Negotiating Without Nature:
Multilateral Negotiation of Genetic Engineering Biotechnology
via
the Convention on Biological Diversity
and the Cartagena Protocol on Biosafety

by
Mary Hutcheon

A dissertation submitted to
the Faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of
Doctor of Philosophy

Department of Political Science
Carleton University
Ottawa, Ontario
October, 2006

© copyright
2006, Mary Hutcheon

Library and
Archives Canada

Bibliothèque et
Archives Canada

Published Heritage
Branch

Direction du
Patrimoine de l'édition

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

ISBN: 978-0-494-23292-7

Our file Notre référence

ISBN: 978-0-494-23292-7

NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protègent cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

Canada

Abstract

Genetic manipulation is a controversial novel technology generating widespread debate about its viability to solve problems of biodiversity damage and loss. During negotiation of the Convention on Biological Diversity, 1992 (CBD) biotechnology was presented as a beneficial tool for managing the world's dwindling biological resources. When the Cartagena Protocol on Biosafety, 2000 (CPB) was negotiated, biotechnology was acknowledged for its potential to destabilize the world's natural diversity, despite claims from multinational agribusiness and pharmaceutical firms of continued benefit. Both regimes situate technological development as a solution to biodiversity losses, asserting that horizontal genetic modification is beneficial since its risks can be controlled. Although multilateral environmental negotiation included non-state actors in the regime formation process, perspectives supporting indigenous and other approaches that advocated greater respect for natural limits were dismissed if these perspectives were also resistant to developing economic and technological solutions that would override natural boundaries. The preference for industrial intensification suggests a bias in negotiation practice and theory towards a materialist conception of nature, in which the sole purpose of negotiation is to satisfy interests that promote international state-led economic development.

This dissertation is a critical analysis of contemporary multilateral negotiation practice and theory regarding environmental matters. This dissertation suggests that human relationships to nature are political; therefore, negotiation theory and practice cannot be driven solely by economic or social principles. A unique challenge of multilateral negotiation is its inclusion of a broad spectrum of perspectives; however, nation-states cannot represent nature easily. Nature is multidimensional, mutable and discursive. Furthermore nature is both present and absent from the negotiation table, posing a significant challenge as it is a featured subject without voice and representation autonomous from human association.

The difficulty of nation-state representation of nature at the negotiation table is explored through negotiation of biotechnology at international conferences sponsored by the United Nations Environment Programme (UNEP) from 1987 to 2000. Negotiation as a process of regime formation and public forum decision-making is examined to understand how matters about nature are resolved. Considered herein are ways in which ideas about nature and human relationships influenced the substantive debate during multilateral negotiation.

Acknowledgements

To the trees that house birds and squirrels, all of whom are going about their daily routines and facilitating my attention on what matters. To the birds and squirrels for giving up their homes to print this work. To the trees for sacrificing their life. To the sky, sun and moon for guiding me everyday. To Rita, my mom, who always worried when I wandered off without paying attention to knowing where I was going. To Terry, my dad for whom talking politics is always important. To Uncle George who wanted a book and to Uncle Dennis who showed me how to travel the world. This dissertation is a record of my journey. To my friends who said, "hurry up", it is now done.

Writing this dissertation would have been impossible without finding the proper materials. I am very much indebted to Susan Tudin, librarian at Carleton University for starting me off by surfing through CD ROMs and other bibliographic resources at the very beginning of this project. I also extend much appreciation to Brad Duplisea for providing me with references and source material about Canadian government/industry partnerships involved in biotechnology policy and negotiation. For a peek into the world of grass-roots organizing and resistance to biotechnology, I am forever grateful to the tireless support of people involved in Food Action Ottawa and GeneAction. I am very much grateful to Kiera Ladner for her support by suggesting people to read and hear speak and whose own dissertation challenged my thinking and with it broadened my worldview.

Throughout this project encouragement from friends has kept me working and focused. With much appreciation for your listening, questioning, talking, reading, walking and laughing along with me: Elisabeth Abergel, Khrishna Bera, Matthew Behrens, Frances Colletti, Clayton Dignard, Sheila Donohue, Pam Huber, Marie Huot, Jamie Kneen, Soha Kneen, Mike Kaulbars, Angela Pinchero, Laura Shevchenko, Paul Smith, Vallie Stearns, Mark Stokes, and Rachel Sutton.

My dissertation work was assisted through conference presentations of papers reflecting early conceptual thinking and drafts of chapters. I am thankful for supportive comments and constructive criticism of the papers I presented for several International Studies Association annual conferences, namely Vincent Della Sela, Michael Maniates, Marianne Marchand, Mary Meyer, Lynne Mytelka, V. Spike Peterson, and Deborah Stienstra. Support for conference attendance is much appreciated from Graduate Studies and Research Office, Public Affairs and Management and the Department of Political Science of Carleton University. I am especially grateful to Anna Kim, Valerie Pereboom

and Bonnie Schmidt for your assistance in helping me navigate the administrative maze of life as a university student.

My understanding of negotiation as it matters to environmental, ecological and political circumstances could not have grown without the help of my dissertation committee. Thank you Radha Jhappan whose conversations about biotechnology, native land claims and political resistance challenged my perception; and for introducing me to the work of Vine Deloria Jr. and Ward Churchill, without which I would not have been able to notice what was ignored and dismissed. Thank you Jill Vickers who insisted that I use my own voice to write what matters, so that I would find answers to my questions and with it challenge my assumptions of politics shaped by race, class and gender. Lastly, I am ever so appreciative of my supervisor, Michael Dolan whose patience, encouragement and guidance ensured that my thoughts and ideas were focused on this dissertation; and for providing me the intellectual tools so I could think through my own ideas and questions to investigate negotiation.

Thanks to all of you for sharing generously your thoughts, books, time, enthusiasm, humour and hospitality.

List of Abbreviations and Acronyms

AI	artificial insemination
AIA	advance informed agreement
AIDS	Acquired Immune Deficiency Syndrome
BCH	Biosafety Clearing House, an information exchange, CPB, Article 20.
BCSD	Business Council for Sustainable Development, during Rio Summit, now WBCSD – World Business Council for Sustainable Development.
BIO	Biotechnology Industry Organization
BSWG	Open-ended Ad Hoc Working Group on Biosafety, negotiating body of Cartagena Protocol
Bt	<i>bacillus thuringiensis</i>
CBAC	Canadian Biotechnology Advisory Committee
CANZ	Canada, Australia and New Zealand, nation-state delegate coalition
CBD	Convention on Biological Diversity, 1992
CEE	Central Eastern Europeans
CEOs	Chief Executive Officers
CG	Contact Group
CGRFA	Commission on Genetic Resources for Food and Agriculture, formerly CPGR – Commission on Plant Genetic Resources, FAO
CITES	Convention on International Trade in Endangered Species of Fauna and Flora (WTO)
CoP	Conference of the Parties, meetings of nation/states that ratified the Convention on Biological Diversity
CPB	Cartagena Protocol on Biosafety, 2000
CSO	Commission on Sustainable Development
DNA	deoxyribonucleic acid
ENB	Earth Negotiation Bulletin
ETC	erosion, technology, concentration, formerly RAFI – Rural Advancement Foundation International
EU	European Union, formerly European Commission (UNCED meetings)
FAO	United Nations Food and Agriculture Organization
G7, G8	Group of 7, then 8 nation-states, representing the largest industrialized economies, includes Canada, France, Germany, Italy, Japan, Russia, United Kingdom and United States of America.
G77	Group of 77, bloc of African, Asian, and Central & South American states, sometimes includes China
GATT	General Agreement on Tariffs and Trade
GE	genetic engineering, also GM, genetic modification, or transgenic/gene transfer technology
GEF	General Environment Facility
GIC	Global Industry Coalition
GM	genetic modification / genetically modified
GMO	genetically modified organism, also referred to as LMO – living modified organism
GRAIN	Genetic Resources Action International

GRULAC	Latin American and Caribbean Group, nation-state delegate coalition
GURT	genetic use restriction technology, also known as terminator technology
ICCP	Intergovernmental Committee for the Cartagena Protocol, disbanded after formation of MoP
IIED	International Institute for Environment and Development
IMF	International Monetary Fund
INC	Intergovernmental Negotiating Committee, negotiating body of CBD text, separate from Working Group I of UNCED on biodiversity and biotechnology, negotiating body of chapters 15 and 16 of Agenda 21.
IISD	International Institute Sustainable Development
IO	international organizations
IPR	intellectual property rights
IR	international relations
IUCN	World Conservation Union, formerly International Union for the Conservation of Nature
JUSSCANNZ	Japan, US, Switzerland, Canada, Australia, New Zealand and Norway, nation-state delegate coalition
LMO	living modified organism, also referred to as GMO – genetically modified organism, or GEO – genetically engineered organism
LMO-FFP	LMO commodities: food, feed and for processing. Noted in the CPB, Article 11
MoP	Members of the Protocol, meeting body of nation/states that ratified the CPB
NGO	non-governmental organization, also INGO/ENGO for international/environmental NGOs
OECD	Organization for Economic Cooperation and Development
OCG	Open-ended Contact Groups
PIC	prior informed consent
PrepCom	Preparatory Committee, multilateral sessions leading to the Rio Summit, noted also, PC-#
RAM	Risk Assessment Management
R&D	research and development
rBST/rBGH	recombinant bovine somatotrophin/recombinant bovine growth hormone
rDNA	recombinant deoxyribonucleic acid
RNA	ribonucleic acid
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice, CBD
SIDS	Small Island Developing States
SPS	Sanitary and Phytosanitary Agreement
SWG	Sub-Working Groups
TEK	Traditional Environmental Knowledge, means traditional Aboriginal knowledge
TRIPs	Trade Related Aspects of Intellectual Property Rights (WTO)
TWN	Third World Network
UNCED	United Nations Convention on Environment and Development, also known as Rio Summit or Earth Summit
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organization

UNEP	United Nations Environment Programme
WCED	World Commission on Environment and Development
WEN	Women's Environmental Network
WHO	World Health Organization
WRI	World Resources Institute
WTO	World Trade Organization
WWF	World Wildlife Federation

Multilateral Negotiation Periods

Early Negotiations

United Nations Convention on Environment and Development – Rio/Earth Summit

PrepCom/PC-1	August 1990	Nairobi, Kenya
PC-II	March 1991	Geneva, Switzerland
PC-III	August 1991	Geneva, Switzerland*
PC-IV	March 1992	New York City, USA [†]
Earth Summit	June 1992	Rio de Janeiro, Brazil

* negotiation phase begins

[†] biotechnology and biodiversity group begins negotiation

Interim Negotiations

Conference of the Parties, Convention on Biological Diversity – COP

COP-1	28 Nov – 9 Dec 1994	Madrid Spain
COP-2	6-17 Nov 1995	Jakarta, Indonesia

Biosafety Talks

Open-Ended Ad Hoc Working Group on Biosafety – BSWG

BSWG-1	22-26 July 1996	Aarhus, Denmark
COP-3	4-15 Nov 1996	Buenos Aires, Argentina
BSWG-2	12-16 May 1997	Montreal, Canada
BSWG-3	13-17 October 1997	Montreal, Canada
BSWG-4	5-13 February 1998	Montreal, Canada*
COP-4	4-15 May 1998	Bratislava, Slovakia
BSWG-5	17-28 August 1998	Montreal, Canada
BSWG-6	14-22 February 1999	Cartagena de Indias, Columbia
ExCOP	22-23 February 1999	Cartagena de Indias, Columbia
Informal sessions	July 1999 September 1999 January 2000	Montreal, Canada Vienna, Austria Montreal, Canada
Resumed ExCOP	24-28 January 2000	Montreal, Canada
COP-5	15-26 May 2000	Nairobi, Kenya

* negotiation phase begins

Table of Contents

Abstract	ii
Acknowledgements	iii
List of Abbreviations and Acronyms	v
Multilateral Negotiation Periods	viii
List of Tables	xii
 One: Negotiation Without Nature	
I. Negotiating Without Nature	1
II. The Question of Representing Nature	6
III. Addressing conquest and colonialism	7
IV. Listening to Nature's Voice and Seeing Other Selves	15
V. Propositioning Nature	20
VI. The Matter of Negotiation	23
 Two: Listening and Speaking to Nature	
Listening, Speaking, Writing: A departure	32
I. Correspondence With Nature	39
A. Ecological Critique of Anthropocentric Conquest of Nature	39
B. Indigenist Critique of Western Politics: a Matter of Ecocide and Genocide	55
1. Theorizing Colonialism	58
2. Resistance to Colonialism	64
3. Decolonizing Colonialism	65
C. Negotiation as Correspondence	73
II. Listening: Transforming Relations	75
A. Political Relations Like No Other	75
B. Listening To Nature	76
C. Hearing Silenced Expressions	78
III. Speaking: Resistance to Monoculture	81
A. Speaking to, for and about Nature	81
B. Willing to Negotiate, Unwilling to Assimilate	88
IV. Writing – The Problem of Anthropocentric Authority	93
 Three: The Problem of the Nature Question	
The Problem of the Nature Question	96
I. Negotiation: Action, Process and Substance	99
A. A general understanding about negotiation	99
B. Negotiation and Conflict	103
II. Negotiation Theories	107
A. Negotiation as Collective Decision-Making	108
1. Purpose and Context of a Collaborative Approach	109
2. Conflict Scenario and Expected Outcome of Negotiations	114
B. Negotiation as Social Actor Representation	117
1. Actor status and the problem of representation	118
2. Representation: access and authority	121

C. Negotiation as Anthropocentric	126
1. Uniqueness of Environment Conflict	127
2. The Environment Question	136
III. The Nature Question	138
Four: The Matter of Negotiation	
The Matter of Negotiation	145
I. Early Negotiation Period 1987-1992	155
A. Organizational Matters – parallel process	155
1. Earth Summit	157
2. Intergovernmental Negotiation	160
B. Negotiating Matters – towards a framework	165
C. Biotechnology Matters – from GMO to LMO	168
D. Matters of Assessment and Regulation – the novelty of AIA	173
E. The Matter of Conserving Biodiversity through Biotechnology	178
II. Interim Negotiation Period 1993-1995	185
A. What's the Matter with Biotechnology? – from solution to problem	185
1. The Question of 'Biosafety'	188
III. Biosafety Talks 1996-2000	195
A. Negotiating Biosafety	196
B. Biosafety Matters – compromise and acceptance	203
1. Definitions – deciphering intent	203
2. AIA Regulations – relevant categories of GMOs	207
3. Mandate – overall purpose and scope of the protocol	209
Savings Clause	210
Precaution	212
IV. Negotiating Biosafety	215
Five: Propositioning Nature	
Propositioning Nature	220
I. Matters of Negotiating Biotechnology	224
A. New or Old Technology	224
1. New, but – Same Old, Same As	225
2. New, but how	229
B. New, Different and Distinct –	
Unraveling a thousand year old mystery since 1953	230
1. Towards a Different Definition	231
2. Holistic Subtext Revealed	235
C. Revolution – transforming life by altering DNA sequences	238
1. Celebratory Promotion	242
2. Cautious Management	245
3. Suspicious Resistance	247
D. Purpose – the matter of technologically bypassing Nature	254
1. Technological Fixes	255
2. Reliance on Diversity instead of Technology –	
a subtext of resistance	261

II. Where is Nature?	265
Six: Towards Ecological Negotiation	
I. Negotiation Without Nature	272
II. What is in Conflict?	277
III. Two Negotiating Discourses	282
IV. Propositioning Nature	285
 Appendices	
A: Mainstream Negotiation Frameworks	288
B: Chronology of Biological Discovery and Political Events	289
C: Matters During Multilateral Negotiations	291
D: Negotiation Blocs During Biosafety Talks	297
E: Selected List of Organizations	298
F: Parties to the Convention on Biological Diversity and Cartagena Protocol on Biosafety	300
G: Negotiating Biotechnology – Four Propositions	304
 Bibliography	308

List of Tables

Mainstream Negotiation Frameworks:

Table 1 – Purpose and Expectations	109
Table 2 – Actor Representation within Conflict Scenario	118
Table 3 – Human Relationships to Nature	126

Multilateral Negotiations:

Table 4 – Three Periods of Multilateral Negotiation	151
Table 5 – Early Negotiation Period – Parallel sessions of UNCED and INC	156
Table 6 – Interim Negotiation Period – Organizing for a Biosafety Protocol	186
Table 7 – Interim Negotiation Period – Biosafety Positions	188
Table 8 – Negotiation Blocs During Biosafety Talks	198
Table 9 – Highlights of Biosafety Talks	202
Table 10 – Range of Options for a Biosafety Protocol	204

Negotiating Biotechnology – Four Propositions

Table 11 – Is GE biotechnology new, or the same as other technologies?	225
Table 12 – Distinguishing ‘modern’ from ‘traditional’ technology	231
Table 13 – How is GE biotechnology Revolutionary?	241
Table 14 – Is GE biotechnology a solution or a problem?	255

The Convention on Biological Diversity was inspired by the world community's growing commitment to sustainable development. It represents a dramatic step forward in the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources.¹

The [Biosafety] Protocol thus creates an enabling environment for the environmentally sound application of biotechnology, making it possible to derive maximum benefit from the potential that biotechnology has to offer, while minimizing the possible risks to the environment and to human health.²

It is not possible to overestimate the damage this [objectification] does to the potential relationship. Ask the Indians encountered by the colonists. Ask the Africans enslaved. As we enjoy the comforts and elegancies our way of life affords, and as we stand amidst the embers of a smoldering and dying planet, we should ask ourselves, too, what this systematic objectification costs – not only them, but us.³

Negotiating without Nature

Negotiation of international environmental regimes has not been effective in stopping humanity's destruction and plunder of nature.⁴ While delegates met at the 2002 World Summit on Sustainable Development in Johannesburg, South Africa, this "Rio Plus Ten" gathering faced a dismal record of international cooperation: the concerns of this summit were the same as those reported ten years ago at 1992 United Nations

¹ CBD Secretariat (2003) *Convention on Biological Diversity*, introduction to regime text, Montreal: CBD Secretariat, p 1.

² CBD Secretariat (2000) *Cartagena Protocol on Biosafety to the Convention on Biological Diversity*, introduction to protocol text, Montreal: CBD Secretariat, p 1

³ Jensen, Derrick (2002) *The Culture of Make Believe*, NY: Context Books, p223.

⁴ Chatterjee, Pratap and Matthias Finger (1994) *The Earth Brokers, power, politics and world development*, London: Routledge, p2; Conca, Ken and Geoffrey Dabelko (1998) "Institutions as though the Earth Mattered" in *Green Planet Blues, Environmental Politics from Stockholm to Kyoto*, Conca, Ken and Geoffrey Dabelko, eds, Boulder: Westview, p171; Susskind, Lawrence (1994) *Environmental Diplomacy*, NY: Oxford U. Press, p6 and Tokar, Brian (1997) *Earth for Sale, reclaiming ecology in the Age of Corporate Greenwash*, Boston: South End Press, p iix.

Conference on Environment and Development (UNCED – Earth Summit or Rio Summit).⁵

Multilateral environmental negotiation in its legacy of regime formation suggests more than ineffectiveness. It reveals that: a) destruction and plunder around the world are interrelated and getting worse;⁶ b) there is an almost exclusive reliance on science and technology to solve problems even though these contributions are noted for exacerbating current and emerging crises;⁷ c) regimes present ironic outcomes, in which natural resources are managed according to requirements of globalizing capital markets, which consequently increase the rate of consumption rapidly instead of conserving the habitats and life of animals and plants as well as air, water and land;⁸ d) multilateral environmental negotiation is part of an international governance system that centralizes authority within the nation-state, guided by an elite cadre of experts from multilateral institutions and non-governmental organizations (NGOs);⁹ and e) as multilateral summits continue to produce agreements outlining objectives and procedures, debates about the

⁵ Barker, Debi (2002) "Business as Usual", *Tikkun*, Vol.17, #4, 2002, p21; Desai, Nitin (2002) "Neither 'Davos Man' nor 'Porto Alegre Protester'", *NPQ – New Perspectives Quarterly*, Vol. 19, #3, Summer, 2002, p6; Sachs, Wolfgang (2001) *Rio+10 and the North South Divide*, Berlin, Heinrich Boll Foundation, www.worldsummit2002.de; Vidal John (2002) "Some yawn, some hope, some rage, some despair. The Summit goes on", *The Guardian*, August 31, 2002.

⁶ Conca, Ken and Geoffrey Dabelko (1998) "Twenty-five Years of Global Environmental Politics", *Green Planet Blues*, *op.cit.*, p10; Tokar, Brian (1997) *op.cit.*, p 4.

⁷ Baron, Lois, ed. (2003) *Editors' and Reporters' Guide to Biotechnology*, Washington DC: BIO, p 63 and 91, pdf file, BiotechGuide, www.bio.org; Ho, Mae-Wan (1999) "Why genetic engineering is hazardous", *Third World Resurgence*, April/May 1999, #104/105, p 22; UNEP (1999) *Agenda 21*, Chapter 16, "Environmentally Sound Management of Biotechnology", 16.1, www.un.org/esa/sustdev/agenda21.htm; Pirages, Dennis (1998) "Global Technopolitics", *Green Planet Blues*, *op.cit.*; p98; and Sachs, Wolfgang (1999) *Planet Dialectics*, Halifax: Fernwood Publishing/Zed Books, p13.

⁸ Chatterjee, Pratap and Matthias Finger (1994) *op.cit.*, p3. Lele, Sharachchandra (1998) "Sustainable Development: A Critical Review", *Green Planet Blues*, *op.cit.*, p247.

⁹ Susskind, Lawrence (1994) *op.cit.*, p 6 and 11.

declining biosphere have yet to translate into a consensus about what to do, except to realize that the responsibility lies within humanity to change itself.¹⁰

Apocalyptic presentations notwithstanding, the problems with multilateral environmental negotiation are numerous. As humanity is responsible for destruction and plunder, we are obligated to change our actions. Multilateral environmental negotiation is crisis management, intent on solving problems of the human condition. Because 'we' are responsible for creating this mess, 'we' are obligated to get 'us' out of this situation.

The idea about human responsibility and obligation reveals just as much as it hides. Regime language objectifies nature, which rhetorically separates it from people.¹¹ Negotiation theory and practice treat nature as a material substance, whether it is a source of life or an economic and scientific resource. Nature is re-presented as "ecosystems", "biological resources", "natural habitats", "genetic resources" and "biological diversity" in need of human protection, human conservation, human stewardship and human intervention. Equally, words obscure the diversity of human activity, referring to people's collective action performed by, for example, as the "nation-state", the "world's community", "corporation", "industry", or "humankind". These presentations replay humanist assumptions that cast universal (hu)mankind as being separate and superior to nature, and in doing so "we" can create and control nature to suit ourselves.

Nation-state motives to negotiate involve concerns about the well-being of nature that is separate from humanity: "In [*r*]ecognizing *also* the crucial importance to

¹⁰ Conca, Ken and Geoffrey Dabelko (1998) "Twenty-five Years of Global Environmental Politics", *op.cit.*, p10.

¹¹ CBD (1992) and Cartagena Protocol (2000), note word usage in preamble and objectives sections of regime texts.

humankind of centres of origin and centres of genetic diversity.”¹² This statement quoted from the Cartagena Protocol on Biosafety (CPB) reflects a belief that nature exists for humankind, that its evolution is necessary for human development and reproduction. Absent from this depiction is the role that collective human responses, as in the case of multilateral negotiation, play in nature’s evolution. Perhaps the interaction between humans and nature has multiple power relations, which are dismissed or ignored, therefore are not being represented during negotiation. According to the Convention on Biological Diversity (CBD) from which the CPB derived, these interests reflect that “contracting parties” have been “[c]oncerned that biological diversity is being significantly reduced by certain human activities.”¹³ These statements illustrate that relationships between humans and nature are interwoven, but as an international convention each nation-state has political authority to decide on matters concerning ‘biological’ and ‘genetic’ diversity. Nation-states’ interests and authority may also extend beyond their geographical territory. These statements indicate to me that anthropocentric ideology has not been deliberated fully because dominant perspectives have remained oblivious to the impact of human authority over nature. Anthropocentric ideology accepts that nature can be cultivated according to ‘our’ viewpoint, yet its premise ignores the possibility of diverse human experience and relations with nature that would inhibit human authority to appropriate and exploit nature. What are the “certain activities” which cause “significant reduction” of nature’s diversity? If ‘we’ humans are part of nature, but separate, why is political authority entirely located in nation-states? Nation-states have authority to regulate human activity, yet nation-states also seek to

¹² Cartagena Protocol (2000) preamble, item 7, emphasis in text.

¹³ CBD (1992) preamble, item 6, emphasis in text.

regulate nature. While people generally manipulate their natural surroundings, plants, animals, climate and other natural phenomenon are known to alter the environments in which they exist. If nature, in its diverse elements and living forms, can alter, create and destroy, why assume that nation-states have political authority to govern nature?

Nature's discursive existence makes it a featured subject at the negotiating table but without a voice that is autonomous from representations based on human expectations, values and will. Negotiation is an exclusively human communicative activity in which nature is both absent and present. Mainstream negotiation theories on these matters are almost entirely focused on humanist viewpoints, which I say are anthropocentric. Accordingly nature can only be known, experienced, valued and presented through westernized and modern human experience and discourse. Since social and political relations are mediated through multiple and mutable lens, constructed through political struggles, however, representations of nature within multilateral negotiation theory and practice are shaped by the west's dominance internationally and within nation-states by elitism, racism and sexism. This dominant perspective presents nature as a useful resource for nation-states' economy and the foundation of human survival. My understanding of this political condition gives rise to my wish to explore human relationships with nature in which nature is assumed to be equal and kin to people rather than apart from nature. These eco-centric perspectives reject anthropocentric superiority as narrow in its perspective. They recognize that nature is not entirely socially constructed for which there will always be some limitation to people's views and understandings of nature, environments and relations with other forms of life. Their

existence shows that anthropocentric ideology is not the only way to ‘know’ nature.

Human representation of nature during negotiation is a conundrum.

The Question of Representing Nature

The central question of this thesis is how human relationships to nature influence multilateral environmental negotiation. In order to understand how multilateral negotiation affirms anthropocentric ideology I explore how different representations of nature shape the negotiation process, which ideas receive attention, which perspectives are dismissed and which viewpoints are appropriated into the mainstream. I explore how ecological and environmental issues are framed and deliberated during multilateral negotiations, which are meant to make treaties that protect and conserve the world’s biodiversity. In particular, I explore different ontological ideas about human/nature relationships to examine why multilateral environmental negotiation in the current international system is ineffective in protecting biodiversity against technological intervention and manipulation of nature. I explore the connection between genetic engineering (GE) biotechnology and biological diversity (biodiversity) to provide a concrete site for my investigation.¹⁴ During the Rio Summit, GE biotechnology was presented as a technical solution that would help conserve and enhance biological diversity. The ensuing controversy and later negotiations of the CPB, shows that reliance on the ‘technological fix’ traps negotiators into a cycle of having to solve problems

¹⁴ The terms ‘genetic engineering’ (GE) and ‘transgenic’ are used herein interchangeably to refer to biotechnology processes that bypass natural barriers in order to change genetic sequences. Regime texts refer to this as ‘modern biotechnology’. I understand that traditional methods are different from biotechnology in both technique and philosophy. ‘Biotechnology’ is a recent term, joining the words, ‘biology’ and ‘technology’ to denote scientific and technical approaches that use genes, genetic material, enzymes and proteins to facilitate reproduction and replication of living plants and animals (including

caused by technological innovation by introducing newer kinds of technologies. The technological trap is illustrated by the fact that technology's effect on the environment is different from its intended purpose to conserve biodiversity. Technological solutions have not protected the world's biological endowment from negative consequences of economic development. Technological innovation is an aspect of economic development rather than a feature of ecological sustainability. My exploration of nature's representation during multilateral negotiations is meant to examine how eco-centric perspectives challenge anthropocentric reliance on technology, refuting it as a primary solution to biodiversity loss.

Addressing conquest and colonialism

I argue that multilateral negotiation fora do not explore sufficiently people's relationship with nature. Modern western preoccupations with conquering nature and colonizing its creative abilities are central political norms in multilateral environmental negotiation. Negotiations presume a dichotomy between humans and nature, so nature is represented as a physical source of wealth and innovation necessary for people's lives and administered through networks of multinational trade and commerce. Furthermore, anthropocentric ideology appropriates erroneous views about interconnectedness while dismissing ideas that threaten to undermine norms of human control and domination over nature.

Multilateral environmental negotiations do not recognize the history of conquest and colonialism as contributing factors to biodiversity loss. The focus on technical

people). The definition and implications of 'biotechnology' are the subject of intense debate during multilateral negotiations.

solutions to protect and conserve natural resources makes it difficult to explore nation-states' history of colonialism and conquest against nature. Industrialized nation-states' support of technological innovation and economic rules to conserve and protect 'natural environments' focus attention on the benefits of cultivating 'natural resources' and its contribution to nation-states' economy. This focus shifts attention away from exposing industrialized nation-states' role in destroying people's relationships from the land and indigenous people's contribution to the stability and well-being of society. Dismissal of the plunder and forced removal of peoples from the land occurs when corporate and scientific ventures are implemented. This closes the possibility of addressing (hu)mankind's conquest of nature as a cause of world-wide destruction and plunder. Humanist motivations as the sole authoritative representation of nature obscure its will to control and dictate the course of nature including appropriating the creative and reproductive processes of nature. This willingness to control nature fosters development of technologies that usurp reproductive capacity and bypass limits established within nature's creative processes. Furthermore, nation-state appropriation of gender and animist (non-western) perspectives, particularly of those who are resisting conquest and colonialism, undermines attempts to reconcile (hu)mankind's separation from nature, thereby foreclosing exploration of peaceable relations among all living beings.

Multilateral environmental negotiations suggest inclusion of many perspectives among the world's peoples to stop environmental destruction, but this diversity of views has yet to withstand norms central to anthropocentric/humanist ideology that situate intellectual property rights (IPRs) and commodity exchange as protections against excessive consumption of natural resources. Nation-states try to avert environmental

disaster and so accept research of new technologies proposed as ‘solutions’ by multinational entrepreneurs and their scientific partners. This replays the human objectification of nature and perpetuates human subjugation and usurpation of nature’s creative diversity. In negotiation of both CBD and CPB biodiversity (nature) was cited as both source and product of GE biotechnology, obfuscating how biodiversity is to be protected and conserved. Genetic matter found in plants and animals is treated as a source for greater technological innovation, while transgenic alteration is framed as an enhancement of biodiversity. On one hand, biodiversity is an adequate primary source for GE biotechnology, while on the other hand, biodiversity is inadequate, necessitating the help of GE biotechnology to create novel organisms and genetic constructs.

To make my case, I conducted a discourse analysis of debates about GE biotechnology focusing on the rationale that linked biotechnology to conservation and protection of biological diversity (biodiversity). The CPB negotiations were about the safety of GE biotechnology vis-à-vis its potential contamination of biological species, which threatened reduction of biodiversity. Therefore, although I focus on negotiations of the CPB, I also show how these talks were framed by prior regimes, namely the CBD and *Agenda 21*.

Concerns about GE biotechnology began in 1953 when James Watson, Francis Crick, Maurice Wilkins and Rosalind Franklin revealed their ‘discovery’ of the deoxyribonucleic acid (DNA) molecule and its structure, followed by the 1973 invention of a genetic construct by Stanley Cohen and Herbert Boyer.¹⁵ While biotechnology

¹⁵ James Watson and Francis Crick did not cite Rosalind Franklin’s work in their initial paper, even though her work was a crucial element in completing their model of the structure of the DNA molecule. The Nobel Prize rules forbid posthumous nominations, therefore, Franklin, who died in 1958, was not awarded the prize given, in 1962, to Watson, Crick and Wilkins.

scientists were fascinated by the possibilities of making novel constructs, concerns were raised about people's ability to alter genetic sequences and produce new forms of life using these new scientific methods.¹⁶ During the 1992 Earth Summit, negotiators initiated some regulatory guidance to address medical research that involved gathering DNA samples from people living in remote areas in the South. Concerns arose because indigenous peoples could not protect their rights, knowledge and heritage because corporations had monopoly access to development of genetic resources which was protected by patents granted by governments.¹⁷ Regulatory adjustments were made in the CBD while Rio Summit negotiations adopted *Agenda 21*, specifically chapters, 15 "Conservation of Biological Diversity" and 16 "Environmentally Sound Management of Biotechnology".¹⁸ Drawing upon inadequate regulations cited in the CBD (articles 19(3), 8(g) and 17, multilateral talks were initiated to deal with mounting evidence about negative impacts from GE biotechnology resulting from the introduction of genetically modified plants into the international marketplace. These "biosafety talks" ended in early 2000 with the CPB that regulates transfer, handling and use of genetically altered agricultural products across international borders.

¹⁶ Cooke, Robert (1977) *Improving on Nature, the brave new world of genetic engineering*, NYC: Quadrangle Books, p11; Suzuki, David and Peter Knudtson (1990), *Genethics, the ethics of engineering life*, Toronto: Stoddart, p212.

¹⁷ The term 'indigenous' is problematic because it tends to generalize many distinct groups of people whose experiences with colonialism are different. Other collective terms are also used, such as "Aboriginal", 'Fourth World Peoples', 'Native', and 'People of the Land' to refer to a group of people subjected to the colonization of their land and denied authority concerning their own lives by a colonizing society. 'Indigenous' is also problematic when discussing relations between nation-states, since 'indigenous' may also refer to local peasant or farming communities threatened by industrialization. In this reference, 'indigenous' can also mean people using knowledge and practices traditional to communities in a so-called 'third' world setting. Both meanings of the term 'indigenous' are sometimes used interchangeably and without clarification in critical ecology literature. For purposes of clarification, I will use the term 'Aboriginal' or 'Aboriginal Peoples' to refer to indigenous peoples in Canada and the US and theorists working within indigenist literature and I will use the term 'indigenous' to refer to peasants living in a 'third world setting'. Factual reference regarding 'concerns' from Chatterjee, Pratap and Matthias Finger (1994) *op.cit.*, p43.

The controversy about genetic manipulation extends beyond multilateral fora, formation of regimes and scientific discovery and invention. As I write, GE biotechnology remains controversial and mostly unregulated. Although the European Union (EU) and Japan have stronger rules than Canada or the US, overall nation-state regulatory attention is piecemeal and weak and generally pertains to monitoring the introduction of GMOs in the food system and laboratory procedures.¹⁹ Research proceeds in agricultural, pharmaceutical, veterinarian and other industrial sectors, supported by private and public investments primarily geared to expand industrial markets. Social movements organized against the industrial/technical intensification in production of foods, medicines and other basic needs. Opposition to GE biotechnology has led to boycotts of processed foods and industrial agriculture and consumer support campaigns (buycotts) for locally grown organic foods. Resistance first appeared, during the late 1980s, in newly industrializing states in the South in opposition to the use of patents credited to scientists gathering DNA samples from indigenous people in the South.²⁰ During the mid 1990s opposition spread to industrialized states when farmers experienced problems with recombinant bovine growth hormone (rbGH) and genetically modified seeds.²¹ Resistance varies throughout the world: for example, resistance is stronger in Europe than in Canada or the US and European campaigns were successful in

¹⁸ Holmberg, Johan, Koy Thomson and Lloyd Timberlake (1993) *Facing the Future*, London: Earthscan Publications and IIED p20.

¹⁹ Examples of opposition and promotion of GE biotechnology can still be found on websites and other information material from major industry, university and environmental NGOs. For insufficient regulation, see Boyens, Ingeborg (2000) *Unnatural Harvest*, Toronto: Doubleday Canada, p114, 207-210; Falkner, Robert (2000) "Regulating biotech trade: The Cartagena Protocol on Biosafety", *International Affairs*, Vol 76, #2, p301

²⁰ Shiva, Vandana (1993) *Monocultures of the Mind*, Penang: Zed Books and Third World Network (TWN), p95-131 and Shiva, Vandana (1997) *Biopiracy, The Plunder of Nature and Knowledge*, Toronto: Between the Lines, p56 and 125.

stopping the introduction of some GMO crops from entering the food system.²² More radical critics argued that multilateral and nation-state institutions have failed to address conquest and colonialism adequately as factors in ecocide.²³

I use the Cartagena Protocol (CPB) and the Biodiversity Convention (CBD) regimes as examples of the failure of multilateral environmental negotiation to elaborate fully on human relationships to nature. The CBD and CPB regime texts, as negotiated documents, are my primary sources. These regimes were written in a collaborative process, designed to facilitate cooperation among nation-states. Therefore, I suspect the text reflects nation-states' interests and the views of people who sought to influence the outcome of multilateral negotiations. Human relationships to nature are complex, discursive and challenging. This suggests to me that environmental negotiation is unable to resolve conflicts because negotiation theory focuses on the material utility for people and nation-states. I argue that human relationships can be a site to explore a broader context (other than material utility for humans and the nation-state) so that formal multilateral negotiation moves away from elite-based decision making among dominant nation-states towards a consensus decision-making that includes eco-centric and animist perspectives. The practice of multilateral environmental negotiation assumes that nation-states have the authority to control nature and the ability to deal with the consequences of modifying nature according to the conditions set by nation-states. Since negotiation

²¹ Anderson, Luke (1999) *Genetic Engineering, Food and Our Environment*, White River Junction: Chelsea Green, p105-114; Kneen, Brewster (1999) *Farmageddon*, Gabriola Is: New Society Publishers, p90-91.

²² Anderson, *ibid*, p118-119 and Boyens, Ingeborg (2000) *Unnatural Harvest*, Toronto: Doubleday, p247-258.

²³ *Cultivating a moral Landscape* (2001) Food Not Lawns: Montreal, Vol 1, January 2001; de Moral, Andrea, Foelsche Arthur and Erin Royster (2000) *The Plunders of Biotechnology*, Third Nature Press, Plainfield; Peoples Global Action (1998) "Peoples' Global Action Manifesto" and "Hallmarks of the

focuses entirely on the material distribution of natural resources, issues are framed as trade related matters that will be addressed through economic rules and technological development. I also draw on materials published and distributed by those I call 'promoters', 'managers' and 'resisters', to provide as full an account of negotiations as possible. To research the multilateral negotiation process, I relied on publicly accessible documents from three major sources: the Secretariat of the CBD²⁴; the Earth Negotiation Bulletin (ENB)²⁵ and post-negotiation reviews by the International Institute for Environment and Development (IIED)²⁶, the International Union for the Conservation of Nature, now called World Conservation Union (IUCN) and the World Wildlife Federation (WWF).²⁷ I also track the debate and negotiation process in academic, government and news media sources culled from internet web sites, periodicals, position papers and brochures. I draw on linguistic analytic devices, namely semantics and rhetoric to assist my interpretation, by allowing me to be consistent in my analysis of debates during the negotiation process.

Multilateral negotiations are discursive in practice, yet they privilege modern, western assumptions about conflict, cooperation and knowledge when trying to resolve issues of environmental destruction. Western scientific knowledge predetermines a

Alliance", www.agp.org; Via Campesina (2000) *Biodiversity and Genetic Resources*, Via Campesina III International Conference, www.viacampesina.org/imprimer.php3?id_article=42, p1-5.

²⁴ The Secretariat of the Convention on Biological Diversity, Montreal, PQ oversees both CBD and Cartagena regimes as well as publishing explanatory documents about the regimes and negotiation process. www.biodiv.org

²⁵ The Earth Negotiation Bulletin, provides timely summaries of multilateral environmental negotiation fora as they occur, highlighting main issues, contestations, and general overview of proceedings. It is a subsidiary of International Institute for Sustainable Development (IISD), located in Winnipeg, Man., www.iisd.ca/linkages/.

²⁶ IIED is associated with Earthscan, a publisher specializing in reviews of multilateral environmental regimes.

²⁷ IUCN and WWF are noted as authors of the first draft of the Convention on Biological Diversity. Timothy Swanson, of WWF, has written numerous articles and books on promoting international norms for biodiversity conservation as well as the CBD regime and negotiation process..

human-centred relationship with nature, which assumes human beings can and should have complete control over nature. This privileges voices favoring technological control over nature and silences voices favoring less intrusive ways of engaging with nature, including changes in human behavior and objectives.

Perspectives based on ideas of the interconnectedness and fragile connection between people and nature are more reluctant to support technologies that privilege one form of life, while suppressing others. These voices tend to be silenced during international negotiations except as rhetorical affirmations that do not threaten anthropocentric authority. For example, positions that resist technological solutions are dismissed as uncooperative and against progress, whereas statements that promote technological innovation of nature are supported for contributing to social well-being and human development. Therefore, multilateral environmental negotiations that privilege technological innovation and achievement move away from exploring alternatives based on greater sensitivity to relationships between people and nature, in context to the land in which survival is based.

My argument has two components, first I focus on the negotiation process and second I focus on the controversies surrounding GE biotechnology. Both indicate that there is something more to multilateral negotiation than nation-state delegations meeting with NGOs to settle policy debates and write regimes. My argument about negotiation pinpoints an inclusive, discursive practice that considers both the process of reaching consensus and the substance of debates as these two components foster the final outcome, a regime text that mandates nation-state responsibilities and obligations. Deeper investigation into the controversy surrounding GE biotechnology reveals many arenas of

conflict, different visions, silenced aspirations and growing resistance to industrial control of life, which multilateral negotiation has only just begun to uncover. I argue that NGO participation during multilateral negotiation of environmental issues has not influenced discussion to include viewpoints that challenge mainstream assumptions about human relations to nature, in particular animist perspectives that encourage a close connection to land and non-human life. Non-governmental organizations provide expert knowledge to nation-state delegations or generate public support or critique of specific elements in government policy; therefore participation in multilateral negotiation is marginal to the decision-making authority carried by nation-states. The practice of environmental negotiation remains unaltered except for some discussion about why nature's sustainability is important for the human goals of development, discovery and knowledge. In this analysis I draw upon a theoretical approach described below.

Listening to Nature's Voice and Seeing Other Selves

My theoretical approach has two components. First I locate the connection between political authority to conquer and colonize nature within the western tradition of humanism. I focus on contemporary secularized anthropocentric ideology, which places (hu)mankind at the centre of the world's existence and evolution. I also stress that anthropocentric ideology incorporates masculinist/patriarchal (androcentric) ideas that divide humanity according to sex/gender characterization, and constructs power hierarchically. While (hu)mankind has dominion (control) over others, some also have control within humanity. Second I demonstrate how the humanist tradition limits the multilateral negotiating process by restricting its ability to explore and discuss

assumptions, concerns and values that legitimate the destruction and plunder of nature around the world. I use discourse analysis to develop these two theoretical components. I also explore international relations (IR) literature for its guidance on multilateral environmental negotiation. This reveals the anthropocentric assumptions within IR literature underpinning its ideas about the environment, conflict, cooperation and negotiation. Challenges to human centrality have emerged which assert that human relationships to nature are political and ecological. Generally, ecology is the study of relationships between organisms and their environment; therefore I consider my investigation of human relationships to nature as ecological. For example, political ideas about power and authority are deliberated through anthropocentric and eco-centric expressions about how people (organisms) relate to non-human life and the land on which we all live (environments). To me political ecology is the study of power as it pertains to human relations with nature, which my use of the term 'human relationships with nature' conveys an ecological relationship focusing on the political aspects of these relations. Ecological feminism (or feminist ecology) explores power and authority within modern western discourses about men's and women's associations to nature, paying attention to how ideas about sex/gender legitimate violence, rape and conquest.²⁸

Feminist ecology advocates political associations that situate diversity as an integral

²⁸ See Birkeland, Janis (1993) "Ecofeminism: Linking Theory and Practice," *Ecofeminism, women, animals, nature*, Gaard, Greta, ed., Philadelphia: Temple U Press, p13-59; Griffin, Susan (1978) *Woman and Nature, the roaring insider her*, NYC: Harper & Row; Griffin, Susan (1982) *Made from this Earth, an anthologies of writings by Susan Griffin*, NYC: Harper & Row; Merchant, Carolyn (1980) *The Death of Nature, Women Ecology and the Scientific Revolution*, San Francisco: HarperSanFrancisco; Mills, Patricia Jagentowicz (1996) "Feminism and Ecology: on the Domination of Nature", *Ecological Feminist Philosophies*, Warren, Karen, ed. Bloomington: Indiana U Press, p211-227. R.W. Connell writes of the influence of sex/gender ideas as "gender regimes" in which various forms of femininity and masculinity are constructed and practiced to influence relations between and among males and females in different institutions such as the family, school, and workplace. See Connell, RW (1987) *Gender and Power*, Stanford: Stanford U Press, p120.

feature of nature that also includes people as part of nature.²⁹ For example, Susan Hawthorne (2002) and Vandana Shiva (1997) compare biological and social/cultural contexts in which diversity becomes a focal point from which to discuss multiplicity, complexity, adaptability and resiliency as ways to live with nature. In respect to political struggles, diversity is a means by which to challenge state and corporate control of reproduction, namely the technical intensification in agriculture and women's fertility.³⁰

A second source is indigenist scholarship, which situates itself in resistance to western orthodoxy. Indigenist literature reasserts a longstanding goal for political determination aided by intimate and spiritual connection to the land, a relationship based on animist philosophy. Aboriginal Peoples' experience provides a site from which to counteract influences of colonial authority, organized around recovery and contemporary assertions of experience, knowledge and politics informed by different traditions among Aboriginal Peoples.³¹ Indigenist scholarship informs me of another alternative vision of people embedded in nature, providing an orientation based on respect and kinship to non-human life rather than diversity as contributed by ecological feminist scholarship. Both

²⁹ Eckersley, Robyn (1992) *Environmentalism and Political Theory, Toward an Ecocentric Approach*, Albany: SUNY; Hawthorne, Susan (2002) *Wild Politics*, North Melbourne: Spinifex; Mies, Maria and Vandana Shiva (1993) *Ecofeminism*, London: Zed; Salleh, Ariel (1997) *Ecofeminism as Politics, nature, Marx and the postmodern*; Sandilands, Catriona (1999) *The Good-Natured Feminist, Ecofeminism and the Quest for Democracy*, Minneapolis: U of Minnesota Press; Seager, Joni (1993) *Earth Follies, coming to feminist terms with the Global Environmental Crisis*, NYC: Routledge; Sturgeon, Noël (1997) *ecofeminist Natures, race, gender, feminist theory and political action*, NYC: Routledge.

³⁰ Hawthorne, *ibid*, p106 and Shiva (1997), *ibid*, p 102-103 and Shiva, Vandana (1991) "Biodiversity, Biotechnology and Profits", *Biodiversity, Social and Ecological Perspectives*, London: Zed Books, p43-45.

³¹ Alfred, Taiaiake (1999) *Peace Power Righteousness, an indigenous manifesto*, Toronto: Oxford U Press; Battiste, Marie, ed (2000) *Reclaiming Indigenous Voice and Vision*, Vancouver: UBC Press; Churchill, Ward (2003) *Acts of Rebellion, the Ward Churchill Reader*, NYC: Routledge; Deloria Jr., Vine (1997) *Red Earth White Lies, Native Americans and the Myth of Scientific Fact*, Golden Co: Fulcrum Publishing; Hughes, Lotte (2003) *The no-nonsense guide to Indigenous Peoples*, Toronto: Between the Lines; Laduke, Winona (1999) *All Our Relations, Native Struggles for Land and Life*, Boston: South End Press; Todorov, Tzvetan (1984) *The Conquest of America*, NYC: HarperPerennial; Weatherford, Jack (1988) *Indian Givers, how the Indians of the Americas transformed the world*, NYC: Fawcett Columbine Book and *Voice of Indigenous Peoples, Native People Address the United Nation* (1994), Santa Fe: Clearlight Publishers.

theoretical perspectives help me understand the connection between a politics of conquest and colonialism to practices of genocide and ecocide.

My own thinking recognizes that an ecologically respectful standpoint has yet to emerge in multilateral negotiation, but I believe it is possible to orient negotiation towards an ecological perspective. Ecological negotiation would reconcile humanity's disassociation from nature by revealing practices and philosophies based on respectful and peaceful co-existence. This could begin to stop destruction of Earth and to recognize the environment as a habitat for plants and animals, not just people. I draw upon indigenist and feminist ecology literature to guide and ground my reservations about mainstream negotiation theory and practice. My choice is prompted by specific points of intervention that challenged the assumption that modern technology would solve biodiversity loss, which had occurred during multilateral negotiations, as referenced in Earth Summit documents. Two principles in particular stand out in the Rio Declaration on Environment and Development. Principle 20 states that "Women have a vital role in environmental management and development". Principle 22 affirms the vital role of "Indigenous people's" contribution to environmental management and development due to "their knowledge and traditional practices." The Preamble of the Convention on Biological Diversity also echoes these principles, noting the vital role women and third world peasants play in conservation and use of natural resources. I am skeptical that negotiations articulated fully principles of ecological feminism and indigenist philosophy, but I am curious as to why these ideas are included in the regimes. Nonetheless ecological feminism and indigenist literature teach me how to listen and observe, both from nature's standpoint, but also from the texts I read. As I become more familiar with

ideas expressed in these traditions my thinking and writing reflects my growing awareness. I remain awkward in writing accurately about perspectives into which I was not socialized in a language I am still learning. Insights from these sources allow me to question assumptions reflected from phrases such as, but not limited to “biological diversity”, “biotechnology”, “environmentally sound”, “common concern of Humankind”, “capacity building”, and “precautionary approach”.

Confronting the conundrums of human/nature dichotomy through human discourse is at best one-sided and I risk falling back into anthropocentric perspectives. Lorraine Code’s (1993) advice to take subjectivity seriously so as to be aware of the pitfalls and dangers of knowledge production that objectifies its subject, however, opens my interpretation to learning how to listen to nature, particularly in my use of ecological feminism and indigenist scholarship.³² In addition, my knowledge of nature is based on my senses, experiences, books and training, all of which are particular to a time and place. But my ability to hear nature’s voice requires that I recognize nature has agency and subjectivity. This recognition is central to Aboriginal People’s knowledge of the land and relationship with nature, and part of a growing realization of ecological feminist literature about human relationships with nature.

My dissertation contributes to an understanding of multilateral negotiation as it deals with nature, ecocide, conquest and colonialism, by drawing attention to relationships humans have with nature and how relations among humans affect them. I contribute to this understanding by also exploring how animist and ecologically sensitive perspectives, if evident in negotiation, can influence the process. I also contribute to an

³² Code, Lorraine (1993) “Taking Subjectivity into account”, *Feminist Epistemologies*, Alcoff, Linda and Elizabeth Potter, eds, NYC: Routledge, p33

understanding of negotiation by considering the dialectical relationship between the process of regime formation and substantive examination and review of human ideas as both social constructions of environments and political governance of these environments.

Propositioning Nature

My approach to discourse analysis of multilateral environmental negotiation involves semantics. Martin Davis (1996) writes, “[t]he everyday idea of meaning or significance is related to the idea of what is conveyed or communicated in the use of language.”³³ Drawing from linguistics and literary criticism, semantics analyzes how words, phrases and sentences express ideas (intentions) and statements (propositions).³⁴

By tracing the meanings of the words ‘biotechnology’ and ‘biodiversity’, I can reference how these terms reveal political associations with nature. While recent additions to the jargon of environmental discourse, both terms were contested during negotiation of both CBD and CPB. ‘Biodiversity’ and ‘biotechnology’ have multiple meanings, which allows me to draw out various assertions about anthropocentric and eco-centric notions about nature. My approach to semantic analysis involves tracking and comparing the meanings of these two words to situate formal negotiations within a broader context of human relations to nature.

Furthermore, examining arguments that factored into the meaning of ‘biotechnology’ reveals intent and viewpoint regarding nature and the limits of human intervention in directing the course of nature’s creativity. Since the meanings of

³³ Davis, Martin (1996) “Philosophy of Language”, *The Blackwell Companion to Philosophy*, Bunnin, Nicholas and E.P. Tsui-James, eds, Oxford: Blackwell, p 92.

'biotechnology' and 'biodiversity' were debated during negotiation, I am able to identify published position statements, which influenced the outcome of multilateral talks, and place these statements within a broader public controversy over genetic manipulation. One aspect of the controversy surrounding GE biotechnology concerns definitions of particular (key) words and phrases in connection to its usefulness. For example, if GE biotechnology is defined as "enabling", its association with biodiversity loss can be referenced as a problem-solving technology. But, if GE biotechnology is defined as a "contaminant" its association with biodiversity loss can be referenced as a problem inherent in the technology. Contrasting these definitions, along with other meanings, allows me to locate specific junctures during negotiations that open or limit debate or shift focus either from or towards anthropocentric bias. It also allows me to be aware of how meanings are mutable, influenced by belief, opinion and perspective. By noting the change in meaning of particular words, I am able to decipher the points at which agreement and disagreement influenced the outcome of negotiations. By focusing on the origin of GE biotechnology in its connection to biodiversity I am also able to track how other ideas about nature are revealed, dismissed or become amendable during the writing (negotiations) of these regimes. By using semantic analysis, I recognize that words convey meanings, by which thoughts (ideas) can be traced to awareness (knowledge) and response (action). My analysis of the meaning of key words helps me to uncover the political features of anthropocentric and ecocentric ideologies; therefore, I am able to note the power dynamics of human relationships to nature.

Discourse analysis is a method of interpretation, through which I can examine political ideology in association with personal life and public policy. I acknowledge that

Davis, Martin (1996) *op.cit.*, p 91.

my interpretation is not absolutely objective and that my knowledge is incomplete. To ensure trustworthiness (reliability) of my analysis, I again draw from linguists and literary criticism. Norman Denzin argues that “interpretive research focuses on experiences that radically alter and shape the meanings persons give to themselves and their projects.”³⁵ Denzin suggests that understandings (“epiphany”) serve to mark alterations and formations of the researcher’s own interpretation of events. In my case, my criterion for interpretation has two features, rooted in textual analysis: a) the interpretation must illuminate the circumstances, contextualized with descriptions of formal negotiation rounds, to reveal both historical and interactional features of the researched experience, and b) “the interpretation must engulf what is learned about” these circumstances and “incorporate prior understandings while always remaining incomplete and unfinished”.³⁶ Discourse analysis and its interpretation encourages an examination of other modes of communication. I have opted to rely on textual analysis of regime texts because these documents are a result of negotiations as well as a site for further negotiations; therefore open for further interpretation. Furthermore, multilateral negotiations are a process of writing regime texts, which to me is also a forum of multilateral decision-making; thereby negotiation reflects thoughts and actions of participants accorded authority (power) to speak and write in multilateral nation-state forum.

³⁵ Denzin, Norman (1989) *Interpretive Interactionism*, Vol 16, Applied Social Research Methods Series, Newbury Park: Sage, p14.

The Matter of Negotiation

A case study approach forms the basis of the empirical portion of my research. My approach to discourse analysis is to consider how both biodiversity (CBD) and biosafety (CPB) regimes framed 'biotechnology' by also analyzing debates that contested these terms. It has two interconnected parts, namely, studies of process and substance of negotiation. I trace procedural features of negotiation (process) which organized the discussion about biotechnology (substance). The main conflict under negotiation was whether GE biotechnology is a suitable response to losses in biodiversity. I analyze multilateral negotiation against my analysis of debates about GE biotechnology's association with biodiversity loss. Regime texts serve as exemplars of negotiated discourse, so in matching process with substance I could locate sites for investigation and analysis, allowing me to trace meanings of terms, noting significant changes and alternative denotations, that correspond to specific times during the talks. For example, the definition and scope of GE biotechnology from the CPB text is significantly different from that in the CBD text. To me this difference suggests a shift in focus from defining biotechnology as a solution for biodiversity loss to defining biotechnology as a problem that could aggravate biodiversity loss. This difference in meaning also suggests that CBD negotiations were narrow in their view concerning biodiversity loss, which prompted the biosafety talks to broaden their scope to include perspectives that challenged the orthodoxy of implementing technological solutions to conserving biodiversity.

It is impossible for all facts and knowledge to be ascertained completely, so my interpretation is incomplete, and the conclusions and judgements I make remain tentative.

Denzin, Norman (1989) *op.cit.*, p30.

Negotiation entails more than a written text to mark its conclusion, since implementation of the regime into international law also requires ratification from nation-states' home legislatures, where tensions and disturbances will shape each nation-state's implementation. Negotiation also entails a broader context of communication, indicating a discursive forum, where people speak, listen, meet, advocate, challenge, avoid and accuse. My presence in this experience, using Denzin's notation, is that of an interested party, excluded from the formal multilateral gatherings, but aware of events as they transpired. My research began shortly before the biosafety talks concluded in Montreal. Since that time, the Cartagena Protocol (CPB) entered the body of international law, on September 11, 2002.³⁷ My absence from multilateral negotiations places a heavier reliance on the text to uncover events as they transpired. This does not mean that I am unable to consider views not represented during negotiations, rather I am aware that many views are under-represented in formal talks and that this under-representation does not diminish the validity of these views.

Multilateral negotiation responded to controversies over scientific developments of GE biotechnology. 'The biotech revolution' prompted three responses: a *movement to establish* scientific innovation as the primary source of production of food and medicine; a *movement to regulate* (manage) the use of this technology and a *movement of resistance* that sought a moratorium on genetic manipulation and related research. The biosafety talks that led to the CPB drew from the CBD text as its point of reference, namely, articles pertaining to handling, transfer and use of biotechnology in reference to risks to

³⁷ See Appendix F for a list of nation-states that have signed and ratified the biodiversity and biosafety regimes. To date Canada has not ratified the Cartagena Protocol, but has ratified the Convention on Biological Diversity (CBD). The United States of America (US) has not ratified the CBD, despite its participation (non-voting status) in the biosafety talks.

the environment and people's health.³⁸ The biosafety talks which form the basis of my research and analysis happened in the context set by written texts, negotiated eight years prior, and from discussions during CBD Conference of the Parties (COP) meetings organized to assist nation-states in implementation of the obligations set out in the CBD. Discussions of the connection between biodiversity and biotechnology were framed within the 1992 Rio Summit meetings in Rio de Janeiro, Brazil; yet initiatives to regulate (and stop) biotechnology were framed prior to the Rio Summit.

The original draft of the CBD text began as a collaborated effort, co-authored by the World Wildlife Federation (WWF) and World Conservancy Union (IUCN), World Resources Institute (WRI), the World Bank, and United Nations Environment Programme (UNEP). The text based conservation and protection of "natural" habitats and wildlife on economic models of resource management.³⁹ Concurrently, Earth Summit negotiations of *Agenda 21* chapters, 15 and 16 dealt, with similar questions and prescriptions to the CBD. Negotiations of *Agenda 21* chapters on biotechnology and biodiversity and the CBD acknowledged that biotechnology has a longstanding history congruent with other technologies. This rationalized scientific manipulation of genetic structure promises that it could alleviate diminishing biological life caused by destruction of the earth's environment from commercial and technological expansion. The CBD, signed by 156 countries at the close of the Rio Summit, was considered a greater

³⁸ *Cartagena Protocol on Biosafety to the Convention on Biological Diversity* (2000), Montreal: CBD Secretariat, preamble item 2.

³⁹ Chatterjee, Pratap and Matthias Finger (1994) *op.cit.*, p41.

achievement than *Agenda 21* and *Rio Declaration*, which were the expected centerpieces of multilateral cooperation at the Rio Summit.⁴⁰

The following chapters are organized in two parts. The first part, chapters two and three, address theoretical challenges. The second part consists of chapters four and five, which reviews and analyses my empirical study of multilateral negotiation.

Chapter two, "Listening and Speaking to Nature", outlines the challenges of representing nature at the negotiation table. Ecofeminist and indigenist scholarships challenge anthropocentric presentation of nature as an entity separate from humanity. Accounts of being closely associated with nature highlights struggle against patriarchal conquest and western European colonialism, respectively. Parallels are made linking conquest (rape) of women with the plunder and destruction of nature (rape). The similarity in ideologies that justify mis-treatment of women and nature outlines a critique of patriarchal exploitation, domination and control. Ecological feminism affirms women's contribution, noting various ways to undermine masculinist/patriarchal conquest in such areas as reproduction, agriculture and political organizing. Indigenist literature links colonialism to usurpation and appropriation of Aboriginal Peoples' culture into mainstream ideology, which results in dislocating Aboriginal Peoples from their cultural traditions in contemporary social and political life. Colonialism is linked to the removal of Aboriginal Peoples from their land by theft and war (genocide) and the destruction of land from pollution and excessive consumption (ecocide), both of which offer a comprehensive critique of anthropocentric ideology. Indigenist literature asserts a

⁴⁰ Chatterjee, Pratap and Matthias Finger (1994) *ibid*, p41; Holmberg, Johan, Koy Thomson and Lloyd Timberlake (1993) *op.cit.*, p20.

process of decolonization that reclaims their traditions while establishing among Aboriginal Peoples a commitment to assert political authority autonomous from concepts found in western ideology. By understanding the political features of conquest (rape) and colonialism (appropriation) I seek to highlight ways in which nature can be presented so that 'nature' speaks and people listen to these expressions.

Chapter three, "The Problem with the Nature Question", analyzes three primary negotiation models as outlined in mainstream international relations theories. These approaches, namely, 'interest-based', 'new multilateralism' and 'environmental diplomacy', focus on social aspects of conflict, rather than relations between humans and nature that support anthropocentric destruction of nature. These negotiation models indicate that a discussion of nature, the environment and ecological relations between people and nature are important issues, yet each situate negotiation as a social activity, where nation-state representatives create norms and institutions to resolve problems and differences confronting its citizens. This anthropocentric orientation establishes negotiation as a means to either reconcile conflicts (problems and differences), or when values and perspectives are deemed incommensurable to negotiate ways to manage conflict. Negotiation is about addressing conflict without resorting to violent means of persuasion. Mainstream negotiation models seek to establish norms of nation-state behavior to de-escalate tensions, before military conflict, or to allow disputing nation-states to move beyond a cease-fire and establish peaceful relations. Negotiation, within these approaches, frame environmental questions as other policy issues, such as human rights, security and economics. Human destruction of nature is treated as a consequence of commercial and industrial development, or naturalized as a normal activity needed for

human preservation. Western humanism and non-secular Christian, Jewish and Islamic religious beliefs also sanction anthropocentric ideas, supporting views that human superiority and centrality are integral to human authority over nature and that powers of creation lay either in human affairs, God, or Allah rather than nature, the land or 'creation'. In chapter three my aim is twofold: I critique three models of negotiation in international relations theory to locate the main assumptions that support anthropocentric conquest and colonialism and to understand the general inability within negotiation theory to converse with nature. I also seek to understand how mainstream frameworks of negotiation restrict the inclusion of ecocentric and animist perspectives to represent nature.

Chapter four, "The Matter of Negotiation", tells a story of GE biotechnology and its connection to biodiversity, focusing on multilateral negotiation of the CBD and CBP. To fully account for the controversy about GE biotechnology, the story of negotiation traces three periods of debate, beginning with the 1992 CBD and ending in 2000 with the CPB. Why GE biotechnology was offered as a solution to diversity loss speaks to the mainstream belief in (hu)mankind's authority over nature. Pressure to limit use and trade of genetically altered organisms speaks first to unresolved conflicts among nation-states and second to a negotiation process that constricts discussion, focussing on the safety of GE biotechnology rather than its suitability in conserving biodiversity. My description of multilateral negotiation pays attention to how negotiation was used to frame 'biotechnology' and promoted its potential rather than exploring its usefulness and necessity. Industrialized nation-states and elite members of intergovernmental organizations privileged technology as the main option to sustainable use of 'natural

resources' while discounting other possibilities. The early negotiation period is essential to understand why suspicions of biotechnology were dismissed and the movement towards establishing a moratorium of biotechnology research and development (R&D) and trade was unsuccessful. I suggested above that reliance on technology is a trap in that it is advocated as a solution to problems that could be dealt with by addressing how anthropocentric ideology contributes to destruction and plunder of nature. Arguments that are more suspicious of technology do not assume that it is beneficial, since many technologies proposed as improvements tend to have the opposite effect. Critics of GE biotechnology wanted more evidence indicating that genetic transfer is beneficial and its changes are not harmful or would not jeopardize the practices and knowledge of those who prefer to live within natural boundaries. Support for the technological benefits promised from transgenic technology remained dominant, which succeeded in undermining the claims that GE biotechnology was inherently dangerous. My aim in chapter four is to understand how negotiation framed GE biotechnology as a solution to biodiversity loss, and was then contradicted later during the biosafety talks, which treated transgenic technology as problematic.

In chapter five, "Positioning Nature", I analyze the negotiation process and substance by exploring four propositions about GE biotechnology that were featured during formal multilateral negotiations. My analysis reveals how dominant actors influence the process by framing the substantive arguments about the importance of technological interference of nature according to their interests. My analysis indicates that appropriation and exploitation are factors ignored in negotiation about biotechnology. My analysis suggests that negotiations were designed to produce regimes

that would encourage development of biotechnology rather than conserve and protect natural environments and wildlife. That biotechnology was defined as an enhancement of biodiversity, and by extension, a technically improved biodiversity would benefit humankind by increased agricultural and pharmaceutical production indicates acceptance of a dominant understanding that technology can solve environmental problems. I suggest that relationships based on human control and appropriation of nature underscore negotiation in the way that nation-states confront disputes about technological problem-solving. Ecological and animist relations with nature are less likely to be championed – brought to attention and explicitly dealt with – except from perspectives that consider ecological relationships a principle feature of political affairs. Views that support a thesis that nature/biodiversity exists to support human life and creativity are more likely to be championed if these views do not challenge the dominant orthodoxy of humanity's control over nature. I also argue that contemporary multilateral environmental negotiations preference for technological innovation and the balancing of risk and benefit in the application of technologies tend to ignore alternative practices that discourage technical usurpation of nature as an approach to conserve biodiversity. Negotiation focused on resolving problems of biodiversity loss through technological innovation becomes limited, thereby constricting other options from being explored, which may be more conducive to sustaining diversity that is necessary for biological creativity. A negotiation process designed to manage competing views merely restricts fuller exploration of the issues it seeks to consider.

Chapter six, "Towards Ecological Negotiation" concludes my account of how multilateral environmental negotiation addresses environmental destruction. I explore the

connection between negotiation and its exploration of human relationships with nature, by comparing process with substance. The challenge to sensitize negotiation to ecological relations focuses on the aim of regimes to transform environmental decline by ending the means by which people can contaminate, waste, consume and alter the environment. However, coming to an agreement about ending human-based destruction of nature cannot be achieved if the questions before negotiators deal only with conflicts among nation-states. Nor can analysis of these questions be complete by assuming that conflict is the basis by which destruction continues, or that a shallow definition of nature as material resources is a source of conflict among nation-states. An examination of the orthodoxy of human control and dominion over nature needs also to examine how multilateral cooperation is premised on accepting human control over and appropriation of nature.

Thus what meaning is there in lumping such disparate entities as deserts, tropical forests, rivers, crabs, and chimpanzees in a catch-all, vague category? The answer, is I would think, that it is the absence of human people, and especially the absence of human beings “who are like us”, which is really the crucial factor in all of this.¹

From learning how to listen, I slowly learned how to speak (and to be silent!) so that I might be better able to join in real communication with people of the North [Anistinabe and Cree].²

Rendering nature knowable involves a process of subjectivation, constructing nature as a subject ... is the task of environmentalism: by bringing up the topic of nature, by showing its subjection to an external authority and by representing nature itself as an active subject.³

The world is rushing towards a single culture. We should pause and reflect on the beauty of diversity. I bring to the attention of my government that it should stop its efforts to assimilate us into the culture of the dominant group.⁴

Listening, Speaking, Writing: A departure

This chapter discusses the challenge of negotiating with nature. By discussing human relationships to nature, I think that negotiation can become open to the various understandings about nature, thus exposing how we treat nature and shape these relations. By placing human relationships with nature at the core of my investigation, I assert a perspective sensitive to these relationships while exposing anthropocentric biases in negotiation. One anthropocentric bias favours (hu)mankind’s superiority, understood also as domination over or conquest of nature, seeking increasingly to control reproductive

¹ Forbes, Jack (2001) “Nature and Culture: Problematic Concepts for Native Americans”, Grim, John, ed., *Indigenous Traditions and Ecology*, Cambridge: Harvard U. Press, p110.

² Ross, Rupert (1992) *Dancing with a Ghost*, Markham: Octopus Publishing Group, p. xix.

³ Sandilands, Catronia (1999) *The Good Natured Feminist, ecofeminism and the quest for democracy*, Minneapolis: Minnesota U. Press, p 79.

⁴ Urad, Anderson Muutang (1992), speech given to the United Nations General Assembly, NYC, Dec. 10/92, opening ceremonies of the International Year of Indigenous People, published in *Voice of Indigenous Peoples, Native People Address the United Nations* (1994), Sante Fe: Clearlight Publishers.

and creative processes emanating from nature.⁵ Another bias favours metaphorical depictions of nature that reflect or impose modern western ideas onto non-human nature.⁶ Appropriation of nature for the exclusive use of human-based innovation often relies on conquest and colonialism.⁷ These biases situate (hu)mankind as the sole arbiter on deciding matters related to nature – determining associations, what/who is not like ‘us’, or assimilating all that is different and unique into a monolithic culture. Equally, anthropocentric discourse relies on vague and generalizing language, making it difficult to convey one’s place in nature without first categorizing nature as separate and different from humanity.⁸ According to anthropocentric ideology, to negotiate with nature is impossible, that any consideration about nature is a social construction; therefore to negotiate with nature in mind is merely an expression about nature’s importance rather than a direct and unmediated interaction with nature. I argue that negotiating with nature is impeded by anthropocentric bias, which couches nature in vague and generalizing terms that obscure diverse meanings about nature, humanity and people’s relationships to nature.

⁵ Merchant, Carolyn (1989) *The Death of Nature*, San Francisco: Harper Collins, p xviii, 69-70, 76-87; 131-132. For an example of contemporary anthropomorphic blindness in operation see Salleh, Ariel (1997) *Ecofeminism as Politics: nature, Marx and the postmodern*, London: Zed Books, p59-62.

⁶ Forbes (2001) *op cit*, p103-104; Sioui, Georges (1992) *For an American Autohistory, An Essay on the Foundations of a Social Ethic*, Montreal: McGill-Queen’s U Press, p xxii; Soper, Kate (1995) *What is Nature? Culture, Politics and the Non-human*, London: Blackwell, p38-39; 61, 81, 97.

⁷ Arnold, David (1996) *The Problem of Nature, Environment, Culture, and European Expansion*, Cambridge: Blackwell, p129-130; Forbes, *ibid*, p 106-108; Merchant, Carolyn (1996) *Earthcare*, NYC: Routledge, p36-47; Soper, *op cit*, p66. See also Churchill, Ward (1992) *Struggle For The Land, Indigenous Resistance to Genocide, Ecocide and Expropriation in Contemporary North America*, Toronto: Between the Lines and LaDuke, Winona (1999) *All Our Relations*, Boston: South End Press.

⁸ Anderson, Kim (2003) “Vital Signs: Reading Colonialism in Contemporary Adolescent Family Planning”, *Strong Women Stories, Native Vision and Community Survival*, Lawrence, Bonita and Kim Anderson, eds, Toronto: Sumach Press, p178-181; Davis, Angela (1998) “JoAnne Little: The Dialectics of Rape” *The Angela Y. Davis Reader*, James, Joy, ed., Oxford: Blackwell, p155; Forbes *ibid*, p 103-104; Soper, *ibid*, p120 and 140; Maracle, Sylvia (2003) “The Eagle Has Landed: Native Women, Leadership and Community Development”, *ibid*, p74; Martin-Hill, Dawn (2003) “She No Speaks and Other Colonial Constructs of ‘The Traditional Woman’”, *ibid*, p111 and 117; Salleh, *op cit*, p 141-147; Amadahy, Zainab

In this chapter I explore negotiation as a process of correspondence between nature and people. In this sense, negotiation is ecological as it translates various relationships between humans and nature into dialectical correspondences. My use of the term 'correspondence' derives from the work of Georges Sioui (1992). He uses the word to expose the Huron point of view and oral tradition as seen in historical documents produced by early settlers, during several 'eras' of first contact between European and Aboriginal Peoples in New France/Turtle Island.⁹ The juxtaposition of Huron and French settlers' ways of living and values affected settler-indigenous relations. Correspondence, literally and figuratively, offers a way to explore multiple views as written in negotiated international treaties, because it uncovers oral discourse, and recognizes this on its own merits as well as contributing to the formation of written discourse. As an analytical device, correspondence shows how colonialist ideology operates similarly to anthropocentric ideology when comparing relations people have with others and relations people have with nature. As a non-native person, my use of 'correspondence' helps me uncover diverse perspectives that speak during multilateral negotiation so that I can trace how these ideas were expressed during negotiation and whether they are reflected in the text.

Negotiation, then, is a 'correspondence' among participants, joined through discussion and processes that lead to peaceable co-existence. Negotiation begins with listening to 'other' voices to explore humanity's killing, manipulation and plunder of

(2003) "The Healing Power of Women's Voices", *Strong Women Stories, Native Vision and Community Survival*, *ibid*, p148-151.

⁹ Correspondence comes from Georges Sioui (1992) in his use of the term to juxtapose Amerindian and European philosophies that shaped settler-indigenous relations in Canada. See Sioui, Georges (1992) *For an American Autohistory, An Essay on the Foundations of a Social Ethic*, Montreal: McGill-Queen's U Press.

nature. Speaking about conquest and colonialism expands the lexicon of conflict beyond policy differences and incommensurable positions to examining the limitations and failures of an orientation that seeks to appropriate nature for its creativity. Listening invokes paying attention to expressions usually excluded from multilateral negotiations; thereby de-centering and potentially dislodging scientific and regime vocabulary from its authoritative position. Speaking to, about and for nature challenges 'our' abilities to communicate perspectives that seek to stop destructive practices. As a point of departure, theorizing negotiation as correspondence (with oral and written components) encourages communication among all living beings rather than establishing contractual agreements among nation-states to enhance nature for the benefit of economic interests.

I draw from ecological feminist and indigenist perspectives to understand better the paradoxes of human-centred constructions of nature. These approaches situate people living in concert with nature, advocate limits on human control and appropriation of nature and affirm creative and distinctive abilities in nature.¹⁰ Each perspective contributes to a better awareness of negotiation that involves listening, speaking and writing from more than one's own perspective, that is, also in resistance to ideas that have been imposed upon us or distorted from our own affirmations and knowledge. Asserting one's own ideas, experiences and places is consistent with political struggles against colonialism, environmental destruction and patriarchy.¹¹ Asserting these ideas,

¹⁰ Eckersley, Robyn (1992) *Environmentalism and Political Theory, Toward an Ecocentric Approach*, Albany: SUNY, p3, Eckersley uses the term "ecocentric approach" to distinguish from other environmental theories that are anthropocentric.

¹¹ See Hughes, Lotte (2003) *The No-nonsense guide to Indigenous Peoples*, Toronto: New Internationalist and Between the Lines, p11 and 20; Lerner, Gerda (1986) *The Creation of Patriarchy*, NYC: Oxford U Press, p4-5, 10; Richardson, Boyce (1993) *People of Terra Nullius*, Toronto: Douglas & McIntyre, p5 and 254; Smith, Linda Tuhiwai (1999) *Decolonizing Methodologies Research and Indigenous Peoples*, London: Zed Books, p1-2 and Zinn, Howard (1999) *A People's History of the United States*, NYC: HarperCollins Publishers, p536-539.

experiences and situations through written discourse, these perspectives advocate transformation of how people treat each other and how people relate to and think of nature by resisting anthropocentric authority and its sanction of human appropriation, coercion and dominance of nature.

