"Working Syllabus" September 3, 2008

ENVR 610: Foundations of Environmental Policy Fall 2008

Instructors

Professor Peter G. Brown McGill School of the Environment, Departments of Geography, and Natural Resource Sciences Address : 413 Burnside Hall e-mail: <u>peter.g.brown@mcgill.ca</u>

Professor Mark Goldberg Department of Medicine, McGill University Address : Division of Clinical Epidemiology, MUHC, Ross 4.29 Tel: (514) 934-1934, ext. 36917 e-mail: <u>mark.goldberg@mcgill.ca</u>



(Rousseau's The Dream)

Human activity is overwhelming and degrading natural systems on local and global scales and this process is accelerating. These activities have dramatic negative implications for the future of humans and other forms of life. It is likely that one or more major collapses are already underway and that they may be irreversible. Yet our responses at the personal and institutional level remain almost nonexistent, fragmented, and mainly ineffective. We lack a coherent way to conceptualize the issues and to evaluate the success and/or failure of responses to environmental problems. Although our institutions and economic "systems" as currently constituted are at direct odds with conservation and sustainability of the essential elements of the biosphere, there is much that can be done, from the personal to the international scale, to modify the current direction of environmental degradation. Our aim in ENVR 610 is to develop our thinking to help foster a flourishing earth.

ENVR 610 is dedicated to describing the foundations of thinking about the environment which provide the conceptual basis and tools by which environmental policy may be formulated. ENVR 630, to be taught in the Winter Term 2009, will deal with specific examples and options. In it we will use a number of examples, including climate change, air pollution, species loss, water use,. Students who take 610 are encouraged to take 630.

The courses are designed for people interested in environmental philosophy and policy as well as those who may be planning careers of practice--in business, public policy, environmental sciences and policy, international development, engineering, law, forestry, medicine, plant or animal agriculture, dietetics and nutrition, genetic or bio-systems engineering, and the like. These courses provide for the critical consideration of a number of conceptual frameworks that we customarily use, implicitly or explicitly, in thinking about the relationship of humans, other species, and more generally the environment. The practical consequences of these frameworks are considered. The aims of the courses are therefore to enrich our ability to think about the moral and conceptual dimensions of the role as citizens of planet earth and to provide a means for developing policies at various scales to alleviate and mitigate environmental degradation.

To appreciate and provide a framework for understanding this current environmental situation, in both courses we will use, and critically reflect upon, a framework proposed in 1972 by Paul Ehrlich, a biologist at Stanford University, and John Holdren, a physicist then at the California Institute of Technology. As part of a critique of Barry Commoner's book, *The Closing Circle*, they proposed that the human impact on the environment can be conceptualized using the formula: I=PAT, where I = environmental impact, P = population size, A = affluence, and T = technology. This very general relationship is context-and scale-dependent in that both impacts and drivers will vary by time/place and by the size of the geographic area affected. These factors can be defined in different ways: for example, impact can refer to loss of biodiversity, increases in ambient concentrations of greenhouse gases or global temperature, effects on health, contamination of aquifers, etc...

We propose modifying this relationship by adding ethics (E) to the relationship because ethical and cultural beliefs strongly influence the scale and character of human impact on the environment. From a policy point of view the E variable must also occur on the "I side" of the relationship since we need some standard to judge what impacts we favour and those which should be avoided: thus, I(E) = PAT(E). For the most part 610 is organized around different ways in which the I variable is understood in the formation of policy. 630 is mainly organized around the PAT(E) part of the equation. Attending to these variables and other drivers forces rigorous thinking about how to enhance life's prospects.

Qualitatively, this relationship and variants provide a framework or paradigm by which to think of the causes, and therefore the cures, of environmental degradation. We suggest that these four variables define a fundamental, but not unique, policy and practice space for reducing human impact on the biosphere. Quantitatively, impact can only be estimated using precisely defined quantitative scales that depend on quantitative predictors (P, A, T). We do not consider I(E) =PAT(E) to be a strict multiplicative model (although some have), where P multiplies A which multiplies T (and E) helps define what is being measured), but rather as a general framework to appreciate the drivers of environmental impact. Mathematically, a general relationship, which incorporates possible non-linearities, would be written as I(E) = f(P,A,T;E), where f is some general mathematical function of P, A, and T, conditional on the choices made by E to define the variables, and f would be estimated from the data at hand.

To provide an introduction into policy as well as making use of I(E) = PAT(E), we have divided ENVR 610 into five modules where we introduce various underlying concepts used in the analysis of environmental problems and which provide foundations for the formulation of policy. We define environmental policy as any action deliberately taken to manage human activities with a view to prevent, reduce or mitigate harmful effects on nature and natural resources, and ensuring that man-made changes to the environment do not have harmful effects on humans, other species, and the biosphere. (Adapted from John McCormick, 2001, "Environmental Policy in the European Union". The European Series. Palgrave, page 21). Environmental policy thus can encompass activities ranging in scale from the individual level through global governance, and may aim to improve upon nature as well as protect it.

Each module will correspond to a way of understanding the I variable, with an emphasis on various ethical foundations that are or can be used in taking action, as well as various frameworks used in framing policy. These various understandings are built around ideas such as "utility," "vulnerability," "sustainability," "community," "precaution", and "citizenship."

Learning Objectives

We assume that students are familiar with the major environmental problems facing the planet. For those who require a refresher, we suggest reading before the term James Gustave Speth's *Red Sky at Morning* (Yale University Press, 2004) or an equivalent account.

By the end of the course, students will be able:

- (1) to appreciate, criticize, and use the I(E)=PAT(E) framework for thinking about personal and policy responses of the impact of these alarming environmental conditions;
- (2) to describe and appreciate the various ethical and moral systems underlying current human activities as it refers to the environment as well alternative ways of thinking about the role humans have on the planet;
- (3) to describe and appreciate the strengths and weaknesses of neo-classical economics as a means of thinking about the human-environment interface;
- (4) to describe and appreciate the strengths and weaknesses of alternative economic systems (e.g., ecological economics) and their potential for providing a foundation for thinking about policy;
- (5) to describe and appreciate the strengths and weaknesses of the main policy tools used currently in framing environmental policy and discourse (i.e., risk assessment, costbenefit analysis, risk management) as well as alternative methods for framing environmental policy;
- (6) to be able to articulate in *writing*, and provide appropriate arguments as appropriate, a description of a specific environmental problem and the drivers that led to it (NB: this objective forms the basis for the term paper);
- (7) to *speak* thoroughly and convincingly on specific environmental issues; and
- (8) to deepen, articulate, and show the consequences of a sense of personal responsibility for life's prospects.

