ERS 301 Sustainability Thought, Practice and Prospects

Fall 2020

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Course organization:

- 12 sessions (weekly except for Reading Week)
- no in-person or synchronous classes
- this syllabus for the detailed information and a course guide for a quick overview and for navigating the course LEARN site
- online lectures posted on course LEARN site (under the "content" tab) early Monday for each week there is a course session (not reading week)
- the lectures will be in relatively short pieces: typically, an introductory screen capture video with the instructor's talking head, and following parts as narrated powerpoints)
- readings for each session also posted on LEARN
- dropboxes for assignments
- online tutorial groups of 5-6 participants; each group has its own Discussion Forum for sharing reading summaries and comments
- a course Q&A Forum, all term for questions of potentially general interest about the course
- a course Recommendations Forum, all term for suggested course adjustments and proposed other readings, videos, websites, etc.
- weekly online announcements, reminders, etc.
- email access to instructor and TAs for individual issues and questions
- a Course Guide with summaries of key steps in the course (though the details should all be here in the syllabus)

This course is a work in progress

This is the first online offering of ERS 301. While much of the course substance and some of the assignments are converted versions of long-tested approaches, the rest is experimental. All is open to adjustment. Changes will be made, where there is participant agreement, throughout the course. We have established recommendations forum on the course LEARN site. It will function all term for posting and getting responses to

comments on what is working as well as what is not, and what changes might be desirable and practical. It may also be used to suggest supplementary materials (readings, videos, websites, etc.)

Course description and rationale

Humans with their big brains now dominate the planet. This is a mixed accomplishment. For ecosystems and non-human creatures (excepting rats, cockroaches, selected bacteria, and some others), the results have been mostly unfortunate. For humans themselves, some of the changes have been positive overall (e.g., poorly distributed but generally greater infant survival, life-expectancy, literacy, access to goods and services, and concern about the pain and suffering of others). But other major trends (the combination of ecological stresses, climate change, persistent poverty and expanding inequality) are towards deeper unsustainability. For your own foreseeable interests, and certainly also for those of your children and grandchildren, and for many other life forms on the planet, we need to reverse the negative trends and find positive as well as practical ways to live more lightly on the planet, more equitably among ourselves, and better all round.

All that entails considerable intentional change – at a global as well as local and regional scale and for the long run as well as to deal with immediately pressing matters. Because we have not done much intentional global change before, we will have to rely to some extent on trial and error experimentation. But it would help to have initial working answers to three basic questions:

- What ways of thinking and living would provide the foundations for lasting wellbeing (respect the capacities of the biosphere, and match human capacities and aspirations)?
- How can we deal with the enormous complexity of living on Earth in a way that will help us achieve and maintain lasting wellbeing?
- How can we best push the changes needed to move towards more sustainable ways of living?

In this course, we will be taking a broadly historical approach to these questions. The idea is that before leaping to answers, we should learn what we can from what we've done in the past. We should see what abilities and possibilities we've demonstrated, what mistakes we've made, what we've learned, what might be realistic as well as desirable in the future.

The record of human experiments with many options reveals much
about the foundations for wellbeing:

- what ideas and practices and changes worked well – seem to have fit reasonably well with the requirements for sustainability, at least in their times
- what ideas and practices and changes worked poorly, maybe because they missed something crucial or had some nasty aspects or were misapplied
- what is essential for people to deal with each other see and the natural environment successfully
- what are humans at least potentially capable of doing and being

about dealing with complexity and uncertainty:

- how people in various cultures and eras, and with different modes of making a living (hunting/gathering/foraging, small and big agriculture, industrial production and consumption, etc.) have understood and dealt with the complexities of social and biophysical relations
- how they have prepared for or accommodated mystery, uncertainty and surprise
- what has happened when they overreached
- how they learned from experience
- what we can learn from past experience with trying to make a living and maintain wellbeing in a world we understand at best imperfectly

and about how significant change happens:

- whether shifts in ideas change practices
- whether changes in practices shift ideas
- whether both affect each other
- how social and socio-ecological transitions have happened in the past
- whether there are any lessons for how can we push social and socio-ecological change in a desired direction now.

While this course is about the history of ideas and practices, the purpose is to illuminate what to do now and in the future. There is no assumption that the findings will point to a single set of answers. Exploring a diversity of understandings and strategies for change is probably a good thing, so long as we seek a better-informed diversity, better understanding of the grounds for and doubts about the big assumptions commonly made in sustainability circles of various sorts, and commonly made by individuals deciding what to do with their lives.

Six starting points

The course begins with the following observations:

- Pursuing sustainability is as much a social and economic challenge as an ecological one; political, philosophical, psychological and spiritual aspects are often at play as well. Sustainability involves all these considerations and their many and complex interconnections. That includes all of our relations with each other and with nature.
- The world has always been far more complex than we could understand and manage with deserved confidence. Dealing with mystery, uncertainty and surprise has been a challenge addressed in many different ways.
- Societies, past and present, have adopted many different packages of relations among people and with nature, with different basic working assumptions about what defines the good human life, how to design appropriate socio-economic and political arrangements, and how "nature" works and what that entails for living as part of nature.
- In most societies, the assumptions involved are rarely presented and discussed openly. Often, they are just accepted as the way things are. The resulting ways of seeing are embedded in and reinforced by society's main social traditions and

institutions (customs and religion, government and economy, science and technology, etc.).

- Each particular package of assumptions leads to a particular way of seeing the world that inevitably influences how people act. A way of seeing the world (including humans, nature and their relations and possibilities) functions as a kind of filter on reality. It favours some perspectives and possible solutions while obscuring or devaluing others.
- We are now in the unique historical position of being at least to some extent aware of many different possible ways of seeing and treating the world. That position gives us a basis for examining the package of assumptions that prevails in our society today. We can compare our package to other options that have been tested in other places and times. Most importantly, we can, if we wish, create new combinations of ideas and practices that are better suited to current challenges, opportunities and understandings.

Readings

The main readings for the course are listed in the full course syllabus. Almost all are posted on the ERS 301 LEARN website. For the few exceptions, URLs are provided. Participants are also encouraged to draw from other sources of reliable illumination (not just readings) for the course work, including the assignments. To access the course website, login at http://learn.uwaterloo.ca/ with your WatIAM/Quest username and password.

More readings are listed here and provided on the course website than you are likely to read. Participants in the course are expected to read several of the required readings for each week. Also, you are expected to be generally familiar with the material in the readings and lectures, and to demonstrate this familiarity in your assignments.

To facilitate sharing of learning, class participants will be posting brief summaries of one (or two more shorter) readings for the mutual benefit of their tutorial group members. See the information below on the "assignment to prepare readings summaries and contribute to your tutorial group."

Familiarity with the readings is also expected for the other two assignments – the "session notes" for sessions 2-11 and the two reports. For the session notes and report assignments, you should give most of the weekly readings at least a very quick skim and concentrate on two or three meaty ones. The summaries prepared by your tutorial colleagues should also be useful.

Tutorials

We have created 18 tutorial groups, each with 5 or 6 participants assigned randomly by the LEARN algorithm. You can find your group on the LEARN site, in the "classlist" information under the "Connect" tab (select view by groups).

Each group has its own Discussion forum for weekly postings – introductions in the first week (see the details below in the section on session 1) and readings summaries and

comments in the following sessions (see the "assignment to prepare readings summaries and contribute to your tutorial group" below on page 6).

Assignments and grading

Summary

The essentials for the formal assignments are as follows:

- to prepare and submit brief "session notes" for all but the first and last sessions
    - to be graded in three sets – notes for sessions 2&3 (10%), sessions 4-7 (20%), and sessions 8-11 (20%)
- to prepare brief readings summaries and contribute to your tutorial group
    - by posting your notes on one reading (or a pair of short readings) on your tutorial discussion board for each of sessions 2-6 (5%) and 7-11 (5%); and
    - by contributing to discussion board exchanges on the readings, etc. (weeks 2-11) for up to 2% in bonus points
- to prepare and submit two reports – an interim one generally covering sessions 1-5 (15%) and a final one covering the whole course but with emphasis on sessions 6-12 (25%)

These assignments are meant to be mutually supporting. They are to be a means of building, integrating and reporting an expanding understanding of how people in various contexts have dealt with the big challenges of making a living with each other and the biophysical environment, and what we can learn from that experience.

Details on all three of these assignments are provided below.

The session notes assignment

For each of sessions 2-11, each participant is required to prepare and submit a summary note. Each note is to be 500 words or less, not including references. Recognizing the limited possibilities of 500 words, each note

- must be a broad response with reasons to (a major aspect of) the big question(s) for that session (see the information on each session, below), and
- must consider at least one more specific idea or practice or change from the readings and/or lecture that you found particularly compelling as a basis for your response to the tutorial question(s);
- must weigh evidence and drawn conclusions;
- may recognize competing evidence and other possible conclusions;
- must draw from the lecture and at least two of the session's readings;
- may draw also from your tutorial colleagues' readings notes (see the tutorial group contributions assignment below), though it is wise to check to ensure those notes are reliable;
- must be literate and comprehensible to others but may present information in point form where suitable;
- must include proper scholarly references to the sources used (including your colleagues' readings notes);

- should through successive notes increasingly take into account information and understandings from preceding weeks; and
- should be submitted as a Word document (not pdf) to facilitate feedback.

The notes are to be submitted – as Word documents (not pdf) to facilitate commenting – in the relevant week's notes dropbox on the course Learn site. The formal deadline for each note is 11:59 pm on the Friday of the relevant week; however, lateness penalties will not begin until 12:01 am on the following Monday). The notes are to be graded in three sets – notes for sessions 2&3 (10%), sessions 4-7 (20%), and sessions 8-11 (20%). Please remember to include your name and identify the session for which the note has been prepared.

In the interests of equity, penalties will be assessed for late submission of the notes. While the notes are graded in packages, each note is marked out of 5%. The grade relevant for a single note will be reduced by .5 for each day late (e.g., a note that would be assigned 4/5 if received on time would get 3.5/5 if one day late), except in cases of documented illness or other extraordinary inability.

The assignment to prepare readings summaries and contribute to your tutorial group
Unfortunately, we cannot hold in-person tutorial sessions and most asynchronous on-line alternatives to tutorial discussions seem unlikely to be both feasible and useful. So we will instead be establishing what amounts to small tutorial groups in Learn mostly for sharing readings notes and whatever further questions and comments you may have.

The tutorial groups will be typically six individuals (some may be five). Each group has its own group discussion forum under the "Connect" tab on the course Learn site.