Negotiations with or without nature are not explicitly documented in ecological feminist and indigenist literature that I draw from, yet as I unpack concepts of transformation and resistance themes of listening, speaking and writing to, for and about nature emerge. This suggests to me elements of a theory of negotiation. The dialectic between people and nature corresponds to an ecological relationship, despite difficulties with re/presenting 'nature' at the negotiation table. The challenges of listening to nature's expressions and learning to correspond in a different language are brought to the fore when nature is represented at the negotiating table. The implication of animist and ecological feminist views of nature is to recognize that human relationships to nature are direct, close and varied, and, as a result, these relationships provide a way in which to negotiate with nature that is not articulated from anthropocentric viewpoints. There is insufficient space to address all of the ideas and debates discussed in both ecological feminism and indigenist literatures that pertain to relations between people and nature. Therefore I focus mainly on North American indigenist and western ecological feminism literatures that addresses issues of conquest and colonialism and intercultural relations, with a few exceptions, in which I consider literature from the South.¹² This literature

¹² These reviews are important, as I rely heavily on them, some accounts can be found in Bear, Leroy Little (2000) "Jagged Worldviews Colliding", *Reclaiming Indigenous Voice and Vision*, Basttiste, Marie, ed, Vancouver: UBC Press; Churchill, Ward (1992) *Struggle For The Land, Indigenous Resistance to Genocide, Ecocide and Expropriation in Contemporary North America*, Toronto: Between the Lines; Deloria Jr., Vine (1995) *God is Red*, NYC: Delta; Eisler, Riane (1996) *Sacred Pleasure, Sex, Myth and the Politics of the Body, new paths to power and love*, San Francisco: Harper Collins; Grinde, Donald and Bruce Johansen (1995) *Ecocide of Native America, Environmental Destruction of Indian Lands and*

outlines specifically themes of resistance to anthropocentric norms and advocate transformation of human-at-the-centre authority offering me insights about negotiation amongst diverse perspectives.

My theoretical examination contributes to understanding how relationships built on agendas of resistance and transformation are connected to international negotiation theorizing and practice. By advocating listening and speaking a language congruent with diverse ways of life, these approaches show how negotiation with nature becomes possible. By advocating a closer connection to nature, this literature argues that nature is an “active subject” and counters anthropocentric perspectives of a human-only construction of nature as a material substance readily available for exploitation and improvement. By viewing multilateral environmental negotiation through a lens of dialectical correspondences, I hope to assess how environmental issues are framed not just the merits and success of a nation-state’s policy objective within multilateral negotiation.

There are some paradoxes in drawing attention to the challenges of presenting and representing nature. First, a crucial problem resides in relying on words such as ‘nature’ and ‘human’ to convey diversity within each without also over-simplifying many of the

Peoples, Santa Fe: Clear Light Publications; Henderson, James Sakeij (2000b) “Post Colonial Ghost Dancing: Diagnosing European Colonialism”, *Reclaiming Indigenous Voice and Vision*, Battiste, Marie, ed, Vancouver: UBC Press; Mander, Jerry (1991) *In the Absence of the Sacred, The Failure of Technology and the Survival of the Indian Nations*, San Francisco: Sierra Club Books; Merchant, Carolyn (1989) *The Death of Nature*, San Francisco: Harper Collins and (1996) *Earthcare*, NYC: Routledge; Sandilands *op cit*; Seagar, Joni (1999) *Earth Follies: Coming to Feminist Terms with Global Environmental Crisis*, NYC: Routledge; Sioui, Georges (1992) *For an American Autohistory, An Essay on the Foundations of a Social Ethic*, Montreal: McGill-Queen’s U Press; Smith, Linda Tuhiwai, *op cit*; Soper, Kate (1995) *What is Nature? Culture, Politics and the Non-human*, London: Blackwell; Sturgeon, Noël (1997) *ecofeminist Natures, Race, Gender, Feminist Theory and Political Action*, NYC: Routledge; Todorov, Tzvetan (1982) *The Conquest of America, The Question of the Other*, NYC: Harper and Row; Tokar, Brian (1997) *Earth for Sale*, Boston: South End; Weatherford, Jack (1988) *Indian Givers, How the Indians of the Americas Transformed the World*, NYC: Fawcett Columbine; and Zimmerman, Michael (1994) *Contesting Earth’s Future, Radical Ecology and Post modernity*, Berkely: U of California Press.

depictions about human relationships with nature that exist throughout time and around the world. Second, human imagination and ingenuity are forms of creativity, but to suggest that human creativity is derived entirely from nature allows 'us' to negate 'our' role in destroying and altering life (nature's creativity) to suit 'our' needs. The capacity people have to imagine, invent and dream, however, should allow for greater ability to converse with nature, rather than be used to justify 'our' destruction and alteration of nature for 'our' self-interest. Third, nature described as an active agent, autonomous from human determinism derives from eco-centric and indigenist perspectives that advocate an orientation different from the mainstream perspectives. Indigenist perspectives are animist, which is a belief that spirituality exists in nature, experienced in all animals and plants and that nature is sacred and its sacredness is embodied in living forms that include lands, waters and the atmosphere. Eco-centric perspectives also recognize this sacredness, but tend to convey a secular understanding that nature, whole and in its components, are diverse and alive. The depiction that nature is alive, diverse and bountiful, however, also tends toward a positive understanding of nature. Eco-centric and indigenist perspectives' depiction encourages respect of nature's abilities and that people's ability to live in concert with nature concerns understanding the dangers as well as the benevolence of nature without resorting to control or domination of nature's agency.

This chapter is divided into two parts: The first provides a theoretical critique of anthropocentric ideology and its correspondences to conquest and colonialism. The second part discusses ecological negotiation as it corresponds to transforming relations of power and resisting conquest and colonialism.

I. Correspondence with nature

A. Ecological Critique of Anthropocentric Conquest of Nature

Human relationships with nature are logically prior to institutional arrangements within which contemporary economic, political and social debates take place.¹³ From an ecological standpoint, negotiation with nature occurs and is prior to socio-political constructs that determine relationships among people, such as community, family, or the state. Within the literature I draw from, ecological standpoints challenge authoritarian supremacy in its quest to conquer nature by elevating human life over nature's viability and creativity.¹⁴

Robyn Eckersley writes of ecocentric perspectives as having an "encompassing approach" that recognizes a full range of human and non-human interests in communal and geographical contexts embedded within a cyclical temporal range.¹⁵ According to Eckersley, environmentalist perspectives are anthropocentric, situating people and/or the nation-state at the centre of life. In contrast ecological perspectives attempt to reposition human viewpoints of nature and are critical of western anthropocentric legacy and its social construction of nature in contemporary politics.¹⁶ The term 'ecological' as I use it concerns political aspects of human interaction with nature, not the scientific basis of

¹³ Eckersley, *op cit*, p28.

¹⁴ Merchant, Carolyn (1994) "Introduction", *Ecology, Key Concepts in Critical Theory*, New Jersey: Humanities Press International, Merchant, C, ed, p1-20. See also Arnold, David, *op cit*, Cambridge: Blackwell, p3 and Soper, Kate *op cit*, p15-36.

¹⁵ Eckersley, *op cit*, p46. While I draw mostly from ecological feminist literature written in North America, there are a few exceptions, namely Eckersley, Susan Hawthorne (both from Australia) and Vandana Shiva (from India). Eckersley surveys western environmental theory and its influence on state policy. Hawthorne writes about ecological feminist activism that challenges international regimes and colonial assumptions in Australia as well as from international financial institutions. Shiva writes from a feminist 'third world' perspective and is actively challenging the research and adoption of GE biotechnology. Their perspectives serve to broaden my scope because I analyze negotiations in an international context.

¹⁶ Eckersley, *op cit*, p3.

knowing nature.¹⁷ I consider arguments that legitimate human behavior towards nature. For example within eco-centric perspectives there is a desire to work in concert with nature and to operate within its limits: both convey respect for nature's creative and reproductive capacity. The study of ecological relations is a way to become sensitive and aware of humanity's role and participation in life on the planet, rather than focusing only on the effects of modern industry and government regulation on the natural environments.

Eckersley sketches three eco-centric approaches: axiological or value theory; transpersonal or deep ecology; and ecofeminism or ecological feminism.¹⁸ First, axiological approaches focus on the intrinsic value of nature and argue that philosophical and moral questions ought to recognize that nature is capable of reproducing and renewing itself without human intervention. According to value theory, plants and animals exist autonomously, so human moral consideration ought to reflect this condition. Axiological approaches see regeneration as an end in itself; therefore, present regeneration as the basis of structuring and organizing life. They reject anthropocentric notions that purport some intent or purpose in nature's creative and reproductive processes; therefore, human imagination, curiosity, existence and survival reflect human will and do not reveal laws of nature or dictate the natural order of evolution. Each process is valued and linked to the whole. This suggests to me a correspondence between humanity and the rest of nature; that nature encompasses people, and is understood as interdependent, interconnected, and inter-related. Furthermore, human relationships to nature are considered to be egalitarian and independent; however, while nature's

¹⁷ For an explanation of scientific ecology see Botkin, Daniel (1990) *Discordant Harmonies, A New Ecology for the 21st Century*, NYC: Oxford Press, p vii and viii.

existence is independent from human existence, human existence depends on the existence of an autonomous and self-regenerating nature. According to Eckersley, intrinsic value of nature is explored independently of human concepts of morality, esteem and importance, yet the critical attention of humanity tends towards general characterizations based on western philosophic explorations of the human condition. Eckersley writes that axiological or value theory approaches are prone to “environmental fascism” in which “it can be interpreted as suggesting that individuals are dispensable – indeed, might need to be sacrificed for the good of the whole.”¹⁹ They are also prone to anthropomorphic renderings, although it considers value to be beyond anthropocentric notions of materiality and evolutionary process.²⁰ Axiological approaches or value theory is helpful to me in asserting that non-human life has value independent from human life. These approaches, according to Eckersley, are prone to anthropocentric ideas in which we can impose our own set of values onto animals, plants and the areas in which they live in order to justify our actions. Acceptance of the intrinsic value of life (including lives of animals and plants) may be quite obvious, yet acceptance that life ought to exist without human interference has not been sufficient to counter the plunder and manipulation brought on by technological and economic development.

Second, transpersonal approaches or ‘deep ecology’ focus on cosmological and psychological features, which enable a broader context within which people can articulate their sense of self and identify with an existence beyond a human-centric description. ‘Deep ecology’ as coined by Arne Naess in the 1970s, broadens the scope of moral philosophy to probe ‘deeper questions’ that probe how human emotion and sensation

¹⁸ Eckersley, *op cit*, p 60-71.

¹⁹ Eckersley, *op cit*, p 61.

fosters knowledge and connection with non-human life, individually and intimately.²¹

Compassion and empathy initiate people's responsibility connecting their beliefs to their actions on a daily basis. Deep ecology defines human existence in terms of place (context) and rejects anthropocentric assumptions that nature is obligated to provide materials for human existence. Yet relationships can be viewed as going beyond human ego and biological physicality to denote existence associated with a particular place and time. This cosmological and psychological rendering tends towards abstraction, and blurs distinctions between species, in essence breaking down barriers between human and non-humans. Joni Seager (1993) and Janis Birkeland (1993) caution against deep ecology's eco-centric orientation, arguing that it dismisses individual identity, which inhibits self-reflection and autonomy that are crucial to feminist transformation of masculinist/patriarchal power.²² This obscures tangible elements of everyday life, leaving abstract concepts and words difficult to practice. Distinctions between experience and imagination conflate, without critically addressing how each person's depiction of reality (nature) is interwoven with one's thoughts, bodily and spiritual sensations; or how this awareness can withstand anthropocentric assault on nature. Birkeland charges that deep ecology's denial of individuality fosters an ignorance of self-interest in its capacity for violence. She argues: "Self-interest has not prevented Mankind from harming people or nature so far, so it is unlikely that a change in our human identification would lead to a cessation of violence against nature."²³ Seager notes that in practice deep ecologists have

²⁰ Eckersley, *op cit*, p 61.

²¹ Seager, Joni (1993) *Earth Follies, coming to feminist terms with the Global Environmental Crisis*, NYC: Routledge, p223.

²² Birkeland, Janis (1993) "Ecofeminism: Linking Theory and Practice," *Ecofeminism, women, animals, nature*, Gaard, Greta, ed., Philadelphia: Temple U Press, p 50 and Seager, *ibid*, p235.

²³ Birkeland, *ibid*, p50.

not disengaged from violence, citing sexist and racist overtones in deep ecology activism, for example its depiction of the population problem supporting widespread birth control programs that impose technical limits on women's reproduction and disregard women's autonomy.²⁴ Transpersonal or deep ecology seeks to transcend human conquest of nature by repositioning nature as a deeper foundation from which humankind is only one among many living beings related in place, time and each other.²⁵ Deep ecology's discussion of applying eco-centric existence in daily life provides insight into the difficulties of undermining anthropocentric authority over nature.

The third general eco-centric approach Eckersley identifies is ecofeminism. This approach "exposes and celebrates what has traditionally been regarded as Other – both women and non-human nature – in the context of a far-reaching critique of hierarchical dualism and 'masculine' culture."²⁶ Many women's empathetic identifications with nature expose many forms of oppression experienced in social and political contexts. It has been suggested that when these expressions are uncovered women's liberation will dismantle masculine forms of domination and oppression. Ecological feminist critiques of masculinist/patriarchal sex/gender depictions are rooted in ideas about women's role in reproduction, care and nurturing that is closely associated to biological/body function. Eckersley notes that at:

... the symbolic and conceptual levels, both women and nonhuman nature have been associated and downgraded in the God-Man-Woman-Nature hierarchy of being – a conceptual schema that has served to *legitimize* the greater social status and power held by men vis-à-vis women and nonhuman nature.²⁷

²⁴ Seager, *ibid*, p224-232 and 232- 233.

²⁵ Eckersley, *ibid*, p 61-63.

²⁶ Eckersley, *op cit*, p64; also noted in Diamond, Irene and Gloria Feman Orenstein (1990) "Introduction", *Reweaving the World, the Emergence of Ecofeminism*, San Francisco: Sierra Club Books, p ix.

²⁷ Eckersley, *ibid*, p68, emphasis in original.

According to ecological feminism, relations with nature include women's expressions of thought and experience, which challenge masculine depictions that engender human existence by situating men as superior, and thereby entitled to authority and power.²⁸ By attempting to incorporate abstract, symbolic with concrete, material depictions, ecological feminism critique how dualistic categories shape women's and men's identity so as to de-legitimize patriarchal dominance in social relationships. In my understanding ecological feminism involves a dual correspondence, therefore; one that exposes and challenges patriarchal assumptions regarding people's association with each other and nature, and another that expresses a feminist consciousness about these relationships and the authority that people have to construct and legitimate relations with nature.

Ecological feminism reveals parallels between domination of nature and domination of people. These parallels are used to examine how power relations legitimate violence that reifies anthropocentric conquest and domination of nature. These parallels serve to illustrate a similarity between masculinist/patriarchal control and domination of women and people, which also corresponds to anthropocentric ideology in its control and domination of nature. Ecological feminist analysis is useful to me because it addresses a correspondence between masculinist/patriarchal and anthropocentric ideologies and notes that both ideologies operate similarly in different contexts.

The intention of ecological feminism, however, is to transform human relations with nature to reflect diversity in both society and nature, rather than reforming

²⁸ Eisler, Riane (1988) *The Chalice and the Blade*, NYC: Harper Collins, p xix-xx, 104-105; Lerner, Gerda (1986) *The Creation of Patriarchy*, Oxford U Press, p5-8 and 15-16; and Minh-ha, Trinh (1989) *Woman Native Other, writing postcoloniality and feminism*, Bloomington, Indiana U Press, p41-44.

masculinist/patriarchal ideology to include women's self expression and autonomy.²⁹

Recognition of human relatedness with nature can reflect coexistence within nature, rather than depict nature as wild, in need of control, or as threatening, requiring aggressive measures to subdue nature. According to Marti Kheel (1990 and 1993), ecofeminist identification with nature reveals a central problem ignored in value theory and deep ecology, namely why nature and women are constantly at risk, which requires "rescue [of] the ailing body of "Mother Nature" from the villains who have bound and subdued her."³⁰ Kheel argues for understanding the world-view that advocates the destruction of nature before advocating for a change in this destructive behavior. Kheel challenges the mainstream image of nature as an "alien force".³¹

Nature, which has been imaged as female, has been depicted as the "other," the raw material out of which culture and masculine self-identity are formed. Two major images have been used to achieve separation from nature. One of the most common images has been that of the Beast. The Beast is conceived as a symbol for all that is not human, for that which is evil, irrational, and wild. Civilization is thus achieved by driving out or killing the Beast. On an inward level, this involves driving out all vestiges of our own animality – the attempt to obliterate the knowledge that we are animals ourselves. Outwardly, the triumph over the Beast has been enacted through the conquest of wilderness, with it concomitant claim to the lives of millions of animals driven from their lands.³²

Analysis of both masculinist/patriarchal and anthropocentric ideology illustrates that their depiction of nature is that of a powerful force that overwhelmingly threatens the survival of (hu)mankind. Furthermore, survival of (hu)mankind requires it to tame or civilize the

²⁹ Agarwal, Bina (1998) "The Gender and Environment Debate", *Radical Ecology, Global and Local*, Keil, Roger, David Bell, Peter Penz, Leesa Fawcett, eds., NYC: Routledge, p194; Eckersley (1992) *op cit*, p64; Griffin, Susan (1978) *op cit*, p xv; Merchant, *op cit*, p xxi.

³⁰ Kheel, Marti (1990) "Ecofeminism and Deep Ecology: Reflections on Identity and Difference", in *Reweaving the World, The Emergence of Ecofeminism*, Diamond and Orenstein p129 and 135 and quotation from (1993) "From Heroic to Holistic Ethics", *Ecofeminism, Women Animals, Nature*, Gaard, Greta, ed, Philadelphia: Temple U Press, p243.

³¹ Kheel, *op cit*, p244.

³² Kheel, *op cit*, p244-245.

'nature as beast'. The risk/rescue relationship that Kheel describes illustrates how women and nature (have been and) are treated, albeit contradictory as threatening, which requires us to protect ourselves, and in danger, which requires us to protect women and nature from further harm. Ecological feminism juxtaposes relations between men and women with relations between people and nature to expose how political relations are structured within a framework of conquest. The idea that nature is 'beastly', in need of 'civilizing', illustrates to ecological feminism that patriarchal relations are socially constructed to legitimate oppression, exploitation and appropriation of women and nature.³³ Equally important to note that patriarchal/androcentric perceptions also construct 'man as beast', often used to de-legitimate men from the political sphere or to discount men's abilities. The 'man as beast' construction has also been used to praise behaviors so as to justify conquest, rape and other forms of violence.

Robyn Eckersley believes this approach reveals and expands upon a wider political discussion about relationships between humans and the non-human world in its critiques of patriarchal conceptions of nature and human relationships.³⁴ First, ecological feminists critique patriarchal ideology because it places mankind as the central authority (androcentricism), and is maintained by organizing hierarchical relations between people and within their environments. This critique suggests masculinist/patriarchal logic and rational thinking devalues knowledge that is based on experience and women's understanding of relations with nature. Second, ecofeminists decry human disconnection from nature, in ways that expose why women and nature are defined and treated in

³³ Agarwal, *ibid*, p193; Diamond and Orenstein, *op cit*, p ix; Griffin, Susan (1978) *ibid*, p xv-xvi; Merchant, Carolyn (1989) *op cit*, p xix and xxi; Sandilands, *op cit*, p xvii; Sturgeon, *op cit*, p23-24; Warren, Karen (1996a) *op cit*, px.

³⁴ Eckersley, *ibid*, p64.

contradictory terms. Ecological feminism argues that nature has many facets, and that these facets are knowable through experience that conceives of nature as nurturing, caring and protective, even though nature is also unpredictable, threatening and changing.

Initially ecofeminism viewed relations between women and nature using a correspondence between sexualized stereotyping and violence against women to the destruction and alteration of nature and natural environments. They accepted uncritically an overtly simplistic identification with nature, which depicted a feminist political project defining conquest as a male characteristic and assumed that men were not 'de-natured' and alienated by modernity. This is too narrow an analysis because it can:

... i) deny the extent to which many women may be complicit in the domination of nature; ii) overlook the various ways in which men have been oppressed by limiting "masculine stereotypes"; and iii) be blind to other social dynamics, institutions, and prejudices that do not bear on the question of [sex/]gender.³⁵

It is not sufficient to say that men and patriarchal ideologies alone author anthropocentric relations with nature, and to assume women are connected to nature because women are capable of childbirth.³⁶ Women's emancipation and resistance from patriarchal authority are tied to development of an independent consciousness. Ecofeminist consciousness does not relate entirely to sex/gender analysis, which too often equates women's role in reproduction with nature's creativity, rather than exposing women's power in reproduction and in knowing and connecting with nature.³⁷ Emancipation from patriarchal authority does not necessarily lead to women liberating nature from

³⁵ Eckersley, *op cit*, p67. See also Peterson, V. Spike and Anne Sisson Runyan (1993) *Global Gender Issues*, Boulder: Westview, p146-147; Sturgeon, *op cit*, p11; Sandilands, *op cit*, p xix.

³⁶ Li, Huey Li (1993) "A Cross-Cultural Critique of Ecofeminism", *Ecofeminism, Women, Animals, Nature*, Philadelphia: Temple U Press, p276 and 283.

³⁷ Birkeland, Janis (1993) "Ecofeminism: Linking Theory and Practice", *Ecofeminism, Women, Animals, Nature*, Philadelphia: Temple U Press, p53; Gruen, Lori (1993) "Dismantling Oppression: An Analysis of

humankind's authority and conquest of nature.³⁸ Appropriation of nature's creative processes cannot be equated fully with men appropriating women's reproductive ability. To do so would essentialize or reduce women to a passive role in their fertility and reproduction. Nature is not passive, nor are women, yet women's participation in asserting a feminist autonomy cannot be assumed to be the same as asserting that nature be treated on its own merits, without relying on metaphors and analogies. Women's political authority in asserting reproductive autonomy is complicated by increasing acceptance of technologies that either inhibit or enable women's reproductive capacity. If women are able to assert themselves independently from a patriarchal consciousness, then women would be able to develop ideas and technologies on their terms. Resistance to patriarchal appropriation and alteration may still occur, but patriarchal control over women would become visible, and so easier to confront. Vandana Shiva (1993) argues that increased reliance on technology in agriculture threatens biodiversity and leads to homogeneity among organisms; however, she argues that the issue is about who controls biodiversity, and how this control influences the invention and use of technology.³⁹ If women's goal is liberation from domination, oppression and exploitation, acceptance of technological innovation suggests a dilemma, whether women's autonomy rests on a choice between freedom from nature or freedom from masculinist/patriarchal authority.⁴⁰ If technological innovation comes from masculinist/patriarchal ideology, as Shiva suggests regarding GE biotechnology, then the dilemma facing women's decision making is further complicated by framing women's authority in contradictory ways. Ideological

the Connection Between Women and Animals", *Ecofeminism, Women, Animals, Nature*, Philadelphia: Temple U Press, p61; Merchant (1994) p20

³⁸ Kneel, Marti (1993) *op cit*, p257-258 and Leiss, William (1994) *op cit*, p55 and Li, Huey Li *op cit*, p276.

³⁹ Shiva (1993) *op cit*, p65 and 90.

affirmations of conquest may be similar, but exploitation of nature and oppression of women indicate different conceptual and historical developments. Although initially trapped by simplistic accounts of human-nature relations, ecofeminists have moved beyond these essentialist beginnings and now explore how sex/gender scripts exploit and oppress people kept on the margins of political power. More recent ecological feminism broadens the discussion of people's connection to nature by addressing the diversity of women's thought and activism when responding to environmental crisis.⁴¹

Ecological feminism explores human relationships with nature through critiques of patriarchal ideology and how it structures relations between men and women, by locating women closer to and associated with nature. Transformation of these relationships necessitates a critique of western tradition, its reductionism and essentialism that depicts reality either in metaphoric reflection of nature or imposes human identity, value and authority onto nature.⁴² In respect to 'negotiation with nature' the issue here, is to recognize that human relationships are mutable, over time and across cultures, while also paying attention to how patriarchy constructs conquest against nature as normal and appropriate feature of human affairs. Ecological feminism sensitizes me to seeing politics as involving conquest of nature. Ecological feminism begins its analysis with sex/gender, yet widens its scope to include questions about human alienation from nature and the significance of context basing politics on relationship, not conquest; and power

⁴⁰ Mies (1993) *op cit*, p254 and Shiva (1993) *ibid*, p5.

⁴¹ A sign of post-essentialist ecofeminist inquiry can be found in Agarwal, Bina (1998) "The Gender and Environment Debate", *Radical Ecology, Global and Local*, Keil, Roger, David Bell, Peter Penz, Leesa Fawcett, eds., NYC: Routledge, p198; Hawthorne, Susan (2002) *Wild Politics*, North Melbourne: Spinifex, p19-20; Sandilands, Catriona (1999) *The Good-Natured Feminist, Ecofeminism and the Quest for Democracy*, Minneapolis: U of Minnesota Press, p xxi, 17-20; and Sturgeon, Noël (1997) *ecofeminist Natures, race, gender, feminist theory and political action*, NYC: Routledge, p12-16.

based on creation, not domination and control. Becoming ecologically sensitive is to engage in a political project that reveals humanity's destruction of the planet's environment as well as confronting people's relations with each other and nature, and shows how these two interact.

Much ecological feminist literature includes debates with other western environmental viewpoints and within ecological feminism and participates in critical interventions that challenge the pervasiveness of racist, sexist, elitist, ageist, ablist and eurocentric assumptions. Ecological feminism seeks resolution of the stalemate between too much introspection and not enough action as a means to recover an ecological feminist praxis, which will go beyond identity politics and essentialist associations that depict women as like nature and nature as like women. From these criticisms it seems that for ecological feminism to be effective, it must unpack the political features of relationships by uncovering connotations, which seek to position humanity as natural or cultural, respectively. Implicated here is an enduring curiosity about multiple forms of masculinity and femininity; and what constitutes 'natural' and 'cultural'. A tactic of anthropocentric ideology is to remove political agency by naturalizing a being's subjectivity. In effect, naturalizing someone/thing is a political act that discounts and devalues living subjects/beings designated as 'natural'.⁴³ In this way, ecological feminism is attempting to re-invigorate itself, to re-view the political by analyzing women's influence on decisions about nature and the environment in which people live. It is in

⁴² Lerner (1986) *op cit*, p8: argues "The period of the "establishment of patriarchy" was not on "event" but a process developing over a period of nearly 2500 years, from app. 3100 to 600 B.C. See also Eisler (1988) *The Chalice and the Blade*, San Francisco: Harper SanFrancisco, p12 and 169.

⁴³ Runyan, Ann Sisson (1992) "The 'State' of Nature: A Garden Unfit for Women and Other Living Things", *Gendered States, Feminism (Re)Visions of International Relations Theory*, Peterson, S V, ed, Boulder: Rienner, p124.

this direction that I seek to understand political dynamics that reaffirm anthropocentric positions while discounting ecologically sensitive viewpoints.

Each ecocentric approach that Eckersley reviews describes nature as interconnected with humanity, viewing relations in a “holistic rather than an atomistic” orientation. Catriona Sandilands (1999) argues that an ecocentric stance comes from acknowledging the subjectivity of nature, the paradox here is that nature is both autonomous from human development (subject as political actor) and the object of human will (subject to exploitation, oppression and construction).⁴⁴ Ecocentric approaches openly challenge anthropocentric bias that situates humanity at the centre of life, which objectifies nature as a material source for human existence while ignoring nature’s status as actor. According to these ecological perspectives, anthropocentric ideology ignores nature as an autonomous actor; thus human-centredness denies that it constructs nature, thereby rendering it into an abstract material, despite being alive and evolving, yet existing for humanity’s benefit and development.⁴⁵ Although nature remains subjected to human will, ecocentric perspectives aim to restore nature’s political autonomy, by depicting nature as holistic, diverse and independent from human will and consciousness. Ecological perspectives sensitize people’s awareness that their existence is connected to their surroundings by encouraging people to interact with nature and experience nature as alive and diverse as humanity itself.⁴⁶ This sensitivity is summed up in the idea that the best strategy to survive against catastrophe is to assert diversity because variety rather

⁴⁴ Sandilands (1999) *op cit*, p79.

⁴⁵ Eckersley, *op cit*, p46.

⁴⁶ Eckersley, *op cit*, p64; Merchant (1994) *op cit*, p20-21; Zimmerman, Michael (1990) “Deep Ecology and Ecofeminism: the Emerging Dialogue”, *Reweaving the World, the Emergence of Ecofeminism*, San Francisco: Sierra Club Books, p140.

than uniformity allows for creative and reproductive processes to continue.⁴⁷ This sensitivity recognizes that nature is not created entirely by people, nor is its existence based on maintaining human life.

An explicit implication of eco-centric literature is for people to live closely with nature. Eco-centric perspectives argue that human separation from nature allows for the objectification of nature, by which human superiority led to further conquest and control of nature. Ecological feminism, however, implies there is more to anthropocentric ideology at play, that separation allowed for nature to be tamed, subdued into passivity and silenced into submission.⁴⁸ For nature to be recognized as an actor (considering its diversity, it is more accurate to say actors or agents) is to admit that nature is not wholly cooperative, pacific and generous, but that nature is active, unpredictable and ungended, and whose actions “defy the totalization of human representation”.⁴⁹ Nature is not a monolithic whole, but is understood here as having unique and diverse, yet connected and related, components. Susan Griffin (1978) argues that nature is fickle, uncontrollable and dangerous, yet she celebrates rather than dismisses these characteristics.⁵⁰ Accordingly emancipation from masculinist/patriarchal conquest requires people to embrace the full breadth of characteristics and essences that are embodied in ourselves: “By her words we are brought to our own lives, and are overwhelmed by our feelings which we had held beneath the surface for so long.”⁵¹

⁴⁷ Hawthorne, Susan (2002) *Wild Politics, Feminism, Globalization, Bio/Diversity*, North Melbourne: Spinifex, p19, 28 and 67; Shiva, Vandana (1993) *Monocultures of the Mind, Perspectives on Biodiversity and Biotechnology*, London: Zed Books, p16, 23, 65.

⁴⁸ Griffin, Susan (1978) *Woman and Nature, the roaring insider her*, NYC: Harper & Row, p182-186 and King, Ynestra (1994) “Feminism and the Revolt of Nature”; Merchant, Carolyn (1994) *Ecology*, New Jersey: Humanities Press, p198 and 203.

⁴⁹ Sandilands, (1999), *op cit*, p118.

⁵⁰ Griffin (1978) *op cit*, p167-168.

⁵¹ Griffin (1978) *ibid*, p183.

Equally, suppression of nature's characteristics considered dangerous or fickle has consequences, thus living closely with nature aims to understand how to live with nature without resorting to manipulation, control and usurpation of nature's forces and actions. Exploring how to live compatibly with nature focuses 'our' attention on how 'we' relate to nature, instead of focusing on re-constructing nature to suit human needs, individually and collectively.

Ecocentric approaches are dialectical, as each is critical of mainstream anthropocentric environmental ideology in western political thought. Axiological approaches critique western moral thought while trying to transform how we value the worthiness of nature without imposing a human-centred moral code. Transpersonal, or deep ecology, challenges the objectivity of environmentalist thought by re-orienting how people respond to nature on emotional and rational levels to become sensitized to how our actions influence and also restrict activities such as the destruction of forests or extinction of fisheries. Ecofeminist approaches confront the sex/gender stereotypes in which the political experience embedded in human struggles of conquest, domination and control are transformed into a political orientation that respects diversity among people and in nature. For me, resistance and transformation free us from anthropocentric ideology and signify the importance of how people relate to nature. Furthermore, by rejecting elitist and essentialist renderings of nature, eco-centric approaches challenge how supremacist authority centralizes human control of all that matters in nature.

My understanding of ecocentric approaches is that each argues that human liberation of humans from conquest and domination is necessary before we can transform human relations with nature. Therefore, the goal is to transform anthropocentric relations

between humans and nature to ecological relations so as to defuse human authority over nature, more specifically nation-state authority to define and control nature. According to ecocentric thought, anthropocentric power is expressed through domination and attempts to control (natural) processes and resources: knowledge needed is acquired through coercion, force, manipulation and theft. Widespread tolerance of violence as a political tool is based on the rationale that violence is enabling and useful in initiating social change.⁵² Control, domination and appropriation operate independently depending on persuasion, oppression or exploitation) or context (relationship, time or place). This depiction is useful for me because it reveals similarities that establish correspondence between nation-states' 'right of conquest' and nation-state's use of violence as a sanction against humans and nature in order to protect and conserve territories and interests held within a nation-state's domain.⁵³ For example, the impact of GE biotechnology destroys nature's creativity by enclosing (through monopolization and patent regimes) people, plants, animals and land, preventing natural/spontaneous innovation, organization, and reproduction from continuing.⁵⁴

I do not believe that patriarchy and masculinity (androcentric) are the only factors contributing to environmental crises. I think the question at stake lies in the schema of relationships: to be *ecocentric* or not to be *anthropocentric* challenges the purpose of having centralizing position rather than exploring the essence of human relations with

⁵² Adams, Carol (1996) "Ecofeminism and the Eating of Animals", *Ecological Feminist Philosophies*, Warren, Karen, ed, Bloomington: Indiana U. Press, p117; Quinby, Lee (1990) "Ecofeminism and the Politics of Resistance", *Reweaving the World, the Emergence of Ecofeminism*, Diamond, Irene and Gloria Feman Orenstein, eds, San Francisco: Sierra Club Books, p122; Spretnak, Charlene (1990) "Ecofeminism: Our Roots to Flowering", *Reweaving the World*, *ibid*, p9.

⁵³ Churchill (1992) *op cit*, p35; Pettman, Jan Jindy (1996) *Worlding Women, a feminist international politics*, NYC: Routledge, p88,90, 94 and 97; Todorov, Tzvetan, *op cit*, NYC: Harper and Row, p10-11 and 60-61..

non-humans and the land on which 'we' live. The challenge of dethroning humanism from its central authority makes me more sensitive to Aboriginal Peoples' ideas, as found in indigenist literature or from 'third world' feminist perspectives, as articulated by Vandana Shiva, because they explore political questions that critique centralizing authority, whether regarding people, nation-state or nature.

B. Indigenist Critique of Western Politics: a matter of Ecocide and Genocide

Indigenist scholarship from North America recovers Aboriginal traditions and experiences to confront western/eurocentric colonization of indigenous peoples, their knowledge and practices as well as appropriation and occupation of their land.⁵⁵ As Poka Laenui (2000) notes, it is a contemporary project of rediscovering cultural histories from which to recover what has been lost, destroyed or assimilated through colonization.⁵⁶ Indigenist scholarship reflects oral traditions but incorporates contemporary literary approaches, offering a diverse range of ideas and viewpoints. Kiera Ladner (2001) and Linda Tuhiwai Smith (1999) describe indigenous scholarship as an emancipatory project

⁵⁴ Shiva, Vandana (1997) *Biopiracy, The Plunder of Nature and Knowledge*, Toronto: Between the Lines, p7.

⁵⁵ There are a few exceptions to this, namely Linda Tuhiwai Smith (1999), who writes primarily from a Maori perspective about colonialism and academic methodology that occurs in New Zealand and Lotte Hughes (2003), who provides a survey of Indigenous Peoples and their struggles world-wide. I concentrated on North American Indigenist perspectives because I live in Canada and my aim is to compare and contrast eco-centric perspectives within North America and also to contrast these with the Canadian Government's position and role during negotiations of the Cartagena Protocol. Methodologically speaking my literature choices serve as a check against my partial view of international politics, while I paying attention to how some perspectives become eclipsed by other perspectives in the formation of state negotiating positions.

⁵⁶ Laenui, Poka (aka Hayden Burgess) (2000) "Process of Decolonization", *Reclaiming Indigenous Voice and Vision*, Battiste, Marie, ed, Vancouver: UBC Press, p153.

that is simultaneously resisting colonialism and de-colonizing.⁵⁷ Taiaiake Alfred (1999)

writes:

Knowing the history of European colonialism in North America demands recognition of the damage that has been done of the vitality of our traditional cultures. But we must also honour the fact that indigenous peoples have survived: the frameworks of their value systems remain intact and vital.⁵⁸

I understand indigenous scholarship to be about confronting degradation and divisiveness that follows in the wake of colonialism, while also respecting the authenticity and integrity of indigenous traditions, approaches, teachings, and cosmology to “construct, rediscover, and or reaffirm their knowledge and cultures” within contemporary political settings.⁵⁹ Indigenous scholarship facilitates, in Ladner’s words, “an alterNative approach” from which ideas and opinions are brought forward to challenge western mainstream societies.⁶⁰ Therefore, I intend indigenous scholarship to refer to perspectives, analysis and positions, but not a single formula for liberation and emancipation. Rather it includes participatory, post-colonial, nationalist, decolonizing and indigenist projects, but not them alone.⁶¹ Indigenist perspectives reflect peoples’ voices that express various approaches, knowledges and experiences – autonomously and collectively – while also resisting western/Euro-centric/modern discourse as the only vehicle to ascribe truth and depict reality.⁶²

⁵⁷ Ladner, Kiera (2001) “When Buffalo Speaks: Creating an Alternative Understanding of Traditional Blackfoot Governance”, Phd. dissertation, Carleton University, Ottawa, p37-42 and Smith, Linda Tuhiwai *op cit*, p104-105.

⁵⁸ Alfred, Taiaiake (1999) *Peace Power Righteousness, an indigenous manifesto*, Toronto: Oxford U Press, p5.

⁵⁹ Ladner, *op cit*, p37.

⁶⁰ Ladner, *ibid*, p37; see also Alfred *op cit*, p21.

⁶¹ Ladner, *ibid*, p36-38.

⁶² Churchill, Ward (2003) “I Am Indigenist”, *Acts of Rebellion, The Ward Churchill Reader*, NYC: Routledge, p275 and Ladner, *ibid*, p38.

By “indigenist” I mean an activist stance in which Aboriginal Peoples from Turtle Island reject imposition of western political ideas and appropriation/repression of aspects of Aboriginal Peoples and their cultures. In a political sense, it rejects categorization of being an object of another nation’s policy imposed by states in favour of acting independently, asserting their authority and identities while conversing with Europeans and their descendants.⁶³ Activism is a process of confronting colonialism while decolonizing, to which Laenui states that it is about: “rediscovering one’s history and recovery of one’s culture.”⁶⁴

My theoretical interest is in the contributions of indigenist thought and practice to transforming negotiation, both with nature and in the inter-national setting with modern nation-states. Indigenist literature helps me identify anthropocentric biases that are hard to see from within a western gaze. Furthermore, my review of indigenist scholarship helps me listen to stories written in text form. Indigenist literature recounts indigenous peoples’ initial contact with English, French, Spanish and Portuguese explorers and settlers in North America to contemporary times of globalisation.⁶⁵ Indigenist literature describes indigenous and settler relations in terms of colonization that has resulted in genocide and ecocide. I consider how colonialism as an ideology treats people and the land on which they live. Indigenist perspectives make a connection similar to ecological feminism, by noting how colonialism affects both social and ecological relationships. My understanding of colonialism is supported by indigenist analysis of colonialism in

⁶³ Henderson, James Sákéj Youngblood (2000) “Ayukpachi: Empowering Aboriginal Thought”, *Reclaiming Indigenous Voice and Vision*, Battiste, Marie, ed, Vancouver: UBC Press, p248, 252. See also speeches given by Bemal Bhikku, p42; William Means, p59; Giichi Nomura, p71; Donald Rojas, p93 from *Voice of Indigenous Peoples, Native People Address the United Nations* (1994), *op cit*.

⁶⁴ Laenui, *op cit*, p153.

⁶⁵ Alfred, *op cit*, p xv, 5; and Churchill (1992) *op cit*, p7.

how it shaped relations between European/settler-states and Aboriginal Peoples from Turtle Island in ways that echo insights from ecological feminism's analysis of anthropocentric ideology and its conquest of women and nature. Their analysis of colonization informs their activist stance to advocate a politic framed around de-colonization and describing processes that recover traditional values, ideas and practices that resists western assimilation and ignorance of Aboriginal Peoples and their cultures.

1. Theorizing colonialism

According to indigenist perspectives situated within North America, colonialism is a systematic process of killing, deception, theft and absorption. There are two periods defined broadly that mark this systematic process, namely 'first contact' (European 'discovery' of 'the Americas' and Indigenous/Aboriginal Peoples) and 'settler-state' or (settler-state occupation of indigenous land and assimilation of Indigenous/Aboriginal Peoples into settler-state social and economic culture). 'Internal colonialism' (settlers' colonialism reinforced within indigenous societies) and 'neo-colonialism' (framed by the international nation-state system) are two contemporary variations of colonialism that exist concurrently with settler-state colonialism.⁶⁶ Colonialism, according to Laenui, is a process created at the time of first contact with Europeans, yet continuing today as a systematic process that internalizes colonialism within Aboriginal populations, therefore perpetuating colonialism through denial, destruction, denigration, superficial tolerance and assimilation.⁶⁷

⁶⁶ Churchill (1992) *ibid*, p7 and 23; Hughes, *op cit*, p29-30, Laenui, *op cit*, p150.

⁶⁷ Laenui, *op cit*, p150-151.

'First contact' refers to the initial contact with Europeans as monarchical state regimes expanded their territorial claims asserting ownership of newly discovered lands that they identified as uninhabited by civilized people. They interpreted their claim to such territory as a right according to their laws and religious beliefs.⁶⁸ During initial contact with European states, the issue confronting Aboriginal Peoples concerned Europeans' assumptions and rights to acquire land. Ownership of land was not an idea familiar to Aboriginal Peoples, however, the idea that they could live on a specific area of land was their inherent collective right comes from their deep spiritual connection to and with the land.⁶⁹ Legal standards for territorial acquisition of North American land by Europeans were based on principles of entitlement if lands discovered were uninhabited (*territorium re nullius*); by purchase, with occupants' consent of terms of sale; or through rights of conquest, as in seizure of land by victors of war.⁷⁰ Ward Churchill (1992) notes that Aboriginal Peoples in North America did not surrender their land willingly, but that land acquisition occurred by coercion or military force.⁷¹ Aboriginal Peoples were not passive in their assertion to govern themselves (including their choice on where and how to live). Although some were willing to share the land, relations with Europeans developed from 'first contact' was determined mostly by how European monarchs sought

⁶⁸ Hughes, *op cit*, p30; Todorov, *op cit*, p11 and 147.

⁶⁹ Henderson (2000) *op cit*, p259, Hughes, *ibid*, p52 and 53.

⁷⁰ Churchill (1992) *op cit*, p35.

⁷¹ Rights to acquire land from and to trade with Aboriginal Peoples "accrued exclusively to the discovering Crown vis-à-vis other European powers," although representative of European states recognized inhabited lands belonged inherently to Indigenous people. Acquisition of title could occur with consent of Indigenous People, which included several conditions, namely if agreement involved purchase rather than force of arms; if trade with European states was not declined arbitrarily; if missionaries were accepted; and if violence was not inflicted on citizens of the Crown. Acquisition by force was valid if it was deemed necessary to "subdue native resistance" and to gain acceptance according to the conditions of consent noted above. Quotation in Churchill (1992) *op cit*, p35.

to acquire land and access to resources found in these territories, by rights stipulated in laws they made and interpreted.

'Settler-state colonialism' eclipsed 'first contact' colonialism when settlers acquired independence from their European monarchs and when competing European states no longer needed indigenous people as allies in war or trade.⁷² The transition from European first-contact regime with people living on Turtle Island to occupation by settler-states was not an orderly process, since treaty-making during 'first contact' did not include all Indigenous Peoples; therefore, Indigenous nations who had not engaged with European states were confronted with negotiating with settler-states.⁷³ 'Settler-state colonialism' continues today with unfinished negotiations concerning claims about land title and compensation for land occupied or damaged by settler-state development. 'Settler-state colonialism' undermines Indigenous Peoples' survival by occupying land and/or displacing Aboriginal communities to the point of near extinction.⁷⁴ A central issue of 'settler colonialism' concerns the conditions in which negotiations with settler-states take place and the issues confronting Aboriginal Peoples' survival and self-determination on land that they have an inherent right to claim. Negotiations with settler-state representatives tend to be biased by a history of relations that favoured western norms and complicated by non-implementation of treaty objectives; and by a legacy of misrepresentation, fraudulent or coerced agreements.⁷⁵ As settler-colonies/states

⁷² Richardson, Boyce (1993) *People of Terra Nullius, betrayal and rebirth in Aboriginal Canada*, Toronto: Douglas & McIntyre, p50.

⁷³ Henderson, James Sakej Youngblood (2000a) "The Context of the State of Nature", *Reclaiming Indigenous Voice and Vision*, Battiste, Marie, ed, Vancouver: UBC Press, p27 and Richardson, Boyce (1993) *People of Terra Nullius, betrayal and rebirth in Aboriginal Canada*, Toronto: Douglas & McIntyre, p51.

⁷⁴ Hughes, *op cit*, p31 and Churchill (1992) *op cit*, p17 and 35. The plural form of 'peoples' refers to the diversity of groups and people within the general group of 'indigenous'.

⁷⁵ Churchill (1992) *op cit*, p414 and Richardson, *op cit*, p51.

expanded their territorial claim, indigenous peoples were displaced from their land until knowledge, identity and values were appropriated into settler-state culture and Indigenous Peoples became invisible, living on the margins of settler-societies.⁷⁶ Churchill asserts 'settler-state colonialism' means that "the immigrant or invading population has rearranged its affairs in such a way as to make itself more comfortable at the continuing expense of indigenous people."⁷⁷

Although settler-state colonialism appears to be the dominant form of colonialism in North America and other parts of the world, such as Australia, New Zealand and South America, it is important to note two other variations: internal colonialism and neo-colonialism. First, 'internal colonialism' illustrates the process of colonialism within indigenous societies of which there are two facets. One facet, according to Churchill, "involves the subordination of many of the smaller nations within Europe itself ... as part of a process of consolidating statist structures desired by the European subcontinent's dominant peoples."⁷⁸ Another facet concerns a form of settler-state colonialism occurring after European settlers established independence from European monarchs. "[T]he substance of settler-state colonialism is visited upon smaller indigenous nations by large and thoroughly Europeanized local peoples striving to replicate the forms of Western-style statist consolidation."⁷⁹

⁷⁶ Churchill (1992) *op cit*, p431-432; LaDuke, Winona (1999) *All Our Relations, Native Struggles for Land and Life*, Boston: South End Press, p5; Henderson (2000a) *ibid*, p28-29; and Weatherford, *op cit*, p252-253.

⁷⁷ Churchill (1992) *op cit*, p418.

⁷⁸ Churchill, Ward (1995) "Remembering Bob Thomas", *Since Predator Came*, Littleton: Aegis Publications, p5. Some of the smaller nations identified by Churchill are: Euskadis (Basques), Scots, Welsh, Freislanders and Magyars.

⁷⁹ Churchill (1995) *ibid*, p6. China and Vietnam are examples provided. See also Todorov, Tzvetan (1984) *The Conquest of America*, *op cit*, for examples citing Mexico and United States of America. Decolonizing 'internal colonialism', via rejection of both capitalism and socialism by some Aboriginal liberation movements has established a 'third way', referred to as 'indigenism' or 'Fourth Worldism'.

Second, in the era of global politics, new forms of colonialism emerge through legal, industrial and territorial acquisition, sanctioned by negotiations that occur in international or multilateral fora. For example, patent protection or 'intellectual property rights' (IPR) close off publicly accessed-areas and resources by, for example, placing ownership and control under the jurisdiction of private enterprise. IPRs create a monopoly in favor of corporate access to commonly shared knowledge, plants, animals and seeds, thereby blocking access to these knowledges and materials traditionally credited by indigenous people.⁸⁰ Farmers in India fought against patents credited to WR Grace and Company (Grace) for properties found in the Neem Tree for use in pesticides manufactured by Grace. The Neem tree has many properties useful for things such as, antiseptics, pesticides, contraceptives, livestock feed and fuel oil, which have been developed by Indian farmers for centuries.⁸¹ This case illustrates corporate piracy using patent laws supported through international treaties, to block local community access to plants that have been part of their traditions for generations.⁸² International regimes, such as the General Agreement on Tariffs and Trade (GATT) and Trade-Related Intellectual Property Rights (TRIPs), are critiqued as a new form of colonialism because patents displaces and reassigns access to knowledge, spirituality, land and resources from indigenous peoples to corporations. Neo-colonialism is global in its reach; treaties ensure corporate and nation-state access to culture, knowledge and resources. The contentious

⁸⁰ IPRs are a 'new' feature of gaining control and monopoly, several other terms reference this phenomena, such as land/resource enclosure, neocolonialism, assimilation (of indigenous nationality into one state/country), see Hawthorne, *op cit*, p173-176; Mander, *op cit*, p342-343; Sachs, Wolfgang (1999) *Planet Dialectics, explorations in environment and development*, London: Zed Books, p87; Shiva, Vandana (1991) *Biodiversity, Social & Ecological Perspectives*, London: Zed Books, p10-11, 67; and Smith, Linda Tuhiwai *op cit*, p 21 and 103.

⁸¹ Shiva, Vandana and Holla-Bhar, Radha (1996) "Piracy by Patent, the case of the Neem Tree", *The Case Against the Global Economy*, Mander, Jerry and Edward Goldsmith, eds. San Francisco: Sierra Club Books, p149.

issue with neo-colonialism is that it perpetuates a standard of acquisition by discovery and coercion through legal means, by ignoring local farmers' and peasants' contributions and access to biodiversity. Neo-colonialism also blurs the definition of indigenous, including generally Aboriginal Peoples; non-western people living in the Southern hemisphere; and people born in 'third world' localities and traditions, living in agrarian-based rather than industrial-based societies.

Colonialism takes many forms in the acquisition of land, knowledge and culture, indicating that relations are based on the assimilation of one nation/culture into another culture/state. Laenui describes five general elements in the process of colonialism.⁸³ First, colonialists deny Indigenous peoples' ability to continue their way of life, thus forcing their withdrawal from the land, which disconnects them from their sense of self, community and culture. Second, colonialist occupation of the land destroys it through pollution and excessive consumption of natural resources, thus eradicating evidence of Indigenous peoples' existence on the land. Third, colonialists denigrate Indigenous ways of life, values and spirituality, which results in belittling their social, political and economic contribution that can equal colonialists' accomplishments. Fourth, colonialist accommodation of indigenous culture is superficial and neglects to acknowledge that accommodation is a token form of opportunity. Fifth and last, colonialism seeks to transform Indigenous ways of life and being, but in practice it leads to exploitation of indigenous people and their knowledge.⁸⁴ These elements together result in state policies that lead to destruction of peoples, their land bases, cultures and knowledges.

⁸² Shiva and Holla-Bhar, *ibid*, p148-149.

⁸³ Laenui, *op cit*, p150-152.

Furthermore, while colonialism defines a relationship between European/settler and 'indigenous'/'native' the process works in subtle ways to set up an 'internal' form of colonialism in which people are caught perpetuating different features of colonialism.⁸⁵ People can perpetuate colonialism in subtle ways knowingly or unknowingly, and directly or indirectly, if their economic, political and social relationships are based on domination, exploitation and violence. Understanding colonialism allows me notice that relations between Aboriginal Peoples and colonial/settler-state nation-state are wrought with injustice, inequity and racism, in particular, from one group rather than from all groups involved. I understand this to be a subtle process in which colonial acquisition is initiated through a complicated web of appropriation, assimilation, deception, denial and usurpation.

2. Resistance to Colonialism

Many Indigenist perspectives resist western/eurocentric authority by making visible traditions, ways, ideas and politics that existed prior to European expansion to North America, and also exist in current decolonizing processes. Understood politically decolonization is a process of recovery and presence. It aims to reverse the effects of assimilation and appropriation and requires resistance to being erased: physically in terms of confronting social displacement and preventing further killings and destruction of the earth's environment; culturally in terms of speaking against efforts to assimilate

⁸⁴ Laenui's framework used the following headings: 1) denial and withdrawal; 2) destruction and eradication; 3) denigration and belittlement, insult; 4) surface accommodation and tokenism; and 5) transformation and exploitation.

⁸⁵ Henderson (2000a) *op cit*, p29-30; Churchill, Ward (2003) "The New Face of Liberation, *Acts of Rebellion*, NYC: Routledge, p266 and Dhruvarajan, Vanaja and Jill Vickers (2002) *Gender, Race, and Nation, a Global Perspective*, Toronto: U of Toronto Press, p235.

indigenous ways into western norms, habits, values and understanding; and ideologically in terms of revealing willful ignorance (not seeing, not knowing, not listening) of western gaze upon Aboriginal peoples.⁸⁶ Laenui asserts that “decolonization includes the re-evaluation of the political, social, economic and judicial structures themselves and the development, if appropriate, of new structures that can hold and house the values and aspirations of the colonized people.”⁸⁷ My understanding of the correspondence between colonialism and decolonization comes from a perspective based on resistance, which is about challenging mainstream western society to confront how “its power relations and relationship with nature” serves to perpetuate ignorance, assimilation and violence.⁸⁸ Correspondence serves also to consider how western society can support a process of decolonization within itself and in support of Aboriginal Peoples to foster a politic that resists colonialism. Resistance requires speaking and writing as part of a process of decolonization, in which actors refute objectification and thereby respectfully listen to all voices speaking during negotiation.⁸⁹

3. Decolonizing negotiation

The correspondence between colonization and decolonization is central to negotiation between Indigenous Peoples and westernized nation-states. On the surface

⁸⁶ Churchill, Ward (1995) “Genocide, towards a functional definition”, *Since Predator Came*, Littleton: Aigis Publication, p75, 90-92, 99. Churchill argues for a definition of genocide that notes both “an overt instrument of state policy” and an “incidental by-product of the functioning of advanced industrial society” in respect to murder and assimilation intended to cease existence of whole peoples and their cultural settings. See also Smith, Graham Hingangaroa (2000) “Protecting and Respecting Indigenous Knowledge”, *Reclaiming Indigenous Voice and Vision*, *op cit*, p210 and 215 and Henderson (2000a) *op cit*, p29-30. Henderson quotes Iris Marion Young’s depiction of the five faces of oppression (exploitation, marginalization, powerlessness, cultural imperialism [assimilation] and violence) suggesting that colonization cannot be reduced to an essential definition or unified explanation.

⁸⁷ Laenui, *op cit*, p155.

⁸⁸ Alfred, *op cit*, p21.

colonial/indigenous relations illustrate cosmological/philosophical differences, which factor into failures in negotiation. According to indigenist perspectives, human relations to nature must be based on honouring all living beings, in which these relations are an integral part of survival. By contrast, an anthropocentric orientation views relations only in a social and economic sense, that is relations are with people (and hierarchical) whereas nature is valued for its utility or feared for its destructive power; hence there are no relations with non-human nature. On a deeper level, this correspondence requires sensitivity to how knowledge is produced and disseminated. Smith argues that research methodology:

... identifies research as a significant site of struggle between the interests and ways of knowing of the West and the interests and ways of resisting of the Other. ... the Other has been constituted without a name, a face, a particular identity, namely, *indigenous peoples*.⁹⁰

As a non-Aboriginal person it is important for me to be aware that I can perpetuate colonialist tendencies in constructing perspectives different from mine as 'Other'. I also need to be sensitive to how I learn from, interpret and use research produced from western and Aboriginal perspectives.

Indigenist perspectives argue that relations between humans and nature are shaped by a people's connection to the land. Life revolves around the land, where other animals are thought to be related and having a close personal association with people.⁹¹ These relationships come from a sophisticated awareness of their surroundings and experience with animals, plants and the environment, to the extent of being aware of shifts in moods,

⁸⁹ Banyacya, Thomas (1994) "Postscript", *Voice of Indigenous Peoples, Native People Address the United Nations*, Santa Fe: Clear Light Publishers, p115-116 and Lyons, Oren, in same volume, p120.

⁹⁰ Smith, *op cit*, p2, italics found in text.

⁹¹ Hughes, *op cit*, p46.

which suggests “the relationship is a highly personal and emotional one.”⁹² This personal connection, however, teaches humanity that the environment needs to be treated with thoughtful consideration without which there is a risk of losing the ability to sustain life.⁹³ Observation, experience and a belief that all living beings have a spiritual essence have fostered this connection to the land. In short, indigenous philosophy is animist, which credits animals, land, plants, people, water bodies (such as lakes and rivers) and weather, such as rains, winds and calm days, as embodying sacred spirits. Animism does not depict spirituality as a power or entity that only people have access to or are capable of knowing, since spirituality is part of all living beings, and this extends to other things such as mountains, rivers and forests.

Taiaiake Alfred summarizes indigenous philosophic principles about human relations with the land generally as:

... premised on the belief that earth was created by a power external to human beings, who have a responsibility to act as stewards; since humans had no hand in making the earth, they have no right to ‘possess’ it or dispose of it as they see fit – possession of land by man is unnatural and unjust. The stewardship principle, reflecting a spiritual connection with the land established by the Creator, gives human beings, special responsibilities within the areas they occupy as indigenous peoples, linking them in a ‘natural’ way to their territories.⁹⁴

Relationships with nature, the land and people respond to an ethic of living in concert, in which these relations influence a sense of community; therefore, people are expected to live cooperatively within this community.⁹⁵ Relations with – as in connected to – place shape a social ethic of responsibility. Churchill writes generally of this ethic as:

⁹² Hughes, *ibid*, p46.

⁹³ Hughes, *ibid*, p46 and 52.

⁹⁴ Alfred, *op cit*, p60-61

⁹⁵ Hughes, *op cit*, p52.

Human beings are free (indeed, encouraged) to develop their innate capabilities, but only in ways that do not infringe upon other elements – called “relations”, in the fullest dialectical sense of the word – of nature. Any activity going beyond this is considered an “imbalance” a transgression, and is strictly prohibited.⁹⁶

Knowledge of relatedness comes from philosophic founded with spiritual beliefs that respect integrity of life in animals and plants (non-human beings), however, this respect and esteem comes from an awareness of how fickle and unexpected changes in the environment or climate can be. For Churchill the transgression concerns becoming colonized; therefore the risk of transgressing or infringing on ‘elements’ or ‘relations’ can lead to genocide and ecocide.⁹⁷ If human relations with nature impart a moral stance not to transgress nature’s elements then indigenist literature suggests a way to resist anthropocentric ideology, through processes of decolonization.

Indigenist accounts of knowledges, politics and experiences are wrapped in expressions of sacredness. I understand it as animism, and as a form of spirituality, this sacredness situates creative energy, or creative power, in living beings, including rivers, mountains and forests. Ladner asserts that knowledge acquisition has many approaches, such as, experience, intuition and imagination:

... knowledge can be obtained through processes of inward journeying; reflection; dreams; visions; and, through individual and collective experiences in the natural world. Thus it is likely that governance emerged out of or was forged using these same intellectual processes and experiences.⁹⁸

If knowledge is acquired from reflective experiences, then it is shared and observed in ways that derive from beliefs in spirituality and sacredness and learning from relations, so

⁹⁶ Churchill (1992) *op cit*, p17.

⁹⁷ Churchill, Ward (1995) “Since Predator Came: A Survey of Native North America Since 1492”, *Since Predator Came*, Littleton: Aegis Publication, p28, 29 and 30. See also LaDuke, Winona (1999) *All Our Relations*, Boston: South End Press, p2-3.

as to inform how people are to conduct themselves when establishing social and political practices. Ladner expresses my understanding more simply as: “Creator... life force... energy of the life world or ecological order”.⁹⁹ Ladner writes that the grammar and meaning are important, since “creator” rather than ‘The Creator’” is to be recognized in the context of a “verb not a noun”.¹⁰⁰ The grammar conveys present tense in the use of ‘ing’ suffixes. Words are to convey happenings connected as – doing/thinking, which to my understanding weaves together noun and verb (substance and process).¹⁰¹ Ladner cautions that the word ‘creator’ does not have the same meaning as Christians and Jews attribute to the word/deity ‘God’ or Muslims give to the word/deity ‘Allah’.¹⁰² ‘Creator’ concerns the ongoing process of learning and living with other living creatures (meaning something created) and the actions that animals, plants, rivers and so on can communicate, thereby teach people. As Ladner notes, however, “[g]iven that Creator is not a noun-god, there is inherent contradiction in these teachings.” Leroy Little Bear (2000) explains further, that:

[t]he Earth cannot be separated from the actual being of Indians. The Earth is where the continuous and/or repetitive process of creation occurs. It is on the Earth and from the Earth that cycles, phases, patterns – in other words, constant motion or flux – can be observed. Creation is a continuity. If creation is to continue, then it must be renewed.¹⁰³

Creator is the essence of the power that defines all human and non-human beings; Creator is everything and is everywhere.¹⁰⁴

⁹⁸ Ladner, *ibid*, p223.

⁹⁹ Ladner, *ibid*, p67

¹⁰⁰ Ladner, *ibid*, p66, in footnote #20.

¹⁰¹ The significance of ‘ing’ to convey noun and verb is noted by Forbes, *op cit*, p116, with his use of ‘together-living’ to describe Cree and Ojibwe relations with nature.

¹⁰² Ladner, *ibid*, p224.

¹⁰³ Little Bear, *op cit*, p78.

¹⁰⁴ Ladner, *ibid*, p224.

My understanding of these teachings is that creator, rather than nature, is the source of life, an energy that gives life, teaches, flows and connects. The circularity of creator – having been created and in creating – highlights the contradiction the source of in this ‘ing’ verb/action. People are not the source of creativity, rather it is found in creator, expressed in spiritual terms as reverence for life that originates outside but also resides in humanity and other beings. Hence creator flows into people as well as from people; ‘we’ as humans cannot claim ourselves as the sole beneficiary of, nor, ironically the inception of creativity. There is diversity in life and creativity. Therefore, human beings are treated as familiar relatives to buffalo or salmon. People communicate with other animals sharing experiences in the same timeframe and place and in doing so, learn from each other.

Human relationships with nature operate within a different orientation from euro-centric philosophy. There is no philosophical distinction separating people from nature or their environment and that aspects of natural environment offer key elements to a person’s or nation’s identity and culture.¹⁰⁵ For example, life cycles and weather patterns suggest that history and time are not linear, that past events do not offer chances for renewal or change. The land and resources it provides are valued not for its profitability or to the sole benefit of human survival.¹⁰⁶ For example, environmental knowledge suggests that the land cannot be owned; that its resources must be shared among people and other living beings, and that if something is taken from the land, something must be given in return. Knowledge of the environment, in terms of relations and connection has come to be known as traditional environmental knowledge (TEK), which on classifying

¹⁰⁵ Hughes, *op cit*, p46.

¹⁰⁶ Hughes, *op cit*, p52.

as such has become valued by western nation-states and international regimes. For example, the Convention on Biological Diversity (CBD) accepts traditional indigenous knowledge specific to plants and animals or approaches in managing biodiversity as forms of intellectual property. Identifying this knowledge specifically as TEK allows it to be patented; however, TEK has become central to disputes about corporate piracy of Aboriginal knowledge, and indigenous groups' struggle to maintain their rights of 'ownership' and access to knowledge and resources that they developed.¹⁰⁷

My understanding of these ideas cannot be expressed adequately in English language and written discourse without some attention being paid to nuance of meaning and difficulties relating to translation. Although my research relies on textual analysis, the ideas discussed above derive from discourses based on oral traditions in many languages and having nuance in meanings and connotations. Furthermore, my understanding reflects, as noted earlier, awareness and learning about perspectives with which I was unfamiliar. In seeking out perspectives that reflect a reverence for nature, and do not come from my social traditions, I run the risk of romanticizing and simplifying these perspectives and traditions. Aboriginal Peoples are not the first or the perfect ideal ecologists, nor do they refrain from changing their environment to suit their needs. My aim has been to understand how international politics and negotiation are influenced by ideologies of colonialism, which I would not be able to grasp fully without consulting literature authored from an indigenist perspective. Of significance to me is that nuance in meanings and vocabulary about nature and creation can be lost if environmental negotiation cannot listen to Aboriginal People's voices.

¹⁰⁷ Hughes, *ibid*, p49 and Smith, *op cit*, p56. Both sources document dilemmas Maori face when patenting TEK to maintain some control of their knowledge when sharing information with westernized researchers.

Nature, is of course, an English word, derived from Roman and Latin linguistic history, with multiple meanings, but initially conveying essence and a condition of being born.¹⁰⁸ Concerned with its problematic use and meaning to convey indigenous concepts and philosophy, Jack Forbes (2001) attempts to find some correspondence in Cree and Objíway languages noting the lack of words to convey meanings similar to the word 'nature'. While no direct translation exists, Forbes draws from the Lenápe language, to find similar concepts. He suggests the term, *waymee taale (wemi tali)* denotes concepts such as "All Where", "Every Where" or "The Every Where" or "All That Is".¹⁰⁹ As Forbes notes, that "huge category" accorded to the meaning of nature is "absurd" and "is definitely the result of a euro-centric and probably male-centred ideology."¹¹⁰ Forbes suggests that:

... the Wemi Tali, the All Where, is a single unity of which we, as humans, are just a part, and not the most significant part either. To get away from other people is very important to First Americans, especially in seeking wisdom and spiritual guidance from the All Where and its many powerful sources of enlightenment and assistance.¹¹¹

The conceptual correspondence remains confusing. The meaning of nature – void of people/humanity – does not equate with *Wemi Tali* – away from people. The word 'nature' connotes distancing one's self from a place and living that does not approximate human, but the Lapáne term is about being alone, separate from other people to think, reflect, observe in a place where one is with others not like one's self. Whereas 'All Where' conveys connection with people, 'nature' conveys disconnection from people. As in other animist perspectives, Cree and Objíway knowledge of nature, place and time

¹⁰⁸ Forbes *op cit*, p103

¹⁰⁹ Forbes, *ibid*, p110.

¹¹⁰ Forbes, *ibid*, p110.

¹¹¹ Forbes, *ibid*, p110.

reflect insights based in part on communicating with relations, the trees, birds and other beings residing in *Wemi Tali*. These insights are not found in ecological feminist theorizing, nor are they evident in western science and philosophy discussions about nature, existence, being, place and time. The challenge here is not so much to delve into existential questions about the foundation of conversation; rather, it pertains to a willingness of westernized eco-centric and anthropocentric ideology to accept the sacredness in all of nature so as to be able to listen and speak to their related beings:

Aboriginal world views, knowledge systems, languages, and practices are the result of how a people understands its local ecological order and how it sees itself as fitting within that order based on millennia of cumulative experiences and observations of individuals and collectives.¹¹²

In practice living within a “local ecological order” means to resist the euro-centric propensity to objectify and make life into material resources and to regenerate the practice of living and conversing with all relations and recognizing creator as guide. Negotiation with nature means living with all our relations, in diversity rather than assimilation into uniformity.

C. Negotiation as Correspondence

Both ecological feminism and indigenist perspectives evolve and each includes various forms of knowledge and approaches to life, and influenced by discussions, reflections and collaborations with people experiencing repression by those in power.¹¹³

The correspondence between ecological feminism and indigenous perspectives however,

¹¹² Ladner, *op cit*, p72.

¹¹³ Alfred, *op cit*, p xvi, 6, 21; Vance, Linda (1993) “Ecofeminism and the Politics of Reality”, *Ecofeminism, women, animals, nature*, Philadelphia: Temple U Press, p134, 135.

remain antagonistic, caught within a colonialist discourse, a setting that westernized ecological feminist perspectives have just begun to articulate.¹¹⁴

Less obvious in my account are correspondences between ecological feminism and indigenist explorations as critiques of western humanism. Their projects reflect difference in locale and viewpoint. Ecological feminism (including other ecocentric approaches) emerged from western culture; therefore, from a critical theory perspective they seek to transform the anthropocentric foundation of politics. Indigenist perspectives seek to de-colonize, so resist the dominance of acquisition and assimilation by colonialisms. The crux of this is not only a positioning of people vis-à-vis nature. The crucial issue concerns a correspondence between colonialisms and conquest as manifested by anthropocentric ideology. Non-humanist/indigenist approaches to negotiation must be included in negotiation if the context of multilateral talks is international and its focus is the environment in which people live. To ignore Aboriginal philosophy and disregard its contribution to knowledge about nature and human relationships perpetuates a facet of colonialism based on anthropocentric beliefs in superiority and assimilation. In the following sections, I draw from ecological feminism and indigenist approaches to transformation and resistance, respectively, to think beyond negotiation as forum restricted to human expression. To me, the oral and written components of negotiation can be addressed as sites that correspond to listening and speaking to nature, even though negotiation remains an activity exclusive to people.

¹¹⁴ Adkin, Laurie (1998) "Ecological Politics in Canada", *Radical Ecology, Global and Local*, Keil, Roger, David Bell, Peter Penz, Leesa Fawcett, eds., NYC: Routledge, p307. See also Churchill (2003) *op cit*,

II. Listening: Transforming Relations

A. Political Relations Like No Other

By situating human relations with nature as correspondences among autonomous actors, it becomes possible to re-present negotiation as a process of listening, speaking and writing; and to articulate the substance of these relations. Can we hear all of nature's voices? In thinking about negotiation as a communication forum, what would make it possible to hear subordinated human voices that suggest other ways of conceptualizing nature, not now represented by nation-state delegates? Whom do 'we' listen to if these voices express nature as an actor or agent autonomous from human existence, which contradicts nation-state representation of nature as a material object available for exploitation? If relations among 'different' social actors affirm and celebrate diversity, is transformation sufficient to prevent homogenized and pejorative representations?

Since my goal is to deal with the communicative features of negotiation in terms of how decisions are made, two interconnected approaches recommend themselves. One approach is listening to expressions and views from cosmological positions different from a western sensibility, as suggested by Rupert Ross, noted earlier. Another approach is to uncover silenced expressions. Lee Quinby (1990) writes that: "[l]istening to all voices of subjugation and hearing their insurrectionary truths make us better able to question our own political and personal practices."¹¹⁵ Listening to voices that have been silenced opens the negotiation forum up to hearing new speakers and resisting ignorance and subjugation. Listening also involves hearing voices of nature, which facilitates negotiators exploring their interpretations and presentations of nature.

p265-273 and Sturgeon, *op cit*, pp113-134.

¹¹⁵ Quinby, *op cit*, p127.

B. Listening to Nature

Indigenist philosophy recognizes creator as integral to life, both human and non-human, and accepts that all living entities are equally responsive and active within the creation of life. According to Forbes, all of the life that surrounds us is “intelligent, inventive, changing, learning, teaching, evolving, acting, praying, feeling, and responding.”¹¹⁶ I suggest that listening to multiple expressions of relating and living with nature complements our social interactions as well as our interactions with nature. As Forbes argues:

The visible universe is indeed dynamic, changing, and often unpredictable, and it certainly bears little or hardly any relationship to how it was at its “birth” or beginning (if it had any beginning). Moreover, it is not a passive, acted upon, place where only “immutable laws” of science operate. Instead, its essence seems to be an ability to modify itself in response to new situations.¹¹⁷

Listening implies a) hearing silenced and hidden voices; b) teaching ourselves to listen to different audio/visual languages other than words; and c) interpreting those expressions.

Listening implies interactive cycles of learning, exploring, teaching and verification.

Listening is one portion of a joint activity between speaker and listener.

According Hugo Slim, Paul Thompson, Olivia Bennet and Nigel Cross (1993), listening in indigenous oral traditions is an active response of respect, honour and truthfulness:

“what is heard is both given back and carried forward.”¹¹⁸ Furthermore, people’s testimony should be respected and honoured either by recognizing authorship or by guaranteeing anonymity. Both speech and listening are direct responses situated within a

¹¹⁶ Forbes, *op cit*, p107.

¹¹⁷ Forbes, *ibid*, p106-107.

¹¹⁸ Slim, Hugo, Paul Thompson, Olivia Bennet and Nigel Cross, eds (1993) *Listening for a Change, Oral Testimony and Community Development*, London: Paros Publication, p2.

consensus, a communal forum of decision-making.¹¹⁹ The term ‘consensus’ means that speaking and listening continues until all participants have had a chance to explore the issues relevant to the discussion, so that the community can arrive at a decision acceptable to all that bridges all differences without diminishing respect and esteem of those in the community. Listening carries responsibility to reflect upon what was spoken, and when we move from listening to speaking, to speak both from our own perspective and what has been heard and learnt.

The act of listening to nature – to hear these voices – suggests communication mediated through human interpretation of words. Human languages, both oral and written are translations from other forms of expression; that is, language conveys expressions other than words organized grammatically on a page or repeated through generations. Becoming aware of sights, movements, sounds and voices is a more direct forum within which to communicate. Sharing insights, experiences, guesses and assumptions complete these relationships, in the context of community. Thus, community is prized over isolation (to exist away from others). Listening to nature, knowledge of one’s natural setting involves inclusive participation beyond human interaction.

Listening corresponds to relations between speakers and listeners. Guided by principles of respect, honesty and honour, its rigor obligates participants to listen then respond with their own speech. In doing so, interpretation of expressions, statements, assumptions, and meanings are subjected to communal review. This prevents early foreclosure, dismissal or ignorance from happening. To stop listening before all can speak is to foreclose exploration of all possibilities and vantage points. Retrieving

¹¹⁹ Slim, et al, *ibid*, p2

expressions lost or silenced facilitates examination of assumptions, beliefs and falsehoods just as much as re-presenting one's values, expectations and intentions. Listening opens people up to acknowledging that there are different ways of knowing, doing and being.

C. Hearing Silenced Expressions

Environmental negotiations, I believe, can be more broadly articulated than disputes or struggles which situate competition among groups of people (political and economic organizations) over increasingly scarce resources extracted from the earth's environment. It is insufficient to situate longstanding adversaries in competition over truth claims, a contested land-base and access to resources without recognizing power and privilege in making decisions. It is crucial to address how negotiation displaces the conquered/colonized from decision-making processes while knowledge and land has been acquired. Negotiation could also examine ideas, terms and meanings that shape ecological and animist knowledges and practices, again exposing information in order to defend against its theft or misuse. Awareness of our complicity ought to be a signal for transforming ourselves, to motivate our nation-state to transform relations that contribute to destructive cycles of production and reproduction.

Is it possible to hear voices that we have silenced by refusing to listen? With listening comes recognition, but recognition can result in obstruction from one's oppressors. According to Lee Quinby (1990) it is important to listen to the voices of nature, especially the sounds (or silence) when industry interests attempt to speak in the interests of the environment:

The cries of factory farm animals, the suffocation of fish in poisoned waters, the sounds of flood waters rushing over deforested land – these are

the voices we need to heed. Listening to all voices of subjugation and hearing their insurrectionary truths make us better able to question our own political and personal practices.¹²⁰

Listening to people who can interpret the expressions of nature opens negotiation to include ecological and animist perspectives; but if anthropocentric perspectives are insensitive to these expressions or do not believe it is possible to listen to nature, then negotiation does not occur.