Class schedule

Formal classes: Monday 4:00-6:30, Burnside Hall, Room 708 Discussion and commentaries: Every second Tuesday, 2 hours, time and place to be determined

Grading and Participation

Individual students will offer critiques and commentaries of the lectures and readings beginning in the second week of the semester. **Please sign up for your participation for the term at the first class.**

In presenting these commentaries, time is essential: to allow sufficient discussion, commentaries should be 10-15 minutes. You should assume that everyone has done their homework in reading the article, so there is no need to restate all that is in the paper. The objective of these commentaries is to provide an opportunity to practise at a high level: selecting the <u>essential</u> points for presentation; presenting these with a thoughtful analysis (perhaps with other information that provides a counter point); and be sufficiently provocative and critical to engender discussion.

Students will be evaluated on the basis of their commentary/critique and overall class participation (25%), presentations (25%), and a 20-25 page fully documented paper (50%) on issues raised by the course. The last few weeks of the course will be devoted to student presentations of their project and in-class discussions (the time allotted will depend on enrolment, but a maximum of three classes will be devoted to this).

Paper: Using a specific environmental problem, students will be asked to choose two ways of understanding the I variable, explain the historical origins of the ideas, contrast the way they shape problem definition, state the assumptions of these frameworks, and assess the plausibility of the assumptions. This paper should lay the foundation for a paper in 630 and should, if possible, help with your dissertation or thesis.

You will need to select a project by the end of September. We will meet with you individually during the course of the term to assist in defining and developing your paper. By October 15th you should send us a detailed abstract, table of contents, and an annotated outline. These will be returned to you with a grade and comments. **See below for guidelines on writing the paper.**

Presentations: You will be asked to present your paper to the class at the end of semester. Ten minutes plus five minutes of discussion will be allocated to each, but this may be expanded depending on the size of the class. **See below for guidelines on the presentation.**

Materials: Course materials will include four books, materials available on-line, and a CDROM to be supplied by the instructors.

The following books are available at the Paragraphe Bookstore, corner Sherbrooke and McGill College. These books should be acquired.

Jared Diamond, *Collapse* (Penguin, 2005)

Aldo Leopold, *A Sand County Almanac* (Oxford University Press, 1968). You will be expected to complete reading this book by the fifth class.

James Gustaf Speth, *The Bridge at the Edge of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability* (Yale University Press, 2008) Herman Daly, *Beyond Growth* (Beacon, 1996)

Supplementary reading (these books will be available in the McLennan Library or can be borrowed from Peter or Mark):

Hugh Brody, *The Other Side of Eden* (Douglas and McIntyre, 2000) An account of the cultures of the world that live with low and even positive impacts on the living systems around them. These are cultures without the Eden myth—hence the title of the book,

Peter G. Brown, *The Commonwealth of Life, Economics for a Flourishing Earth, Second Edition* (Black Rose, 2008) A re-conceptualization of our moral frameworks and the implications of it for economics, government, civil society and international relations.

Herman E, Daly and Joshua Farley, *Ecological Economics: Principles and Applications* (Island Press, 2003), A text on economics based on the ideas that the earth is open to energy, but closed to matter.

George Lakoff and Mark Johnson. *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. (Basic Books, 1999). A lengthy critique of Western thought's failure to take into account the biological basis of consciousness and conduct. A conceptual revolution.

Carolyn Merchant, *Reinventing Eden: The Fate of Nature in Western Culture* (Routledge, 2003) The role of the idea that humans are engaged in a project of retaking paradise by modifying the earth in the image of the garden of Eden.

Schneider, Eric, and Dorion Sagan. *Into the Cool: Energy Flow, Thermodynamics, and Life.* (University of Chicago Press, 2006). A history of the ideas of thermodynamics and how they help us understand the evolution of the universe--including the physics and chemistry of complex systems such as Mark Goldberg.

Albert Schweitzer, *The Philosophy of Civilization* (MacMillan, 1949) Schweitzer's brilliant survey of the shortcomings of the Western philosophical tradition, the abdication of philosophy's role in guiding civilization and the resulting catastrophe in the 20th century.

James Gustaf Speth, *Red Sky at Morning* (Yale University Press, 2004). This is an excellent summary of the state of the planet, and the inadequacy of our response to the decline in earth's life support systems.

Daniel Quinn, *Ishmael* (Bantum, 1992). How humans created God in their own image, and then followed His instructions in taking over the Earth. Lessons taught by an ape named after Abraham's banished son.

At a mutually convenient time early in the semester there will be a brief field trip to the Roman Catholic Church on de Maisonneuve at Clarke in Westmount. A worldview of amazing beauty and intricacy is displayed there. This visit will serve to highlight some of the difficulties in arriving at a way to think about environmental policy in our era.

NB: You will be expected to have read chapters 1 ("Modern Montana") and 2 ("Twilight at Easter") of "Collapse" by the first class.

The course is divided into five interdependent modules.

Module I. Course Overview, I(E) = PAT(E), Collapse, and Climate Change

Class 1: Course overview, the path to collapse(s), and I(E) = PAT(E) (Peter and Mark)

Visuals: Rogier Van der Weyden, The Last Judgment, (circa 1443) in Hotel Dieu in Beaune, France. Pieter Brueghel: The Seven Deadly Sins. Carravaggio: The Seven Works of Mercy (1607). (Optional Auditory: Handel, "The Messiah.")

Visual: Thomas Coles: four paintings on the rise and collapse of civilization.

- a) Introductions; course objectives; project, term paper, presentation; readings; evaluation; further development of the syllabus; suggestions; etc...
- b) Discussion of I(E)=IPAT(E)
- c) The Road to *Collapse...* discussion. Schweitzer's diagnosis.

Selected readings:

- Ehrlich and Holdren, "One dimensional ecology". This and many other readings are on your CDROM, in the directory "Readings". This file is a PDF and is located in the sub-directory IPAT(E). Henceforth, we will refer to locations on the CDROM and files using standard computer terminology: CDROM\Readings\IPAT(E)\Ehrlich and Holdren Bulletin Atomic Scientists.pdf. (The Adobe Acrobat Reader (version 9) can be downloaded from http://www.adobe.com/products/acrobat/readstep2.html and it is available on the CDROM in directory CDROM\Adobe Acrobat Reader V 9 Aug 2008)
- Speth, *The Bridge at the Edge of the World*, First 45 pages.
- Schweitzer, Philosophy *of Civilization Chapter* 6 (CDROM\Readings\Ethics\Schweitzer-Philosophy of Civilization Ch 6.pdf)

Optional readings:

• UNEP: The Atlas of Our Changing Environment. Available online at http://na.unep.net/unep-atlas.php

Class 2: Climate Change: The Science and Selected Observed and Potential Impacts (Mark)

Visual: Dusts storms from China and Africa; Melting Greenland Ice Cap and Canadian Arctic Ocean; Rivers not Going into the Ocean

Selected readings:

• Read Mark's Powerpoint (CDROM\Lectures\Goldberg\Climate Change\Climate Change - Policy Course Fall 2008 version 2.ppt).