Introductions assignment for session 1: By Wednesday at midnight in the first week of the course, session 1, each participant is to introduce her/himself by posting on your group's discussion forum a brief biography with

- your name
- current location
- area of particular interest in the SERS program
- some other information of your choosing to indicate what you know/care about especially and/or makes you unique and intriguing
- your very brief answer to the big question for week 1: "What are the two most important changes in ideas and practices in the world to be achieved over the next 50 years to start moving us to a more durable, just and agreeable future?"

Once you have posted your bio you will be able to see those your colleagues have posted.

Initial survey assignment for session 1: Also by Friday, September 11, at midnight in the first week of the course, each participant is asked to fill out an easy and mildly eccentric initial survey. The survey is in two parts. The first part is a set of miscellaneous questions about your views and knowledge in a diversity of loosely course-related areas. It involves yes or no answers. The second part of the survey is about your views on some

basic sustainability-related issues. It involves some multiple-choice selections as well as yes/no or true/false answers.

The survey is not a test. It will not be graded, and should be undertaken quickly and without research. The answers will be aggregated and reported (if everything works) but the submitters will remain anonymous. The practical purpose of the exercise is to give the instructor some sense of the ideas and understandings that participants are bringing into the course. However, it should also be fun and thought-provoking.

Reading summaries assignment for sessions 2-11: For sessions 2 to 11, each tutorial participant will be allocating a reading or two (occasionally three) shorter ones to summarize in light of the question(s) for the applicable session – see the readings lists and questions for each session in details about the sessions in the syllabus below. You are of course expected to read more than the readings you have been allocated for summary purposes.

The method of allocating readings to individuals is simple and flexible. You will see lists of readings below in the information on each of the 12 course sessions. For weeks 2-11, many of the core readings are numbered from [1] to [6], to correspond to the number of individuals in each tutorial group (initially most will have 6 members, some may have 5). The numbering of the readings has aimed to ensure there is no advantage or disadvantage to being allocated reading [1] versus [6] or any other. To favour randomness, the readings are allocated in your tutorial in alphabetical order based on the first letter of your first name – the first name on the classlist and tutorial group list (which is not necessarily the name you actually go by. (You can make the name you go by clear in the tutorial introductions in the first session.) So Ali gets readings [1], Ben gets readings [2], Daniella gets [3], Rohan gets [4] and so on.

Also, you are free to trade the pre-assigned readings for any session with another member of your tutorial group. Moreover, you may also choose to cover some non-assigned posted readings instead of your assigned ones, so long as you check with one of the TAs first.

The readings summaries are to be posted on the group discussion forum before midnight on the Tuesday of the week for the relevant session. Once you have posted your summary, you will be able to see those of others.

The purpose of the summaries assignment, beyond encouraging individual reading and thinking about the course material, is to facilitate sharing of understanding from readings beyond those that the participants are likely to read through themselves.

The readings summaries must

- identify the most important insights from the reading(s), with importance determined in light of relevance to the course agenda and the questions for the session involved

- explain the significance and implications of the insights (for the course agenda and questions) where these are not obvious
- provide proper bibliographic references for the reading(s) and any other sources used
- be comprehensible and respect conventional grammar, but may make use of point form where this is likely to be clearer and more efficient
- be no longer than 250 words, not including references.

The readings summaries will be marked in 2 sets – the first set is the readings summaries for sessions 2-6; the second is the set covering sessions 7-11. Each set will be graded out of 10%.

Submit your first set (the readings summaries you already posted during sessions 2-6, but in a package for grading purposes) in the relevant ERS301 dropbox under the "Submit" tab in LEARN before midnight on October 23.

Submit your second set (the readings summaries you already posted during sessions 7-11, but in a package for grading purposes) in the relevant ERS301 dropbox before midnight on November 27.

In addition to posting and sharing the readings summaries, you area encouraged use the discussion forum for sharing comments and questions/responses concerning the readings summaries and associated matters. That use of the discussion forum is not mandatory but participation of that kind will be recognized with up to 2% in bonus points for engaged individuals.

The two reports assignments

Two reports are assigned – roughly one for each of the main sections of the course. Report 1 is about what we can learn concerning sustainability-related ideas, practices and implications from sessions 1-5. Report 2 is about lessons from the whole course, but with emphasis on sustainability-related ideas, practices and implications from sessions 6-12.

General guidance applying to both reports

Broadly, the reports are to provide answers to the core question for the course: what positive lessons can we learn from the past about what we should do now? More specific aspects of this huge question are set out in the three questions in the introduction to the course on page 1 of the syllabus, and further elaboration of those three questions is provided on page 2 of the syllabus. You can take that material as useful background guidance for both reports.

For both reports, you have options for form and style as well as substance. More detailed guidance on expectations for the substance of each report is provided below. For both reports, the following general rules about form and style apply.

1. Pick a reporting form from the options below. Your reports cannot be in the form of a conventional academic essay. However, many other options are acceptable, and may be

more professionally useful and/or fun than a conventional essay. Options include the following:

- a transdisciplinary team's briefing paper to a major global think tank
- an interstellar envoy's official report to her/his/its superiors in the Galactic Agency for Struggling Planets (GASP), who are concerned with prospects for Earth
- the script for a TED-Talk by a highly respected time-travelling scholar (with some indication of the accompanying visuals)
- the transcript of panel presentations by a human, a rat and a watershed, each of whom through generations of reincarnation had access to the sweep of history relevant to the report assignment, but necessarily approached the material from somewhat different perspectives
- another option with the permission of the instructor(s) or TAs.

You may use different formats for the two reports.

2. Treat the reports, in whatever form, as exercises in professional writing and scholarly rigour. Adhere to the conventions of grammar. Also, ensure that your readers will understand the conclusions and know there is reliable backing evidence (including as evidenced by proper supporting references). Feel free to incorporate illustrative examples. You are being asked to address very big issues and cover very long periods and huge diversities of particular issues, experiences, understandings and explanations in short reports. You must focus on the high points, but your audience must be able to understand the practical significance of the points you make.

3. Even where different perspectives are involved, present the work of impartial observers/reporters/analysts – relying on the most reliable information available, recognizing disputes and uncertainties. The reports are, at least implicitly, making a reasoned argument based on carefully assessed evidence and sound logic.

4. Draw from the readings and lectures. Use of other relevant scholarly material is fine. Using material from your own preparation notes is entirely acceptable. You can draw also from your tutorial colleagues' readings notes (see the tutorial group contributions assignment below), though again it is wise to check to ensure those notes are reliable.

5. Provide proper bibliographic references to written materials, lectures and other sources you've used, applying a recognized referencing style. For some of the format options, footnotes may work better than in-text citations and a references list. For bibliographic referencing style guides see https://uwaterloo.ca/library/find-resources/citing-sources .

6. Recall or re-familiarize yourself with the rules against plagiarism and the penalties for offences. See the note on academic offences, below.

7. Be concise. These are short reports, especially the first one. Given that the course is covering a sizable chunk of the human experience, you cannot discuss everything. In choosing what to include in the reports, give particular attention to what you consider to

be most significant, surprising and illuminating for building possible answers to the big questions set out at the beginning of this syllabus.

8. All written assignments are to be submitted to the appropriate ERS 301 course website dropbox by 11:59 pm on the deadline date. In the interests of equity, penalties will be assessed for late submission of written assignments. The grade given for a written submission will be reduced by .5 for each day late (e.g., a paper assigned 19/25 if received on time will get 18.5/25 if one day late), except in cases of documented illness or other extraordinary inability.

9. Ensure that your name is on the submission (a separate title page is not necessary);

Reports grading rubric

The grading of the reports will be based primarily on evidence of

- attention to the purposes and particulars of the assignment and familiarity with (or mastery of) the concepts and sources, ideas and implications covered by the course, including in the lectures and readings (though discussion of other relevant books, articles and/or other reliable sources is welcome) (40%);
- coherence (or brilliance) of argument, including insightful understanding, logical flow, emphasis on most significant points, effective use of evidence (with appreciation of its limitations), integration of ideas, attention to implications, and appropriate credit to sources (40%); and
- clarity (or elegance) of writing, taking into consideration the structure and organization of thoughts and argument, effective linking of broad ideas to special illustrations or examples, proper grammar and syntax, concise presentation, and ease of understanding (20%).

In the second report, we will expect increasing concentration on identifying connections or conflicts among the ideas considered.

Finally, and despite the usual stuffiness of professional and scholarly writing, in this course there are bonus points for wit and humour.

The report assignment details for the first report (covering sessions 1-5. From the dawn of time to the rise of modern science and economics)

Your first report is to focus on what we can learn from how people struggled with the problem of sustainability up to about 200 years ago. That includes the strengths and weaknesses of the various basic ideas and practices tested over these times, how they addressed the complexities of the world, what big changes happened and what we can learn from all that. The relevant material relates to practical approaches to making a living, getting along with each other and dealing with the rest of the environment and all the associated complexities, but it also includes how people understood the world and their place and role in it.

The big issues to address in this first report are as follows:

- What were the core the ideas and practices of the hunter/gatherer/forager cultures that prevailed throughout most of the human record? How did people in these

cultures understand their place in the world, and proper interactions with each other and the larger environment?
- What changed and what remained the same for the early farmers and initial agricultural civilizations that gradually supplanted the hunter/gatherer/forager cultures?
- What was different about the ideas and practices that came with and from modern science and economics – especially concerning how people understood their place in the world, and how they interacted with each other and the larger environment?
- In what ways did these shifts enhance and/or diminish prospects for lasting wellbeing for the people involved?
- From that
    - what are the most attractive indigenous, ancient and modern ideas and practices that may still be applicable today in some form (recognizing that many circumstances are now quite different)?
    - what are the least attractive ideas and practices from these times that may represent still relevant concerns?
    - what are the main overall lessons for thinking about how to make a better world?

In addressing these big issues, you should consider what ideas and practices were most fundamental, which ones were (or were not) substantially different from those that they replaced, what changes in ideas and practices were or were not likely to work for the people involved over the long term (help them to survive, have fulfilling lives and maintain sustainable relations), and what human inclinations, capacities and limitations are revealed by the nature and results of these ideas and practices.

That will involve some digging into what the long period from the dawn of time to the rise of modern science and economics tells us about what people can do, what qualities of life in community and environment seem necessary for humans in any culture or time period, and what sorts of ideas, institutions and practices might be both feasible and desirable now.