Seeking hidden or previously silent voices suggests change to both relationships and process; yet change also invokes risk to nation-state norms of authority in making treaties. The challenge of listening to subordinated voices also means to uncover resistance to a willingness to change the dynamics of relationships expected from listening to the 'other'. Colonizing and conquering relations can be maintained if expressions continue to be ignored and dismissed; therefore, change requires transforming the 'other' into an actor, respecting political agency to act autonomously, that is, to recognize their authority in making decisions required for a negotiated settlement. Negotiating from a premise of diversity prevents shared interests from being assimilated, co-opted, coerced or interpreted as common interests ('common ground'). Common interests may be identified before or during negotiation, yet while shared interests may be used to ensure a mutually acceptable decision, 'negotiation' ceases if 'common ground' is forced or imposed during the proceedings.

Worth repeating here is that ecological feminist and other ecocentric discourses may share a critique of industrial and technological destruction similar to indigenous perspectives, but their political goals are not the same. In reviewing the intersection of

¹²⁰ Quinby, *op cit*, p127.

indigenous struggles and environmental activism in Canada Laurie Adkin (1998) writes: “it is anti-colonial discourse (not eco-feminist) which provides the dominant interpretation of indigenous women’s and men’s struggles against white European supremacy.”¹²¹ In listening, negotiation establishes many ways to resist and transform human relations with nature by recognizing who is speaking for whom, who is left out and how nature is being re-presented and what interests are reflected in these presentations.

To summarize, listening is a first step of negotiation that is potentially collaborative and transforming. Listening to nature, or its advocates, can transform relationships constructed as static dualities between people and nature. This challenges anthropocentric distancing from nature through abstraction, individuation, and uniformity. While shared identity cannot be assumed to mean that people within a cultural group are the same and lack internal disagreements, relations with nature cannot be assumed to exist only in human terms. Relations can be interpreted through correspondences other than words, such as emotion, sensation and intuition, as oral traditions suggest. Listening to diverse non-verbal expressions, however requires some translation into spoken language, otherwise listening cannot facilitate exploration of nuance in meanings, conceptualizing and experience. Spoken languages combine words with inflections, gestures, and other non-verbal cues. The ability to interpret and validate the accuracy of translation becomes a feature of listening, thus distinguishing it from hearing. Understanding of multiple forms of expression requires listening from creator, nature, *waymee taale*, or ‘All Where’. Transforming relations encourage diverse and

¹²¹ Adkin, *ibid*, p310.

dynamic interactions, while also resisting anthropocentric, and patriarchal and colonial relationships.

III. Speaking: Resistance to Monoculture

A. Speaking to, for and about Nature

Listening is incomplete without voices that speak. Listening to nature speak is a way to resist anthropocentric authority. Correspondingly, speaking to nature transforms the dialogue; thus ensuring that negotiation is inclusive. Additionally, if the focus remains on a single view or opinion, then dialogue is exclusive, closed to a fully articulated range of perspectives. If nature does not speak at the negotiation table, if its voices are silent in contemporary negotiation of international regimes, then speaking refers to encouraging the voices that advocate for nature or are able to translate nature's expressions to speak. Speaking (to nature) as a stage in negotiation challenges metaphoric and elite representation. At issue here is a presumption of truth when people speak to, for and about nature.

First, speaking 'to' nature implies a direct and interactive dialogue, as exemplified by indigenist and ecocentric approaches. To be able to speak to nature, also infers an ability to listen to these voices and convey through human language what has been heard, learned and felt. Speaking to nature is a process of becoming attuned to living in context to one's surroundings. Speaking 'to' nature, however, lacks legitimacy that scientific expertise claims and is accorded to have, despite interactions that are direct, intimate and based on observation, skill and experience. While scientific interpretation is critiqued for anthropomorphic depictions and its objectification of nature, scientists are privileged for

their expertise, as if scientific knowledge is able to convey accurately the expressions and interests found in nature. A common critique among eco-centric perspectives invalidates the claim that scientists do speak to nature because, as Neil Evernden suggests, scientific ideas about nature indicate what our values and assumptions are.¹²² Speaking 'to' nature resists anthropocentric authority that human life will triumph regardless to the consequences of human destruction, intended and unintended. The challenge, to me, is whether eco-centric and animist perspectives will be listened to and legitimized as interpreter and advocate when they dispute the legitimacy of scientific accounts to speak to nature and listen to its expressions. At issue here is the degree in which we are willing to admit our own ignorance and limitations when we speak to nature.

Second, speaking 'for' represents metaphorically and associatively nature's voices. In this case, nature's voices do not speak. Rather, human voices articulate what we have come to understand as nature's voices. Therefore, speaking 'for' is representational because nature as 'we' present it, defines 'our' relationship, intentions, goals and meanings. To speak on behalf of nature is always symbolic or associative, implying that a comparison, idea or image can be used to decipher 'what is not like us' in order to determine a connection. Speaking 'for' nature is problematic because it reveals the interests and values of people speaking on behalf of nature, thus displacing the political authority from nature to the person or group speaking 'for' nature. According to Clare Brant, Mohawk communication is based on an "ethic of non-interference" which means not interfering with the rights, privileges and activities of another person and not giving advice or imposing beliefs and values onto someone else.¹²³ Therefore, one can

¹²² As quoted in Sandilands, *op cit*, 77

¹²³ As quoted by Ross, *op cit*, p12 and 13.

only speak for him/herself, not for others. Speaking 'for' nature will always be representational, crediting the speaker with the knowledge of nature's interests.

Third, to speak 'about' nature assumes a separate or abstracted association, in which nature has no voice, intent or any characteristic referencing political actor status. Speaking about nature remains completely within anthropocentric knowledge and authority. This knowledge occurs through objectification and experimentation and is the basis by which scientific references about nature are made.¹²⁴ Speaking 'about' nature distances the speaker further from nature than speaking 'to' or 'for' because it does not claim to listen to nature's voice, nor acknowledge the subjectivity of nature. Speaking 'about' nature calls into question whether nature has voices that can be listened to, because political authority resides in humans to determine whether nature has a voice worthy of listening to. Rupert Ross (1992) believes relations between Canadian government and northern Cree and Ojibway are a "one-way street, with all the concessions coming from Native people".¹²⁵ For example, Canadian legal system uses an adversarial model that proceeds as follows: accusation, allocation of blame, rewards and "imposition of consequences, including punishment."¹²⁶ According to Ross, the adversarial and confrontational manner of legal discourse tended to silence Cree and Ojibway persons from speaking on their behalf.¹²⁷ Often this left their lawyers to extrapolate a legal defence, in short, to know better than their client on how to speak

¹²⁴ While indigenist literature is critical of science due to its euro-centric premise, there is considerable debate among scientists about the accuracy of knowledge in science. Science is another contested site, in which a critical analysis exposes conflicting premises (for example, deterministic versus holistic) or the use of science to establish a particular worldview as truth (for example, the use of biotechnology science to assert cancer can be cured through development of genetic based medicines). See Lewontin, RC (1991) *Biology as Ideology*, Concord: Anansi and Ho, Mae-Wan (2000) *Genetic Engineering – Dream or Nightmare?*, NY: Continuum Publishing.

¹²⁵ Ross (1992) *op cit*, p xxv.

¹²⁶ Ross (1992) *ibid*, p15.

about their client's rights and interests without knowing fully the circumstances of their client's case.

My aim here is to be able to assess a negotiated document regarding how it represents the substance of communication, by the correspondence between listening and speaking. In terms of human speech in speaking 'to', 'for' and 'about' nature it becomes useful to notice how nature is re/presented during multilateral negotiation. Rendering nature knowable, as Catriona Sandilands (1999) notes, responds to human processes of cognition, which renders nature recognizable to us. To claim knowledge of nature implies truthfulness in translating into human vocabulary the expressions of nature. Sandilands argues that the role of speaker is always questioned, having to justify truthful representation; therefore claims of speaking are subjective, open to interpretation and consistently problematic.¹²⁸

Listening to nature transforms relations, while speaking to nature accentuates a politic of resistance against anthropocentric authority. Communication is a process of sifting through experiences and stories to explore "significant facts" until there is an understanding of these facts. This process of exploring and thinking together underlies consensus decision-making, as described by Ross, that consensus occurs through speaking and listening, a means by which people have a chance to understand each other and think collectively through an issue or problem confronting the community.¹²⁹

Directly listening to nature's voices challenges our own anthropocentric assumptions that define nature as a passive subject compliant to human will. Responding to these voices challenges supremacist assumptions. This correspondence resists

¹²⁷ Ross (1992) *ibid*, p45.

¹²⁸ Sandilands, *op cit*, p79.

anthropocentric norms of power, authority and metaphoric depictions that claim people cannot converse, speak and listen to the sounds coming from plants, animals, forests, rivers and so on.

Authenticity of speech relies either on direct experience or it is shared empathetically enriches our understanding of beings and people that are not like us. This begs the question: “How, then, does nature speak – reveal and persuade – for itself [to our human selves]?”¹³⁰ One answer lies in a willingness to confront human arrogance by asking questions that reveal people’s experiences of threats to their bodies and against the lands/environments on which they depend. While we may not know whether we have heard nature’s voices correctly, our assumptions are checked against our willingness to re-present, to speak as directly as possible what our knowledge of nature is, including our lack of knowledge.

Sandilands argues that the empathetic form of communication attempted by ecological feminists is complicated by a dilemma relating to authenticity of voice and speech. That is “the problem of speaking nature, is at its core a problem of the subject.”¹³¹ According to Sandilands, an eco-centric approach is less able to claim that human ability to “speak nature” because at best human speech approximates nature rather than re-presenting its expressions and insights. The impossibility of definitive claims is a result of human inability to be without political subjectivity.¹³² Subjectivity becomes a barrier to direct communication, as it implies that expressions could be contorted due to

¹²⁹ Ross, *op cit*, p23

¹³⁰ Sandilands, *op cit*, p80.

¹³¹ Sandilands, *ibid*, p79.

¹³² Sandilands, *ibid*, p79.

human subjection to political authority. Communication is filtered through human sensibility, knowledge and interpretation.

In contrast, the indigenist literature above suggests a direct connection with nature, which allows them to communicate directly.¹³³ Learning to speak to nature was expected as a normal feature of life. Oral traditions situate language in a context that is experiential, intimate, intuitive and interpretive.¹³⁴ For example, people in Subartic societies “explore their place in a complex world of other sentient ‘persons’ by following the multiple possibilities of this fundamental ‘mental percept’ [perception of reality from creator/indigenous traditional knowledge].”¹³⁵ Drawing on ethnographic work of northern Ojibwa, Chipewyan, Cree and Dene people, Ridington notes that animals and natural forces are regarded as persons responding to each other. “Because their category of ‘person’ includes sentient animals, animal masters, and forces of nature, northern natives negotiate social relations in the same way that they negotiate relations with animals and natural forces.”¹³⁶ Conversing is possible with animals, waters, mountains and other living beings because it is believed that each has sentient abilities and with individuality/action status given equally by creator.

My concern about speaking, whether direct or indirect, touches on the possibility of misunderstanding when power inequities and difference are not acknowledged. When Ross was learning to speak with Northern Cree and Objibway people he noted there was:

¹³³ communication with nature comes in many forms, for example dreams, trances, vision quests. See Hughes, op cit, p47 and 50.

¹³⁴ Bailey, Aimee (2002) *Anishnabe 101: the basics of what you need to know to begin your journey on the Red Road*, Golden Lake: The Circle of Turtle Lodge, p15, 23-32; and Ridington, Robin (1992a) “Knowledge, Power & The Individual in Sub-Artic Hunting Societies”, *Readings in Indian/Native Studies*, Miller, David, Carl Bear, James Dempsey and R. Welsley Heber, Piaport Reserve #75: Saskatchewan Federated College Press, p117-118.

¹³⁵ Ridington (1992a) *ibid*, p119.

¹³⁶ Ridington (1992a) *ibid*, p119.

... mutual bewilderment here, based on a mutual assumption only now being proved wrong: the assumption that both societies share common notions of the “proper” way to relate to and treat the universe, other people, and one’s own mental and spiritual health.¹³⁷

The problem here is that there is an assumption that words spoken (and written) convey meanings that can be understood in a single conversation or conference. This ignores cosmological or philosophical differences that take time to understand. Furthermore, after translation into the language of the colonizer (English), words do not always convey the same meaning. A major barrier to consensus pertains to assuming common understanding if English words do not adequately convey the speaker’s meaning and intent.¹³⁸

Recognizing how ‘we’ communicate challenges us to notice that diverse forms of expression reflect multiple intentions and meanings. Learning to speak ‘to’ nature opens communication to exploring statements for their nuance, accuracy and conduct in relating to being not like ourselves. It is crucial to respect difference and diversity of being, while still able to participate in decision-making processes, especially with those with whom we disagree. Speaking, as noted earlier, reflects listening and it is also about instilling a cognitive ability (recognition) that makes visible hidden expressions. According to indigenous oral traditions, listeners are responsible for hearing what is said, in turn, ‘speaking for’ indicates that someone has been listened to and the speaker is able to convey ideas and interests so that all ‘persons’ or ‘relations’ will be accepted. The challenges involved in listening and speaking to nature are compounded when ‘we’

¹³⁷ Ross *op cit*, p xxv and 5.

¹³⁸ Ridington also notes misconceptions which lead to serious bias if meanings are understood only in western or social science conceptualizing, see, Ridington (1992a) *op cit*, p114,119-120 and (1992b) “Technology, World View and Adaptive Strategy in Northern Hunting Society”, *Readings in Indian/Native*

refuse to listen or deliberately mis-represent the voices that 'we' have listened to and these refusals and deceptions are not noticed and rectified. Listening and speaking is dialectical and cyclical, a correspondence among participants, as listeners reply to voices heard. The constant movement between speakers and listeners, the back and forth exchange of understanding and experience is needed to validate the accuracy of the information exchanged. According to ecological feminisms and indigenist literature, anthropocentric vantage places authority over nature and this silences the idea that human survival can occur on cooperative terms with nature or that living can be fulfilled and uninhibited within the scope of re/production delineated by nature. Challenging conquest and colonialism requires speaking against anthropocentric claims to expose a strategy that questions and rejects nature's subjectivity.

B. Willing to Negotiate, Unwilling to Assimilate

Speaking from one's own perspective, in a negotiation setting, is a way to open dialogue, to explore ideas from many vantage points. Winona LaDuke (1999) documents how colonialism corresponds to losses of biodiversity and cultural diversity: "stories of the fish and the people are not so different."¹³⁹ To LaDuke, speaking is a means to expose destructive consequences of colonialism, but speaking also gives expression to stories about survival, resurgence and contributions to social and political life.¹⁴⁰ Speaking expresses more fully a variety of intentions, but this diversity ought not be confused by or contradicted as resistance couched as anthropocentric refusal to

Studies, Miller, David, Carl Bear, James Dempsey and R. Welsley Heber, Piaport Reserve #75: Saskatchewan Federated College Press, p161-162.

¹³⁹ LaDuke, Winona, *op cit* Press, p1.

¹⁴⁰ LaDuke, *ibid*, p2 and 5.

acknowledge the validity of human and non-human voices that exist. Resistance also expresses affirmations of autonomy and diversity indicating willingness to discuss and confront destructive practices.

Speaking according to indigenous oral traditions reflects a willingness to talk with all their relations, to listen and be heard, to share with others responsibility and obligation in restoring damaged relations. Willingness to speak is shaped by one's beliefs that life provided by creator is both valuable and respectful. Speaking one's story conveys what one expects, esteems as well as accepts and rejects. Jeanette Armstrong (2002) describes Okanagan tradition of *En'owkin*:

... which corresponds to a conflict resolution approach developed by our people prior to contact, in action means, 'I challenge you to give me the opposite perspective to mine. In that way I will understand how I need to change my thinking to accommodate your concerns and problems.'¹⁴¹

Dissent and agreement reflect what is possible and impossible within the scope of living in concert with nature. Armstrong suggests that negotiation requires all participants to express themselves fully, thereby encouraging participants to speak directly on their own behalf, but also to express their likes and dislikes. Reflecting *En'owkin* practice, I think of negotiation as a dialectical process where participants take on collective responsibility and obligation within a framework of possibilities and restrictions.

In broader terms, negotiation explores desires and limits and can be understood as mutual "willingness to learn how to coexist and cooperate with others."¹⁴² Voicing dissent is not only a feature of resistance, but also it is crucial to negotiation because it opens the possibility of exploring differing perspectives that challenge prevailing

¹⁴¹ Armstrong, Jennette (2002) interview by Derrick Jensen, *Listening To the Land*, San Francisco: Sierra Club/NYC: Context Books, p283

¹⁴² Armstrong, *ibid*, 284

assumptions. Rejection of universalizing norms foregrounds indigenous resistance to assimilation not a rejection of negotiation. Armstrong notes that Okanagan elders are not rooted in the past nor did they form their practices from a static understanding of past traditions. Instead, their knowledge “is important to guide our future, we must always be fluid in terms of our interactions”.¹⁴³

Armstrong focuses on difficulties in a larger communal context. She suggests that: “if your oppressors cannot and will not work with it, and in fact will do everything they possibly can to subvert the process.”¹⁴⁴ Negotiation cannot be a forced or coerced process because unwillingness to renounce dominance and control over other beings perpetuates continuation of colonial relations. How negotiation deals with control, domination and appropriation pertains to how negotiators address relations shaped by conquest and colonialism. Resistance helps shift power from predator/prey relations in colonialist and anthropocentric frameworks to legitimize relationships that are mutually respectful, independent and honourable.

On one hand, a willingness to talk indicates a desire to live compatibly with diverse beings. As a result, the term ‘human relation with nature’ is inadequate. Jack Forbes proposes the term “together-living” to convey living in nature (*waymee taale*, or All Where).¹⁴⁵ Forbes finds that Germanic languages have words which overlap with some Native American words to convey “anything which is active” grammatically combining noun and verb, to express actor/action meanings.¹⁴⁶ Thus, ‘ing’ suffixes echo ideas about Creator, within contexts of time, place and relation. ‘Together-living’

¹⁴³ Armstrong, *ibid*, 284.

¹⁴⁴ Armstrong, *ibid*, p284.

¹⁴⁵ Forbes, *op cit*, p115.

¹⁴⁶ Forbes, *ibid*, p115.

combines concrete and abstract meanings in tune with Aboriginal conceptions of living compatibly with all relations. 'Willing to negotiate' means that there is a willingness to disagree to reject assimilation and to resist ignorance of one's voice. Negotiation, therefore, according to indigenist literature, responds to place, time and existence. On the other hand willingness to talk is an opportunity to confront authoritarian rule. Resistance takes many forms, according to James Scott (1985), avoidance to non-compliance and confrontation.¹⁴⁷ Scott describes two styles of resistance, one that is "everyday" and another that is "open defiance".¹⁴⁸ Furthermore, Scott notes that resistance is a) "influenced by the existing forms of labour control and by beliefs about the probability and severity of retaliation" and b) not always directed to an "immediate source of appropriation."¹⁴⁹ Carolyn Nordstrom (1997) writes of resistance as acts that "coalesced into shared patterns – cultures – of survival and a fight for independence from onerous and violent conditions". Accordingly, resistance can be acts that refute terror and destruction.¹⁵⁰ Resistance responds to conditions that have been imposed or coerced rather than accepted by consent. Resistance during negotiation confronts appropriation and retaliation where acceptance and consent are too often confused with coercion and imposition. Expressing dissent against systematic violence including oppression,

¹⁴⁷ Scott, James (1985) *Weapons of the Weak: Everyday forms of Peasant Resistance*, New Haven: Yale Press, p29. Scott's list of everyday forms of resistance includes, "foot dragging, dissimulation, false compliance, pilfering, feigned ignorance, slander, arson and sabotage".

¹⁴⁸ Scott, *ibid*, p32.

¹⁴⁹ Scott, *ibid*, p34.

¹⁵⁰ Nordstrom, Carolyn (1997) *A Different Kind of War Story*, Philadelphia, U of Pennsylvania Press, p69. Nordstrom's list of approaches includes, oral communication and artistic expressions such as codes or slang, poetry, street theatre, puppetry, song, murals and other visual cues or signs as well as hiding, camouflage, humour and creating phantoms.

appropriation and assimilation corresponds directly to resisting aggressive and contemptuous relations against nature and people.¹⁵¹

My understanding of resistance suggests to me that it has a place in negotiation. Resistance can initiate negotiation to expose how conquest and colonialism systematically destroys people and nature. Resistance does not mean refusing to negotiate; to the contrary it explicitly seeks to open decision-making to a wider presentation of questions and problems. Resistance, as described by June Jordan, means affirming one's presence to speak, meet, reach out, and connect with others to defy intentional violent domination.¹⁵² Resistance enables dissenting voices to speak against established practice; however, resistance is an opportunity to speak against interference, coercion, subjugation or hypocrisy can be manifested in all perspectives.¹⁵³

To summarize, who can speak during negotiations directly affects the substantive elements being discussed and debated. One of the central questions during multilateral environmental negotiation is 'who speaks for whose nature?' Speaking similar to listening has two features, interpreting hidden and silenced voices and confronting forms of authoritarian rule. Speaking has many challenges, in that negotiation is a human only form of conversing, but it corresponds to discursive re/presentations of nature. Speaking to nature challenges anthropocentric ideology in its assumptions about nature and that human ingenuity will be sufficient to fix the unexpected results of human control of nature. To speak against human appropriation, control and domination of nature opens space within negotiation to decolonize human relationships established among nation-

¹⁵¹ Henderson, James Sakeij Youngblood (2000c) "*Ayukpachi: Empowering Aboriginal Thought, Reclaiming Indigenous Voice and Vision*, Battiste, Marie, ed, Vancouver: UBC Press, p253.

¹⁵² Jordan, June (2002) *Some of Us Did Not Die*, NYC: Basic/Civitas Books, p82.

¹⁵³ Henderson, *op cit*, p255 and Laenvi, *op cit*, p54.

states. To speak from a standpoint of resistance opens space from which to confront colonialism and conquest, but also to invite the process of negotiation to transform elite decision-making, where consensus matches the standards of agreement accredited to Aboriginal understanding. The challenge of negotiation concerns a willingness to probe other's comprehension rather than being subjected to an imposed decision or coerced into acceptance of the dominate will. Speaking is a stage of negotiation that explores 'together-living'.

IV. Writing: The Problem of Anthropocentric Authority

Being able to define and thus to determine circumstances and courses of action are central components of politics, where authority and authorship are brought together within struggles where survival is at stake.¹⁵⁴ Writing the words of voices that have been silenced, ignored and dismissed is an act of resistance, transforming colonialism to emancipation and conquest to sustainability.

The central challenge of this chapter was how to negotiate with nature, to listen, speak and write accurately about non-human existence. One part of the challenge concerns resisting deterministic, superior and coercive attempts to dominate as the primary means to negotiate with persons unlike ourselves. People have multiple and overlapping relationships with each other, which are nested within many forms of experience and awareness, communicated through listening, speaking and writing. Thus another challenge is to unwrap these relationships, as Rupert Ross pioneered in having to

¹⁵⁴ Churchill (1992) *op cit*, p7, Hughes, *op cit*, p11; Lerner (1986) *op cit*, p10 and Merchant (1989) *op cit*, pxx.

learn to converse with people speaking from a different vantage.¹⁵⁵ Georges Sioui advocates studying the “correspondences between Amerindian and non-Amerindian sources” to “demythologize” beliefs dominant within eurocentric discourse.¹⁵⁶ For Sioui, unpacking correspondences involves listening to the text, to uncover the expressions of those whose authorship was suppressed.

For me, listening to the text becomes a point at which I am aware of my assumptions and begin to address how negotiation facilitates decisions made by governments claiming to speak for my benefit, comfort or survival. It departs from the position ‘we’ in the modern west take for granted as unalterable. Speaking is an act of translating what I have heard; and writing corresponds to acts of listening and speaking. Reading different perspectives invites transformation; however, without direct correspondence with the voices that speak and write, negotiation cannot change the dynamics of centric bias. Likewise, listening, speaking and writing correspond to negotiation.

My aim is to expose negotiation to new questions and paradoxes about human relations with nature. To do so I seek a way to theorize from a vantage point that recognizes the difficulty of situating nature as an autonomous actor which is absent from multilateral environmental negotiation. By theorizing negotiation as a communicative forum, I can address whether the written regime reflects listening and speaking, from which I can draw dialectical correspondences to expose how nature is re/presented. In this context I addressed listening, speaking and writing in terms how people re/present nature.

¹⁵⁵ Ross, *op cit*, p. xix

¹⁵⁶ Sioui, *op cit*, p xx and xxii

An ecological framework of negotiation theorizes a process of decision-making in respect to listening, speaking and writing. It involves both oral and written traditions to define relationships to nature. Relationships may be key, but power is also a factor as it reflects various dimensions of human to nature relations. Therefore, context becomes significant in terms of recognizing relations among actors. Anthropocentric views of nature define a context ridden with supremacist overtones.

In the next chapter, I review mainstream theories of negotiation pertaining to environmental issues. Contemporary multilateral environmental negotiation views nature, the environment and ecology as tangential to social conflicts manifested through nation-state interactions. Mainstream theorizing dismisses nature as an autonomous actor; therefore, treaty making is a forum that negotiates without nature.

... environmental disputes — controversies in which the use of natural resources or the choice of appropriate standards for environmental protection are involved...¹

... basic assumption ... under certain conditions environmental degradation may cause violent conflict or war.²

The interests of disenfranchised majorities ... are problematic from the point of view of liberal theories, which start with the assumption that individual preferences are equal and should simply be taken at face value. This stance is too passive when it comes to the environment, not only because some parties are not represented at the bargaining table, but because the preferences of those who are represented are often at the root of the problem.³

The Problem with the Nature Question

In this chapter I argue that multilateral environmental negotiation is embedded in theories of social relations, which makes it difficult to explore the political dimensions of human relations with nature because its anthropocentric bias diverts attention away from examining human control and domination over nature. Mainstream theorizing of multilateral negotiation is oblivious to its anthropocentric bias, which diverts attention from discussing people's relationships with nature, thus obscuring human conflicts against nature when negotiation responds to conflicts among people, individually or in groups, such as nation-states. I argue that mainstream negotiation theories, to date, are anthropocentric, which emphasizes mutual cooperation among human actors as a precursor to agreement. Yet the negotiation process is not neutral as it diminishes

¹ Susskind, Lawrence and Alan Weinstein (1980) "Towards a Theory of Environmental Dispute Resolution", *Environmental Affairs*, Vol 9, p312.

² Baechler, Gunther (1999) "Environmental Degradation and Violent Conflict: Hypotheses, Research Agendas and Theory Building", *Ecology, Politics and Violent Conflict*, Suilman, Mohamed, ed, London: Zed Books, p76.

³ Hampson, Fen Osler, Pierre Laberge and Judith Reppy (1996) "Introduction: Framing the Debate", *Earthly Goods: Environmental Change and Social Justice*, Hampson, Fen Osler and Judith Reppy, eds, Ithaca: Cornell U Press, p5.

examination of human superiority and appropriation of nature as contributing factors to environmental degradation.

As I noted in chapter two, discussions about human relations with nature are obscured by multiple understandings of nature and humanity. I explored indigenist and ecological feminism perspectives because their ideas considered: a) relations between people and nature as central to resolving environmental issues; b) 'nature' is either equally important as people or as the basis of life itself rather than locating human invention and production as the foundation of life; and c) that negotiation with 'nature' could be possible if people were willing to change their attitudes towards 'nature' from a stance of superiority and exploitation to a stance of equity and respect.

In contrast mainstream negotiation theories are premised on anthropocentric ideology, which tends to accept that (hu)mankind is alienated, apart from and superior to nature. For example, these theories tend to define nature as separate from human experiences and settlements, which reifies cultural/natural duality. Also, nature is defined in such ways that its existence is primarily for economic and social development, which reifies human dominion over nature. Furthermore, when nation-states respond to international environmental issues, nature is framed as scarce or damaged material resources, which are understood as changes in the environment and are a source of nation-states' conflict over access and distribution of natural resources. The anthropocentric bias within negotiation theory and practice serves to dismiss the idea that people (as individuals or representatives of nation-states) can and do negotiate with nature. Instead, the premise of negotiation is that people negotiate with other people and

that nature is couched as economic interests that focus on equitable and fair allocation and alteration of 'natural resources' that will benefit humankind.

In this chapter I explore why mainstream negotiation models cannot be effective to resolve and manage global environmental problems. I think that negotiation models focus entirely on social conflict (violence, disagreement and inequity), which serves to limit the scope of negotiation from investigating a) anthropocentric conflicts against nature (conquest) and b) the appropriation of nature for the exclusive use and control by nation-states' and corporations' (colonialism). The central question concerns the purpose of multilateral environmental negotiation. I base the review on how negotiation theory within International Relations (IR) literature 1) situates negotiation vis-à-vis conflict and 2) discusses nature, what it is and how people relate to it. These questions allow me to examine contributions and shortcomings of multilateral environmental negotiation theorizing and practice so I can speculate on whether theoretical models are able to introduce ideas that challenge the assumptions of anthropocentric ideology.

The chapter has two parts. The first part is a general outline of the purpose of negotiation. In International Relations (IR) literature, negotiation is theorized from studies about deep-seated conflict (within and between states). Negotiation is treated as a non-violent, communicative response to combative relations either to prevent or de-escalate tensions. Negotiation theorizing aims towards instilling cooperative and peaceful relations among nation-states by emphasizing the persuasive influence that discussion has on decision-making. Negotiation, as theorized, produces a practical rules-based forum, which provides an alternative to war and unilateralism.⁴ The second part of the chapter

⁴ Unilateral approach is a strategy in which a nation-state acts alone when responding to international events.

compares and contrasts three theories of negotiation: 'interest-based'; 'new multilateralism'; and 'environmental diplomacy'. 'Interest-based' negotiation theory, as argued by Roger Fisher and William Ury (1991) advances the thesis that international dialogue can be more effective through collaborative than through competitive (aggressive) approaches. 'New multilateralism' as discussed by, but not exclusive to, Robert Cox (1997), Fen Osler Hampson (1996) and Andy Knight (1997) theorize negotiation as a democratic process of decision-making among nation-states in which the hierarchical dominant/subordinate power structures of the international political system are challenged. 'Environmental diplomacy' as advanced by Lawrence Susskind (1994), draws from the 1992 Rio Summit and offers a collaborative problem-solving approach to managing conflict among nation-states as they deal with negative impacts of modern development.

I. Negotiation: Action, Process and Substance

A. A general understanding of negotiation

A general definition of negotiation is of social interactions in which people barter with each other for the purpose of making arrangements or settling affairs through various forms of communication, including discussion. To Chester Karrass (1995) negotiation is a "procedure", accessible to anyone in many situations. He defines negotiation "as a way of doing something, an understanding as an expression of a mutual viewpoint and attitude on an issue and an agreement as a conclusive commitment to mutually acceptable terms."⁵ In general terms then, many practitioners and teachers

⁵ Karrass, Chester (1995) *Give and Take: The complete guide to negotiating strategies and tactics*, NY: Harper Business, p6. Fisher and Ury call this a 'win-win' outcome, see Fisher, Roger and William Ury (1991) *Getting to Yes*, NY: Penguin.

define negotiation as a linear and fluid process in which people communicate their interests and needs in an attempt to create a mutually satisfactory outcome for all participants.⁶ According to this general definition, negotiation has three elements: 1) a communicative activity involving of two or more people; 2) a process of exploration in which participants work toward an end result; and 3) a commitment to working collaboratively (respectfully and fairly) rather than resorting to aggressive, coercive, combative, or submissive arrangements.⁷ Furthermore, the purpose of negotiation allows participants to explore their interests and issues collectively, to arrive at a decision that all parties agree with, which is understood as a consensus.

Negotiation literature within IR theorizing often deals with procedural problems, hence attention is given to broadening negotiator's knowledge and skill to design and implement a negotiation process that will 'bring parties together to form a satisfactory agreement'.⁸ Guides and training manuals depict negotiators as equal participants, although differences among negotiators' styles and levels of abilities suggest that power

⁶ Like many other professional negotiators, Karrass also teaches and writes guides about negotiation. Herb Cohen (1981) another practitioner/teacher, defines negotiation to be, "... a field of knowledge and endeavor that focuses on gaining the favor of people from whom we want things. ... the use of information and power to affect behavior within a 'web of tension' ", *You Can Negotiate Anything*, Toronto: Bantam, p15, 16. Daniel Drukmán (1997) describes negotiation as passing "through stages building momentum towards a conclusion, referred to as the endgame." A stage is marked by a turning point or event, which signals progression onto the next stage until its conclusion. "Negotiating in the International Context", *Peacemaking in International Conflict, Methods and Techniques*, Zartman, William I and J. Lewis Rasmussen, eds, NYC: United States Institute of Peace, p92. See also Lewicki, Roy, David Saunders and John Minton (1999) *Negotiation*, 3rd ed., NYC: Irwin/McGraw Hill, p1-3.

⁷ In practice psychological and physical elements (such as aggression, coercion and capitulation) exist, however negotiation theory focuses on a discourse that persuades by collaborative rather than adversarial approaches. An assumption in this literature is that the process is neutral and that any bias towards coercion and manipulation derives from participants' behavior and style during the process.

⁸ The literature generally is divided between two variations of negotiation theories, strategic and collaborative, that also roughly corresponds to "aggressive" and "cooperative" styles. See Fisher, Roger and William Ury (1991) *Getting to Yes*, NY: Penguin, second edition, original published in 1981; Rapoport, Anatol (1964) *Strategy and Conscience*, NYC: Harper and Row and Pruitt, Dean and Jeffrey Rubin (1999) *op cit*, p14-31.

imbalances exist, which can determine whether the outcome will be successful.⁹

'Competitive', 'collaborative' and 'concession-seeking', according to many theorists, are referred as styles, although some theorists attribute these styles to gender or personality, rather than attribute these 'styles' to social or political factors.¹⁰ Some theorists argue that negotiation styles are incompatible or intensify tension rather than focusing on matters under negotiation. Thereby negotiation theory tries to expand a negotiator's awareness and skill to be flexible to various approaches, styles, tricks and pitfalls.¹¹ Therefore, ability to negotiate suggests a person's competence in the art of persuasion, to articulate and argue so items under discussion will be explored until consensus is reached.¹² According to these theories, power resides in each individual's ability to negotiate; however, I suggest negotiation theory that focuses on the practical skills and styles of negotiation tends to ignore how power struggles impact negotiation processes, as found in relations framed by conquest or colonialism.

It may seem I am arguing that anyone can negotiate just about anything. Not so. Although Fisher and Ury (1991), and Herb Cohen (1981), believe negotiation is a normal activity, and that people's ability can be sharpened with education and training, there is

⁹ Cohen (1981) *op cit*, p20; Karrass (1995) *op cit*, p7-9; Greenhalgh, Leonard (1999) "Managing Conflict" *ibid*, p13; Lewicki, Roy, David Saunders and John Minton (1999) "Nature of Negotiation", *Negotiation, ibid*, p1.

¹⁰ For an outline of particular styles see: Savage, Grant, John Blair and Ritch Sorenson (1999) "Consider Both Relationships and Substance when negotiating strategically", *Negotiation, op cit*, p41. For gender/personality styles see: Anderson, Terry (1999) "Step into My Parlor: A Survey of Strategies & Techniques for Effective Negotiation", *Negotiation, ibid*, p127-135; Babcock, Linda and Sara Laschever (2003) *Women Don't Ask, Negotiation and the Gender Divide*, Princeton: Princeton U Press, 169 and Greenhalgh, Leonard and Roderick Gilkey (1999) "Our Game, Your Rules: Developing Effective Negotiation Approaches", *Negotiation, op cit*, p364.

¹¹ Babcock and Laschever (2003) *op cit*, p169 and 173; Kohn, Robert (1999) "How to Plan the Strategies" *Negotiation, op cit*, p54 and Savage, Grant, John Blair and Rich Sorenson (1999) "Consider Both Relationships and Substance when negotiating strategically", *Negotiation, ibid*, p37.

¹² Cohen (1981) *op cit*, p 20; Fisher, Roger and William Ury (1991) *op cit*, p xvii; Scott, Bill (1999) "Preparing for Negotiations", *Negotiation, op cit*, p67.

more to this idea, they also stress that negotiation has limitations.¹³ It is meant to facilitate dialogue through which respectful interaction can occur regardless of the kind of relationship participants have with each other.¹⁴ Negotiation focuses on communication aimed at persuasion and set in an interactive and collaborative context. Negotiation is not about learning how to use coercion, force or other forms of violence as a means of attaining agreement. Additionally, the idea that one can negotiate anything suggests that the subject of negotiations can include principles, beliefs, values, truth claims or identity. But negotiation does not require people to give up their personal autonomy, ability to influence or give into demands that are incompatible and unworkable. There are occasions when negotiation is not possible or cannot continue, specifically if conditions are coercive or manipulative. Although negotiation is considered a normal, common practice, its theorists suggest that negotiation cannot be effective in violent or dominant/submissive hierarchical situations.

The aim of negotiation is clear, the process is not. The purpose of negotiation is to achieve consensus – a decision that is mutually acceptable and beneficial for all participants. According to theories about the purpose of negotiation, it is a process that fosters consensus, which is understood as a mutually accepted agreement or decision made collectively. Negotiation is not always straightforward and simple, because as Dean Pruitt and Jeffrey Rubin (1999) note: “negotiation is an indeterminate, reiterative and often confusing process.”¹⁵ The confusion noted by Pruitt and Rubin pertains to the process of decision-making, that achieving consensus among diverse and divergent parties can be time consuming and confusing. Each approach (style and model) and

¹³ Cohen (1981) *op cit*, p30, 240-241, Fisher and Ury (1991) *op cit*, p xix, 178-179.

¹⁴ Cohen (1981) *ibid*, p19 and 250-251 and Fisher and Ury (1991) *ibid*, p154-157.

arrangement (structure and number of parties) is open to theoretical speculation and debate, adding to a sense that negotiation is both discursive and lacks clarity. The intent of negotiation is significant as it clarifies the purpose of multilateral meetings, and to devise an appropriate strategy (process) to deal with matters in need of public discussion and acceptance. In practice, the more complex the setting the more complicated the negotiations. Whether one-on-one or multiparty, negotiation includes action, process and substance interactively, albeit discursively.

B. Negotiation and Conflict

Negotiation, as theorized thus far, stipulates cooperation as a remedy for conflict, essentially positioning cooperation as negotiation's operating norm. Theories about multilateral negotiation especially advocate that nation-states work together in a collaborative manner to solve problems common to all nation-states. Cooperation, as a theoretical norm, is understood as working together in a collaborative manner to resolve mutual problems or disputes through rules and procedures established in international treaties. Collaborative or collective action among three or more nation-states are said to be 'multilateral', to distinguish 'bilateral', which refers to relations between two nation-states or 'unilateral', which refers to one nation-state's action. Multilateral agreements are regimes that have been negotiated to manage common problems among nation-states, for example, the environmental regime, Convention on Biological Diversity (CBD) responds to losses of biological diversity around the world. Negotiated regimes are the basis of international law, which stipulates nation-states' responsibilities and obligations, essentially outlining how nation-states conduct relations with other nation-states. As an

¹⁵ Pruitt, Dean and Jeffrey Rubin (1999) "Strategic Choice", *Negotiation, ibid*, p48.

analytic tool in negotiation theorizing, however, conflict rather than cooperation informs us about the challenges of nation-state interaction which negotiation attempts to overcome. Conflict usually is a given in negotiation, but it also can arise in the process because of incompatibility, competition or because of differences in orientation, perspective and experience among states/groups/persons.¹⁶ Recognized as a feature of socio-political interaction alongside cooperation, conflict is analyzed as if war, competition and disagreement were impediments to cooperation and peace. Cooperation is assumed the norm, from which conflict is a disruption or disturbance, which can destroy the relationships and the parties in conflict.¹⁷

My interest here is to understand multilateral environmental negotiation theorizing to expose its anthropocentric bias, which obstructs how people can encourage 'together-living' among all living beings. As I noted in chapter two, human relations with nature are bound within contested ideas about nature and humanity; however, anthropocentric ideology perpetuates conditions of conquest and colonialism. According to mainstream theorizing, negotiation is a means to work through conflict, and to open discussion on contentious and controversial subjects. Yet paradoxically negotiation cannot proceed towards a mutual agreement in situations of coercion, manipulation and violence, however these are the conditions of conquest and colonialism in which international environmental negotiation takes place. As a process, negotiation

¹⁶ Pruitt, Dean and William Rick Fry (1989) "Conflict Escalation and Problem Solving", *Peace: meanings, politics, strategies*, Forcey, Linda, ed, NY: Praegar, p152.

¹⁷ Discussions referring to "common ground" or finding ways to "work together" follow a negotiation framework developed by Fisher and Ury (1991). See also Dukes (1993); Fisher and Brown (1988); Hampson (1995); Mitchell, Christopher (1993) "Problem-Solving exercises and theories of conflict resolution", *Conflict Resolution Theory and Practices: Integration and Application*, Sandole, Dennis and Hugo van der Merwe, eds, Manchester: Manchester University Press, p78-94; Saunders, Harold (1985) "We Need a Larger Theory of Negotiation: The Importance of Pre-negotiating Phases", *Negotiation Journal*, vol 1, #3, July 1985, p249-262; Susskind (1994) and Vayrynen (1991).

encourages nation-states' delegates to communicate verbally as a way to ensure a particular action, rather than employ military force or economic sanctions. Cooperation may be the ideal of nation-state relations, but negotiation is considered necessary to offset conflict. Accordingly, negotiation is effective because it focuses parties to communicate with each other and confront the issues that lead them into conflict, at best before tensions escalate into war or shortly after a major rift occurred to prevent it from occurring again. Multilateral or international relations are ripe with tension, dissonance, confusion, gaps and repetition thus, the scope of negotiation is more complex than one-on-one interactions among negotiators.

According to theories of negotiation, its purpose has honorable intentions; yet absent in these theories is an examination of how negotiation (process and substance) can be coercive resulting in unworkable and incompatible regimes, or how it can centralize authority and diminishes dissent. To me, negotiation theorizing has some blind spots. It gives an impression that inequities, manipulation and other problems will be resolved if negotiators behave ethically, or that negotiators, alone, can correct power imbalances, reduce obstructions, and discourage improper behaviors, or out-wit belligerents and bullies. Furthermore, based on my understanding of consensus presented in indigenist literature, it seems to me that negotiation theory uses the term 'consensus' differently.¹⁸ Consensus, in negotiation theory, is used interchangeably with 'agreement', in that an agreement is a mutually arrived at decision (outcome) and acceptance may come about through a majority vote rather than all parties arriving at an agreement. According to

¹⁸ In chapter two, I wrote the term 'consensus' to indicate that discussion continues until all participants have had a chance to speak, listen and explore the issues relevant to the discussion. 'Consensus' means that the community arrives at a decision acceptable to all and bridges all differences without diminishing respect and esteem of those in the community. See p72.

international protocol, a negotiated agreement is first accepted by consensus of the negotiating body, or by majority vote, then it becomes open for 'signature', which is a signal of acceptance nation-state members of a larger body that commissioned the treaty. The treaty comes into effect as international law when a specified number of nation-states ratify the regime in their home governments. Also regimes tend to settle issues temporarily. For example, the biosafety talks dealt with the issue of whether genetic engineering (GE) biotechnology is safe. The safety of GE biotechnology was a contested issue that was 'settled' during negotiations of the Convention on Biological Diversity (CBD), because the CBD 'agreement' identifies GE biotechnology as a safe solution to the problem of biodiversity loss. Since the Earth Summit the G77 attempted to negotiate a moratorium on GE biotechnology, including research and development. The biosafety talks produced a treaty that continues to allow R&D of GE biotechnology and trade of agricultural GMOs, despite some restrictions. The controversy about the safety of GE biotechnology continues, despite an agreement on biosafety, the Cartagena Protocol on Biosafety (CPB).

My interest in negotiation theory is threefold. One, in considering the broader context of international regime/agreement-making, how can negotiation proceed to establish peace and respect for diversity in conditions of conquest and colonialism? Two, how can multilateral environmental negotiation include eco-centric and indigenist perspectives? Inclusion of these perspectives may alter how 'consensus' is achieved among nation-states. Inclusion may broaden the presentation of nature from its anthropocentric and materialist focus. Three, to probe how negotiation as a 'process of cooperation' produces outcomes that fail to protect and conserve biodiversity. I examine

three models of negotiation more closely because this allows me to consider how negotiation produces international environmental regimes and why the process and substance of negotiation fail to reflect interests and needs of people who represent ecocentric and animist perspectives.

II. Negotiation Theories

World events affect relations among nation-states as much as nation-states affect changes in world circumstances. In addressing these changes International Relations (IR) theorizing has broadened its analytic lens to include political actors other than the nation-state, namely non-governmental organizations (NGOs). These new actors have played an active role in environmental negotiations, seeking to influence nation-state policy as well as the outcome of negotiations. To understand how environmental negotiations among nation-states operate in the post-Cold war era, I review three negotiation frameworks that address the intersection of negotiation theory and its practice.

Negotiation theory, however, assumes negotiation is a direct response to social conflict. This raises several questions: Why is negotiation appropriate for conflict situations, especially if the operating theoretical norm favours cooperation and equity among participants? What are the means by which negotiation achieves consensus among nation-states when they are the central participants? How are barriers to decision-making overcome? How do negotiators articulate interests of nation-states and the citizens they represent? How do various negotiation models interpret conflict, collaboration, difference and disagreement? In this section I compare and contrast three negotiation frameworks: 'interest-based', 'new multilateralism' and 'environmental

diplomacy'. I examine how each a) interprets and contributes to negotiation practice; b) addresses interactions among nation-states and other actors, such as NGOs, that are seeking to influence the outcome of international regimes; and c) examines environmental conflict and human relations to nature. My examination below is aided by tables (1-3) to help illustrate the main elements I discuss from each negotiation framework. Appendix A is a composite of these tables.

A. Negotiation as Collective Decision-Making

Negotiation, theorized thus far, is a collective endeavor, in which negotiators establish a process to discuss interests relevant to each participant so that decisions can be made, collectively, to outline how future interactions are to proceed. Each framework, 'interest-based', 'new multilateralism' and 'environmental diplomacy', outlines a negotiation model that is a practical response to conflict among human actors. In this section I address each framework's understanding of negotiation's purpose; the type of conflict in which negotiation is designed to address; and an outcome expected from each negotiation model developed. Table 1, "Purpose and Expectations", below, summarizes my discussion. Purpose and expectation of negotiation illustrate how each framework perceives negotiation in context to political events as shaped by world events.

Table 1
Mainstream Negotiation Frameworks
Purpose and Expectations

Framework	Interest-based	New multilateralism	Environmental diplomacy
Purpose	resolve conflict between parties; reduce tensions among rival parties	restructure international system (Cox); or reform inequities embedded in nation-state authority (Hampson)	solve environmental problems amongst adversarial stakeholders
Historical origins	Cold War era	Post-Cold War era	Earth Summit
Conflict scenario	disagreement or dispute between two or more rival or competitive parties, escalating tensions	political inequities of international system; problems resulting from tensions between hegemony and disenfranchised or colonized nation-states	unique and adversarial; differences or disagreement of opinion ("battle of wits") between 'developmentalists' and 'environmentalists' over the use of and entitlements to natural resource
Expected outcome	all parties 'work through conflict' collaboratively and cooperate on resolving issues that produced the conflict by addressing interests in common	broaden context of civilian representation in international political institutions by including non-state actors marginalized by hegemonic authority	institutional reform, by addressing inadequacies in the nation-state that are unable to respond effectively to environmental problems
Sources	Fisher & Ury	Cox, Knight, Hampson	Susskind & w/Weinstein

1. Purpose and Context of a Collaborative Approach

Although negotiation is theorized as a collaborative approach to decision-making, each framework portrays the purpose of negotiation differently. 'Interest-based' negotiation focuses on conflict resolution, whereas 'new multilateralism' situates negotiation as an approach that can reform or restructure political inequities within multilateral institutions, and 'environmental diplomacy' frames negotiation as an approach to solve contemporary environmental problems by managing conflict among groups that have different ideological viewpoints. The purpose of negotiation, I believe, relates to negotiation theorists' understanding of conflict as it influences interaction among nation-states, in particular and people, in general.

First, 'interest-based' negotiation aims to resolve conflicts between parties, by using dialogue that focuses on participants' interests, thereby reducing tensions arising from adversarial, competitive and confrontational behavior, which are features of conflict and may occur during negotiations.¹⁹ Roger Fisher and William Ury (1991) introduced 'interest-based' or 'principled negotiation' in opposition to 'positional bargaining', because as a standard practice, 'positional' negotiation privileged a winner take all approach ('win-lose') in which parties negotiated on the basis of strategic, competitive and adversarial positions.²⁰ The notion of 'principled negotiation' derived from the work of Harvard Negotiation Project during Cold War (late 1970s to early 1980s), which suggested tensions will escalate as a result of inflexible positions held by adversarial and competitive persons or groups. Initially published in 1981, *Getting to Yes* popularized negotiation as a 'win-win' process in contrast to competitive 'win-lose' scenarios, purportedly provides an "all purpose strategy" suitable for any context.²¹ Fisher and Ury argue that interest-based negotiation is an alternative to two types of position-based approaches: 1) the "hard" method that is adversarial and competitive, focused on individual gains at the expense of other's concessions; and 2) a "soft" approach that avoids conflict through capitulation, hoping that agreement will easily result from being friendly and amicable.²² For Fisher and Ury, 'principled' or 'interest-based' negotiation explores "issues on their merits rather than through a haggling process focused on what each side says it will and won't do."²³ For example, participants can establish an objective standard from which to explore their interests and options, which would not

¹⁹ Fisher and Ury (1991) *op cit*, p xix and 4.

²⁰ Fisher and Ury (1991) *ibid*, p xix.

²¹ Fisher and Ury (1991) *ibid*, p xix.

²² Fisher and Ury (1991) *ibid*, p xviii.

have been possible with positional bargaining as delegates presented each other with options, rather than engage each party in discussion and exploration.

Second, 'new multilateralism' situates negotiation as a forum that can challenge hierarchical dominant/subordinate political relations between nation-states, which is the current norm in the international political system.²⁴ 'New multilateralism', as an approach to negotiation, deals with an expanded scope of political actors, including corporate and non-government organizations (NGOs) that are influencing negotiation of international regimes. Multilateral negotiation is no longer seen as a forum only for nation-state actors. Theoretical debates speculate on the significance of nation-state authority in relation to groups other than governmental institutions that operate internationally. Theoretical speculation within 'new multilateralism' in part responds to the effects of NGO and corporate lobbying on nation-state policy. It also responds to changes emerging from the international system since the end of the Cold-War. Hence another aspect of this approach involves a deeper analysis of conflict, which considers the resiliency and ubiquity of violent tensions that existed prior to WWII and new conflicts emerging after dissipation of capitalist and communist rivalry, as led by United States of America (US) and former Soviet Union. 'New multilateralism' concerns how multiple actors influence the international system through negotiation and vice versa.

Third, Lawrence Susskind (1992) describes in his book, *Environmental Diplomacy*, a model of negotiation designed "to manage conflict and to foster voluntary

²³ Fisher and Ury (1991) *ibid*, p xvii.

²⁴ Cox, Robert (1997a) "Introduction", *The New Realism*, p xvi; Hampson, Fen Osler with Michael Hart (1995) *Multilateral Negotiations: Lessons from Arms Control, Trade and the Environment*, Baltimore: John Hopkins University Press p19 and Knight, Andy W (1997) "Top-Down and Bottom-Up Multilateralism", p15.

agreements” in response to international environmental conflicts.”²⁵ With Alan Weinstein (1980), Susskind conceptualizes an interest-based approach to identify common reference points from which to solve environmental problems, such as pollution, extinction and over-consumption of natural resources. Susskind and Weinstein draw from experiences with environmental dispute resolution in US domestic politics, which to them have been hampered by adversarial and winner-take-all approaches common to litigation and judicial review, which they argue does not balance interests effectively.²⁶ To them, political institutions in the US are ineffective because they constrain debate and fail “to recognize that few ‘scientific’ judgements are ever value-free.”²⁷ To Susskind, ‘environmental diplomacy’ also draws from problems and lessons from interactions between NGOs and nation-states during negotiations 1992 Earth Summit. As an empirical reference point, The Earth Summit included NGOs, whose influence enabled multilateral negotiations to confront the impact of economic development on the natural environment. NGO participation, according to Susskind, changed the course of multilateral negotiations to focus on global-wide environmental issues rather than problems experienced within several nation-states or natural resource disputes between competing and adversarial nation-states.²⁸ Operating under the auspices of intergovernmental organizations (IGOs), Susskind argues that environmental multilateral

²⁵ Susskind and Weinstein (1980) *op cit*, p313.

²⁶ Susskind and Weinstein (1980) *ibid*, p313.

²⁷ Susskind and Weinstein (1980) *ibid*, p319.

²⁸ Also referred to as environmental non-governmental organizations (ENGOS) or international non-governmental organizations (INGOs). Third World Network, Greenpeace, IUCN – World Conservation Union and WWF – World Wildlife Fund are four of the more recognizable ENGOS with standing at multilateral meetings. The Big 10, refers to a group of established American ENGOS having international networks that also have standing at multilateral gatherings, and are: Sierra Club, National Audubon Society, National Parks and Conservation Association, Izaak Walton League, Wilderness Society, National Wildlife Federation, Defenders of Wildlife, Environmental Defense Fund, Friends of the Earth and National Resources Defense Council.

negotiations can be reformed. Intergovernmental organizations are institutions established and operated by nation-state representatives, giving IGOs authority to make collective decisions to manage world wide problems (United Nations Environment Programme/UNEP, World Bank, and Food and Agriculture Organization/FAO are IGOs). 'Environmental diplomacy' is a model of negotiation that is designed to address the current stalemates and decisions based on the lowest, common standards acceptable to nation-states' delegations.²⁹

The purpose of negotiation varies among these frameworks; however, each theorist suggests that negotiation as practiced in multilateral fora is ineffective in responding to people's interests and their conflicts as manifested in relations among nation-states. These models are designed to correct the inadequacies of current multilateral process. 'Interest-based' negotiation is designed to challenge the norm of positional bargaining evident in Cold-war era international negotiation. 'New multilateralism' examines hierarchical dominant/subordinate relations, which is a norm in international institutions, despite the apparent dissipation of Cold-war tensions, so that negotiation can challenge this power relationship by examining how NGO and other actors influence nation-state regime negotiation. 'Environmental diplomacy' frames negotiation as an approach to solve environmental problems by managing conflicting interests, in which NGOs broaden discussion, by offering perspectives that tend to be over-looked in nation-states' policies.

²⁹ International environmental regimes are generated through the United Nations Environment Programme (UNEP) which reports to Economic and Social Council to the General Assembly of the United Nations (ECOSOC).

2. Conflict Scenario and Expected Outcome of Negotiations

Each framework approaches negotiation differently, focusing on a different understanding about conflict. For example, 'interest based' negotiation frames conflict pejoratively, designing negotiation as an approach that encourages actors to work collaboratively on contested issues.³⁰ The implication given in this model is that principled negotiation can resolve conflict more effectively than adversarial models. Conflict manifests, primarily, from differences in viewpoint or power inequities among parties; however, 'interest-based' negotiation resolves disputes and tensions that form as a result of ideological differences and power inequities through principled persuasion, which to Fisher and Ury is designed to bypass force and manipulation.³¹

In contrast to 'interest-based' framework, 'new multilateralism' focuses on power inequities among nation-states and international institutions; therefore, negotiation is designed to respond to power imbalances among nation-states and international institutions that structure nation-states' interaction.³² The implication here is that negotiation can be effective if structural/systemic inequities in multilateral decision-making processes are changed to support inclusion of perspectives and their access in the 'consensus' of decisions and not based on legitimating hierarchical dominant/subordinate relations.³³ Furthermore, by responding to inequities negotiation would explore disputes more deeply, which would reduce tensions that result from these power dynamics.³⁴ By analyzing the influence of non-state actors on negotiated outcomes, for example a regime

³⁰ Fisher and Ury (1991) *ibid*, p10-13.

³¹ Fisher and Ury (1991) *ibid*, p159-160.

³² Cox (1997b) *op cit*, p259; Hampson (1995) *op cit*, p5 and 25 and Knight, Andy W (1997) "Top-Down and Bottom-Up Multilateralism", p15.

³³ Hampson (1995) *ibid*, p5 and 23-25.

³⁴ Cox (1997a) *op cit*, p xx; Cox (1997b) "Reconsiderations", *The New Realism*, *ibid*, p258.

such as the Convention on Biological Diversity (CBD), 'new multilateralism' rethinks how nation-states are able to represent citizens' viewpoints at international fora.³⁵ Conflict resides in nation-states' authority to set policy agenda and implement international law, however within multilateral institutions some nation-states are legitimated as dominant and other nation-states as subordinate, thus replicating hierarchical power structures. Conflict, according to 'new multilateralism' framework, is played out as struggles over authority and representation between nation-states and non-state actors that seek access to multilateral decision-making.

'Environmental diplomacy' defines conflict as a battle of wits between opposing ideological viewpoints, defined by Susskind as 'developmentalists' and 'environmentalists'. Susskind and Weinstein pose these battles between business and environmental interests experienced in US domestic politics.

Almost every effort to protect or enhance environmental quality is perceived as a challenge, at least at the outset, by groups or individuals whose economic self-interest – or political beliefs – are threatened. Similarly, almost every attempt to promote economic development or technological innovation is viewed as a potential insult to the quality of the natural environment or a threat to the delicate "ecological balance" upon which we all depend. Environmental and developmental interests, if the shorthand is permissible, are locked in a fierce and widening battle.³⁶

According to Susskind and Weinstein the adversarial features of conflict fragments participation and represents poorly citizens' values, needs and wants, which are not

³⁵ I use the term 'non-state actors' to keep my analysis flexible enough to allow for other types of organized groups that seek to influence nation-state policy. 'Non-state actors' can include, but is not limited to, 'non-governmental organizations' (NGOs), corporations, citizen groups and other groups representing people from a diaspora, such as Palestine or Aboriginal and Indigenous Peoples. NGOs are considered to be lobby groups or 'interest-based groups' representing its members' and seeking to change or support a range of initiatives at international groups. The term 'NGO' tends to be used in the literature differently, some using it narrowly to signify 'interest-based groups' and others using it to include broader range of organizations and associations.

³⁶ Susskind and Weinstein (1980) *ibid*, p311.

resolved properly through competition or adjudication.³⁷ Conflict is a dispute among various members representing either a stance favoring economic development, or a stance promoting environmental conservation and protection, instead of referring to conflicts between humans and nature. As a dispute, conflict is defined as a rift in social relations, in which negotiation can explore each party's interests so as to determine, collectively, what is best for all parties. For Susskind and Weinstein 'environmental diplomacy' is a model of dispute-resolution that attempts to rectify legal and legislative failures in accommodating interests represented by developmentalists and environmentalists.³⁸

Each framework focuses on different aspects of social relations to define conflict, in which negotiation is presented as a means to address problems in relations between social actors. 'Interest-based' framework situates conflict as problematic in social relations in which negotiation is designed to facilitate collaborative exploration of interests, and from which compromises suitable to each participant can be achieved. 'New multilateralism' and 'environmental diplomacy' frameworks situate conflict as a structural rift, specifically in political institutions or generally in society, in which each theorize negotiation as an approach to manage differences, so that inequities or biases in collective decision-making can be balanced. 'New multilateralism', however, examines negotiation in its ability to reform or restructure multilateral institutions, whereas 'environmental diplomacy' situates negotiation as an approach that can manage conflicting interests from which environmental problems can be solved, thus bypassing institutional barriers that obstruct collective decision-making.

³⁷ Susskind and Weinstein (1980) *ibid*, p312 and 323.

³⁸ Susskind and Weinstein (1980) *ibid*, p334-335.

Each framework presents negotiation as a practical collective response to conflict, however, each framework identifies political actors, their interests and the conflict scenario differently. I summarize how each framework identifies actors, interests and conflict scenario in Table 2, “Actor Representation within Conflict Scenario”, presented below. My understanding of these frameworks suggests that actors have political agency, however the structure of relationships also determines how nation-states are able to act, decide and represent their interests.

B. Negotiation as Social Actor Representation

The nation-state remains the sole authority in multilateral negotiation practice; however, non-state actors also participate, which challenges the legitimacy of nation-state primacy and the right of nation-states to set the agenda of issues. A challenge of negotiation theory is to examine how negotiation changes interaction between nation-state and non-state actors towards a collective, consensus-based decision-making. This examination is based on whether non-state actors can influence the outcome of international negotiations, and the question of whether nation-state and non-state actors sufficiently represents people’s viewpoints. These questions about representation illustrate how actors are able to be persuasive in presenting their interests and be able to convince others to dismiss or reject other proposals. Furthermore, these questions provide an opportunity to examine the way in which nation-states and NGOs act politically when presenting their constituents’ interests.

Table 2
Mainstream Negotiation Frameworks
Actor Representation within Conflict Scenario

Framework	Interest-based	New multilateralism	Environmental diplomacy
Conflict scenario	disagreement or dispute between two or more rival or competitive parties, escalating tensions	political inequities of international system; problems resulting from tensions between hegemony and disenfranchised or colonized nation-states	unique and adversarial; differences or disagreement of opinion ("battle of wits") between 'developmentalists' and 'environmentalists' over the use of and entitlements to natural resource
Primary actor	depending on conflict scenario, could be individuals, groups or states	nation-states as members of contemporary international regimes and institutions, such as UNEP, OECD, or CBD; NGOs as new actors in multi-lateral negotiations.	developmentalists and environmentalists within a country, as represented by NGOs, or within UN/UNEP multilateral forum as represented by nation-states and NGOs
Power	power defined as persuasion by logical analysis of interests and issues; assumes equality among actors	power defined as ability to address diverse cultural and historical factors in decision-making; critical of power as dominance and control (hegemony) because it distorts nation-states into dominant/subordinate relations.	power treated as ability to influence or persuade through debate and willingness to discuss opposing viewpoints; actors assumed equal, but having different worldviews. (similar to interest-based negotiation)
Expected outcome	all parties 'work through conflict' collaboratively and cooperate on resolving issues that produced the conflict by addressing interests in common	broaden context of civilian representation in international political institutions by including non-state actors marginalized by hegemonic authority	institutional reform, by addressing inadequacies in the nation-state that are unable to respond effectively to environmental problems
Sources	Fisher & Ury	Cox, Knight, Hampson	Susskind & w/Weinstein

1. Actor status and the problem of representation

'New multilateralism' theorizing places questions of representation at the centre of its analysis dealing with the challenges of an ever-changing context of issues, actors and struggles. According to Fen Osler Hampson (1995) negotiation needs to adjust to the changing structures of the multilateral system because it is more complex than negotiation between individual actors, or among groups, within a nation-state's

jurisdiction.³⁹ For Hampson complexity refers to the overall multiplicity of players and positions, rather than implying how issues are interconnected and may overlap with different viewpoints. The challenge, according to Hampson, is a matter of managing how nation-states and NGO delegates present their understanding of the issues, for negotiation becomes a practical exercise in summarization, framing issues, and setting an agenda that will produce an agreement. In contrast, Robert Cox (1997) argues that changing context of multilateral negotiation is a way to determine whether the hierarchical dominant/subordinate system is flexible to change. For Cox, it is flexibility, not complexity, that determines whether inclusion of new actors, such as NGOs, will challenge nation-state authority and the hierarchical dominant/subordinate relations within multilateral negotiations.

More often than not, consensus is dependent on nation-states' ability to control the agenda because the feasibility of an agreement hinges on nation-states' willingness to be directly involved in the negotiation and implementation of these agreements.⁴⁰ In practice this means that agreements are temporary settlements rather than a long-standing consensus. It also means that nation-states still control the agenda, even though NGOs successfully place an issue on the multilateral negotiating table. Consensus within multilateral negotiations tends to be more fragile in practice than in theory. Dominant-subordinate relations among nation-states, and between the nation-state and civilian/citizen organizations, remain intact if there is tacit acceptance by NGO delegates that dominant nation-states must be involved to make, adjudicate and enforce international law. The influence of NGOs is limited if they are only able to introduce

³⁹ Hampson (1995) *op cit*, p5.

ideas at the onset of negotiations rather than challenge the orthodoxy of dominant nation-states, which in practice means that NGOs would be effective in changing the way in which issues are framed and decided.

'Interest-based' and 'environmental diplomacy' offer little to explain how NGOs are able to influence and change dominant/subordinate hierarchies in multilateral negotiation. 'Interest-based' negotiation does not theorize interactions between nation-state and NGOs. Actors can be individuals, groups or the nation-state, however, multilateral and international settings are described as a forum exclusive to nation-states.⁴¹ 'Interest-based' framework does not address the interaction between nation-state and other types of actors. 'Environmental diplomacy' depicts the negotiation forum as a collection of interests, from which exploration delineates between areas of common understanding and disagreement so that an agreement can be achieved. Accordingly, non-state/NGO actors' participation bypasses barriers within domestic nation-state institutions to provoke greater exploration of interests and issues, or these new actors intervene in multilateral negotiation to broaden nation-state discourse concerning environmental issues. According to Susskind (1994) NGO participation during multilateral negotiation includes advising, lobbying or providing research for nation-state delegations, although its role is secondary to nation-states in multilateral negotiations, including NGOs in the process of exploring interests becomes a way to expand the range of ideas and options articulated during negotiations.⁴² According to Susskind, NGOs

⁴⁰ Dolan, Michael and Chris Hunt (1998) "Negotiating in the Ottawa Process: The New Multilateralism", *To Walk Without Fear*, Cameron, Maxwell, et al, Toronto: Oxford U. Press, p 416.

⁴¹ Fisher, Roger, Andrea Schneider, Elizabeth Borgwardt and Brian Ganson (1997) *Coping With International Conflict, A systematic approach to influence in international negotiation*, Upper Saddle River: Prentice Hall, p3 and

⁴² Susskind, Lawrence (1994) *Environmental Diplomacy: Negotiating more effective global agreements*, NY: Oxford, p49.

help to manage the negotiation process to facilitate nation-states' ability to explore issues and arrive at a consensus.⁴³ Susskind concedes that there is no consensus process currently in place, however, the negotiation process tends to revert towards 'a lowest common denominator' status that is marked by a program to manage the use and distribution of natural resources, which is administered through trade and other economic mechanisms.⁴⁴ Both 'interest-based' and 'environmental diplomacy' do not clarify how interests are determined by actors, nor do they speculate how negotiations are to proceed if actors (nation-state and non-governmental organization delegates) are not equal. Both frameworks do not address power imbalances or differences in styles and strategies that occur when NGOs are included in a multilateral process. These frameworks do not explain how interests can resolve conflicts if interests seem to be contradictory. If non-governmental actors expand the discourse of interests, why are they unable to challenge how nation-states determine the agenda?

2. Representation: access and authority

Multilateral negotiation as theorized is about consensus, a forum of collective decision-making among three or more nation-states, yet NGO inclusion has not been sufficient to challenge the closed and elitist status of international treaty negotiations. Representation is about actors' access and authority to represent people's interests during negotiation, but it is also about why NGOs are included in negotiations. 'New multilateralism' theorizes whether NGO inclusion into multilateral negotiation changes the legitimacy of the nation-state to represent the interests of its citizens. Yet among all

⁴³ Susskind, *ibid*, p52-53.

⁴⁴ Susskind *ibid*, p49-53, 61.

three frameworks, NGO inclusion is meant to open the practice of multilateral negotiation up to norms of inclusive participation, dialogue and decision-making. Including non-state actors, according to theoretical analysis suggests the presence of NGOs would facilitate new voices and ideas, by initiating a wider membership, from which decisions would reflect changes in nation-states' policies and laws on international issues.

Michael Dolan and Chris Hunt (1998) argue that there is "... an inherent normative aspect to the new multilateralism, in that it seeks to uncover whose voices are represented (or not) in international politics as well as revealing the nature of particular sites of struggle and contestation."⁴⁵ They recognize that adding actors to international negotiations will not necessarily change the agenda or framework of the debate, but by seeking groups that historically have been excluded from elite, state-driven negotiations, there is a potential to explore the substance of these conflicts more thoroughly.

If 'new multilateralism' framework can be used to legitimate the participation of actors previously silent or ignored, then this suggests a different normative feature of negotiation, which is to reveal, examine and explore issues significant to various non-state actors. Whereas 'interest-based' and 'environmental diplomacy' expect mutual agreements to resolve issues raised in negotiation, 'new multilateralism' proposes that negotiation rests upon parties' willingness to investigate their interests more broadly and deeply to uncover how tensions and struggles relate and contribute to deeply entrenched conflicts and unequal power relations. According to 'new multilateralism,' negotiation discourse influences the process in its choice of venue and legal mechanisms, as well as indicating who may participate and speak.

Representation, to me, becomes a way to examine access and authority of both nation-states and NGOs. Generally my argument is that multilateral negotiation and nation-states are anthropocentric in the treatment of environmental issues. Since negotiation frameworks suggest that NGO inclusion alters the dynamics of multilateral negotiation, my aim here is to understand what NGOs are, how they gain access to international negotiations and what authority they have to represent viewpoints that can speak 'about', 'for' and 'to' nature. I am trying to decipher whether NGOs can shift negotiation from its anthropocentric bias towards including eco-centric and animist interests. If these frameworks suggest that NGOs can shift dominant opinion, my line of inquiry here is to understand the role of NGOs and why these actors are conceived as challengers of nation-state authority.

Non-governmental organizations (NGOs) are theorized as participants new to multilateral negotiations; however, they are also thought to be equal to nation-states in the ability to persuade through logical examination of interests and issues and to contribute how issues are framed to facilitate discussion of the issues and policy options. Nation-states retain sole authority to decide how substantive issues are presented in the regime text, yet NGOs are excluded from this stage of negotiation. Power, as theorized, is understood here as the ability to influence, to persuade through discussion and debate and the ability to articulate or represent a party's interests. In terms of the three negotiation frameworks, power as I understand it is about having the authority to speak, to define and to act according to the viewpoint expressed.

Despite these different characterizations of multilateral negotiation, 'interest-based' and 'new multilateralism' frameworks imply that NGOs are similar and equal in

⁴⁵ Dolan, Michael and Chris Hunt (1998) *op cit*, p 396.

ability. In practice, NGOs are different from each other, some groups are elitist and hierarchical, other groups are collectives of smaller organizations, and many groups are barely able to participate in a multilateral forum.⁴⁶ Non-state groups range in size, membership, purpose and ability to intervene and participate. At the Earth Summit only the Business Council for Sustainable Development (BCSD), an umbrella group representing 48 corporations, participated beyond written submissions.⁴⁷ Stephen Schmidheiny, a friend of Rio Summit organizer, Maurice Strong, organized the BCSD. World Wildlife Fund (WWF) and the World Conservation Union (IUCN) were two NGOs that helped draft an early version of the regime text and were more generally involved in the negotiation process for the Convention on Biological Diversity (CBD), than other NGOs having official accreditation. 'Environmental diplomacy' as conceived by Susskind, does not identify specific NGO groups, but he implies that NGOs represent either 'developmentalists' or 'environmentalists' interests, and that NGOs can alleviate stalemates among nation-states by providing knowledgeable experts and other services. 'New multilateralism' discussion of NGOs does not differentiate among these groups; however, as non-state actors NGOs are presented as assisting subordinate nation-states to articulate their interests or as lobbyists that will advocate a position that is not articulated by nation-state delegates. Access to multilateral negotiations and authority to represent

⁴⁶ Chatterjee, Pratap and Matthias Finger (1994) *The Earth Brokers, power, politics and world development*, London: Routledge, p6, 8, 10, 76-78; Seager, Joni (1993) *Earth Follies, coming to feminist terms with the Global Environmental Crisis*, NYC: Routledge, p13, 168, 170, 189-199; and Tokar, Brian (1997) *Earth For Sale*, Boston: South End Press, p xi, 17-20, and 86-89.

⁴⁷ Holmberg, Johan, Koy Thomson and Lloyd Timberlake (1993) *Facing the Future*, London: Earthscan Publications and IIED – International Institute for Environment and Development, p4 and 19. At the Rio Summit there were 1,420 NGOs with official accreditation to the Summit proceedings, but there were "many thousands" of NGOs, that participated at the NGO Global Forum, which was some forty kilometres away from the official Summit with an agenda conferring on alternatives to nation-state treaties. NGOs could submit written statements to the Rio Summit official plenary, but were barred from actual negotiations with nation-states.

views excluded from these negotiations are theorized as a given, since NGO performance is theorized in relation to nation-state involvement, instead of comparison with other NGOs and the relationships among these 'new' actors. Furthermore, these frameworks do not discuss NGO authority to speak by addressing to how some of these groups overcame obstacles to participate in unilateral negotiations, while other NGOs and grass-roots groups remain excluded from multilateral proceedings.⁴⁸

'New multilateralism' theorizing contributes to an understanding of power as structural. 'New multilateralism' characterizes relations among nation-states as hierarchical with some nation-states dominating over other nation-states as a way to influence debate and achieve agreement according to their interests. In contrast 'environmental diplomacy' characterizes multilateral negotiations as rife with obstacles to cooperation, which are inherent in the rules that administer international negotiations, however NGOs, as new actors will be able to facilitate a change in the administration of negotiations. These frameworks are in contrast to the 'interest-based' model of negotiation that identifies power as residing in individual agency or personal will. Discussions of power that identify and challenge dominance and control in hegemonic order relate well to indigenous and feminist claims of inequities and relationships based on supremacist ideology. The connection between institutional arrangement and representation of ideas and practices provide insight into how the international system constrains debate and compartmentalizes issues. The elusiveness of equity and consensus in the inter/multi- nation-state system raises questions about representation. However, these questions are themselves constrained by the interplay of actors and institutional

⁴⁸ Grass-roots groups are smaller, groups of people, who operate, within their community, voluntarily, and with limited resources. Members of these groups may also be members of NGO delegations at multilateral

processes, particularly in the assumption that NGOs are equal to and act similarly with other non-governmental groups, and that they have the same persuasive ability as nation-states to determine the substantive content of negotiations.

C. Negotiation as Anthropocentric

Table 3
Mainstream Negotiation Frameworks
Human Relationship to Nature

Framework	Interest-based	New multilateralism	Environmental diplomacy
Conflict scenario	disagreement or dispute between two or more rival or competitive parties, escalating tensions	political inequities of international system; problems resulting from tensions between hegemony and disenfranchised or colonized nation-states	unique and adversarial; differences or disagreement of opinion ("battle of wits") between 'developmentalists' and 'environmentalists' over the use of and entitlements to natural resource
Primary actor	depending on conflict scenario, could be individuals, groups or states	nation-states as members of contemporary international regimes and institutions, such as UNEP, OECD, or CBD; NGOs as new actors in multi-lateral negotiations.	developmentalists and environmentalists within a country, as represented by NGOs, or within UN/UNEP multilateral forum as represented by nation-states and NGOs
Relationship with Nature	no discussion, nature could be interpreted as an interest, thus a topic for negotiation	anthropocentric, minor discussion; nature is discursive and mysterious (Cox) or nature is important to humanity's survival (Hampson and Reppy)	anthropocentric, major focus: nature is physical matter, w/essence is independent from people; environmental changes are from industrial growth or nature's creative, reproductive capacity
Contribution	reconfigure negotiation to bypass stalemates and weak agreements produced by adversarial and positional bargaining or capitulation; negotiation focuses on 'interests not people'	analytic framework recognizes historical and cultural contexts and NGO influence on decision-making; move beyond ideological paradigms to explore diverse factors in decision-making; negotiation as counter-hegemony	re-orient negotiation from managing disagreements among nation-states to solving environmental problems experienced commonly; negotiation as problem-solving.
Sources	Fisher & Ury	Cox, Hampson and Reppy	Susskind & w/Weinstein

meetings.