NB: You will be expected to read these short articles on the findings from the fourth assessment (2007) of the Intergovernmental Panel on Climate Change (IPCC) before Class-2. These will be found on CDROM\Readings\Climate Change\General News Articles.

- Climate Change Summary, Am Scientist May 2007 (Am Scientist May 2007 Climate Change Summary.pdf)
- Driven to Extremes, Environ Health Perspectives 2007 (Driven to Extremes-EHP115pa196PDF.pdf)
- Nature articles on climate change, Feb 2007 (Nature articles 2007.pdf)
- Global Warming Is Changing the World, Science 13 April 2007 (Global Warming Is Changing the World Science 13April2007.pdf)
- Interview with John Holdren (Climate Change Interview John Holdren Bull Atomic Scientists 2007.pdf)
- IPCC working group Summary for Policymakers documents; Working Group 1 (in CDROM\Readings\Climate Change\IPCC\2007 Reports\Documents for Policy makers\WG1-Projections-SPM_17Apr07.pdf).

NB: The entire IPCC 2001 and 2007 final reports will be found in CDROM\Readings\Climate Change\IPCC.

Additional Optional Sources:

- The Millennium Assessment (http://www.millenniumassessment.org/)
- IPCC working group-1 technical summary (CDROM\Readings\Climate Change\IPCC\2007 Reports\Full Report\Technical Summaries\WG1_Pub_Technical Summary.pdf).

DISCUSSION 1: QUESTION: IS COLLAPSE UNDERWAY? IS IT INEVITABLE? IS IT UNDESIRABLE?

MODULE II: The Good is Protecting the Vulnerable

Class 3: Vulnerability: Introduction to Utilitarianism and Impacts of Climate Change (Peter and Mark)

Visual: Carl Loth: The Samaritan (circa 1697)

Selected readings:

- Read Mark's Powerpoint on climate change and vulnerability (All lectures will be posted on the web site after class.)
- The Good Samaritan Story (The Gospel According to Luke Book 10, Verses 25-37 and Proverbs 19-17 and 29-7), CDROM\Readings\Ethics\Good Samaritan Parable and Proverbs.doc)
- Robert Goodin, Selections on protecting the vulnerable
- IPCC report for policy makers, Working Group 2 (in CDROM\Readings\Climate Change\IPCC\2007 Reports\Documents for Policy makers\WG2-Impacts-SPM13apr07.pdf).

Additional Optional Sources:

• IPCC working group-2 technical summary (CDROM\Readings\Climate Change\IPCC\2007 Reports\Full Report\Technical Summaries\WG2_Pub_Technical Summary.pdf).

Class 4: Principles of Risk Assessment, Scientific Uncertainty, and Causality (Mark)

VISUAL: Jean Gros: Napoleon Visiting the Plague House Jaffa (1804). (Optional: Bergman: The Seventh Seal)

Selected Readings:

- Read Mark's Powerpoint on risk assessment
- Marko Scholze, et. al., "A Climate-change Risk Analysis for World Ecosystems", (CDROM\Readings\Climate Change\Risk Assessment\Scholze A Climate-change risk analysis for world ecosystems.pdf)

Discussion 2: Question – What is vulnerability? Which vulnerability matters? Whom does it matter to? What are the risks? What are the consequences?

Module III. The Utilitarianism of John Stuart Mill and Its Progeny—THE GOOD IS THE SATISFACTION OF HUMAN PREFERENCES.

Class 5: Micro-Economics and its Applications to the Environment. (Peter)

Visuals: Rodin, The Thinker. Rembrandt, Aristotle Contemplating the Bust of Homer. Renoir, The Boating Party

Selected readings:

• Jonathan Harris "Environmental and Natural Resource Economics, Chapter Six, "Valuing the Environment." (CDROM\Readings\Economics and Environment\Harris - Environmental and Natural Resource Economics.pdf)

Class 6: Cost-Benefit Analysis: Principles and Applications from climate change, the conundrum of discounting (Peter and Mark) THE GOOD IS MAXIMUM NET PRESENT VALUE OF CONSUMPTION.

VISUAL: THE EDMONTON MALL. (Optional visual: The film WALL-E.)

Selected readings:

- William Nordhaus, "The Challenge of Global Warming: Economic Models and Environmental Policy", (CDROM\Readings\Climate Change\Cost of Climate Change\Nordhaus\The Challenge of Global Warming Nordhaus.pdf, pp. 1-35)
- Derek Parfit, "Energy Policy and the Further Future: The Social Discount Rate" (this paper including a simple definition of the discount rate by Nordhaus will be found in CDROM\Readings\Economics and Environment\ Energy and the Future\Parfit Energy and the Future Chapter 2.pdf.
- A thoughtful discussion of assumptions and philosophy of cost benefit analysis as it relates to climate change will be found in the NRDC Report (CDROM\Readings\Climate Change\Cost of Climate Change\NRDC Report\ US_Costs_of_Inaction.doc.) In this paper, the authors also show explicitly how they derive estimates of future costs and they discuss the implicit assumptions in most economic analyses.
- Descriptions of the PAGE (Policy Analysis for the Greenhouse Effect) integrated assessment model used in the Stern and NRDC reports will be found in CDROM\Readings\Cost of Climate Change\Integrated Assessment Models\Plambeck et al The Page95 model integrating the science and economics of global warming.pdf. and in CDROM\Readings\Cost of Climate Change\Integrated Assessment Models\Hope The Marginal Impact of CO2 from PAGE2002 227-814-1-PB.pdf, which uses data from the IPCC Third Aassessment Report (TAR). When reading these papers, it may be

advisable to skip the latter sections on the specific mathematical models that are used (these will be described briefly in class).

• Peter G. Brown, "Toward an Economics of Stewardship: the Case of Climate" (CDROM\Readings\Climate Change\Cost of Climate Change\Sundry\Brown_1998_Econ of stewardship.pdf)

Recommended Optional Readings:

• The Natural Resources Defense Council (NRDC) report on "The Cost of Climate Change: What we Will Pay if Global Warming Continues Unchecked" (CDROM\Readings\Climate Change\Cost of Climate Change\NRDC Report\NRDC cost report.pdf. This summary report provides the results for the entire model. (NB: the Stern Report is on the CDROM or online at: treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_rev iew_report.cfm)

Class 7: Macro-Economics, Risk Management and Climate Change (Peter) THE GOOD IS PROSPERITY AND STABILITY.

VISUAL: La Patrie, PQ. THE THAMES BARRIER.