You may find it useful to approach these big questions in part by identifying and focusing on one or more major issues – for example, how pre-modern and modern ideas have conflicted and combined, or what the main similarities and differences are between the transition to agriculture and the transition to modern scientific and economic practices. Or you might adopt one or more illuminating perspectives – for example, implications for women, or poor people, or ecosystems. Recognize, however, that any such approach should assist and illuminate coverage of the big issues, not replace it.

Feel free to rely heavily on illustrative examples. You are being asked to address a set of very big issues and cover a very long period and a huge diversity of particular cultures, in a short report. Moreover, depending on the style of "report" you are preparing, your work will need to be understandable and lively, and that may be helped by engaging illustrative examples.

Requirements: The report can be a maximum of 1500 words (not including references). The submission is due in the relevant dropbox on the course Learn site before midnight on Monday, October 19.

The report assignment details for the second report (covering sessions 6-12: From the modern world to a sustainable one)

Your second report is to build on your first one (though you can choose a different form of report). Report 2 is to focus on ideas and practices to the big sustainability-related questions – about wellbeing, living successfully with others, living viably in the biosphere, and dealing with uncertainty and complexity – over the past 200 years or so. That is very roughly the modern era of dominant ideas in an identifiable package rooted in the rise of modern science and economics. But it is also period of big changes, debates about the modern ideas and their practical implications, various proposed alternatives, and increasing sustainability concerns.

As with the first report, the objective for report 2 is to identify the major lessons for application in pursuing sustainability now and in the future. You should include matters addressed in your first report, but give particular attention to the ideas, critiques, applications, and happy and tragic results over the past couple of centuries, which we have explored in the final six weeks of the course.

The final report question is as follows:

- what basic ideas and practices from historical experience and recent deliberations are most likely to be useful in helping us move significantly towards sustainable (desirable, just and viable over the long run) local to global socio-ecological arrangements and activities with in your lifetime?

For the purposes of this report, you might think of the past as having revealed and tested a variety of options. These options have included different ideas and practices that have been packaged in different cultures and institutions and involve ways of making a living and ways of defining good lives, successful communities and desirable futures. In turn, these options have rested on different basic assumptions – about the essential character, capacities, inclinations and potentials of human beings, as individuals and communities; about the nature and purpose of the larger environment; and about proper relations between individuals and communities, humans and the biosphere, us and them, now and before and yet-to-come.

In response to the broad question above, your final report should do the following (though not necessarily in the order of the points below):

- set out the basic ideas and practices from historical experience and recent deliberations that you propose in response to the report question above;
- report, briefly, the origins and original contexts of these ideas and practices;
- establish that the ideas and practices you have identified would work together as mutually supportive parts of a workable package;

- provide supporting evidence and argument to establish that the proposed components and package are preferable to other options (more beneficial, flexible, viable, least risky, more easily achievable, etc.);
- assess whether adopting such assumptions and associated ideas and practices would entail fundamental changes to prevailing basic approaches to how we organize our lives, economies, societies, and governing institutions, etc.;
- identify, very briefly, three illustrative examples of how application of your package of lessons could affect sustainability-related initiatives in some area (e.g., sustainable food and agriculture systems, poverty elimination, ecological restoration and biodiversity preservation, climate change mitigation, sustainability-based urban (re)design, human rights and distributional justice, energy sustainability, …) at some scale or scales, local to global.

Requirements: The report can be a maximum of 2500 words (not including references). The submission is due in the relevant dropbox on the course Learn site before midnight on Friday, December 11.

Evaluation summary

Session notes set 1	10% (sessions 2&3)
Session notes set 2	20% (sessions 4-7)
Session notes set 3	20% (sessions 8-11)
Tutorial group reading summaries	5% (sessions 2-6, due October 23)
Tutorial group reading summaries	5% (sessions 7-11, due November 27)
Tutorial discussion board contributions	up to 2% in bonus points (sessions 1-12)
Report 1	15% (sessions 1-5, due October 19)
Report 2	25% (esp. sessions 6-12, due December 11)

The course schedule

Part 1: From the dawn of time to the modern world

Session 1. Week of Sept 8

Introduction: sustainability and the history of ideas and practices – different views of the world and different routes to saving it

Session 2. Week of Sept 14

Foundations: the long record of hunting and gathering, the recent shift to agriculture and their contrast with modern societies

Session 3. Week of Sept 21

New understandings: philosophy, religion and the roots of the Western tradition

Session 4. Week of Sept 28

The rise of modern science: nature as knowable and manipulable

Session 5. Week of Oct 5

The rise of modern economics: markets, individuals and a world of commodities

Week of Oct 12 Reading week

Part 2: From the modern world to a sustainable one

Session 6. Week of Oct 19

Industrial society and modernity: the union of modern science and economics and a new image of humans and nature

Session 7. Week of Oct 26

Domination and other options: conquest, exploitation, imposition and more positive themes in human history

Session 8. Week of Nov 2

Advocates and critics: contrasting liberal, conservative, feminist, socialist, romantic and other responses to modern industrial society

Session 9. Week of Nov 9

Progress and its discontents: reason, technology and doubts in the twentieth century

Session 10. Week of Nov 16

Greens: the first century of environmental critique and response

Session 11. Week of Nov 23

Sustainability: the integration of environment and development under conditions of complexity

Session 12. Week of Nov 30

Lessons: implications of the historical and cultural roots of our current situation and our possibilities for change towards sustainability

Important UW policies and services on key course-related topics

Mental Health: The University of Waterloo, the Faculty of Environment and our Departments/Schools consider students' well-being to be extremely important. We recognize that throughout the term students may face health challenges – physical and/or emotional. *Help is available.* Mental health is a serious issue for everyone and can affect your ability to do your best work. Counselling Services is an inclusive, non-judgmental, and confidential space for anyone to seek support (http://www.uwaterloo.ca/counselling-services). They offer confidential counselling for a variety of areas including anxiety, stress management, depression, grief, substance use, sexuality, relationship issues, and much more.

Disabilities: AccessAbility Services (https://uwaterloo.ca/accessability-services/), located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. See http://www.uwaterloo.ca/academicintegrity/.

Every student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his or her actions. Please review the material provided by the university's Academic Integrity office specifically for students: http://uwaterloo.ca/academicintegrity/Students/index.html. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating), should visit the on-line tutorial at https://uwaterloo.ca/library/get-assignment-and-research-help/academic-

integrity/academic-integrity-tutorial, and seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean.

When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline: https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71.

Within the Faculty of Environment, those committing academic offences (e.g. cheating, plagiarism) will be placed on disciplinary probation and will be subject to penalties that may include a grade of 0 on affected course elements, 0 on the course, suspension, and expulsion.

Grievances: Students who believe that they have been wrongfully or unjustly penalized have the right to grieve; refer to Policy 70, Student Grievance: https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70.

Appeals: A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) on matters other than a petition, or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he or she has a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm.

Religious observances: A student needs to inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

***Communications with Instructor and Teaching Assistants*:** All communication with students must be through either the student's University of Waterloo email account or via Learn. Students who email the instructor or TA from a personal account will be requested to resend the email using their personal University of Waterloo email accounts.

Intellectual Property: Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo. Intellectual property includes items such as: lecture content, spoken and written (and any audio/video recording thereof); lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides); questions or solution sets from various types of assessments (e.g., assignments); and work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

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intellectual property rights owner deserves to know (and may have already given their consent).
Recording lecture: Use of recording devices during lectures is only allowed with explicit permission of the instructor of the course. Only audio recordings will be permitted. Posting of videos or links to the video to any website, including but not limited to social media sites such as: Facebook, Twitter, etc., is strictly prohibited.

Readings and questions for the twelve sessions of the course

Part 1: From the dawn of time to the modern world

Session 1. Week of Sept 8

Introduction: a course on the history of ideas and practices related to sustainability – different views of the world and different routes to saving it

[Note: for this session there is no tutorial group readings summary assignment and no session notes assignment, but considering the questions will be of use for the reports assignments, and should be of interest in any event. Also there are two introductory non-graded elements. First, you are to introduce yourself to your tutorial group colleagues (see page 6, above). Second, there is a survey for you to fill out for your own entertainment and head scratching as well as to give the instructor some sense of what the participants are starting with in the course (again, see page 6, above).]

Introductory clips, etc.:
Claire L. Evans, "The evolution of life in 60 seconds," https://www.youtube.com/watch?v=YXSEyttblMI
World History For Us All, *History of the World in Seven Minutes,* http://www.youtube.com/watch?v=4pnmZalx9YY

Core readings [skim through your own selections from the offerings below; read a few more carefully]:
Lester Brown, "Learning from past civilizations," *Grist* (July 2009), http://grist.org/article/2009-07-29-learning-from-past-civilizations/.
Geeta Vaidyanathan, "In Gandhi's Footsteps: two unusual development organizations foster sustainable livelihoods in the villages of India," *Alternatives Journal* 28:2 (spring 2002), pp.32-37.
Steve K. Katona, "Worms, germs and sperms: celebrating our shared past and common future," Commencement address, College of the Atlantic, 2009.
Ronald Wright, *A Short History of Progress* (Toronto: Anansi, 2004), pp.32-35.
United Nations Sustainable Development Knowledge Platform, *Sustainable Development Goals*, on-line, multi-layer site, https://sustainabledevelopment.un.org/?menu=1300 [not on the course Learn site]; also check out the background information provided in United Nations, *Transforming Our World: The 2030 Agenda for Sustainable Development* (New York: UN, 11 August 2015), esp. paragraphs 14-38 (pp.4-8). https://sustainabledevelopment.un.org/post2015/transformingourworld.]

Kate Raworth, "Want to get into the doughnut? Tackle inequality," Exploring doughnut economics (2014), http://www.kateraworth.com/2014/10/16/doughnut-inequality/

WWF et al., *Living Planet Report 2018: Aiming Higher,* esp. pp.22-25, https://wwf.panda.org/knowledge_hub/all_publications/living_planet_report_2018/

World Business Council for Sustainable Development, *Vision 2050: a new agenda for business – in brief* (Geneva: WBCSD, 2010), esp. pp.2-6, full report available at https://www.wbcsd.org/Overview/About-us/Vision2050/Resources/Vision-2050-The-new-agenda-for-business

Session questions:

Is it not difficult to establish that what humans are doing today on this planet is unsustainable. Unfortunately, choosing appropriate responses is not so easy. What should be done, how quickly, by whom and with what resources? Not surprisingly, the most common responses focus on modest adjustments to current ideas and practices – seeking greater sustainability through more or less conventional economic and technological means (using economic motives and developing more advanced technologies for much more efficient resource use, less pollution, etc.).