According to each negotiation framework, people remain the primary agents of political change. Human agency is the accepted norm in negotiation theory, in which power of influence comes from negotiators' ability to explore interests, issues and a willingness to determine collaboratively understanding and acceptance. I suggest that environmental negotiation is biased according to anthropocentric ideology.⁴⁹ How does negotiation theory facilitate an anthropocentric depiction of nature?

In Table 3, I compare 'interest-based', 'new multilateralism' and 'environmental diplomacy' so that I can assess how each depicts nature and human relationships to nature. This table includes descriptions of primary actors and conflict scenario to help illustrate my analysis that negotiation theory is embedded in an understanding of conflict between social actors, instead of theorizing conflicts between nature and humans, in what I consider are ecological relationships.

1. Uniqueness of Environmental Conflict

Daniel Druckman (1997) speculates on the obscure way in which nature is represented: "Environmental negotiations are embedded within a larger institutional context; complex issue packages and linkages among issue-areas and sectors make them difficult to negotiate and sustain."⁵⁰ Environmental laws are primarily regulatory regimes, outlining responsibilities and obligations of industry, and by extension what powers governments have to restrict or facilitate corporate access and ownership of natural resources. International regimes also regulate corporate and industrial activities, but these regimes create international institutions that, along with nation-states, have the

⁴⁹ This bias influences how nature is represented, which accepts human-beings as superior to other forms of life, and frames environmental issues according to human interests and values.

authority to administer the terms and conditions of the treaty. The Rio Summit was intended to produce several international regimes that would regulate industrial development, and delineate government responsibility to manage the world's natural endowment.⁵¹

An explicit articulation of nature is missing from 'interest-based' negotiation because human relations with nature and nature as an actor are not conceptualized in this framework. 'Interest-based' negotiation, however, suggests that 'interests' can be analyzed to understand how environmental issues are framed and discussed. If this occurs, contrary interests or viewpoints are weighted equally, in which advocacy and condemnation of nature are twinned in the treaty making process. 'Interest-based' negotiation suggests a resolution or problem-solving approach; therefore, pollution, extinction and loss of biological diversity are framed as problems, from which negotiation is a forum that generates ideas about how nation-states 'interests' can respond to these problems. I think that exploration of interests within 'interest-based' negotiation cannot be more instructive, because it theorizes too generally on the substantive elements of negotiation, and situates negotiation as isolated events, thereby not including historical and ideological features that are external to a negotiation session. I believe, however, that 'new multilateralism' and 'environmental diplomacy' can elaborate on environmental issues because each suggests that interests are represented more broadly socially and culturally. Both frameworks address questions about power and conflict, but theoretical discussions have not developed a model of negotiation that includes animist or

⁵⁰ Druckman (1997) *op cit*, p107.

⁵¹ I will discuss this further in the next chapter.

eco-centric perspectives regarding power dimensions of human relationships with nature or how these ideas can challenge politics of colonialism.

To unpack the complex arrangement of issues and interests I borrow from Eckersley's models of mainstream environmental theories: resource conservation, human welfare ecology, preservation and animal liberation. Eckersley's typology of forms of environmentalism is helpful because she reveals anthropocentric bias in each, thereby assisting me to identify this bias in negotiation theories. Eckersley distinguishes environmental approaches from eco-centric approaches by suggesting that anthropocentric principles guide environmental approaches.

First, resource conservation approaches focus on waste and exploitation of wildlife and natural resources, and call for prudent and efficient forms of production and management of any industry reliant on extracting raw resources.⁵² This fits within a utilitarian view of nature that sees conflicts based in social competition over use and consumption of resources taken from the earth.

Second, human welfare ecology approaches focus on pollution and waste disposal, and call forth better forms of stewardship and regulation of industry in its extraction and waste disposal systems.⁵³ It involves people's enlightened self-interest to maintain the environment in which they work, rest and enjoy and keep the environment clean and vibrant. In this case, conflict occurs between people and industry and/or government as each try to sustain nature, held in common, for different modes of

⁵² Eckersley, Robyn (1992) *Environmentalism and Political Theory, Towards an Ecocentric Approach*, Albany: SUNY, p35-36.

⁵³ Eckersley (1992) *ibid*, p36-38.

development.⁵⁴ Sustainable development initiatives seek to maintain progress/development while mitigating the most negative consequences of industrial and technical intensification. Human welfare ecology conceives the nature question narrowly as solving the problems of industrial waste and spoilage. It does not reexamine ideologies that accept destruction as a 'side effect' of development.

Third, a preservationist stance attempts to protect and take care of animals, and their habitats, against the encroachment of urban, industrial and agricultural growth.⁵⁵ Its ethnocentric bias ignores human habitation in so-called 'wild' spaces, which ignores preservation movements' removal of Aboriginal Peoples from their land, in the creation of national parks as areas designed to preserve 'wildlife' living in their natural habitat.⁵⁶ This approach exposes conflicts between efforts to conserve and preserve nature's beauty and abundance and efforts to consume and develop nature for self-interested and utilitarian purposes.

Last, animal liberation promotes the moral integrity of all animals, and seeks to end animal suffering at the hands of human abuses from scientific research and the commercial production of food and clothing.⁵⁷ Believing in the moral integrity of animals also extends to movements against the domestication of wild animals, and protection of species threatened by destruction of their habitats. Conflicts associated with animal liberation are twofold: one, ideological, resulting from asserting that animals are

⁵⁴ conservation movements also organize on the principle of protecting land for the economic benefit of elite members of society, often promoting new techniques, thus conservation movements tend to reflect corporate interests instead of broader public interests. See Tokar, *op cit*, p10.

⁵⁵ Eckersely (1992) *ibid*, p39-43.

⁵⁶ LaDuke, Winona (1999) *All Our Relations*, Boston: South End Press, p141-153 and 168.

⁵⁷ Eckersely (1992) *ibid*, p43-45.

sentient beings and worthy of moral consideration; the other, practical, resulting from encouraging humane and respectful behavior towards non-human animals.

Environmental approaches are varied, yet anthropocentric principles are common among these approaches. Green political thought, according to Eckersley, deals with basic ethical questions but is demarcated by assumptions about political themes regarding human participation in the environment, people's survival of environmental catastrophes and (hu)mankind's emancipation from the constraints of nature.⁵⁸ Gunther Baechler (1999) argues that environmental sources of conflict are about scarcity, toxicity and extinction, which are culturally and socially manifested. He suggests that there is a link between environmental change and threat and risk manifested from changes in the environment, in which environmental change induced by government, industry, commerce, and military activities, risks people's lives.⁵⁹ In contrast, David Deudney (1998) writes that there is an underlying miscalculation linking security to address environmental threat and protection.

Environmental degradation is not a threat to national security. Rather environmentalism is a threat to 'national security' mindsets and institutions. For environmentalists to dress their programmes in the blood-soaked garments of the war system betrays their core values and creates confusion about the real tasks at hand.⁶⁰

Deudney argues that the aim of environmentalism is to probe the consequences of human changes to the environment in creating places to live and work. Too often the concept of security is linked with military responses, rather than probing how military responses destroy the environment. I think that negotiation theory can be expanded to understand how policy decisions regarding economic development of natural environments are made

⁵⁸ Eckersley (1992) *op cit*, p7.

⁵⁹ Baechler (1999) *op cit*, p81.

within the institutional and ideological settings we create by examining how conceptual frameworks limit people's exploration of ideas and values about nature, including their lack of connection to nature.

'Environmental diplomacy' exposes negotiation to the environmental features of social interaction, by indicating that conflicts among 'developmentalists' and 'environmentalists' are about how people can respond to threats against their survival associated with changes occurring in nature and natural environments. According to Susskind and Weinstein, the problem, as they define it, is finding the balance between dealing with the negative impact of human progress and sustaining natural environments threatened by the spread of industry and human settlement.⁶¹ Conservation and preservation can be limited in which policy objectives are to protect natural/wild spaces from the negative effects of economic development. Exploitation of nature can continue even if technological innovation promotes efficient and clean methods of mining and harvesting and offers enhancements to pollution abatement and plant and animal evolution. If technologies do not reduce destructive consequences of resource extraction and consumption the aims of human welfare ecology will be at odds with the goals of technological development. Although environmental theories challenge the assumptions of economic development, 'environmental diplomacy' is designed to manage ideological conflicts, so that a negative effect of economic development can be mitigated.

'Environmental diplomacy' frames the controversy too narrowly. I believe that there is more at stake than a 'battle of wits' about conservation and protection of natural environments and natural resources. According to Eckersley's typology, 'environment

⁶⁰ Deudney (1997) *op cit*, p313.

⁶¹ Susskind and Weinstein (1980) *op cit*, p326.

diplomacy' describes conflicts similar to three mainstream environmental theories: resource conservation, human welfare ecology and preservation.⁶² Exponents of 'environmental diplomacy' approach explore questions about: 1) appropriate use of territories and resources and 2) how to validate claims about threat, loss or catastrophe. This framework does not seem to include an animal liberation approach explicitly, unless a dispute involves the encroachment of housing and industrial development on areas that threaten the lives of animals and their habitat, or if 'environmentalists' represent interests expressed in animal liberation theory. Since 'environmental diplomacy' draws from cases of environmental negotiations, internationally and in the US, the explicit absence of animal liberation, eco-centric and indigenist perspectives (discussed earlier) suggests to me that environmental negotiation as practiced and theorized is influenced by anthropocentric principles.

Important shortcomings of the 'environmental diplomacy' framework are: 1) an uncritical acceptance of anthropocentric human/nature dichotomy; and 2) it addresses only some strands of environmentalism: resource conservation, human welfare ecology and preservation. 'Environmental diplomacy' favors a materialist understanding of nature, which is understood as an essence/character in which changes are a result of industrial intervention or from nature's creative/reproductive capacity. 'Environmental diplomacy' advocates an improved standard of human stewardship; therefore, negotiation focuses on ideological disagreements about what people can and cannot do to natural environments. 'Environmental diplomacy' could include several meanings of nature, beyond utilitarian resources and geographical places, by identifying anthropocentric

⁶² Susskind and Weinstein (1980) *ibid*, p332.

relations as a conflict in need of solving and managing, thereby re-orienting its central question to how social conditions sanction conflict against nature.

Despite its anthropocentric bias, 'environmental diplomacy' offers some insight about the misconceptions of environmental disputes, and is critical of how these misconceptions factor into a negotiated settlement. Susskind and Weinstein argue that the measure of successful environmental negotiation:

... will depend on a thorough understanding of 1) the forces and conditions that have given rise to a search for negotiated solutions and 2) the unique qualities of environmental disputes that make resolution difficult.⁶³

If eco-centric and animist perspectives are included in a thorough understanding, I suggest that conquest and colonialism be included in theoretical examination of environmental disputes. If a thorough understanding of forces and conditions is a precursor to negotiated solutions, I argue that a deeper analysis of how 'the human element' contributes to environmental destruction facilitates inclusion of eco-centric and animist perspectives. This analysis would include an examination of why humans need to control, dominate and appropriate nature, and if there are sufficient limits to humanity's capacity to control, dominate and appropriate from nature and people.

In reference to the uniqueness of environmental issues, Susskind and Weinstein argue that, "the question of the reversibility of man's impact on the environment is confused by the notion that we can 'fix up' troublesome situations."⁶⁴ They note that few tools exist to make predictions about long term impact of industrial development and that cost-benefit analysis has little ability to calculate costs of permanent changes, such as

⁶³ Susskind and Weinstein (1980) *ibid*, p313.

⁶⁴ Susskind and Weinstein (1980) *ibid*, p326.

extinction and loss of natural habitats.⁶⁵ Susskind and Weinstein are skeptical of technical solutions provided by cost-benefit and scientific analysis because they note that, “[w]hile there are remedial actions we can take to reverse some adverse environmental impacts ... efforts to fix one problem tend to create new ecological difficulties.”⁶⁶ If environmental damage and loss are permanent, a negotiated settlement affords no possibility for restitution, reclamation and reconciliation as compared to conflicts in labour-management disputes or social justice issues.⁶⁷ Environmental destruction is not always permanent; however, returning lands to conditions prior to human development does not reverse all aspects of environmental changes. Of matters that are permanent, such as genetically engineered plants and animals, the purpose of negotiation is to regulate limits of human development instead of ways to compensate for loss and damage.

‘Environmental diplomacy’ responds to a unique form of conflict, understood as the permanence of human destruction of natural environment brought on by economic development. Although sensitive to human limitations, in knowledge, time, money, ability and willingness to change our way of living, this negotiation model is designed to explore ‘solutions’ to the destructive consequences of industrial and capital intensification. Susskind and Weinstein argue that environmental negotiation is a ‘process’ to examine the conditions that cause disputes and the conditions in which resolution becomes possible. According to Susskind and Weinstein, ‘developmentalists’ and ‘environmentalists’ manifest conditions of dispute and resolution, rather than anthropocentric ideology. ‘Environmental diplomacy’ could expand its framework to

⁶⁵ Susskind and Weinstein (1980) *ibid*, p327.

⁶⁶ Susskind and Weinstein (1980) *ibid*, p327.

include a broader spectrum of ecological thought, to include eco-centric and animist perspectives and interests so that the reversibility of destruction and the permanence of extinction can be explored and assessed against technological solutions.

2. The environmental question

The 'new multilateralism' framework examines ideas, interests and issues that operate in a broader context, yet it does not re-constitute negotiation theory to incorporate eco-centric or animist concepts that suggest nature has diverse forms of life and is autonomous from human activity. The environmental question, however, comes into play when: 1) its proponents discuss the limitations of 'new multilateralism' theorizing; and 2) it challenges hierarchical dominant/subordinate power structures evident in multilateral institutions and political harmonization of nation-states.

According to Cox a major gap in the theoretical analysis of the 'new multilateralism' is its failure to explore nature as actor, participating in multilateral decision making process.

Only recently have we begun to understand the ways in which human life is circumscribed by ecological forces and the capacity of the biosphere to become an actor in the human drama. Who speaks for the biosphere in multilateral discourse? The biosphere, of course, speaks for itself; but how shall we understand and respond to what it says?⁶⁸

Cox's comment infers that representation of nature, the biosphere or environment remains fixed within an anthropocentric orientation. He suggests that more effort be given to exploring the question of human relationships with nature. To me, his critique of the theoretical gap in 'new multilateralism' provides an opportunity to develop

⁶⁷ Susskind and Weinstein (1980) *ibid*, p325-327.

⁶⁸ Cox (1997b) *op cit*, p xxi.

multilateral negotiation beyond the confines of anthropocentric ideology, so that our understanding of nature can be developed to respond to environmental changes without constructing hierarchical relationships.

In recognizing that nature “has its own logic, based on the interdependencies of different forms of life, human and non-human”, Cox admits that the subordination and destruction of nature has been brought on by relying on market forces as the dominant/hegemonic ideology through which we relate to nature.⁶⁹ Cox argues that multilateral environmental issues have been negotiated according to economic understandings of nature, that as a result, have failed to understand that the environment is active, volatile, and ever-changing. While Cox often assumes that the environment is synonymous with climate, territory or atmosphere, which humans depend on for survival, his suggestion to re-configure economic approaches in multilateral negotiation indicates a willingness to expand the meaning of nature beyond a material conception of nature as resources valuable to humans.

Fen Olsen Hampson and Judith Reppy (1996) note that issues of representation point to deeper ethical issues that “rest on our understanding of humanity’s place in nature.”⁷⁰ Once there is an acceptance that people “value the ecosystem for its own sake and not simply as an exploitable resource” then decision-making enters into ethical areas that extend beyond strict humanist confines of rational reasoning.⁷¹ Hampson and Reppy concede that there are limits to liberal principles currently in operation in multilateral negotiation, yet they also concede that ethics of value and rights pose difficult questions

⁶⁹ Cox (1997b) *op cit*, p251.

⁷⁰ Hampson, Fen Osler, Pierre Laberge and Judith Reppy (1996) “Introduction: Framing the Debate”, *Earthly Goods: Environmental change and Social Justice*, Hampson, Fen Osler, and Judith Reppy, eds, Ithaca: Cornell U Press, p5.

to answer.⁷² Exploring the ethical dimensions of environmental issues can expose how current practices perpetuate human practices and behaviors that create these problems.⁷³

Does 'new multilateralism' change current practice, from a 'business as usual' to a process that reorients anthropocentric perspectives? Hampson and Reppy indicate their willingness to discuss nature's intrinsic worth beyond a script of material resources. Their examination is constrained by an anthropocentric position, however they seek to extend liberal assumptions of morality, rights and values onto nature, as well as human rights concerns for the most vulnerable and disadvantaged, peasants and indigenous peoples.⁷⁴ For Hampson and Reppy these ethical questions reflect challenges of representation, regarding how to include people previously excluded or marginalized in multilateral processes. Representation is based on the ability to speak about experiences about living closely with nature and supported by it rather than by framing questions about use and allocation of resources. The paradox of representation exposes two questions: who speaks for nature and how can nature speak for itself. The dilemma here is how able and willing are people to listen, therefore communicate with diverse forms of life, that are not like themselves.

III. The Nature Question

In this chapter I argued that mainstream negotiation theories are anthropocentric, which model negotiation to respond to social conflicts only, whether these are among

⁷¹ Hampson, Pierre and Reppy (1996) *ibid*, p5

⁷² Hampson, Laberge and Reppy (1996) *ibid*, p5.

⁷³ Reppy and Hampson (1996) *op cit*, p254.

⁷⁴ Hampson, Laberge and Reppy (1996) *op cit*, p6-7. Some members of the colloquia, from which this book is based, explore eco-centric arguments, although citing a preference for anthropocentric environmental theorizing. See Donner, Wendy (1996) "Inherent Value and Moral Standing in

individual people or larger groups, such as nation-states. The anthropocentric bias in negotiation models implies that environmental change threatens the security and well-being of people and nation-states, from which negotiation responds to international conflicts over nation-state access and distribution of natural resources. Negotiation frameworks refute framing environmental conflict as a security issue because military applications would be the 'option' proposed. Security assumptions, however, remain embedded in economic and scientific options designed to resolve problems of scarce or inadequate natural resources. Human conquest of nature is overlooked when disputes are framed in terms of reforming economic development so that the environment can be sustained as a source of natural resources and other social benefits required for people's survival. Each framework, 'interest-based', 'new multilateralism' and 'environmental diplomacy' examines different elements of international negotiation as practiced among nation-states, which includes non-governmental organizations (NGOs) as new actors in international politics.

I examined how multilateral negotiation theory addressed various features of negotiation, which combine action, process and substance so that I could analyze how these theories structured human relationships with nature and how environmental issues were brought to the negotiation table. These frameworks situate nation-states as central actors, aided by NGOs, to resolve mutual problems; allocate resources; define terms of relationships, conditions, responsibility and obligations among nation-states. The limitations of multilateral arrangements among nation-states and NGOs are the focus of theoretical debate, of which environmental questions are quite challenging, yet these

Environmental Change", p52-74 and Kymlicka, Will (1996) "Concepts of Community and Social Justice", p36-40.

debates are bounded by ideological differences that situate environmental conservation and preservation and industrial growth under the rubric of sustainable development.

In short, my examination of negotiation theorizing highlights how multilateral negotiation delineates what nation-states and NGOs can and cannot do in an ever-changing context of social relations, which consist of cooperation, competitiveness, differences, inequities, rivalries, suspicions and trust. My examination revealed that the premise of negotiation is to encourage cooperative relations among nation-states in a rules-based system rather than striving for appropriate relations with nature, which would counter anthropocentric supremacy and appropriation of nature. Theoretical investigation are limited to discussions about conflict, such as: 1) ideological and policy differences; 2) hierarchical dominant/subordinate relations among nation-states; 3) escalation of military violence. In contrast, animist and eco-centric perspectives, explored in chapter two, frame environmental issues as human conquest against nature. I argued that anthropocentric ideology operates according to a colonialist power structure, which structures power according to dominate/subordinate relations between people and nature and allows for dominant interests to appropriate and alter subordinate resources and ideas. Mainstream theoretical analysis ignores conquest and colonialism as features of nation-state interaction. I suggest that absence of conquest and colonialism from mainstream negotiation analysis restricts examination of negotiation practices, which limits examination of human control and exploitation of nature as features of environmental conflicts.

Where is nature in all of this? Can mainstream negotiation frameworks expand on questions about the environment, nature and human relations with nature? Human

relations with nature are examined in 'interest-based' and 'new multilateralism' frameworks indirectly, while 'environmental negotiation' has an explicit focus.

First, 'interest-based' negotiation does not provide guidance on how to deal explicitly with questions about the environment and human relationships with nature. A specific articulation of relationships, ecology and environmentalism is possible but not guaranteed if negotiators explore these as interests. I concluded that 'interest-based' negotiation was insufficient to address ecological and animist interests.

Second, 'new multilateralism' supports inclusive participation, challenging nation-states' representation of interests and policy goals. Its recognition that nature is inherently valuable, however, becomes limited by its inability to explore fully that nature is an 'actor speaking for itself'. Although 'new multilateralism' is unable to model how to negotiate/speak to nature, its analysis of conflict, as structural hierarchy among nation-states, can broaden its scope to include Aboriginal People's critique and practices, thereby addressing colonialism as a feature in multilateral negotiations. Inclusion of new voices helps contribute to theories about emancipation from exploitation and oppression to confront colonial authority, yet 'new multilateralism' does not use this contribution to explore further its anthropocentric premise and how it frames questions about nature. I suggest that 'new multilateralism' models environmental negotiation within an anthropocentric view of nature, recognizing the inherent value of nature, but also recognizing the inherent right of humanity to manage natural resources. I conclude that 'new multilateralism' situates environmental questions within a model of negotiation that manages human rights and values, foreclosing on the possibility that negotiation can be a way to expose the privileges of human authority and superiority over nature.

Third, 'environmental diplomacy' offers an explicit rendering of environmental matters under the rubric of sustainable development. The intersection of development and environment allows for theoretical analysis of interests among its advocates, while assessing negotiation that is practiced in multilateral fora. Since the nature question has been settled according to anthropocentric principles, 'environmental diplomacy' bypasses investigation of problems within western and modern norms of human supremacy and appropriation of nature. By emphasizing environmental change, as an ever-changing site in the struggle for human survival, 'environmental diplomacy' is able to retain its human-centred focus, thus ignoring analysis critical of human relationships with nature from eco-centric and animist perspectives.

My examination of multilateral environmental negotiation theory in International Relations (IR) literature reveals that social relationships are a central organizing feature from which analysis of negotiation occurs. Environmental issues are framed as conflicts among nation-states (and individuals) and treated as ideological differences. These differences are most often described as between people seeking to protect and conserve natural environments and habitats versus people seeking to protect and conserve economic advancements and growth opportunities. Framing the conflict in this way makes the question of nature ~~is~~ problematic: while nature is not treated as an autonomous actor its essence is bypassed in favor of discussing matters important for human sources of development and survival. This suggests that each theoretical framework could expand its analytic scope to include an understanding of: 1) conquest and colonialism, from which negotiation could respond to; 2) a broader context that includes eco-centric and animist perspectives; and 3) the limitations of anthropocentric

negotiation in which it ignores or refuses to see how political appropriation, control and domination corresponds between social relations and human relations with nature.

My examination revealed that 'new multilateralism' theorists see a gap in their analysis on environmental questions, and that 'environmental diplomacy' theorists speculate on the unique features of environmental negotiation. Proponents of 'new multilateralism' recognize that synthesizing 'green thought' with negotiation theory is only starting to occur. This suggests to me that analysis of political hierarchies, from eco-centric and animist perspectives would sharpen the framework's focus of negotiation practice. Furthermore, a discussion of the uniqueness of environmental conflict in comparison to other types of conflict in 'environmental diplomacy' suggests its proponents are attempting to understand how political relations are not exclusively social, although its analysis does not include conquest and colonialism. The uniqueness of environmental negotiation could be discussed in a manner that takes into account eco-centric and indigenist literature about human relations with nature.

According to each negotiation model, nature can be understood as a: a) resource for economic development; b) material necessity for human survival; c) malleable process to satisfy anthropocentric wants, imagination and needs ('interests') and d) target for greater technical intervention. In contrast, animist and eco-centric perspectives suggest human understanding of 'nature' is broader than an anthropocentric materialist conception. Indigenist and ecological feminism literature argues that nature is interconnected with human life. Relations between people and nature can be a site of negotiation; therefore; by resisting a narrow materialist definition of nature, people's relations with nature could be transformed to challenge anthropocentric ideology. When

environmental issues are part of the substance of talks, anthropocentric ideology takes precedence over indigenist and ecocentric perspectives because mainstream negotiation frameworks do not theorize ecological relations. My contribution to negotiation theory in IR literature is to challenge mainstream ignorance and rejection of ecological relations by including ecological feminist and indigenist examination of human relations with nature.

In the next chapter I provide an account of multilateral environmental negotiations that responded to the controversy of genetic engineering biotechnology. Chapter four will allow me to examine how multilateral environmental negotiation situated GE biotechnology as an appropriate response to biological diversity loss and destruction, and later as a response to limit the international trade of genetically modified plants and seeds (GMOs). While my main focus is on the biosafety talks that produced the 2000 Cartagena Protocol on Biosafety (CPB), my review would not be complete without including negotiations of the 1992 Convention on Biological Diversity (CBD) because the biosafety talks were limited to ideas written in the CBD text.

The political and economic establishments become evermore fixated on growth. If growth falters, the market panics. Growth is the prevailing orthodoxy. Entrepreneurs become evermore inventive in turning out consumables. A failure to consume begins to be equated with sabotage.¹

What was the problem for which AI [artificial insemination] seemed to be the answer? This is the question we need to ask ourselves about biotechnology – the application of technology to life and the practice of treating life as a technology.²

... biotechnology [is] based on conversion of sunlight, water and nutrients to create biomass or bioproducts ... perception of playing God, subject of misinformation [therefore] must be communicating a different way until the consumer as citizen buys in...³

The Matter of Negotiation

This chapter focuses on the controversy of Genetic engineering (GE) biotechnology as contained within three periods of formal multilateral negotiations about the safety of GE biotechnology (biosafety talks) that resulted in the Cartagena Protocol on Biosafety (CPB, or Cartagena Protocol). These state-led talks were structured according to an 'interest-based' model of negotiation, having a process of exploration and debate on various policy options, while the substance of talks appeared to follow an 'environmental diplomacy' model, having framed the issues between protecting biodiversity and sustaining non-restrictive economic development and trade. Both the process and substance of negotiation limited NGO access and constricted the G77/Like Minded Group's goals; therefore the biosafety talks did not follow a 'new multilateralism' model to re-orient the dominant/subordinate power structure. The agenda of biosafety talks was shaped by its Chairs, first by Veit Koester, of Denmark and

¹ Strong, Maurice (2000) *Where On Earth Are We Going?* Toronto: Knoff Canada, p 24.

² Kneen, Brewster (1999) *Farmageddon, Food and the Culture of Biotechnology*, Gabriola Is.: New Society Publishers, p2.

then Juan Mayr, of Columbia, and guided by protocols set in prior multilateral environmental agreements (MEA), specifically the Convention on Biodiversity (CBD).

The Cartagena Protocol is the first international regime to provide a regulatory formula that seeks to “ensure the safe transfer, handling and use of genetically modified organisms” (GMOs) specifically focusing on movements across international borders.⁴ Genetically modified organisms possess novel combinations of genetic material, produced in laboratories using processes designed to bypass natural barriers, which do not permit animal and plant gene sequences from mixing or fusing. The CPB “deals primarily with GMOs that are to be intentionally introduced into the environment [such as seeds, trees or fish] and with genetically modified farm commodities [such as corn and grain used for food, animal feed or processing – LMO-FFPs].”⁵ The Cartagena Protocol came into force on September 11, 2003, just ninety days after the fiftieth country, Palau, ratified it.⁶ Five years prior, during the sixth round of biosafety negotiations in February 1999 at Cartagena de Indias, Columbia, talks collapsed when the Miami Group, a bloc of nation-states promoting biotechnology production and trade, threatened to pull out if trade interests did not become the focus of the protocol. These acrimonious circumstances put the protocol in doubt and threatened the legitimacy of the Convention on Biological Diversity (CBD) to regulate GMOs and allow its signatories to negotiate a

³ Church, Robert (2000) presentation of “Biotech: Delivering on the Promise”, a panelist on “Bioproducts Revolution” at Ottawa Life Sciences Conference, organized by Ottawa Life Sciences Council, December 4, 2000, Ottawa Conference Centre, Ottawa.

⁴ United Nations Environment Programme – UNEP (2003) “Treaty on international trade in GMOs to become law”, Press Release, Nairobi, June 13, 2003, www.biodiv.org/biosafety, p1.

⁵ UNEP (2003) *Ibid*, p1. GMO farm commodities are referred to as LMO-FFP (food, feed and for processing) in the CPB text.

⁶ UNEP (2003) *ibid*, p1. Please see Appendix F, “Signatories to Convention on Biological Diversity and Cartagena Protocol on Biosafety”.

regulatory framework.⁷ Negotiations extended past initial planning and agreement was reached in Montreal January 29, 2000.⁸ The CPB is an internationally binding regulatory regime that reflects an occupational health and safety standard compatible with goals of industrial development.

In this chapter, I argue that biosafety negotiations occurred within a policy framework established primarily by signatories to the Convention on Biological Diversity (CBD, or Biosafety Convention) and officials from the United Nations Environment Programme (UNEP) that limited negotiations to discuss the risks of biotechnology products traded internationally. Biosafety talks focused on regulation of safe use and transfer of seeds, grains, seedlings and other commodities produced using GE biotechnology processes, as featured in agricultural and pharmaceutical industries. While the regulatory scope decreased even more during negotiations when scientific R&D and pharmaceutical GMOs were excluded from the Biosafety Protocol, negotiations focused on how GMOs would effect trade and its socio-economic development. This shifted attention from examining the reliance on technological approaches to sustain the diversity of biological life around the globe.

Multilateral negotiations exposed varying claims about risk, safety and methods of assessing GE biotechnology, yet not all perspectives were accepted. The Group of 77 (G77) argued that GE biotechnology and GMOs were invasive technologies, uniquely different from other products and needed to have a separate regime that they could use to

⁷ Earth Negotiation Bulletin – ENB (1999) Report on BSWG-6, Vol 9, #117, 2/26/99, Winnipeg: HSD, p12.

⁸ ENB (1999) Report on COP-5, Vol 9, #160, 5/29/00, p2.

restrict or prohibit the use of GE biotechnology and GMOs in their respective territories.⁹

The negotiation framework restricted the G77 from exploring other options, primarily: 1) a general five-year moratorium on GE biotechnology research and development (R&D) and; 2) support for programs currently in place to avert biodiversity losses that did not interfere in the genetic make-up of plants and animals.¹⁰ Although the G77 successfully argued that GE biotechnology was a problem rather than a solution to biodiversity loss, they had not been able to challenge the premise that scientific technology and economic mechanisms (for example, patents) are unsuitable as approaches to conserving biological diversity. The G77 were unable to expand the application of precautionary approaches, which they argued should assess technology on its compatibility with natural cycles and boundaries, instead of its compatibility with risk analysis, which is based on cost/benefit models that assessed how GE biotechnology would impact economic markets.

Industrialized nation-states rejected G77's critique, in which they argued: 1) technological solutions are compatible with sustainable development objectives established by UNEP and the CBD; and 2) GMOs are safe and not sufficiently different from other breeding and cultivation techniques. According to some nation-states,

⁹ The term, G77, refers to a group of 77 nation-states, mainly from the South, formed in 1962 to represent non-aligned nation-states in response to Cold War dualism between Soviet/communist bloc and democratic liberal economies, led by the US. The G77 comprise of countries from continents of Africa, Central and South America and Asia, such as Ethiopia, Jamaica, Brazil and India. Since then the G77 increased its initial membership, although the name remains, and used extensively to refer to countries with emerging industrial economies in the South. Terms such as 'South', 'Southern', 'developing' or 'underdeveloped' are inaccurate and biased, as are 'Northern', 'North' or 'Industrialized' that refer to nation-states that continue to dominate the international development agenda, both during and after the Cold War era. Nonetheless I know of no substitutes that describe these general groupings accurately and without prejudice. While these terms are contested, they are used in the literature I draw from. Consequently I do so, while I acknowledge the problems with using these terms.

¹⁰ Egziabher, Tewolde, Vandana Shiva, Mae-Wan Ho, Brian Goodwin, Elaine Ingham, Beatrix Tappeser, Regine Kollek, Nicanor Perlas, Diana Pombo, Gurdail Singh Nijar, Chee Yoke Ling, Dan Leskien (1996a) "Biosafety: Recent Findings and Need for a Protocol", *Third World Resurgence*, #65/66, Jan/Feb 1996, p15-21; also in same issue, Khor, Martin (1996) "Genetic Engineering: Science, Ecology and Policy,

primarily, Australia, Canada and United States of America (US), the biosafety talks should be premised on principles of risk management, that would be sufficient to determine the safe use and transfer of GMOs.

The biosafety talks were organized according to terms of reference negotiated by the signatories to the CBD, referred to as 'conference of the parties' (CoP). These parameters were based on articles in the CBD regime text and objectives laid out in *Agenda 21*, a non-binding plan of action negotiated during the United Nations Conference on Environment and Development (UNED, Rio/Earth Summit). The CBD regime defined biotechnology and its products; established patent protections to govern the exchange of genetic resources and data among countries; and specified a regulatory framework about handling and distributing biotechnology and its benefits, if the need arose.¹¹ *Agenda 21* chapter 15, "Conservation of Biological Diversity" and chapter 16, 'Sound Management of Biotechnology' defined biotechnology as a safe and simple technology similar to tools used in cultivation of new plant varieties and fermentation used in food production; therefore biotechnology was promoted as advantageous to enhancing biological diversity.¹²

In this chapter I focus on how multilateral negotiations responded to the controversy over GE biotechnology and its connection to the crisis of biodiversity loss. My aim here is to understand how the Cartagena Protocol came to be written; and how multilateral environmental negotiations framed the controversy over research and

Report of a TWN Seminar", p22 and 29; and Falkner, Robert (2000) "Regulating biotech trade: The Cartagena Protocol on Biosafety", *International Affairs*, Vol 76, #2, p300, 302-303.

¹¹ CoP-2 Decision II/5 posted on www.biodiv.org and CBD Articles 19 (3) and (4); 8 (g) and 17.

¹² *Agenda 21*: chapter 15, "Conservation of Biological Diversity", 15.3 and 15.4 (d); chapter 16, "Environmentally Sound Management of Biotechnology", 16.1; CBD, Article 16 "Access to and transfer of technology" and Article 18, "Technical and scientific cooperation". See also ENB (1992) UNCED-PC IV, Vol 1, #21, 29/3/92: "... euphoric vision of biotechnology given by the text [draft of the CBD]...", p2

development of artificial gene transfer technology. To do so, I trace negotiations chronologically, through three periods. In the first three sections of this chapter, I review each period, outlining the structure of negotiations first and reviewing the substantive issues as debated during each period. The controversy over GE biotechnology is mainly about disagreements over the definition of biotechnology; therefore, the negotiation focused on several questions about biotechnology: what is it?, what can it can do?; how is it used and applied?; and is it dangerous or safe? In Table 4, “Three Periods of Multilateral Negotiations” below, I illustrate these periods by indicating the negotiation forum, focus of debate, and outcomes of each negotiation session in each period.

The first period of negotiation occurred from 1988 to 1992, under the auspices of UNEP and Rio Summit, producing the Biodiversity Convention. The second period of negotiation occurred under the auspices of ‘conference of the parties’ (CoP) forum (1994-1995) in which nation-states, as signatories to the Biodiversity Convention, provided a framework to negotiate a regulatory protocol. The third period of negotiation occurred from 1996 to 2000, under the auspices of Open-ended *Ad Hoc* Working Group on Biosafety (BSWG), established by CoP-2 to negotiate a biosafety protocol. When the last BSWG session was abruptly halted by the Miami Group’s rejection of the working text, biosafety talks were extended by CoP-4 forum, establishing the Extraordinary Conference of the Parties (ExCoP) that produced the Cartagena Protocol.

Table 4
Three Periods of Multilateral Negotiations

Early Negotiations 1988 to 1992	Interim Negotiations 1994 to 1995	Biosafety Talks 1996 to 2000
1) United Nations Conference on Environmental and Development (UNCED), 'working group on biosafety and biotechnology', chaired by Bo Kjelle'n, of Sweden. 2) Intergovernmental Negotiating Committee (INC) on biosafety, chaired by Vincente Sanchez, of Chile.	1) Conference of the Parties to the Convention on Biological Diversity (CoP) organized Open-ended <i>Ad Hoc</i> Group of Experts on Biosafety (BSWG); 2) UNEP organized <i>Ad Hoc</i> Panel of Experts on International Technical Guidelines	Open-ended Ad Hoc Working Group on Biosafety (BSWG) chaired by Veit Koester, of Denmark and the Extraordinary Conference of the Parties (ExCop), chaired by Juan Mayr, of Columbia.
reported to United Nations Environment Programme. Mostafa Tolba, executive director of UNEP; UNCED organized by Maurice Strong, of Canada	reported to Secretariat of the Convention on Biological Diversity, Hamdallah Zedan Executive Secretary of CBD; and United Nations Environment Programme, Klaus Töpfer, and executive director of UNEP	reported to Secretariat of the Convention on Biological Diversity, Hamdallah Zedan, Executive Secretary
Both UNCED and INC sought to: promote biotechnology as an approach to the conservation of the planet's biodiversity, nation-state access to and protection of biological resources using patent mechanisms; and to centralize management of diverse biological resources for production and trade, administered by intergovernmental organizations	CoP: goal was to review the necessity of a legally binding biosafety protocol; UNEP: goal was to produce a non-binding and voluntary technical framework on biotechnology risk management	Like Minded Group: moratorium on GE biotechnology and GMOs, right to refuse GMO imports; European Group: regulation of GMOs limiting risk of potentially harmful GMOs; Miami Group: discourage restrictions on GMO trade and research, right to export GMO commodities and develop biotechnology capacity in other countries.
UNCED working group produced non-binding and voluntary framework for <i>Agenda 21</i> , Chapter 15, "Conservation of Biological Diversity" and Chapter 16, "Environmentally Sound Management of Biotechnology; and INC forum produced Convention on Biological Diversity (CBD), becomes international law December 29, 1993	CoP produced framework for biosafety negotiation: Decision II/5, "Consideration of the Need For and Modalities of a Protocol for the Safe Transfer, Handling and Use of Living Modified Organisms"	Cartagena Protocol on Biosafety (CPB), becomes international law September, 11, 2003

Together these three periods trace multilateral negotiation through a progression of meetings that returned to the same issues: 1) whether biotechnology was new or

different from other technologies; 2) whether biotechnology was safe or harmful; 3) whether the basis of a regulatory framework should be premised on risk assessment management (RAM) or the precautionary principle.¹³ Risk assessment relies on scientific analysis to determine within a reasonable allowance of certainty that harm results from a specific technology or product. The precautionary principle implies both caution and prevention when harmful effects are anticipated, to avoid danger or to withdraw from harmful practices.¹⁴ Debates were intense and acrimonious as nation-state delegates strove to catch up to scientific, technical and commercial developments occurring in industrialized nation-states.¹⁵

Controversy first emerged among scientists and policy-makers during the 1970s when deoxyribonucleic acid (DNA) transfer techniques were developed in industrialized countries, mainly Australia, Britain, Canada, Japan and the US.¹⁶ Policies focused on criteria to fund and design research protocols of new technologies that manipulated genetic characteristics of plants and animals to be applied in agriculture and medicine.

¹³ 'Risk assessment management' (RAM) refers to a science-based process for estimating the potential adverse effects of genetically modified organism on the environment and procedures that would manage adverse consequences on conservation and use of biodiversity.

¹⁴ 'Precautionary Principle' is referred to in the preamble of Biodiversity Convention and the Biosafety Protocol, and is Principle 15 of the 1992 *Rio Declaration*. Interpretation varies and its application remains open to debate, but an accepted idea of these treaties is to anticipate whether a technology will be harmful to the environment or biodiversity when scientific analysis is inconclusive to determine harm with a significant degree of certainty (also referred to as scientific uncertainty). A precautionary approach stipulates that in anticipation of harm the appropriate response would be to either prevent or withdraw from using the technology and distributing its harmful products. Interpretations are debated when 'precaution' implies prohibition of trade of dangerous products.

¹⁵ According to Robert Falkner (2002) international biosafety rules were initiated first in the 1980s, noted in *Our Common Future* (1987) a report authored by The World Commission on Environment and Development (WCED). Falkner (2002) "Negotiating the biosafety protocol: the international process", *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development?*, Bail, Christoph, Robert Falkner and Helen Marquard, eds, London: Earthscan, p6.

¹⁶ Situating debates in historical context among scientists and public policy officials see: Cooke Robert (1977) *Improving on Nature*, NYC: Quadrangle Books; Falkner (2002) *ibid*, p3-22; Ho, Mae-Wan (2000) *Genetic Engineering, Dream or Nightmare?*, NY: Continuum Publishing, p24-47; and Susan Wright (1994) *Molecular Politics: Developing American and British Regulatory Policy for Genetic Engineering, 1972-1982*, Chicago: U of Chicago Press, p2, 7-8.

Since the emergence of biotechnology, policy development among industry, scientists and government officials restricted commentary critical of biotechnology promotion and bypassed citizen participation.¹⁷ For example, during the 1980s British, Canadian and US governments facilitated partnerships among science and industry groups to develop biotechnology products for domestic and international markets. Policy decision-making was limited among industry groups and their government sponsors, without informing citizens of these policies or acknowledging a wider span of scrutiny that existed among scientists and environmentalists.¹⁸ While biotechnology industry had full access to multilateral negotiations, some NGOs were able to intervene on a limited basis providing written submissions to the negotiating forum bureau, an administrative body facilitating negotiations. NGOs, generally, were excluded from influencing nation-states' positions during the agenda setting and decision-making phases of negotiation. NGOs organized education campaigns to generate citizen awareness and activism against unfettered industry and government development of biotechnology. While multilateral negotiations were held within a process that privileged industrialized countries' perspectives, controversy about biotechnology continues. Critics of biotechnology generate public debate about the problems of R&D, production and trade, and promoters of biotechnology seek public approval for increasing use of technological approaches in agriculture, medicine and food economic sectors.

¹⁷ Wright, *ibid*, p64.

¹⁸ Kuyek, Devlin (2002) *The Real Board of Directors, The Construction of Biotechnology in Canada 1980-2000*, Sorrento, BC: The Ram's Horn, p4-5 and Wright, *ibid*, p49.

The International Institute of Sustainable Development (IISD) records multilateral environment negotiations through its Earth Negotiation Bulletin (ENB).¹⁹ This record of daily proceedings outlines main areas of discussion, and identifies preliminary statements of each country and NGO group. It also provides analysis, identifies 'working' passages in official texts and lists future meetings related to each subject area under negotiation. As a matter of policy, the ENB does not attribute statements made specifically by governments or individuals during informal and working group sessions.²⁰ This makes it difficult to identify specific nation-states, corporate and NGO representatives' positions in the latter stages of negotiation, despite the publishing of substantive remarks spoken during negotiation. Individuals are identified according to their administrative role, for example, as chair of proceedings or a working group, but statements do not indicate these persons' positions or interests, other than their administrative rulings.

As part of its role of facilitating transparency and promoting public education, the Biodiversity Convention Secretariat provides copies of CBD and CPB texts and other documents that explain objectives and mechanisms of each regime. The secretariat also provides a summary of the biosafety talks, which highlight the main issues and connect these issues to specific articles in the Protocol. Accounts written by participants and observers available through the internet or published in books or periodicals provide direct references to people's comments and opinion.²¹ Prior to and during the last ex-COP meeting in Montreal, 2000, I attended workshops, lectures and public

¹⁹ IISD/ENB www.iisd.ca/linkages, also linked through CBD Secretariat www.biodiv.org (also CBD and CPB texts). UNCED texts can be located at www.un.org.

²⁰ See editor's note, ENB vol9, #103, 31/08/98, p2.

²¹ For example, CBD Secretariat (2003) *Cartagena Protocol on Biosafety: From Negotiation to Implementation*, Montreal: CBD Secretariat and Bail, Christoph, Robert Falkner and Helen Marquard, eds (2002) *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development?*, London: Earthscan.

demonstrations that were organized to raise public awareness about biotechnology and these negotiations. This allowed me to introduce a small participant observation component into my research.

I. Early Negotiation Period 1987-1992

A. Organizational Matters – parallel process

During the early period of negotiation, multilateral response to biotechnology occurred in two parallel processes.²² These processes blended an ‘interest-based’ format that outlined various policy options and interests with a problem-solving management approach, as noted in ‘environmental diplomacy’, to frame the environmental issue of damaged natural habitats and extinction of wildlife due to unregulated economic growth. One process was UNCED/Rio Summit, begun in 1990, which had organized ‘working groups’ to focus on specific policy issue areas, such as the ‘working group on biodiversity and biotechnology’ and operated under the auspices of the United Nations Environment Programme (UNEP). The other process was ‘Intergovernmental Negotiating Committee’ (INC), operated independently from UNEP, but had started earlier in the late 1980s initiated by calls within UNEP for a conservation regime. Both negotiation processes converged in the final round of the Earth Summit in June 1992, in which the Convention on Biological Diversity (CBD) was tabled, and opened to nation-state approval. Table Five, “Early Negotiation Period”, below, illustrates the organizational structure of each multilateral negotiation process.

²² ENB (1992) UNCED- PCIV, Vol 1, #15, 19/March/1992, p3 and ENB (1992) UNCED Vol 1, #26, p1.

Table 5
 “Early Negotiation Period – Parallel sessions of UNCED and INC”

Early Negotiations 1988 to 1992	United Nations Conference on Environmental and Development (UNCED) Process	Intergovernmental Negotiating Committee (INC) Process
negotiating premise	promotion of biotechnology to conserve and enhance biotechnology	conservation of biodiversity through centralized management and funding
organized through	UNCED in two sessions Prepcom-IV, March 1992, New York City, USA and Earth Summit, June 1992, Rio de Janeiro, Brazil	independent and closed to outside groups, brought into UNEP and UNCED during Rio Summit June 1992
negotiation body	working group on biosafety and biotechnology; chaired by Bo Kjelle'n of Sweden	Intergovernmental Negotiating Committee (INC); chaired by Vincente Sanchez of Chile.
primary negotiating actors	Brazil, Canada, Finland, Malaysia, Portugal, Sweden and the United States (US); negotiating blocs organized according to North/South axis, but privileging economic development agenda.	World Bank, World Resources Institute (WRI), United Nations Environment Programme (UNEP), World Conservancy Union (IUCN), World Wildlife Federation (WWF) and companies involved in biotechnology R&D
included in process	Business Council for Sustainable Development (BCSD)	World Conservancy Union (IUCN) and World Wildlife Federation (WWF) provided initial draft of a biodiversity convention
written submissions from	Friends of the Earth, Third World Network	closed session, converged with biosafety and biotechnology working group in last round of UNCED sessions and introduced CBD text for nation-state approval, June 1992.
included interests	environmental conservation, bio- prospecting, trade, property rights	environmental conservation, bio- prospecting, trade, property rights
excluded interests	‘Third World’, eco-centric and animist perspectives	‘Third World’, eco-centric and animist perspectives
outcome	Chapter 15, “Conservation of Biological Diversity” and Chapter 16, “Environmentally Sound Management of Biotechnology of <i>Agenda 21</i> ”	<i>Convention on Biological Diversity</i> (CBD)

Each negotiation stream was organized differently in its focus on biotechnology, although all were premised on facilitating research and development to conserve diverse biological resources. As organizer of the ‘Earth Summit’, Maurice Strong attempted to bring nation-states and non-state actors to produce several outcomes, namely an Earth Charter and conventions on climate change, water and forestry. The INC stream of

negotiations involved a closed set of actors, which brought together representatives from intergovernmental organizations, to create a regime that would respond to similar problems, namely: 1) loss of biological diversity and extinction; 2) implications of dwindling natural resources on economic development; and 3) the absence of protocols that encouraged conservation and protection of resources and natural habitats. Both negotiation processes were seen as complementary to the other's goals and outcomes, despite differences in organization.

1. Earth Summit

As Secretary-General to the Rio Summit, Maurice Strong argued that the goal of the multilateral conference was to improve the management of nation-states' economies to achieve the "basic goals of development ... to improve the lives and prospects of people in environment and social as well as economic terms."²³ Strong wrote that this goal could be achieved by "integrating the environment as an integral dimension of development"²⁴, which he believed could be achieved when:

... richer countries could support a renewed commitment to the development process itself, and the developing countries could see the environment issue as a basis for such additional support for their development.²⁵

From the perspective of Strong, the Rio Summit and INC negotiations were organized to encourage multilateral collaboration that would re-organize nation-state economic development policies by introducing the idea that improvement of people's lives and livelihoods is possible with careful management of environmental (natural) resources.

²³ Strong, *op cit*, 122.

²⁴ Strong, *ibid*, 122.

²⁵ Strong, *ibid*, 122.

The 'Earth Summit' as dubbed by Strong was an ambitious project that took two years, and was comprised of four pre-negotiation sessions, with the final summit that was attended by 120 state leaders, with delegates from 178 governments held in Rio de Janeiro, Brazil, June 1992.²⁶ Partnerships between government and business became the operational premise, noted by Strong's argument "that we needed to develop a positive synergy between our economic and environmental needs."²⁷ Strong and Mostafa Tolba, executive director of UNEP, encouraged intergovernmental organizations, such as the World Bank and the World Resources Institute (WRI), to participate, and each organization sought to conserve biodiversity through trade and patent regulations. Strong appointed industrialist Stephen Schmidheiny, as his chief advisor even though the Earth Summit was accountable to the United Nations Environment Programme (UNEP). Schmidheiny, tasked with steering the many working groups of the Rio process, formed the Business Council for Sustainable Development (BCSD) as an advisory body to Strong in his capacity to facilitate multilateral agreements designed to orient economic development projects according to principles of environmental conservation and preservation. This advisory council, comprised of chief executive officers (CEOs) from 48 companies, provided access for these companies to participate in UNCED negotiations.²⁸ The diplomatic style of Strong, Tolba and Schmidheiny promoted

²⁶ ENB (1992) Overview of the UNCED Process, Issue #6, 02:06 June 6, 1992, p1-2 and Holmberg, *et al* (1993) *op cit*, p4 and 7. Plenary or pre-negotiation sessions are referred to as PrepCom 1-4, or UNCED-PC I – IV, and were officially created by the UN General Assembly, resolution #44/228, December 1989. PrepCom 1 was held in Nairobi, August 1990 and the last, PrepCom 4 held in New York City (NYC) March 1992.

²⁷ Strong (2000) *op cit*, p150. Strong explains further: "It's through our economic life, I argued that we affect the environment, and it's only through changes in economic behavior, particularly on the part of corporations, which are primarily actors in the economy, that we can protect and improve the environment."

²⁸ Holmberg, Johan, Koy Thomson and Lloyd Timberlake (1993) *Facing the Future, beyond the Earth Summit*, London: Earthscan Publications Ltd and IIED, International Institute for Environment and

environmental interests in resource conservation and combined both 'interest-based' and 'environmental diplomacy' negotiation models. They designed the Earth Summit process to open dialogue between governments and businesses on how to manage problems of industrial intensification and used the expertise of NGOs to assist the exploration of interests that promoted reforms in economic development based on environmental conservation goals.

Negotiation regarding biological diversity was a response to a "general agreement that the world's biodiversity is under imminent threat".²⁹ During the late 1980s, the prevailing understanding of biological diversity was that it was a composite of genes, species and ecosystems around the globe.³⁰ While the Earth Summit objectives were ambitious, the accomplishments dealt with overall strategies and guidelines with few practical goals and funding arrangements binding on nation-states. Bo Kjelle'n of Sweden chaired negotiations about biodiversity conservation, organized as the 'working group on biodiversity and biotechnology', which produced Chapter 15 "Conservation of Biological Diversity" and Chapter 16 "Sound Environmental Management for

Development, p15. Among 48 companies were: ABB, Ceiba-Geigy, Chevron, DuPont, Mitsubishi, Nippon Steel, Nissan, Shell, 3M and Volkswagen. The BCSD remains active operating as the World Business Council for Sustainable Development (WBCSD), www.greenyearbook.org/ngo/wbcd.htm and www.wbcd.org. WBCSD promotes GE biotechnology development. See Holliday, Chad (1999) "Biotechnology and Sustainable Growth", speech delivered at the Boston Chief Executives Club, September 22, 1999, World Business Council for Sustainable Development (WBCSD), www.wbcd.org; Dormann, Jürgen (1999) "Innovation, Technology, Society and Sustainability: The Implications of Biotechnology", speech given at the WBCSD Council Meeting, Germany, November, 4, 1999, World Business Council on Sustainable Development, www.wbcd.org and Stigson, Björn (2001) "Benefits and risks of new technologies for sustainable development", speech given at OECD Forum 2001, May 14, 2001, World Business Council for Sustainable Development, www.wbcd.org. Chad Holliday, Chairman, WBCSD and Björn Stigson, President, WBCSD

²⁹ Flitner, Michael (1998) "Biodiversity: Of Local Commons and Global Commodities", *Privatizing Nature, Political Struggles for the Global Commons*, Goldman, Michael, ed, New Jersey: Rutgers U. Press, p144.

³⁰ Munson, Abby (1995) "The United Nations Convention on Biological Diversity", *The Earthscan Reader in Sustainable Development*, Kirchy, John, Phill O'Keefe and Lloyd Timberlake, eds, London: Earthscan, p35.

Biotechnology". Each chapter was included in an overall guidebook for intergovernmental organizations and nation-state policy makers, titled *Agenda 21*. The 'Earth Charter' became the *Rio Declaration on Environment and Development*. While negotiations for conventions on forestry and water collapsed, the 'working group on climate' produced a Convention on Climate Change. The Convention on Biological Diversity (CBD) was also tabled during the Summit finale, although its 'author', the INC negotiation body, was independent from the UNEP process.³¹

2. Intergovernmental Negotiations

The second negotiation process, Intergovernmental Negotiating Committee (INC) was organized from within intergovernmental organizations. Initially, the INC identified the problem of biodiversity based on concerns about the destruction of the rainforests of South America.³² The INC sessions were composed of delegates from northern-based World Conservancy Union (IUCN) and the World Wildlife Federation (WWF) interested in conservation through market reforms and intergovernmental organizations including the World Bank, the World Resources Institute (WRI) and UNEP which promoted a biodiversity convention.³³ Also included were transnational companies active in the

³¹ ENB (1992) UNCED- PCIV, Vol 1, #15, 19/March/1992, p3.

³² Chatterjee and Finger (1994) *op cit*, p41.

³³ Chatterjee, Pratap and Matthias Finger (1994) *The Earth Brokers*, NYC: Routledge, p41 and Flitner (1998) *op cit*, p145. The General Environmental Facility (GEF) operates within the World Bank system of organizations. It was established by UNEP and the World Bank and is related to the CBD (Article 39) to help 'third world' nation-states fund projects aimed at protecting biodiversity, on a project by project basis. These projects tend to be dams and hydro-electric facilities, which are controversial for its displacement of indigenous peoples, large scale diversion of water and clear-cutting of forests, thus contravening the aims of conservation. See Rich, Bruce (1998) "The Emperor's New Clothes", *Green Planet Blues*, Conca, Ken and Geoffrey Dabelko, eds, Boulder CA: Westview, p202.

business of ‘biodiversity prospecting’ using the latest of cutting edge R&D, transgenic biotechnology.³⁴

Timothy Swanson (1997) argues that the Convention on Biological Diversity (CBD) represents interests forged together from several overlapping interests within the development and environmental sectors of intergovernmental organizations (IGOs). These interests include: a) environmental conservation achieved by establishing parks and protected areas; b) use of ‘transferable property rights’ to determine land use in other countries;³⁵ c) use of international funding mechanisms as incentives to conserve natural resources; d) the use of trade regimes to promote sustainable development and e) promotion of biological prospecting, or R&D of genetic resources (human, animal and plant) as new sources for food and drugs.³⁶ Its proponents, argued Swanson, believed that the majority stock of biodiversity was located in less developed areas in the Southern Hemisphere, where countries lack the legal and financial resources to protect against prospecting from industrialized northern countries in search of raw materials after exhausting their own territorial resources.³⁷ Together, these interests set into motion a problem-solving model of decision-making that combined management of

³⁴ As a reminder, the terms ‘genetic engineering’ (GE) and ‘transgenic’ are used herein interchangeably to refer to biotechnology processes that bypass natural barriers in order to change genetic sequences. The Convention on Biological Diversity refers to ‘biotechnology’, whereas the Cartagena Protocol refers to ‘modern biotechnology’, which both terms denotes transgenic processes. The biosafety talks focused on the technical aspects of ‘modern biotechnology’, to convey that ‘modern biotechnology’ means the same as transgenic or genetic transfer technology, of which the definitions and meanings were a focal point of intense debate.

³⁵ Swanson defines transferable property rights as “a right to certain uses of land that is transferable across national boundaries.” Through the purchase of rights to use land in other countries, a country would be able to express preferences about the types of uses of the land it has rights to. Swanson, Timothy (1999) “Why is there a biodiversity convention? The international interest in centralized development planning” *International Affairs*, Vol 75, #2, p315.

³⁶ Swanson, *ibid*, p307-331, p 307, 314, 315, 318, 321, 326 and 328.

³⁷ Munson (1995) *op cit*, p35; Strong (2000) *op cit*, p202; Swanson (1997) *ibid*, p1 and 2.

natural/biological resources with centralized government policy and planning, which framed how nation-states ought to conserve natural wildlife and habitats.³⁸

In 1987, amid scientific evidence of biological erosion, UNEP requested that governments establish a regime for conservation and sustainable use of diverse plants, animals and their components.³⁹ Biological diversity was understood as a quantifiable stock of genetic material created over time (without human interference), yet it is also the net result of new species formation (speciation) that occurred along with extinction.⁴⁰ According to Swanson biological diversity is a “one-off endowment from nature to earth in that it cannot be replaced on any timescale that is relevant to humanity.”⁴¹ While extinction occurs naturally (without human participation), negotiations dealt with human causes of extinction (social/economic structural), which were seen as the primary threats to biodiversity.⁴² During the same year IUCN with WWF drafted a biodiversity convention, which became the initial negotiating draft of the CBD regime.⁴³

Discussions organized through UNEP occurred three times between November 1988 and July 1990, producing a report by legal and technical experts with ideas similar to those outlined by IUCN and the UNCED process.⁴⁴ The UNEP *Ad Hoc* group met twice more, afterward becoming formally organized as the ‘intergovernmental negotiating committee’, which met five more times from June 1991 to May 1992. Official sponsorship of INC by UNEP commenced in November 1990.⁴⁵ Chaired by Vincent Sanchez of Chile, the Intergovernmental Negotiating Committee (INC)

³⁸ Swanson (1997) *op cit*, p12 and 45, Swanson (1999) *ibid*, p307-331, p307 and Strong (2000) *op cit*, p122.

³⁹ Munson (1995) *op cit*, p35.

⁴⁰ Swanson, Timothy (1997) *Global Action For Biodiversity*, London: Earthscan, IUCN and WWF, p8.

⁴¹ Swanson (1997) *ibid*, p10.

⁴² Swanson (1997) *ibid*, p11 and Strong (2000) *ibid*, p25, 117 and 122.

⁴³ Chatterjee and Finger (1994) *op cit*, p41 and Holmberg *et al* (1993) *op cit*, p20.

⁴⁴ Munson (1995) *op cit*, p35.

proceeded to write the Convention on Biological Diversity (CBD). The INC was able to table the Convention on Biological Diversity (CBD) at the Earth Summit, June 1992.⁴⁶ Over 150 countries signed the CBD treaty when it came into force on December 29, 1993 and since then over 175 countries have ratified the CBD in their national legislatures.⁴⁷

Sanchez and Kjelle'n kept each other informed of their respective negotiation groups, making sure that they did not contradict each other's goals. The objectives of the CBD, as stated in Article 1, are to conserve biological resources in accordance with sustainable use, and with fair and equitable sharing of their benefits, while also "taking into account all rights over those resources and to technologies, and by appropriate funding."⁴⁸ Both UNCED and INC groups were aware that the developing world demanded a greater share of economic benefits from industrial nation-states' use of its resources, while the developed world was apprehensive about the accelerating rate at which biodiversity was being lost and the consequences that this posed around the world.⁴⁹ While affirming each nation-state's sovereignty over its territorial resources, objectives of the CBD was meant to compliment each nation-state's policy objectives using guidance from intergovernmental organizations rather than to supplant the objectives of the treaty as the only course of action.

Swanson argues the purpose of the Biodiversity Convention was to create a collaborative framework from which nation-states can work together to conserve natural resources in their respective territories. Nation-states do not need to compete or

⁴⁵ Munson (1995) *ibid*, p35. See also Holmberg *et al* (1993) *op cit*, p20

⁴⁶ ENB (1992) UNCED-PCIV, Vol 1, #15, p3 and #16, p16.

⁴⁷ UNEP, CBD Ratification, as of February 14, 2000, CBD website, www.biodiv.org. Entry into force ninety days after accession from the 30th state. See also CBD Secretariat (2000) *Sustaining Life on Earth*, p8, pdf file, cbd-sustain-en.pdf, www.biodiv.org/doc/publications/bs-brochure-03-en.pdf.

⁴⁸ CBD, Article 1.

⁴⁹ Holmberg *et al* (1993) *op cit*, p20.

intimidate other nation-states to gain access to biological resources, since the CBD provides several options in which economic development can continue while protecting and conserving the world's supply of biological sources. By emphasizing sharing of resources and ensuring mutual benefit among nation-states to use biological resources wisely, the aim of the CBD is for nation-states to facilitate "environmentally sound uses" of these resources based on an explicit agreement of terms.⁵⁰ For Swanson: "[t]he issue here is whether it is possible for human societies to develop alternative development paths that build on the existing natural base of diversity rather than on the conversion to the uniform, specialized resources."⁵¹ Swanson argues that the purpose of a biodiversity convention was to promote national policies that were compatible with sustaining diversity, and coordinated through centralized international legal and funding mechanisms.⁵²

The Intergovernmental Negotiating Committee does not fit the model of 'new multilateralism' because it comprises of policy makers from several intergovernmental organizations situated in the US and Europe. Despite inclusion of two NGOs with interests in environmental conservation, the forum did not include groups from either the North or the South geographical regions that could have represented eco-centric and animist ideas. According to the INC, the environmental issue of biodiversity depletion was a matter of environmental conservation that would be served by improving the economic management of natural resources. The format of negotiation appears to follow an 'environmental diplomacy' approach, despite its bias of a closed and elite decision-making process. Furthermore, the closed and elite approaches of the INC did not lend

⁵⁰ Holmberg *et al* (1993) *ibid*, p20.

⁵¹ Swanson (1997) *ibid*, p12.

itself to the same scrutiny as the UNCED process. References about the Intergovernmental Negotiating Committee deliberations are found in Rio Summit documentation, which references INC's work on a biodiversity convention when it joined the Rio Summit process in 1990.

B. Negotiating Matters – towards a framework

During the Rio Summit process discussions about biotechnology did not occur until the fourth PrepCom in New York City (NYC). The Swedish delegation presented a “simplified and streamlined” draft for *Agenda 21*. The United States (US) argued for its own version of the text seeking to use property rights as legal protection for biotechnology R&D.⁵³ Brazil proposed different protections, instead of relying on intellectual and property rights mechanisms to protect traditional methods and technologies used by its local communities and indigenous populations.⁵⁴ Kjelle'n proposed to consolidate options of delegate proposals because there was no more time for discussions.⁵⁵ Negotiations focused on consolidating wording so that *Agenda 21* chapters 15 and 16 would be consistent with each other and reflect a common understanding among negotiators. Over US objections, the discussion was limited to the Swedish text, which outlined provisions to share information gained through genetic research and new technologies, while also allowing delegates to revisit liability issues if the need arose.⁵⁶

The text remained incomplete when it was submitted to the Bureau, the office managing working group negotiations. Contested “items were deferred back to the main

⁵² Swanson (1997) *op cit*, p12.

⁵³ ENB (1992) UNCED- PCIV, Vol 1, #15, *op cit*, p4.

⁵⁴ ENB (1992) UNCED-PCIV, Vol 1, #15, *ibid*, p3

⁵⁵ ENB (1992) UNCED-PCIV, Vol 1, #15, *ibid*, p3.

committee.”⁵⁷ This left several bracketed passages indicating areas under dispute, primarily around liability and safety matters surrounding biotechnology. These included:

- a) access to and ownership of biological resources which pertain to the sharing of information and the rights of countries that are the sources of biodiversity to share in the benefits from biotechnology R&D and the commercial utilization of such resources;⁵⁸
- b) liability and compensation if new technologies failed to ensure conservation or posed unexpected hazards;⁵⁹
- c) safety (biosafety) issues regarding the hazards of using biotechnology and risks, such as genetic contamination, unexpected mutation and invasive species;
- d) regulation of fertility-related mechanisms (scope of reproductive forms of biotechnology in health and agricultural sectors).⁶⁰

Contentious issues were not resolved easily because participants were waiting for INC to confirm specific details that would be featured in the *Agenda 21* chapters. The ‘working group’ on biodiversity and biotechnology was unwilling to jeopardize the work of the INC negotiations on a biodiversity convention, so contentious issues were deliberately not resolved.⁶¹ As a consequence the amended Swedish text has greater ambiguity because objections from Brazil and US were included rather than explored further to overcome remaining disagreements or contradictions. Although bracketed sections in these chapters were expected to be resolved, the focus of the final round of Rio Summit negotiations was to ensure that the chapters on biodiversity and biotechnology would be consistent with ideas expressed in the Biodiversity Convention.⁶² Negotiation seemed to be a matter of reconciling inconsistencies between texts rather than forming a consensus that would represent agreement and common understanding among negotiators.

⁵⁶ ENB (1992) UNCED- PCIV, Vol 1, #15, *ibid*, p3-4

⁵⁷ ENB (1992) UNCED Main Committee Contact Groups, #8, 02:06 June 10, 1992, p2.

⁵⁸ ENB (1992) *ibid*, p2.

⁵⁹ ENB (1992) UNCED- PCIV, Vol 1, #26, 3/April/1992 and ENB (1992) Things to look for Today at UNEP, #4, 02:04 June 4, 1992, p2.

⁶⁰ ENB (1992) UNCED #4, *ibid*, p2.

⁶¹ ENB (1992) UNCED-PCIV: The Final Stop on the Road to Rio, p4.

Upon closer inspection the areas of contention pertain to issues that defined biotechnology; its assessment protocols; and the regulatory regiment suitable for genetic transfer technology. Definition of biotechnology influenced the assessment formula and in turn fashioned regulatory mechanisms. The Biodiversity Convention negotiations dealt with all three. Biodiversity Convention negotiations, more than negotiations for *Agenda 21*, laid the framework for establishing procedures in the development and regulation of biotechnology because it was a legally binding convention. Treated as a framework for further elaboration, the CBD linked biotechnology to biodiversity conservation, namely through IPR mechanisms (patent protections), formation of new regulatory formula, called advanced informed agreement (AIA) and biotechnology defined narrowly as living modified organisms (LMOs) which were designated as the products of transgenic technology. *Agenda 21* chapters provided a general picture of biotechnology's potential and intended uses, so it dealt with questions of assessment, definition and funding, linking together corporate, government and scientific programs. *Agenda 21* influenced substantive arguments in its affirmation of a technological solution to environmental problems. During the early negotiation period, UNCED and INC combined introduced a framework that positioned biotechnology as a viable solution to the problem of biodiversity erosion. During this period biotechnology was in its infancy, which meant that its affects on the environment and production were not realized, and these were discussed in probability terms. The effects of biotechnology, whether positive or negative, were referenced *as if* these effects *might happen*. Consequently, the framework of biodiversity conservation disregarded perspectives that challenged biotechnology as a viable course of action, arguing that its development and patronage

⁶² ENB (1992) UNCED- PCIV, Vol 1, #26, 3/April/1992.

were based on encouraging the economic potential of natural resource management instead of limiting its excessive aspects.

C. Biotechnology Matters – from GMO to LMO

During the early negotiation period, debate focused on the potential of ‘biotechnology’ to encourage economic growth while solving many problems as a result of scarce natural resources evident in sectors such as agriculture, forestry, food production, pharmaceuticals and mining. Proponents of biotechnology from government, science and industry argued that biotechnology has the potential to prevent disease by designing new medication, and increase agricultural production by improving the application of pesticides and herbicides in managing crops and accelerating growth rates of plants and animals.⁶³

According to *Agenda 21*, Chapter 16, “Environmentally Sound Management of Biotechnology”, ‘biotechnology’ can solve the biodiversity problem by increasing productivity or enhancing natural processes:⁶⁴

Biotechnology is the integration of the new techniques emerging from modern biotechnology with the well-established approaches of traditional biotechnology. Biotechnology, an emerging knowledge-intensive field, is a set of enabling techniques for bringing about specific man-made changes in deoxyribonucleic acid (DNA), or genetic material, in plants, animals and microbial systems, leading to useful products and technologies.⁶⁵

⁶³ Prentis, Steve (1984) *Biotechnology, A New Industrial Revolution*, Orbis: London, p1 and Canada, Industry, Sciences and Technology (1990) *Biotechnology Means Business, An Explosion of Commercial Activity*, p2.

⁶⁴ The chapter’s supportive and promotional emphasis is most explicit in its fifth programme area, 16.37-16.46, “Establishing enabling mechanisms for the development and the environmentally sound application of biotechnology”.

⁶⁵ *Agenda 21*, Chapter 16.1: and in the CBD, Article 2, Use of Terms: ‘Biotechnology’ means any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use. ... Technology includes biotechnology.

This definition of 'biotechnology' incorporates techniques developed from molecular biology, based on research originating in the 1950s, which segued into medical, agricultural and environmental restoration projects focused on enhancing the one-time endowment of biodiversity.⁶⁶ Accordingly, 'nature' was defined as a quantifiable 'biologically diverse resource', which required both enhancement and protection.

According to *Agenda 21*, 'biotechnology' is a new scientific development, which permits "man-made changes" to the genetic structure of biological plants, animals and microbes. This definition of 'biotechnology' specifically defines techniques that reorganize DNA sequences for the purpose of making new products and technologies. It also conveys an understanding that 'biotechnology' is unique and separate from natural processes of adaptation, such as fermentation used in food production. The term 'biotechnology' refers to techniques developed in scientific laboratories using genes, genetic codes and biological processes to alter or bypass processes that occur in nature.⁶⁷ Accordingly, genetic transfer and modification are a novel development in western science, which has the potential to revolutionize a wide scope of human activities.⁶⁸ The *Agenda 21* definition of 'biotechnology', however, allowed negotiations to discuss the distinction between product and process. As a technical-oriented definition, the *Agenda 21* wording implied 'processes' that reorganized genetic sequences, not otherwise possible, because natural barriers could be bypassed or eliminated artificially in scientific laboratories. These 'processes' made 'products' (GMOs) that would display novel

⁶⁶ Cooke (1977) *op cit*, p50 and Wright (1994) *op cit*, p67.

⁶⁷ Ho (2000) *op cit*, p18, 25, 49-60; Suzuki, David and Peter Knudtson (1990) *Genethics, the ethics of engineering life*, Toronto: Stoddart, p97, 98-113 and Wright (1994) *ibid*, p67.

⁶⁸ Cooke (1977) *op cit*, p6 and Wright (1994) *ibid*, p75-77.

characteristics, which were designed to improve, among other things, medications, crop production and food processing.

At issue was which aspects of biotechnology could be regulated: scientific processes or their end products. Regulating scientific approaches would hamper research unnecessarily, and negotiators recognized that protocols were in place to prevent release of viruses and bacteria in laboratories. Debate focused on the application of biotechnology: whether GMOs (products) were similar to other products developed traditionally. If GMOs were not significantly different from other products made from traditional adaptation processes then GMOs could be argued to be as safe as other products. The possibility of genetic transfer processes, however, induced profound changes in the overall cultivation and production of natural resources; therefore, the application of biotechnology 'processes' indicated a significant shift in the delivery of products, with the potential to threaten established production systems. Since biotechnology processes changed organic matter at its genetic level, these techniques had inherent risks that involved in the use and development of these techniques.⁶⁹

The US took exception to the definition of 'biotechnology' that combined process and product because modern biotechnology was not significantly different from other adaptive processes. Therefore GMOs, as products of biotechnology, were just as safe as other products made by traditional methods.⁷⁰ During the early period of negotiations, the US preferred to define 'biotechnology' as various techniques that utilized biological

⁶⁹Holmberg *et al* (1993), *op cit*, p22; Strong, *op cit*, p32 and Swanson (1999), *op cit*, p329

⁷⁰ Gupta, Aarti (1999) "Framing 'Biosafety' in an International Context", Environmental and Natural Resources Program (ENRP) Discussion Paper E-99-10, Kennedy School of Government, Harvard University, paper presented at International Studies Association (ISA) conference, Los Angeles, March, 2000, p4-5 and Holmberg *et al*(1993) *op cit*, p22.

material, combining modern and traditional approaches.⁷¹ While this generalizing definition conveyed the meaning that 'biotechnology' was the same as other processes, the definition focused on the potential of biotechnology products to have a wide array of applications and benefits for the environment and economic development.

A compromise was reached in defining 'biotechnology' by changing the vocabulary that referred to biotechnology products. The term, 'living modified organism' (LMO) replaced the term, 'genetically modified organism, thus in regime texts 'products' of genetic modification are referred to as living modified organisms (LMOs). Although the meaning of the terms are similar, replacing the word 'genetically' with the word 'living' satisfied the US objections to the negative connotations associated with organisms produced by recombinant DNA (rDNA) and other artificial genetic transfer technologies. Change in wording was intended to displace possible public controversy prompted by use of the term, 'genetic.' It also made another subtle but critical distinction. Modified products that were still living (active) such as, seeds, plants and whole foods, could continue to be regulated and those that were essentially inert (dead) would be excluded from assessments, as in highly processed foods, medications or other products made from natural resources. Only 'living modified organisms' were considered to carry genetic sequences that could combine with other strains of plants or animals once released into the environment. A general definition of biotechnology implies process (gene transfer techniques) and products (GMOs), which are classified into 'living' and 'inert'. During the early negotiation period, it was thought that any potential risks could arise only from 'living modified organisms' (LMOs).

⁷¹ ENB (1992) UNCED Things to look for Today at UNCED, #4, *op cit*, p1 and 2; Holmberg *et al* (1993) *op cit*, p20 and Strong (2000) *op cit*, p32

The Convention on Biological Diversity (CBD) defines 'biotechnology' generally to mean "any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use."⁷² The regime also uses the term 'technology' to "include biotechnology."⁷³ This generalization focuses on the beneficial uses developed from scientific adaptations of biological processes, while removing the idea that genetic engineering processes are new and different from traditional practices. The INC negotiating committee defined 'biotechnology' according to US standards, effectively displacing examination of the inherent dangers of genetic transfer processes and potential risks of using GMOs. By focussing on perceived benefits of the products of biotechnology a general definition in effect dismisses further examination of the claim that biotechnology processes could be a risky approach to conserving biological diversity.