Selected Readings:

- Read Mark's Powerpoint on risk management and climate change
- Read Part II of Speth's *The bridge at the Edge of the World*
- Socolow et al. "Solving the climate problem Technologies Available to Curb CO₂ Emissions" (CDROM\Readings\Climate Change\Stabilization Wedges\Solving the climate problem - Technologies Available to Curb CO2 Emissions - Environ_08-21a.pdf)
- Tickner et al "A compass for health: rethinking precaution and its role in science and public health" (CDROM\\Readings\Precautionary Principle\A compass for health rethinking precaution -Tickner PP IJE 2003.pdf)
- UK-ILGRA, "The Precautionary Principle: Policy and Application", CDROM\Readings\ Precautionary Principle\UK ILGA The Precautionary Principle- Policy and Application.pdf

Recommended Optional Readings:

- Steve Maguire and Jaye Ellis, "The Precautionary Principle and Global Chemical Risk Management" (CDROM\Readings\Precautionary Principle\The Precautionary Principle and Global Chemical Risk Management Maguire-Ellis-2003-GMI.pdf)
- European Environmental Agency, "Late lessons from early warnings", Pages 11-16, and Chapter 4 on benzene. (CDROM\Readings\Precautionary Principle\Late lessons from early warnings - the PP Issue_Report_No_22.pdf) PETER – THIS IS QUITE A GOOD VOLUME
- Scully: Chapter Six: "Deliver Me From My Necessities." (CDROM\Readings\Economics and Environment\Scully Deliver me from my necessities.pdf)

DISCUSSION 3: QUESTION—CAN UTILITARIANISM ESCAPE ITS OWN PARADOXES?

MODULE IV. THE GOOD IS SUSTAINABILITY

VISUAL: TERRACED FIELDS IN THE ANDES?

Class 8: Sustainability and Ecological Economics (Peter)

Selected Readings:

- Wackernagel and Rees, "Perceptual and structural barriers to investing in natural capital: Economics from an ecological footprint perspective." CDROM\Readings\Ecological Footprints\Perceptual and structural barriers to investing in natural capital- Economics from an ecological footprint perspective.pdf
- Read Daly, *Beyond Growth*, Chapter 4.
- Garrett Hardin "The Tragedy of the Commons" (CDROM\Readings\The Commons\Garrett Hardin- The Tragedy of the Commons.pdf)
- Peter G. Brown, *The Commonwealth Of Life*, Chapter four: "Government as Trustee."
- John Locke, *Second Treatise, On Civil Government*, "Of Property" (CDROM\Readings\John Locke\John Locke Of Property.pdf)
- George Monbiot, "The Tragedy of Enclosure" (CDROM\Readings\The Commons\ Monbiot - The Tragedy of Enclosure.pdf)

MODULE V: THE GOOD IS MEMBERSHIP IN A HEALTHY COMMUNITY

VISUALS: The film "The Plough that Broke the Plains." THE ATWATER MARKET, THE FORTRESS AT BLCKWOOD FARM

(Optional: The Film "The Grapes of Wrath.") and the song "The Battle Hymn of the Republic."

Class 9: WHAT IS THE COMMUNITY? (Peter) Selected Readings:

- Jane Jacobs, Selection from *"The Death and Life of Great American Cities"* (CDROM\Readings\Cities\ Jacobs Death and Life of American Cities.pdf)
- Leopold, A Sand County Almanac.
- Robert Frost: "West Running Brook" (CDROM\Readings\Robert Frost\Robert Frost-West Running Brook.doc)
- Schrodinger: What is Life? Chapter Six (CDROM\Readings\Schrodinger\What is Life Ch 6.pdf)
- Chaisson, "Non-equilibrium Thermodynamics in an Energy-Rich Universe" (CDROM\Readings\Thermodynamics\ Chaisson Non equilibrium.pdf)
- Schneider and Kay, Order from Disorder: The Thermodynamics of Complexity in Biology (CDROM\Readings\Thermodynamics\Schneider and Kay Order from Disorder.doc)
- BROWN, "Are there any natural resources?" (CDROM\Readings\Brown\Brown_2004_Are there any natural resources.pdf)

Recommended optional readings

- Finlayson, A. Christopher & Bonnie J. McCay, "Crossing the Threshold of Ecosystem Resilience: the Commercial Extinction of Northern Cod." (CDROM\Readings\Sustainability\Finlayson and McCay - Crossing the threshold of ecosystem resilience.pdf)
- Holling, C.S., Fikret Berkes, Carl Folke, "Science, Sustainability and Resource Management." (CDROM\Readings\Sustainability\Holling et al Science sustainability and resource management.pdf)

DISCUSSION 4: QUESTION: WHAT IS A GOOD COMMUNITY? A SUSTAINABLE COMMUNITY?

MODULE VI. THE GOOD IS CITIZENSHIP

CLASS 10: A METAPHYSICAL RENNAISANCE? (Peter)

VISUAL: SALVADOR DALI'S THE LAST SUPPER, Photos of Keynes, Gandhi, and/or Schweitzer.

- Albert Schweitzer, Excerpt from film on Schweitzer's life.
- Carse, *Finite and Infinite Games*, Chapter One, "There are at least two kinds of games." (Will be available on web site)
- Albert Schweitzer's *The Philosophy of Civilization* (Chapters 26 and 27). (CDROM\Readings\Ethics\Schweitzer- Philosophy of Civilization Ch 26.pdf and Schweitzer- Philosophy of Civilization Ch 26.pdf)
- Coormasawmy, "What is Civilization?" (Will be available on web site)

DISCUSSION 5: QUESTION: CAN WE RECONSTRUCT A COHERENT WORLDVIEW? IF SO, CAN IT MAKE USE OF AND STRENGTHEN THE POLICY CONSTRUCTS DISCUSSED IN THE COURSE?

Module VII: Student presentations and discussion

Weeks 11-13.