In contrast, others believe it is necessary and desirable to replace central aspects of the prevailing political economy (e.g., consumerism, increasingly ambitious technologies and artificial environments, market globalization, inequitable distribution of benefits, etc.) with fundamentally different alternatives (e.g., nega-growth and regenerative economies, redistribution of power and opportunity, more local and/or global control, small-scale technologies, voluntary simplicity, etc.). Some sustainability activists rely heavily on use of the existing economic system, while others try to subvert and transform it. Some work to change laws, policies and educational systems, while others promote conviviality, spirituality and aesthetics. Some seek alliances with corporate leaders, while others work with the poor. And so on.

On the surface, these are just disagreements about what strategies for change will work best. But at the roots are basically different ways of seeing the world, different understandings of what is desirable and possible, different objectives and priorities as well as different strategies for change. The readings about current unsustainability and possible responses present a variety of alternative ways of seeing people, the environment and proper relations between them.

The varieties reflect different answers to the three big interrelated core questions for this course:

- What ways of thinking and living would provide the foundations for lasting wellbeing (respect the capacities of the biosphere, and match human capacities and aspirations)?
- How can we deal with the enormous complexity of living on Earth in a way that will help us achieve and maintain lasting wellbeing?
- How can we best push the changes needed to move towards more sustainable ways of living?

And these three big questions together pose a third:

- How differently do we need to think and act, and how differently do we need to design our institutions and order our priorities so we can move towards a world that is happier and more sustainable, etc.?

Throughout the term we will develop a better historical foundation for answering these questions. But you can begin by considering your starting position. Over the next twelve weeks, your views may be confirmed or altered. We will see. The questions will be considered again in the last two sessions. Here at the beginning we are only looking for initial positions, and short answers. Since these are very big questions, offering temptations for elaborate responses, it is perhaps wise to start with a few basic suggestions.

Your tutorial assignment for this introductory session (see page six above) requires you to introduce yourself to your tutorial colleagues. Your introductory note should include an initial, very brief answer to the following question:

- What are the two most important changes that are needed in ideas and practices in the world over the next 50 years to start moving us to a more durable, just and agreeable future? (Please restrict yourself to changes that could conceivably occur. Note that we are not expecting you to research the options, though you should look through the readings for this session.)

Session 2. Week of Sept 14

Foundations: the long record of hunting and gathering, the recent shift to agriculture and their contrast with modern societies

[Note: for this session and for the following sessions except for the last one, the relevant readings assigned to tutorial members 1-6 in each tutorial group are identified with numbers in square brackets.]

Introductory clip

John Green, The Agricultural Revolution: *Crash Course World History* #1, http://www.youtube.com/watch?v=Yocja_N5s1I&feature=player_embedded

Core readings:

[all] Clive Ponting, *A New Green History of the World* (London: Penguin, 2007), "Ninety-nine percent of human history, pp.17-23 [on hunting, gathering and foraging; all of pp.17-115 of Ponting's book is excellent].

[all] Clive Ponting, *A New Green History of the World* (London: Penguin, 2007), "The first great transition," pp.36-42 [on agriculture].

[1] Carol R. Ember, "Hunter-Gatherers (Foragers)" in C. R. Ember, Explaining Human Culture. Human Relations Area Files (2014), http://hraf.yale.edu/hunter-gatherers-foragers/ [overview]

[1] Margaret Alic, "Goddesses and gatherers: women in prehistory," in *Hypatia's Heritage: a history of women in science from antiquity to the late nineteenth century* (London: The Women's Press, 1986), pp.12-19 [on women's roles, including in the early stages of farming].

[2] Hugh Brody, *The Other Side of Eden: hunters, farmers and the shaping of the world* (Vancouver: Douglas and McIntyre, 2000), pp.11-15 [on Inuit culture]

[2] Jill Oakes, "Raw seal and the spirit of plenty, *Alternatives Journal* 15:1 (1987), pp.78-79 [on Inuit food knowledge].

[2] J. Donald Hughes, “Kakadu, Australia: the primal tradition,” in *An Environmental History of the World: humankind’s changing role in the community of life* (London: Routledge, 2001), pp. 19-22. [Australian Aboriginal knowledge]

[3] James. C. Scott, “Introduction,” *Against the Grain: A Deep History of the Early States* (New Haven: Yale University Press, 2017), pp.1-36 [the rise of the first agricultural states].

[4] Clive Ponting, *A New Green History of the World* (London: Penguin, 2007), “Destruction and survival,” pp.67-77 [on soil and forest depletion due to agriculture].

[4] Vandana Shiva, *Monocultures of the Mind* (London: Zed, 1993), pp.12-15 and 19-21 [on traditional and modern views of forest resources].

[5] Eman M. Elshaikh, “Social, political and environmental characteristics of early civilizations,” https://www.khanacademy.org/humanities/world-history/world-history-beginnings/birth-agriculture-neolithic-revolution/a/why-did-human-societies-get-more-complex

[6] Mary E. Clark, *Ariadne's Thread: the search for new modes of thinking* (London: Macmillan, 1989), pp.179-181 [on cultural change].

[6] Thomas Hobbes, "Of the naturall condition of mankind as concerning their felicity, and misery," in *Leviathan* (1651), pp.84-88 [the classic early modern misrepresentation of “primitive” human life].

[6] Bronislaw Malinowski, *Argonauts of the Western Pacific* (1922), excerpt on gift exchanges, from *Lapham’s Quarterly* 8:3 (2015), pp.97-98 [gifts, trade and generosity (in contrast to Hobbes)]

Other selection options:

Jared Diamond, "To farm or not to farm," in *Guns, Germs and Steel: the fates of human societies* (New York: Norton, 1997), pp.104-113.

Ronald Wright, *A Short History of Progress* (Toronto: Anansi, 2004), pp.14-18, and 40-45.

Laurel Sefton MacDowell, “Encountering a new land” (excerpt), in *An Environmental History of Canada* (Vancouver, UBC Press, 2012), pp.11-20 [part of a longer piece on the course website].

Joachim Radkau (trans. Thomas Dunlap), “In the beginning was fire,” and “Humans and animals,” in *Nature and Power: a global history of the environment* (Cambridge U. Press, 2008), pp.41-55.

Paul Nadasdy, “’Property’ and aboriginal land claims in the Canadian Subarctic: some theoretical considerations,” *American Anthropologist* 104:1, March 2002, pp.247-261.

Nicole Gombay, “Shifting identities in a shifting world: food, place, community and the politics of scale in an Inuit settlement,” *Environment and Planning D” Society and Space,* 23 (2005) pp.413-433.

Steven Robins, “NGOs, ‘Bushmen’ and double visions: the ≠khomani San land claim and the cultural politics of ‘community’ and ‘development in the Kalahari,” *Journal of Southern African Studies* 27:4 (December 2001), pp.833-853

Richard B. Lee and Richard Daly, “Foragers and others,” *The Cambridge Encyclopedia of Hunters and Gatherers* (Cambridge: Cambridge University Press, 1999), http://www.udel.edu/anthro/ackerman/hunter.pdf

Marshall Sahlins, “Notes on the original affluent society,” in Richard B. Lee and Irven DeVore, ed., *Man the Hunter* (Chicago: Aldine, 1968), pp.85-89; from http://www.udel.edu/anthro/ackerman/economics.pdf.

Session questions:

Different ways of seeing the world entail different ways of treating it. And probably vice versa. Perhaps the biggest contrast has been between how hunters-gatherers-foragers and people in modern industrial societies see and treat the world. Unfortunately, this comparison is not easy to make. We live in a modern industrial society and might be reasonably familiar with the basic ideas that our modern society reflects and encourages – about human nature, the good life, how nature is to be treated, etc. But these are not matters often discussed in everyday conversation and it is hard to get a perspective on something when we are in the middle of it.

Getting a good sense of the hunter-gatherer-forager worldview is also difficult, though for other reasons. For perhaps 95% of the human experience, life was in hunting and gathering communities. That reality is mostly past and those few communities that remain are vulnerable, perhaps atypical, and in any event more or less seriously affected by their relations with the industrial world. Moreover, it is hard to imagine a way of seeing the world that is very different from our own.

The Vandana Shiva reading gives some sense of the contrast. The other readings present a variety of perspectives on hunters, gatherers and foragers. Hobbes' piece, from 1651, provides an early and influential version of what came to be the dominant western viewpoint – that the shift from hunting and gathering communities to modern industrial society was a move from ignorance to knowledge, from childhood to maturity, from subjugation (esp. to nature and custom) to freedom, from poverty to comfort. Also in the usual depiction, the departure from hunting, gathering and foraging was entirely beneficial and chiefly led by technological advance, which until recently has typically been credited to certain unknown men who were particularly inventive leaders. Margaret Alic corrects the crediting only men part. But the darkness to light view of human progress rests on a particular set of misunderstandings of history and prehistory, and on a particular set of conclusions or assumptions about humanity, nature and their interrelations.

There have long been alternative views. Jean-Jacques Rousseau's concept of the noble savage is one example. More recently, anthropologists and aboriginal people themselves have been presenting challenges to the conventional position and raising the possibility that hunting and gathering cultures may represent humanity’s best arrangements in society and in nature. Some such accounts are included in the readings for this week.

Clive Ponting’s version of the story suggests a mixed package with humans driven to spread more extensively and exploit more ambitiously for many reasons, including mistakes and external pressures, and that the eventual development of sedentary agricultural and industrial civilization was at best a mixed and perilous achievement. James Scott’s more recent account is more inclined to emphasize the limitations and fragility of rising of the agricultural civilizations.

Among the questions raised by all this are the following:

- Which of these various depictions of hunting, gathering and foraging, and the shift to sedentary agriculture and more "civilized" life, seems most plausible and reliable?
- What are the implications if this depiction is correct?

The standard modern view of progress from hunting, gathering and foraging is part of a larger picture of history as a more or less continuous line of upward advancement, led by technology, consequent economic improvements and related gains. An alternative at the other end of the spectrum would present hunter-gatherer-forager communities as the ideal and natural human social and ecological arrangement and consider moves away from it to be largely regrettable. Between these two options lies a range of possibilities seeing various combinations of gains and losses.

In light of this spectrum of possibilities, several big questions follow for your consideration of the lecture and readings this week and for preparation of your session notes (you may not get to all of these questions in any detail):

- What did "lasting wellbeing" mean for hunter-gatherer-forager people and what were their strategies for maintaining it?
- How did they deal with the enormous complexity of getting along with each other and with their surrounding environment?
- What led to the change away from the hunter-gatherer-forager society into herding and farming and how did that affect their conception of wellbeing and ways of getting along with each other and with their surrounding environment?
- What else was lost and/or gained in the transition from small farming to agricultural city-states and empires?
- What are the implications for today concerning how humans can define the good life, get along with each other and with the natural environment, and make big changes?