Underlying the changes was the question of whether DNA-related technologies are distinct and unique from traditional methods, such as fermentation or seed development, or natural processes of adaptation. If 'biotechnology' was defined as distinct from traditional approaches its uniqueness could indicate inherent risk or hazard, thus allowing G77 to negotiate a stronger regulatory framework that included biotechnology processes and products. Since 'biotechnology' was defined generally in the CBD as similar to traditional processes, it helped the US position to disregard the G77 position to regulate biotechnology, which consequently allowed biotechnology processes and products (GMOs) to be developed and traded internationally. By dismissing the idea that biotechnology techniques are new and different the US succeeded in asserting the

⁷² CBD, Article 2, Use of Terms, item 3.

⁷³ CBD, Article 2, Use of Terms, item 17.

idea that biotechnology techniques and GMOs were no more risky than existing techniques and the products they made. The simpler and general definition limited negotiations to discussing the benefits of applying biotechnology products to conserve biodiversity, and by consequence disregarded wider concerns that challenged a scientific paradigm that promotes technological applications as improvements on nature and appropriate to 'enhance' its diversity.

D. Matters of Assessment and Regulation – the novelty of AIA

Risks associated with GMOs were (and still are) varied; however, assessment of risk was determined largely by how people defined biotechnology's impact and how willing they were to accept a technology that introduces potentially far-reaching hazards that cannot be recalled once introduced into the environment. Medical researchers and molecular biologists associated risk with unknown genetic changes if laboratory containment failed and risks to human health that accompany occupational hazards if processes and products were used improperly.⁷⁴ 'Hazards,' in these scenarios, focused on research protocols and occupational health policies to prevent exposure to viruses and bacteria that could prompt negative changes in human immune systems. Business groups defined risk associated to venture capital investments, invoking protections such as intellectual property rights (IPR, or patents) to ensure privileged access to financial and intellectual resources, and to protect investments during all phases of development, production and trade.⁷⁵ Environmental groups focused on the impact on *in-situ* environments (wild or natural locations) and promoted regulations based on prior

⁷⁴ Wright (1994) *op cit*, p115.

⁷⁵ Wright (1994) *ibid*, p116.

experience with technologies with far-reaching consequences such as chemicals and nuclear energy.⁷⁶

The G77 nation-states were concerned about economic, social and environmental impact resulting from ownership accredited to the ‘discovery’ of genetic material (bio-prospecting) to be used in developing biotechnology processes and products.⁷⁷ For the G77 and environmental groups, ‘risks’ went beyond occupational health and safety, into areas of human rights and ecological protection against prospecting and monopolization of biological ownership. They first turned to existing legal mechanisms regulating toxic and hazardous materials, namely the Basel Convention and the precautionary principle established in the Rio Declaration.

During the early negotiation period, the debate about ‘risk’ focused on whether to include biotechnology in established assessment regimes or organize totally new mechanisms to address the novelty of biotechnology. The former would mean reshaping these measures by adjusting them to include newly emerging technologies. In the case of Organization for Economic Cooperation and Development (OECD) policy guidelines GMOs were treated as ‘substantially equivalent’ to other products, thereby applying regulatory measures in the same manner as other hazardous products. ‘Substantially equivalent’ denoted GMOs as similar in kind to other products, a designation supported by OECD member nation-states but discredited by environmentalists and the G77. The latter understanding of risk would mean that nation-states would have to negotiate a

⁷⁶ Tapper, Richard (2002) “Environment Business and Development Group”, *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development?* Bail, Christop, *et al*, *op cit*, p268. World Wildlife Fund (WWF) sought international regulation, including a ban on patenting of GMOs, but it did not seek a moratorium on biotechnology R&D and use.

⁷⁷ ENB1992) UNCED PrepCom IV: The Final Stop on the Road to Rio, *op cit*, p3-4 and Falkner (2002) *op cit*, p6.

wholly separate and new regulation formula to govern the use and trade of LMOs across international borders. INC negotiations considered the Basel Convention because it outlined Prior Informed Consent (PIC), a mechanism with a history of international legal jurisprudence, which stipulates that consent from recipients is required prior to shipping or disposal of hazardous materials such as atomic materials and toxic chemical waste.⁷⁸

The US delegation did not support PIC. Arguing that GMOs are 'substantially equivalent' meant that GMOs could not be intrinsically unsafe, implying that the connotation of hazard without scientific evidence would unfairly subject GMOs to prohibition. Furthermore, the US position situated 'risk' in terms of accidental release from laboratories, or contamination of gene lines due to improper research protocols. By the 1990s, the US and other OECD countries had established their own regulation or policy guidelines dealing with risks associated with genetic and biotechnology research.⁷⁹

The US tabled an alternative proposal, Advanced Informed Agreement (AIA), arguing that national policy better suited biosafety regulations than international law developed through Prior Informed Consent (PIC). Advanced informed agreement carries the same meaning as PIC, although AIA had no history in international law concerning risk and liability, so would be open to interpretation. In essence, the US initiated new criteria without having to negotiate a separate regime.⁸⁰ As with the stalemate over the change in wording from GMO to LMO, the US insisted successfully in placing its AIA proposal in the finalized version of the CBD.

⁷⁸ Gupta (1999) *op cit*, p6;

⁷⁹ Wright (1994) *op cit*, for a historical review of US and UK regulation. For a history of Canadian policy regulation see The Canadian Institute for Environment Law and Policy – CELAP (2002) *A Citizens' Guide to Biotechnology*, Toronto: CELAP and Kuyek, Devlin (2002) *The Real Board of Directors, The Construction of Biotechnology in Canada 1980-2000*, Sorrento, BC: The Ram's Horn.

⁸⁰ Gupta (1999) *op cit*, p6.

As outlined in the Biodiversity Convention, Advanced Informed Agreement (AIA) deems GMOs to be without risk. Advanced Informed Agreement criteria were written according to the possibility that risk and harm would become evident over time as GMOs were used. Harm was to be confirmed using the best available evidence provided by scientific monitoring. Despite scientific studies about the problems of GMOs, scientific findings are always contested, based on charges of bias for and against the use of biotechnology. According to biotechnology proponents, the evidence of risk is inconclusive, or the research indicating damage to the environment is improperly designed.⁸¹ Opponents of biotechnology complain that research that addresses harm is preliminary, often subject to further research, which rarely gets done. CBD Article 19, “Handling of Biotechnology and Distribution of its Benefits”, stipulates nation-states could establish a regulatory protocol in the future, but it does not itself establish a regulatory formula or mechanism regarding biotechnology. If the need arose, the AIA mechanism would be the basis on which to negotiate international regulations of biotechnology development and trade.⁸² Regulatory language, whether PIC or AIA, does not appear in the chapters on biosafety conservation and management of biotechnology. While *Agenda 21* was meant to be a compilation of policy objectives guiding nation-state policy, the absence of a regulation framework suggests that biotechnology did not warrant regulation, which reflects US and corporate resistance to limiting development and trade of new technology.

⁸¹ For an account of debates among scientists and policy makers see, Cooke (1977) *op cit*, p 11-12 ; Ho (1999) *op cit*, p24-26; Panem, Sandra (1985) *Biotechnology, Implications for Public Policy*, Panem, S. ed., Washington, DC: The Brookings Institute, p vii, 1-9; and in the same volume, Lederberg, Joshua, “A Scientist’s Perspective”, p19-25; Dingell, John (1985) “Problems beyond Regulation”, p25-31 and Levin, Simon and Mark Harwell, “Environmental Risks and Genetically Engineered Organisms”, p57-72. Also other accounts are found in Suzuki and Knudtson (1990) *op cit*, p26, 212-214, 328-332; Wright (1994) *op cit*, p 160-212, 438-456.

The failure of scientists to provide unequivocal conclusions about the effects of biotechnology forced negotiation onto uncertain terrain. Policy could not be based on a complete accounting of benefits and consequences of GMO use. In negotiations scientific knowledge was privileged, but negotiators attempted to reconcile scientific uncertainty with the precautionary principle, a broader assessment criteria based on ecological, ethical and social and economic considerations which would determine the unsuitability of a new technology based on its potential to harm. The precautionary principle was based on ideas that the 'polluter pays', in effect placing the burden of proving the safety of a technology on its inventors or proponents.⁸³ The precautionary principle, as noted in the CBD and the *Rio Declaration*, allows for risk assessment decisions to proceed when scientific evaluation is inconclusive.⁸⁴ According to the CBD preamble, when: "there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat."⁸⁵ Despite mention in the preamble, the precautionary principle does not have the same legitimacy as scientific assessments, which are located in the body of a regime. Since the CBD effectively does not outline regulatory framework, but indicates only that one may be needed, the CBD does not regulate GMOs. Instead, the CBD outlines trading arrangements among nation-states to develop the capacity of biotechnology and its products, as long as the benefits were shared equitably among nation-states and the genetic sources were sustained.

⁸² CBD, Article 19 (3).

⁸³ Tickner, Joel, Carol Raffensperger and Nancy Myers (1998) *The Precautionary Principle in Action, a handbook*, pdf format, available through www.sehn.org/rtdocs/handbook-rtf.trf, p18-21.

⁸⁴ The CBD refers to principle 15, the precautionary approach as indicated in the Rio Declaration. *Agenda 21* chapters 15 and 16 of Agenda 21 do not mention precaution.

⁸⁵ CBD, Preamble (item 9).

E. The Matter of Conserving Biodiversity through Biotechnology

I examined the early negotiation period because I wanted to understand 1) why critics of biotechnology have been unable to negotiate a moratorium on biotechnology research, development and trade; and 2) how multilateral negotiations about biotechnology were organized, in terms of the structure of meetings and the substance of debate. I suggested that environmental issues are framed in such a way as to privilege anthropocentric understandings of nature, which results in the absence of perspectives that challenge human-centred authority to define what nature is to people and rationalize appropriation of nature for the benefit of (hu)mankind. During the early period of multilateral negotiations, debate was limited because the substance of discussion was premised on conserving biological diversity so as not to threaten people's ability to develop economically and socially. By focusing solely on human interests, in respect to the economic and social benefits provided by natural resources, nature was effectively reduced to a material understanding, which excluded other perspectives from negotiation. The early negotiation period limited debate about biotechnology by defining artificial genetic manipulation as positive and helpful, which was designed to enhance nature, and defined as an approach that could conserve biodiversity.

My review of the early period of multilateral negotiations indicates a response that was supportive of biodiversity conservation by privileging technological approaches. By drawing attention to how anthropocentric ideology encourages human authority to define the conditions by which humans relate to nature I would be able to analyze how the framework became limited to a material definition of nature. If I focus my attention only on the differences in perspectives among nation-states and other actors, such as

NGOs and intergovernmental organizations (IGOs), I would not be able to understand how multilateral decision-making process reinforces a material understanding of nature. Searching for articulations of human relations with nature presented during negotiation allows me to analyze why economic considerations of nature are at the core of negotiation of environmental treaties.

During the early period of multilateral negotiation officials from intergovernmental organizations organized a process to reconfigure nation-state development strategies that would consider 'the environmental' as a crucial factor of economic planning and management. The specifics of the debate between North and South carried out in terms of who would control access and rights to biological resources, both *in situ* and *ex situ*.⁸⁶ The US delegation argued that IPRs of biological organisms (patents) offered sufficient protection to encourage conservation of natural resources while also affirming a nation-states' authority to govern its own social and economic activities.⁸⁷ The G77 contested ownership and control of technology and natural resources accredited to foreign companies, arguing that G77 nation-states' are autonomous in governing activities regarding natural resources in their own territories. The Group of 77 did not dismiss economic arguments supportive of growth and intensification; however, it disputed the industrialized nation-states' assumption that equity and autonomy existed within international regimes.

Specifically regarding negotiations about biotechnology, industrialized nation-states framed this novel technology as encouraging the South's economic growth and equity in international trade. Promoters of IPR mechanisms argued that as patented

⁸⁶ *Ex-situ* conservation was meant to provide complementary support to *in-situ* measures. *Ex-situ* measures could be in seed banks or biotechnology products.

commodities, GMOs could be used to protect against over-consumption and extinction by controlling the use and distribution of genetic sequences of organic resources within a nation-state territory.⁸⁸ Supporters of biotechnology, most prominently the US, promoted the ability of transgenic technology to enhance nature by reconfiguring genetic sequences, so as to create new characteristics in plants and animals. They also argued that patents could prevent improper use of natural resources, by asserting ownership and control over the use of the organism or GMO that was patented. Novel constructs (GMOs) produced through genetic manipulation were allowed to be patented because, according to this argument, GMOs are similar to other kinds of inventions. As a result, patents would protect developers' intellectual and financial investments. The biological sources taken from nature (natural environment/resources) that were used to develop these novel constructs became open to disputes over ownership and control between Southern nation-states (as providers of genetic/biotic resources) and Northern-based corporations (as developers and patent holders). If corporations acquired a patent on a genetic sequence of a particular plant, by default local and Aboriginal knowledge about the plant and its cultivation would be discounted, which meant that Indigenous knowledge (TEK) would be excluded from the 'equitable sharing of benefits'. Biotechnology was discussed in the context of how traded products (GMOs) privileged corporate ownership and proprietary control over plants and animals (including human) biological components. Negotiators of the Convention on Biological Diversity text accepted IPR provisions as argued by biotechnology industry and US positions, while they dismissed reservations about the dangers of corporate ownership of genes because

⁸⁷ ENB (1992) UNEP, Vol 1, #4, p6 and Holmberg, *et al* (1993) *ibid*, p14.

⁸⁸ ENB (1992) UNEP, #4, *op cit*, p2 and #8, *op cit*, p2.

genes are key elements of biological life, to be openly shared and accessible. The use of patents on life forms was also consistent with the International Biodiversity Forum's view that GMOs are "natural, while claiming that they are improvements upon nature due to 'increased efficiency'".⁸⁹

Nation-states from the South contested the argument that IPR mechanisms would lead to equitable access and sharing of genetic resources. The G77 nation-states argued for extensive regulation of biotechnology, which were supported by grass-root and Indigenous interests that argued against the use of patents in biotechnology development and trade. They presented patents and ownership of genetic/biotic resources as leading to greater exploitation, waste and depletion of biodiversity and suggested that IPR mechanisms would be abused, leading to increasing disputes between G77 nation-states and corporations located in the industrialized countries. Southern assessment of environmental problems tended to emphasize holistic interconnections critical of the narrow framework that UNCED promoted by linking the activities of international political and economic institutions. The G77 did not succeed in establishing a regulatory framework. Instead of reconciling disputes regarding the appropriate regulatory formula, the issue was postponed by a stipulation that discussions could occur in the future.

Inclusion of NGOs seems to be determined by their geographical location, ideology, status and ability to intervene during negotiation meetings. Although selection was seemingly a disorganized process, NGOs' access to formal talks was determined either by a congruency of their ideas with those of UN officials, or a willingness to affirm the political agenda of G8 nation-states supportive of the World Bank, International

⁸⁹ Chatterjee and Finger (1994) *op cit*, p43. See CBD Article 16 (3) (4) and (5), Access to Transfer of Technology.

Monetary Fund (IMF) and WTO rules.⁹⁰ The INC group did not include NGOs critical of biotechnology development, but included biotechnology industry representatives. The Third World Network (TWN) was not involved with INC negotiations and they had limited access to the Rio Summit negotiations, providing written submissions and advising some G77 nation-states. Based in Malaysia, the TWN contested the use of biotechnology as a vehicle to decrease the rate of extinction, by attempting to curb the use of patents to claim rights of ownership and exploitation of plants and animals for profit. The Third World Network advised G77 countries not to sign the Biodiversity Convention because last minute compromises favored US and European corporate oriented-interests, allowing continued exploitation and expropriation of natural resources located in the South.⁹¹ Vandana Shiva, speaking on behalf of the Third World Network, warned that the CBD encouraged the globalization of property rights, which would increase corporate “control, management and ownership of biological diversity”.⁹² She represented a concern of Southern NGOs that the Biodiversity Convention could become a legal instrument to increase Northern access to resources found in the South, in the name of ‘conservation’, while the North does little to amend its colonial and consumption habits. Southern NGOs saw North/South power relations as founded on neo-colonial institutional arrangements whereas Northern NGOs viewed international political inequality as a problem of poor distribution of resources, and biases in international economic institutions that favoured by Northern actors.⁹³

⁹⁰ Chatterjee and Finger (1994) *ibid*, p65-78 and Tokar (1997) *ibid*, p68-69.

⁹¹ Chatterjee and Finger (1994) *ibid*, p42.

⁹² Holmberg *et al* (1993) *op cit*, p22.

⁹³ Disparities and disagreements among NGOs are referenced in Chatterjee and Finger (1994) *ibid*, p65-78 and 83-84; Tokar (1997) *op cit*, p13-31 and 159-174; Seager (1993) *op cit*, p169-199, 230-244 and 281.

During the early negotiation period, nation-state representatives located in the North responded to the threat of biodiversity loss by initiating multilateral negotiations cumulating with the Rio Summit. This summit established, among other items, the Convention on Biological Diversity (CBD), a binding treaty, and *Agenda 21*, a non-binding policy guideline with chapters on biodiversity conservation and management of biotechnology R&D. Organizers aimed to centralize government policies that would manage natural resources using a common 'framework' or guidelines, as noted in *Agenda 21*.

Upon closer inspection, these 'agreements' were achieved through two different negotiation streams, yet each stream reflected interests common among elite members in international organizations and nation-states based in the industrialized North. The Convention on Biological Diversity was a product of the Intergovernmental Negotiating Committee, a closed group that limited membership to officials in international organizations located in the industrialized North. The CBD was incorporated into the Rio Summit process during its final round of negotiations and opened for nation-states' signature, thereby ensuring nation-states' acceptance of the treaty, which would later come into force as international law. The Rio Summit was based on a process of multilateral participation among nation-states that were members of the UN General Assembly. The Rio process pertaining to biotechnology did not produce any binding agreements and within the relevant *Agenda 21* chapters, biotechnology was portrayed positively as a viable solution to biodiversity losses. Members of the INC negotiated the CBD text, not the Earth Summit multilateral gathering that was organized by Maurice Strong, although this group of nation-states became the signatories to the CBD. Nation-

states agreed to the terms and arrangements specified in the CBD by ratifying the treaty in their home legislatures after the agenda and regime content had been set.

It is misleading to suggest that consensus was reached through multilateral negotiation among nation-states because the signatories did not participate fully and openly in its negotiation. Furthermore conflict within the INC negotiation tended to be 'reconciled' by encouraging compatibility to norms established elsewhere (for example, OECD policy and Rio Summit working groups), or by changing the vocabulary of contested terms, in essence ignoring or dismissing crucial nuances that indicated critical or dissenting arguments. Differences within the INC negotiations were set aside or not resolved sufficiently, which indicates that INC could not have achieved a negotiated consensus. The question of whether patents are sufficient mechanisms for biodiversity conservation is a case in point because G77 nation-states challenge patent use and suitability for environmental conservation. It is more accurate to suggest that the CBD text was a product of a settlement amongst its negotiation participants, who agreed to the treaty because disagreements were taken off the negotiating agenda. As a multilateral environmental agreement (MEA), the CBD established an organizing framework from which nation-states accepted the suitability of biotechnology regulation and the terms and conditions of biotechnology regulations. The suitability of biotechnology regulation would be the focus of the interim period of negotiations and the terms and conditions of this regulation would be the topic of the biosafety talks.

II. Interim Negotiation 1993-1995

A. What's the Matter with Biotechnology? – from solution to problem

The interim negotiation period took two main tracks: UNEP and CBD, which are illustrated, below in Table 6, “Interim Negotiation Period – Organizing for a Biosafety Protocol.” ‘Biosafety’ rules have been organized informally since the 1980s by UNEP in collaboration with other UN agencies, all of which were independent from the Rio Summit process.⁹⁴ The UNEP guidelines were voluntary guidelines geared to individual market sectors of agricultural or pharmaceuticals products, so the UNEP stream of negotiations would not produce binding agreements. Binding rules, such as biosafety regulations within the CBD, were weak, but provided a starting point as indicated in Articles 19 (3) (4), 8 (g) and 17. Drawing from CBD Article 19 (3) and scientific assessments of harm and negative impacts on human health and agriculture the G77 sought universally binding regulatory provisions administered through the CBD secretariat.⁹⁵ The interim period of debate focused on three decisions: a) determining the types of risk using the categories of biotechnology and GMOs outlined in various agreements; b) determining whether international or national regulations would suffice; and c) deciding which regime, environmental (CBD) or trade (WTO), would manage and regulate LMOs.

⁹⁴ Zedan, Hamdallah (2002) “The road to the biosafety protocol”, *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development?* *op cit*, p28. Collaboration began with UNEP, United Nations Industrial Development Organization (UNIDO) and World Health Organization (WHO). In 1987, UNEP, UNIDO and WHO along with Food and Agriculture Organization (FAO) and International Centre for Genetic Engineering and Biotechnology (ICGEB) launched the informal working group on biosafety. Voluntary codes, guidebooks and training manuals were developed, but did not consider emerging developments in biotechnology R&D. The World Trade Organization (WTO) through its Sanitary and Phytosanitary (SPS) protocol also confronted environmental and safety issues emerging from GMO trade.

⁹⁵ Falkner (2002) *op cit*, p7.

Table 6
Interim Negotiation Period, 1993-1995
Organizing for a Biosafety Protocol

Convention on Biological Diversity – Conference of the Parties (CoP)	UNEP intergovernmental sessions
Conference of the Parties (CoP): the decision-making body of the Convention on Biological Diversity, with authority to adopt amendments or protocols to the CBD.	United Nations Environment Programme, an intergovernmental organization, reports to United Nations Economic and Social Committee
<p>CoP-1, 1994, Nassau, Bahamas G77 questions the definition, use and safety of biotechnology, as presented in the CBD regime text, and <i>Agenda 21</i>. Establishes Open-Ended <i>Ad Hoc</i> Group of Experts on Biosafety to determine the need for a biosafety protocol</p>	
<p>Open-Ended <i>Ad Hoc</i> Group of Experts on Biosafety, 1995, Madrid, Spain Panel considers two categories of items to review for a biosafety protocol: 1) items favoured unanimously (non-contested items; and 2) items favoured by a smaller sub-set of delegates (contested categories)</p>	
<p>CoP-2, November 1994, Jakarta, Indonesia: negotiate the terms and conditions of a biosafety protocol; Decision II/5: Consideration of the need for and modalities of a protocol for the Safe transfer, handling and use of living modified organisms, which establishes <i>Ad Hoc</i> Working Group on Biosafety (BSWG) to negotiate a biosafety protocol.</p>	
<p>Cop-3, October, 1997, Montreal, Canada: endorses UNEP's panel on voluntary guidelines in: Decision III/5 on additional guidelines to financial mechanisms for developing biotechnology capacity Decision III/20 on biosafety endorses Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), a CBD working group, report endorsing building biotechnology capacity in the South</p>	<p>Cairo, Egypt, December 1994: <i>Ad Hoc</i> Panel of Experts on International Technical Guidelines, an intergovernmental committee: To develop voluntary, non-binding, and sector by sector technical framework on biotechnology risk management.</p>

During the interim negotiation period debates continued to challenge the use, safety and viability of biotechnology to conserve biodiversity. The Earth Summit negotiations had not resolved issues concerning the definition of biotechnology, how to assess it and the need for a regulatory protocol. The G77, and NGOs that were ignored during the Rio process, argued that the Biodiversity Convention (CBD) was the best site to regulate GE biotechnology because a strong regulatory protocol would strengthen the aims of the CBD, to conserve and protect biodiversity, by blocking development and trade of GE biotechnology. They argued that GE biotechnology does not enhance or conserve biotic resources at the genetic level. For these groups, negotiating a regulatory regime through the auspices of the CBD would serve to de-legitimize the premise that GE biotechnology was an appropriate response to loss of biological diversity. With a regulatory protocol established via the CBD, it would be possible to affirm strategies that have been proven to ensure conservation and appropriate use of biological (natural) resources. G77 and NGOs who were critical of the blatant endorsement of biotechnology in the CBD continued efforts to debate the terms and conditions in which biotechnology was defined and assessed; and in doing so re-iterated the need for a regulatory protocol. The G77's negotiation strategy fits within a 'new multilateral' approach, since they attempted to alter the dominant/subordinate power structure and dominate view of sustainable development that was the norm of multilateral negotiations. The interim negotiations established guidelines (framework) from which to negotiate a regulatory protocol, situating the CBD as the basis of this regulatory regime (biosafety protocol).

1. The Question of Biosafety

The meaning of ‘biosafety’ depended on whether biotechnology could be managed to avert the risk of harm to the environment and people’s health. Negotiations during the interim period explored various positions about whether biotechnology was 1) safe and beneficial; 2) beneficial but risky and 3) harmful and not beneficial. A summary of these positions is illustrated below in, Table 7, “Interim Negotiation Period – Biosafety Positions”

Table 7 – Interim Negotiation Period – Biosafety Positions

promoters	managers	resisters
Australia, Canada, Britain, US, Biotechnology industry, includes Biotechnology Industry Organization (BIO)	UNEP; EU; Environmental Business and Development Group, includes WWF	G77; Third World Network (TWN), Genetic Resources Action International (GRAIN); Greenpeace International, Rural Advancement Foundation International (RAFI), Women’s Environmental Network (WEN)
Biotechnology is safe	Biotechnology carries both risks and benefits; uncertainty exists about whether GMOs are harmful	Biotechnology is inherently hazardous; real harm exists that will affect biological organisms. (harmful to biodiversity); Potentially risky to people’s health and livelihoods in agriculture and food production (socio-economic considerations)
GMOs (product not process)	Biotechnology is distinguished by processes of genetic transfer and its products, GMOs	Genetic Engineering Biotechnology is both process and product
No need for regulation: National policies are in place and IPRs/patents are sufficient to manage access to resources and share in the benefits of these resources	Biotechnology is here to stay, so protocol is needed to respond to potential risk of GMO use	Regulation is needed to respond to the inherent dangers of GE biotechnology
Critical of regulatory guidelines, although favours voluntary guidelines via UNEP	Biosafety protocol based on CBD provisions, including AIA; scientific risk assessment management (RAM) and precautionary principle	Biosafety protocol based on precautionary principle and a moratorium of biotechnology R&D until more is known about how new constructs will affect the environment, humans and socio-economic

Positions would shift, mostly in Europe, during the interim negotiation period, as scientific evidence began to suggest that GE biotechnology could be harmful and when boycott campaigns that advocated for biosafety regulation using the precautionary principle influenced European government policy.

First, several European countries, along with Australia, Canada and the US maintained a position that national regulation and OECD guidelines were sufficient. Although industrialized countries continued to resist an internationally binding protocol, they did change their position on the need for a protocol. Their acceptance of the biosafety negotiations suggested that it was possible to negotiate a biosafety protocol that would be in compliance with WTO trade agreements and countries' national regulations on occupational standards for work with hazardous substances and proper guidelines established by laboratories that conduct research on viruses and bacteria.⁹⁶ In preparation for the biosafety talks, a coalition of biotech industry groups formed – Global Industry Coalition (GIC) – and acted similarly to the BCSD during the early negotiation period.⁹⁷ The Global Industry Coalition primarily represents biotechnology industries in Canada, the US and Europe and claims membership of over 2,200 firms in 130 countries that spanned economic sectors of farming and food manufacturers, seed distributors, grain commodity traders and shippers, and technology, forestry and pharmaceutical firms.⁹⁸

⁹⁶ ENB (1996) BSWG-1, Vol. 9, #48, p2; ENB (1997) BSWG-2, Vol 9, #67, p2 and ENB (1998) BSWG-5, Vol 9, #108, p2. See also Enright, Cathleen (2002) "Miami Group", *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development? op cit*, p98.

⁹⁷ Membership: Biotechnology Industry Organization (BIO), Japan Bioindustry Association (JBA), Green Industry Biotechnology Platform (GIBIP), Senior Advisory Group on Biotechnology (SAGB). ENB (1996) BSWG-1, Vol 9 #48, p7. See also Reifschneider, Laura (2002) "Global Industry Coalition", *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development? op cit*, p275.

⁹⁸ Reifschneider (2002) *ibid*, p275 and SeedQuest (1999) "Global Industry Coalition reaffirms its support of a successful biosafety protocol", GIC press release, www.seedquest.com/News/releases/usa/misc/N2121.htm, p2.

The GIC sought a protocol that would support the development and trade of its products, seeking to influence governments' position against a strong regulatory regime, namely Canada, Britain, France, Germany, Japan and the US.⁹⁹ At this time, only the US and Canada had interests in generating international trade in biotechnology products.¹⁰⁰ Industry spokespersons affirmed the need for a protocol, as long as it complied with WTO rules, and privileged IPRs and science assessment, despite claims that biotechnology was natural, harmless and would not interfere with access to natural resources and knowledge about these resources.¹⁰¹

Second, the need for a protocol, as argued by Klaus Töpfer, Executive Director of UNEP, echoes an attitude noted during the Rio Summit:

Modern biotechnology was here – it was not going to go away. The time was now or never to address the questions, challenges and opportunities that the planet faces from this sector. We needed an instrument, a global framework not only for the present, but more importantly, for the future generations as well.¹⁰²

For elite representatives, such as policy officials from UNEP and European nation-states, the key regulatory question was: how can we work better with biotechnology given its potential problems? They believed that risks from GMOs were manageable and a normal feature of technological applications, and that dangers of transgenic processes were controllable. They thought biosafety was a way of ensuring people would not be harmed when working with biotechnology or consuming GMOs foods and drugs. Most European nation-states had strong environmental lobby groups that supported the objectives of the

⁹⁹ ENB (1996) BSWG-1, Vol 9, #48, p5 and 7. GIC (2000) "Global Industry Coalition – Biosafety Protocol: A Major Step Forward To Sustain Development of Biotechnology", Press Release, *Canada NewsWire*, www.newswire.ca/releases/January2000/29/c4276.html.

¹⁰⁰ Ballhorn, Richard (2002) "Canada", *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development?* *op cit*, p106-107.

¹⁰¹ See ENB (1997) BSWG-1, Vol 9, #48, p3-7.

CBD, in which Article 8 (g) refers to controlling the risks associated with use and release of GMOs that are likely to have harmful effects in the environment. For them, a 'biosafety' protocol would be determined by standards regarding risk management in environmental, occupational and consumer policy sectors.

Third, a perspective more suspicious of biotechnology, the question was how to address the catastrophic implications of genetic transfer technology. A biosafety protocol would create a moratorium on R&D, including its trade and distribution of GMOs, so that a program could be established to monitor the effects of GMOs already used and distributed, such as seeds, plants and food products. Accordingly, 'biosafety' refers to harm prevention. Therefore, while it is important to know the effects so as to anticipate and protect against harm, 'biosafety' meant preventing the introduction of GMOs into the environment and market. Furthermore 'biosafety' included 'socio-economic considerations' in which existing ecological approaches in agriculture and production would continue to make clothing, food, medicines and other products and not be affected by the changes implied by applying biotechnology in economic production. The G77 and anti-biotech NGOs attempted to reorient attention away from the idea that biotechnology was a solution to biodiversity losses and its promise that it would provide cures for any of the problems of poverty, hunger and disease. They stressed that existing biosafety regulations were based on overly simplistic accounts of genes and genetic engineering. Existing regulation standards defined GE biotechnology as neither new, nor different, nor distinct from traditional breeding and food production approaches, so assumed that GMOs were safe, placing the burden on users and critics to prove otherwise. Thus,

¹⁰² Töpfer, Klaus (2002) "Foreword", *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development?* op cit, p x.

determination of risk was based on political calculations to promote biotechnology capacity and trade instead of scientific assessments that determined risk according to 1) probable harmful effect; 2) possible harmful effect and 3) likely harmful effect. Most G77 nation-states did not have domestic regulation. To them, national policies existing in, for example, Canada and the US, dealt with GMOs as 'substantially equivalent' to non-GMO seeds, plants and foods, which did not address the affect of biotechnology on the environment, people's health and livelihoods. For the G77, a biosafety protocol should not be similar to OECD or domestic policy because it would mean that the regulatory rules would not change. The G77 wanted to strengthen their authority, as nation-states, to decide on matters concerning biotechnology development and importation. Of particular worry to the G77 was that biotechnology regulation dealt only with end-use products in the CBD; therefore, a biosafety protocol could amend the CBD to include the full gamut of biotechnology rather than only food products containing GMOs.

During the interim negotiation period a NGO coalition formed to broaden the scope of regulation to include biotechnology R&D and processes and to promote more ecologically sound techniques, practices and knowledge.¹⁰³ The coalition initiated a campaign for biosafety protocol shaped around reviving political accountability in

¹⁰³ NGOs campaigns organized in support of ecological development, which critiqued economic development, a component of this dealt with the problems of biotechnology. Some NGO campaigns focused on raising awareness thereby respecting people's right to decide and act for themselves. Among these were campaigns by: Indigenous Peoples Council on Biocolonialism (IPCB) www.ipcb.org; The Third World Network via www.twinside.org and *Third World World Resurgence*; Women's Environment Network (WEN), *The Gene Files, Resource and Action Pack* (1999) and www.gn.apc.org/WEN; The North American Congress on Latin America (NACLA), www.nacla.org, in its publication *NACLA, Report on the Americas*, see "Who Owns Knowledge?", Vol XXXV #5, March/April 2002; CUSO – Canadian University Students Overseas, an independent international development agency: www.cuso.org and *A Closer Look at Genetically Engineered Foods* (2000); The Edmonds Institute, www.edmonds-institute.org; Via Campensia, www.viacampesina.org; and People's Global Action (PGA), www.agp.org.

conservation and protection of biodiversity, which they charged that the Rio Summit and biotechnology industry failed to do. The Third World Network (TWN) organized a series of seminars for UN delegates about the dangers of biotechnology, bringing in experts from many disciplines and countries. These seminars reviewed scientific evidence that showed the harmful effects of biotechnology and GMOs on biodiversity, people's health and its negative impact on the South's agricultural production. The TWN along with other NGOs, such as Greenpeace International, Rural Advancement Foundation International – RAFI (now ETCgroup – erosion, technology, concentration) and Genetic Resources Action International (GRAIN), challenged the favorable status western governments and international agencies gave to biotechnology. They intervened during the second CoP meeting in Jakarta, Indonesia to support G77's and China's demands for an internationally binding protocol on biosafety.¹⁰⁴

The G77 and the NGO coalition attempted to re-orient the debate to discuss biotechnology as harmful and not fulfilling expectations to conserve biodiversity and benefit people's lives. During the interim period of negotiation, biotechnology development had advanced to a stage in which agricultural and pharmaceutical GMOs were distributed primarily within Britain, Canada and the US. Biotechnology industry was established in other industrialized countries in Europe, Australia and Japan, and its development was beginning in some G77 nation-states, such as India and Mexico. China was also developing a biotechnology industry. Since some GMOs had been introduced into the environment and in the production of foods and animal feed, there was some evidence to indicate that biotechnology had an adverse effect on biodiversity and

¹⁰⁴ Egziabher, Tewolde, *et al.*, (1996b) *op cit*, p14 and Nijar, Gurdial Singh (2002) "Third World Network", *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and*

people's health. Within the CoP forum, the debate about biotechnology was about the implications of biotechnology and how its definition could accommodate the interests of its promoters and detractors by defining biosafety.

The conference of the parties to the Biodiversity Convention (CoP) process had not yet agreed on the different meanings attributed to 'biosafety'. There was a wide spectrum of interests and expertise from North and South attempting to understand the implications of biotechnology, for which many wanted a stricter protocol. Agreement to proceed to negotiate stricter regulation was based on a growing belief that biotechnology *could be* risky. Agreement to negotiate a biosafety protocol also meant that NGOs excluded from the Rio process could reorganize to be more effective in persuading nation-states to re-negotiate the terms and conditions that defined biotechnology as environmentally helpful and useful. The industry perspective, also shared by Australia, Canada, England, Japan and US, did not give in to pressure among the majority of nation-states that wanted a protocol. Rather, the 'need for a protocol' became a moot point if their position stressed that biotechnology was safe, when the evidence suggested that there could be a possibility of harm instead of actual harm. By downplaying the importance of 'potential risk' developers of biotechnology co-opted managerial positions by stressing the potential benefits of biotechnology, which was an idea that rallied together interests supportive of developing biotechnology further. The G77 and the NGO coalition argued they had scientific evidence to indicate that biotechnology was harmful to the environment and people's health.¹⁰⁵ This position was sufficient to convince

Development?, *op cit*, p264.

¹⁰⁵ Report summary published in *Third World Resurgence*, #65/66, Jan/Feb 1998, p14-21. Full text downloaded from www.twinside.org, Egiabher, Tewolde, *et al* (1996a) *Biosafety, Scientific Findings and*

Conference of the Parties (CoP-2) that a biosafety protocol was needed, but not that biotechnology was too dangerous to use. The Decision II/5 stated that “biotechnology has great potential for human-well being if developed and used with adequate safety measures for the environment and human health.”¹⁰⁶ The various positions regarding ‘biosafety’ were not resolved during this period, yet along with the definition of biotechnology, would underpin multilateral negotiation that produced the Cartagena Protocol on Biosafety.

III. Biosafety Talks 1996-2000

Multilateral negotiations returned to defining and regulating biotechnology, but this time biotechnology was its main focus. This section reviews multilateral negotiation that produced the Cartagena Protocol on Biosafety (CPB). I chart nation-state negotiation blocs that emerged during the latter rounds of biosafety negotiations, described below in Table 8, “Negotiating Blocs During Biosafety Talks”. In Table 9, “Biosafety Talks – Highlights of Negotiations of the Cartagena Protocol on Biosafety” I illustrate the organizational aspects and outcomes of each round of the biosafety talks. The biosafety talks commenced July 22, 1996 with the *Ad Hoc* Group on Biosafety (BSWG) and finished January 2000 with the Extra-Ordinary Conference of the Parties meetings (ExCoP). I focus my review on three of the five contentious issues, specifically definition of transgene technology, format of AIA and the overall scope of biosafety protocol, which were resolved during these talks. To date issues of liability and redress

Elements of a Protocol, Report of the Independent Group of Scientific and Legal Experts on Biosafety, Malaysia: Third World Network.

¹⁰⁶ Decision II/5, “Consideration of the need for and modalities of a protocol for the safe transfer, handling and use of Living Modified organisms”, www.biodiv.org.

remain outstanding, discussed in the Members of the Protocol (MoP) negotiation forum for signatories to the Cartagena Protocol. Liability and redress, combined, focus on determining the legal and financial responsibilities for negative effects of GMOs and the procedures involved for nation-states to seek restitution in response to consequences of adverse effects.

A. Negotiating Biosafety

While biosafety talks progressed, several groups emerged as coalitions, both within the formal process and on an *ad hoc* basis to influence its outcome. Noted, below, in Table 8 are the five negotiation blocs that emerged during the biosafety talks, which are: Miami Group; the Like Minded Group; European and Central East European (CEE) Groups and the Compromise Group.¹⁰⁷

The biosafety talks were predominately shaped according to an 'interest-based' approach, since nation-state delegates organized themselves into negotiating blocs to better represent their interests until agreement was reached. When talks collapsed on February 23 during the Extra-Ordinary Conference of the Parties (ExCoP), the last bloc, the Compromise Group, emerged, and organized by Beat Nobs of Switzerland specifically geared to assist Juan Mayr, Chair of ExCoP to produce a biosafety protocol. NGOs and industry coalitions had no votes, but provided *ad hoc* expertise and administrative support for delegates and generated public debate and support. They

¹⁰⁷ Negotiation blocs described herein were formed specific to interests represented during the biosafety talks. Membership continues to change after the close of the biosafety talks, as indicated by debates in Intergovernmental Committee for the Cartagena Protocol (ICCP) and Members of the Parties (MoP) meetings relating to implementation of the Cartagena Protocol. see Ching, Lim Li and Lim Li Lin (2005) "Brazil, New Zealand block decision on documentation of GMOs", *The South North Development Monitor (SUNS)*, June 7, 2005, #5815, www.gmwatch.org/archive2.asp?arcid=5344

influenced the substantive elements of the negotiation. NGOs generally were aligned to the G77 and later, the Like Minded Group, while industry groups supported the Miami Group's position. Although NGOs and industries had organized themselves into coalitions before biosafety talks commenced, each organization acted independently, representing the views of its member organizations. The interaction between non-state actors and nation-state actors was substantial; however, NGO and industry participation was determined by rulings from the Chair.

The biosafety talks began in Aarhus, Denmark, July 1996, chaired by Veit Koester, of Denmark. Calling the first meeting a "pre-negotiation stage", Koester requested "a non-confrontational atmosphere" in which participants would "relax and listen to each other."¹⁰⁸ Koester reminded delegates to identify then explore items as fully as possible. These items included "non-contested" and "contested" elements for a protocol, which was drafted initially at the Madrid meeting by the Open-Ended *Ad Hoc* Group of Experts on Biosafety.¹⁰⁹ Koester reiterated CoP-2 organizing framework for the biosafety talks, calling it:

... a negotiation process to develop in the field of the safe transfer, handling and use of living modified organisms, a protocol on biosafety, specifically focusing on transboundary movement of any LMO that may have an adverse effect on biological diversity, setting out appropriate procedures for advanced informed agreement.¹¹⁰

¹⁰⁸ ENB (1996) BSWG-1, Vol 9, #48, p3. See also Koester, Veit (2002) "The Biosafety Working Group Process: a personal account from the chair", *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development? op cit*, p46.

¹⁰⁹ 'Non-contested items' are: "all activities related to LMOs that may have adverse effects on biodiversity; transboundary movement of LMOs, including unintended movement; release of LMOs in centres of origin/genetic diversity; mechanisms for risk assessment and management (RAM); procedures for advance informed agreement (AIA); facilitated information exchange; capacity building; and implementation and definition of terms." 'Contested items' include: "socioeconomic considerations; liability and compensation and financial issues. These items were outlined at the Madrid 1995 meeting of the *Ad Hoc* Group of Experts on Biosafety and are noted in ENB (1996) BSWG-1, Vol 9, #48, p2.

Table 8
Negotiating Blocs during Biosafety Talks

Central East European Group – Gabor Nechay, Hungary, spokesman.	Albania, Armenia, Belarus, Bosnia & Herzegovina, Bulgaria, The Czech Republic, Estonia, Georgia, Latvia, Macedonia, Poland, Russia, Slovakia, Slovenia, Turkmenistan and the Ukraine. Delegates from these nation-states negotiated according to an 'environmental diplomacy' model.	CEE operated either as a sub set of the European Group or independently, comprising of non-EU members. CEE members do not have an active biotechnology industry and tended to side with the Like Minded Group on matters of biodiversity and biosafety.
European Group – Christoph Bail spokesman, officer of EU.	Countries within the continent of Europe. Membership includes both EU and non-EU members, and tended to reflect EU decisions regarding biotechnology. Delegates from these nation-states negotiated according to an 'environmental diplomacy' model.	Position reflected balance risk and benefits, using both science and precautionary principle
Like Minded Group – Tewold Egziabher, Ethiopia, spokesman.	Remaining members of G77 and China after Argentina, Chile and Uruguay left to join the Miami Group in 1998. Bloc has over 130 countries. Delegates from these nation-states negotiated according to a 'new multilateralism' model.	Few if any countries have biotechnology capacity, interests are varied. Liability, redress and precaution are key to protocol.
Miami Group – Richard Ballhorn, Canada, spokesman	Argentina, Australia, Canada, Chile, Uruguay and the US, organized to introduce trade related implications of biosafety, which served to undermine G77's aims to negotiate comprehensive regulation. 2005 New Zealand currently represents the interests of the Miami Group, since Canada and the US are not voting members of MoP. The Miami Group's negotiation strategy is positional and obstructive.	Focused entirely on international trade rules and rejected precautionary principle. Argentina and Canada exporter of grain based LMOs. Australia, Chile and Uruguay producer of LMOs but not yet exporter. US largest producer and exporter of agricultural and pharmaceutical LMOs. The US is the only non-voting member and its founder, after it organized a meeting in Miami, July 1998 to discuss how biosafety will impact trade.
Compromise Group – Beat Nobs, Switzerland, spokesman and founder.	Japan, Mexico, Norway, Republic of Korea, Switzerland. Singapore joined BSWG-6, 1999. New Zealand joined 2000, Montreal, it speaks for Miami Group during ICCP meetings since Canada and US have not ratified the protocol. The Compromise Group's purpose was to dissolve the stalemate among the other blocs, so its negotiation approach fits within an 'interest-based' model.	Emergenced while talks were failing in Cartagena 1999. Main purpose was to bring divergent parties towards compromise and produce a workable protocol. All members have biotechnology capacity.

¹¹⁰ ENB (1996) BSWG-1, Vol 9, #48, p2.

Koester directed working groups to discuss: key concepts and terms; form and scope of AIA procedures and relevant categories of LMOs. Negotiations during the biosafety round were structured according to 'Contact Groups', that were organized by the Chair and were responsible for negotiating specific elements of the protocol as assigned and coordinated by the Chair.¹¹¹

The biosafety talks started under tense conditions and increased steadily when negotiators moved to a stalemate in Cartagena de Indias. A chronology of meetings from 1996-2000 is illustrated below in Table 9, "Biosafety Talks – Highlights of Negotiations of the Cartagena Protocol on Biosafety". When biosafety talks collapsed Mayr reorganized the structure of the ExCop meetings to focus on the five outstanding items left to discuss that had been outlined by Koester during the fifth session of the BSWG. These items formed the basis of discussion during the remainder of the biosafety talks. Koester and Mayr organized the biosafety talks according to an 'interest-based' framework. Koester advised delegates to explore first, then negotiate once text outlining everyone's interests was established. Both Chairs facilitated a process that sought 'common ground' which indicated few disagreements from a majority of nation-states. Their attention to facilitate negotiations focused on contentious issues pertaining to items that nation-states agreed would be included in the protocol, namely the AIA formula and 'transboundary movements, which identified GMOs that crossed international borders.

¹¹¹ ENB (1996) BSWG-1, Vol 9, #48, p3, 7-8 and ENB (1997) BSWG-2, Vol 9, #67, p3. The Bureau supported the Chair by providing written reports, summaries and documentation. The Chair organized negotiating groups, called, Contact Groups (CG). Smaller advisory groups were also organized to assist the Contact Groups, which facilitated technical and legal understanding, such as the scientific and technical group that elaborated the technical aspects so as to define biotechnology, which was the responsibility of Contact Group One (CG-1). Please refer to Table 9.

Later, the meaning of 'transboundary movement' came to be identified with trade and transportation of GMOs, rather than other less tangible meanings, such as accidental introductions and wind drift. Strong disagreements were often put off to discuss at a later date.

Koester and Mayr tended to focus their attention to include all relevant stakeholders in the development of biotechnology, thereby allowing for the US to participate, over several objections from the G77 and the NGO coalition. They justified including the US in biosafety talks because the US represented the majority of corporations forming the biotechnology industry, and most were interested in developing international trade and encouraging development of the industry in other parts of the world. Their rationale also included a concern that if the US did not participate, the biosafety protocol could be rejected by the US, even if the US had ratified the CBD. Koester and Mayr preferred to ignore that the US intended to sabotage the G77's goals to negotiate a comprehensive regulatory protocol. The US delegation focused entirely on the issue of trade and they refused to discuss limits on developing biotechnology capacity, its effects on the environment, and impact on locally developed economies and social systems because they argued that regulation would reverse the initiatives in liberalizing trade. The G77/Like Minded Group identified locally established agricultural cultivation and production networks as 'socio-economic conditions'. By including the US, Koester and Mayr diminished dominant/subordinate power structures embedded in multilateral negotiations. In doing so, Koester and Mayr treated the negotiation process as an interest-based model, which would play out as an exercise of exploration and collective decision-making among nation-states as 'equals'. They assumed that since

each nation-state had the weight of one vote during deliberations, their authority and influence would be equal. They unwittingly assumed that each interest was equally valued, as if each nation-state's responses would have the same effect on other nation-states, their citizens and their territories.

Ironically, the US had no voting rights during the biosafety talks. The delegation preferred to broker its interests by finding nation-states to advocate on their behalf during the talks and to encourage biotechnology development, rather than restrictions on GMOs. Australia, Britain, Canada, Japan, Mexico, New Zealand, Switzerland, each with established biotechnology industry, aided the US because these nation-states expressed similar interests in CoP, OECD and Food Agriculture Organization (FAO) meetings. The US focused solely on trade issues, thus refusing to discuss any matter unless it could be discussed as an issue on trade. This single-issue focus helped the US to organize the Miami Group, furthering its goal of sabotaging biosafety by raising trade as a feature of biosafety. Since Koester and Mayr preferred that nation-states discussed all issues relevant to biosafety, and encouraged negotiations to reflect the interests of all participating, the US was able to gain support for trade-related issues and to weaken the scope of a biosafety protocol.

Table 9 – Highlights of Biosafety Talks

Negotiation Round	Outcome
BSWG-1 , 22-26 July 1996, Aarhus, Denmark	'Working Paper', first negotiating draft, outlining non-contested and contested items from 1995 Madrid meeting of Open-Ended <i>Ad Hoc</i> Group of Experts on Biosafety; precautionary principle omitted from draft, and motion for a 5 year general moratorium on biotechnology R&D dismissed by Chair Veit Koester, of Denmark. Chair Koester advised delegates to explore not negotiate, setting first three rounds as the 'pre-negotiation phase'.
BSWG-2 , 12-16 May 1997, Montreal, Canada	Negotiation structure established: 1) Chair issues <i>aides memoirs</i> to focus attention on main discussion points and set each groups' agenda; 2) 'Bureau', provided administrative and procedural guidance for the Chair; 3) 'Friends of the Chair', advises Chair on strategic, legal and scientific matters; 4) 'Contact Group One' (CG-1) consolidated definitions; and 'Contact Group Two' (CG-2) worked on elements of 'Working Paper'.
BSWG-3 , 13-17 October 1997, Montreal, Canada	Established 3 more groups: Sub Working Group I (SWG-I) focused on proposed Articles 1 to 10 and 12-14; and Sub Working Group II (SWG-II): focused on proposed Articles 11 and 15-27. Open-ended Contact Group (OCG) reviewed drafts regarding institutional matters and final clauses
BSWG-4 , 5-13 February 1998, Montreal, Canada	Koester announces start of negotiation phase. Main areas of concern: definition of biotechnology; scope of AIA formula (which GMOs to include in protocol); and whether scientific risk assessment management (RAM) or precautionary principle should be used. Disputes on the rise, indicated by 450 pairs of bracketed text
BSWG-5 , 17-28 August 1998, Montreal, Canada	Miami Group emerged as a negotiation bloc and proceeded only to discuss trade-related implications of biosafety, which obstructed G77's goals for comprehensive regulations. Group consisted of Argentina, Australia, Canada, Chile, USA and Uruguay.
BSWG-6 , 14-22 February 1999, Cartagena de Indias, Columbia	Like Minded and European Groups emerged to counter Miami Group's position on trade-related matters. Like Minded Group classified biotechnology as harmful; European Group classified biotechnology and GMOs as beneficial but risky. Koester advised negotiators to focus on five contentious items: a) whether to include precautionary principle; b) savings clause; c) scope of AIA formula; d) socio-economic considerations (effects of biotechnology on existing production systems, mostly in 'third world' countries); e) liability and redress. Miami Group rejects working draft because provisions were either unworkable or unclear, called for protections of trade related commodities, namely GMO food, feed and processed goods (LMO-FFP); Negotiations focused on regulating GMO imports, moving away from regulating use of GMOs Negotiation ends abruptly in stalemate between Miami Group and the other delegates
ExCoP , 22-23 February 1999, Cartagena de Indias, Columbia	Jean Mayr becomes Chair, extension of negotiation time, approved by CoP-4, May 1998, Bratislava, Slovakia, begins Mayr proceeds to unlock stalemate and establishes new organizing procedures, he called 'Group of 10' and consisted of a total of 10 spokespersons. These 10 persons represented Central East European (CEE), the Europeans, Central America and the Caribbean (GRULAC), and Like Minded Group. Compromise Group emerged to ensure a protocol would result Negotiations of ExCoP collapse.
Informal Sessions, called 'Vienna Round'	Talks resume on informal basis in Montreal, Canada July 1999; Vienna, Austria September 1999 and Montreal, January 22-23, 2000 Negotiation focuses on five major points of contention (noted during BSWG-6)
Resumed Ex-CoP , 24-28 January 2000, Montreal, Canada	Formal negotiations resume. Agreement reached, subject to approval by CoP-5 delegates meeting in May 2000.
CoP-5 , 15-16 May 2000, Nairobi, Kenya	Cartagena Protocol on Biosafety presented formally to CoP meeting and opened for signatures.

B. Biosafety Matters – Compromise and Acceptance

Negotiation of biosafety was discursive, moving from one issue to another, with controversy and priorities shifting in attention and intensity. During the biosafety talks, substantive positions and interests shifted, some items rose in priority, while other items lacked attention. Throughout there were three main areas of contention: how to define biotechnology, which framed which type of GMOs would be regulated; the scope of the proposed regulatory formula; and the mandate of the protocol. I review four issues: categorization of GMOs; scope of the AIA formula; and the protocol's mandate, especially regarding the savings clause and precautionary principle. The 'savings clause' is a provision found in international treaties that indicates that a recent treaty does not alter a nation-state's existing international rights and obligations, usually noted in prior treaties. While omitted from the first working draft of the protocol, European and Like Minded Groups argued that the precautionary approach was a necessary feature of environmental regulation.

1. Definitions – deciphering intent

Negotiators faced a range of options, each with different understandings about what the biosafety protocol should do. From the onset, definition of biotechnology and GMOs would determine how risks, harm and applications of biotechnology were understood in order to outline the AIA regulatory formula and scope of the protocol.¹¹² These interconnections between are illustrated below in Table 10, "Range of Options".¹¹³

¹¹² ENB (1996) BSWG-1, Vol 9, #48, p3-4 and Gupta (1999) *op cit*, p10.

¹¹³ Table found in Gupta, Aarti (1999) Framing 'Biosafety' in an International Context", Environment and Natural Resource Program (ENRP) Discussion Paper E-99, Kennedy School of Government, Harvard University. <http://environment.harvard.edu/gea>, p10.

Table 10 – Range of Options for a Biosafety Protocol

LMOs to be covered by the Protocol and its informed consent procedures	Adverse impacts of LMOs to be covered by the Protocol	Decision-making principles underlying informed consent for LMO transfers
<ul style="list-style-type: none"> • All LMOs <i>and</i> products deriving from them; • All LMOs; • All LMOs, excluding LMO-based pharmaceuticals, and contained use; • All LMOs, excluding LMO-based pharmaceuticals, contained use and LMOs for processing (commodities) 	<ul style="list-style-type: none"> • Adverse impacts on biological diversity; • Adverse impacts on human health (food safety concerns); • Adverse socioeconomic impacts in the agricultural sector 	<ul style="list-style-type: none"> • Sound science or the precautionary principle; • Can or cannot take 'non-scientific socioeconomic factors into account • Deference to [World Trade Organization] WTO obligations or not [savings clause]

During the biosafety talks, critics of biotechnology sought to challenge the norm established in the Convention on Biological Diversity (CBD) that framed regulation of biotechnology solely on its products, which were understood as 'living modified organisms' (LMOs).¹¹⁴ The G77 argued that effective regulation needed to include a broader scope of GMOs, which included scientific-based gene transfer technology (process), GMOs used in research, and products that could be made from LMOs. If cottonseed was genetically modified, then regulation should include, 'products thereof' such as cotton, fibre, fabric and oil produced from GMO cotton plants. If both process and products of biotechnology were covered by the protocol, this could mean that GMOs used and stored in laboratories ('contained use') should be regulated using AIA formula, which includes the precautionary principle if these GMOs indicated 'adverse effects'. The Like Minded Group argued that prohibition of GMOs should include all possible applications of biotechnology, not just GMOs intended for introduction directly into the environment, which would only focus on adverse effects on the environment

(biodiversity) and not cover health effects on people or socioeconomic conditions. The Miami Group rejected inclusion of GMOs categorized as 'contained use' because it threatened to regulate scientific research, which the biotechnology industry relied on, to develop techniques and GMOs. The premise of the Miami Group's position was to assure unrestricted trade of LMOs and biotechnology development. The Miami Group rejected the draft text of biosafety because it omitted trade-related considerations.¹¹⁵

'Socioeconomic considerations' pertain to the range of social and economic practices in each country that provide food and medicine for people and animals, which the Like Minded Group advocated, and is different from the economic interests advanced by the Miami Group. If a biosafety protocol could not become a treaty that prohibited biotechnology R&D and production (moratorium), then the G77 wanted a protocol to be as comprehensive as possible.

The biosafety talks redefined biotechnology, acknowledging that genetic transfer technology was different in kind to traditional processes that use biological organisms in production of foods and breeding of plants and animals. The change in meaning of biotechnology accepted the Like Minded Group's argument that biotechnology products (GMOs) included several different uses. The compromise of including subsequent uses of GMOs was achieved by introducing the concept of 'intentional use', in which a totally separate regulation formula was introduced to satisfy this new category. The Like Minded Group accomplished its goal to include a broader range of GMOs, which were referred to as 'products thereof' and meant that its 'intentional use' referred to GMOs

¹¹⁴ ENB (1998) BSWG-4, Vol 9, #85, p5.

¹¹⁵ ENB (1999) BSWG-6, Vol 9, #117, p3.

used in 'food, feed, and processing' (LMO-FFP), covering, for example cotton, fibre, fabric and oil.

The new regulatory guidelines for LMO-FFPs, however, satisfied the Miami Group's intention to exclude 'products thereof' from stricter AIA provisions, which reduced importing nation-states' options to refuse imports from industrialized countries such as Britain, Canada and the US.¹¹⁶ GMOs used directly in other applications, as referred by the terms 'intentional use' and 'direct use', would mean that LMO-FFPs did not require as strict a formula as GMOs introduced directly into the environment, such as seeds. According to the Miami Group, AIA regulation of LMO-FFPs would interfere with international trade of GMOs and 'products thereof'. The biotechnology industry had developed sufficiently in agricultural GMOs to begin trade internationally. The Miami Group represented countries that supported international trade of agricultural GMOs, which included corn, soy bean, canola, and cotton distributed in food, animal feed and other products. The compromise reached with the new category of 'intentional use' allowed the Miami group to use regulatory standards in an arbitrary way, by categorizing GMOs differently. Since the Miami Group succeeded earlier in the biosafety talks to exclude GMO-based pharmaceuticals and 'contained use' from being covered in the

¹¹⁶ US was the largest exporter of GMO commodities, mostly potatoes, soybean, cotton, canola. Argentina, the second largest exporter of grain and Canada's major export of its oilseed product, canola. The largest GMO seed distributors then were Dupont, Monsanto, Norvatis, Astra Zenec and Aventis/Rhone. These companies also manufacture agricultural, petro-chemical and pharmaceutical products. According to BIOTECCanada, the majority of biotechnology companies in Canada are small and specialized operations. Ballhorn (2002) *op cit*, p106; CFIA – Canadian Food Inspection Agency, Agriculture Canada, "General Questions and Answers on Biotechnology", with list of approved GMO commodities, www.cfia-acia.agr.ca/english/ppc/biotech/fqas.html; Teitel, Martin and Kimberly Wilson (1999) *Changing the Nature of Nature*, Rochester, Vermont: Park Street Press, 19 and 28; Maude Barlow, speaker, Citizens' Forum: Genetic Engineering", January 22, 2000, UQAM, Montreal, sponsored by GreenPeace, Council of Canadians and Biotech Action Montreal (BAM) and Joyce Groote, speaker, "Pros and Cons of Genetically Modified Foods", panel discussion, October 16, 2000, Ashbury College, Ottawa, sponsored by Canadian Federation of University Women.

scope of biosafety the final compromise had effectively rejected the Like Minded Group's intention to include all GMOs into the scope of biosafety.

2. AIA regulation – relevant categories of GMOs

The Advanced Informed Agreement (AIA) was expected to be the central regulatory mechanism of the protocol. The scope of 'informed consent' implied by the concept of AIA presented during the early negotiation period suggested that the formula would outline procedures for identification, notification and assessment of GMOs (with exceptions of pharmaceutical and contained use). The Miami Group preferred scientific assessment and rejected the precautionary principle. The Like Minded Group preferred the precautionary principle and was suspicious of risk assessment protocols that applied scientific assessments of probable, possible and likely risks. The European Group preferred both, and the Compromise Group used this position to strike a compromise between the Miami and Like Minded Groups.

The prevailing view of biotechnology among officials from UNEP and several nation-states, within the European, Central East European and Compromise Groups was that GMOs were beneficial but might have risks. This prevailing view did not perceive biotechnology and GMOs were as inherently dangerous, but only as potential cause of adverse effects. That is, hazards were framed as 'potential', while benefits were treated as established 'facts'. During the biosafety talks, debate focused on deciding what would be included in AIA mechanism: 1) adverse impacts on biological diversity; 2) adverse impacts on human health; and 3) adverse socioeconomic impacts in the agricultural sector.

When talks stalled in Cartagena, Klaus Töpfer, UNEP Executive Director said, that the “Protocol could not solve all problems related to biosafety; but it should demonstrate that the international community could use modern biotechnology while taking responsibility for its repercussions.”¹¹⁷ The focus on ‘potential adverse effects’ rejected the Like Minded Groups’ argument that biotechnology and GMOs were inherently harmful. This rejection was based on a dominant understanding that the benefits of biotechnology would be realized and that ‘potential adverse effects’ could be managed responsibly through scientific assessments, risk management procedures and the precautionary principle. While the Miami Group rejected outright any application of precaution, its support for scientific assessment and risk management was sufficient for the Compromise Group to limit the AIA formula and appease the Like Minded Group by addressing precaution in the preamble of the Biosafety Protocol.

The stalemate over ‘informed consent’ dealt with whether AIA provisions should include GMOs with potential adverse socioeconomic impacts in agricultural and food production and potential adverse impacts on human health. GMOs that could negatively affect agricultural production and human health had been categorized as LMO-FFPs, and thus were excluded from the AIA formula. The compromise, influenced by the Like Minded Groups’ desire for full disclosure regarding details of genetic modification and its potential effects, imposed on exporters requirements to notify importing nation-states in writing before the first intentional release of GMOs into the environment. The Advanced Informed Agreement (AIA), thereby included only GMOs intended to be introduced into the environment. The category of ‘intentional introduction into the environment’ would bridge the Miami Group’s resistance to regulate international trade

¹¹⁷ ENB (1999) BSWG-6, Vol 9, #117, p9.

of GMOs, with the Like Minded Group's concern about the adverse effect on biological diversity. The European and Compromise Groups' positions about informed consent supported a requirement of disclosure of product information, but more important, they accepted a criterion of scientific evidence as a basis for withdrawal of GMOs intended for environmental release. These blocs sided with the Miami Group to exclude socioeconomic considerations and LMO-FFPs from the AIA formula.

3. Mandate – overall purpose and scope of biosafety

The purpose of negotiation was to write a regulatory formula that addressed rapid advances in biotechnology, thus filling a regulatory vacuum.¹¹⁸ Understanding of 'biosafety' varied, as outlined in table 7, thus opening the mandate and scope of the protocol to negotiation. During the first session of the biosafety talks (BSWG-1), Koester noted that biosafety was an abbreviation of "safety in biotechnology" and that this concept was already addressed in the Biodiversity Convention.¹¹⁹ Both the Miami and European Groups had established biotechnology sectors, developed to broaden markets and increase economic opportunity. The Miami Group, representing exporter nation-states, sought a narrow scope, thus based its position on harmonizing biosafety regulation to international trade rules.¹²⁰ The European Group was concerned about the effects on people's health in connection with GMO food consumption and occurrences of genetic contamination on farmlands, crops and animals.¹²¹ Egziabher, speaking on behalf of the Like-Minded Group noted that biosafety meant limiting the use of biotechnology,

¹¹⁸ Zedan (2002) *op cit*, p23.

¹¹⁹ ENB (1996) BSWG-1, Vol 9, #48, p4.

¹²⁰ Ballhorn (2002) *op cit*, p107, 109 and 112 and Enright (2002) *op cit*, p98.

¹²¹ Bail, Christop *et al* (2002) *op cit*, p167.

rather than making it easier and safer to use.¹²² These differences influenced negotiations about the overall scope and purpose of what the biosafety protocol was to regulate.

Two issues featured in disputes about the meaning of biosafety: first, the protocol's relationship with other international agreements, especially whether to include a 'savings clause' -- a rule used in international law that determined which regime would prevail in the event that incompatible provisions existed between agreements; and second, whether to include the precautionary principle in the decision making formula vis-à-vis scientific risk management.

Savings Clause

The 'savings clause', as it is known, ensures that provisions found in prior regimes are not overridden by provisions made in subsequent agreements. The decision on whether to include a 'savings clause' provision in the protocol was debated between the Miami and European Groups. The European Group argued that the 'savings clause' would nullify the protocol, whereas the Miami Group argued that the clause was necessary to prevent unreasonable barriers to trade.¹²³ The other negotiating blocs did not have a position either way and remained silent on the issue.

The dispute focused on whether risk management criteria found in World Trade Organization (WTO) regimes, in particular in its Sanitary and Phytosanitary Agreement (SPS) should trump the biosafety protocol, be its equal or be trumped by the biosafety protocol. This debate was framed around World Trade Organization (WTO) rules, specifically on cases under dispute between the US and the European Union (EU). On the

¹²² Egziabher (2002) *op cit*, p115.

¹²³ Cosbey and Burgiel (2000) *op cit*, p5-6.

agenda of the upcoming 2000 WTO Millenium Round, held in Seattle, USA was a plan to establish trade rules on LMOs.¹²⁴

Proponents of a biosafety protocol worried that if the biosafety talks failed, the WTO would establish a biosafety formula that would privilege trade rules and diminish environmental considerations. Egziabher noted that the Convention on Biodiversity, which initiated the concept of 'biosafety' in international regime rule came before WTO agreements, and he argued that "the wording of the biosafety protocol [should] deal with the safety problems created by those [trade] agreements."¹²⁵ On behalf of the Like Minded Group, Egziabher implied that the WTO premise of reducing trade barriers by harmonizing markets was incompatible with the biodiversity and biosafety regimes, which intended to protect biodiversity threatened by industrial growth. According to Egziabher, the 'savings clause' was a moot issue, yet he believed that the protocol should reassert the goal to protect biodiversity, not protect nation-states' freedoms to trade with other countries.

The compromise removed 'savings clause' language from the body of the protocol and inserted it as the last three items of the Preamble.¹²⁶ According to Aaron Cosbey and Stas Burgiel (2000), each group got what they wanted.¹²⁷ This may be so, but placing the 'savings clause' in the preamble removed any legal significance from the clause. The issue was not resolved, but was sidelined as an advisory note. The exact

¹²⁴ Mayr, Juan (2003) "Doing the Impossible: The Final Negotiations of the Cartagena Protocol", *Cartagena Protocol on Biosafety: from negotiation to implementation*, Montreal: CBD Secretariat, p11.

¹²⁵ Egziabher (2002) *op cit*, p118.

¹²⁶ *Recognizing* that trade and environment agreements should be mutually supportive with a view to achieving sustainable development; *Emphasizing* that this Protocol shall not be interpreted as implying a change in the rights and obligations of a Party under any existing international agreements; *Understanding* that the above recital is not intended to subordinate this Protocol to other international agreements. CPB (2000) *Preamble*.

¹²⁷ Cosbey and Burgiel (2000) *op cit*, p9.

relationship between the Cartagena Protocol and the SPS risk assessment mechanisms has yet to be determined and the incompatibility between 'trade' and 'environmental' regimes remains open to speculation.¹²⁸

Precaution

The precautionary principle, for environmentalists, has been a key element in decisions on whether to use dangerous technologies when scientific evidence is inconclusive, but preliminary indications suggest that harm to the environment or human health is possible, but avoidable.¹²⁹ It is portrayed as common sense, and a practical approach that can be used to avoid harm, even though a risk-free world is not possible.¹³⁰ The NGO coalition, along with the Like Minded and European Groups argued that precaution was the key decision-making concept that should underpin the Advanced Informed Agreement (AIA).

Supported by the biotechnology industry, the Miami Group fought against the 'precaution', arguing that it is prone to abuse, contradictory and meaningless.¹³¹ To them, scientific assessments are sufficient for AIA decision-making procedures to reject biotechnology as unsafe. The Miami Group believed that the Like Minded Group would use 'precaution' to block imports, becoming an arbitrary obstruction to trade, rather than a consistent approach to assess the risks of GMOs. According to Laurence Graff, the precautionary principle "became a more important issue, in part because of the

¹²⁸ Cosbey and Burgiel (2000) *op cit*, p9-12 and Swenarchuk, Michelle (2000) The Cartagena Biosafety Protocol: Opportunities and Limitations, Toronto: CELA, p7-8.

¹²⁹ Myers, Nancy (2000) "The US and the Precautionary Principle: An NGO Response in the Context of the Cartagena Protocol", www.sehn.org/rtfdocs/ICCP.rtf, p1 and Tickner, et al (1998) *The Precautionary Principle in Action, a Handbook*, NY: Science and Environmental Health Network, www.sehn.org/rtfdocs/handbook-rtf.trf, p1.

¹³⁰ Myers (2000) *ibid*, p1

¹³¹ Myers (2000) *op cit*, p1

continuous insistence by the Miami Group on the ‘savings clause’ and because of the attempt to start a parallel process in the WTO on a market access regime for biotechnology products.”¹³²

Having been omitted from the first draft text, the precautionary principle became a major issue during ExCOP negotiations; however, all references to ‘precaution’ were bracketed.¹³³ The precautionary principle had to be consistent with the CBD text, which was noted in the preamble and is the fifteenth principle of the Rio Declaration. The US had ratified the Rio Declaration, but not the CBD, so while not bound by the Biodiversity Convention, the US was bound to the precautionary principle through the Rio Declaration.¹³⁴ The NGO coalition put pressure on both Miami and European Groups to include precaution language in the protocol through their public information campaigns to rally support for a biosafety protocol.¹³⁵ When devising language about how ‘precaution’ would proceed, delegates proposed two avenues, explicit mention of ‘precaution’ in articles or in the preamble.¹³⁶

The compromise came in Montreal, 2000. The precautionary approach was accepted as long as it was cited in the Preamble section. The final text of the Biosafety Protocol refers to ‘precaution’ in the preamble, the objective (Article 1), as a decision-making procedure in Article 10 and 11 (LMO-FFP regulatory formula), and in the technical annex relating to risk assessment. ‘Precaution’ language regarding the imports of LMO-FFP was considered by Egziabher as a major success, because it “gives clear

¹³² Graff, Laurence (2002) *ibid*, p414.

¹³³ Graff, Laurence (2002) “The Precautionary Principle”, *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development?* *op cit*, p415.

¹³⁴ Tickner, et al (1998) *op cit*, p2

¹³⁵ Bail, Christop *et al* (2002) *op cit*, p167 and Graff, Laurence (2002) *ibid*, p415.

¹³⁶ ENB (1999) BSWG-6, Vol 9, #117, p3.

priority and makes up for much of the weakness introduced into the protocol by considerations of trade.”¹³⁷

The biosafety talks would not have occurred without the efforts of the G77 and a supportive NGO coalition. After their failure to acquire biosafety protections at the Rio Summit the G77 and a NGO coalition (formed after Rio Summit) worked together to lobby the CoP forum to initiate negotiations of a biosafety protocol. Their presentation of gene transfer technology as hazardous and problematic followed the specifications outlined in the CBD and included scientific evidence obtained by NGOs. For the G77, the biosafety regime was secondary to a 5-year moratorium. Failing that, biosafety required provisions for liability and redress; precautionary principle; comprehensive coverage of all GMOs, including all possible categories, such as GMOs contained in enclosed spaces; GMOs intended for release into the environment and products of GMOs. These categories covered a range of items such as, animals, grains, trees, plants having industrial uses, fish (for cultivation in aquaculture), and pharmaceuticals. The G77 did not succeed in its efforts to regulate a comprehensive protocol. Biosafety coverage was reduced to agricultural seeds and plants, including cotton, but excluding fish and non-edible plants.

If the G77/Like Minded Group had accomplished its goal, a biosafety protocol would have placed a five-year moratorium on biotechnology R&D. The Like Minded Group would also set in motion a procedure to monitor the effects of GMOs that exist in the environment and the food supply to analyze how genetic engineering biotechnology affects plants, animals and people. The Like Minded Group wanted to use a five-year

¹³⁷ Egziabher (2002) *op cit*, p121

period to understand the implications of biotechnology as experienced in the countries that developed the technology before embracing it as a solution to their problems. The Like Minded Group may be able to do this using the Cartagena Protocol, however the pressure to develop western standards of economic growth comes along with the trade related aspects of the Protocol.

IV. Negotiating Biosafety

In this chapter I argued that the negotiation of the Cartagena Protocol was limited in scope, by framing biosafety in terms of 'safe use and transfer' of GMOs across international borders, citing the Convention on Biological Diversity, which provided the basic framework for a regulatory protocol. According to the dominant view, 'biosafety' regulation implied that GMOs are beneficial but they also could be risky to use. The biosafety protocol encourages the use and development of genetic transfer technology and trade of its products. The protocol restricts GMO applications that could indicate adverse effects, while endorsing possible benefits that GMOs may provide to the environment and people's physical and economic well-being. A moratorium on the development of biotechnology was rejected outright during the first round of biosafety talks, which prevented its proponents, the Like Minded Group, from challenging the reliance on technological approaches to sustain the diversity of biological life around the globe. The Miami Group re-focused negotiations, to discuss how regulations would obstruct international trade of GMOs, which considered biosafety as a way to limit international trade transgenic products.

I examined three periods of negotiation in which nation-states debated the merits of biotechnology in response to environmental damage. Based on my understanding of theoretical frameworks of multilateral negotiation, the multi-actor depiction and dominant/subordinate power relations apply. On closer inspection, the process over three periods of negotiation, involved different arrangements of nation-state and non-state actors, which also included officials from intergovernmental organizations. The early period of negotiation indicates that the Biodiversity Convention was established in a closed process (INC) that inhibited debate by excluding perspectives that challenged the assumptions of the negotiators, most of whom sought to manage environmental resources by centralized planning controlled by intergovernmental organizations. The interim period of negotiation showcased perspectives that were excluded during the Rio Summit forum, namely the G77 and environmental groups concerned about the harmful effects of using GMOs. Although the G77 succeeded in initiating negotiations to make a biosafety treaty, a unified concept of biosafety had not been fully explored, nor accepted by all participants. During the third period, the biosafety talks, a range of perspectives about biotechnology emerged: 1) promotion of biotechnology and resistance to regulation (Miami Group and the biotech industry); 2) management of biotechnology by balancing risk and benefits (European and Compromise Groups); 3) resistance to biotechnology and promotion of a moratorium, or a fully comprehensive regulation protocol (Like Minded Group). The NGO coalition, while supportive of a biosafety protocol, was split between managing and resisting biotechnology. Multilateral response to biotechnology was varied, yet during each period of negotiations perspectives that supported economic and technological development had privileged access to negotiations among nation-states.