Notes on term papers

- 1) We would classify "good" scientific writing (or for that manner, any analytic piece) as one that is grammatically precise, tells a story that is easy to follow, is imaginative, concise and not repetitive), is as unbiased as possible, and is logically cohesive. Headings and visual devices (tables, graphs) can often help.
- 2) We are expecting essays of about 25-30 pages, maximum (1.5 line spacing, 12-point font, 1" margins), excluding front page, summary/abstract, bibliography/citations, and footnotes/end-notes. We expect a summary/abstract of no more than 300 words. (This does not have to be the same one as you provided for your presentation.) You can use any format that you like for structuring the paper, as long as it is clear. Please choose one style for footnotes and references (e.g., Chicago, MLA); we do not care which one you use.
- 3) We expect that the paper will comprise a statement of the problem or issue that you are addressing, relevant background material, your analysis of the problem, discussion, and conclusions.
- 4) It is not a necessary that you use the IPAT(E) paradigm as part of your analysis; use the glove that fits. However, the paper must be about the environment and it must have a policy component.
- 5) <u>All</u> statements of fact must be referenced. We are not expecting full reviews of the literature but we also do not expect complete reliance on secondary sources.
- 6) Please use sufficient headings and sub-headings to make the paper comprehensible. Consider using the heading facility in your word processor for structuring your paper. Use of this facility will greatly enhance structure and will automatically place headings and sub-headings in your text in the correct places.
- 7) We do not expect run-on paragraphs or sub-sections that comprise more than one logical development.
- 8) Consider the use of tables and figures rather than describing data in the text.
- 9) Ensure that all sentences follow each other logically; avoid non-sequitors.
- 10) When using figures and other graphics from other sources, they must be numbered and captions provided so that the essential elements of the figure are described.
- 11) Do not copy and paste tables from other papers; create your own tables and make sure you explain them.
- 12) Do not make conclusions before stating the facts. Arguments need to be developed in a logical way and you need to find appropriate ways of introducing a subject without stating your conclusion in advance. Readers prefer to make their own conclusions as they read; the perception will be that you are attempting to bias the reader or you have a specific agenda. However, this does not apply when stating a thesis at the beginning of an essay.
- 13) Try to use the active voice instead of the passive one. See the description in the file: \CDROM\On evaluating essays \Active and Passive Verbs.pdf.
- 14) It is all too common these days in professional publications and elsewhere to invent terminology by using phrases where nouns modify nouns. This is extremely poor form and you must be very careful to reduce this as much as possible. For example, "oil sand development" should be written as "the development of the oil sands" and "nutrient delivery to water bodies" should be written as "delivery of nutrients to bodies of water".

You may find this difficult to achieve (it has become inherent in many of us), but the end result will be a far better essay grammatically; the drawback is that it takes more words to express the same idea.

- 15) In addition, verbs are often attached to inanimate objects. For example, you will often see something like: "This paper focuses....", "This paper argues...", etc...: PAPERS CANNOT FOCUS, ONLY PEOPLE CAN. An alternative (active voice) is: "In this paper, I will focus on....".
- 16) Lists that start with a colon (":") should be delimited by semi-colons (";" and not commas (",").
- 17) "1980's" is written as "1980s", etc...
- 18) Check your spelling and use the Canadian language facility in your word processor.
- 19) Do not use contractions: e.g., "can't" is written as "can not".
- 20) Do not use acronyms!!! We do not want to see papers made up of alphabet soup.
- 21) Numbers less than 10 should be written out in full; if you use a number to start a sentence, it must be written out.
- 22) Avoid placing additional information in appendices.
- 23) All statements of fact must be referenced by reliable sources.
- 24) We will receive papers by email only and will read them and provide comments directly in your papers, electronically, and will return them to you by email. We will independently read your paper, provide comments electronically, and will assign a grade (A, B, C, etc...). We will not give you our individual ratings but your final grade on the paper will be based on our combined evaluation. You should read carefully the following file on your CDROM that contains elements used in evaluations: \CDROM\On evaluating essays\RUBRIC.pdf.
- 25) Papers are to be submitted to us by email. A date will be provided in class (usually around December 15).
- 26) PLEASE SEND AS A TEXT DOCUMENT (E.G., WORD FORMAT) AND NOT A PDF

Notes on presentations in class

The goal is to present your paper (which you should be developing but do not have to have written) to the class. So, you need to be able to discuss your thesis and what you know in a concise and clear manner. It means, therefore, that you have done enough work on it to make a cogent presentation.

- 1) Please provide us with a title and an abstract. These will be distributed in class and placed on the website.
- 2) The presentations will be no more than 10 minutes + 10 minutes discussion.
- 3) You can use whatever audiovisual aids you wish, including none, blackboard, etc... If you want to use Powerpoint, you need to bring provide it on a memory stick or email it to us beforehand.
- 4) You should practise your talk in advance, especially keeping to the 10 minute limit.
- 5) Approximate rule of thumb: one slide per minute

- 6) Restrict what you present; the listener can only absorb a few concepts in 10 minutes
- 7) Try to keep your slides as simple as possible; do not have multiple graphic images and text on the same slide
- 8) Ensure that you explain what is on the slide
- 9) Keep the number of words on a slide to a minimum
- 10) Do not use any acronyms.
- 11) The main issue with using colour maps (and other complex slides), especially ones that have multiple colours and legends (especially in small fonts!), is that it is difficult for the audience to appreciate in a very short time span the meaning and nuances of the slide. It would be easier to present maps that are simpler; perhaps, having a set of slides in which colours are overlaid would assist the audience, though this may be difficult. This is especially true for maps that are taken off of the internet, where the reader has as much time as necessary to comprehend the maps. Borrowing media that are designed for one purpose and using it in another may not work.
- 12) There will be three sessions at the end of the semester. First come first serve.
- 13) In each session, we will hand out a prize for the "best" presentation. You will decide this (not us) by ranking the presentations according to interest of the subject matter, objectives, clarity, etc... The ranking system is simple: suppose we have six presentations, you will assign a "1" to the best presentation, a "2" to the second best, etc... We will than add up the scores for each presenter across the class (excluding those who are presenting, so that would be 11 students in this example) and the one with the smallest total score is the winner. We will decide ties by flipping a coin. As well, you can provide written comments anonymously to the presenters.
- 14) The last session may be held at Peter's farm. We will discuss this with you. The constraint is that EVERYONE must be available.

Criteria for peer-review ranking:

Presentations will be ranked by your classmates. Points to consider in judging a presentation:

- 1) is the objective/thesis stated clearly?
- 2) is the context of the problem presented clearly?
- 3) is the analysis/synthesis cogent?
- 4) were too few or too many ideas covered by the presentation?
- 5) are the conclusions consistent with the analysis?
- 6) was the presentation done in the allotted time?
- 7) For those using visual aids:
 - 1. were the slides too crowded?
 - 2. were there too many/too few slides?
 - 3. were you able to read the slides and follow the monologue?

See the files for information on producing presentations: \CDROM\On oral presentations\American Scientist 2006 Frankel.pdf and SCIENCE AND ART.pdf

Academic Integrity

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code

of Student Conduct and Disciplinary Procedures (see <u>http://www.mcgill.ca/integrity/</u> for more information).



