff and Herbert F. York's A Shie in Space? Technology, Politics and the Strategic Defence Initiative, (Berkley: University of California Press), 1992, offer particularly useful descriptions of the role in the political decision making process held by the American scientific and technological community.

CONCLUSION

As I am sure this work has made abundantly clear, the study of Canadian science fiction is in its infancy. All that has been accomplished here is a provisional placement of Canadian SF within critical categories developed by critics of the genre as it is practised world wide, and some suggestion of possible connections between the patterns evident in science fiction produced by Canadians and the manifestation of science and technology in other areas of the Canadian experience. Much remains to be accomplished before we can claim to have an adequate understanding of how the genre of science fiction has been interpreted by Canadian writers.

Perhaps the most obvious omission from this study is science fiction written by French-speaking Canadians. While this omission was unavoidable -- both the limited length of this work and the linguistic limitations of the author prevent its inclusion -- it is an area that clearly needs to be addressed. This is especially true, given that Quebec culture resisted American-inspired modernism much more adamantly than is true of anglophone Canada, and that its final acceptance of modernism occurred almost instantaneously.

There is a substantial literature examining the relationship of technological development to the rise of Quebecois nationalism. Edouard Cloutier's review of this literature suggests that the Quiet Revolution was accompanied, or was caused by, or caused, a significant reversal in the Quebecois perception of technology. Prior to the early-1960s, technology was seen as a threat to the traditional Roman Catholic, agrarian Quebecois lifestyle. Around 1963, however, this perception was

reversed and technological development became seen as a means of restoring or reinforcing French-Canadian culture. It has been argued that "technological change . . . somersaulted French Canada from a pre-liberal to a post-liberal outlook in too short a time to permit smooth social adjustments." (Cloutier 151). Quebec's Quiet Revolution may be interpreted as the most dramatic example of the abrupt change from pre-modern to post-modern perspectives that characterizes Canadian history as whole.

Attempting to situate French-Canadian SF in the typologies established for the genre world-wide is an important next step in clarifying the dynamics of this genre in Canada. A brief examination of two of the most important recent works of Quebecois science fiction indicates that these works share the tendency of Gibson and Atwood to interrogate the nature of truth. Elisabeth Vonarburg's celebrated La silence de la cité was translated by Jane Brierly as The Silent City in 1988. This work has been called a significant contribution to the "current trend in feminist SF: a movement away from female separation toward a vision of the sexually integrated society." (Ketterer 157) It is also a (somewhat overly didactic) examination of the problematic nature of truth in the post-modern world. Esther Rochon's Le Coquillage (translated by David Lobdell as The Shell) must be considered more radically subversive of traditional concepts of reality than anything produced by the English-speaking writers considered in this study. Although critics have tended to treat this work as science fiction (see Ketterer's "The Shell, an Exquisite Monstrosity"), it has obvious affiliations with the offshoot of SF that has been called magical realism. The work provides no scientific rationale for the existence of

the telepathic creature that lives beneath the shell, nor for a small village's acceptance of a house-sized shell on an island in the St. Lawrence. The episodes in which the main human character makes love to the monster border on the surreal. It appears the reader is expected to accept these incidents at face value, without appealing to science for domestication of these elements. Le Coquillage might be more profitably treated as an "oxymoronic form" in which "the imaginary and actual, the magical and the prosaic, the mythical and the scientific, meet and interanimate," (Malmgren 156) than as a work of science fiction proper. If Colombo's brief analysis may be trusted, earlier works of Quebecois science fiction and fantasy are characterized by a comparable blend of "supernatural and folkloristic elements." (2) A more adequate understanding of Canadian science fiction requires a detailed examination of how these elements are grounded in "science" in French-Canadian science fiction.

Both the strength and limitations of this study derive from its attempt to place English-language Canadian SF in the genre of science fiction as it has developed globally. Examining Canadian science fiction as one part of the larger genre allowed the use of previously established critical typologies. As I argued earlier, this approach to Canadian SF circumvents the expectation of many critics that a characteristic of Canadian literature be "uniquely Canadian" to be of importance. The unfortunate corollary to this claim is that any "uniquely Canadian" element would necessarily be overlooked by this study. The typologies of Rose, Malmgren and Biezenski were developed as tools for the examination of the global genre, and thus identify common patterns in the mainstream of science fiction. Until William Gibson's

commercial success. English-language Canadian SF was not a major influence in the mainstream of science fiction as a whole. As long as French-language Canadian SF remains written in the french language it is questionable whether it will ever contribute directly to the mainstream of the genre. The critical "tools" employed in this study were developed to detect patterns that may be absent from Canadian SF, or that may be of lesser importance to the genre as it is practised by Canadian writers than to the global genre. Indeed, the typological cohesiveness of Canadian SF suggests that a different dynamic may operate in works of SF produced in this country than is true of works produced elsewhere in the world. Identification of any uniquely Canadian science fiction dynamic would require critical tools developed through an examination of the patterns inherent in the Canadian genre, not the genre world wide. In other words, it would require a prolonged meditation on the patterns in Canadian SF analagous to that undertaken by Margaret Atwood in Survival, (which, for all of its flaws, attempts to identify Canadian motifs, rather than "wondering why nothing it examines is the Canadian Moby Dick."(Survival 23)) Clearly a comparable study of Canadian SF would require a critical effort of a much larger size and scale than that which this work attempts.

Finally, much remains to be accomplished in order to place Canadian science fiction within its proper context. Although I have attempted a few brief remarks to this end, there clearly remains a need to understand the ways in which Canadian SF parallels (or does not parallel) the treatment of science and technology in other areas of Canadian life. For example, industrialization took place at different times and to differing extents in different regions of this country.

Has this resulted in regional variations in Canadian science fiction? Would an historical comparison of expenditures on research and development and the evolution of the SF genre in this country confirm a relationship between the two? In his examination of innovation in Canada, J. J. Brown divides the history of Canadian inventions into ten (sometimes overlapping) "ages." Does the prevalence or thematic preoccupation of Canadian science fiction change in parallel with these "ages?" If so, by what social mechanism are these two dimensions of Canadian life connected? It is by drawing connections between disparate elements of the Canadian technological experience that we may arrive at a fuller understanding of the dynamics of technology in this country. In overlooking Canadian SF, the Canadian critical community risks overlooking a rich and potentially revelatory dimension of this country's continuing struggle to survive in the "technological dynamo" of the postmodern world.

APPENDIX A: SF THEMES IN CANADIAN LITERATURE

TITLE	THEMATIC CATEGORY
James De Mille's <u>A Strange Manuscript Found in a Copper Cylinder:</u>	Dystopia
Charles G.D. Roberts' <u>In the Morning of Time</u>	Evolutionary fable
Frederick Philip Grove's <u>Consider Her Ways</u>	Ant-society satire
Phyllis Gottlieb's <u>Sunburst</u>	"Mutant-superman" fiction
Margaret Atwood's <u>Handmaid's Tale</u>	Dystopia
William Gibson's <u>Neuromancer</u>	Cyber-punk
Robert C. Wilson's <u>Memory Wire</u>	Cyber-punk
Spider Robinson's <u>Time Pressure</u>	Time-travel SF

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