I noted earlier that the three periods of multilateral negotiations combined 'interest-based' and 'environmental diplomacy' models. Generally this was the case, since the outcome of negotiations did not re-orient dominant/subordinate power structures or introduce eco-centric or animist interests into these negotiations. On closer inspection, it seems that the three main blocs applied different negotiation models. The Miami Group was predominately positional in its orientation, necessitating the development of the Compromise Group to invoke an 'interest-based' model to assist Juan Mayr in unlocking the stalemate during the talks in Cartagena de Indias. The European and Central East European Groups argued from an 'environmental diplomacy' approach, as suggested by their preference towards managing the risks and benefits of GE biotechnology research and application. The Like Minded Group, however, indicated a change in approach since they encouraged support from a wider-scope of actors, namely the global-wide NGO coalition and sought to equalize the power-structure towards balancing decision-making between industrialized and 'newly' industrialized nation-states. This change in approach suggests that the Like Minded Group's negotiating strategy followed a 'new multilateralism' approach.

My observations of negotiations from 1988 to 2000, suggest to me that multilateral negotiation does not, in fact, result in 'consensus'. Negotiating delegates give their consent, but challenges would be mounted in the future in a forum organized by the treaty's signatories. The 'agreement' of terms and obligations (consent) outlined in a regime is a product of accepting the dominant view of economic development. When environmental issues are mixed with economic issues, in particular, trade of intellectual or material products, trade interests seem to become more important than environmental

interests. The US rejected the concept of biosafety and sought to undermine the goal to restrict and prohibit the development and trade of biotechnology. The US position remained consistent throughout each period, as it was resistant to changing its course of industrial development. Other industrialized countries, for example, Australia, Britain, Canada, Japan and New Zealand supported the US, thereby helping to shift negotiations to debated matters regarding technological development instead of limiting their course of development and seeking alternatives to work within natural processes and boundaries.

In this chapter I described how negotiation produced two international treaties, but I wanted to understand how biotechnology became linked to biodiversity and why regulation of transgenic processes and its products were difficult to accomplish. During the early period of negotiation, biotechnology was defined according to its ability to enhance nature, suggesting that manipulating genetic sequences could improve the productive capacity of nature, which would provide economic opportunities for commodity production and trade. As a solution to the problem of biodiversity loss, biotechnology was portrayed as staving off a potential crisis by developing plants and animals while bypassing traditional methods of reproduction. As biotechnology R&D advanced, negotiation proceeded to the CoP forum, in which nation-states were confronted by criticisms of prevailing view that portrayed biotechnology too positively. During the interim period, G77 representatives, and NGOs previously excluded from the Rio Summit, re-interpreted how biotechnology could be understood. They re-opened debate by arguing that biotechnology was not a benefit for people, economically or environmentally and it was not a technical solution of the problem of biodiversity loss. The biosafety talks served as a forum from which nation-states deliberated on the

significance of biotechnology, its regulatory formula and obligations of parties to restrict use and transfer of transgenic biotechnology. During the biosafety period, negotiations exposed various claims as to whether technology ought to be promoted, managed or resisted. NGOs and corporate interests aligned themselves to nation-states that represented their interests, thus interests were framed according to promotion of biotechnology of trade and development or promotion of biotechnology regulation (management of benefits and effects) or promotion of biodiversity conservation and protection (moratorium on biotechnology). The framework of negotiation was not broadened by the inclusion of non-state actors, as these actors reinforced the dominant/subordinate dynamics that had already existed.

My examination of multilateral environmental negotiation in three successive periods confirms the anthropocentric orthodoxy of mainstream negotiation frameworks and that the practice of negotiation of environmental treaties depict nature as a material resource for economic growth and technological development. I sought to examine whether relations with nature are featured in negotiation of environmental issues and if not, to find out why 'nature' was absent from the negotiation table. To understand why human relations to nature are absent from negotiators' perspective I need to examine more closely the arguments that underpin three views of biotechnology. Each period of negotiation defined 'biotechnology', which determined how it was going to be regulated. In the next chapter I set out to examine the substantive arguments that defined 'biotechnology' from Rio Summit to the Cartagena Protocol so that I can examine why human relationships with nature are bypassed during multilateral environmental negotiations.

One answer to the dilemma is another apparent paradox: both sides are right, and neither side is right. Like many technologies, biotechnology has its advantages and disadvantages. When opponents focus on different, if overlapping, issues, the result is confusion and disagreement. Used as a catchall term to cover a multitude of effects, biotechnology often ends up getting sole blame or credit for outcomes that are really due to a combination of factors that include planning, infrastructure, regulations, and economics. The way to resolve these disputes is to be more precise about what exactly is being debated in the name of biotechnology.¹

Where does one begin to explain?²

Propositioning Nature

This chapter analyzes how negotiation as practiced responded to different propositions about biotechnology, which shaped decision-making regarding terms and obligations outlined in the Convention on Biological Diversity (CBD) and the Cartagena Protocol on Biosafety (CPB). Genetic Engineering (GE) biotechnology was debated in each period, which produced two conflicting definitions of 'biotechnology'. The CBD presented biotechnology positively, as a solution to biodiversity losses, whereas the CPB presented biotechnology as potentially harmful to biodiversity. I argue that contradictory claims about 'biotechnology' were not resolved, yet negotiators approved international development and distribution of genetically modified organisms (GMOs), despite evidence of their negative impact because decision-making was based on accepting a norm of human domination and exploitation of nature.

As I argued earlier, multilateral negotiation is theorized to have three integrated components, in which parties collectively establish a process in which to explore their

¹ Eric Grace (1997), *Biotechnology Unzipped, Promises and Realities*, Toronto: Trifolium Books Inc, p 225.

² Leanne Simpson, panelist at Science and the Public Good conference sponsored by the Council of Canadians, Feb. 16, 2001, Crowne Plaza Hotel, Ottawa. Simpson's comment was a question she put to herself when asked by a Canadian government official to summarize the Aboriginal perspective on biotechnology in a preparation meeting for Canadian delegates during the biosafety talks.

interests and devise a set of obligations that all members can agree to. According to theory, the combination of process and substance follows a simple theoretical format in which negotiation is meant to proceed from propositions (theses) and counter arguments (theses) with subsequent statements involving both argument and response (antitheses). Theoretically, this simple progression becomes the basic structure of negotiation until participants reach a decision (synthesis). According to theory, the outcome of negotiation reflects a discursive path from theses to antitheses to syntheses.

The theory of negotiation suggests to me that negotiation as practiced will be an interactive and discursive flow from proposition to decision, where I can identify expressions that have been accepted, rejected and ignored. Accordingly theories of multilateral and environmental negotiation describe a process in which nation-state policies are explored and debated, and organized into a framework of rules and procedures designed to lessen environmental decline caused by contemporary industrial development. In practice, negotiations occurred in a context of competing, antagonistic and collaborative political alignments that strategically employed a definition of biotechnology to influence decisions on whether to regulate and how to assess the affects of biotechnology and its products.

I argued earlier that the definition of biotechnology was connected to how it was assessed and regulated. Now I explore how the significance of 'biotechnology' is used to debate questions on: 1) whether to regulate biotechnology; and 2) how to respond to dangers posed by new technologies and their products. I examine regime texts and position statements to identify the premise from which the meaning and significance of biotechnology was argued in negotiations that led to the Biodiversity Convention and the

Biosafety Protocol. Overall, these propositions (arguments) convey ideas about relationships to nature through conceptual understandings of GE biotechnology, which specify intent and indicate the significance of biodiversity. To assess how negotiation is practiced, I isolated four propositions about biotechnology that were presented during the early period (Rio Summit), the interim period (CoP) and the biosafety talks.

I collected statements from a number of groups, from corporate, NGOs and grass-roots groups. These statements were published in reference to the biosafety talks and were readily available at public events in Ottawa and Montreal and on websites during the period of 1999 to 2002.³ These statements were drawn from a list of groups compiled from participants of events I attended and references to NGOs and corporations mentioned in the Earth Negotiation Bulletin (ENB). Please refer to Appendix E, “Selected List of Organizations Involved in Negotiations”. I conceptualize regime texts as a ‘collective decision’ reflective among nation-state delegates. Statements from negotiation participants, such as nation-state delegates, corporate and NGO groups offer a particular viewpoint of biotechnology and its significance. If a statement refers explicitly to biodiversity, environment or nature, I would be able examine its view of nature and relationship to people.

I compare and contrast formal negotiation with public statements corporate and NGO groups attempting to influence state-led negotiations. This lets me uncover viewpoints that were ignored and dismissed (subtext) during formal state-led negotiations. In seeking out subtexts, I rely on the notion of ecological negotiation discussed in chapter two; in which negotiation is theorized as a process of listening and

speaking to form a consensus, a decision that is accepted by everyone, rather than an elite group of nation-state delegates. This allows me to identify power relations among people and with nature by detecting: 1) who speaks for whom; 2) what was argued; 3) what happens to the process and substance of negotiation when subtext is ignored or dismissed. A subtext reveals viewpoints overshadowed by a framework focused on balancing risks and benefits of GE biotechnology. Subtexts also may reveal ideas that could have been explored more fully, thus indicating if the negotiation process as practiced was: 1) flexible and inclusive; 2) biased towards assimilating all views into one; or 3) was coercive by excluding dissent or closing exploration prematurely. I look for subtexts because I am able to locate ideas about relationships between nature and humanity by drawing from concepts expressed in chapter two, about ecological and indigenous perspectives, which have been marginalized in dominant western discourses.

I note the substance of discussion at specific junctures, as revealed by exploring four propositions during debate. I trace each proposition to note how its definition of GE biotechnology influenced decisions about regulation aimed at imposing limits on R&D and trade of transgenic technology, which are presented in a table at the beginning of each section. The controversy around GE biotechnology concerned issues about a) its novelty; b) its distinction from traditional approaches; c) its revolutionary capability; and its purpose. Each issue, noted below, presents GE biotechnology in a certain way as described below, prompting challenge (antithesis) and consensus (synthesis). Each proposition is reviewed separately in the following order:

³ I collected information until the CPB came into force. Some NGOs and grass-roots groups continued their campaigns after negotiations ended offering analysis of biosafety negotiations and the Cartagena Protocol.

- A. Old or New: 'Biotechnology' is the same as older traditional methods such as breeding and fermentation. Or, 'biotechnology' is a new technology developed since the 1970s.
- B. Distinction: Modern biotechnology is different from traditional technologies. What is the significant difference between 'modern' and 'traditional' when assessing horizontal genetic transfer? Is this difference simple or complex? Is the distinction between 'modern' and 'traditional' and 'simple' or complex' significant enough to provoke cautious or suspicious responses? What are the criteria for rejecting 'modern' and 'complex' technologies?
- C. Revolution: Modern biotechnology is similar to the 'Green Revolution' and is part of other technological innovations that apply modern scientific discoveries. Or, 'the biotech revolution' will shift aside or replace traditional approaches and is not complimentary to current social and economic conditions. What are the changes anticipated in the 'the biotech revolution'? How will the 'revolution affect current approaches?
- D. Revolution: Modern biotechnology is similar to the 'Green Revolution' and is part of other technological innovations that apply modern scientific discoveries. Or, 'the biotech revolution' will shift aside or replace traditional approaches and is not complimentary to current social and economic conditions. What are the changes anticipated in the 'the biotech revolution'? How will the 'revolution affect current approaches?
- E. Purpose: What is the purpose of GE biotechnology? What is GE biotechnology meant to accomplish? Are the benefits of biotechnology helpful for biodiversity? Should GE biotechnology be promoted, managed or resisted?

I. Matters of Negotiating Biotechnology

A. New or Old technology?

I chart below how two different propositions argue whether 'biotechnology' is new to illustrate how each proposition responds to assessment and regulation of gene transfer technologies. The issue of whether biotechnology is new or the same as older approaches introduces the question of whether to regulate biotechnology.

Table 11
Is GE biotechnology new, or the same as other technologies?

A: the same and as old as	B: a new technology
If GE biotechnology is same as traditional methods or an old technology as old as traditional methods, then it is neither new nor different and does not require new regulation. Promotion of GE biotechnology begins.	If GE biotechnology is new then, how is its novelty to be interpreted? Further questions open exploration, negotiation continues as more questions are posed. Management of GE biotechnology begins.
Argument forecloses discussion of alternative policy rules, negotiation unnecessary. LMO/GMO designated as substantially equivalent to products made by traditional means. Negotiation of new regulations bypassed due to concept of equivalency.	How is GE biotechnology different from traditional methods? What is its uniqueness or how is modern biotechnology distinct from traditional approaches? What and how will GE biotechnology change? Why use GE biotechnology?
Existing regulation satisfactory, no new options needed. Safety is assumed as workplace and research standards are applied. No exploration warranted and negotiation stops.	Exploration fosters more questions, debate and discussion continue, focussed on categorizing novelty – unique, distinct or revolutionary. Debate/negotiation moves to different topics based on a) distinction; b) socio-economic change and c) purpose or utility of horizontal gene transfer technology.
Promoters of biotechnology: Biotechnology Industry Organization (BIO) (2003); BIOTEC Canada (2000); Industry, Sciences and Technology (1990); Ministry of State for Science and Technology (1987)	Critics of biotechnology (managers and resisters): Greenpeace (2002 and 2000); Ho (2000); Rifkin (1998); Suzuki and Knudtson (1990); Third World Network (TWN); Women's Environmental Network (WEN) (1999)

1. New, but – Same old, Same as

Promoters of biotechnology argue that GE biotechnology is the 'same as' or 'as old as' traditional methods of breeding that modify characteristic traits of plants and animal and fermentation used in food processing. Studies commissioned by Industry Canada presented biotechnology and its applications for industry consistently situated biotechnology as part of a continuous progression of using biology instrumentally in order to achieve specific economic objectives.⁴ The authors of an Industry Canada report

⁴ Among these are Ministry of State for Science and Technology, Beak Consultants Ltd (1987) *Regulatory Policy Options for Canadian Biotechnology*, Ottawa: Ministry of State for Science and Technology; Morsly, Safia, John Jaworski, Mario Perek, Bob Patterson, Michele LeBel and Michel Bouchar (1996) *Biotechnology Research and Development in Canadian Industry, 1989 and 1993, Research Innovation*, Statistics Canada, Science and Technology sector with collaboration from Chemicals and Bio-Industry

published in 1985 called, *The Essentials of Biotechnology*, Robert Ouellette and Paul Cheremisinoff, reviewed US policy to define biotechnology. In the Report they wrote, “in a certain sense [biotechnology] is one of the oldest industries”, which can be traced back to fermentation used in the making of wine, beer and cheese.⁵ For them, the biological material used to induce chemical change forms the basis of biotechnology, which creates human ability to change genetic components at the cellular level using recent inventions such as cloning, genetic transfer, sequencing, and recombinant DNA (rDNA).⁶ According to BIOTECCanada, a participant in the biosafety talks, the GE biotechnology is a more precise way of reproducing specific character traits, consequently the technology is as natural as other techniques that use nature as a basic source material.⁷

According to its promoters, biotechnology is part of a tradition that uses nature’s capacity to create, reproduce and facilitate chemical change and copies these processes to make a seemingly unlimited range of commercial products. Combining scientific fields of genetic and molecular biology, the process of reproduction happens by isolating character traits in a genetic sequence, and when bred according to the traits desired, the results can

Branch of Industry Canada and Science and Technology Redesign Project, p3; Ouellette, Robert and Paul Cheremisinoff (1985) *Essentials of Biotechnology*, Pennsylvania: Technomic Publishing Company, p10; Weldon, J, J. Ferguson and D. Shindler (1986) *Federal Expenditures for Biotechnology 1981-1986*, Canada: Ministry of State, Science and Technology, Biotechnology Unit, Strategic Technologies Branch, p2; The Canadian Biotechnology Strategy Secretariat – CBSS (1998), *The Canadian Biotechnology Strategy: An Ongoing Renewal Process*, p2; Industry, Sciences and Technology (1990) *Biotechnology Means Business, An Explosion of Commercial Activity*, p2.

⁵ Ouellette and Cheremisinoff (1985) *ibid*, p10.

⁶ Ouellette and Cheremisinoff (1985) *ibid*, p10.

⁷ BIOTECCanada, www.biotech.ca, see Question 10 in FAQ section, “What is genetic engineering” and the section, “Dispelling the Myths” point 1. The association’s motto states: “Food biotechnology offers tremendous potential to improve our health, to help feed the world’s population and to benefit the environment.”

be repeated many times.⁸ Biotechnology is promoted for its ability to 'enhance' nature, whether applied to food, medicines, forestry or mining. In terms of 'development' (progress as enhancement or improvement of nature), biotechnology follows a long legacy of discovery, analysis and exploitation. In these terms, GE biotechnology practices are not new additions to existing technological traditions and biological processes. The argument of 'same old, same as' refers to a long history of scientific and industrial cultivation of nature that legitimizes human control and exploitation of nature to improve 'organisms' suitable as a resource for economic production.

There is an internal contradiction in promoters' argument that biotechnology is the 'same old, same as' other technologies that apply biological organisms (enzymes and genes) instrumentally. The biotech industry referred to biotechnology in terms of technologies developed in the latter part of the 20th century.⁹ In the 1970s biotechnology was identified as 'cutting edge' or on the 'frontiers' of knowledge, discovery and innovation based on advances of scientific research.¹⁰ These references indicate that 'biotechnology' was not only new, but that it was revolutionary and that the new word, which combined 'biology' and 'technology' describes these recent advancements in the history of science and technology.

⁸ Weldon, J, *et al* (1986) *op cit*, p2; Industry, Sciences and Technology (1990) *ibid*, p2; Morsly, *et al* (1996) *ibid*, p 2 and 3. This is a common theme, see also CBSS (1998) *ibid*, p2; Ah-You, K *et al* (2000) *op cit*, p9 and Grace (1997) *ibid*, p45-53.

⁹ Beak Consultants Limited (1987) wrote: "The term 'biotechnology' is a neologism which has not been included in any major dictionary. Most new terms acquire meaning by usage, which tends to stabilize over a period of time." *op cit*, point 3.1; CBSS (1998) wrote: "biotechnology is an umbrella term" that "covers a broad spectrum of scientific applications used in many sectors", *op cit*, p2. The same term is used by BIOTECCanada found in section titled "Dispelling the Myths about Biotechnology", statement found in Myth #1: Genetic modification is new and unnatural process. www.biotech.ca.

¹⁰ CBSS (1998) *ibid*, p2; Industry, Sciences and Technology (1990) *op cit*, p2; Grace (1997) *ibid*, p2 and 30; Koshland, Jr, Daniel (1986) "Introduction, In Pursuit of the Renewable Frontier" *Biotechnology, The Renewable Frontier*, Daniel Koshland Jr., ed. Washington: American Association for the Advancement of Science, p ix-x; Morsly, *et al* (1996) *op cit*, p3; Prentis, Steve (1984) *Biotechnology, A New Industrial Revolution*, Orbis: London, p1, 2-3.

One could not claim that GE biotechnology was possible without the initial discovery of the structure of deoxyribonucleic acid (DNA) – the double helix. The ability to construct “novel” organisms was a result of the 1953 ‘discovery’ of the structure of the DNA molecule made by Watson, Crick, Wilkins and Franklin. In 1973 Stanley Cohen of Stanford University and Herbert Boyer of the University of California performed the first genetic engineering experiment, a task made possible from the DNA ‘discovery’. Cohen and Boyer took two unrelated organisms that were known not to be able to mate and joined isolated strands of DNA from each and bound them together to form a new construct. Their invention came to be understood as novel – and since was named biotechnology – carrying with it the ability of scientists to make novel constructs or chimeras that could not be produced naturally.¹¹

The proposition that ‘biotechnology’ is ‘new – but the same old, same as’ other technology was the dominant position during negotiations of the Biodiversity Convention. The regime text defines biotechnology as: “any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use.”¹² The similarity construed by this definition identified ‘genetic transfer’ technology as ‘substantially equivalent’, a term accepted by Organization of Economic Cooperation and Development (OECD), which allowed existing regulation to be applied to biotechnology and GMOs without acknowledging the distinctiveness of GMOs when compared to products made from fermentation and breeding. The term, ‘substantially equivalent’ refers to a rationale of comparison

¹¹ Cooke, Robert (1977) *Improving on Nature*, NYC: Quadrangle Books, p49-51; Grace (1997) *ibid*, p15-20, 28-29 and 42; and Suzuki, David and Peter Knudtson (1990) *Genethics, The Ethics of Engineering Life* Toronto: Stoddart, p24-27 and 98-122;

¹² CBD (1992) Article 2, Use of Terms, item 3.

between existing organisms and GMOs that have ‘novel traits’, which is used to determine whether GMOs are safe to use and consume.¹³ The proposition of ‘biotechnology as new’, was used strategically by biotechnology promoters to reject the need for regulation and monitoring of GMOs for adverse effects. The strategy allowed for ‘biotechnology’ to be defined as the same biological processes that occur during fermentation and genetic development, which ignored critics who preferred a more specific definition.

2. New, but how

‘Novel traits’ of GMOs are central to the issue of declaring that biotechnology is a new technology. It is not the long-standing belief that human beings can manipulate nature that is at question here, but the fact that ‘biotechnology’ is new because it allows scientists to transfer genes between unlike species. Biotechnology enables people (research and applied scientists) to construct organisms with traits that would not occur naturally, and without the aid of scientific intervention.¹⁴

The G77, and some NGOs, such as, the Third World Network and Greenpeace argued that ‘biotechnology’ is a novel technology, and not similar to other types of reproductive technology. Defining ‘biotechnology’ as new challenges the dominant position established during the early period of negotiations that biotechnology is nothing to worry about or does not need to be investigated further. The proposition of ‘newness’

¹³ Canadian Institute for Environmental Law and Policy – CELAP (2002) *A Citizens’ Guide to Biotechnology*, Toronto: CELAP, p53.

¹⁴ Those who argue this position are: Anderson, L (1999), Cooke, R (1977), Grace, E (1997), Ho, Mae-Wan (1999), Kneen, B (1999), Mander, J (1991), Nottingham, S (2000), Rifkin, J (1998). See also Information brochures published by Greenpeace, Women’s Environmental Network (WEN) and CUSO. Discussion about the novelty of biotechnology can be found in The Brookings Institute (1985) *Biotechnology*,

opened space for debate, to examine: 1) a new definition of biotechnology, outlining what is new and different about biotechnology when it is compared to older technologies that use biological organisms to produce other products; and 2) discussing the implications of using genetic transfer technologies to develop ‘novel traits’ in plants and animals; 3) assessing the impact of GMOs on the environment and people’s health. The proposition that biotechnology is neither ‘new’, nor ‘similar’, to other reproductive technologies, opens negotiation to explore other arguments, namely that biotechnology is different, distinct and unique from traditional processes.

B. New, Different and Distinct – Unraveling a thousand year old mystery since 1953

The proposition that biotechnology is new opens negotiation to discuss how it is new, and is compared to ‘traditional’ approaches and applications of scientific knowledge of genetics and heredity. I illustrate these propositions below in Table 12, “Distinguishing ‘modern’ from ‘traditional’ technology. The definition that ‘biotechnology’ is new led the debate to discuss whether ‘modern’ technology should be assessed similarly to ‘traditional’ methods. Promoters defined ‘biotechnology’ as a simple application of molecular genetics, that could be managed, and thus new regulation would be redundant. Resisters defined ‘biotechnology’ as a complex web of applications and methods, which promoted developing regulation to fit the distinctiveness of genetic modification using gene transfer technology.

implications for public policy, record of conference discussions, January 15-16, 1985, Washington DC: Brookings Institute.

Table 12
Distinguishing 'modern' from 'traditional' technology

A. Simple technology	B. Complex technology
If a simple technology, then it follows from principles of heredity and genetic fusion. GE biotechnology is novel, but it continues on from other simple technologies that also use these principles.	Resistance emerges. If a complex technology, exploration focuses on its complexity... Is GE biotechnology a process, a product or both process and product? How will assessment proceed? Is scientific knowledge and interpretation sufficient?
Definition based on material reduction; forecloses debate and negotiation ends if regulations fit criteria of simple technology (ie substantial equivalence) But if debate explores the unique novelty of GE biotechnology products, then negotiation shifts to debates about trade and products, assuming imminent entry into international markets.	Complexity of technology opens negotiation to examine criteria for scientific due diligence and assessment of risk/hazard/danger: a) appropriateness of technology; b) response (moratorium, caution; more research); c) what other forms of assessment can support decision-making for or against technological development.
Debate re-opens to focus on products: a) monitor for risk; b) place restrictions on production and/or trade; c) initiate consumer product protections, for example, labeling. Negotiation proceeds as an economic issue.	Negotiation proceeds to address limitations of scientific knowledge and its interpretation, possibly including other types of assessments and/or criteria. If negotiation shifts to scientific R&D it explores the due diligence procedures of scientific research and hazards of researching dangerous substances. If negotiation shifts to GE/GMO as dangerous substances then exploration opens to occupational/public health and criteria for continuing scientific research. Each negotiation site addresses ethical, environmental and health issues.
Managers: Cooke (1977); Grace (1997); Nottingham (2000)	Resisters: Ho (2000); Lewontin (1991); Rifkin (1983); Steinbrecher (WEN); Suzuki and Knudtson (1990)

1. Towards a different definition

During the biosafety talks, biotechnology was distinguished from traditional methods. Delegates and scientific experts debated the technical distinctiveness of 'modern' biotechnology to alter genetic expression by over-riding natural boundaries. The new definition dislodged the dominant claim that biotechnology is the same as other 'traditional' methods, so was re-defined:

'Modern biotechnology' means the application of: a. *In vitro* nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and

direct injection of nucleic acid into cells or organelles, or b. Fusion of cells beyond the taxonomic family, that overcome natural physiological reproductive or recombination barriers and that are not techniques used in traditional breeding and selection.¹⁵

The CPB defines biotechnology as distinct from traditional tools because methods are more complex than traditional methods. 'Modern biotechnology' is unique because it has the ability to modify genetic sequences by breaking down or usurping natural processes, which 'traditional' approaches do not. The change in definition reflected growing discontent with the dominant proposition and its effectiveness at rejecting regulation. Negotiators discussed the same methods and products, but differences in definition of GE biotechnology in the Biodiversity Convention and Biosafety Protocol represent conflicting perceptions.

Promoters of biotechnology claimed that 'modern' was a minor difference, that genetic transfer was a simple technology, which focused negotiations on discussing the effects of 'novel traits' found in GMOs and the benefits of using these 'novel traits' established by 'modern' biotechnology. The 'newness' of biotechnology is accepted, but couched within accepted wisdom of human inventions to cultivate plants or breed animals, then negotiation ends with an acceptance that new technology is as innocuous as traditional approaches. The proposition that biotechnology is new, but simple scientifically repeats rhetorical claims of 'substantial equivalence' employed by promoters of biotechnology as noted above. Hidden within propositions of 'simple' and 'modern' is a strategy to resist a moratorium on biotechnology without making explicit statements that reject regulation of biotechnology applications and its products.

¹⁵ CPB (2000) *Cartagena Protocol on Biosafety to the Convention on Biological Diversity*, Article 3 (i) – Use of terms, p3.

Managers of biotechnology supported the proposition that 'biotechnology' was complex and should be regulated because GMOs would be introducing genetic constructs into the environment, and there was no way to predict how 'novel traits' would affect the reproductive diversity present in nature. The European Group accepted the precautionary principle as a key element of biosafety, but the European Group also accepted that 'biotechnology' could be beneficial, so their position was based on a management approach to regulation. A managerial approach to biotechnology still affirms development of biotechnology. Restrictions tend only to apply to its production and trade as noted in chapter four, which categorized biotechnology according to a process and a product. Management of biotechnology relies on a problem-solving approach to negotiation, in which positives and negatives balance out to produce compromises that mitigate risk while encouraging its development and use. The CPB defined 'biotechnology' according to its designated purpose, which accepted the proposition that 'biotechnology' is complex, but requires careful assessment and regulation, not a temporary moratorium or an outright rejection.

According to resisters of biotechnology, the uniqueness of genetic transfer involves an inherent danger because natural barriers between species are bypassed deliberately. According to Mae-Wan Ho (2000), GE biotechnology refers to four basic techniques: genetic sequencing; recombinant deoxyribonucleic acid (rDNA); chemical synthesis of DNA with any desired base sequences; and polymerase chain reaction (PCR).¹⁶ According to Ho, a geneticist and member of the NGO coalition of experts

¹⁶ These techniques are: 1) genetic sequencing, which identifies a sequence of bases as a 'gene' in any stretch of DNA; 2) , rDNA uses enzymes to cut and join sequences of DNA together; 3) chemical synthesis of DNA, which joins together the desired base sequences isolated in genetic sequencing; 4) polymerase chain reaction (PCR) allows for the rapid and frequent replication of gene sequences in Ho (2000) *ibid*,

intervening during the interim period and biosafety talks, GE biotechnology “accelerates the rate of horizontal gene transfer as well as enlarging its scope” thereby creating “arbitrary” genetic combinations and using “increasingly sophisticated means to overcome species barriers.”¹⁷ The capacity to transfer genetic material across species and the increase of viruses, suggests to Ho that the use of bacteria and viruses in breaking down natural resistance and expression points to the inherent dangers of GE biotechnology.¹⁸ Horizontal gene transfer is rare because natural species barriers prevent exchange between dissimilar taxonomic groups, but GE biotechnology uses viruses to break down these barriers and disable its resistance.¹⁹ Barriers against horizontal transfer check against problematic genetic constructs and mutations. Once barriers are dismantled, artificially induced traits can reproduce in subsequent generations. Dangers exist because: a) the technology subverts natural processes; b) the technology and its products cannot be recalled once introduced; and c) changes induced by the technology cannot be predicted with any degree of certainty.

Arguments that resisted biotechnology opted for comprehensive regulation because genetic transfer was considered to be complex and dangerous. The proposition that genetic transfer included four basic techniques, as outlined by Ho, indicated that the Biodiversity Convention’s definition of ‘biotechnology’ was limited to two components, chemical synthesis and PCR techniques. During the biosafety talks, advocates for stronger regulation sought to broaden the definition of ‘modern biotechnology’ to include

p49-50. See also “Biotechnology: Forging Ahead in Secret, in Haste and for Profit”, Biotechnology Caucus of Canadian Environmental Network (CEN), information sheet, 2001, p1; Cooke, R (1977) *op cit*, p4; Nottingham, S (2002) *ibid*, p 1 and 3; and Rifkin, J (1998) *op cit*, p8.

¹⁷ Ho (1999a) *ibid*, p24.

¹⁸ Ho (1999a) *ibid*, p24

¹⁹ Ho, Mae-Wan (1999a) “Why genetic engineering is hazardous”, *Third World Resurgence*, April/May 1999, #104/105, p22.

the full range of technical components, adding genetic sequencing and recombination. Multilateral environmental negotiations explored the complexities of 'modern biotechnology' prematurely, because debates about whether biotechnology was simple or complex ignored the significance that 'biotechnology' was unique because it was designed to deliberately bypass natural barriers between species.

2. Holistic subtext revealed

The proposition that 'biotechnology' is unique focused attention on the instrumental use of biology to reconfigure genetic expression, deliberately bypassing processes that would inhibit expression of an inserted gene.²⁰ Ho argued that GE biotechnology operates within a scientific paradigm of reductionism and determinism, in which biotechnology was designed to break down natural barriers.²¹ According to Ho GE biotechnology is based on false notions about nature and how it operates. Ho suggests that the natural barriers found in nature will be unable to prevent dangerous viral and genetic mutations from happening. Traditional techniques operate in a different context, maintaining barriers and structures created within natural processes. The differences are not subtle, but infer also a difference in perspective.

The destructive impact on nature from technological intensification underpins skeptical responses to biotechnology. Skeptical views of technological R&D stress problems associated with relying on technologies to mitigate environmental destruction caused by industrial development. Exploration of technological 'fixes' opens negotiation

²⁰ On the problems of predicting and determining the course of evolution see Benasson, D (1999) "Genetic Pollution I" *The Gene Files*, Resource and Action Pack, London: WEN, p1, 3-4; Ho (2000) *op cit*, p168-200; Rifkin, Jeremy (1983) *Algeny*, NYC: Viking, p 140, 143 and Suzuki and Knudtson (1990) *op cit*, p88-89, 138.

to suspicious views of using 'modern biotechnology', which are not invoked when 'traditional' technologies are promoted. Furthermore, discussion of potential and actual negative consequences opens negotiation to include the perspectives of people with direct experience with the impact of transgenic technology and GMOs. The depth of this exploration is measured by the willingness of all participants to investigate these problems and to act against these and future complications.

The subtext to which Ho and others speak describes nature in holistic terms: that which is living, interconnected, interdependent and multi-faceted. A holistic approach, whether eco-centric or animist, follows principles that do not breach natural barriers and identifies relationships and context so as to work with the resources at hand rather than introducing something new. Accordingly, they believe nature as a whole ought to be recognized when considering human impact on nature's complexity, connections, links and relations. Human creativity in respect to cultivation of plants, animals and foods acknowledges that it is possible because biodiversity is fostered by nature's creativity. Like Ho, R. C. Lewontin (1991) contrasts two schools of thought within the scientific community. To Lewontin, molecular geneticists' support for GE biotechnology relies on a paradigm based on reductionism and determinism, that nature can be understood by looking only at its component parts and these parts can be interpreted as determining traits and behaviors noted whole organisms (plants, humans and other animals). Whereas, ecologists advance a holistic view of biological life by considering relationships, flux and context:

... [t]he physical and biological worlds since the beginning of the earth have been in a constant state of flux and change, much of which has been far more drastic than anyone can now conceive. Indeed, much of what we

²¹ Ho (1999) *ibid*, p18.

conceive of as the environment has been the creation of living organisms.²²

Lewontin suggests that human appropriation of natural building capacity may not be used to justify technological manipulation because living organisms are capable of influencing the context in which they live; therefore, the 'novel traits' would also begin to change in response to the environment in which these were placed. The constant flux, rhythm and flow of organisms, as understood by ecologists seems to be overlooked in the reductionism and determinism of molecular biology. Discovery of such natural creative processes in no way confirms scientists should develop new abilities or continue to use biotechnology because molecular biologists ignore the context in which organisms live. The rhetoric of 'enabling' emphasizes that humans can control biological outcomes. A skeptical view of GE biotechnology represents an ecological viewpoint, premised on holistic notions of nature and ideological skepticism that technological development will solve problems derived from socio-political relations with nature.

A holistic perspective involves a resistance to unlimited human appropriation of nature and the hubris of anthropocentric control over nature. Holistic perspectives accept that nature has autonomy in its creativity, arguing that respect for nature's boundaries and creative ability should feature in decisions about development and innovation. According to Ho, the genetic determinism that underpins biotechnology scientists' work is inaccurate because recent findings in genetics and microbiology:

... reaffirms the ecological wisdom of traditional indigenous peoples all over the world ... on the understanding that the biological nature of each organism or species is inextricably linked to its environment and depends ultimately on the entire ecosystem, consisting of other organisms.²³

²² Lewontin, RC (1991) *Biology as Ideology*, Concord: Anansi, p92.

²³ Ho (1999) *op cit*, p281. Usage is not clarified.

Ecological perspectives present skeptical views of biotechnology, initiating a re-negotiation of its definition. A subtext was insufficient to re-negotiate terms of reference sufficiently to reject biotechnology on the grounds that it was not viable for today's problems.

The Like Minded and NGO coalition argued that GE biotechnology is inherently dangerous, which challenged orthodox views of GE biotechnology as safe and beneficial for biodiversity, but their argument did not challenge successfully the equally orthodox idea that reduced 'nature' to a resource useful for industry and science. The critique injected radical perspectives into the multilateral environmental negotiation, thus revealing viewpoints ignored by the promoters and managers of biotechnology during the Rio Summit era of early debates. Ecological viewpoints affirm diversity and see 'nature' as a living environment whose inhabitants could not exist individually and independently apart from their habitats. Central to this perspective is the significance of nature on its own terms, that its utility for humanity is not the sole purpose, importance or meaning. This eco-centric perspective remained in the background during the three periods of negotiation, nonetheless forming a subtext from which to argue against the development of GE biotechnology.

C. Revolution – transforming life by altering DNA sequences

Two other propositions – the idea that gene transfer technology is revolutionary and ideas surrounding the purpose (intent) of gene transfer – were not at the forefront of multilateral negotiation, but were part of a larger context that attempted to influence the outcome of formal state-led negotiation. This discourse allows me to reveal what was rejected and ignored by state-led negotiation of regimes that privilege biotechnology

development despite continued threats to biodiversity. Since the philosophical premise that promotes biotechnology was not discredited during multilateral negotiation, but continues as a means to support further development, the 'biotech revolution' and the purpose of transgenic technology are relevant to how the actual negotiation process facilitated exploration of the issues and decisions regarding issues raised. Propositions about the revolutionary features and purpose of gene transfer reveal people's ideas about nature.

The connotation of GE biotechnology as a 'revolution' means that horizontal gene transfer will provoke significant changes. The debate focuses on various interpretations and whether these changes will be acceptable; therefore political features of human relations with nature are found at the core of this issue. The revolutionary features of GE biotechnology point towards substantial alteration of life, suggesting a universality about GE biotechnology's impact as it may replace, ignore or shift present conditions, processes and practices. The revolutionary connotation of genetic transfer was not contested during the multilateral environmental negotiations. The idea that biotechnology was revolutionary was implicitly accepted, yet it served to focus attention on how the 'biotech revolution' would alter the environment and society. The debate was apparent in public forums between promoters of biotechnology and its skeptics, which probed whether change would be unobtrusive, difficult or harmful. Debates held in community forums revealed a subtext in support of ecological sustainability, which offered different views from mainstream ideas about conservation and protection of

biodiversity.²⁴ As a whole, discussion about the consequences of the ‘biotech revolution’ revealed three perspectives, namely the celebratory promotion of GE biotechnology, the cautious management of its effects and a suspicious resistance to its applications and appropriation of life. These three ideological perspectives correspond roughly to positions of three of the negotiation blocs during the biosafety talks: the Miami Group (celebratory promoters of biotechnology), the European Group (cautious managers of GMOs) and the Like Minded Group (suspicious resistance to genetic transfer technology).

The correspondence between perspectives that argue the significance of ‘biotechnology’ and the negotiating blocs helps me determine how non-state actors influenced nation-state interests and whether eco-centric and animist perspectives (as subtext) entered into the debate about biotechnology, and if so, if these perspectives were presented explicitly. I trace below, in Table 13, “How is GE biotechnology Revolutionary?” how propositions about the ‘biotech revolution’ fostered negotiation.

²⁴ Notable events were: Citizens’ Forum on Genetic Engineering, 22/1/2000; Genetically Engineered Food, 18/5/2000; 20 Years of Growing, Organic conference, 26-28/1/2000; Science for the Public Good, 16/2/2001 and Food Choices Think Globally, Act Locally, 17/2/2001.

Table 13
How is GE biotechnology Revolutionary?

A. no major shift or change	B. major change occurs	C. major shifts occur
<p>GE biotechnology does not pose significant alteration as it is complimentary to natural evolutionary process and now a part of a larger set of tools used for cultivation and production. This proposition reiterates the idea that biotechnology is similar to other technology.</p>	<p>GE biotechnology is revolutionary as both technique and products will change current circumstances. Questions emerge about the types of changes to anticipate, debate concerns questions about change, whether positive or negative and how to mitigate negative consequences. Debate explores whether transgenic technology has problem-solving potential.</p>	<p>GE biotechnology is revolutionary and will alter traditional agriculture and other subsistence economies. GE biotechnology cannot co-exist with ecological, organic or traditional approaches. GE biotechnology threatens to displace, replace or sidetrack completely sustainable practices including traditional knowledge about ecological sustainable farming and natural reproduction.</p>
<p>GMO/GE deemed suitable. Negotiation focuses on technical aspects, proceeds as an issue of industrial development (capacity building). Exploration of capacity building shifts negotiation to discuss further technological developments, choice and availability of these tools.</p>	<p>Debate about appropriate technology, primarily a scientific and technical issue. Exploration re-focuses on GE as a problem solving applications. Negotiation explores questions: a) use and/or usefulness; b) consequences of use; c) criteria for assessment; may invoke precautionary principle and/or risk management criteria.</p>	<p>Exploration focuses on the ecological, environmental and socio-economic issues. Negotiation focuses on questions a) moratorium of R&D, distribution, production, and trade b) adverse/negative effects on environment, health, and other social, cultural and economic considerations.</p>
<p>Negotiation focused on promoting GE biotechnology as a viable option, despite resistance to regulation. Exploration limited to GE biotechnology as substantial equivalence, simple and beneficial technologies.</p>	<p>Negotiation proceeds to questions of regulation. Scientific uncertainty emerges as a determining factor to manage perceived risks of biotechnology, may explore precaution. Negotiation manages uncertainty, qualifying GMO use according to its effects, not its than purpose or usefulness</p>	<p>Resistance emerges when traditional and alternatives are promoted. Negotiation responds to adverse impact on the environment. Resistance to biotechnology due to a) precautionary principle as harm prevention (b) support for 'traditional'/alternative cultural practices, such as organics.</p>
<p>Promoters: BIO (2003); BIOTECCanada (2000); Koshland (1986); Paarlberg (2000); Prentis (1984)</p>	<p>Managers: Canadian Institute for Environmental Policy and Law (CIELAP)/Shenarchuk (2000); Cooke (1997); Food Biotechnology Communication Network (1999); Nader (2001); Rifkin (1983 & 1998); Suzuki and Knudtson (1990); Tapper (2002)</p>	<p>Resisters: Anderson (1999); CUSO (2000); Kneen (1999); Mander (1991); Roberts, MacRae and Stahlbrand (1999); WEN (1999)</p>

1. Celebratory Promotion

A celebratory promotion of the 'biotech revolution' focuses entirely on economic benefits and the opportunities that GMOs have to create new markets. A celebratory version of the 'biotech revolution' argues that it is a continuation of scientific discovery and invention, on the frontiers of human achievement and discovery that would create opportunities for people (scientists and policy makers) to design life that would be suitable to people's sensibilities in positive and idealistic terms.²⁵ The revolutionary potential of gene transfer technologies marries objectives of scientific discovery and economic opportunity.²⁶

Technological innovation was the Government of Canada's primary concern in establishing a biotechnology industry beginning with Industry Canada then concentrating initially on agricultural applications through Agriculture and Agri-Foods. As a member of the Miami Group, the Government of Canada argued that biotechnology should be developed strategically because it has:

... great potential to add to industrial efficiency, output and jobs, enhance the productivity and competitiveness of ... natural resource sectors, safeguard the environment and enhance our quality of life through improved pharmaceuticals, in diagnostic medicine and food production.²⁷

²⁵ References to revolution made by Cooke (1977) *ibid*, p6-7 and quotation from Koshland (1986) "Introduction, *op cit*, p x.

²⁶ See Ah-You, et al (2000) *op cit*, p9 ("When incorporated into an overall industrial process, biotechnology has the potential to contribute to cleaner production..."); Food Biotechnology Communications Network, FBCN (1999) *A Growing Appetite for Information*, p2 (Modern biotechnology, however, is a giant leap in scientific capacity – and to some, it's off and running at an Olympian pace); Industry, Science and Technology (1990) *op cit*, p2 (... biotechnology revolution will affect everything...); and Prentis (1984) *op cit*, p ix ("The intellectual climate presupposed that diligent research would lead – as, indeed, it did and continues to do – to useful innovation and economic advance.").

²⁷ The Canadian Biotechnology Strategy Secretariat – CBSS (1998) *op cit*, p2.

This promotion of biotechnology is similar to the biotech industry, which is one-sided in its depiction of transgenic technology attributing biotechnology to several positive outcomes emphasizing its benefits, opportunities and profits.²⁸

The importance of assessing the actual results incurred by GMOs seems to be diminished to the point of resisting an over-all regulatory standard. The Government of Canada's 1998 *Canadian Biotechnology Strategy: An Ongoing Renewal Process* report stressed the importance of developing biotechnology to ensure ethical and social responsibility in the development of biotechnology. The celebratory promotion of biotechnology diminishes any implication that revolutionary change could be problematic. Bob Church, a Canadian biotechnology pioneer, encouraged his colleagues at a biotechnology conference to talk about GE biotechnology in terms that are more conducive to gaining support from the general public: '[we] must be communicating a different way until the consumer as citizen buys in.'²⁹ Church spoke of genetic transfer technology as if it could improve every aspect of modern life, yet scientific, commercial and industrial enterprises need to explain more effectively their role in promoting biotechnology development as a viable enterprise. Promoters' rhetoric emphasizes people's 'understanding' and promoters suggest that until people comprehend how beneficial biotechnology *is* they will remain skeptical and cautious. This suggests to me that celebratory promoters' refusal to acknowledge dissent is strategic. By not speaking directly about problems of biotechnology, promoters do not speak directly to their

²⁸ I noticed a celebratory promotion of biotechnology at the Ottawa Life Sciences Conference, December 4-6, 2000 and in Biotechnology Industry Organization – BIO (2003) *Biotechnology Guide*, available in a pdf file, "BiotechGuide.pdf", found on www.bio.org

²⁹ Bob Church, presentation of "Biotech: Delivering on the Promise" given at a seminar of "Bioproducts Revolution" during Ottawa Life Sciences Conference, Dec., 4, 2000, Ottawa Conference Centre, Ottawa.

opponents. During negotiations this refusal could potentially be used to subvert a process that proceeded towards either regulating or prohibiting biotechnology.

A celebratory proposition attempts to negotiate the best circumstances for applications of biotechnology, guided by a belief that they can enhance nature to produce better resources for production of medicines, foods and other products. During the biosafety talks the Miami Group emphasized the proposition that biotechnology was 'the same old, same as' rather than acknowledging the revolutionary connotations of biotechnology. The Miami Group's silence regarding 'the biotech' revolution suggests a deliberate strategy not to speak about biotechnology in reference to changes so as not to encourage regulation, which was argued by the Like Minded and European Groups.

A celebratory response to GE biotechnology reveals an implicit retort to critics. Promoters suggest that gene transfer and GMOs enable farmers to cultivate their own livestock and crops not, as detractors suggest, increase their dependence on scientific and commercial centres of knowledge and production.³⁰ Furthermore, the enabling qualities reach into many other economic sectors to the extent that other approaches are overlooked or invalidated.³¹ The experience and knowledge of people working within natural diversity and its life cycles are discredited when they challenge government policy about safety and accuracy of GE biotechnology.³² Their contributions to restoring biodiversity are often replaced or sidetracked as outmoded in the face of the glamorous products of scientific progress central to the issues under negotiation. The proposition

³⁰ Bob Church (2000) and Wayne Schnarr, "The Bioproducts Revolution: An analyst's View", presentation at Ottawa Life Sciences conference, *ibid.*

³¹ Lorenzo Muelas Hurtado, (1999) *Access to the Resources of Biodiversity and Indigenous Peoples*, occasional paper, The Edmonds Institute, p1-3. See also Anderson (1999) *op cit*, p115-122; Shiva, Vandana (1993) *Monocultures of the Mind*, London: Zed Books and Third World Network, p17,-18 and 65-66.

that GE biotechnology achieves positive change inserts a bias into the debate by privileging an economically-driven but environmentally-intrusive technology, while dismissing ecologically-sensitive practices that resist reliance on complex technologies and the professions that promote technical intensification.

The promotional proposition of biotechnology defines nature as a material resource and useful as long as it benefits scientific and economic developments. Genetic and other biotic matter are easily attainable resources. An assumption here is that human creativity has more importance, whereas the role of nature is reduced to a source providing materials for a range of human endeavors and interests. Although the revolutionary prospects of GE biotechnology treats nature as a passive provider, nature requires enhancement or improvement in order to satisfy requirements necessitated by human progress. The meaning here is simple: nature will be improved to benefit people. This celebratory vision over-emphasizes the importance of human achievements, and science becomes the pursuit of complex technology that can manipulate and exploit nature for human interests. As a result it also ignores approaches and tools based on a broader conception of nature's value and contribution in sustaining human life.

2. Cautious Management

Cautious management of GE biotechnology recognizes that changes induced by this technology will be difficult. Transgenic technology is powerful; however, its capacity to achieve massive change requires caution in managing its results. A cautious managerial proposition assumes a mixture of benefits and hazards, about which neither

³² Kneen (1999) *ibid*, p66, 70-72 and 159. See also Hurtado (1999) *ibid*, p1 and Shiva (1993) *ibid*, p9 and (1997) *op cit*, p73

benefits nor risks can be framed in absolute and certain terms. A cautious perspective considers the paradox of scientific R&D, that new technologies are capable of harm and open to improper use. Nevertheless, technological development is an integral feature of human affairs. Technological applications are assumed to have socio-economic impacts, with mixed consequences. According to a cautious management of biotechnology negotiation pursues regulations to balance gains and losses and offset risks by enhancing its benefits.

According to cautious management perspectives, GE biotechnology and GMOs could have an adverse effect on the environment and human health. It was assumed that hazardous materials can be contained by providing adequate occupational safety for handling and disposal, thus reducing risk of disease from exposure to viruses and bacteria used in transgenic technology processes or (genetic) contamination from the technology and its products. While promoters of biotechnology supported scientific oversight of risk management protocols, a cautionary perspective acknowledges that technologies can have a destructive impact on people's well-being and the natural environment. Since the effects of GMOs vary, it takes time to process, assess and provide conclusive evidence that there are environmental and health problems.³³ A management approach attempts to measure the effects of dangerous technologies, situating GE biotechnology as a recent addition, among other problematic 20th Century inventions.

The European Group supported a cautious management perspective that balanced risk (potential adverse effects) and benefits (revolutionary capacity). Evidence about

³³ Cosbey, Aaron and Stas Burgiel (2000) The Cartagena Protocol on Biosafety: An analysis of results", International Institute for Sustainable Development – IISD occasional paper, <http://iisd.ca>; Dawkins, Kristin (1999) "Unsafe In Any Seed", *Multinational Monitor*, March 1999, Vol 20, #3, www.essential.org/monitor/mm1999/mm9903.05.html, p4; Meyer, Hartmut (1999) "Precise Precaution

adverse effects of GMOs had been established by the time the interim period of negotiation was underway. An acceptance of the proposition that the 'biotech revolution' would have mixed results and potentially could harm people and the environment opened negotiation up to discussing regulation of use and trade of GMOs. Negotiation of biotechnology did not encourage examination of judgements that defined risk and harm. Instead, negotiation framed the question of risk that allowed for the continued acceptability of a dangerous technology. A management orientation to regulating GE biotechnology inferred a cautious response focusing on adverse effects that occur after the period of development and initial use.

A cautious perspective that focuses on responsibility for damage may support concepts of 'precaution' as a means to prevent the implementation of dangerous technologies.³⁴ This understanding was the basis of 'liability and redress', but the European nation-states argued that the forum was not the appropriate place to discuss these matters, suggesting that the issue be postponed and discussed once the regime came into force. The cautious management comes into play when it complements scientific analysis in that it frames regulatory decisions to decipher adverse effects after introduction of GMOs.

3. Suspicious Resistance

A suspicious interpretation of genetic transfer technology doubts that GE technology can 'enable' or conserve biodiversity because GE biotechnology is designed

Versus Sloppy Science", Third World Network, www.twinside.org.sg/title/3food-cn.htm, p2 and Runge, C Ford and Benjamin Senauer (2000) "A Removable Feast", *Foreign Affairs*, May/June 2000, p50

³⁴ A precautionary approach stipulates that in anticipation of harm the appropriate response would be to either prevent or withdraw from using the technology and distributing its harmful products.

to change DNA expression, which permanently alters one of the fundamental building blocks of life. Genetic transfer changes are irreversible and far-reaching. A suspicious interpretation of change that transgresses natural boundaries focuses on the impact that genetic transfer will have on biodiversity and the livelihoods that operate within ecologically sustainable practices that rely on this diversity. Interpretation of the 'biotech revolution' provokes a suspicious resistance to biotechnology.

A suspicious interpretation reveals that wild and heritage varieties of plants will be contaminated by novel constructs that are able to reproduce regardless of genetic barriers. This fact was sufficient to raise awareness that ecological sustainable practices and subsistence agriculture would be threatened by corporate agribusiness in its monopolization of modern technology and information. The disruption of traditional practices occurs on two levels: 1) from the ability of transgenic technologies to usurp natural creative processes and 2) the monopolization of knowledge by corporate interests that displaces local peasant and Aboriginal knowledge and practices. Combined together, interpretation of 'the biotech revolution' raises suspicion of genetic transfer technology to the level of resistance.³⁵ The potential of GE biotechnology to disturb socio-economic conditions in the South prompted the Like Minded Group to resist importation of GMOs and be more suspicious of the industrialized countries' capacity to develop technologies that dealt with problems faced by these nation-states. Genetic contamination, brought on

³⁵ The danger of displacement implied by GE biotechnology finds expression in many areas. These dangers were the theme of the conference, "Science and the Public Good" organized by The Council of Canadians, February 16, 2001, at the Crowne Plaza Hotel, Ottawa. A sampling of statements given by Tony Clarke, Polaris Institute, "... thousands of [biotechnology] labs to radically alter life...on the verge of a great social revolution..."; Warren Bell, "patents on GMOs... a distortion [that] elevates man-made efforts and downgrades indigenous and naturally occurring and community-based processes", Julie Delahanty, Rural Advancement Foundation International (RAFI), "nothing to do with sustainable agriculture... about feeding the wealthy and luxury market... change where and how food is produced."

by transgenic technology was considered to be a problem far worse in proportion than the problems biotechnology promoters suggested they could solve.

Suspicion of complex technology entails both prevention and resistance. Prevention fosters awareness of other forms of human development, challenging assumptions that there is only one way in which to progress and improve. Resistance fosters support of approaches and knowledge that sustain ecological diversity. In this perspective, closer relationships between people and their natural surroundings and diversity of living are interrelated. Processes within nature are sufficient to encourage diversity of genetic expression that is needed to enable plants and animals to develop on their own.

A suspicious perspective affirms a preventative stance against further destruction of natural environments, thus resistant to development of technical replacements and the social and economic institutions that support industrial progress. A suspicious resistance to GE biotechnology draws on perspectives that also respect and esteem ecological diversity.³⁶ These views are similar to eco-centric perspectives that believe people are part of diverse biological processes that create life all over the world, rather than situating humanity as the central figure of creation. A similarity between suspicious resistance and eco-centric views reveals a subtext based on a composite of ideas and values that critique anthropocentric authority over nature and its uncritical affirmation of economic and industrial development.

Ecologically sensitive decisions are shaped by a common understanding that people are supported by nature where sources of life are found, thus believing that people

ought to live within these cycles.³⁷ Both the Like Minded Group and NGO coalition were suspicious of the biotechnology in part because of its revolutionary aspects that threatened to disrupt various socio-economic practices, such as ecological or organic farming. The decision-making process during three periods of multilateral negotiation did not open exploration to include ecologically sensitive perspectives. Critiques regarding major displacements of ecologically sensitive practices and knowledge expected by 'the biotech revolution' were couched as a position that was antagonistic to technology as a solution to biodiversity depletion. Both the Like Minded Group and NGO coalition argued against the interpretation of the Miami Group that GE biotechnology was a solution to biodiversity loss. The strategy to be suspicious and resistant served to buttress support for ecologically sustainable agriculture, and its approach would serve to conserve and protect biodiversity.

A suspicious resistance to GE biotechnology rejects technical intensification while promoting a variety of ecologically sensitive approaches that support ecocentric relations between people and nature rather than current progress of development. Vandana Shiva, an active proponent of peasant women's traditional knowledge in India and involved in the resistance movement against GE biotechnology compares western industrial development with peasant farming practices:

In contrast, for cultures and economies which have practiced diversity, biodiversity is a web of relationships which ensures balance and sustainability. On the grand scale this involves a relationship between

³⁶ Hawthorne, Susan (2002) *Wild Politics*, North Melbourne: Spinfex, p58 and 60; Mander (1991) *op cit*, p187-188. Mies, Maria and Vandana Shiva (1993) *Ecofeminism*, London: Zed, see part 2, "Subsistence V. Development", p55-97; and Shiva, Vandana (1997) *Biopiracy*, Toronto: Between the Lines, p5.

³⁷ Baltaz, Diane (1998) *Why We Do It*, Kitchener: Sand Plains Publishers, p3, 89-104; Cooper Arnie (2003) "Earthly Delights: Cultivating a New Agricultural Revolution: An Interview with Michael Ableman", *Sun*, Issue #230, June 2003, p6; Kneen, Cathleen (1999) *Just Food*, British Columbia: the BC Food Systems Network, pamphlet; Roberts, Wayne, Rod MacRae and Lori Stahlbrand (1999) *Real Food for a Change*, Toronto: Random House, p16-28; and Shiva (1989) *op cit*, p xvii-xviii.

planets and plants, between cosmic harmony and agricultural harmony captured in *navdanya*.³⁸

By working with nature rather than against it, Shiva argues that agrarian synergies support biodiversity. Diane Baltaz, an organic farmer in Ontario, Canada echoes Shiva's position, by noting that the dynamics between people and nature illustrate people's role in production when they work with rather than fight against nature.³⁹ That human development is seen only in its social and material aspects, ignores discourses that speak about different structures of power relations between humans and nature. Resistance to GE biotechnology within the organic/ecological movement comes from experiential knowledge of natural limits and biological diversity as well as a desire to maintain public access to knowledge, land and political institutions.⁴⁰

A suspicious resistance defines the 'biotech revolution' as a fundamental shift which bypasses established practices that are conserving and sustaining biodiversity. Changes made by GE biotechnology at the genetic level suggest a fundamental re-orientation of characteristics found in nature. Modern biotechnology is critiqued as intensifying unnecessary intervention of natural processes, which make recall and containment impossible.⁴¹ Dangerous effects of technology prompt its rejection, suggesting that research and development occur without designing technologies that would induce far-reaching fundamental changes in the environment.

³⁸ Shiva, (1991) "Women's Indigenous Knowledge" in *Ecofeminism, op cit*, p171, The word "*navdanya*" relays a meaning that biodiversity is a relational not reductionist category. It implies context rather than atomized concept and conserving the relationship from which derive balance and harmony, explanation found on p170.

³⁹ Baltaz (1998) *op cit*, p38.

⁴⁰ Kevin Walsh (2001) "The Auctioning of the Food System", *Food Not Lawns*, Montreal: Food Not Bombs/QPIRG McGill, p8.

⁴¹ Egziabher, Tewolde, Vandana Shiva, Mae-Wan Ho, Brian Goodwin, Elaine Ingham, Beatrix Tappeser, Regine Kollek, Nicanor Perlas, Diana Pombo, Gurdail Singh Nijar, Chee Yoke Ling, Dan Leskien (1996b)

Revolution linked to economic and scientific development provokes political responses that open negotiation to examine 'alternative' processes, practices and ideas. When dominant prescriptions, such industrial development or economic growth, are open to dissent, key assumptions can be explored more fully during negotiation. Suspicious resistance refutes the proposition that wide-ranging change of organic matter induced by genetic transfer technology is an appropriate solution to environmental problems. When ecological or organic production face becoming overshadowed by GE biotechnology critical voices frame the issue as another global shift in the social conditions of economic development.

The Like Minded Group had a suspicious approach to biotechnology revolution. This was in part based on its experience with the 'Green Revolution' of the 1960/70s, which was a set of practices to increase agricultural production and more generally, the wealth of nation-states in the South. The 'Green Revolution' made agriculture sectors reliant on chemicals and machinery and re-configured farming to specialize crop production on one or two items (monoculture), rather than continuing with small-scale farms that cultivate a diversified range of crops and livestock. Single-crops, chemicals and machinery increased toxicity in soil and water and weakened soil, water and crops ability to sustain ample levels of nutrients and minerals. As a result of the 'Green Revolution' the stability of food production and markets among G77 nation-states are compromised and risk collapse. The Like Minded Group argued that the failure of the 'Green Revolution' to sustain increases in agricultural production signaled discussion

Biosafety, Scientific Findings and Elements of a Protocol Report of the Independent Group of Scientific and Legal Experts on Biosafety, Malaysia: Third World Network, p18-20.

about how biotechnology would threaten continuation of various agricultural and health-care practices (socio-economic conditions) that these nation-states relied on.⁴²

Ecological views were not explicitly represented during formal multilateral negotiations regarding biotechnology, yet these views served to support a suspicious interpretation of the 'biotech revolution' that had wide-spread popular support. Using popular suspicions of technologically intense production systems, the Like Minded Group advocated for inclusion of the precautionary principle along with concepts of informed consent and public access to information as criteria for regulation and assessment of transgenic technologies invented by industrialized nation-states.⁴³ An outright rejection of GE biotechnology, however, comes from perspectives that promote less invasive technological development, which can be easily recalled if warranted. A suspicious resistance to revolutionary technology is a clear dismissal of GE biotechnology; however, this position does not indicate an absolute rejection of technology, only technology that is incompatible to natural processes and cycles. As noted in chapter two, a guiding premise of eco-centric and animist perspectives is to live in concert with nature and to limit people's conquest of nature. This principle is realized through consensus, a mutually achieved decision, and arrived at after as full a deliberation as possible, with community support.

⁴² Chatterjee, Pratap and Matthias Finger (1994) *The Earth Brokers, power, politics and world development*, London: Routledge, p34-35; Escobar, Arturo (1993) "Planning", *The Development Dictionary*, Sachs, Wolfgang, ed, London: Zed Books, p137; Sachs, Wolfgang (1999) *Planet Dialectics, explorations in environment and development*, London: Zed Books, 149; and Shiva (1993) "Resources" *The Development Dictionary*, p 213 and (1997) *op cit*, p49, 107

⁴³ Egziabher, et al (1996b), p9, 39-41.

D. Purpose – the matter of technologically bypassing nature

Underpinning support for a moratorium was the proposition that ‘biotechnology’ is intended to promote industrial development rather than conserve and protect biodiversity. This argument was not explored during the biosafety talks, but served to encourage resistance to biotechnology because it sought to challenge the dominant norms that established research and development of genetic-based technologies. We can speculate although not demonstrate here, the extent of the existence of a resistance movement that was able to change the process of negotiating environmental issues from a problem-solving format to a redefinition of the term ‘biotechnology.’ I outline three propositions below concerning the intent or purpose of biotechnology, in Table 14, “Is GE biotechnology a solution or a problem?” The purpose of biotechnology to ‘enable’ scientists to enhance nature and open economic opportunities was advanced by the biotech industry. I unpack statements regarding the purpose and intent of GE biotechnology to show how the negotiation process came to represent GE biotechnology as a way of curtailing biodiversity loss. I explore the proposition that GE biotechnology is problematic, so I can examine the subtext that challenges the norm of ‘technological fixes’ and privileges biodiversity over biotechnology.

Table 14
Is GE biotechnology a solution or a problem?

A. Technical Solution	B. Enabling Ability	C. Problem
GE biotechnology provides a technical solution to problems in controlling disease, genetic malformation and environmental distress and crisis. Nature is unpredictable or chaotic and needs to be controlled or managed.	GE biotechnology has the ability to alter genetic codes and usurp natural processes of reproduction, thus enabling its developers to bypass traditional methods of replication and reproduction, which have become hampered. Nature/biodiversity needs enhancement.	GE biotechnology alters genetic character and usurps natural processes; therefore, it is a form of genetic contamination. Nature has been damaged. Nature needs to be protected against invasive technology.
Negotiation explores human control of nature. Technical design corresponds directly to a specific type of problem, celebrated and promoted to its fullest potential.	Negotiation focuses on questions of its enabling and usefulness: a) caution in GE/GMO use; or b) suspicion – suspend use until research validates assumptions regarding risk and/or safety.	GE biotechnology rejected out right, debate shifts to explore organic or ecological forms of development. Negotiation re-focuses on biodiversity shifts and shifts focus from biotechnology.
Coalition among science, commerce and government formed to promote the benefits accrued through technology. Negotiation shaped according to a positive depiction of design and anticipated results. Discussions restrict debate as negotiation resists critical interpretations.	Caution: leads to management approach, negotiating terms and obligations of use. Assessment is cautious, while negotiation proceeds to manage potential and known effects. Suspicion: leads to precaution while developing research to monitor effects on environment; plant and animal reproduction; health effects in animals and humans. Use suspended until additional research indicates safe and beneficial effect.	Debate opens to critiques of technological progress, closing negotiation from discussing the possibilities of relying on technological innovation. Negotiation focuses on precautionary principle. Resistance fosters social movements promoting organic, ecological based production systems and slower forms of development (ie Slow Food movement).
promoters: (BIO (2003); BIOTECCanada (2000); Biotech Knowledge Centre; Canadian Biotechnology Strategy Secretariat (CBSS) (1998); Ouellete and Cheremisinoff (1985); Wooley and Vowles (2000);	Caution: Grace (1997); Rifkin (1998); Tapper (2002); Union of Concerned Scientists; WWF Suspicion: Council of Canadians (2000); Green Party of Canada (2001); Greenpeace (2000) Sierra Club of Canada (2000);	resisters: Anderson (1999); Biotech Action Montreal (BAM); ETC Group (2003); Food Action Ottawa (FAO); Food Not Lawns; GeneAction (2000); Hawthorne (2002); Mander (1991) Seeds of Diversity; WEN (1999)

1. Technological Fixes

I review below a subtext that emerged to reject biotechnology research and development (R&D) but was not represented explicitly by the Like Minded Group or its NGO supporters. This subtext questioned the use of biotechnology, which multilateral negotiations did not explore. Köster's rejection of a moratorium as one of the negotiating

items during the biosafety talks in essence excluded debate that challenged the premise of biotechnology research and development. The rejection of far-reaching technology, such as GE biotechnology or genetic transfer, was expressed in public forums during the same period as the biosafety talks. NGOs and grass-roots groups that resist biotechnology used networks that linked several countries to mount public awareness and debate about corporate and government sponsorship of biotechnology research and development (R&D) and trade.

Resistance movements against GE biotechnology exposed 'technological fix' as a myth by questioning the extent to which people can control nature and judging negatively its exploitation for economic aggrandizement. To promote public influence over nation-state policy decisions, resisters called the purpose and design of GE biotechnology into question.⁴⁴

The debunking of the biotech industry's 'technological fix' began among resistance movements in the South. They argued that GE biotechnology usurps creative processes in nature, which allows industry and commerce to bypass nature, increasing greater human control and ownership over nature.⁴⁵ The proposition that biotechnology 'enables' is about devising processes to artificially manipulate genes, which usurps

⁴⁴ Geman, Ben (2000) "Food Fight: The Growing Grassroots Movement Against Genetic Engineering Hits Boston," *Boston Phoenix*, March 23, 2000 and www.commondreams.org/views/032400-101.htm, Godrej, Dinyar (2002) "Eight things you should know about patents on life", *New Internationalist*, #349, p1, 10, 11-12; Raghavan Chakravarthi (1998) "New patent aims to prevent farmers from saving seed", *Third World Resurgence*, #92, April 1999, p21; (Via Campesina (2000) Biodiversity and Genetic Resources, Via Campesina III International Conference, www.viacampesina.org/imprimer.php3?id_article=42, p1 and 4. See also Levidow, Les and Joyce Tait (1995) "The Greening of Biotechnology: GMOs as Environment-Friendly Products", *Biopolitics: A Feminist and Ecological Reader on Biotechnology*, Shiva, Vandana and Ingunn Moser, eds, London: Zed Books, p133 and 135 and Holm, Soren (1994) "Genetic Engineering and the North-South Divide", *Ethics and Biotechnology*, Dyson, Anthony and John Harris, eds, NYC: Routledge, p48-49.

⁴⁵ Shiva (1997) *op cit*, p3 and 5. See also "The Gene Debate" a special issue of *Resurgence*, #188, May/June, 1998, Monbiot, George, ed., specifically, Paul, Helena, "Colonization of Life", p15-15;

nature's creative processes into the control of the biotech industry. According to Aboriginal activists working in the South, an holistic view of nature is threatened by the proponents of biotechnology who seek to own and control the genetic makeup of a region that has been developed by its 'indigenous' inhabitants.⁴⁶ Victoria Tauli-Corpuz, an Aboriginal activist working against the biotechnology industry's appropriation of traditional knowledge argues that GE biotechnology is a continuation of western colonial politics:

With the invention of technologies which control and re-engineer nature, human beings have succeeded in setting themselves apart from nature. This is what happened after the industrial revolution and now with the biotechnology and information revolution. Plants, animals, and humans, are reduced into their genetic components and their integral wholeness is not important anymore. These separate components can be manipulated and engineered at will and for commercial purposes.⁴⁷

Resisters in the South assert that western knowledge, development and technology reshape its form of theft and imperialism into genetic piracy. Worldviews that promote biotechnology and 'Southern' and 'animist' worldviews are incompatible, especially given the long history of western colonial imposition. For them, the purpose of biotechnology is about something other than biological conservation, as the design of GE biotechnology does not respect the diversity of biotic life that exists.

Industrialized nation-state sponsorship of IPRs used to help the development and trade of GMOs was critiqued by resistance groups as a form of neo-colonialism, which they argued were used to encourage greater access of biological matter and limit public access of genetic material and knowledge about biotic life. For example, Vandana Shiva

Simpson, Alan (1998) "Soul Ownership", p12-14; and Lubchenco, Jane (1998) "Nature, Science and Society", *Resurgence*, #190, September/October 1998, p12-18.

(1997) argues that GE biotechnology R&D encourages the patenting of life, allowing an elite few authority over the sources of life. In defining GE biotechnology as part “biopiracy”, Shiva, exposes biases inherent in multilateral agreements that support genetic manipulation, by turning all biotic matter (flora, fauna and human) into economic resources accessible to only a few people through ownership.⁴⁸ The proposition that GE biotechnology is part of neo-colonial supremacy rallied resistance to protocols established in WTO agreements as well as the regulatory framework outlined in *Agenda 21* chapters 15 and 16, CBD and CPB.

Resistance to genetic transfer technology challenges the purpose and design of GE biotechnology, calling into question its enabling capacity and assumptions that allow people to alter nature at the genetic level.⁴⁹ Whose definition of the environmental problem determined GE biotechnology as a solution?⁵⁰ What are the objectives of ecological ‘development’?⁵¹ Do ecological ‘solutions’ counter invasive and controlling technologies? While these questions encourage debate about the intent and purpose of technological solutions, they also challenge anthropocentric biases regarding humanity’s relationship with nature. Negotiation that considers the design, purpose and ability of GE biotechnology to control life guides exploration to review how technological problem-solving has not led to ecologically sustainable practices. The debate regarding the

⁴⁶ Tauli-Corpuz, Victoria (2001) *Biotechnology and Indigenous Peoples*, download from Third World Network website March 2001, www.twinside.org.sg/title/tokar.htm, p7. Writing on behalf of Igorot people in the Cordillera region of the Philippines.

⁴⁷ Tauli-Corpuz (2001) *ibid*, p7

⁴⁸ Shiva (1997) *op cit*, , p2, 5, 22-24.

⁴⁹ Question asked by Kneen (1999) *op cit*, p2.

⁵⁰ Question asked by Beth Burrows during, “Citizens’ Forum: Genetic Engineering” Saturday January 22, 2000, UQAM, Montreal, a public forum organized to shadow EX-CoP proceedings of the biosafety talks. Organizers of this public forum facilitated a demonstration outside the CBD Secretariat Offices, the site of formal negotiations.

⁵¹ Presentation made by Maria Jose Guazzelli, comparing ecological with technological farming in Brazil, Science and the Public Good conference, February 16, 2001.

problems of GE biotechnology raises the question of whether genetic transfer technology should be used to sustain biodiversity.

Two days before the resumption of the Ex-Cop meeting in Montreal, 2000, Chee Yoke Ling, from the Third World Network, summarized the Like Minded Group's resistance to GE biotechnology.

A moratorium on biotechnology [asserts] society's basic right to say no ... [that] we do not want nature to be manipulated; we want safe food; and we don't want to be experimented on. Genetic engineering offers the greatest threat to democracy and biodiversity. The Rio Summit offered a chance to change sustainable development, [but] there was no fundamental change. [Therefore the] basic issue about GE biotechnology is a right to say no; apply the precautionary principle; that GE biotechnology violates all the laws of life and the issue of health is ignored or sideswiped by presentations of genetic therapy [which GE biotechnology promises]. The fight against GE biotechnology has been ten years in the making, with three years to say there is a need of a protocol.⁵²

Ling's rejection of GE biotechnology concerns two facets of global resistance within the environmental movement: promotion of democracy and biodiversity as parallel principles. Ling's assessment of the biosafety talks hinged on whether these talks included dissenting views that promoted a ban on GE biotechnology. She argued that protection and conservation of biodiversity would be impossible if GE biotechnology continued to be developed. Implied in her plea for democratic dissent against the promotion of GE biotechnology was the idea that the biosafety talks ought to abide by principles of democratic debate, which would allow for an absolute rejection of GE biotechnology. Since to Ling, the majority of the world's people were suspicious or rejected biotechnology in the countries supporting biotechnology development,

⁵² From notes taken during Chee Yoke Lee's presentation at a public forum, "Citizens' Forum: Genetic Engineering" Saturday January 22, 2000, UQAM, Montreal. These statements refer directly to Lee's speech. Lee was legal advisor a member to the Like Minded Group and an associate of The Third World Network.

specifically the Miami Group, should represent the interests of their citizens rather than the interests which dominate, specifically corporate bio-prospectors.

Chee Yoke Ling's statement helped situate my analysis of the resistance movement and its role in multilateral negotiation. How could an understanding of biodiversity based on its parallel with democracy affect multilateral negotiation? If the biosafety talks included claims previously silenced and rejected, could the negotiation process re-frame GE biotechnology as a discourse of biopiracy? I discuss below the subtext that supports 'biodiversity' as a means to challenge 'biotechnology' so I can show how its meaning shaped a resurgence of political resistance to GE biotechnology.

Simply stated, the principle of 'diversity' ensures that life continues and can be found in both nature and society. For example, Susan Hawthorne (2002) draws from the work of Vandana Shiva and other feminist ecologists/activists to argue against the technologicalization of social, economic and political affairs. Hawthorne calls for global resistance to corporate 'harmonization' based in the promotion of social, environmental and ecological diversity.⁵³ Jerry Mander (1991) asserts that the rise of technological problem-solving parallels the disappearance of Aboriginal Peoples, their ideas, livelihoods and culture from western viewpoints.⁵⁴ The absolute rejection of GE biotechnology and demands for a moratorium are based on a subtext that supports bio/diversity.

⁵³ Hawthorne (2002) *op cit*, p4, 19 and 369.

⁵⁴ Mander (1991) *op cit*, p3,6-7.

2. Reliance on Diversity instead of Technology

A subtext to the rejection of biotechnology is respect for diversity in nature and by extension, a rejection of corporate control over nature and preservation of nature's autonomy in creativity. Their aim is protection of access to knowledge, processes settings and conditions that foster diversity of life.⁵⁵ Promotion of biodiversity involves rejection of technological intensification because it is invasive and depletes the sources of creativity found in 'natural' environments thereby hampering creative and evolutionary cycles.⁵⁶ This argument asserts that biological diversity that will ensure human survival, although people are not immune from the dangers found in nature. Promotion of biodiversity recognizes that ecological problems are a result of human misuse and damage of nature's diversity; therefore people's comprehension of their natural surroundings are key to encouraging respect for the biological region that sustains them.

Rejection of GE biotechnology resists the idea that nature can be organized into gene banks, protected by patents, monitored by judgements of costs and benefits.⁵⁷ According to Aboriginal philosophy, biodiversity can be protected if people's connection to the land (nature) is close enough to learn and be guided by the land and other life on which they depend upon to live. Having deeper connections with nature is considered to be a key element that will help people maintain and enrich the diversity that is part of nature as well as society. Resisting, relating, knowing the land and embracing diversity are understood as protections against 'biopiracy'.