Hurricane Katrina, Gulf of Mexico

"Working Syllabus" January 25, 2009

ENVR 630: Foundations of Environmental Policy Winter 2009

Instructors

Professor Peter G. Brown McGill School of the Environment, Departments of Geography, and Natural Resource Sciences Address: 413 Burnside Hall e-mail: peter.g.brown@mcgill.ca

Professor Mark Goldberg Department of Medicine Address: Division of Clinical Epidemiology, MUHC, Ross 4.29 Tel: (514) 934-1934, ext. 36917 e-mail: mark.goldberg@mcgill.ca

Guest Lecturers:

Professor Tom NaylorProfessor Madhav BadamiDepartment of EconomicsSchool of Urban Planning and McGill School of EnvironmentAddress: Leacock BuildingMacdonald-Harrington BuildingTel: (514) 398- 4828514-398-3183e-mail: tom.naylor@mcgill.camadhav.badami@mcgill.ca

Professor Peter Victor Institute for Research & Innovation in Sustainability, York University Address: Faculty of Environmental Studies Tel: (416)-736-2100, ext. 22614 e-mail: pvictor@yorku.ca



Three Gorges Dam, China



Qori Kalis Glacier, Peru

Human activity is overwhelming and degrading natural systems on local and global scales and this process is accelerating. These activities have dramatic negative implications for the future of humans and other forms of life. It is likely that one or more major collapses are already underway and that they may be irreversible. Yet our responses at the personal and institutional level remain almost nonexistent, fragmented, and mainly ineffective. We lack a coherent way to conceptualize the issues and to evaluate the success and/or failure of responses to environmental problems. Although our institutions and economic "systems" as currently constituted are at direct odds with conservation and sustainability of the essential elements of the biosphere, there is much that can be done, from the personal to the international scale, to modify the current direction of environmental degradation.

ENVR 630 will deal with specific examples and options. In it we will use a number of examples, including climate change, air pollution, species loss, water use, etc. ENVR 610 was dedicated to describing the foundations of thinking about the environment which provide the conceptual basis and tools by which environmental policy may be formulated.

The courses are designed for people interested in environmental philosophy and policy as well as those who may be planning careers of practice--in business, public policy, environmental sciences and policy, international development, engineering, law, forestry, medicine, plant or animal agriculture, dietetics and nutrition, genetic or bio-systems engineering, and the like. These courses provide for the critical consideration of a number of conceptual frameworks that we customarily use, implicitly or explicitly, in thinking about the relationship of humans, other species, and more generally the environment. The practical consequences of these frameworks are considered. The aims of the courses are therefore to enrich our ability to think about the moral and conceptual dimensions of the role as citizens of planet earth and to provide a means for developing policies at various scales to alleviate, mitigate, and possibly reverse environmental degradation.

To appreciate and provide a framework for understanding this current environmental situation, in both courses we will use, and critically reflect upon, a framework proposed in 1972 by Paul Ehrlich, a biologist at Stanford University, and John Holdren, a physicist then at the California Institute of Technology. As part of a critique of Barry Commoner's book, *The Closing Circle*, they proposed that the human impact on the environment can be conceptualized using the original formulation: I=PAT, where I = environmental impact, P = population size, A = affluence, and T = technology. This very general relationship is context-and scale-dependent in that both impacts and drivers will vary by time/place and by the size of the geographic area affected. These factors can be defined in different ways: for example, impact can refer to loss of biodiversity, increases in ambient concentrations of greenhouse gases or global temperature, effects on health, contamination of aquifers, etc...

We propose modifying this relationship by adding ethics (E) to the relationship because ethical and cultural beliefs strongly influence the scale and character of human impact on the environment. From a policy point of view the E variable must also occur on the "I side" of the relationship since we need some standard to judge what impacts we favour and those which should be avoided. Moreover, the multiplicative nature of the original formulation is unlikely to be general, so one can think of impact as some (complex) function, f, of the predictors: thus, $I(E) = f\{P,A,T; E\}$ conditional on the choices made by E to define the variables. For the most part 610 was organized around different ways in which the I variable is understood in the formation of policy. 630 is mainly organized around the PAT(E) part of the equation. Attending to these variables and other drivers forces rigorous thinking about how to enhance life's prospects.

Qualitatively, this relationship and variants provide a framework or paradigm by which to think of the causes, and therefore the cures, of environmental degradation. We suggest that these four variables define a fundamental, but not unique, policy and practice space for reducing human impact on the biosphere. Quantitatively, impact can only be estimated using precisely defined quantitative scales that depend on quantitative predictors (P, A, T). We do not consider $I(E) = f\{P,A,T,E\}$ to be a strict multiplicative model (although some have), where P multiplies A which multiplies T (and E) helps define what is being measured), but rather as a general framework to appreciate the drivers of environmental impact. Thus, $I(E) = f\{P,A,T,E\}$ incorporates possible non-linearities, etc.... Morever, the context buy which impact is being measured will have a direct bearing on the type of relationship; e.g., comparisons across geographical areas may lead to an entirely formulation than considering comparisons across time; scale will also play a major role, as will other factors.

Learning Objectives

We assume that students are familiar with the major environmental problems facing the planet. For those who require a refresher, we suggest reading before the term James Gustave Speth's *Red Sky at Morning* (Yale University Press, 2004) or an equivalent account.

By the end of the course, students will be able:

- (9) to appreciate, criticize, and use the I(E)=PAT(E) framework for thinking about personal and policy responses of the impact of these alarming environmental conditions;
- (10) to describe and appreciate the various ethical and moral systems underlying current human activities as it refers to the environment as well alternative ways of thinking about the role humans have on the planet;
- (11) to identify the major factors that influence Population, Affluence, and Technology;
- (12) to describe the impact of Population, Affluence, and Technology and their interactions on the environment;
- (13) to be able to articulate in *writing*, and provide appropriate arguments as appropriate, a description of a specific environmental problem and the drivers that led to it (NB: this objective forms the basis for the term paper);
- (14) to *speak* thoroughly and convincingly on specific environmental issues; and
- (15) to deepen, articulate, and show the consequences of a sense of personal responsibility for life's prospects.

Class schedule

Formal classes: Monday 4:05-6:55, Burnside Hall, Room 708

Grading and Participation

The last three weeks will be dedicated to student presentations. Individual students will offer critiques in each class. *If possible, the critique offered by the student will be in the same*

"variable space" from PATE as their topic for the term paper. Please sign up for your participation for the term at the first class.

In presenting these commentaries, time is essential: to allow sufficient discussion, commentaries should be 10-15 minutes. You should assume that everyone has done their homework in reading the article, so there is no need to restate all that is in the paper. The objective of these commentaries is to provide an opportunity to practise at a high level: selecting the <u>essential</u> points for presentation; presenting these with a thoughtful analysis (perhaps with other information that provides a counter point); and be sufficiently provocative and critical to engender discussion.

Students will be evaluated on the basis of this critique and overall class participation (25%), presentations (25%), and a 20-25 page fully documented paper (50%) on issues raised by the course. Students should meet individually with Mark **and** Peter B. no later than February 1st to begin defining the topic for the presentation and the paper.

Materials: Course materials will include four books, materials available on-line, and/or on a DVD to be supplied by the instructors.

The following text books will be used in this course and are available at the Paragraphe Bookstore, corner of McGill College and Sherbrooke, and should be purchased.