Session 3. Week of Sept 21

New understandings: philosophy, religion and the roots of the Western tradition

Core readings:

[1] Ronald Wright, *A Short History of Progress* (Toronto: Anansi, 2004), pp.65-79 [from the Garden of Eden to the desertification of Mesopotamia]

[2] J. Donald Hughes, *An Environmental History of the World: humankind's changing role in the community of life* (London/New York: Routledge, 2001), pp.30-33 and 52-59 [tensions between nature and the cultures of civilization].

[3] *The Holy Bible*, Genesis, Chapter 1, especially verses 20-28 [the King James Bible's version of all of Genesis is on the course website]; Psalm 8; Psalm102, verses 25-28; and Matthew, Chapter 6, verses 19-21 [bonus item: Hope Mennonite Church, Winnipeg, 350 Earth friendly verses in the Bible http://www.youtube.com/watch?v=a7TFBqUmfNw&feature=player_embedded].

[3] *The Rig Veda*, "Creation Hymn," translated by V.V. Raman.

[3] *The Bagavadgita*, excerpt, "The be all and end all," excerpt, *Lapham's Quarterly* 7:4 (2014), pp.92-93.

[4] Thomas King, *The Truth about Stories* (Toronto: Anansi, 2003), pp.10-25.
[5] Mary E. Clark, *Ariadne's Thread: the search for new modes of thinking* (London: Macmillan, 1989), pp.194-204.
[6] Stephanie Lahar, "Roots: rejoining natural and social history (excerpt)," from Kent Peacock, ed., *Living with the Earth: an introduction to environmental philosophy* (Toronto: Harcourt Brace, 1996), pp.313-316.

The classic paper in the field:
Lynn White, Jr., "The historical roots of our ecologic crisis," *Science* 155:3767 (March 1967), pp.1203-1207.

Session questions:
The ideas, institutions and practices that characterize the modern western approach to the world are the products of a long evolution. It is often said that the foundations of western thinking lie in the Abrahamic religious traditions (Judaic, Christian and Muslim) and in the development of Greek rational philosophy. The Abrahamic and Greek foundations arose more or less separately but were combined in the middle ages. As we will see, these "foundations" were only part of the story – many more influences were involved in the rise of modern science and economics, industrialization, adoption of the idea of progress, etc.

It will be difficult to evaluate the relative significance of the Abrahamic and Greek contributions until after we have examined later influences and have developed a clearer understanding of the fundamental ideas that now rule the world. However, we can learn much by comparing the Abrahamic and Greek approaches with those of preceding traditions (hunter-gatherer-forager, early farming, ancient city/farming civilizations), the various eastern traditions (Buddhist, Hindu, Taoist, Confucian, etc.), and prevailing modern views. The following questions may help to guide your thinking, reading and drafting your session notes:

- What were the main understandings – about how humans should behave in society, about how we should see and treat the environment, and about the complex workings of the world – at the centre of the Abrahamic religions and Greek rationalist philosophy? How well do these understanding fit together?
- How did these understandings differ from the understandings that prevailed before (e.g., in hunter-gatherer-forager societies) and from the understandings that characterize Hinduism, Buddhist and other major religions that had less influence on the development of the western tradition?
- What aspects of the Abrahamic/Greek combination provide openings for more exploitive treatment of other people and the non-human environment, and what aspects would seem to discourage such an attitude? (Be sure to consider the two traditions' views about the environment, the accumulation of wealth, the exercise of power, and the nature of the good life.)
- Which do you think are more likely to affect behaviour that is socially and environmentally responsible: religious or philosophical ideas about the human place in nature, or religious or philosophical ideas about the pursuit of wealth?

Session 4. Week of Sept 28

The rise of modern science: nature as knowable and manipulable

Core readings:

[all] Hugh Kearney, *Science and Change 1500-1700* (Toronto: McGraw-Hill, 1971), pp.17-48.

[1] Edward Dolnick, *The Clockwork Universe* (New York: HarperCollins, 2011), "The end of the world," pp.13-19; "God at His drawing table," pp.34-42 [on 7th century science]; "A play without an audience," pp.90-96 and "All in pieces," pp.97-102 [modern science versus appearance and common sense]; and "The view from the crowsnest," pp.169-176 [about Galileo]

[2] Yasmeen Mahnaz Faruqi, "Contributions of Islamic scholars to the scientific enterprise," *International Education Journal* (2006), pp.391-399.

[3] Carolyn Merchant, "Dominion over nature," from *The Death of Nature: women, ecology, and the scientific revolution* (San Francisco: Harper and Rowe, 1980), pp.164-191, esp.164-173 [on Francis Bacon].

[4] James R. Gaines, *Evening in the Palace of Reason: Bach meets Frederick the Great in the Age of Enlightenment* (New York: HarperCollins, 2005), pp.45-52 [a pre-modern theory of music].

[5] Patricia Fara, "Magic," in *Science: a four thousand year history* (Oxford: Oxford University Press, 2009), pp.121-128.

[5] Patricia Fara, "Europe," (medieval science) in *Science: a four thousand year history* (Oxford: Oxford University Press, 2009), pp.81-91.

[6] Lewis Mumford, "The monastery and the clock," *Technics and Civilization* (London: Routledge, 1934), pp.12-18.

[6] Lynn Steen, "The measure of reality," notes based on Alfred W. Crosby, *The Measure of Reality: quantification and western society 1250-1600* (Cambridge: Cambridge University Press, 1997), http://www.stolaf.edu/other/ql/crosby.html.

[6] Morris Berman, *The Re-enchantment of the World* (New York: Bantam Books, 1984), pp.34-35 [from the scientific revolution to the industrial one].

For curiosity:

Nicholas Copernicus, *On the Revolutions of the Heavenly Spheres* (1543) http://webexhibits.org/calendars/year-text-Copernicus.html

Leonardo Da Vinci, *The Notebooks* (1519ff), http://www.gutenberg.org/ebooks/5000

Andreas Vesalius, *De Fabrica* (1543), especially the dedication of Charles V, http://vesalius.northwestern.edu

Session questions:

The two immediate foundations of the modern worldview lie in the ideas and practices of modern science and modern economics. The two are interrelated. They arose together, were pushed by overlapping historical forces and events, and were influenced by a similar set of other influences. Probably they are best considered as parts of a package.

But this week as a first step, we can examine the essentials of the scientific contribution, especially that of the mechanical tradition, and try to identify what changes

in thinking and action led to it and what contribution made to development of the modern worldview.

The relevant questions include the following:

- How did the mechanical tradition differ from competing scientific approaches to understanding and treating nature, especially those of the organic and magical traditions, especially as a way of dealing with the evident complexity of the world?
- How did the new scientific view of nature and its purpose build upon or depart from the Abrahamic and Greek traditions?
- How was the rise of the mechanical view linked, ideologically and practically, with other aspects of thought and life (e.g., religion, economic organization, gender politics, social hierarchies) at the time?
- How crucial does the mechanical tradition in science seem to have been in the formation of our modern way of seeing the world and to what extent do the central concepts of the mechanical tradition still prevail?

For us now, and for tutorial discussion, the big question is:

- What was gained and what was lost in the rise of the mechanical, scientific worldview and what are the implications for how we should think about science and about the nature and use of scientific knowledge today?

Session 5. Week of Oct 5

The rise of modern economics: markets, individuals and a world of commodities

Core readings:

[all] Robert L. Heilbroner, *The Worldly Philosophers,* fourth edition (New York: Simon and Schuster, 1972), pp.16-39.

[1] Adam Smith, *The Wealth of Nations,* (originally published, 1776), Book I, chapter 2.

[1] Karl Polanyi, *The Great Transformation* (Boston: Beacon, 1957), pp.43-47.

[2] Mary E. Clark, *Ariadne's Thread: the search for new modes of thinking* (London: Macmillan, 1989), pp.261-268.

[3] Erica Schoenberger, “The origins of the market economy: state power, territorial control and modes of war fighting,” *Comparative Studies in Society and History* 50:3 (2008), pp.663-691.

[4] John Locke, "The second treatise of government (excerpts)," (originally published, 1690) from Lori Gruen and Dale Jamieson, eds., *Reflecting on Nature: readings in environmental philosophy* (New York: Oxford, 1994), pp.20-21.

[4] Carolyn Merchant, "Dominion over nature," from *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper and Rowe, 1980), pp.177-180 [also included in readings for week 4]

[5] Bronislaw Malinowski, *Argonauts of the Western Pacific* (1922), excerpt on gift exchanges, from *Lapham’s Quarterly* 8:3 (2015), pp.97-98 [also a reading for week 2]

[5] Avner Offer, “Between the gift and the market: the economy of regard,” *Economic History Review* 50:3 (1997), pp.450-476,

http://www.nuffield.ox.ac.uk/economics/history/paper3/gift3.pdf [you can skim much of this one and get the main ideas].

[6] Mark Casson and John S. Lee, "The origin and development of markets: a business history perspective," *Business History Review* 85 (Spring 2011), pp.9-37 [skimmable].

Session questions:

The second immediate foundation of the modern worldview was provided by the rise of the market as the organizing framework for economic exchange and, increasingly, the organizing framework for ideas about human character, social organization, wellbeing, improvement, etc.

As noted last week, the rise of markets and acceptance of the pursuit of gain happened over the same period as the rise of modern science and acceptance of the pursuit of domination and control. This combination of changes was not just coincidence and it will be important to consider how the ideas and practices involved were connected and mutually supporting.

First, however, we should be clear about the essentials of the new economic approach, why it arose and what effects it had:

- What were the underlying ideas of modern market economics concerning the basic nature of human beings, proper relations among people, the role of the natural environment, and the foundations for human wellbeing? And how did these ideas deal with the challenge of complexity?
- How did an economy that expanded the role and range of market exchange differ in practice from previous approaches to organizing production and allocation?
- In what ways did the ideas underlying the new economic approach build upon or depart from the Greek and Abrahamic traditions?
- Why did markets and the pursuit of gain expand and win acceptance? What factors were influential? Was this change the product of an inevitable process, or an historical accident, or something else?
- How was the rise of markets linked, ideologically and practically, with other aspects of thought and life (e.g., science, religion, gender politics, social hierarchies) at the time?
- How crucial does the rise of market economic seem to have been in the formation of our modern way of seeing the world and to what extent do the central concepts of market economics still prevail?