⁵⁵ Indigenous Peoples Council on Biocolonialism – IPCB (2002) *Indigenous Peoples Caucus Statement*, www.ipcb.org, p6.

⁵⁶ Anderson (1999) *op cit*, p85-86; Kneen (1999) *op cit*, p10; Mander (1991) *op cit*, p 36.

⁵⁷ Harry, Deborah and Franck Dukepoo (1998) *Indians, Genes and Genetics: What Indians Should Know About the New Biotechnology*, Nixon: Indigenous Peoples Coalition Against Biopiracy, pdf file from www.ipcd.org, p7; Tauli-Corpuz (2001) *op cit*, p6; and IPCB (2002) *ibid*, p6-7

Shiva argues that traditional knowledge employed by peasant women suggests the role of humans is not to control nature, but to encourage natural processes that foster diverse varieties of plants and animals. This orientation is similar to animist beliefs of living closely with the land, as this belief accepts creation that comes from the land rather than from scientific inventions or manufactured goods.

The claim of 'creation' of life by corporate scientists is totally unjustified, it is in fact an interruption in the life flow of creation. It is also unjustified because nature and Third World farmers have made the seed that corporations are attempting to own as their innovation and their private property. Patents on seeds are thus a 21st Century form of piracy, through which the shared heritage and custody of Third World women peasants is robbed and depleted by multinational corporations, helped by global institutions like GATT.⁵⁸

Rejection of GE biotechnology comes from the experiences and insights of people who were colonized and remain displaced on the margins of international politics. The rejection of GE biotechnology is not just about the problems of access to food, medicines, land and waters on which we live. The rejection is about the full agenda of applications of GE biotechnology and the patent regimes that make knowledge and sources of life into private property.

Rejection of western superiority and (neo-)colonial expansion is also a feature of anti-colonial resistance in the South. Writing on behalf of Movimiento Autoridades Indigenas de Columbia, Lorenzo Muelas Hurtado, describes the source of his resistance:

For us, for me personally, if our communities are really interested in protecting what is ours by Higher Law (*Derecho Mayor*), and taking into account that what they are messing with is of substance, that it is the essence, that it is that power, that wisdom of the indigenous world's knowledge, there is no other way, no other road, no alternative for that protection, but TO DENY THAT ACCESS, to demand a stop to all

⁵⁸ Shiva (1993) "Women's Indigenous Knowledge", *op cit*, p172

activities of research and collection of resources and knowledge within our territories.⁵⁹

Resistance to colonialism also involves denying corporate (and industrialized nation-states) access to everything that Aboriginal and indigenous peoples know, relate to and survive on. Access to knowledge, tools, skills, and material sources should not be given to people working on behalf of biotechnology industry because their interests in these resources are incompatible to the interests of Aboriginal Peoples throughout the world.⁶⁰

Political leaders unaware of their place in their countries' colonial history tend to deny the role that colonialism plays in environmental decline. Haikai Tane (2000) outlines the problem of colonial ignorance in the South Pacific region of Oceania that face Koorinesian, Melanesian and Polynesian peoples.

In most places, degraded, unstable and eroding rangelands and riverbeds are neither natural nor necessary. They are cultural artefacts maintained by resource mismanagement of mountain watersheds and riparian ecosystems. Stuck in their colonial mythologies, resource managers persist in spraying, burning, bulldozing and eliminating naturally regenerating riparian and rangeland communities. They have become very proficient at turning resource prospects into environmental problems for which they alone claim to have the answers.⁶¹

Tane argues that biodiversity is a resource coveted by scientists and businessmen, eager to expand corporate assets by reaching into new territories and frontiers. GE biotechnology facilitates this expansion, by taking from people the sources of life from which they depend.

Resistance to GE biotechnology challenges the reliance on technology to solve problems of waste, ignorance, inequities and mis-management.

⁵⁹ Hurtado (1999) *op cit*, p10.

⁶⁰ As a reminder, the term 'Aboriginal' or 'Aboriginal Peoples' refers to indigenous people in Canada and US and theorists working within indigenist literature and term, 'indigenous' refers to peasants living in a 'third world setting'.

Sadly for society at large, in the field of natural resource management, the industrial, scientific paradigm has degenerated into a problem solving, technological fix-it kit. Reviewing cultural attitudes and changing social paradigms is the furthest thing from the minds of most resource managers. By focusing on the publicly conspicuous symptoms of environmental degradation, (eg. pests, weeds and indigenous biodiversity) the natural resource specialist is rewarded by popular acclaim and generous funding for projects that side-step or ignore the widespread destruction of complex environmental systems⁶²

Technology employed in agriculture, to grow resources for food, shelter and clothing creates a range of problems. Environmental management reduces nature to its elemental parts (chemical, genetic, and energy conversions) when it attempts to use technology as a way of re-building damaged ecosystems. The tragedy here is that environmental distress, damage and displacement most affect people who live closely with nature. The tragedy is also about destruction of knowledge, skills and ways of living in concert with nature.

Peoples Global Action (PGA) a coalition established by peasant, indigenous and Aboriginal Peoples, counters the political dominance of nation-states and corporations to control the environment and its resources. Their strategy of resistance refutes the authority of nation-states to properly manage the environment:

Land, water, forest, wildlife, aquatic life and mineral resources are not commodities, but our life support. For decades the powers that have emerged from money and market have swelled their profits and tightened their control of politics and economics by usurping these resources, at the cost of the lives and livelihoods of vast majorities around the world. ... The result is environmental devastation, tragic and unmanageable social displacement, and the wiping out of cultural and biological diversity, much of it irretrievably lost without compensation to those reliant on it.⁶³

As a result these contributions to solving ecological problems become hampered by colonial imposition, theft and ignorance. These circumstances are about the violence and

⁶¹ Tane, Haikai (2000) *Colonial Myths-Cultural Realities: Sustainable Development in the South Pacific*, Te Karere Ipurangi Maori News Online, <http://maorinews.com/karere/comment/colonial.htm>, p7.

⁶² Tane (2000) *ibid*, p8.

displacement resulting from colonial expansion, currently addressed as modern development designed and promoted by western elites.

II. Where is Nature

In this chapter I analyzed the propositions that defined biotechnology, which were used to support or refute regulation of biotechnology and GMOs during negotiation at state-led multilateral conferences from 1988-2000. I argued that multilateral negotiations of the 1992 Convention on Biological Diversity (CBD) and the 2000 Cartagena Protocol (CPB) were biased towards acceptance of technological development; however, a critique of biotechnology was accepted only if it did not challenge anthropocentric ideology to control and exploit nature for profit. The negotiation process was geared towards collective decision-making among nation-states, but its participants did not share common purposes, goals or interests. Dominant interests reflect technological development and anthropocentric control and exploitation of nature for corporate profit, whereas subordinate interests reflect ideas and interests critical of biotechnology and its connection to biodiversity conservation. Nation-states presented conflicting options, which when explored tended to confine discussions to options based on prior negotiated regimes thereby reinforcing dominant positions. Instead of achieving a 'consensus', multilateral negotiation formulated decision-making based on acceptance of ideas presented by the majority of participants.

My examination revealed that propositions about biotechnology advanced by dominant interests closed exploration prematurely, while propositions presented by the critical interests opened negotiation to further examination. If a proposition of

⁶³ PGA – Peoples Global Action (1998) *Peoples' Global Action Manifesto*, www.agp.org.

biotechnology fostered exploration, debate was able to expose counter arguments and reveal perspectives often eclipsed by dominant perspectives. If propositions on biotechnology reflected dominant interests, debate tended to be limited, which shut down exploration before dissenting views could speak on the matter. The process of exploration is a key element in negotiation as it is the site in which ideas were introduced, suggesting that the basic premise of the argument was accepted and so proceeded on to further examination. If dominant perspectives refused to discuss a matter that was an interest to subordinate parties, negotiation shifted to incorporate goals set by the dominant interests.

How biotechnology was defined influenced how nation-states decided questions about regulation of GE biotechnology. The process of negotiation suggests to me decisions are determined by 1) the willingness and flexibility of dominant perspectives to listen and accept critical or dissenting views; 2) the degree of resistance that critical perspectives are able to withstand from dominant interests' pressure; and 3) the ability of subordinate perspectives to present arguments in support of their interests rather than presenting a critique of dominant perspectives, facilitated by inclusion of perspectives marginal to multilateral negotiations. The presence of animist views was marginal and less apparent than eco-centric views. These perspectives supported critical intervention and buttressed subordinate interests when resistance to trade interests was crucial.

If dominant perspectives are not willing to change, listen to or acknowledge positions that challenge their worldview, these ideas are ignored or rejected and are not represented during negotiations. Propositions presented by critics of biotechnology were unsuccessful in their attempts to expose the intentions of promoters of biotechnology to sabotage negotiation. Resistance to biotechnology was insufficient for critical

perspectives to initiate negotiations, as this seemed to indicate dissent from the majority opinion. Interests presented in a positive fashion, so as to appear to cooperate with the collective process of decision-making, facilitated their success. Arguments cast in positive rhetoric also served dominant interests and made it difficult to accuse these parties of sabotaging the objective of negotiating either a biodiversity convention or a biosafety protocol.

I argued in chapter two that an ecologically sensitive form of negotiation is a process of listening, speaking and writing. I noted in chapter three that mainstream environmental negotiation is primarily tasked as a problem-solving process, whereby nature is relegated to an exploitable material subject. I have also argued that many sites and levels of discussion influence negotiation. My analysis allowed me to consider the way in which an issue is framed, thus revealing how specific propositions open, close or shift focus during negotiation. Therefore, if the process of negotiation is more open to exploring an issue by including other perspectives, then the resolution may reflect a multiplicity of views. If negotiation is closed to accepting multiple viewpoints, a negotiated outcome reveals a partial consideration of the issues under review. If negotiation ignores certain viewpoints, the process of agreement is biased and shifts discussion away from acceptance of these views, thus limiting exploration of other possibilities.

In this chapter, I explored whether negotiation can become inclusive of animist and eco-centric perspectives if all propositions were explored. The negotiation process tended to be closed to critical intervention if propositions about biotechnology threatened to reject biotechnology completely. Decisions were based on acquiring the majority of

opinion, which in the case of biosafety, tended to be biased towards a managerial position that balanced benefits and risk, thus allowing for biotechnology to continue with some reservations and limits placed on its transboundary handling and distribution.

I examined various propositions about 'biotechnology' during the period of multilateral negotiations from 1988 to 2000 to understand how definitions of biotechnology were used to assert a specific proposition that groups used to argue for, against or to manage the development and use of GE biotechnology. I examined four propositions about biotechnology to analyze how the process of negotiation progresses towards collective decisions on nation-states' obligations and responsibilities concerning environmental issues. The purpose of this examination was to contribute to multilateral environment negotiation theory by examining the practice of negotiation in how process and substance influenced the outcome of negotiations.

The Rio Summit negotiation process facilitated by international cooperation fostered a problem-solving strategy focused on using newly developed technology to conserve and protect the Earth's natural diversity. GE biotechnology was then defined as an enabling technological solution to problems of extinction of species and degradation of natural habitats. Although circumstances and causes of biodiversity loss were understood as complex, scientific, corporate and intergovernmental officials promoted GE biotechnology to solve depleting biodiversity and the human insecurity it involved.

During the interim period of negotiation regarding GE biotechnology the G77 and NGOs lobbied to re-negotiate the terms and conditions of the Convention on Biological Diversity to respond to the distinctive features of GE biotechnology. They rejected the proposition that GE biotechnology was 'an enabling solution;' arguing instead that

'biotechnological fixes' do not work because the design of biotechnology was flawed. Their proposition was that GE biotechnology was distinctive in design and purpose; arguing that tampering with the genetic codes of living organisms and bypassing natural barriers was inherently dangerous. This proposition challenged the dominant thesis that biotechnology was enabling and the solution to the problems of economic development, which was a cause of depleting biodiversity. Critics of biotechnology argued in favour of biosafety regulation, although the meaning of biosafety was contested.

During the biosafety talks the G77 successfully framed the debate about GE biotechnology in terms of it not being problem-free and framed biosafety as protection of biodiversity, which the majority accepted as vital to people's survival. The Biosafety talks could not debate the purpose or scientific premise of GE biotechnology, although delegates accepted the proposition that GE biotechnology was potentially dangerous. The proposition that 'biotechnology' is inherently flawed and a problem for biodiversity was sufficient to shift the debate for the majority of nation-state negotiators to agree to regulate biotechnology.

The scope of biosafety became biased towards trade interests as negotiations progressed. The scope was already constricted by the terms outlined in the CBD, yet this was used by industrial nation-states in both European and Like Minded Group to focus negotiations on responding to evidence of adverse effects from GMOs, rather than from biotechnology. Although relations between the European and Like Minded Group were antagonistic, their focus helped to frame the biosafety talks on regulating GMOs that may adversely affect the environment and human health. This premise drew on the dominant view that defined nature as an economic resource and commodity whose enhancement

would benefit the nation-state's economy by increasing the range of products available to people for basic survival and well-being.

Ignored by this dominant view were perspectives that challenged human control over nature. The G77 and NGOs critiqued corporate control over nature challenging the use of patents and trade rules to govern development in biotechnology and its connection with conservation of biodiversity. The implications of this are about relying on technology to conserve and protect biodiversity, through genetic alteration and patents regarding access to genetic information and uses of GMOs. While regarding nature as a source of life, this view suggested that gene transfer technologies manipulate the basic building blocks of life. Implied in this perspective was a warning that to tamper with these elements would jeopardize the processes in nature that provide the sources of human existence. Although this critique of transgenic technology was overlooked, definitions of key concepts were debated throughout negotiations, refining the meaning of these concepts to address the adverse effects of using GMOs. Major differences were sidelined, overlooked or included in the text, leaving contradictions and inconsistencies in the regime.

Trade interests presented nature as a material resource, offering benefits to the world's human population while also re-presented as insufficient and damaged, thus in need of specialized human-generated technical assistance. Although critics of biotechnology presented nature in ways indicating its diversity, interconnectedness and unpredictability, overall nature was not represented as an autonomous actor and subordinate interests could refute the material aspects of nature that were important for human existence. In the case of GE biotechnology, multilateral negotiation process

ignores political features of human relationships with nature in order to proceed to solve problems of contemporary economic and industrial development.

The proposition that 'biotechnology' is a problem for biodiversity did not refocus the debate to challenge the dominant norm that supports technological development, and as a result the G77 could not frame the negotiation process to discuss a moratorium on biotechnology development and trade. Calls for a moratorium challenged directly the philosophical and epistemological claims of biotechnology's promoters, who fostered its invention and design, and who framed genetic manipulation as 'the' solution to environmental problems as well as to disease and hunger.

A way you can help is to create space for our voice, advocate for it, add that voice in whatever ways are open to you. I make that challenge when I talk to different groups. I say: "You can ask for my thinking, but what are you prepared to do about it?" That's especially true for people who have any sort of power in the dominant society. I say to them: "There's no point in sharing this with you, if it's only going to excite you for a day and then you go your way. You're wasting my time and your time. If you're willing to do something I'm willing to talk with you."¹

Towards Ecological Negotiation

I. Negotiation Without Nature

The central question of this thesis concerns how ideas about human relations to nature influence the outcome of multilateral negotiated regimes when responding to conditions of the world's natural environment. Multilateral environmental negotiation is a process of decision-making among nation-states to produce a treaty, yet these decisions concern a wider framework of influences, some of which challenge nation-states' central authority to represent matters that are contested. A problem of multilateral negotiation lay in representation, in that nation-state delegates cannot convey all expressions which frame questions about humanity's role in contributing to biological diversity losses. The purpose of multilateral environmental negotiation, as theorized, is to reach a 'consensus' collectively among nation-states in response to the negative impact of industrialization on the environment. The practice of multilateral environmental negotiation is predominantly elitist and anthropocentric; it yet appears to combine some, but not all aspects of 'interest-based' and 'environmental diplomacy'. Nation-states' delegates have authority to agree to terms and conditions as set out in a convention text, regardless of citizens' approval. If dissent is voiced during negotiations, the issue is set aside, to be dealt later by nation-states that have ratified the treaty. Furthermore, not all nation-states have equal

¹ Jeanette Armstrong quoted in Jensen, Derrick (2002) *Listening to the Land*, NYC: Context Books, p299.

authority, as in the case of the US delegation, although US delegates do not have voting power, they can participate, which affects the outcome. If conflict is not explored fully, decisions are biased toward the dictates of dominant nation-states, supported by their allies, both nation-states and non-state actors that controlled how the debate was framed.

I argued that multilateral environmental negotiation can be a forum to explore diverse and contested ideas, as long as these ideas do not challenge the dominant relations among nation-states and between humans and nature, which sustain an anthropocentric bias to control and exploit nature for human profit. Perspectives often ignored or that are marginal to mainstream discourse can affect how issues are debated by dominant perspectives. When animist, indigenist and eco-centric perspectives challenge the dominant perspective, which seeks to control and exploit nature for profit, debate becomes limited by focusing on interests important to dominant perspective. Ideas are represented primarily by nation-states, forming into coalitions (blocs) to arrive at a 'common' purpose. Non-state actors influence nation-states agenda by aligning with a particular bloc, as was the case of the coalition of NGOs that were marginal to the Rio Summit process but regrouped to support the Like Minded Group during the biosafety talks. Although NGO access was limited by the Chairs of the biosafety talks, the preference of the Like Minded Group to include a broader base of actors to shift power dynamics from G8 and industrialized nation-state dominance suggests that the Like Minded Group applied a 'new multilateralism' negotiation approach. The biotech industry aligned with the Miami Group, both of whom advocated a position that resisted biosafety regulation and favored WTO standards of risk assessment management. The Miami Group applied a positional negotiation strategy and according to the other nation-

state blocs the Miami Group used obstructive tactics by refusing to discuss biosafety regulations unless the regulatory format did not interfere with liberal trading rules adopted by WTO nation-state members. The European and Central East European Groups represented a managerial approach in balancing between risks and benefits of biotechnology products, as advocated in intergovernmental organizations and environmental conservation groups. Their actions suggest that European countries generally applied an 'environmental diplomacy' approach to their negotiation strategy, even though the Europeans and CEE Groups acted independently and supported different initiatives.

My analysis of arguments presented during multilateral environmental negotiation confirms my argument that ecological viewpoints are not represented during negotiations. I showed that negotiations were primarily between two distinct worldviews, developmentalist and environmentalist which eclipse other views, such as eco-centric perspectives, from advocating a different course of action, that does not rely on technological and economic development or governmental management of natural resources to conserve and sustain biodiversity. A developmentalist view, represented by the Miami Group, promoted science as a means to assess risk and apply its knowledge to invent technologies designed to enhance nature by enabling people to exploit nature for its creative and reproductive capacity. According to this view, nature is passive, imperfect, and malleable, which justifies human interference in a belief that technological development will enhance nature and improve the human condition. An environmentalist view, supported mainly by the European Group, situated modern development as a cause of biological decline, thus seeking regulation and compliance to reform negative practices

of international commerce and industry. Accordingly, nature is seen as bountiful, alive and a diverse source for human survival; yet excessive consumption and waste continues to damage nature, thus its need for protection against the indulgences of developmental interests. The Like Minded Group and NGO coalition proposal of a moratorium seemed to reflect ecological principles, as noted in a 'subtext' identified in chapter 5. When the biosafety talks proceeded after the moratorium was removed from the agenda, the Like Minded Group represented conservationist goals, falling within the spectrum of an environmentalist position, even though the Like Minded Group maintained its suspicions about transgenic technology. Eco-centric and animist perspectives examine multiple sites and facets of conflict to uncover the essence of humanity's relationship with nature and emerge in my account when debate is open to challenging mainstream assumptions about humanity's political role in relation to nature. The practice of multilateral negotiation responds to conflicts between two anthropocentric perspectives of developmentalists and environmentalists, which pushes aside conflicts that eco-centric and animist perspectives vocalize.

Anthropocentric perspectives situate humanity at the centre of politics, where conflict is about distribution and use of natural resources, negotiated and administered through transnational state-led institutions. Developmentalist and environmentalist views dismiss ecological understandings; therefore, both dismiss the premise that recognizes nature as a political actor present at the negotiating table. As a result, multilateral environmental negotiation follows a process of managing ideological contests between advocates of industrial progress and proponents of environmental conservation, instead of

curbing losses to the Earth's biodiversity and allocation of resources among industrialized nation-states and corporations.

I introduced two ecological perspectives, ecological feminism and indigenist ecological ideas, which reflect local, diverse and multiple sources of knowledge, and that humanity is not the sole creator and authority of nature, while recognizing that nature is capable of voice and expression. These theoretical perspectives challenged anthropocentric norms to present an understanding of conflict that is structured by arrangements that seek authority through domination and control over people identified as living within nature. I also included 'third world' indigenous perspectives, to understand how international relations between nation-states are influenced by power dynamics of colonialism and conquest. According to these views, nature's creativity and vitality has been diminished by separation of humans from nature and the privileging of technological intervention to solve problems incurred by human domination and control over nature. Thus ecological views resist development of intensive technologies that encroach on the creativity and diversity found in nature.

My examination of ecological feminism and indigenist perspectives contributed how negotiation theory and practice can be transformed to resist anthropocentric bias. In advocating a closer connection to nature, these perspectives argue that nature is an autonomous actor. Accordingly, nature has its own voice, which we can learn to listen when developing closer connections. This presentation allows for nature to be included in environmental negotiations as an 'active subject' instead of a material resource that is necessary to exploit for the development potential of nation-states. My examination allowed me to locate perspectives hidden in debates about biotechnology so I could

analyze the extent to which eco-centric perspectives are presented and represented during multilateral negotiations.

II. What was in conflict?

I argued that different ideas about GE biotechnology were not resolved through multilateral negotiations, despite the production of two regimes. Many perspectives are present at the negotiating table, but there was an inequity in determining whose perspective was accepted as legitimate. I argued that the early period of negotiation was organized among elite members of intergovernmental organizations bringing together developmentalist and environmentalist perspectives. The absence of other perspectives influenced an outcome that represented these perspectives' interests. A developmentalist view promoted technological innovation as a solution to biodiversity loss. This view established *Agenda 21* chapters 15 and 16 regarding the implementation of GE biotechnology in environmental management. Mainstream environmentalist positions manage the excesses of economic development by balancing commercial and environmental conservation interests. In collaboration with transnational institutions the World Conservation Union (ICUN) and World Wildlife Fund (WWF) established the Biodiversity Convention (CBD), a regime that fosters international market acceptance of GE biotechnology in response to protecting biological diversity. Conflicts were mainly ideological among its participants, which highlighted conflicts among nation-states, shaped by hierarchical dominant/subordinate relations between industrialized and 'non-industrialized' nation-states. Anthropocentric conflicts were not discussed during state-

led negotiations rather conflict were framed as differences among nation-states' in policy goals regarding their management of natural resources.

Both developmentalist and environmentalist views accepted GE biotechnology as a vehicle for enhancing nature. Horizontal gene transfer was presented as a means to improve human capacity to cultivate material sources required for economic development and market growth. It was also suggested that modern biotechnology would conserve the genetic resources needed to sustain the necessary levels of genetic diversity, albeit confined to laboratories. Loss of biological diversity in natural environments was no longer a problem if diversity could be retained scientifically. In contrast, an ecological view promoted greater connection with nature and recognizing it is erroneous for people to try to control and own nature's material resources. Ecological perspectives seek to reverse technologically intensive approaches in the cultivation of basic human necessities, proposing to limit research in its technical manipulation of nature. This view rejected technological interference with the building blocks of life because it would cause havoc with biological diversity., Ecological positions were ignored during the Rio Summit round of negotiation as a result of its promotion to curb GE biotechnology development.

Since then multilateral negotiation responded to critiques about the sunny depiction of GE biotechnology by accepting the need for regulations of international trade and use of GMOs/LMOs. I argued that the interim period of negotiation framed the biosafety talks narrowly to negotiate the adverse effects of modern bio-technological innovation, drawing from the CBD regime that specified the transboundary movement and safe handling, use and transfer of biotechnology. The framing of GE biotechnology

regulation focused on how GMOs/LMOs could threaten to disrupt traditional agricultural methods and genetic integrity of plants and animals in natural environments. Biosafety deliberations re-negotiated the meaning and significance of GE biotechnology, shifting the emphasis away from developmentalist interests that depicted biotechnology as safe and the same as traditional methods. While promotion of GE biotechnology continues to be the prevailing objective of mainstream developmentalist and environmentalist groups, the biosafety talks were open to explore GE biotechnology beyond questions of safe handling and use. The G77 and later the Like Minded Group wanted to protect traditional socio-economic practices. These practices were threatened by the 'biotech revolution'. The Like Minded Group noted that of the introduction of GMOs and the pressure by G8 nation-states to industrialize agricultural production encouraged greater technological intensification and reduced existing alternatives to biotechnology. The Cartagena Protocol is not the comprehensive regulatory regime sought by the Like Minded Group and the Central East European (CEE) Group as it excludes pharmaceutical and aquacultural GMOs, nor does it inhibit development of GMOs. The Cartagena Protocol fosters exchange of information regarding the genetic composition of GMOs between exporter and potential importer nation-states.

Broadening the scope of negotiation to include other perspectives correspondingly opens the process to explore a broader range of issues. This line of inquiry became apparent when the promotional claims of GE biotechnology could no longer be substantiated due to the scientific evidence presented by the NGO coalition. The definition of GE biotechnology was redefined, distinguishing it from traditional breeding approaches, thus focusing attention on the products of scientific innovation and their

usefulness in agricultural sectors of international economy. Despite the introduction of ecological perspectives that biotechnology was a recent invention and quite distinct from natural and traditional reproductive processes, negotiations shifted to managing disagreements resulting from different propositions about safe use, transfer and handling of GMOs/LMOs. At conflict here was the ability of nation-states to determine if GMOs/LMOs could be imported safely. Negotiation produced a regime to manage the interests between exporter and potential importer nation-states, shifting emphasis away from questions of liability, compensation and redress in the event of a catastrophe resulting from technological modification.

During the biosafety talks nation-state blocs solidified into three different positions. The Miami Group promoted the development and trade of biotechnology and GMOs. The European Group wanted to manage the risk and benefits associated with this new and different technology and its products. The Like Minded Group resisted the development and trade of biotechnology arguing in favour of supporting biodiversity and socio-economic practices that sustain and conserve biodiversity. 'Agreement' among parties came about by each Group (Miami, European, CEE, Like Minded and Compromise) accepting a piece of each other's position. In essence, compromise not consensus was the result of multilateral environmental negotiation. Issues that could not be resolved were sidelined into the regime preamble or postponed to future meetings among nation-states that have ratified the Protocol. Consensus was not achieved; rather, the outcome reflects a majority decision, and allows international trade of GMOs if these considered safe to use. The outcome also invokes both scientific and precautionary assessments, which are intended to restrict GMOs that have an adverse effect on the

environment and people's health. The biosafety talks did not facilitate debate on whether to use biotechnology, but focused on how to manage biotechnology products given the evidence of 'potential' hazards. By not proceeding with the G77/Like Minded Group's proposed moratorium, the majority of nation-states bypassed perspectives that would have challenged the norm to develop technologies to respond to environmental crisis, such as the loss of biodiversity.

When ecological perspectives addressed the adverse impact of GE biotechnology on the environment and its socio-political considerations of traditional agriculture the debate shifted to explore the basis of decision making that brought GE biotechnology into existence. While the question challenged assumptions about technological invention, ecological perspectives were ignored, since this line of inquiry emphasized the inherent dangers of GE biotechnology, rather than exploring the criteria that determined what the adverse effects of GMOs/LMOs could be. Ecological preference for simple tools, as practiced for example in organic and subsistence agriculture, that do not hinder natural processes could still be advanced, since this preference accepted the use of technology to develop natural resources for the marketplace and did not challenge the dominant view of development.

Negotiation of GE biotechnology in both CBD and CPB regimes did not explore questions that challenged the assumptions of technological solutions and the necessity to control reproduction and creation. These questions focus on human conflicts against nature, or quests to dominate and control nature, either by conquest or colonialism. Assimilation of nature's creativity as a human construction points directly to the concept of biotechnology itself by highlighting the motives that seek to reorganize genetic

sequences, to manipulate germplasm to reflect specific human requirements and to modify nature to serve the material interests of industrialized nation-states. Human conflicts with nature were not explored with sufficient interest because this idea would provoke exploration of anthropocentric ideology in how it uses technological development to determine the course of nature.

III. Two negotiation discourses – differing views, diverse objectives

My departure from state-centred discourse reveals a different way to conceptualize nature's presence at the negotiating table. This difference involves challenging how nature is represented during negotiation. This departure relies on listening to expressions from non-human and non-western perspectives and in learning how to articulate these messages in a textual forum. Writing about human relations with nature opens space to discuss how these relationships structure our actions. Ecological negotiation opens negotiation to confront anthropocentric bias, challenging its propositions about nature.

My examination of human relations with nature reveals two discourses in multilateral negotiation: an anthropocentric discourse that structures negotiation to manage diverse claims and solve problems of resource allocation. Overshadowed by environmentalist and developmentalist debates, ecological discourse to negotiation situates humans in direct correspondence with their non-human surroundings. Juxtaposing these two negotiation discourses allowed me to understand how anthropocentric relations with nature differ from ecological relations in its influence on negotiation. My examination of multilateral environmental negotiation indicates to me

that ecological discourse is not represented at the negotiation table and remains hidden in public debates within some perspectives critical of biotechnology. I described this hidden voice as a 'subtext' that I conceptualized various points at which an ecological perspective could enter into multilateral negotiation. The success of ecological perspectives represented during negotiation remains speculative. Ecological perspectives were a support that helped the Like Minded Group argue its position and challenge the Miami Group. Ecological perspectives tended to be rejected or ignored when trade interests became the focus of talks.

Drawing from ecologically sensitive and indigenist perspectives, I wrote about negotiation as a forum of listening, speaking and writing with nature, as if nature, in its diverse forms and lives could speak, be heard and understood. Recognition of nature's subjectivity is key to enlivening human understandings of 'our' places and roles within nature. It is also fundamental to an ecological critique of anthropocentric ideology and practices, because it confronts anthropocentric pursuits to colonize and conquer. In noting various challenges to negotiating with nature, I examined how ecological and indigenist perspectives could contribute to negotiation of international regimes as theorized and to the debates about GE biotechnology.

Ecological correspondence with nature reveals a different form of negotiation involving direct communication with nature to enable people to re-present and explore the diverse forms of expressions that nature articulates and to advocate these intentions during negotiation with other people. Despite the social context that negotiation is currently practiced, nature is present and actively engaged and people are connected to nature. The challenge of negotiating with nature is to understand the essence of these

relationships and kind of power people employ. Negotiation 'with nature' is reflected in a 'consensus' on how to live together and is different from understandings of 'consensus' noted in negotiation theory on multilateral negotiation that discuss agreements among nation-state delegates. Rejection, ignorance and dismissal of viewpoints are tantamount to refusal to acknowledge human relatedness with other animals and non-human forms of life. From a critical western standpoint, hearing nature's voice accepts its subjectivity rendering nature alive as a political actor. From an indigenist perspective, creator flows through all beings, bringing together all relations in a place of *Wemi Tali*/All Where – in a space of 'together living'. The goal here is to live without transgressing the life of another related being.

I have shown that anthropocentric environmental negotiation structures delegates to accept or dismiss and ignore specific propositions about the significance and impact of technology on nature, narrowly defined as environments and natural resources. Formal environmental negotiation explores a range of views in so far as these views can be brought together towards agreement on principles, obligations and responsibilities to implement technological development of nature. The structure of negotiation (process) is organized to present and choose specific policy options regarding both restrictions of and implementation of technology. The agenda of negotiation does not include questions about the purpose of or whether to use technology. Negotiation about GE biotechnology privileges anthropocentric views of nature, thus ignoring ecological positions when these interests resist development of GE biotechnology. Acceptance of ecological ideas occurs when these ideas promote vitality of nature, a position in concert to the goals of anthropocentric ideology, where nature is represented as providing sources needed for

sustaining human development. Environmental negotiation sustains mainstream views, in which change occurs through struggles to gain privileged acceptance of specific interests and values.

The comparison between ecological and anthropocentric perspectives reveals itself through different understandings of nature as well as different positions about technological and economic development. Anthropocentric perspectives favour centralized authority, which multilateral negotiation processes facilitate. In contrast, ecological perspectives reject centralized authority, situating political authority in all relations. Transforming anthropocentric negotiation means to hear and speak with perspectives that resist a narrow conception of nature as material and malleable for human use. The more directly one speaks to and listens to nature the less likely one defines nature materially. When nature is represented materially, its voice and wisdom is silenced. Resistance to the objectification of nature transforms negotiation making it possible to hear and learn from nature.

IV. Propositioning Nature

My investigation of multilateral environmental negotiation departed from the assumption that negotiation is a matter of decision-making among social actors, primarily nation-states. In challenging this assumption I speculated whether negotiation theorizing could explore human relations with nature – and thus situate negotiation to confront conditions of violence, experienced as colonialism and conquest. In challenging humanist assumptions in its metaphoric and supremacist expressions I examined whether

multilateral negotiation as theorized could provide space from which to respond to eco-centric and indigenist perspectives about nature and technology.

I argued that theoretical frameworks of multilateral negotiation were premised on social conflict between people, either as individuals or in groups, such as nation-states. I suggested that theoretical frameworks were not able to conceptualize human relations with nature. I speculated on whether these theories could address the question of ecological politics. While I suggested that 'interest-based' negotiation was limited because it did not deal with power, I thought that 'new multilateralism' and 'environmental diplomacy' could include analysis of human relations with nature.

Multilateral negotiation of both Convention on Biological Diversity (CBD) and Cartagena Protocol (CPB) framed regulation of GE biotechnology according to its definition and significance to biological diversity. Over the course of negotiations from the late 1980s to 2000, the connection of biotechnology to biodiversity revealed how anthropocentric ideology is linked to the promotion of GE biotechnology. The view within negotiation discourse highlights anthropocentric views of economic development and environmental conservation, focused around nation-state as legitimate authority.

Analysis of the various definitions of biotechnology revealed different propositions regarding the meaning and significance of manipulating genetic sequences across natural barriers. I was able to identify a subtext that challenged mainstream ideology in its view of science, technology and nature. Upon further inspection, I noted that ecological and indigenist views supported arguments against biotechnology, while promoting the sustaining of biological diversity. Although some Southern NGOs critiqued GE biotechnology, outlining an eco-centric premise from which to influence

nation-states' policy, European and Like Minded Groups did not represent these ideas to challenge the Miami Group's propositions about transgenic technology and GMOs. The absence of an explicit ecological perspective represented at multilateral negotiations indicated to me that these fora constricted exploration about GE biotechnology, its definition, utility and purpose.

Ecological correspondence was revealed through discourse analysis of various propositions about GE biotechnology. Each proposition conveys statements that promote, manage and resist technology in its connection to biodiversity. My analysis of these propositions reflected statements published by industry and NGO groups involved in the biosafety talks, in which I noted that the meaning of biotechnology changed, not chronologically but discursively as assumptions were challenged and reaffirmed.

My investigation of ecological perspectives in their contribution to negotiation theory and practice suggest to me that these perspectives remain marginal to the dominant perspectives that privilege exploitation and control of nature as more important than sustaining biological and social diversity. I argued that there were openings to both mainstream multilateral negotiation theory and practice from which ecological perspectives could enter. While ecological perspectives are not fully represented during formal negotiations, the means by which these perspectives negotiate with nature could contribute to a wider investigation on how to open negotiation up to a broader spectrum of actors and perspectives.

APPENDIX A

Mainstream Negotiation Frameworks

Framework	Interest-based	New multilateralism	Environmental diplomacy
Purpose	resolve conflict between parties; reduce tensions among rival parties	restructure international system (Cox); or reform inequities embedded in nation-state authority (Hampson)	solve environmental problems amongst adversarial stakeholders
Historical origins	Cold War era	Post-Cold War era	Earth Summit
Conflict scenario	disagreement or dispute between two or more rival or competitive parties, escalating tensions	political inequities of international system; problems resulting from tensions between hegemony and disenfranchised or colonized nation-states	adversarial; differences or disagreement of opinion ("battle of wits") between 'developmentalists' and 'environmentalists' over the use of and entitlements to natural resource
Primary actor	depending on conflict scenario, could be individuals, groups or states	nation-states as members of contemporary international regimes and institutions, such as UNEP, OECD, or CBD; NGOs as new actors in multi-lateral negotiations.	developmentalists and environmentalists within a country, as represented by NGOs, or within UN/UNEP multilateral forum as represented by nation-states and NGOs
Power	power defined as persuasion by logical analysis of interests and issues; assumes equality among actors	power defined as ability to address diverse cultural and historical factors in decision-making; critical of power as dominance and control (hegemony) because it distorts nation-states into dominant, subordinate relations.	power is ability to influence or persuade through debate and willingness to discuss opposing viewpoints; actors assumed equal, but having different worldviews. (similar to interest-based negotiation)
Relationship with Nature	no discussion, nature could be interpreted as an interest, thus a topic for negotiation	anthropocentric, minor discussion; nature is discursive and mysterious (Cox) or nature is important to humanity's survival (Hampson and Reppy)	anthropocentric, major focus: nature is physical matter, w/essence is independent from people; environmental changes are from industrial growth or nature's creative, reproductive capacity
Expected outcome	all parties 'work through conflict' collaboratively and cooperate on resolving issues that produced the conflict by addressing interests in common	broaden context of civilian representation in international political institutions by including non-state actors marginalized by hegemonic authority	institutional reform, by addressing inadequacies in the nation-state that are unable to respond effectively to environmental problems
Contribution	reconfigure negotiation to bypass stalemates and weak agreements produced by adversarial and positional bargaining or capitulation; negotiation focuses on 'interests not people'	analytic framework recognizes historical and cultural contexts and NGO influence on decision-making; move beyond ideological paradigms to explore diverse factors in decision-making; negotiation as counter-hegemony	re-orient negotiation from managing disagreements among nation-states to solving environmental problems experienced commonly; negotiation as problem-solving.
Sources	Fisher & Ury	Cox, Knight, Hampson	Susskind & w/Weinstein

APPENDIX B

Chronology of Biological Discovery and Political Events

1000 BC	Babylonians celebrate the pollination of date palm trees with religious rituals
323 BC	Aristotle speculates on the nature of reproduction and inheritance
100 – 300	Indian metaphorical writings on the nature of human reproduction
1620	Aboriginal Peoples introduce to maize to European Settlers. Other foods also introduced to Europeans since first contact include tomato, potato, squash, bean, pepper, strawberry, gooseberry, blueberry.
1665	Robert Hooke describes and names cells
1675	Anton van Leeuwenhoek improves microscope and finds bacteria cells
1676	Sexual reproduction in plants confirmed
1677	Animal sperm isolated microscopically
1839	Matthias Schleiden and Theodore Schwann establish a theory that all living organisms are composed of cells
1859	Charles Darwin establishes theory of natural selection, publishes <i>On The Origin of Species</i>
1866	Gregor Mendel outlines principles of heredity, publishes <i>Experiments with Plant Hybrids</i>
1869	Johann Miescher performs a chemical analysis of nucleic acid
1887	Scientific findings of reproductive cells note its continuous lineage distinct from body cells
1902	Archibald Garrod theorizes that genes consist of instructions for making proteins
1908	Mendel's theory of inheritance frequency modeled mathematically
1909	Genes named for factors of inherited characteristics
1910	Thomas Hunt Morgan establishes that genes are located in chromosomes
1925	Position on a chromosome found to affect a gene's activity
1927	X-rays found to cause genetic mutation
1928	Fred Griffith identifies "transforming principle" that traits of genetic virulence is carried from dead to live cells
1941	George Beadle and Edward Tatum establish that one gene makes one enzyme
1943	Oswald Avery and others team members prove that Griffith's transforming principle is the DNA molecule
1953	The research of Francis Crick, Rosalind Franklin, James Watson and Maurice Wilkins help reveal DNA molecule and structure. Crick and Watson receive Nobel Prize in 1953, Wilkins recognized in 1962. Franklin was not granted prize, nor cited by Watson and Crick in their original publication, and recognition of her work cited posthumously.
1956	23 pairs of chromosomes are identified in the human body
1960-1970	Green Revolution era, implementation of industrial agriculture in Southern countries primarily of high-yield grain and other commodity crops cultivated with chemical fertilizers and herb/pesticides; Norman Borlaug, funded by both Ford and Rockefeller Foundations, developed high yielding wheat varieties for use in Africa and Asia
1964	FAO sets up Genetic Resources Unit, Turkey, to address diminished genetic diversity, first unit to collect, store and study disappearing cultivated and wild plant species
1966	Har Gobind Khorana and Marshall Nireberg decipher DNA codes
1972	Recombinant DNA created in laboratory; Stockholm Conference, UN Conference on the Human Environment; Club of Rome, meeting of business, academic and government leaders, establish concept of economic limits, <i>Limits to Growth</i>
1973	Stanley Cohen of Stanford University and Herbert Boyer of the University of California attempt the first genetic engineering experiment by splicing rDNA transferred into different species
1975	Asilomar Conference, California USA, scientists assess dangers of genetic engineering

1977	Scientists develop techniques to sequence chemical messages of DNA molecules; Canadian Medical Research Council announces laboratory safety guidelines for genetic engineering experiments
1982	Commercial production of insulin via genetic engineering begins; Commissioner of Patents grants first patent of a living organism in Canada to Abitibi-Price
1983	National Biotechnology Strategy established by Canadian federal government in order to boost Canadian biotechnology industry; Monsanto's M-Team creates first genetically engineered plant
1987	Proposal for commercialized project to sequence the entire human genome; United States Department of Agriculture – USDA supervised GMO outdoor field trials begin
1988	The first four genetically engineered plants are released into the Canadian environment; World Commission on Environment and Development, Brundtland report, <i>Our Common Future</i> , establishes idea of international sustainable development
1989	Injection of genetically engineered cells into a human patient
1990	Genetically engineered microorganism released in Canada; Canada's Green Plan promises new regulations for biotechnology; introduction of GMOs in US commercial markets, supervised by USDA
1992	Convention on Biological Diversity – final round of negotiations, UNCED. Establishes guidelines for safe transfer and handling of GM cells, plants and seeds.
1993	FAO calls for a moratorium on the introduction of GMO products in agriculture until adequate capacity is established to assess their environmental, health and socio-economic effects; CoP-1 in Nassau – G77 and China propose a legally binding international biosafety protocol established under CBD provisions, recognizing potential hazards of GE
1994	Agriculture Canada approve releases of over 700 genetically engineered crops
1995	CoP-2 in Jakarta – agrees to begin negotiations on an international biosafety protocol; GE "Flavr Saver" tomato approved for sale in Canada, marking the first GMO available in retail stores, removed due to lack of consumer demand
1996	Biosafety talks begin in Aarhus, Denmark with the Open-ended Ad Hoc Working Group on Biosafety (BSWG) the international negotiating body organized by CBD, CoP-2. 6 million acres of GMO plants growing in US; increases to 25 million acres in 1997, 58 million acres in 1998. Approximately 70 million acres world-wide.
1997	Dolly, first cloned mammal, announced by UK scientists
1998	Arpad Pusztai, dismissed from Rowett Research Institute, Scotland, scandal erupts regarding unethical treatment of scientists publishing studies indicating problems with transgenic technology and GMOs.
1999	Canadian Biotechnology Advisory Committee – CBAC launched
2000	BSWG concludes Biosafety talks in Montreal, CPB open for signature; Science based evidence of widespread contamination of non-GMO crops and human health problems emerge in public media; Starlink scandal erupts, USDA food safety procedures proved inadequate, recall of food products demanded.
2002	Saskatchewan Organic Directorate – SOD a co-op of organic grain farmers launches class action suit against Monsanto and Bayer (formerly Aventis) for contamination of organic crops and ruination of organic grain farming in Saskatchewan. Same group also files injunction to stop field trials of GE wheat in undisclosed locations throughout Canada's western provinces. Cases scheduled to be heard 2004, later Canada's Supreme Court announces its refusal to hear SOD's case. As of 2005, SOD re-filing of case pending.
2003	September 11, CPB enters into force; Canada has not adopted precautionary policies nor ratified the CPB.

compiled from Robert Cooke (1977) *Improving on Nature*; Canadian Institute for Environmental Law and Policy (1996), *Citizen's Guide to Biotechnology*; David Suzuki and Peter Knudtson (1988), *Genethics*; Martin Teitel and Kimberly Wilson (1999) *Changing the Nature of Nature*; Third World Network (TWN) *Resurgence*, #81/82 May/June 1997; Jack Weatherford (1988) *Indian Givers*; and Margaret Visser (1988) *Much Depends on Dinner*.

APPENDIX C
Matters During Multilateral Negotiations of Biotechnology
 Three Periods of Multilateral Negotiations

Early Negotiations 1988 to 1992	Interim Negotiations 1994 to 1995	Biosafety Talks 1996 to 2000
1) United Nations Conference on Environmental and Development (UNCED), 'working group on biosafety and biotechnology', chaired by Bo Kjelle'n, of Sweden. 2) Intergovernmental Negotiating Committee (INC) on biosafety, chaired by Vincente Sanchez, of Chile.	1) Conference of the Parties to the Convention on Biological Diversity (CoP) organized Open-ended Ad Hoc Group of Experts on Biosafety; 2) UNEP organized Ad Hoc Panel of Experts on International Technical Guidelines	Open-ended Ad Hoc Working Group on Biosafety (BSWG), chaired by Veit Koester, of Denmark and the Extraordinary Conference of the Parties (ExCop), chaired by Juan Mayr, of Columbia.
reported to United Nations Environment Programme. Mostafa Tolba, executive director of UNEP; UNCED organized by Maurice Strong, of Canada	reported to Secretariat of the Convention on Biological Diversity, Hamdallah Zedan Executive Secretary of CBD; and United Nations Environment Programme, Klaus Töpfer, and executive director of UNEP	reported to Secretariat of the Convention on Biological Diversity, Hamdallah Zedan, Executive Secretary
Both UNCED and INC sought to: promote biotechnology as an approach to the conservation of the planet's biodiversity, nation-state access to and protection of biological resources using patent mechanisms; and to centralize management of diverse biological resources for production and trade, administered by intergovernmental organizations	CoP: goal was to review the necessity of a legally binding biosafety protocol; UNEP: goal was to produce a non-binding and voluntary technical framework on biotechnology risk management	Like Minded Group: moratorium on GE biotechnology and GMOs, right to refuse GMO imports; European Group: regulation of GMOs limiting risk of potentially harmful GMOs; Miami Group: discourage restrictions on GMO trade and research, right to export GMO commodities and develop biotechnology capacity in other countries.
UNCED working group produced non-binding and voluntary framework for <i>Agenda 21</i> , Chapter 15, "Conservation of Biological Diversity" and Chapter 16, "Environmentally Sound Management of Biotechnology; and INC forum produced Convention on Biological Diversity (CBD), becomes international law December 29, 1993	CoP produced framework for biosafety negotiation: Decision II/5, "Consideration of the Need For and Modalities of a Protocol for the Safe Transfer, Handling and Use of Living Modified Organisms"	Cartagena Protocol on Biosafety (CPB), becomes international law September, 11, 2003

APPENDIX C
Matters During Multilateral Negotiations of Biotechnology
“Early Negotiation Period – Parallel sessions of UNCED and INC”

Early Negotiations 1988 to 1992	United Nations Conference on Environmental and Development (UNCED) Process	Intergovernmental Negotiating Committee (INC) Process
negotiating premise	promotion of biotechnology to conserve and enhance biotechnology	conservation of biodiversity through centralized management and funding
organized through	UNCED in two sessions Prepcom-IV, March 1992, New York City, USA and Earth Summit, June 1992, Rio de Janeiro, Brazil	independent and closed to outside groups, brought into UNEP and UNCED during Rio Summit June 1992
negotiation body	working group on biosafety and biotechnology; chaired by Bo Kjelle'n of Sweden	Intergovernmental Negotiating Committee (INC); chaired by Vincente Sanchez of Chile.
primary negotiating actors	Brazil, Canada, Finland, Malaysia, Portugal, Sweden and the United States (US); negotiating blocs organized according to North/South axis, but privileging economic development agenda.	World Bank, World Resources Institute (WRI), United Nations Environment Programme (UNEP), World Conservancy Union (IUCN), World Wildlife Federation (WWF) and companies involved in biotechnology R&D
included in process	Business Council for Sustainable Development (BCSD)	World Conservancy Union (IUCN) and World Wildlife Federation (WWF) provided initial draft of a biodiversity convention
written submissions from	Friends of the Earth, Third World Network	closed session, converged with biosafety and biotechnology working group in last round of UNCED sessions and introduced CBD text for nation-state approval, June 1992.
included interests	environmental conservation, bio- prospecting, trade, property rights	environmental conservation, bio- prospecting, trade, property rights
excluded interests	'Third World', eco-centric and animist perspectives	'Third World', eco-centric and animist perspectives
outcome	Chapter 15, “Conservation of Biological Diversity” and Chapter 16, “Environmentally Sound Management of Biotechnology of <i>Agenda 21</i>	<i>Convention on Biological Diversity</i> (CBD)

APPENDIX C
Matters During Multilateral Negotiations on Biotechnology
Interim Negotiation Period, 1993-1995 – Organizing for a Biosafety Protocol

Convention on Biological Diversity – Conference of the Parties (CoP)	UNEP intergovernmental sessions
Conference of the Parties (CoP): the decision-making body of the Convention on Biological Diversity, with authority to adopt amendments or protocols to the CBD.	United Nations Environment Programme, an intergovernmental organization, reports to United Nations Economic and Social Committee
CoP-1 , 1994, Nassau, Bahamas G77 questions the definition, use and safety of biotechnology, as presented in the CBD regime text, and <i>Agenda 21</i> . Establishes Open-Ended <i>Ad Hoc</i> Group of Experts on Biosafety to determine the need for a biosafety protocol	
Open-Ended <i>Ad Hoc</i> Group of Experts on Biosafety, 1995, Madrid, Spain Panel considers two categories of items to review for a biosafety protocol: 1) items favoured unanimously (non-contested items; and 2) items favoured by a smaller sub-set of delegates (contested categories)	
CoP-2 , November 1994, Jakarta, Indonesia: negotiate the terms and conditions of a biosafety protocol; Decision II/5: Consideration of the need for and modalities of a protocol for the Safe transfer, handling and use of living modified organisms, which establishes <i>Ad Hoc</i> Working Group on Biosafety (BSWG) to negotiate a biosafety protocol.	Cairo, Egypt, December 1994: <i>Ad Hoc</i> Panel of Experts on International Technical Guidelines, an intergovernmental committee: To develop voluntary, non-binding, and sector by sector technical framework on biotechnology risk management.
CoP-3 , October, 1997, Montreal, Canada: endorses UNEP's panel on voluntary guidelines in: Decision III/5 on additional guidelines to financial mechanisms for developing biotechnology capacity Decision III/20 on biosafety endorses Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), a CBD working group, report endorsing building biotechnology capacity in the South	

APPENDIX C
Matters During Multilateral Negotiations on Biotechnology
Interim Negotiation Period – Biosafety Positions

promoters	managers	resisters
Australia, Canada, Britain, US, Biotechnology industry, includes Biotechnology Industry Organization (BIO)	UNEP; EU; Environmental Business and Development Group, includes WWF	G77; Third World Network (TWN), Genetic Resources Action International (GRAIN); Greenpeace International, Rural Advancement Foundation International (RAFI), Women's Environmental Network (WEN)
Biotechnology is safe	Biotechnology carries both risks and benefits; uncertainty exists about whether GMOs are harmful	Biotechnology is inherently hazardous; real harm exists that will affect biological organisms. (harmful to biodiversity); Potentially risky to people's health and livelihoods in agriculture and food production (socio-economic considerations)
GMOs (product not process)	Biotechnology is distinguished by processes of genetic transfer and its products, GMOs	Genetic Engineering Biotechnology is both process and product
No need for regulation: National policies are in place and IPRs/patents are sufficient to manage access to resources and share in the benefits of these resources	Biotechnology is here to stay, so protocol is needed to respond to potential risk of GMO use	Regulation is needed to respond to the inherent dangers of GE biotechnology
Critical of regulatory guidelines, although favours voluntary guidelines via UNEP	Biosafety protocol based on CBD provisions, including AIA; scientific risk assessment management (RAM) and precautionary principle	Biosafety protocol based on precautionary principle and a moratorium of biotechnology R&D until more is known about how new constructs will affect the environment, humans and socio-economic

APPENDIX C

Matters During Multilateral Negotiations on Biotechnology

Highlights of Biosafety Talks

Negotiation Round	Outcome
BSWG-1 , 22-26 July 1996, Aarhus, Denmark	'Working Paper', first negotiating draft, outlining non-contested and contested items from 1995 Madrid meeting of Open-Ended <i>Ad Hoc</i> Group of Experts on Biosafety; precautionary principle omitted from draft, and motion for a 5 year general moratorium on biotechnology R&D dismissed by Chair Veit Koester, of Denmark. Chair Koester advised delegates to explore not negotiate, setting first three rounds as the 'pre-negotiation phase'.
BSWG-2 , 12-16 May 1997, Montreal, Canada	Negotiation structure established: 1) Chair issues <i>aides memoirs</i> to focus attention on main discussion points and set each groups' agenda; 2) 'Bureau', provided administrative and procedural guidance for the Chair; 3) 'Friends of the Chair', advises Chair on strategic, legal and scientific matters; 4) 'Contact Group One' (CG-1) consolidated definitions; and 'Contact Group Two' (CG-2) worked on elements of 'Working Paper'.
BSWG-3 , 13-17 October 1997, Montreal, Canada	Established 3 more groups: Sub Working Group I (SWG-I) focused on proposed Articles 1 to 10 and 12-14; and Sub Working Group II (SWG-II): focused on proposed Articles 11 and 15-27. Open-ended Contact Group (OCG) reviewed drafts regarding institutional matters and final clauses
BSWG-4 , 5-13 February 1998, Montreal, Canada	Köster announces start of negotiation phase. Main areas of concern: definition of biotechnology; scope of AIA formula (which GMOs to include in protocol); and whether scientific risk assessment management (RAM) or precautionary principle should be used. Disputes on the rise, indicated by 450 pairs of bracketed text
BSWG-5 , 17-28 August 1998, Montreal, Canada	Miami Group emerged as a negotiation bloc and proceeded only to discuss trade-related implications of biosafety, which obstructed G77's goals for comprehensive regulations. Group consisted of Argentina, Australia, Canada, Chile, USA and Uruguay.
BSWG-6 , 14-22 February 1999, Cartagena de Indias, Columbia	Like Minded and European Groups emerged to counter Miami Group's position on trade-related matters. Like Minded Group classified biotechnology as harmful; European Group classified biotechnology and GMOs as beneficial but risky. Köster advised negotiators to focus on five contentious items: a) whether to include precautionary principle; b) savings clause; c) scope of AIA formula; d) socio-economic considerations (effects of biotechnology on existing production systems, mostly in 'third world' countries); e) liability and redress. Miami Group rejects working draft because provisions were either unworkable or unclear, called for protections of trade related commodities, namely GMO food, feed and processed goods (LMO-FFP); Negotiations focused on regulating GMO imports, moving away from regulating use of GMOs Negotiation ends abruptly in stalemate between Miami Group and the other delegates
ExCoP , 22-23 February 1999, Cartagena de Indias, Columbia	Jean Mayr becomes Chair, extension of negotiation time, approved by CoP-4, May 1998, Bratislava, Slovakia, begins Mayr proceeds to unlock stalemate and establishes new organizing procedures, he called 'Group of 10' and consisted of a total of 10 spokespersons. These 10 persons represented Central East European (CEE), the Europeans, Central America and the Caribbean (GRULAC), and Like Minded Group. Compromise Group emerged to ensure a protocol would result Negotiations of ExCoP collapse.
Informal Sessions, called 'Vienna Round'	Talks resume on informal basis in Montreal, Canada July 1999; Vienna, Austria September 1999 and Montreal, January 22-23, 2000 Negotiation focuses on five major points of contention (noted during BSWG-6)
Resumed Ex-CoP , 24-28 January 2000, Montreal, Canada	Formal negotiations resume. Agreement reached, subject to approval by CoP-5 delegates meeting in May 2000.
CoP-5 , 15-16 May 2000, Nairobi, Kenya	Cartagena Protocol on Biosafety presented formally to CoP meeting and opened for signatures.

APPENDIX C
Matters During Multilateral Negotiations on Biotechnology
Table 10 – Range of Options for a Biosafety Protocol

LMOs to be covered by the Protocol and its informed consent procedures	Adverse impacts of LMOs to be covered by the Protocol	Decision-making principles underlying informed consent for LMO transfers
<ul style="list-style-type: none"> • All LMOs <i>and</i> products deriving from them; • All LMOs; • All LMOs, excluding LMO-based pharmaceuticals, and contained use; • All LMOs, excluding LMO-based pharmaceuticals, contained use and LMOs for processing (commodities) 	<ul style="list-style-type: none"> • Adverse impacts on biological diversity; • Adverse impacts on human health (food safety concerns); • Adverse socioeconomic impacts in the agricultural sector 	<ul style="list-style-type: none"> • Sound science or the precautionary principle; • Can or cannot take ‘non-scientific socioeconomic factors into account • Deference to [World Trade Organization] WTO obligations or not [savings clause]

APPENDIX D
Negotiating Blocs During Biosafety Talks

Central East European Group – Gabor Nechay, Hungary, spokesman.	Albania, Armenia, Belarus, Bosnia & Herzegovina, Bulgaria, The Czech Republic, Estonia, Georgia, Latvia, Macedonia, Poland, Russia, Slovakia, Slovenia, Turkmenistan and the Ukraine	CEE operated either as a subset of the European Group or independently, comprising of non-EU members. CEE members do not have an active biotechnology industry and tended to side with the Like Minded Group on matters of biodiversity and biosafety
European Group – Christoph Bail spokesman, officer of EU.	Countries within the continent of Europe. Membership includes both EU and non-EU members, and tended to reflect EU decisions regarding biotechnology.	Position reflected balance risk and benefits, using both science and precautionary principle
Like Minded Group – Tewold Egziabher, Ethiopia, spokesman.	Remaining members of G77 and China. Emerged after Argentina, Chile and Uruguay left to join the Miami Group in 1998.	Few if any countries have biotechnology capacity, although levels of interest remains mixed.
Miami Group – Richard Ballhorn, Canada, spokesman	Argentina, Australia, Canada, Chile, Uruguay and the US. 2005 New Zealand currently represents the interests of the Miami Group, since Canada and the US are not voting members of MoP.	Argentina and Canada exporter of grain based LMOs. Australia, Chile and Uruguay producer of LMOs but not yet exporter. US largest producer and exporter of agricultural and pharmaceutical LMOs. The US is the only non-voting member and its founder, after it organized a meeting in Miami, July 1998 to discuss how biosafety will impact trade.
Compromise Group – Beat Nobs, Switzerland, spokesman and founder.	Japan, Mexico, Norway, Republic of Korea, Switzerland. Singapore joined BSWG-6, 1999. New Zealand joined 2000, Montreal, it speaks for Miami Group during ICCP meetings since Canada and US have not ratified the protocol.	Emerg ed while talks were failing in Cartagena 1999. Main purpose was to bring divergent parties towards compromise and produce a workable protocol. All members have biotechnology capacity.

APPENDIX E

Selected List of Organizations (IGO, Corporate, NGO and Grass-root)

Intergovernmental Organizations

- CBD – The Secretariat of the Convention on Biological Diversity, Montreal PQ, www.biodiv.org, also administers Cartagena Protocol on Biosafety
- UNEP – United Nations Environmental Program, Nairobi, Kenya, www.un.org
- OECD – Organization Economic Cooperation and Development, www.oecd.org

Corporate

- BIOTECCanada, www.biotech.ca
- BIO – Biotechnology Industry Organization, www.bio.org
- FBCN – Food Biotechnology Communications Network (FBCN), Guelph, www.foodbiotech.org
- GIC – Global Industry Coalition, coalition group during BSWG. Members include: BIO, Japan Bioindustry Association (JBA), Green Industry Biotechnology Platform (GIBIP), Senior Advisory Group on Biotechnology (SAGB).
Ottawa Life Sciences Council, www.olsc.ca
- WBCSD – World Business Council for Sustainable Development, initially BCSD, formed by Stephan Schmidheiny, principal advisor to Maurice Strong, UNCED Secretary-General and comprised of Chief Executive Officers from 48 companies, which served as an advisory council to UNCED executive body.
www.foundation.org

Five largest Biotech Corporations, 1995-2000:

- AstraZeneca, “life inspiring ideas”, www.astrazenca.com
- Aventis, “our challenge is life”, www.aventis.com, now Bayer
- Dow, “Living, improved daily”, www.dow.com
- Dupont, “the miracles of science”, www.dupont.ca, www.dupont.com,
www.dupontpharma.com
- Monsanto, “food, health, hope” and “better crops helping farm families live better lives,” www.monsanto.com, www.monsanto.co.uk;
also Monsanto’s resource web site –
Biotech Knowledge Centre, www.biotechknowledge.com
- Novartis, “caring & curing”, www.foundation.novartis.com,
www.novartis.com/home, www.novartisandhealth.com

NGOs

- Biodevestation, an anti-biotech peoples’ conference held in conjunction with BIO’s annual trade fair, www.biodev.org
- CAPE – Canadian Association of Physicians for the Environment, www.cape.ca
- CCIC – Canadian Council for International Cooperation, www.web.net/ccic-ccci
- CELA – Canadian Environmental Law Association, www.cela.ca
- CEN – Canadian Environmental Network, www.cen-rce.org
- Canadian Indigenous Caucus on the Convention on Biological Diversity, www.ibin.net
- CIELAP – Canadian Institute for Environmental Law and Policy, www.cielap.org
- COG – Canadian Organic Growers, www.cog.org

Council of Canadians, Ottawa, www.canadians.org
 Council for Responsible Genetics, www.gene-watch.org, publisher of *Gene Watch*
 CUSO – Canadian University Students Overseas, www.cuso.org
 Edmonds Institute, www.edmonds-institute.org
 ENB – Earth Negotiation Bulletin, www.iisd.ca/linkages/, reports international negotiations on environment and development issues, sponsored by International Institute for Sustainable Development, IISD, Winnipeg, Canada www.iisd.ca
 ETC – erosion, technology, concentration, www.etcgroup.org (formerly RAFI – Rural Advancement Foundation International, www.rafi.org, site closed)
 GRAIN – Genetic Resources Action International, www.grain.org and GAIA Foundation, publisher of *Seedlings*
 Greenpeace, International, www.greenpeace.org
 Independent Group of Experts on Biosafety
 Indigenous Peoples Coalition Against Biopiracy
 Indigenous Peoples Council on Biocolonialism, www.ipcb.org
 IFOAM – International Federation of Organic Agriculture Movements, coalition group
 International Network on Bioethics and Disability, www.thalidomide.ca/gwolbring (Gregor Wolbring, bioscientist and disability activist)
 IUCN – World Conservation Union, formerly International Union for the Conservation of Nature (acronym unchanged) www.iucn.org
 NFU – National Farmers Union, www.nfu.ca
 Research Foundation for Science, Technology and Ecology, New Delhi, India
 TWN – Third World Network, Malaysia, www.twinside.org
 Union of Concerned Scientists www.ucsusa.org
 WEN – Women's Environmental Network, www.gn.apc.org/wen

“Big Ten” largest of the multinational environmental groups

Sierra Club, 1892, www.sierraclub.org/cafos
 National Audubon Society, 1905
 National Parks and Conservation Association, 1919
 Izaak Walton League, 1992
 Wilderness Society, 1935
 National Wildlife Federation, 1936
 Defenders of Wildlife, 1947
 Environmental Defense Fund, 1967
 Friends of the Earth (FOE), 1969, www.foe.org (US), www.foe.co.uk (UK),
www.foecanada.org, (Canada)
 Natural Resources Defence Council, 1970

Grass Roots

BAM – Biotech Action Montreal
 FAO – Food Action Ottawa
 Food not Lawns
 GeneAction
 Seeds of Diversity

APPENDIX F
Parties to the Convention on Biological Diversity and the Cartagena Protocol
(biodiv.org, 21/12/05)

Convention on Biological Diversity 188 Parties (168 Signatures)

Cartagena Protocol on Biosafety 130 Parties (103 Signatures)

acs=accession; acp=acceptance; apv=approval; dd/mm/yy

Country	Convention on Biological Diversity		Cartagena Protocol on Biosafety	
	signed	ratified*	signed	ratified*
Afghanistan	12/06/1992	19/09/2002		
Albania		05/01/1994, acs		08/02/2005, acs
Algeria	13/06/1992	14/08/1995	25/05/2000	05/08/2004
Andorra				
Angola	12/06/1992	01/04/1998		
Antigua & Barbuda	05/06/1992	09/03/1993	24/05/2000	10/09/2003
Argentina	12/06/1992	22/11/1994	24/05/2000	
Armenia	13/06/1992	14/05/1993, acp		30/04/2004, acs
Australia	05/05/1992	18/06/1993		
Austria	13/06/1992	18/08/1994	24/05/2000	27/08/2002
Azerbaijan	12/06/1992	03/08/2000, apv		01/04/2005, acs
Bahamas	12/06/1992	02/09/1993	24/05/2000	15/01/2004
Bahrain	09/06/1992	30/08/1996		
Bangladesh	05/06/1992	03/05/1994	24/05/2000	05/02/2004
Barbados	12/06/1992	10/12/1993		06/09/2002
Belarus	11/06/1992	08/09/1993		26/08/2002
Belgium	05/06/1992	22/11/1996	24/05/2000	15/04/2004
Belize	13/06/1992	30/12/1993		12/02/2004, acs
Benin	13/06/1992	30/06/1994	24/05/2000	02/03/2000
Bhutan	11/06/1992	25/08/1995		26/08/2002
Bolivia	13/06/1992	03/10/1994	24/05/2000	22/04/2002
Bosnia and Herzegovina		26/08/2002, acs		
Botswana	08/06/1992	12/10/1995	01/06/2001	11/06/2002
Brazil	05/06/1992	28/02/1994		24/11/2003, acs
Brunei Darussalam				
Bulgaria	12/06/1992	17/04/1996	24/05/2000	13/10/2000
Burkina Faso	12/06/1992	02/09/1993	24/05/2000	04/08/2003
Burundi	11/06/1992	15/04/1997		
Cambodia		09/02/1995, acs		17/09/2003, acs
Cameroon	14/06/1992	19/10/1994	09/02/2001	20/02/2003
Canada	11/06/1992	04/12/1992	19/04/2001	
Cape Verde	12/06/1992	29/03/1995		01/11/2005, acs
Central African Republic	13/06/1992	15/03/1995	24/05/2000	
Chad	12/06/1992	07/06/1994	24/05/2000	
Chile	13/06/1992	09/09/1994	24/05/2000	
China	11/06/1992	05/01/1993	08/08/2000	08/06/2005
Columbia	12/06/1992	28/11/1994	24/05/2000	20/05/2003
Comoros	11/06/1992	29/09/1994		
Congo	11/06/1992	01/08/1996	21/11/2000	
Cook Islands	12/06/1992	20/04/1993	21/05/2001	
Costa Rica	13/06/1992	26/08/1994	24/05/2000	
Cote d'Ivoire	10/06/1992	29/11/1994		
Croatia	11/06/1992	07/10/1996	08/09/2000	29/08/2002

Country	Convention on Biological Diversity		Cartagena Protocol on Biosafety	
	signed	ratified*	signed	ratified*
Cuba	12/06/1992	08/03/1994	24/05/2000	17/09/2002
Cyprus	12/06/1992	10/07/1996		05/12/2003, acs
Czech Republic	04/06/1993	03/12/1993, apv	24/05/2000	08/10/2001
Dem Ppl's Rep of Korea	11/06/1992	26/10/1994, apv	20/04/2001	29/07/2003
Dem Rep of the Congo	11/06/1992	03/12/1994		23/03/2005, acs
Denmark	12/06/1992	21/12/1993	24/05/2000	27/08/2002
Djibouti	13/06/1992	01/09/1994		08/04/2002, acs
Dominica		06/04/1994		13/07/2004, acs
Dominican Republic	13/06/1992	25/11/1996		
Ecuador	09/06/1992	23/02/1993	24/05/2000	30/01/2003
Egypt	09/06/1992	02/06/1994	20/12/2000	23/12/2003
El Salvador	13/06/1992	08/09/1994	24/05/2000	26/09/2003
Equatorial Guinea		06/12/1994, acs		
Eritrea		21/03/1996, acs		10/03/2005, acs
Estonia	12/06/1992	27/07/1994	06/09/2000	24/03/2004
Ethiopia	10/06/1992	05/04/1994	24/05/2000	09/10/2003
European Community	13/06/1992	21/12/1993, apv	24/05/2000	apr
Fiji	09/10/1992	25/02/1993	02/05/2001	05/06/2001
Finland	05/06/1992	27/07/1994	24/05/2000	09/07/2004
France	13/06/1992	01/07/1994	24/05/2000	08/04/2003, apv
Gabon	12/06/1992	14/03/1997		
Gambia	12/06/1992	10/06/1994	24/05/2000	09/06/2004
Georgia		02/06/1994, acs		
Germany	12/06/1992	21/12/1993	24/05/2000	20/11/2003
Ghana	12/06/1992	29/08/1994		30/05/2003, acs
Greece	12/06/1992	04/08/1994	24/05/2000	21/05/2004
Grenada	03/12/1992	11/08/1994	24/05/2000	05/02/2004
Guatemala	13/06/1992	10/07/1995		28/10/2004
Guinea	12/06/1992	07/05/1993	24/05/2000	
Guinea-Bissau	12/06/1992	27/10/1995		
Guyana	13/06/1992	29/08/1994		
Haiti	13/06/1992	25/09/1996	24/05/2000	
Holy See				
Honduras	13/06/1992	31/07/1995	24/05/2000	
Hungary	13/06/1992	24/02/1994	24/05/2000	
Iceland	10/06/1992	12/09/1994	01/06/2001	
India	05/06/1992	18/02/1994	23/01/2001	17/01/2003
Indonesia	05/06/1992	23/08/1994	24/05/2000	03/12/2004
Iran	14/06/1992	06/08/1996	23/04/2001	20/11/2003
Iraq				
Ireland	13/06/1992	22/03/1996	24/05/2000	14/11/2003
Israel	11/06/1992	07/08/1995		
Italy	05/06/1992	15/04/1994	24/05/2000	24/03/2004
Jamaica	11/06/1992	06/01/1995	04/06/2001	
Japan	13/06/1992	28/05/1993, acp		
Jordan	11/06/1992	12/11/1993	11/10/2000	11/11/2003
Kazakhstan	09/06/1996	06/09/1994		
Kenya	11/06/1992	26/07/1994	15/05/2000	24/01/2002
Kiribati		16/08/1994, acs	07/09/2000	20/04/2004
Kuwait	09/06/1992	02/08/2002		
Kyrgyzstan		06/08/1996, acs		05/10/2005

Country	Convention on Biological Diversity		Cartagena Protocol on Biosafety	
	signed	ratified*	signed	ratified*
Lao Ppl's Dem Republic		20/09/1996, acs		03/08/2004, acs
Latvia	11/06/1992	14/12/1995		13/02/2004, acs
Lebanon	12/06/1992	15/12/1994		
Lesotho	11/06/1992	10/01/1995		20/09/2001
Liberia	12/06/1992	08/11/2000		15/02/2002
Libyan Arab Jamahiriya	29/06/1992	12/07/2001		14/06/2005
Liechtenstein	05/06/1992	19/11/1997		
Lithuania	11/06/1992	01/02/1996	24/05/2000	07/11/2003
Luxembourg	09/06/1992	09/05/1994	11/07/2000	28/08/2002
Madagascar	08/06/1992	04/03/1996	14/09/2000	24/11/2003
Malawi	10/06/1992	02/02/1994	24/05/2000	
Malaysia	12/06/1992	24/06/1994	24/05/2000	03/09/2003
Maldives	12/06/1992	09/11/1992		02/09/2002, acs
Mali	30/09/1992	29/03/1995	04/04/2001	28/0/2002
Malta	12/06/1992	29/12/2000		
Marshall Islands	12/06/1992	08/10/1992		27/01/2003, acs
Mauritania	12/06/1992	16/08/1996		22/07/2005, acs
Mauritius	10/06/1992	04/09/1992		11/04/2002, acs
Mexico	13/06/1992	11/03/1993	24/05/2000	27/08/2002
Micronesia	12/06/1992	20/06/1994		
Monaco	11/06/1992	20/11/1992	24/05/2000	
Mongolia	12/06/1992	30/09/1993		22/07/2003, acs
Morocco	13/06/1992	21/08/1995	25/05/2000	
Mozambique	12/06/1992	25/08/1995	24/05/2000	21/10/2002
Myanmar	11/06/1992	25/11/1994	11/05/2001	
Nambia	12/06/1992	16/05/1997	24/05/2000	10/02/2005
Nauru	05/06/1992	11/11/1993		12/11/2001, acs
Nepal	12/06/1992	23/11/1993	02/03/2001	
Netherlands	05/06/1992	12/07/1994, acp	24/05/2000	08/01/2002, acp
New Zealand	12/06/1992	16/09/1993	24/05/1993	24/05/2005
Nicaragua	13/06/1992	20/11/1995	26/05/2000	28/08/2002
Niger	11/06/06/1992	25/07/1995	24/05/2000	30/09/2004
Nigeria	13/06/1992	29/08/1994	24/05/2000	15/07/2003
Niue		28/02/1996, acs		08/07/2002
Norway	09/06/1992	09/07/1993	24/05/2000	10/05/2001
Oman	10/06/1992	08/02/1995		11/04/2003
Pakistan	05/06/1992	26/07/1994	04/06/2001	
Palau		06/01/1999, acs	29/05/2001	13/06/2003
Panama	13/06/1992	17/01/1995	11/05/2001	01/05/2002
Papua New Guinea	13/06/1992	16/03/1993		14/10/2005, acs
Paraguay	12/06/1992	24/02/1994	03/05/2001	10/03/2004
Peru	12/06/1992	07/06/1993	24/05/2000	14/04/2004
Philippines	12/06/1992	08/10/1993	24/05/2000	
Poland	05/06/1992	18/01/1996	24/05/2000	10/12/2003
Portugal	13/06/1992	21/12/1993	24/05/2000	30/09/2004, acp
Qatar	11/06/1992	21/08/1996		
Republic of Korea	13/06/1992	03/10/1994	06/09/2000	
Republic of Moldova	05/06/1992	20/10/1995	14/02/2001	04/03/2003
Romania	05/06/1992	17/08/1994	11/10/2000	30/06/2003
Russian Federation	13/06/1992	05/04/1995		
Rwanda	10/06/1992	29/05/1996	24/05/2000	22/07/2004

Country	Convention on Biological Diversity		Cartagena Protocol on Biosafety	
	signed	ratified*	signed	ratified*
Saint Kitts and Nevis	12/06/1992	07/01/1993		23/05/2001, acs
St Lucia		28/07/1993, acs		16/06/2005, acs
St Vincent & Grenadines		03/06/1996, acs		27/08/2003, acs
Samoa	12/06/1992	09/02/1994	24/05/2000	30/05/2002
San Marino	10/06/1992	28/10/1994		
Sao Tome & Principe	12/06/1992	29/09/1996		
Saudi Arabia		03/10/2001, acs		
Senegal	13/06/1992	17/10/1994	31/10/2000	08/10/2003
Serbia and Montenegro	08/06/1992	01/03/2002		
Seychelles	10/06/1992	22/09/1992	31/01/2001	13/05/2004
Sierra Leone		12/12/1994, acs		
Singapore	12/06/1992	21/12/1995		
Slovakia	19/05/1993	25/08/1994	24/05/2000	24/11/2003
Slovenia	13/06/1992	09/07/1996	24/05/2000	20/11/2002
Solomon Islands	13/06/1992	03/10/1995		28/07/2004, acs
Somolia				
South Africa	04/06/1993	02/11/1995		14/08/2003, acs
Spain	13/06/1992	21/12/1993	24/05/2000	16/01/2002
Sri Lanka	10/06/1992	23/03/1994	24/05/2000	28/04/2004
Sudan	09/06/1992	30/10/1995		13/06/2005
Suriname	13/06/1992	12/01/1996		
Swaziland	12/06/1992	09/11/1994		
Sweden	08/06/1992	16/12/1993	24/05/2000	08/08/2002
Switzerland	12/06/1992	21/11/1994	24/05/2000	26/03/2002
Syrian Arab Republic	03/05/1993	04/01/1996		01/04/2004, acs
Tajikistan		29/10/1997, acs		12/02/2004, acs
Thailand	12/06/1992	29/01/2004		10/11/2005, acs
Republic of Macedonia		02/12/1997, acs	26/07/2000	14/06/2005
Timor-Leste				
Togo	12/06/1992	04/10/1995, acp	24/05/2000	02/07/2004
Tonga		18/05/1998, acs		18/09/2003
Trinidad and Tobago	11/06/1992	01/08/1996		05/10/2000
Tunisia	13/06/1992	15/07/1993	19/04/2001	22/01/2003
Turkey	11/06/1992	14/02/1997	24/05/2000	24/10/2003
Turkmenistan		18/09/1996, acs		
Tuvalu	08/06/1992	20/12/2002		
Uganda	12/06/1992	08/09/1993	24/05/2000	30/11/2001
Ukraine	11/06/1992	07/02/1995		06/12/2002
United Arab Emirates	11/06/1992	10/02/2000		
UK of Great Britain	12/06/1992	03/06/1994	24/05/2000	19/11/2003
U Rep of Tanzania	12/06/1992	08/03/1996		24/04/2003, acs
United States of America	04/06/1993			
Uruguay	09/06/1992	05/11/1993	01/06/2001	
Uzbekistan		19/07/1995, acs		
Vanuatu	09/06/1992	25/03/1993		
Venezuela	12/06/1992	13/09/1994	24/05/2000	13/05/2002
Viet Nam	28/05/1993	16/11/1994		21/01/2004, acs
Yemen	12/06/1992	21/02/1996		01/12/2005, acs
Zambia	11/06/1992	28/05/1993		27/04/2004, acs
Zimbabwe	12/06/1992	11/11/1994	04/06/2001	25/02/2005

Appendix G

Negotiating Biotechnology

Four Propositions

Biotechnology has many definitions, depending on certain propositions. The Convention on Biological Diversity and Cartagena Protocol on Biosafety have two different definitions, each drawing from different propositions dominant during negotiation. The following propositions were evident during formal multilateral negotiation from 1987-2000. These charts present arguments that correspond to each proposition and serve to guide my analysis of negotiation in Chapter five.