Herman Daly, Beyond Growth

Peter G. Brown, Geoffrey Garver, et al. *Right Relationship. Building a Whole Earth Economy*. Berrett-Koehler Publishers, San Francisco. (If this book is not available at Paragraphe, Peter B. has additional copies that he will sell at cost.)

In ENVR610 we used the following texts: James Gustaf Speth, *The Bridge at the Edge of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability* (Yale University Press, 2008); Jared Diamond, *Collapse* (Penguin, 2005); Aldo Leopold, *A Sand County Almanac* (Oxford University Press, 1968). These are also available at the Paragraphe Bookstore and students are urged to read these.

Date	Topics
January 5	Introduction, review of 610, collapse (Peter B.)
12	Population (Mark)
19	Population (Mark)
26	Affluence – contrasting macro economics with
	ecological economics (Peter B.)
February 2	Affluence – rise of an oil economy (Tom Naylor)
9	Affluence – steady state economics (Peter Victor)
16	Affluence – the right relationship (Peter B.)
23	Reading week
March 2	Technology – (Madhav Badami)
9	Technology – (Madhav Badami)

Course Structure

16	Technology – (Madhav Badami)
23	Student presentations
30	Student presentations
April 6	Student presentations

The course is divided into five interdependent modules.

Module I: Introduction, review of 610, collapse (Peter)

Class 1: (Peter) Collapse at the orphanage.

Readings:

Two books that are of particular value for this class are Guth Speth's *Red Sky at Morning*, which describes generally the state of the environment, and Jared Diamond's *Collapse*.

Module II: The P variable. Trends in population growth and factors affecting growth. Can/should we reduce the number of people on the planet?

Classes 2 and 3: (Mark) Trends in population and future estimates, factors influencing population growth, family planning, case studies. The population explosion and some cascading effects of human lifestyles on the environment: carrying capacity and the influenza pandemic as examples.

Readings:

Class 2:

Joel Cohen, *"Human population – The next half century"* (DVD\Readings\Population\Cohen Human Population - in State of the Planet (Science Magazine).pdf)

Martha Campbell, "*Why the silence on population*?" (DVD\Readings\Population\Why the silence on population.pdf)

Ndola Prata, "*The need for family planning*" (DVD\Readings\Population\The need for family planning.pdf)

Class 3:

P. K. Streatfield and Z. A. Karara, "*Population Challenges for Bangladesh in the Coming Decades*" (DVD\Readings\ Population\Population_Challenges_for_Bangladesh.pdf) J.J. Speidel et al., "*Family planning and reproductive health: the link to environmental preservation*" (DVD\Readings\ Population\Family planning and reproductive health- the link to environmental preservation.pdf)

Garret Hardin "*Carrying capacity as an ethical concept*" (DVD\Readings\Population\Hardin Carry Capacity.pdf)

Barry Commoner "*How Poverty Breeds Overpopulation (and not the other way around)*" (DVD\Readings\Population\Barry Commoner's views on population.pdf)

Partha S. Dasgupta "Population, Poverty and the Local Environment"

(DVD\Readings\Population\ Dasgupta- Population, Poverty and the Local Environment Sci American 1995.pdf). Please also see the technical note to this article (DVD\Readings\Population\ Technical Note to Dasgupta Scientific American 1995.doc)

Supplementary Readings:

Amartya Sen "*Population: Delusion and Reality*" (DVD\Readings\Population\Amartya Sen on Population_ Delusion and Reality.pdf)

J. Harte, "*Human Population as a Dynamic Factor in Environmental Degradation*" (DVD\Readings\Population\Human population as a dynamic factor in Environmental Degradation - Harte_2007_pop&Envt.pdf) R.G. Webster and E.J. Walker, *"Influenza"* An article on the influenza pandemic from the American Scientist (DVD\Readings\Pandemic

flu\Influenza_Webster_American_Scientist_2003.pdf)

GermanWatch, 2004. Sea-Level Rise in Bangladesh and the Netherlands. One Phenomenon, Many Consequences (DVD\Readings\Population\Sea-Level Rise in Bangladesh and the Netherlands.pdf)

Useful reference material, mostly from the UN, on worldwide population in DVD\Readings\Population\Reference Material.

Module III: The A Variable. Can/Should We Get Poorer? Tom, Peter B., and Peter V.

Class 4. Contrasting macro economics with ecological economics (Peter B.) **Readings:**

AB Abel, BS Bernanke, D Croushore. "*Macroeconomics*", 6th edition, Chapter 1. To be found on web page.

HE Daly, J Farley. "*Ecological economics*", Chapter 2. To be found on web page. HE Daly, "*Beyond Growth*", Parts V and VI.

Class 5. The rise of an oil economy (Tom Naylor)

Readings: To be posted on web site

Vaclav Smil. "Energy at the Crossorads: Global Perspectives and Uncertainties" (DVD\Readings\Energy\Smil - Energy at the Crossroads - 2003.pdf)

Vaclav Smil. "Energy in World History" (DVD\Readings\Energy\Smil - Energy in World History - 1994.pdf)

Simon Bennett. "*Chemistry's Special Relationship*" (DVD\Readings\Energy\ ChemistrysSpecialRelationship_tcm18-102604.pdf)

Class 6. Steady state economics (Peter Victor)

Readings:

Victor and Rosenbluth, "*Managing without Growth*" (DVD\Readings\Economics and Environment\Victor_2006_Managing without Growth.pdf)

Kenneth Boulding. "*The Economics of the Coming Spaceship Earth (historical)*" (DVD\Readings\Economics and Environment\The Economics of the Coming Spaceship Earth (historical) - Encyclopedia of Earth.pdf; see also

http://www.eoearth.org/article/The_Economics_of_the_Coming_Spaceship_Earth_(historical))

Class 7. The right relationship (Peter B.)

Readings:

Peter G. Brown, Geoffrey Garver, et al. Right Relationship. Building a Whole Earth Economy.

Module IV: The T Variable. Can/Should We Invent Our Way Out of the Juggernaut?

Classes 8-10: Technology and the Environment: Possibilities and Issues -- The Case of Transport, Energy and Air Pollution (Madhav Badami) **Readings: To be posted on web site**

Module V: Student presentations and discussion

Weeks 11-13.