For us now, and for your session note, the big question is similar to last week's question about modern science:

- What was gained and what was lost in the rise of modern market economics and what are the implications for how we should think about the pursuit of wealth, the roots of consumer behaviour and the nature of "the good life" today?

Week of Oct 12 Reading week

Part 2: From the modern world to a sustainable one

Session 6. Week of Oct 19

Industrial society and modernity: the union of modern science and economics and a new image of humans and nature

Core readings:

[all] E.J. Hobsbawm, "The human results of the industrial revolution," from *Industry and Empire* (Harmondsworth: Penguin, 1969), pp. 79-95.

[all] Modern History Sourcebook, "Leeds Woollen Workers Petition, 1786,"

https://sourcebooks.fordham.edu/mod/1786machines.asp

[all] Modern History Sourcebook, "Letter from Leeds Cloth Merchants, 1791," https://sourcebooks.fordham.edu/mod/1791machines.asp

[1] Tim Jackson, "Material transitions: the birth of the industrial economy," *Material Concerns: Pollution, Profit and Quality of Life* (London: Routledge, 1994), pp.22-39

[2] Theodore L. Steinberg, "An Ecological Perspective on the Origins of Industrialization," *Environmental Review: ER* 10:4 Winter 1986, pp. 261-276.

[3] Anthony Flew, "Introduction," to T.R. Malthus, *An Essay on the Principle of Population*, A. Flew, ed. (Harmondsworth: Penguin, 1970, originally published 1798/1830), pp. 17-31 [on Malthus]

[4] Donald Worster, "The ascent of man," from *Nature's Economy: the roots of ecology* (New York: Doubleday, 1979), pp.170-179 [on Darwin]

[5] J.C. Greene, "Darwinism as a world view," (excerpt) from *Science, Ideology and World View* (Berkeley: University of California Press, 1981), pp.128-135.

[6] Frederick Taylor, *Scientific management* (originally published 1911), Project Gutenberg eBook (excerpts).

[6] John Ralston Saul, "Taylor, Frederick" and "Taylorism" in *A Doubter's Companion* (Toronto: Penguin, 1994), pp.279-281.

Session questions:

Arguably, the Industrial Revolution was at least as significant a change in human ideas and practices as the rise of agriculture, millennia before. Certainly it brought or intensified many of the problems that contribute to sustainability concerns today. In this session, we will consider the character of the Industrial Revolution, how it applied the new scientific and economic ideas that had been emerging in Europe, and what its effects were and are.

The industrial revolution began in northwestern Europe, initially mostly in England in the late 1700s. On the surface, it was a transition from craft production (e.g., handloom weaving of wool into cloth) to industrial production (machine-made cloth. But it also represented the practical combination of new ideas about science and economics, and it entailed new means of production, new ways of organizing labour and using energy, new demands for resources and financing, new roles for cities, new possibilities for trade and new arrangements of wealth and power, poverty and exploitation. Together, these meant new ways of thinking, living and affecting the world.

The changes brought new opportunities for improving lives and for escaping old tyrannies. They also brought wrenching changes for many people, with the greatest burdens falling predictably on the least powerful and most vulnerable. As you will recognize, some of those changes are still happening, in various parts of the world,

despite common talk of now being in a post-industrial era (in some places). In any event, the key questions to consider, looking back on the beginnings of the modern industrial period, include the following:

- What were the key characteristics of the industrial revolution and its effects?
- What factors drove the changes (do they represent anyone's coherent agenda and was it all an accumulation of coincidental pressures and initiatives)?
- What was (and what remains) the character and distribution of the gains and the losses that resulted?

For illustration we will also look at the ideas and influence of three especially important figures in the era – Thomas Robert Malthus, Charlies Darwin and Frederick Taylor – whose work stretched from the end of the eighteenth century into the beginning of the twentieth. They addressed quite different immediate concerns, but each in his own way attempted to apply the principles of modern scientific thinking to matters of human social, economic and political importance.

There are two main general questions here:

- What were the central principles of modern scientific and economic thinking that the three attempted to apply to human subjects?
- How well did that work?

In considering these questions, it may be useful to consider three things: what were they trying to learn or illuminate? how did they use a "scientific" research method? what big assumptions did they make about nature and/or people (and the complexities of both).

The conclusions drawn by Malthus, Darwin and Taylor and their followers had repugnant aspects. Their efforts were used (and in some places still are being used) to justify social policies and industrial practices that were, and are, evidently inhumane and insensitive, if not utterly heartless and cruel. This begs the following questions:

- Are these the result of inappropriate scientific and economic principles or poor application of these principles?
- Do they suggest there is something basically wrong with the scientific project involved (trying to identify the natural laws applying to humans and identify their social and economic implications)?
- Do human motivation and behaviour reflect the operation of natural laws of human nature in roughly the same way as billiard balls obey the rules of Newton's physics?
- In Frederick Taylor's case, is there anything fundamentally misguided about his application of a mechanical view of human motivation to industrial management?
- Is Taylor's objective (the efficient delivery of material satisfactions) necessarily the central concern of political and economic activities in industrial societies?

And as a more immediate test:

- How well do the assumptions about human beings made by Malthus, Darwin's various followers, and Taylor describe you (as an exemplary human being) and if not so well, what is missing or misguided in their depictions?

Session 7. Week of Oct 26

Domination and other options: conquest, exploitation, imposition and more positive themes in human history

Introductory clip:
Eddie Izzard, "Do you have a flag?" http://www.youtube.com/watch?v=hYeFcSq7Mxg
John Green, "Imperialism: Crash Course World History #35," https://www.youtube.com/watch?v=alJaltUmrGo

Core readings:
[all] Clive Ponting, *A New Green History of the World* (London: Penguin, 2007), "The rape of the world," pp.137-145; and "The foundations of inequality," pp.171-181.
[1] Thomas R. Dunlap, "Creation and destruction in landscapes of empire (excerpt)," in Jeffry M Diefendorf and Kurk Dorsey, eds., *City, Country, Empire: Landscapes in Environmental History* (Pittsburgh: University of Pittsburgh Press, 2005), pp.207-212.
[2] James C. Scott, "The state and slavery," *Against the Grain* (New Haven: Yale University Press, 2017), pp155-171.
[3] Eduardo H. Galeano, *Memory of Fire: Genesis* trans. C. Belfrage (New York: Pantheon, 1985), pp.45-48, 51, 54-55, 57.
[3] Andrew Jackson, "Humanity has often wept," from Derek Wall, *Green History: a reader in environmental literature, philosophy and politics* (London: Routledge, 1994), p.137.
[4] Vandana Shiva, "Two myths that keep the world poor," *Ode* 28 (2005).
[4] Vandana Shiva, excerpt from *Staying Alive: women, ecology and development* in Lori Gruen and Dale Jamieson, eds., *Reflecting on Nature: readings in environmental philosophy* (New York: Oxford, 1994), pp.35-36.
[5] Stephanie Lahar, "Roots: rejoining natural and social history (excerpt)," from Kent Peacock, ed., *Living with the Earth: an introduction to environmental philosophy* (Toronto: Harcourt Brace, 1996), pp. 316-322.
[6] William A. Dobuk, "Killing the Canadian Buffalo 1821-1881," in David F. Duke, ed., *Canadian Environmental History: Essential Readings* (Toronto: Canadian Scholars Press, 2006), pp.240-257.

Other selection options:
Carolyn Merchant, "Dominion over nature," from *The Death of Nature: women, ecology, and the scientific revolution* (San Francisco: Harper and Rowe, 1980), pp.164-191, esp.164-173 [on Francis Bacon; with the readings for session 4].
Laurel Sefton MacDowell, "Encountering a new land" (excerpt), in *An Environmental History of Canada* (Vancouver, UBC Press, 2012), pp.25-29 [of longer piece on the course website].
William Cronon, "Kennecott Journey: the paths out of town," in William Cronon, George Miles and Jay Gitlin, *Under an Open Sky: rethinking America's western past* (New York: Norton, 1992), pp. 28-51. http://www.williamcronon.net/writing/Cronon_Kennecott_Journey.pdf.

Session questions:
In this session we survey the many forms and venues use of human actions to dominate and exploit nature and other humans, including

- control and manipulation of the biophysical environment (fire, agriculture, industrialization, genetic engineering, etc.);
- hierarchy, patriarchy, empire and slavery;
- conquest, ancient and modern;
- conflict (and cooperation);
- power over (versus power with);
- colonialization and globalization; and maybe even
- space, the ultimate frontier.

The significance of the modern worldview lies in the practical effects of its application and we would expect these effects to be most obvious in three of the defining aspects of the modern era – industrialization, domination of nature and global conquest. We will see in session 8 how the domestic effects of industrialization and other applications of modern scientific and economic ideas inspired critiques of the modern agenda and assumptions, long before the rise of the present movements for social justice, environmental responsibility and sustainability.

The readings for this session reveal much about how the application of modern scientific and economic ideas has introduced and supported programs of domination around the world. However, domination of nature and others is not an exclusively modern phenomenon. Nor, more specifically, are slavery, patriarchy and misogyny, conquest, religious and ideological intolerance, racism, national bigotry and their equivalents – all of which are ancient and all of which accompanied and influenced the application of modern ideas during the European conquest of most of the rest of the world. It is worth considering to what extent recent forms and practices of domination reflect the characteristics and deficiencies of modernism, or are modern forms of longstanding ideas and practice, or persisted or worsened because the modern ideas were not applied energetically enough to eliminate bad old ways.

The following questions may help to guide your reading and thinking:

- Did the European nations' efforts to conquer and control the rest of the world (its lands, people and resources) reflect the motivations and assumptions of the western scientific and economic agenda or pre-modern ones or both?
- Current scientific and economic practices include development of virus vaccines, genetic engineering, and various efforts to make employees more productive (or replace them with robots and software), and consumers more willing to buy. On what grounds do you determine which of these practices are desirable and which ones are disgusting? To what extent are your grounds based on modern scientific and economic program ideas, or older ones, or some other package?
- What are there similarities (and differences) among the ideas used to justify the following:
    - the exploitation of nature by hunter-gatherers, early farming communities, agriculture-based empires, industry in the modern era, transnational corporations today;
    - the European powers' colonization of the globe and treatment of people and nature/resources in colonized territories in the nineteenth century, and the treatment of poor people and nature/resources in the home countries of the European powers at that time;
    - the subjugation of women in ancient and modern patriarchal societies;

    - formal (caste and class-based) and informal but persistent social stratification, including slavery and near equivalents?
- On the positive side:
    - where have we seen powerful and attractive alternatives to domination efforts and attitudes in practice (cooperation, sharing, collective management of common lands and resources, …) and in application of tools (rights, cultural traditions, legal protections, religious/philosophical/ethical convictions, …)?
    - where have we seen the greatest improvements and why (e.g., have modern ideas been involved, or one ideas and practices that have been around forever, or largely new concepts)?