- A. Novelty: Is GE biotechnology new or is it as old as traditional methods?
- B. Distinction: What is the difference between 'modern' and 'traditional' biotechnology?
- C. Revolution: Is genetic transfer revolutionary? What changes are anticipated? What are the changes anticipated in the 'the biotech revolution'? How will the 'revolution affect current approaches?
- D. Purpose: What are gene transfer techniques designed to accomplish? Why use GE biotechnology?

A. Novelty

Old or New: 'Biotechnology' is the same as older traditional methods such as breeding and fermentation. Or, 'biotechnology' is a new technology developed since the 1970s.

A: the same and as old as	B: a new technology
If GE biotechnology is same as traditional methods or an old technology as old as traditional methods, then it is neither new nor different and does not require new regulation. Promotion of GE biotechnology begins.	If GE biotechnology is new then, how is its novelty to be interpreted? Further questions open exploration, negotiation continues as more questions are posed. Management of GE biotechnology begins.
Argument forecloses discussion of alternative policy rules, negotiation unnecessary. LMO/GMO designated as substantially equivalent to products made by traditional means. Negotiation of new regulations bypassed due to concept of equivalency.	How is GE biotechnology different from traditional methods? What is its uniqueness or how is modern biotechnology distinct from traditional approaches? What and how will GE biotechnology change? Why use GE biotechnology?
Existing regulation satisfactory, no new options needed. Safety is assumed as workplace and research standards are applied. No exploration warranted and negotiation stops.	Exploration fosters more questions, debate and discussion continue, focussed on categorizing novelty – unique, distinct or revolutionary. Debate/negotiation moves to different topics based on a) distinction; b) socio-economic change and c) purpose or utility of horizontal gene transfer technology.
Promoters of biotechnology: Biotechnology Industry Organization (BIO) (2003); BIOTEC Canada (2000); Industry, Sciences and Technology (1990); Ministry of State for Science and Technology (1987)	Critics of biotechnology (managers and resisters): Greenpeace (2002 and 2000); Ho (2000); Rifkin (1998); Suzuki and Knudtson (1990); Third World Network (TWN); Women's Environmental Network (WEN) (1999)

B. Distinction

What is the significant difference between 'modern' and 'traditional' when assessing horizontal genetic transfer? Is this difference simple or complex? Is the distinction between 'modern' and 'traditional' and 'simple' or complex' significant enough to provoke cautious or suspicious responses? What are the criteria for rejecting 'modern' and 'complex' technologies?

A. Simple technology	B. Complex technology
If a simple technology, then it follows from principles of heredity and genetic fusion. GE biotechnology is novel, but it continues on from other simple technologies that also use these principles.	Resistance emerges. If a complex technology, exploration focuses on its complexity... Is GE biotechnology a process, a product or both process and product? How will assessment proceed? Is scientific knowledge and interpretation sufficient?
Definition based on material reduction; forecloses debate and negotiation ends if regulations fit criteria of simple technology (ie substantial equivalence) But if debate explores the unique novelty of GE biotechnology products, then negotiation shifts to debates about trade and products, assuming imminent entry into international markets.	Complexity of technology opens negotiation to examine criteria for scientific due diligence and assessment of risk/hazard/danger: a) appropriateness of technology; b) response (moratorium, caution; more research); c) what other forms of assessment can support decision-making for or against technological development.
Debate re-opens to focus on products: a) monitor for risk; b) place restrictions on production and/or trade; c) initiate consumer product protections, for example, labeling. Negotiation proceeds as an economic issue.	Negotiation proceeds to address limitations of scientific knowledge and its interpretation, possibly including other types of assessments and/or criteria. If negotiation shifts to scientific R&D it explores the due diligence procedures of scientific research and hazards of researching dangerous substances. If negotiation shifts to GE/GMO as dangerous substances then exploration opens to occupational/public health and criteria for continuing scientific research. Each negotiation site addresses ethical, environmental and health issues.
Managers: Cooke (1977); Grace (1997); Nottingham (2000)	Resisters: Ho (2000); Lewontin (1991); Rifkin (1983); Steinbrecher (WEN); Suzuki and Knudtson (1990)

I have not included a third series of arguments, that modern technology is a matrix or web of components; therefore as a feature of megatechnology genetic engineering is linked to data gathering, monitoring and storage; digital conversions and nanotechnology. This argument is the most recent addition to debates about biotechnology emanating from grass-roots circles and not evident in formal state-led negotiations. However, biotechnology defined as megatechnology provokes arguments to reject it. See, Andrew Kimbrell (1993) *The Human Body Shop*, San Francisco: Harper Collins, Derrick Jensen and George Draffan (2004) *Welcome to the Machine*, White River Junction: Chelsea Green, Jerry Mander (1991), Lewis Mumford (1962) *Technics and Human Development*, NYC: Harcourt Brace Jovanovich and Wolfgang Sachs (1999).

C. Revolutionary Shift or Change

Revolution: Modern biotechnology is similar to the 'Green Revolution' and is part of other technological innovations that apply modern scientific discoveries. Or, 'the biotech revolution' will shift aside or replace traditional approaches and is not complimentary to current social and economic conditions.

A. no major shift or change	B. major change occurs	C. major shifts occur
<p>GE biotechnology does not pose significant alteration as it is complimentary to natural evolutionary process and now a part of a larger set of tools used for cultivation and production. This proposition reiterates the idea that biotechnology is similar to other technology.</p>	<p>GE biotechnology is revolutionary as both technique and products will change current circumstances. Questions emerge about the types of changes to anticipate, debate concerns questions about change, whether positive or negative and how to mitigate negative consequences. Debate explores whether transgenic technology has problem-solving potential.</p>	<p>GE biotechnology is revolutionary and will alter traditional agriculture and other subsistence economies. GE biotechnology cannot co-exist with ecological, organic or traditional approaches. GE biotechnology threatens to displace, replace or sidetrack completely sustainable practices, including indigenous knowledge, ecological sustainable farming, and natural reproduction.</p>
<p>GMO/GE deemed suitable. Negotiation focuses on technical aspects, proceeds as an issue of industrial development (capacity building). Exploration of capacity building shifts negotiation to discuss further technological developments, choice and availability of these tools.</p>	<p>Debate about appropriate technology, primarily a scientific and technical issue. Exploration re-focuses on GE as a problem solving applications. Negotiation explores questions:</p> <ul style="list-style-type: none"> a) use and/or usefulness; b) consequences of use; c) criteria for assessment; may invoke precautionary principle and/or risk management criteria. 	<p>Exploration focuses on the ecological, environmental and socio-economic issues. Negotiation focuses on questions</p> <ul style="list-style-type: none"> a) moratorium of R&D, distribution, production, and trade b) adverse/negative effects on environment, health, and other social, cultural and economic considerations.
<p>Negotiation focused on promoting GE biotechnology as a viable option, despite resistance to regulation. Exploration limited to GE biotechnology as substantial equivalence, simple and beneficial technologies.</p>	<p>Negotiation proceeds to questions of regulation. Scientific uncertainty emerges as a determining factor to manage perceived risks of biotechnology, may explore precaution. Negotiation manages uncertainty, qualifying GMO use according to its effects, not its than purpose or usefulness</p>	<p>Resistance emerges when traditional and alternatives are promoted. Negotiation responds to adverse impact on the environment. Resistance to biotechnology due to a) precautionary principle as harm prevention (b) support for 'traditional'/alternative cultural practices, such as organics.</p>
<p>Promoters: BIO (2003); BIOTECCanada (2000); Koshland (1986); Paarlberg (2000); Prentis (1984)</p>	<p>Managers: Canadian Institute for Environmental Policy and Law (CIELAP)/Shenarchuk (2000); Cooke (1997); Nader (2001); Rifkin (1983 & 1998); Suzuki and Knudtson (1990); Tapper (2002)</p>	<p>Resisters: Anderson (1999); CUSO (2000); Kneen (1999); Mander (1991); Roberts, MacRae and Stahlbrand (1999); WEN (1999)</p>

I have not included a fourth series of arguments regarding technological replication of biological matter because it has not been an explicit feature of formal negotiations. This argument can be found in science fiction and scholarship about technological developments in the life sciences. See Elliot, Robert (1997), *Faking Nature*, NYC: Routledge; Haraway, Donna (2004) *The Haraway Reader*, NYC: Routledge; McKibben, Bill (2003) *Enough*, NYC: Henry Holt & Co.

D. Purpose/Utility

What is the purpose of GE biotechnology? What is GE biotechnology meant to accomplish? Are the benefits of biotechnology helpful for biodiversity? Should GE biotechnology be promoted, managed or resisted?

A. Technical Solution	B. Enabling Ability	C. Problem
GE biotechnology provides a technical solution to problems in controlling disease, genetic malformation and environmental distress and crisis. Nature is unpredictable or chaotic and needs to be controlled or managed.	GE biotechnology has the ability to alter genetic codes and usurp natural processes of reproduction, thus enabling its developers to bypass traditional methods of replication and reproduction, which have become hampered. Nature/biodiversity needs enhancement.	GE biotechnology alters genetic character and usurps natural processes; therefore, it is a form of genetic contamination. Nature has been damaged. Nature needs to be protected against invasive technology.
Negotiation explores human control of nature. Technical design corresponds directly to a specific type of problem, celebrated and promoted to its fullest potential.	Negotiation focuses on questions of its enabling and usefulness: a) caution in GE/GMO use; or b) suspicion – suspend use until research validates assumptions regarding risk and/or safety.	GE biotechnology rejected outright, debate shifts to explore organic or ecological forms of development. Negotiation re-focuses on biodiversity shifts and shifts focus from biotechnology.
Coalition among science, commerce and government formed to promote the benefits accrued through technology. Negotiation shaped according to a positive depiction of design and anticipated results. Discussions restrict debate as negotiation resists critical interpretations.	Caution: leads to management approach, negotiating terms and obligations of use. Assessment is cautious, while negotiation proceeds to manage potential and known effects. Suspicion: leads to precaution while developing research to monitor effects on environment; plant and animal reproduction; health effects in animals and humans. Use suspended until additional research indicates safe and beneficial effect.	Debate opens to critiques of technological progress, closing negotiation from discussing the possibilities of relying on technological innovation. Negotiation focuses on precautionary principle. Resistance fosters social movements promoting organic, ecological based production systems and slower forms of development (ie Slow Food movement).
promoters: (BIO (2003); BIOTECCanada (2000); Biotech Knowledge Centre; Canadian Biotechnology Strategy Secretariat (CBSS) (1998); Ouellete and Cheremisinoff (1985); Wooley and Vowles (2000);	Caution: Grace (1997); Rifkin (1998); Tapper (2002); Union of Concerned Scientists; WWF Suspicion: Council of Canadians (2000); Green Party of Canada (2001); Greenpeace (2000) Sierra Club of Canada (2000);	resisters: Anderson (1999); Biotech Action Montreal (BAM); ETC Group (2003); Food Action Ottawa (FAO); Food Not Lawns; GeneAction (2000); Hawthorne (2002); Mander (1991) Seeds of Diversity; WEN (1999)

Bibliography

- Adams, Carol (1996) "Ecofeminism and the Eating of Animals", *Ecological Feminist Philosophies*, Warren, Karen, ed, Bloomington: Indiana U. Press, p 114-136.
- Ah-You, K., et.al. (2000) *Cleaner Production Through Biotechnology*, Life Sciences Branch, Industry Canada.
- Alfred, Taiaiake (1999) *Peace Power Righteousness, an indigenous manifesto*, Toronto: Oxford U Press.
- Altieri, M (2002) "For an Agriculture that Doesn't Get Rid of Farmers", an interview with Miguel Altieri, *NACLA, Report on the Americas*, Vol XXV #5, March/April, 2002, p29-34.
- Anderson, Luke (1999) *Genetic Engineering, Food and our Environment*, White River Junction: Chelsea Green Publishing Company.
- Arnold, David (1996) *The Problem of Nature, Environment, Culture, and European Expansion*, Cambridge: Blackwell.
- Baechler, Gunther (1999) "Environmental Degradation and Violent Conflict: Hypotheses, Research Agendas and Theory Building", *Ecology, Politics and Violent Conflict*, Suilman, Mohamed, ed, London: Zed Books, p76-112.
- Babcock, Linda and Sara Laschever (2003) *Women Don't Ask, Negotiation and the Gender Divide*, Princeton: Princeton U Press.
- Bail, Christoph, Robert Falkner and Helen Marquard, eds (2002) *The Cartagena Protocol on Biosafety – Reconciling Trade in Biotechnology with Environment and Development?* London: Earthscan.
- Bailey, Aimee (2002) *Anishnabe 101: the basics of what you need to know to begin your journey on the Red Road*, Golden Lake: The Circle of Turtle Lodge.
- Baltaz, D (1998) *Why We Do It, Organic Farmers on Farming*, Kitchener: Sand Plains Publishers.
- Baron, Lois, ed. (2003) *Editors' and Reporters' Guide to Biotechnology*, Washington DC: BIO.
- Battiste, Marie, ed (2000) *Reclaiming Indigenous Voice and Vision*, Vancouver: UBC Press.
- Bear, Leroy Little (2000) "Jagged Worldviews Colliding", *Reclaiming Indigenous Voice and Vision*, Battiste, Marie, ed, Vancouver: UBC Press, p77-85.

- Berry, Wendall (1977) *The Unsettling of America Culture and Agriculture*, NYC: Avon.
- Birkeland, Janis (1993) "Ecofeminism: Linking Theory and Practice," *Ecofeminism, women, animals, nature*, Gaard, Greta, ed., Philadelphia: Temple U Press, p13-59.
- Botkin, Daniel (1990) *Discordant Harmonies, A New Ecology for the 21st Century*, NYC: Oxford Press.
- Boyens, Ingeborg (2000) *Unnatural Harvest*, Toronto: Doubleday Canada.
- Canadian Press (1999) Would you buy those bananas if they were labeled 'Biotech'?, *Globe and Mail*, April 24/99.
- Carrell, S (2003) "Government determined to sell GM food to consumers", *The Independent*, June 22, 2003,
http://news.independent.co.uk/low_res/story.jsp?story=417808&host=3&dir=58.
- Chase, Steven (2003) Canadians want labels on modified food, poll says, *Globe and Mail*, Dec 4/03
- Chatterjee, Pratap and Matthias Finger (1994) *The Earth Brokers, power, politics and world development*, London: Routledge.
- Clark, Ann with Tony McQuail, Jude Otis, Johanna Wandel, Anne Macey, Alan Hall and Veronica Mogyorody (2000) "Organic Agriculture in Ontario: Past, Present and Future," paper presented at the Canadian Organic Growers Annual Conference, January 26-28, 2001, Guelph, Ontario.
- Clark, Edwin (1985 "Balancing Risks and Benefits", *Biotechnology, Implications for Public Policy*, The Brookings Institute, record of conference discussions, January 15-16, 1985, Washington DC: Brookings Institute.
- Churchill, Ward (2003) *Acts of Rebellion, the Ward Churchill Reader*, NYC: Routledge.
- (1995) *Since Predator Came*, Littleton: Aigis Publication.
- (1992) *Struggle For The Land, Indigenous Resistance to Genocide, Ecocide and Expropriation in Contemporary North America*, Toronto: Between the Lines.
- , ed. (1991) *Critical Issues in Native North America*, vol 2, Copenhagen: International Working Group for Indigenous Affairs (IWGIA).
- Code, Lorraine (1993) "Taking Subjectivity into account", *Feminist Epistemologies*, Alcoff, Linda and Elizabeth Potter, eds, NYC: Routledge, p15-48.

- Coghlan, Andy, Philip Cohen, Bob Holmes, Kurt Kleiner, Debora MacKenzie, Rachel Nowark and Fred Pearce (2002) "Beyond Organic: The Smart Farming Revolution – Guaranteed Genetically Modified and Organic", *The New Scientist*, 18, May, 2002, p31-47.
- Cohen, Herb (1981) *You Can Negotiate Anything*, Toronto: Bantam.
- Cohen, Raymond (1999) "International Negotiation: A Semantic Analysis", unpublished paper given at International Studies Association (ISA), Washington US, 16pp.
- Cooke, Robert (1977) *Improving on Nature*, NYC: Quadrangle Books.
- Cooper, Ann (2000) *Bitter Harvest*, NYC: Routledge.
- Cooper, Arnie (2003) "Earthly Delights: Cultivating a New Agricultural Revolution: An Interview with Michael Ableman", *Sun*, Issue #230, June 2003, p4-14.
- Conca, Ken and Geoffrey Dabelko, eds (1998) *Green Planet Blues*, 2nd ed., Boulder: Westview.
- Connell, R.W. (1987) *Gender and Power*, Standford: Standford U. Press.
- Cosbey, Aaron and Stas Burgiel (2000) The Cartagena Protocol on Biosafety: An analysis of results", International Institute for Sustainable Development – IISD occasional paper, <http://iisd.ca>.
- Cox, Robert, ed (1997) *The New Realism, Perspectives on Multilateralism and World Order*, NY: UN University Press.
- Daiyi, Nancy, Linda Ford and Deborah Rose (2002) "Life in Country, Ecological Restoration on Aboriginal Homelands", *Cultural Survival Quarterly*, Summer 2002.
- Davis, Angela (1998) *Angela Y. Davis Reader*, James, Joy, ed, Oxford: Blackwell.
- Davis, Martin (1996) "Philosophy of Language", *The Blackwell Companion to Philosophy*, Bunnin, Nicholas and E.P. Tsui-James, eds, Oxford: Blackwell, p 90-139.
- Dawkins, Kristin (1999) "Unsafe In Any Seed", *Multinational Monitor*, March 1999, Vol 20, #3, , online version, www.essential.org/monitor/mm1999/mm9903.05.html, downloaded 29/01/00, p1-5.
- Deloria Jr., Vine (1973) *God is Red*, NY: Delta.
- (1995) *Red Earth, White Lies, Native Americans and the Myth of Scientific Fact*, NY: Scribner.

- Denzin, Norman (1989) *Interpretive Interactionism*, Vol 16, Applied Social Research Methods Series, Newbury Park: Sage.
- Desai, Nitin (2002) "Neither "Davos Man" nor "Porto Alegre Protester"", *NPQ – New Perspectives Quarterly*, Vol. 19, #3, Summer, 2002, p6-7.
- Dhruvarajan, Vanaja and Jill Vickers (2002) *Gender, Race, and Nation, a Global Perspective*, Toronto: U of Toronto Press.
- Devaki, Jain (1991) Perspectives in Conflict Resolution Emerging from Women's Experiences", *Peace and Conflict Resolution in the World Community*, Rose, Anima, ed, New Delhi: Vikas Publishing House, p146-159.
- Diamond, Irene and Gloria Feman Orenstein (1990) "Introduction", *Reweaving the World, the Emergence of Ecofeminism*, Diamond, Irene and Gloria Feman Orenstein, eds., San Francisco: Sierra Club Books, p ix-xv.
- Dolan, Michael and Chris Hunt (1998) "Negotiating in the Ottawa Process: The New Multilateralism", *To Walk Without Fear*, Cameron, Maxwell, Robert Lawson, Brian Tomlin, eds, Toronto: Oxford University Press, p392-423.
- Dormann, Jürgen (1999) "Innovation, Technology, Society and Sustainability: The Implications of Biotechnology, speech given at the WBCSD Council Meeting, Germany, November, 4, 1999, World Business Council on Sustainable Development, www.wbcsd.org.
- Daniel Druksman (1997) "Negotiating in the International Context", *Peacemaking in International Conflict, Methods and Techniques*, Zartman, William I and J. Lewis Rasmussen, eds, NYC: United States Institute of Peace, p81-123.
- Dukes, Frank (1993) "Public Conflict Resolution: A transformation approach", *Negotiation Journal*, vol 9, #1, January 1993, p45-57.
- Dyer, Gwynne (1999) Frankenstein foods, *Globe and Mail*, Feb 20/99.
- Eckersley, Robyn (1992) *Environmentalism and Political Theory, Toward an Ecocentric Approach*, Albany: SUNY.
- Egziabher, Tewolde (2000) "Outstanding Issues of the Biosafety Negotiations", Third World Network website, www.twinside.org.sg/title/tewolde-cn.htm, downloaded 3/28/00, p1-5.
- (1999) "Power Affirmed to Men and of Safety Denied to Life", Third World Network website, www.twinside.org.sg/title/affirm-cn.htm, downloaded 3/28/00, p2-3.

Egziabher, Tewolde, Vandana Shiva, Mae-Wan Ho, Brian Goodwin, Elaine Ingham, Beatrix Tappeser, Regine Kollek, Nicanor Perlas, Diana Pombo, Gurdail Singh Nijar, Chee Yoke Ling, Dan Leskien (1996a) "Biosafety: Recent Findings and Need for a Protocol" (summary report), *Third World Resurgence*, #65/66, Jan/Feb 1996, p14-21.

——— (1996b) *Biosafety, Scientific Findings and Elements of a Protocol* Report of the Independent Group of Scientific and Legal Experts on Biosafety, Malaysia: Third World Network.

Eisler, Riane (1988) *The Chalice and the Blade*, NYC: Harper Collins.

——— (1996) *Sacred Pleasure, Sex, Myth and the Politics of the Body, new paths to power and love*, San Francisco: Harper Collins.

Falk, Richard (1991) "International Law in a Fragmented World: The Challenge of New Issues and New Actors", *New Directions in Conflict Theory: conflict resolution and conflict transformation*, Vayrynen, Raimo, ed, London: International Social Science Council (ISSC), p79-107.

Falkner, Robert (2000) "Regulating biotech trade: The Cartagena Protocol on Biosafety", *International Affairs*, Vol 76, #2, p299-313.

Fisher, Roger and Scott Brown (1988a) *Getting Together: Building Relationships as We Negotiate*, NY: Penguin Books.

——— (1988b) "How Can We Accept Those Whose Conduct is Unacceptable?", *Negotiation Journal*, April 1988, vol 4 #2, p125-136.

Fisher, Roger, Andrea Schneider, Elizabeth Borgwardt and Brian Ganson (1997) *Coping With International Conflict, A systematic approach to influence in international negotiation*, Upper Saddle River: Prentice Hall.

Fisher, Roger and William Ury (1991) *Getting to Yes, Negotiating Agreement Without Giving In*, NY: Penguin. Second ed., original published in 1981.

Fisher, Ronald and Loreleigh Keashly (1991) "The Potential Complementarity of Mediation and Consultation within a Contingency Model of 3rd Party Intervention", *Journal of Peace Research*, vol 26 #1, 1991, 29-42.

Fitz, D (2003) "The Biotech Industry and Repression in St. Louis", ZNet, posted on June 24, 2003, www.zmag.org/content/print_article.cfm?itemID=3824§ionID=7.

- Flitner, Michael (1998) "Biodiversity: Of Local Commons and Global Commodities", *Privatizing Nature, Political Struggles for the Global Commons*, Goldman, Michael, ed, New Jersey: Rutgers U. Press.
- Forbes, Jack (2001) "Nature and Culture: Problematic Concepts for Native Americans", *Indigenous Traditions and Ecology, The Interbeing of Cosmology and Community*, Grimm, John, ed, Cambridge: Harvard U Press, p103-124.
- Gaard, Greta, ed (1993) *Ecofeminism, Women Animals, Nature*, Philadelphia: Temple U Press.
- Galtung, Johan and Carl Jacobsen (2000) *Searching for Peace, the road to TRANSCEND*, London: Pluto Press.
- Geman, Ben (2000) "Food Fight: The Growing Grassroots Movement Against Genetic Engineering Hits Boston", *Boston Phoenix*, March 23, 2000, Common Dreams Newscentre, www.commondreams.org/views/032400-101.htm.
- Giddings, Val (1999) "Biosafety: An Industry Perspective as the deadline approaches", linkages/journal web posting, www.iisd.ca/journal/giddings.html.
- (1999b) "A New Green Revolution", www.ourplanet.com/imgversn/02/viewpoint.html.
- Godrej, Dinyar (2002) "Eight things you should know about patents on life", *New Internationalist*, #349, p1 and 9-12.
- Grace, Eric (1997), *Biotechnology Unzipped, Promises and Realities*, Toronto: Trifolium Books Inc.
- Griffin, Susan (1978) *Woman and Nature, the roaring insider her*, NYC: Harper & Row.
- (1982) *Made from this Earth, an anthologies of writings by Susan Griffin*, NYC: Harper & Row.
- Grinde, Donald and Bruce Johansen (1995), *Ecocide of Native America, Environmental Destruction of Indian Lands and Peoples*, Santa Fe: Clear Light Publishers.
- Gupta, Aarti (1999) Framing 'Biosafety' in an International Context", Environment and Natural Resource Program (ENRP) Discussion Paper E-99, Kennedy School of Government, Harvard University. <http://environment.harvard.edu/gea>.
- Hampson, Fen Oşler and Judith Reppy, eds (1996) *Earthly Goods: Environmental Change and Social Justice*, Ithaca: Cornell U Press.

- Hampson, Fen Osler with Michael Hart (1995) *Multilateral Negotiations: Lessons from Arms Control, Trade and the Environment*, Baltimore: John Hopkins University Press.
- Harry, Deborah and Franck Dukepoo (1998) *Indians, Genes and Genetics: What Indians Should Know About the New Biotechnology*, Nixon: Indigenous Peoples Coalition Against Biopiracy, pdf text from www.ipcd.org.
- Hawthorne, Susan (2002) *Wild Politics*, North Melbourne: Spinifex.
- Hayden, T (2003) "Globalization and GMOs", *The Nation*, June 23/03 and posted on enRAGE.org site by Biotech Project, Friday June 6, 2003, www.nerage.org/print.hpp?story=03/06/06/3459429.
- Ho, Mae-Wan (2000) *Genetic Engineering – Dream or Nightmare?*, NY: Continuum Publishing.
- (1999a) "Why genetic engineering is hazardous" *Third World Resurgence*, April/May 1999, #104/105.
- Holliday, Chad (1999) "Biotechnology and Sustainable Growth", speech delivered at the Boston Chief Executives Club, September 22, 1999, World Business Council for Sustainable Development (WBCSD), www.wbcsd.org.
- Holm, Soren (1994) "Genetic Engineering and the North-South Divide", *Ethics and Biotechnology*, Dyson, Anthony and John Harris, eds, NYC: Routledge, p48-49.
- Holmberg, Johan, Koy Thomson and Lloyd Timberlake (1993) *Facing the Future*, London: Earthscan Publications and IIED -- International Institute for Environment and Development.
- Hughes, Lotte (2003) *The no-nonsense guide to Indigenous Peoples*, Toronto: Between the Lines.
- Hurtado, Lorenzo Muelas (1999) *Access to the Resources of Biodiversity and Indigenous Peoples*, an occasional paper, Edmonds: The Edmonds Institute.
- Jensen, Derrick (2002a) *The Culture of Make Believe*, NYC: Context Books.
- (2002) *Listening to the Land*, San Francisco: Sierra Club Books/NYC: Context Books.
- Jordon, June (2002) *Some of Us Did Not Die*, NYC: Basic/Civitas Books.
- Juma, C (1989) *The Gene Hunters: Biotechnology and the Scramble for Seeds*, London: Zed Books.

- Karrass, Chester (1995) *Give and Take: the complete guide to negotiation strategies and tactics*, revised, NYC: Harper Business.
- Keil, Roger, David Bell, Peter Penz, Leesa Fawcett, eds. (1998) *Radical Ecology, Global and Local*, NYC: Routledge.
- Keohane, Robert and Marc Levy (1996) "Analyzing the Effectiveness of International Environmental Institutions", *Institutions for Environmental Aid: Pitfalls and Promises*, Cambridge: MIT Press, p5-27.
- Khor, Martin (1996) "Genetic Engineering: Science, Ecology and Policy, Report of a TWN Seminar", *Third World Resurgence*, #65/66, Jan/Feb 1996, p22-29.
- King, Ynestra (1994) "Feminism and the Revolt of Nature", *Ecology*, Merchant, Carolyn, New Jersey: Humanities Press, p198-206.
- Kneen, Cathleen (1999) "Just Food: The BC Food Systems Network", pamphlet, BC Food Systems Network/Cathleen Kneen, cathleen@ramshorn.bc.ca.
- Kneen, Brewster (1999) *Farmageddon*, Gabriola Is: New Society Publishers.
- Korten, D, N. Perlas and V. Shiva (2003) "Global Civil Society: The Path Ahead", Discussion paper, December 3, 2002, www.cadir.ph/features/Global_Cs_Path_Ahead_Main.htm.
- Koshland Jr, Daniel (1986) "Introduction, In Pursuit of the Renewable Frontier" *Biotechnology, The Renewable Frontier*, Daniel Koshland Jr., ed. Washington: American Association for the Advancement of Science, p ix-x.
- Knight, W. Andy (1997) "'Top-Down' and 'Bottom-Up' Multilateralism: Two Approaches in the Quest for Global Governance", *Multilateralism and Regional Security*, Fortmann, Michel, S. Neil MacFarlane and Stephane Roussel, eds. Halifax: Canadian Peacekeeping Press, p15-42.
- Kuyek, Devlin (2002) *The Real Board of Directors, The Construction of Biotechnology in Canada 1980-2000*, Sorrento, BC: The Ram's Horn.
- Ladner, Kiera (2001) "When Buffalo Speaks: Creating an Alternative Understanding of Traditional Blackfoot Governance", doctoral dissertation, Carleton University, Ottawa.
- LaDuke, Winona (1999) *All Our Relations*, Boston: South End Press.
- Lambrecht, B (2001) *Dinner at the New Gene Café*, NYC: Thomas Dunne Books/St. Martin's Griffin.

- Large, Judith (1995) "Feminist Conflict Resolution", *A Diplomacy of the Oppressed: New Directions in International Feminism*, Ashworth, Georgina, ed, London: Zed Books, p23-32.
- Lawrence, Bonita and Kim Anderson eds (2003) *Strong Women Stories, Native Vision and Community Survival*, Toronto: Sumach Press, p70-80.
- Leahy, S (2000) "Gene Pool", *Sustainable Times*, CUSO, Summer, 2000, #16.
- Lerner, Gerda (1993) *The Creation of Feminist Consciousness, From Middle Ages to Eighteen-Seventy*, NYC: Oxford U Press.
- (1986) *The Creation of Patriarchy*, Oxford U Press.
- Lewicki, Roy, David Saunders and John Minton, eds (1999) *Negotiation*, 3rd ed., NY: Irwin/McGraw Hill.
- Lewontin, RC (1991) *Biology as Ideology*, Concord: Anansi.
- Levidow, Les and Joyce Tait (1995) "The Greening of Biotechnology: GMOs as Environment-Friendly Products", *Biopolitics: A Feminist and Ecological Reader on Biotechnology*, Shiva, Vandana and Ingunn Moser, eds, London: Zed Books, p121-190
- Levinger, George and Jeffrey Rubin (1994) "Bridges and Barriers to a More General Theory of Conflict", *Negotiation Journal*, vol 10, #3, July 1994, p201-215.
- Ling, Yoke Chee (1999) "US behind the collapse of the Caragena Biosafety Talks", Third World Network website edition, www.twinside.org.sg/title/cheey-cn.htm, p1-5; text version published by *Third World Resurgence*, #104/105, April/May 1999, p5-7.
- Lubchenco, Jane (1998) "Nature, Science and Society", *Resurgence*, #190, September/October 1998, p12-18.
- Magowan, Fiona (2002) Ganna, *Cultural Survival Quarterly*, Summer 2002.
- Mander, Jerry (1991) *In the Absence of the Sacred, the Failure of technology and the Survival of the Indian Nations*, San Francisco: Sierra Club Books.
- Marushko, Irene (2000) "Farmer battles firm over modified seeds", *Globe and Mail*, June 3, 2000.
- Masood, Ehsan (1999) "African 'flexibility' may open path to biosafety agreement", February 18, 1999, <http://helix.nature.com/wcs/blb.html>.

- Mathur, Purnima (1991) "On Conflict Resolution", *Peace and Conflict Resolution in the World Community*, Rose, Anima, ed, New Delhi: Vikas Publishing House, p106-119.
- McGregor, S (2001) "GE whiz: Ralph Nader brings consumer advocacy to Canada", *Ottawa Xpress*, February 15, 2001.
- McSmith, A (2003) "Blair buried health warning on GM crops, says sacked minister", *The Independent*, June 22, 2003, http://news.independent.co.uk./low_res/story.jsp?story=417828&host=3&dir=58.
- Meacher, M (2003) "Michael Meacher: Are GM crops safe? Who can say? Not Blair", *The Independent*, June 22, 2003, (UK House of Commons, hansard record, published in *The Independent*), http://news.independent.co.uk./low_res/story.jsp?story=417687&host=6&dir=58.
- Merchant, Carolyn (1996) *Earthcare*, NYC: Routledge.
- (1994) "Introduction", *Ecology, Key Concepts in Critical Theory*, New Jersey: Humanities Press International, Merchant, C, ed, p1-25.
- (1980) *The Death of Nature*, NYC: Harper & Row.
- Merton, Thomas (1965) *Gandhi on nonviolence: A selection from the writings of Mohandas Gandhi*, NY: New Directions Publisher Corp.
- Meyer, Hartmut (1999) "Precise Precaution Versus Sloppy Science", Third World Network, www.twinside.org.sg/title/3food-cn.htm.
- Mies, Maria and Vandana Shiva (1993) *Ecofeminism*, London: Zed.
- Mills, D (2000) "Campaigning for Safer Foods" *PEN*, Vol 15, #2, March 2000 p1 & 7.
- Mills, Patricia Jagentowicz (1996) "Feminism and Ecology: on the Domination of Nature", *Ecological Feminist Philosophies*, Warren, Karen, ed. Bloomington: Indiana U Press, p211-227.
- Minh-ha, Trinh (1989) *Woman Native Other, writing postcoloniality and feminism*, Bloomington, Indiana U Press.
- Mitchell, Alanna (2000) The great canola conundrum, *Globe and Mail*, May 20/2000.
- Mitchell, Christopher (1993) "Problem-Solving exercises and theories of conflict resolution", *Conflict Resolution Theory and Practices: Integration and*

- Application*, Sandole, Dennis and Hugo van der Merwe, eds, Manchester: Manchester University Press, p78-94.
- Monbiot, George, ed (1998) "The Gene Debate" a special issue of *Resurgence*, #188, May/June, 1998, p7-22.
- Mulkins, Lindsey, Roger Samson, Louie Amongo, Emmanuel Yap, Teodoro Menoza and Ben Ramos (2000) "The Flora Community in Transition" Resource Efficient Agriculture Production – *REAP-Canada Newsletter*, December 2000.
- Munson, Abby (1995) "The United Nations Convention on Biological Diversity", *The Earthscan Reader in Sustainable Development*, Kirchy, John, Phill O'Keefe and Lloyd Timberlake, eds, London: Earthscan, p35-62.
- Myers, Nancy (2000) "The U.S. and the Precautionary Principle: An NGO Response in the Context of the Cartagena Protocol", workshop paper given at the International Committee on the Cartagena Protocol, Montpellier, France, December, 2000. Located from the Science and Environmental Health Network (SEHN) website, www.sehn.org/rtfdocs/ICCP.rtf.
- Nader, Ralph (2001) "Changing the Nature of Nature: Genetically Engineered Food", San Francisco Bay Guardian, available through FAO – food action ottawa listserve, received Jan 9, 2001.
- Neale, Margaret and Max Bazerman (1985) "Perspectives for Understanding Negotiation," *Journal of Conflict Resolution*, vol 29, #1, March 1985, p33-35.
- Nijar, Gurdial Singh (1999) "Elephants, mouse-deer and genetic modification", www.ourplanet.com/imgversn/102/viewpoint.html, p1.
- (1999b) "EU – the South's unreliable ally at Cartagena", *Third World Resurgence*, #104/105, April/May 1999, p8-9.
- Nolan, Ron (1997) "Environmental Conflict: An Opportunity to Develop Critical Thinking Skills", *The American Biology Teacher*, vol 59, #6, June 1997, p324-325.
- Nordstrom, Carolyn (1997) *A Different Kind of War Story*, Philadelphia: U of Pennsylvania Press.
- Nottingham, Stephen (2002) *genscapes: the Ecology of Genetic Engineering*, London: Zed Books.
- Ouellette, Robert and Paul Cheremisinoff (1985) *Essentials of Biotechnology*, Pennsylvania: Technomic Publishing Company.

- Paarlberg, Robert (2000) "The Global Food Fight" *Foreign Affairs*, May/June 2000.
- Panem, Sandra, ed. (1985) *Biotechnology, Implications of Public Policy*, Washington DC: The Brookings Institute, record of conference discussions, January 15-16, 1985, Washington DC: Brookings Institute.
- Peterson, V. Spike, ed. (1992) *Gendered States*, Boulder: Rienner.
- Peterson, V. Spike and Anne Sisson Runyan (1993) *Global Gender Issues*, Boulder: Westview.
- Platter, Adele and Thomas Mayer (1989) "A Unified Analysis of International Conflict and Cooperation" *Journal of Peace Research*, vol 26, #4, 1989, p367-383.
- Pollan, Michael (2001) "Behind the Organic-Industrial Complex", *New York Times*, May 13, 2001, www.nytimes.com/2001/05/13/magazine/13organice.html.
- Peacock, Sandra and Nancy Turner (2000) "The Interior Plateau of British Columbia", *Biodiversity & Native America*, ed, Minnis, Paul and Wayne Elisens, U of Oklahoma, Norman.
- Prentis, Steve (1984) *Biotechnology, A New Industrial Revolution*, Orbis: London.
- Pruit, Dean and William Rick Fry (1989) "Conflict Escalation and Problem Solving", *Peace: Meanings, Politics, Strategies*, Forcey, Linda, ed, NY: Praegar, p149-162.
- Putnam, Linda (1994) "Challenging the Assumptions of Traditional Approaches to Negotiation", *Negotiation Journal*, v10, #4, Oct. 1994, p337-346.
- Raghavan Chakravarthi (1998) "New patent aims to prevent farmers from saving seed", *Third World Resurgence*, #92, April 1999, p20-21
- Rapoport, Anatol (1964) *Strategy and Conscience*, NYC: Harper and Row.
- Rath, Biraja Shankar (1991) "Gandhi and International Conflict Resolution", *Peace and Conflict Resolution in the World Community*, Rose, Anima, ed, New Delhi: Vikas Publishing, p120-145.
- Ren, Zhou Dun (1993) "Yin-Yang Theory and Conflicts", *Conflict between People and Groups: causes, processes and resolutions*, Worchel, Stephen and Jefferey Simpson, eds, Chicago: Nelson-Hall Publishers, p233-235.
- Richardson, Boyce (1993) *People of Terra Nullius, betrayal and rebirth in Aboriginal Canada*, Toronto: Douglas & McIntyre.

- Ridington, Robin (1992a) "Knowledge, Power & The Individual in Sub-Arctic Hunting Societies", p114-122, and (1992b) "Technology, World View and Adaptive Strategy in Northern Hunting Society", p160-166, both texts from *Readings in Indian/Native Studies*, Miller, David, Carl Bear, James Dempsey and R. Welsley Heber, Piaport Reserve #75: Saskatchewan Federated College Press.
- Rifkin, Jeremy (1998) *The Biotech Century*, NYC: Tarcher Putnam.
- (1983) *Algeny*, NYC: Viking.
- Roberts, Wayne, Rod MacRae and Lori Stahlbrand (1999) *Real Food for a Change*, Toronto: Random House, Canada.
- Ross, Lee and Constance Stillenger (1991) "Barriers to Conflict Resolution" *Negotiation Journal*, vol 7, #4, October 1991, p389-404.
- Ross, Rupert (1992) *Dancing with a Ghost*, Markham: Octopus Publishing Group.
- Runge, C Ford and Benjamin Senauer (2000) "A Removable Feast", *Foreign Affairs*, May/June 2000.
- Russell, Edmund (2001) *War and Nature*, London: Cambridge U Press.
- Ryser, Rudolph (1984) "Nation-States, Indigenous Nations, and the Great Lie", *Pathways to Self-Determination – Canadian Indians and the Canadian State*, Little Bear, Leroy, Menno Boldt, J. Anthony Long, eds, Toronto: U of Toronto Press, p27-35.
- Sachs, Wolfgang (2001) *Rio+10 and the North South Divide*, Berlin, Heinrich Boll Foundation, www.worldsummit2002.de.
- (1999) *Planet Dialectics, explorations in environment and development*, London: Zed Books.
- ed. (1993) *The Development Dictionary*, London: Zed Books.
- Salem, Paul (1993) "A critique of Western Conflict Resolution from a Non-western Perspective", *Negotiation Journal*, vol 9, #4, October 1993, p361-369.
- Salleh, Ariel (1997) *Ecofeminism as Politics, nature, Marx and the postmodern*, London: Zed.
- Sanchez, Angela (1999) "New Delay for Biosafety Protocol", February 25, 1999, www.oneworld.org/ips2/feb99/18_20_084.html, p1-2.
- Sandilands, Catriona (1999) *The Good-Natured Feminist, Ecofeminism and the Quest for Democracy*, Minneapolis: U of Minnesota Press.

- Sandole, Dennis and Hugo van der Merve, eds (1993) *Conflict Resolution Theory and Practice*, Manchester: Manchester University Press, p3-24.
- Saunders, Harold (1985) "We Need a Larger Theory of Negotiation: The Importance of Pre-negotiating Phases", *Negotiation Journal*, vol 1, #3, July 1985, p249-262.
- Sauve, M (2000) "Permaculture for a Sustainable Future", *PEN Insider*, Vol 15, #2, March 2000, p3.
- Scofield, Heather (2001) "Farmer loses to Monsanto over patent infringement", *Globe and Mail*, March 30, 2001.
- (1999) Genetically altered food may soon be labeled, *Globe and Mail*, Sept. 18/99.
- Scott, James (1985) *Weapons of the Weak: Everyday forms of Peasant Resistance*, New Haven: Yale Press.
- Seager, Joni (1993) *Earth Follies, coming to feminist terms with the Global Environmental Crisis*, NYC: Routledge.
- Shiva, Vandana (2003) "Biotech Wars: Food Freedom Vs Food Slavery, June 23, 2003, www.zmag.org/sustainers/content/2003-06/23shiva.cfm.
- (1997) *Biopiracy, The Plunder of Nature and Knowledge*, Toronto: Between the Lines.
- (1993) *Monocultures of the Mind*, London: Zed Books and Third World Network.
- (1991) *Biodiversity, Social & Ecological Perspectives*, London: Zed Books.
- (1989) *Staying Alive*, London: Zed Books.
- Shiva, Vandana and Holla-Bhar, Radha (1996) "Piracy by Patent, the case of the Neem Tree", *The Case Against the Global Economy*, Mander, Jerry and Edward Goldsmith, eds. San Francisco: Sierra Club Books, 146-159.
- Sioui, Georges (1992) *For an Amerindian Autohistory*, Montreal: McGill-Queen's U Press.
- Silliman, Jael and Ynestra King (1999) *Dangerous Intersections*, Cambridge: South End Press.
- Slim, Hugo, Paul Thompson, Olivial Bennet and Nigel Cross, eds (1993) *Listening for a Change, Oral Testimony and Community Development*, London: Paros Publication.

- Smith, Justine (1999) "Native Sovereignty and Social Justice: Moving Toward an Inclusive Social Justice Framework," *Dangerous Intersections*, ed Silliman, Jael and Ynestra King, Cambridge: South End Press.
- Smith, Linda Tuhiwai (1999) *Decolonizing Methodologies, Research and Indigenous Peoples*, London: Zed Books.
- Soper, Kate (1995) *What is Nature?*, Cambridge: Blackwell.
- Stein, Janice Gross (1989) "Getting to the Table: Triggers, Stages, Functions and Consequences of Prenegotiation", *Getting to the Table*, Stein, JG, ed, Baltimore: John Hopkins U. Press, p239-268.
- Stephenson, Carolyn (1997) "The United Nations and Alternative Approaches to Conflict", unpublished paper given at International Studies Association (ISA), Toronto, 1997, 20pp.
- Stewart, L (2001) "Who can you trust?", *The Gazette*, Montreal, July 20, 2001.
- Stigson, Björn (2001) "Benefits and risks of new technologies for sustainable development", speech given at OECD Forum 2001, May 14, 2001, World Business Council for Sustainable Development, www.wbcsd.org.
- Strong, Maurice (2000) *Where On Earth Are We Going?*, Toronto: Knopf Canada.
- Story, Jennifer (2000) "Buying Science", *Canadian Perspectives*, Fall 2000, p7.
- Sturgeon, Noël (1997) *ecofeminist Natures, race, gender, feminist theory and political action*, NYC: Routledge.
- Susskind, Lawrence (1994) *Environmental Diplomacy: Negotiating more effective global agreements*, NY: Oxford.
- Susskind, Lawrence and Alan Weinstein (1980) "Towards a Theory of Environmental Dispute Resolution", *Environmental Affairs Law Review*, Boston College, vol 9, p311-357.
- Swanson, Timothy (1997) *Global Action For Biodiversity*, London: Earthscan, IUCN and WWF.
- (1999) "Why is there a biodiversity convention? The international interest in centralized development planning" *International Affairs*, Vol 75, #2.
- Suzuki, David and Peter Knudtson (1990) *Genethics, The Ethics of Engineering Life* Toronto: Stoddart.

- Swenarchuk, Michelle (2000) *The Cartagena Biosafety Protocol: Opportunities and Limitations*, Toronto: Canadian Environmental Law Association – CELA, Brief #385
- Tane, Haikai (2000) *Colonial Myths-Cultural Realities: Sustainable Development in the South Pacific*, Te Karere Ipurangi Maori News Online, <http://maorinews.com/karere/comment/colonial.htm>.
- Tauli-Corpuz, Victoria (2001) *Biotechnology and Indigenous Peoples*, download from Third World Network website March 2001, www.twinside.org.sg/title/tokar.htm.
- Tam, Pauline (2000) Canada faces loss of grain markets over modified food, *Ottawa Citizen*, May 20/2000.
- Tickner, Joel, Carolyn Raffensperger and Nancy Myers (1998) *The Precautionary Principle in Action, a handbook*, pdf format, available through www.sehn.org/rtdocs/handbook-rtf.trf and www.essential.org/monitor/mm19999/mm9903.05.html.
- Todorov, Tzvetan (1984) *The Conquest of America*, NYC: HarperPerennial.
- Tokar, Brian (1997) *Earth For Sale*, Boston: South End Press.
- Trew, Stuart (2002) Seeds of discontent poison markets, *Ottawa X*, Sept. 26-Oct 2/2002.
- UN Wire (1999) “International: Economic Concerns Steered Cartagena Talks”, Corporate Watch, www.igc.org/trac/corner/worldnews/other/33.html.
- Vance, Linda (1993) “Ecofeminism and the Politics of Reality”, *Ecofeminism, women, animals, nature*, Philadelphia: Temple U Press, p118-145.
- Vayrynen, Raimo (1991) “To Settle or Transform? Perspectives on the Resolution of National and International Conflicts”, *New Directions in Conflict Theory: Conflict Resolution and Conflict Transformation*, Vayrynen, Raimo, ed, London: International Social Science Council (ISSC), p1-25.
- Vidal John (2002) “Some yawn, some hope, some rage, some despair. The Summit goes on”, *The Guardian*, August 31, 2002.
- Visser, M (1986) *Much Depends on Dinner*, Toronto: McClelland and Stewart.
- Voice of Indigenous Peoples, Native People Address the United Nation* (1994), Santa Fe: Clearlight Publishers.
- Von Weizsacker, Christine (1993) “Competing Notions of Biodiversity, *Global Ecology, A New Arena of Political Conflict*, ed Wolfgang Sachs, London: Zed Books.

- Walsh, Kevin (2001) "The Auctioning of the Food System", *Food Not Lawns*, Montreal: Food Not Bombs/QPIRG McGill.
- Warfield, Wallace (1993) "Public Policy Conflict Resolution: The nexus between culture and process," *Conflict Resolution Theory & Practice*, Sandole, Dennis and Hugo van der Merwe, eds, Manchester: Manchester University Press, p176-193.
- Warren, Karen (1996a) "Ecological Feminist Philosophies: An Overview of the Issues", p xi-xxvi and (1996b) "The Power and Promise of Ecological Feminism", p19-41, *Ecological Feminist Philosophies*, Warren, Karen, ed, Bloomington: Indiana U. Press.
- Weatherford, Jack (1988) *Indian Givers, how the Indians of the Americas transformed the world*, NYC: Fawcett Columbine Book.
- Weldon, J, J. Ferguson and D. Shindler (1986) *Federal Expenditures for Biotechnology 1981-1986*, Canada: Ministry of State, Science and Technology, Biotechnology Unit, Strategic Technologies Branch.
- Wooley, Alexander and Andrew Vowles (2000) "Sensational Science or Science Fiction?", *Guelph Alumnus*, Vol 31, #1, Spring, p12-18.
- Wright, Susan (1994) *Molecular Politics: Developing American and British Regulatory Policy for Genetic Engineering, 1972-1982*, Chicago: U of Chicago Press.
- Zartman, William (1989) "Prenegotiation: Phases and Functions", *Getting to the Table*, Stein, Janice Gross, ed, p1-17.
- Zimmerman, Michael (1994) *Contesting Earth's Future, Radical Ecology and Post modernity*, Berkely: U of California Press.
- (1990) "Deep Ecology and Ecofeminism: the Emerging Dialogue", *Reweaving the World, the Emergence of Ecofeminism*, San Francisco: Sierra Club Books, p138-154.
- Zinn, Howard (1999) *A People's History of the United States*, NYC: HarperCollins Publishers.

Organizations

Biotechnology Industry Organization – BIO (2003) Biotechnology Guide, available in a pdf file, “BiotechGuide.pdf”, found on www.bio.org.

Biodevestation (2003) “Global Declaration from Biodevestation 7: a global citizen’s declaration for biosafety and food security”, issued and ratified at the 7th international grassroots gathering on Biodevestation, St. Louis, Missouri, USA, May 16-18, 2003. Biodevestation is a coalition of NGOs and grass-roots groups resisting GE biotechnology that hosts a counter-conference during BIO’s annual industry conference. Information posted May 22, 2003, www.biodev.org.

BIOTECCanada (2000) “FAQ” web page, www.biotech.ca.

——— (2001) *Meeting Your Needs ... Today and Tomorrow*, brochure, Ottawa, www.biotech.can.

Biotech Action Montreal – BAM (2000) “No GMOs in my plate”, pamphlet and information sheet, <http://bam.tao.ca>.

Biotechnology Caucus of Canadian Environmental Network – CEN (2001) “Biotechnology: Forging Ahead in Secret, in Haste and for Profit”, information sheet.

Canadian Association of Physicians for the Environment – CAPE (2000) “CAPE News”, Fall/Winter, 2000, Ontario, www.cape.ca.

Canadian Broadcasting Corporation – CBC (1999) Genetics in Food: Changing Mother Nature, CBC Online newservice: www.cbc/newsinreview/Nov%2099/Food%20Genetics/organic.html.

Canadian Environmental Network – CEN, Biotechnology Caucus (2001) Biotechnology: Forging Ahead in Secret, In Haste, and For Profit, factsheet, www.cen-rce.org.

Canadian Health Coalition (2001) Don’t Swallow Chretien’s Food Bill, c80, pamphlet, www.healthcoalition.ca

——— (2001) Update on Food Safety, www.healthcoalition.ca.

Canadian Health Food Association (2000) “GMO Debate: 95% of Canadians want the right to choose what they eat”, press release, August 15, 2000.

Canadian Institute for Environmental Law and Policy – CELAP (2002) *A Citizen’s Guide to Biotechnology*, Toronto: CELAP.

Canadian Organic Growers – COG (2001) “20 Years and Growing: Conference Proceedings”, January 26-28, 2001, University of Guelph.

——— (2000) Information package on organic food (including list of suppliers and information on organics for producers and consumers), Ontario, www.cog.ca.

——— (1999) “Canadian Organic Growers Position Statement on Biotechnology”, www.cog.ca/biotechnstateng.htm.

CornerHouse, The (2003) *Ten Reasons Why GE Foods Will Not Feed the World*, Organic Consumers Association, www.organicconsumers.org/ge/tenreasons.cfm.

Council of Canadians – CoC (2001) *Science and the Public Good: An International Conference Exploring the Impact of Genetic Engineering on Food, People and the Planet*, Conference Program, Crowne Plaza Hotel, Ottawa, February 16, 2001.

——— (2000) “The Facts on GE Foods”, pamphlet, www.canadians.org

——— (2000) “The Makers of Toxic Waste, Leaded Gas and Silicone Breast Implants would like to fix you dinner...” pamphlet., www.canadians.org

Council for Responsible Genetics (2002) “Reclaiming Progress”; “What Human Genetic Modification means for Women”; “Biotechnology in the News”; “Biopharmaceutical Agriculture”; “Exploiting Africa’s Famine”; “Oregon’s Battle to Label Genetically modified Food”; “Industrial Agriculture meets Surveillance Technology”, *GeneWatch*, Vol 15, #6, Nov-Dec 2002

Canadian University Students Overseas – CUSO (2000) CUSO in Canada, pamphlet and promotional material, www.cuso.org.

——— (1999) *A Closer Look at Genetically Engineered Foods*, Calgary: CUSO.

ETC Group – erosion, technology, concentration (2003) *Keyword Definitions*, www.etcgroup.org/key_defs.asp.

———, as RAFI – Rural Advancement Foundation International (1999) “Biodiversity Convention’s Terminator Decision Fails Biodiversity and Fails Farmers”, news release, June 28, 1999, p1-3, www.web.net/-oen/notices/rafi.html

Food Action Ottawa – FAO (c2000) information flyers on the GMO Debate; GE paradigm; Bill C287 (labelling); street theatre performance, action flyers; sample letters; and draft mandate statement, Ottawa. www.flora.org/c287 and www.flora.fao.ca.

Food Biotechnology Communications Network – FBCN (1999) “What’s in Store”, pamphlet, www.foodbiotech.org.

——— (1999) *A Growing Appetite for Information*, infobook, FBCN,
www.foodbiotech.org

Foundation on Economic Trends, The (2000) information kit on Anti-trust suit against Monsanto and the GE debate, Washington, DC: The Foundation on Economic Trends.

Friends of the Earth – FOE (2000) “Who Wants What at the International Biosafety Protocol Negotiations?” www.foc.org/safefood/biosafetyneeds.html.

——— (1999) “Biosafety Negotiations Fail: Trade and Agro-Business Interests Hijacked the Process, says Friends of the Earth, press release, February 24, 1999, p1-2. www.foeeurope.org/biotechnology/press_release_feb_24.html.

GE Working Group of the Guelph Environment Network (2001) “If we are what we eat, then what are we if we eat genetically engineered foods?”, pamphlet, Guelph, Ontario.

GeneAction (2000) “Say No to GMOs” pamphlet with resource guide,
geneaction@graffiti.net.

Global Industry Coalition – GIC (2000) “Global Industry Coalition – Biosafety Protocol: A Major Step Forward To Sustain Development of Biotechnology”, Press Release, *Canada NewsWire*,
www.newswire.ca/releases/January2000/29/c4276.html.

——— (1999) “Global Industry Coalition reaffirms its support of a successful biosafety protocol”, press release, www.seedquest.com/News/releases/usa/misc/N22.htm.

Greenpeace (2002) *How to Avoid Genetically Engineered Food: A Greenpeace Shoppers Guide*, Greenpeace Canada, September, 2002,
www.greenpeace.ca/shoppersguide.

——— (2000) “Harvesting Destruction”, A Bulletin from Greenpeace,
www.greenpeacecanada.org.

——— (2000) “Genetically Modified Food: the Secret Ingredient, Genetic Experiment”, campaign flyer, www.greenpeacecanada.org.

——— (2000) “Here is another approach to the problem of the government booklet”, email from Michael Koo, Greenpeace Toronto, April 7, 2000, from FAO listserve, (A response to CFIA’s *Food Safety and You*).

——— (2000) *Greenpeace Factsheets*: “Myths and Facts of Genetic Engineering”; “Genetically Engineered Foods in Canada”; “Health Risks and Genetically

Engineered Foods”; “The Environmental Impact of Genetically Engineered Crops”, www.greenpeacecanada.org.

Green Party of Canada (2001) *The Green Sheet*, platform pamphlet on organic agriculture, <http://green.ca>.

——— (2000) “First Principles: Think Globally Act locally”, pamphlet on key principles and values”, www.greenparty.on.ca.

Independent Organic Inspectors Association (2000) “Thorough, Professional Inspections of the Organic Industry”, pamphlet, Montana, USA, www.ioia.net.

Indigenous Peoples Council on Biocolonialism – IPCB (2002) *Indigenous Peoples Caucus Statement*, www.ipcb.org.

Ontario Federation of Food Co-ops (2000) “A word about organic foods”, pamphlet, Ontario

Ontario Natural Food Co-op (2000) “Buying Club Basics”, pamphlet, Ontario, www.onfc.ca.

Organic Choice Inc. (2000) “Certified Organic Produce, what is it? You’re questions answered”, pamphlet, Ontario

Organic Crop Improvement Association (Ont.) Inc. (2000) “Organic crop Improvement Association (Ont.) Inc.”, pamphlet, Ontario, www.ocia.on.ca

Organic Crop Producers & Processors Ontario Inc. (2000) “Growing Together”, pamphlet, Saskatoon and Lindsay, www.ocpro-certcanada.com

Organic Meadow (2000) “The Facts”, pamphlet, Ontario,

Organic Materials Review (2000) “Organic Materials Review Institute”, pamphlet, www.omri.org.

Natural Law Party – NLP (2000) “Genetically Engineered Food – A Serious Health Risk” Consumers Right to Know Campaign, NLP, pamphlet, www.natural-law.ca/genetic.

——— (2000) *Safe Food News*, Mothers For Natural Law of the Natural Law Party, USA, www.safe-food.org and www.natural-law.org.

North American Congress on Latin America – NACLA (2002) Who Owns Knowledge? special issue of *NACLA Report of the Americas*, Vol XXXV, #5, March/April, 2002, www.nacla.org.

Peoples Global Action (1998) “*Peoples’ Global Action Manifesto*” and “Hallmarks of the Alliance”, www.agp.org.

President’s Choice (2001) “Understanding Organics”, pamphlet, Loblaw/President’s Choice, www.presidentschoice.ca

Polaris Institute (2000) “‘Rigorous Regulation?’: How the Canadian Government Approves Genetically Engineered Foods and Crops without Adequate Testing”, pamphlet, Ottawa, www.polarinstitute.org.

REAP – Resource Efficient Agricultural Production – Canada (2000) *Newsletter*, December, 2000, Quebec, www.reap.ca

Quality Assurance International – QAI (2000) “FAQ’s”, pamphlet, California, USA

Science and Environmental Health Network – SEHN (c2000) FAQ web page, www.sehn.org/ppfaqs.htm.

Sierra Club of Canada and Canadian Health Food Association and Canadian Organic Growers (2000) “What is Genetic Engineering? ... What is Organic?”, pamphlet, www.sierraclub.ca/national.

——— (2000) “Designer Genes Cost the Earth”, SCAN: Sierra Club Activist News, Vol 2, #1, Spring 2000.

Society for Bio-Dynamic Farming and Gardening in Ontario (2000) “Demeter” and “History and Principles of Biodynamic Agricultural Methods”, pamphlets, Ontario.

Third World Network – TWN (1997) “Some critical environmental issues after Rio” *Third World Resurgence*, #81/82, May/June 1997, p20-26.

Via Campesina (2000) *Biodiversity and Genetic Resources*, Via Campesina III International Conference, www.viacampesina.org/imprimer.php3?id_article=42, p1-5.

Whole Village (2000) “A community dedicated to sustainable living”, pamphlet, Caledon, Ontario, www.wholevillage.org.

Women’s Environmental Network (WEN) (1999) *The Gene Files: Resource and Action Pack*, WEN, London, UK, www.gn.apc.org/WEN.

Zines

Bringing Democracy Home (2000), Institute for Social Ecology: Plainfield, April 2000.

Cultivating a moral Landscape (2001) Food Not Lawns: Montreal, Vol 1, January 2001.

Haymarket (2000) Issue #1, May, 2000, Ottawa.

——— (2002) Issue #4, July 2001, Ottawa.

Proper Propaganda Zine (1999) Issue #8, Spring-Summer 1999, IRATE: PEI.

de Moral, Andrea, Foelsche Arthur and Erin Royster (2000) *The Plunders of Biotechnology, It's not a Science, It's a Social Problem*, Plainfield, Vermont: Third Nature Press.

Government Documents

Australia, Nature Conservation Council of New South Wales – NSW, Community Biodiversity Network (1999) Media Release, December 13, 1999, www.cbn.org.au/member/cbn/news/media/19991213_53sci_biot.html.

Canada, The Canadian Biotechnology Strategy Secretariat – CBSS (1998), *The Canadian Biotechnology Strategy: An Ongoing Renewal Process*, Ottawa: CBSS.

Canada, Canadian Food Inspection Agency – CFIA, Office of Biotechnology, Agriculture and Agri-Food Canada and Health Canada, (2000) *Food Safety and You*, infobook, www.canada.gc.ca.

——— (2000b) Information Kit and factsheets on government regulation of GMO foods in Canada

——— (2000) “General Questions and Answers on Biotechnology, www.cfia-acia.agr.ca/english/ppc/biotech/fqas.html

——— (2001) “Status of Regulated Plants with Novel Traits (PNTs) in Canada: Environmental Release, Novel Livestock Feed Use, Variety Registration and Novel Food Use”, also posted on the web, www.cfia-acia.agr.ca.

Canada, Department of Foreign Affairs and International Trade – DFAIT, (1995) *Global Agenda*, Vol 3, #2, 1995, www.dfait-aei.gc.ca/english/news/nesletr/global/glob2-e.htm.

Canada, Department of Justice (2002) *Biotechnology Conference*, February 21-22, 2002, Westin Hotel, Ottawa, “Public Policy and Emerging Socio-Ethical Issues in Biotechnology”; “Indigenous Perspectives on Biotechnology”; “Environmental Sustainability and Biotechnology”, notes posted at <http://canada.justice.gc.ca/en/news/conf/biotech/fs3.html>.

- Canada, Environment, (2000) *The Green Lane*, News Release, April 11, 2000, www.ec.gc.ca/press/000411_n_e.htm.
- Canada, Environment, (2000) "Environmental Priority – Nature", www.ec.gc.ca/envpriorities/nature_e.htm.
- Canada, Industry, Sciences and Technology (1990) *Biotechnology Means Business, An Explosion of Commercial Activity*.
- Canada, Industry Canada, Ah-You, Kim, Moe Suleiman and John Jaworski (2000) *Cleaner Production Through Biotechnology*, Ottawa: Life Sciences Branch, Industry Canada.
- Canada, Industry, Science and Technology (1988) *The Regulation of Biotechnology: A Critical Issue for Canadian Research and Industrial Development, Annual Report, 1987-1988*, Ottawa: National Biotechnology Advisory Committee – NBAC.
- Canada, Ministry of State, Science and Technology, Weldon, J, J. Ferguson and D. Shindler (1986) *Federal Expenditures for Biotechnology 1981-1986*, Biotechnology Unit, Ottawa: Strategic Technologies Branch.
- Canada, Ministry of State for Science and Technology, Beak Consultants Ltd (1987) *Regulatory Policy Options for Canadian Biotechnology*, Ottawa.
- Canada, Statistics Canada, Morsly, Safia, John Jaworski, Mario Perek, Bob Patterson, Michele LeBel and Michel Bouchar (1996) *Biotechnology Research and Development in Canadian Industry, 1989 and 1993, Research Innovation*, Statistics Canada, Science and Technology sector with collaboration from Chemicals and Bio-Industry Branch of Industry Canada and Science and Technology Redesign Project, Ottawa.
- Organization for Economic Cooperation and Development – OECD, Nancy Field (1987) "Biotechnology R&D: National Policy Issues and Responses", *Biotechnology and the Changing Role of Government*, NYC: OECD Publication Service.
- Ontario, Ministry of Agriculture, Food and Rural Affairs (1998) "Organic Farming in Ontario", *Factsheet # 98-029*, June 1998.
- International Joint Commission – IJC (1995) *1993-1995 Priorities and Progress Under the GLWQA*, Windsor: IJC.
- United Nations Environment Programme – UNEP (1992) *Convention on Biological Diversity [CBD]* 1992, regime text, Montreal: CBD Secretariat, also available from www.unep.org and www.biodiv.org.

UNEP (1992) *Agenda 21*, "Preamble"; Chapter 15, "Conservation of Biological Diversity"; and Chapter 16, "Environmentally Sound Management of Biotechnology", pdf format, www.un.org/esa/sustdev/agenda21.htm.

UNEP (1992) *Rio Declaration on Environment and Development*, Report of the United Nations Conference on Environment and Development, UNCED, www.unep.org.

UNEP, CBD Secretariat (2003) "Treaty on international trade in GMOs to become law", press release, Nairobi, June 3, 2003, www.biodiv.org/biosafety.

UNEP, CBD Secretariat (2003) *Cartagena Protocol on Biosafety: From Negotiation to Implementation*, CBD Secretariat, also available from www.biodiv.org.

UNEP, CBD Secretariat (2000) *Cartagena Protocol on Biosafety to the Convention on Biological Diversity* [CPB] 2000, regime text, Montreal: CBD Secretariat, also available from www.biodiv.org.

UNEP, CBD Secretariat (2000) "Ecosystem Approach", www.biodiv.org/ecosysapproach/description.html.

UNEP, CBD Secretariat (c2002) The Secretariat of the Convention on Biological Diversity, "Sustaining Life on Earth, Convention on Biological Diversity", information pamphlet, www.biodiv.org, pdf file, [cbd-brochure-en.pdf](#), CBD: Montreal.

UNEP, CBD (c2002) The Secretariat of the Convention on Biological Diversity, *Sustaining Life on Earth, How the Convention on Biological Diversity promotes nature and human well-being*, information booklet, www.biodiv.org, pdf file, [cbd-sustain-03-en.pdf](#), CBD: Montreal.

UNEP, CBD Secretariat (1997) "Traditional Knowledge and Biological Diversity, from Workshop on Traditional Knowledge and Biological Diversity, Madrid, Spain, November 24-28, 1997, advance unedited copy, coded UNEP/CBD/TKBD/1/2 October 18, 1997, www.biodiv.ca.

Earth Negotiations Bulletin – ENB, A reporting service for Environment and Development Negotiations, Published by the International Institute for Sustainable Development (IISD) www.iisd.ca/linkages/. Negotiation Bulletins as follows:

Rio Summit Negotiations

ENB (1992) UNCED- PCIV, Vol 1, #15, 19/03/1992.

ENB (1992) UNCED-PCIV, Vol 1, #18, 25/03/1992.

ENB (1992) UNCED-PC IV, Vol 1, #21, 29/03/92.

ENB (1992) UNCED-PCIV, Vol 1, #26, 3/04/1992.

ENB (1992) PreCom IV: The Final Stop on the Road to Rio, an analysis of proceedings, ed, Johannah Bernsein, Pamela Chasek, Langston James Gorree, p1-6.

ENB (1992) Overview of the UNCED Process, Issue #6, 02:06 June 6, 1992.

ENB (1992) Main Committee Contact Groups, Issue #8, 02:06 June 10, 1992.

ENB (1992) Things to look for Today at UNEP, Issue #4, 02:04 June 4, 1992.

BSWG Negotiations

ENB (1996) BSWG-1, 22-26 July 1996, Vol 9, #48, 07/29/96.

ENB (1997) BSWG-2, 12-16 May 1997, Vol 9, #67, 10/05/97.

ENB (1997) BSWG-3, 13-17 October 1997, Vol 9, #74, 20/10/97.

ENB (1998) BSWG-4, 5-13 February 1998, Vol 9, #77, 05/02/98.

ENB (1998) BSWG-5, 17-28 August 1998, Vol 9, #108, 31/08/98.

ENB (1999) BSWG-6, 14-19 February, Vol 9, #117, 26/02/99.

ENB (2000) Resumed Ex-Cop, 24-28 January 2000, Vol 9, #137, 31/01/00.

ENB (2000) Report on COP-5, Nairobi, Kenya, Vol 9, #160, 29/05/00.

Events attended:

22/1/2000 Citizens' Forum: Genetic Engineering", public forum workshops followed by evening lectures, UQAM, Montreal, sponsored by Greenpeace Canada, Council of Canadians, and Biotech Action Montreal – BAM.

27/3/2000 Should Labeling Be Required for GMO Foods?, Ottawa Public Library, Panel Discussion sponsored by Civil Liberties Association, National Capital Region and Ethics and Policy Issues Centre, Carleton University.

15/4/2000 The Future of Foods: Genetic Engineering, panel discussion, Ottawa Health Show, Ottawa Congress Centre, sponsored by Alive Magazine.

10/5/2000 Genetic Engineering and the Secret Life of "Codex", lecture by Brewster Kneen, Sandy Hill Community Health Centre, Ottawa, sponsored by Sierra Club of Canada and Food Action Ottawa.

18/5/2000 Genetically Engineered Food: What is happening in the UK and around the world?, talk by Luke Anderson, YMCA, Ottawa, sponsored Sierra Club of Canada and Food Action Ottawa.

13/6/2000 Where on Earth are We Going? Book launch, with presentation by Maurice Strong, sponsored by International Development and Research Council – IDRC IDRC conference room, Ottawa.

16/10/2000 Pros and Cons of Genetically Modified Foods, panel discussion, Ashbury College, Ottawa, sponsored by Canadian Federation of University Women.

- 3/12/2000 Genetic Engineering, from designer Plants to Designer Humans: Disability Rights and Bio-Medicine, lecture by Gregor Wolbring, Sandy Hill Community Health Centre, Ottawa, sponsored by Food Action Ottawa.
- 4-6/12/2000 7th Annual Ottawa Life Sciences National Conference & Exhibition, "The BioProducts Revolution", Dec. 4-6 2000, Ottawa Conference Centre, Ottawa. Sponsored by Ottawa Life Sciences Council.
- 26-28/1/2001 "20 Years and Growing", organic growers conference, University of Guelph, sponsored by Canadian Organic Growers, Ecological Farmers Association of Ontario, Organic Advocates/Feast of Fields, Ontario Agricultural Training Institute, Organic Crop Improvement Association, Organic Crop Producers and Processors/Pro-Cert Canada, University of Guelph, Ontario Ministry of Agriculture, Food and Rural Affairs, Quality Assurance International, Resource Efficient Agricultural Production, Society for Biodynamic Farming and Gardening in Ontario, Organic Trade Association and Canadian Health Food Association – Organic Caucus.
- 16/2/2001 Science for the Public Good conference, Crowne Plaza Hotel, Ottawa, sponsored by the Council of Canadians.
- 17/2/2001 Food Choices Think Globally, Act Locally, Genetic Engineering, Organics, and Local Food Choices, workshop and panel discussion, Ottawa Public Library, sponsored by Seventh Generation Community Projects, Sierra Club of Canada, Canadian Organic Growers, and Council of Canadians.
- 1/4/2001 People's Parliament, public forum on free-trade agreements, Parliament Hill, Ottawa, sponsored by FTAA-Ott, local Ottawa citizen's group resisting Free Trade Agreement of the Americas (FTAA)
- 30/10/2001 Public Forum Consultation, Museum of Nature, Ottawa, sponsored by the Canadian Food Inspection Agency (CFIA).
- 23-26/1/2003 "Organic Goes Mainstream" organic growers conference, University of Guelph, sponsored by Canadian Health Food Association – Organics Committee, Canadian Organic Growers, Ecological Farmers Association of Ontario, Independent Organic Inspectors Association, National Farmers Union, Organic Advocates/Feast of Fields, Organic Agriculture Center of Canada, Organic Crop Improvement Association (International), Organic Crop Producers & Processors/Pro-Cert Canada, Ontario Ministry of Agriculture and Food, Organic Trade Association, Quality Assurance International, Resource Efficient Agricultural Production – Canada, Society for Biodynamic Farming and Gardening, and the University of Guelph.