Further Suggestions for Readings

Books

State of the World, Worldwatch Institute State of the Planet 2006-2007, Science

Notes on term papers

- 27) We would classify "good" scientific writing (or for that manner, any analytic piece) as one that is grammatically precise, tells a story that is easy to follow, is imaginative, concise and not repetitive), is as unbiased as possible, and is logically cohesive. Headings and visual devices (tables, graphs) can often help.
- 28) We are expecting essays of about 25-30 pages, maximum (1.5 line spacing, 12-point font, 1" margins), excluding front page, summary/abstract, bibliography/citations, and footnotes/end-notes. We expect a summary/abstract of no more than 300 words. (This does not have to be the same one as you provided for your presentation.) You can use any format that you like for structuring the paper, as long as it is clear. Please choose one style for footnotes and references (e.g., Chicago, MLA); we do not care which one you use.
- 29) We expect that the paper will comprise a statement of the problem or issue that you are addressing, relevant background material, your analysis of the problem, discussion, and conclusions.
- 30) It is not a necessary that you use the IPAT(E) paradigm as part of your analysis; use the glove that fits. However, the paper must be about the environment and it must have a policy component.
- 31) <u>All</u> statements of fact must be referenced. We are not expecting full reviews of the literature but we also do not expect complete reliance on secondary sources.
- 32) Please use sufficient headings and sub-headings to make the paper comprehensible. Consider using the heading facility in your word processor for structuring your paper. Use of this facility will greatly enhance structure and will automatically place headings and sub-headings in your text in the correct places.
- 33) We do not expect run-on paragraphs or sub-sections that comprise more than one logical development.
- 34) Consider the use of tables and figures rather than describing data in the text.
- 35) When using figures and other graphics from other sources, they must be numbered and captions provided so that the essential elements of the figure are described.

- 36) Do not copy and paste tables from other papers; create your own tables and make sure you explain them.
- 37) Ensure that all sentences follow each other logically; avoid non-sequitors.
- 38) Do not make conclusions before stating the facts. Arguments need to be developed in a logical way and you need to find appropriate ways of introducing a subject without stating your conclusion in advance. Readers prefer to make their own conclusions as they read; the perception will be that you are attempting to bias the reader or you have a specific agenda. However, this does not apply when stating a thesis at the beginning of an essay.
- 39) Try to use the active voice instead of the passive one. See the description in the file: \DVD\On evaluating essays \Active and Passive Verbs.pdf.
- 40) It is all too common these days in professional publications and elsewhere to invent terminology by using phrases where nouns modify nouns. This is extremely poor form and you must be very careful to reduce this as much as possible. For example, "oil sand development" should be written as "the development of the oil sands" and "nutrient delivery to water bodies" should be written as "delivery of nutrients to bodies of water". You may find this difficult to achieve (it has become inherent in many of us), but the end result will be a far better essay grammatically; the drawback is that it takes more words to express the same idea.
- 41) In addition, verbs are often attached to inanimate objects. For example, you will often see something like: "This paper focuses....", "This paper argues...", etc...: PAPERS CANNOT FOCUS, ONLY PEOPLE CAN. An alternative (active voice) is: "In this paper, I will focus on....".
- 42) Lists that start with a colon (":") should be delimited by semi-colons (";" and not commas (",").
- 43) "1980's" is written as "1980s", etc...
- 44) Check your spelling and use the Canadian language facility in your word processor.
- 45) Do not use contractions: e.g., "can't" is written as "can not".
- 46) Do not use acronyms!!! We do not want to see papers made up of alphabet soup.
- 47) Numbers less than 10 should be written out in full; if you use a number to start a sentence, it must be written out.
- 48) Avoid placing additional information in appendices.
- 49) All statements of fact must be referenced by reliable sources.
- 50) We will receive papers by email only and will read them and provide comments directly in your papers, electronically, and will return them to you by email. We will independently read your paper, provide comments electronically, and will assign a grade (A, B, C, etc...). We will not give you our individual ratings but your final grade on the paper will be based on our combined evaluation. You should read carefully the following file on your DVD that contains elements used in evaluations: \DVD\On evaluating essays\RUBRIC.pdf.
- 51) Papers are to be submitted to us by email. A date will be provided in class (usually around December 15).
- 52) PLEASE SEND AS A TEXT DOCUMENT (E.G., WORD FORMAT) AND NOT A PDF

Notes on presentations in class

The goal is to present your paper (which you should be developing but do not have to have written) to the class. So, you need to be able to discuss your thesis and what you know in a concise and clear manner. It means, therefore, that you have done enough work on it to make a cogent presentation.

- 15) Please provide us with a title and an abstract. These will be distributed in class and placed on the website.
- 16) The presentations will be no more than 10 minutes + 10 minutes discussion.
- 17) You can use whatever audiovisual aids you wish, including none, blackboard, etc... If you want to use Powerpoint, you need to bring provide it on a memory stick or email it to us beforehand.
- 18) You should practise your talk in advance, especially keeping to the 10 minute limit.
- 19) Approximate rule of thumb: one slide per minute
- 20) Restrict what you present; the listener can only absorb a few concepts in 10 minutes
- 21) Try to keep your slides as simple as possible; do not have multiple graphic images and text on the same slide
- 22) Ensure that you explain what is on the slide
- 23) Keep the number of words on a slide to a minimum
- 24) Do not use any acronyms.
- 25) The main issue with using colour maps (and other complex slides), especially ones that have multiple colours and legends (especially in small fonts!), is that it is difficult for the audience to appreciate in a very short time span the meaning and nuances of the slide. It would be easier to present maps that are simpler; perhaps, having a set of slides in which colours are overlaid would assist the audience, though this may be difficult. This is especially true for maps that are taken off of the internet, where the reader has as much time as necessary to comprehend the maps. Borrowing media that are designed for one purpose and using it in another may not work.
- 26) There will be three sessions at the end of the semester. First come first serve.
- 27) In each session, we will hand out a prize for the "best" presentation. You will decide this (not us) by ranking the presentations according to interest of the subject matter, objectives, clarity, etc... The ranking system is simple: suppose we have six presentations, you will assign a "1" to the best presentation, a "2" to the second best, etc... We will than add up the scores for each presenter across the class (excluding those who are presenting, so that would be 11 students in this example) and the one with the smallest total score is the winner. We will decide ties by flipping a coin. As well, you can provide written comments anonymously to the presenters.
- 28) The last session may be held at Peter's farm. We will discuss this with you. The constraint is that EVERYONE must be available.

Criteria for peer-review ranking:

Presentations will be ranked by your classmates. Points to consider in judging a presentation:

- 8) is the objective/thesis stated clearly?
- 9) is the context of the problem presented clearly?

10) is the analysis/synthesis cogent?

- 11) were too few or too many ideas covered by the presentation?
- 12) are the conclusions consistent with the analysis?
- 13) was the presentation done in the allotted time?
- 14) For those using visual aids:
 - 4. were the slides too crowded?
 - 5. were there too many/too few slides?
 - 6. were you able to read the slides and follow the monologue?

See the files for information on producing presentations: \DVD\On oral presentations\American Scientist 2006 Frankel.pdf and SCIENCE AND ART.pdf

Academic Integrity

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see <u>http://www.mcgill.ca/integrity/</u> for more information).