The following two final questions may provide a basis for summarizing the implications of all this:

- What are the main lessons to be drawn from experience with domination in pre-modern and modern times?
- What are the main alternatives to domination as means of organizing relations among people and with the natural environment?

Session 8. Week of Nov 2

Advocates and critics: liberal, conservative, feminist, socialist, romantic and other responses to industrial society

Core readings:

[1] Louis Menand, "Karl Marx, yesterday and today: the nineteenth-century philosopher's ideas may help us to understand the economic and political inequality of our time," *The NewYorker*, 10 October 2016 (abridged), 9pp.

[1] Karl Marx, "Estranged labour (excerpt)," from *Economic and Philosophic Manuscripts of 1844*, *http://www.marxists.org/archive/marx/works/1844/manuscripts/labour.htm*.

[2] Edmund Burke, *Reflections on the Revolution in France 1791* (excerpts); http://www.fordham.edu/halsall/mod/1791burke.asp.

[2] Thomas Carlyle, "Signs of the times (1829)," in Derek Wall, *Green History: a reader in environmental literature, philosophy and politics* (London: Routledge, 1994), p. 143.

[3] Mary Wollstonecraft, *A Vindication of the Rights of Woman* (1792), excerpts from chapters 1, 2 and 8; from http://www.bartleby.com/144/.

[4] Theodore Roszak, "Romantic perversity," from *Where the Wasteland Ends* (Garden City, NY: Doubleday, 1973), pp. 255-271.

[5] Richard Holmes, "Dr. Frankenstein and the soul (excerpt)," in Richard Holmes, *The Age of Wonder: how the Romantic generation discovered the beauty and terror of science* (London: Harper, 2008), pp.330-335.

[5] William Blake, "The Tyger," in *Songs of Experience* (London: 1794).

[5] William Blake, "The garden of love," in *Songs of Experience* (London: 1794); also put to music by Rodney Money, http://www.youtube.com/watch?v=h6avqJDRiYY.

[5] William Blake, "Jerusalem," from the preface to a longer poem *Milton: a poem* (1810); also as put to music in the hymn/anthem by Hubert Parry, https://www.youtube.com/watch?v=qKDBGHmH7Hw

[6] Samuel Taylor Coleridge, "The Rime of the Ancient Mariner," (1798), Project Gutenberg eBook [or Richard Burton *et al.* version: https://www.youtube.com/watch?v=RGH4p4z4s5A (and 2 following uploads)].

Session questions:

As we have seen in earlier sessions, industrialization embodies the modern approach to the world. It sits at the conjunction of applied modern economics and applied science and technology, treating nature and people (as labour and even as consumers) as resources in the service of material progress. But early industrial nations also reflected pre-modern influences, including the residual power of old class divisions and patriarchal attitudes and old traditions of community and collective support. Also, from the outset, industrialization brought gains (and the promise of more gains) as well as damage, disruption and suffering. Not surprisingly, then, the rise of modern industrial society had both advocates and critics who built their arguments on various foundations – traditional, modern and visionary.

In this session, we explore the positions and underlying ideas of a diversity of these advocates and critics. Most are from the period from the late 1700s to the early 1900s, but as will be evident, the ideas involved anticipate many themes of today's debates about current problems and options for a more sustainable future. Your reading and thinking about these characters and their ideas should benefit from consideration of the following questions:

- What did the socialist, conservative, feminist and romantic critics consider to be fundamentally wrong with modern industrial society at least in Britain?
- As alternatives to the views of the advocates of modern industrial practice, what did these critics propose as alterative positions on nature of human beings, proper relations among people, the role of the natural environment, and the foundations for human wellbeing? How did their ideas deal with the challenge of complexity?
- Given all of these options – the ideas underlying the dominant modern industrial approach and the views of the critics – what positions or combinations of positions do you find most likely to serve well to guide moves towards more sustainable institutions and practices today?

Session 9. Week of Nov 9

Progress and its discontents: reason, technology and doubts in the twentieth century

Core readings:

[all] William Butler Yeats, "The second coming (1919)," http://www.poetryfoundation.org/poem/172062

[all] Walter Benjamin, "Theses on the philosophy of history (thesis IX: re Klee painting, Angelus Novus,)," http://www.sfu.ca/~andrewf/CONCEPT2.html.

[1] Brian Fawcett, "Universal Chicken," in *Cambodia: A book for people who find television too slow* (Vancouver: Talonbooks, 1986), pp. 57-68.
[1] Franz Kafka, “An imperial message,” an excerpt from the short story “The Great Wall of China” (1917), http://records.viu.ca/~johnstoi/kafka/imperialmessage.htm.
[2] Loren Eiseley, *The Invisible Pyramid: a naturalist analyses the rocket century* (New York: Scribners, 1970), pp. 149-156.
[3] Ronald Wright, *A Short History of Progress* (Toronto: Anansi, 2004), pp.109-115 [also recommended: pp.3-7; chap. 3, esp. 65-79 (see readings for week 3); all of chap. 4].
[4] Zygmunt Bauman, "The practice of the gardening state," *Modernity and ambivalence* (Cambridge: Polity, 1991), pp.26-30.
[5] Joanne Kates, "A fairy-tale ending to the food crisis," *Toronto Globe and Mail* (October 7, 1987).
[5] Vandana Shiva, *Monocultures of the Mind* (London: Zed, 1993), pp.12-15, 19-21 [included in readings for week 2].
[6] Reinhold Niebuhr, "Progress denied (excerpt)," from W. Warren Wagar, ed., *The Idea of Progress Since the Renaissance* (New York: Wiley, 1969), pp. 130-136.
[6] Edward Dolnick, “The end of the world,” in *The Clockwork Universe* (New York: HarperCollins, 2011), pp.13-19 [17th century: progress inconceivable].

Other selection option:
Graeme Maxton, “The end of progress and the start of the age of endarkenment,” an excerpt from *The End of Progress, how modern economics has failed us* (Wiley. 2011).

Session questions:
The last hundred years have been remarkable for extraordinary highs and lows. There has been unprecedented advance in many areas, most obviously in technology and wealth generation, but also in other social and political fields. Over the same period, however, there have been unspeakable cruelties and appalling destruction. In addition to environmental damage, the evils of the twentieth century included brutal totalitarian regimes, creation and application of highly destructive technologies and expansion of inequities alongside increased wealth and economic capacity. So far in the twenty-first century the record has been equally mixed.

Certainly, there is good reason to think carefully about the causes of, and the possible links between, the gains and the losses. As a start, we might ask,

- Were the evils of the twentieth century the products of the modern worldview or do they reveal the residual influence of pre-modern, or at least non-modern ideas? In other words, have we had too much modernization or not enough?

The main elements of applied modernism – the economic market and the specialized and competitive world of science and technology – have in some ways demonstrated admirable diversity and adaptability. They are also among the products of the Enlightenment, which gradually opened the way to much greater tolerance for new and competing ideas and options than was evident in most previous eras. Nonetheless, many critics have expressed fears that the combination of global free market economics and

technological advance is leading to a new kind of totalitarianism that is dehumanizing and ecologically destructive. Late twentieth and early twenty-first century sustainability concerns have also led many observers to conclude that the dream of infinitely continuing material progress, and the assumption that economic growth would automatically eliminate both poverty and pollution, are both over.

And so, the big question is

- How do we retain the highly desirable aspects of modern "progress" while also making necessary changes to recognize material limits, address deep inequities, be more respectful of complex interactions that we do not understand well, and maybe adopt a broader concept of human wellbeing?

That involves considering,

- What are the main limitations and errors in the core ideas that underlie the modern project (especially ideas about the nature of human fulfillment and wellbeing, how to get along with others and the natural environment, and how to deal with the complexities of the world), and what better ideas could correct or replace them?

And especially for your session note,

- If you suddenly had enormous influence over the world's major decision makers, what would be your first priority for initiating long term positive change towards a more sustainable approach to living on Earth? What core ideas lie behind this change? How do they differ from the now dominant modern package of ideas?

Session 10. Week of Nov 16

Greens: the first century of environmental critique and response

Core readings:

[1] Laurel Sefton MacDowell, "Early cities and urban reform" (excerpt on public health and urban greening), in *An Environmental History of Canada* (Vancouver, UBC Press, 2012), pp.86-93.

[1] Jane Jacobs, *The Death and Life of Great American Cities* (New York: Vintage, 1961), pp.443-448.

[2] Global Greens, "Principles," in *Global Green Charter* (2001, updated 2012), pp. 4-7 http://www.globalgreens.org/globalcharter-english.

[2] Ramachandra Guha, "Going green," in *Environmentalism: a global history* (New York: Longman, 2000), pp.1-9.

[3] Aldo Leopold, "The land ethic," in *A Sand County Almanac* [originally published in 1949], http://home.btconnect.com/tipiglen/landethic.html, esp. "The Outlook," pp.12-14.

[4] Paul Kingsnorth, "Confessions of a recovering environmentalist: a personal account of a journey through environmental politics," *Dark Mountain* 1 (May 2010); http://paulkingsnorth.net/journalism/confessions-of-a-recovering-environmentalist/.

[4] Robert B. Gibson, "Diversity over solidarity: what we have learned and where we have come in 30 years of ecoactivism," *Alternatives Journal* 26.4 (Fall 2000), pp.10-12.

[5] John Bellamy Foster, "Expansion and conservation," in *The Vulnerable Planet: a short economic history of the environment* (New York: Monthly Review Press, 1994), pp.69-84.
[5] David W. Orr, "Love," in *Earth in Mind: on education, environment and the human prospect* (Washington: Island, 1994), pp.43-47.
[6] Laurel Sefton MacDowell, "The environmental movement and public policy," in *An Environmental History of Canada* (Vancouver, UBC Press, 2012), pp.243-267.

About a "green pioneer from the 12th century:
Joshua J. Mark, "Hildegard of Bingen," *Ancient History Encyclopedia,* Last modified May 30, 2019; https://www.ancient.eu/Hildegard_of_Bingen/.

Survey:
Peter Dauvergne, "Introduction," in Peter Dauvergne, *Historical Dictionary of Environmentalism* (Scarecrow Press, 2009): xli-lviii

Session questions:
While there is evidence of environmental abuses and environmental critics stretching back to the beginnings of human history, the origins of environmentalist criticism of various kinds are usually traced to the nineteenth century – initially with health concerns related to urban and industrial pollution (e.g. in Britain) and later with concerns about resource depletion and the disappearance of wilderness (esp. in North America), plus advocacy of humane treatment of animals, of spiritual and aesthetic links to nature as a garden, and even the beginnings of a more systemic (or what we would now call ecological) perspective.

Throughout the twentieth century these themes were restated and elaborated in various forms, gradually to cover a broad set of concerns at the global as well as local and regional scale. Like all the other ideas we have discussed, these arose in an historical context. They responded in various ways to the prevailing modernist thinking and practices and they reflected the contributions of other critics, including the eighteenth and nineteenth century thinkers, the critics of colonialism and the representatives of other twentieth and twenty-first century worries discussed over the last three weeks.

All of these matters are worthy of consideration:

- Did the environmental concerns that emerged in the late nineteenth century and continued in the twentieth pose any fundamental challenges to the dominant character of industrial society and the ideas underlying it?
- Were the basic concerns of the early environmentalist critics essentially the same as those that had been raised by the other critics of industrial ideology and practice, or did the environmentalists introduce something new?
- What were the new understandings of possible and desirable human behaviour – in relations with other people as well as relations with the natural environment?

For your consideration of the lecture and the readings, and for your session note, the overall question is,

- What were the most promising (and perhaps subversive) new ideas and associated possibilities introduced by the greens?

Session 11. Week of Nov 23

Sustainability: the integration of environment and development under conditions of complexity

Core readings [just scan the longer ones]:

[all] Robert B. Gibson, "Sustainability: the essentials of the concept," chapter 3 of *Sustainability Assessment* (London: Earthscan, 2005).

[1] United Nations Sustainable Development Knowledge Platform, *Sustainable Development Goals*, on-line, multi-layer site, https://sustainabledevelopment.un.org/?menu=1300,* and the background materials available at United Nations, *Transforming Our World: The 2030 Agenda for Sustainable Development* (New York: UN, 11 August 2015), esp. paragraphs 14-15 (pp.4-5) and paragraphs 18-38 (pp.5-8) https://sustainabledevelopment.un.org/post2015/transformingourworld [also in readings for week 1].

[1] World Business Council for Sustainable Development, *Changing Pace: Public Policy Options to Scale and Accelerate Business Action Towards Vision 2050* (2012), esp. pp.1-6, https://www.greengrowthknowledge.org/resource/changing-pace-public-policy-options-scale-and-accelerate-business-action-towards-vision, or World Business Council for Sustainable Development, *Vision 2050: a new agenda for business* (Geneva: WBCSD, 2010), esp. pp.2-4 and 6-7, full report available at https://www.wbcsd.org/Overview/About-us/Vision2050/Resources/Vision-2050-The-new-agenda-for-business

[2]Stockholm Resilience Centre, "The nine planetary boundaries," https://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html and/or

[2] Thomas Sterner et al., "Policy design for the Anthropocene," *Nature Sustainability* 2 (January 2019), pp.14-21.

[3] Kate Raworth, "Want to get into the doughnut? Tackle inequality," Exploring doughnut economics (2014), http://www.kateraworth.com/2014/10/16/doughnut-inequality/ and/or

[3] Kate Raworth, "Why it's time for Doughnut Economics," *Progressive Review* 24:3 (Winter 2017), pp.217-222.

[4] Jianguo Liu, et al. [Liu , J., T. Dietz, S. R. Carpenter, M. Alberti, C. Folke, E. Moran, A. N. Pell, P. Deadman, T. Kratz, J. Lubchenco, E. Ostrom, Z. Ouyang, W. Provencher, C. L. Redman, S. H. Schneider, and W. W. Taylor], "Complexity of Coupled Human and Natural Systems," *Science* 317 (14 September 2007), pp.1513-1516.

[4] Geeta Vaidyanathan, "In Gandhi's Footsteps: two unusual development organizations foster sustainable livelihoods in the villages of India," *Alternatives Journal* 28:2 (spring 2002), pp.32-37 [also in readings for week 1].

[5] Tim Jackson, "The transition to a sustainable economy," in *Prosperity without Growth* (2009), pp.171-185.

[5] Smart Prosperity, *New Thinking: Canada's Roadmap to Smart Prosperity* (February 2016), esp. pp.1-8, https://www.smartprosperity.ca/thinking/newthinking

[6] WWF et al., *Living Planet Report 2018: Aiming Higher,* esp. pp.22-25, https://wwf.panda.org/knowledge_hub/all_publications/living_planet_report_2018/

[6] Dale Lewis, "Getting poachers to give up their guns in Zambia," *Solutions: for a sustainable and desirable future* 2:4 (1 August 2011), http://www.thesolutionsjournal.com/node/960.

Basic background:

World Commission on Environment and Development, Gro Harlem Brundtland, chair, "From one earth to one world: an overview," from *Our Common Future* (Oxford/New York: Oxford University Press, 1987), pp. 1-23; online at https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

The United Nations Conference on Environment and Development, "The Rio declaration on environment and development," June 1992 [downloadable from http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163]

Session questions:

The term "sustainable development" was introduced to popular use by the World Commission on Environment and Development (aka the Brundtland Commission) in 1987. The WCED and sustainable development represented a coming together of two of the main agenda items of the UN family of global governance bodies – development as a means of overcoming poverty and enhancing economic wellbeing, which had been a major focus of international policy and activity since the late 1940s, and environmental protection at a world scale, which had arisen as a recognized concern in the early 1970s.

The idea of linking environment and development was counter-intuitive for many people, including some committed environmentalists, and to some extent it remains so today. Throughout the early years of the recent environmental movement, growth – of human numbers, resource extraction activities, consumption and waste – was considered the key problem. And development was frequently used as just another word for more growth. At the same time, however, most environmentalists saw that any useful long-term strategy would have to deal with the links between socio-economic conditions and environmental behaviour, and include plausible means of addressing social and economic as well as more narrowly environmental concerns.

In this way, the old ecological principle that everything is connected to everything else has come to be applied in socio-ecological thought. Campaigns for environmental responsibility have been more often linked to efforts to improve social justice, prevent armed conflict, reduce gender inequity, improve child health, and so on. This does not make things easier, especially when combined with appreciation of scientific uncertainty and cultural diversity. However, it seems that more narrow and partial approaches are unrealistic. It has proved impossible, for example, to protect endangered species without protecting their habitat, and impossible to protect wildlife habitat without involving the local communities and finding complementary ways of enhancing their wellbeing.

The challenge now comes in two parts – the first is to be reasonably clear about the problems to be addressed, and the second is to identify the basics of the needed solutions.

You will notice that most of the readings for this session (and most of the huge heap of writings on sustainability available today) focus on proposed solutions. They offer

differing answers, which is fine (probably a diversity of answers and approaches to sustainability is desirable). But it may not be immediately obvious whether there are any fundamental differences among the ideas and assumptions upon which the various proposed solutions rest. So we should look deeper.

For thinking about the lecture, readings and session note, we can begin by identifying the basic ideas and assumptions underlying the various readings. The most important basic ideas and assumptions are those about the nature of wellbeing, how to organize societies and economies to deliver lasting wellbeing, and how to deal with all the big complexities while doing so. The following three questions expand on these points a little:

- What do people want and need for a good life; what does nature need, at least if it is to continue providing the key ecological services upon which human life depends; and what are the connections between these two considerations?
- What ways of living and seeking fulfilling lives can provide the foundations for lasting wellbeing (respect the capacities of the biosphere, match human capacities and aspirations, and respect how little we know about the enormous complexities of life on Earth)?
- How can we best push the changes needed to move towards more sustainable ways of living?

You can apply your thinking about these three points in answering the following two overall questions for this session:

- What (if anything) is basically wrong with the current ideas, structures and behaviours that contribute to (or fail to correct) continued mistreatment of the biophysical environment, persistent economic inequities, social injustice and other adverse influences on the quality of life?

and on the flip side:

- What are the key positive characteristics and valued contributions of current ideas, structures and behaviours and how we might preserve and strengthen them?

Session 12. Week of Nov 30

Lessons: implications of an inquiry into the historical and cultural roots of our current environmental situation and our possibilities for change

Core readings:

[all] Donald Worster, *The Wealth of Nature: environmental history and the ecological imagination* (Oxford: Oxford University Press, 1993), pp. 206-219, 242-243.

[all] Ursula Franklin, "Beautiful, functional and frugal," *Alternatives 33:2* (2007), p.56.

[all] Albert Camus, *The Rebel* (New York: Vintage, 1956), pp.288-289.

[all] Ian G. Simmons, "Context for environmental history," *Encyclopedia of Earth* (2008).

Session questions:

After this quick tour through the history of ideas and their effects, we can return to our first tutorial questions about what changes are most needed now.

In preparing your answer this time, please consider our exploration of the nature of pre-modern and modern ideas, recognizing that the basic ideas – about the nature of humans wellbeing, how we can best get along with each other and the natural environment and how we can best deal with complexity – that underpin dominant human political and economic institutions today are current versions of modern that human institutions first began to adopt maybe 500 years ago.

Last week, after considering the experience of the past hundred years or so, we asked about the viability of the fundamental assumptions of modernism and the nature of possible replacements for the purposes of sustainability. Now we can look at this more closely, in light of the whole sweep of prehistory and history that we have reviewed (a bit quickly, admittedly). The following four are the main questions for a detailed analysis:

- As a representative of the interests of yourself and others in 2070, what do you find to be the key lessons we can take from the human record so far to help us to build a generally more durable, just and agreeable future in a complex world?
- In particular, what (if any) basic ideas about humans, the environment and proper relations between them should be adopted individually, locally and/or globally?
- Would this entail fundamental changes to prevailing basic assumptions and attitudes, as well as fundamental changes to how we organize our production and consumption and our institutions of learning and decision making?
- What historical (or other) grounds can you give to support your position; and how firm are these grounds – in other words how confident are you that your position is sound?
- Insofar as significant changes are needed, how might they be encouraged most effectively? What can we learn from how big changes happened in the past?

Unfortunately, you won't to address all of these directly in your final report. We will therefore leave it to you to consider these matters in preparing your new answer to the old session one question:

- What are the two most important changes that are needed in ideas and practices in the world over the next 50 years to start moving us to a more durable, just and agreeable future? (Please restrict yourself to changes that could conceivably occur.)