POSC 333-00:  
Global Social Changes and Sustainability

Syllabus

Tuesdays and Thursdays 10:10 a.m. – 11:55 a.m.  
March 26 – May 30, 2018

Weitz Center 233

The Department of Political Science  
Carleton College, Northfield, MN

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Preface

“Just providing knowledge, even if communicated well, without offering spaces to discuss the implications, will no longer suffice. If sustainability were something we could achieve by holding hands and singing “kumbaya” despite all our differences, we’d already be there!”


“The big question in the end is not whether science can help. Plainly, it could. Rather, it is whether scientific evidence can successfully overcome social, economic and political resistance.”

Donald Kennedy, Science Magazine’s State of the Planet 2006-2007

The continual existence and betterment of humankind depends on the ability and intellect of human beings to make educated choices (rightly understood) in living with nature and to govern themselves. At the center of this challenge for human beings in the age of Anthropocene is the need for systematic and scientific (social ecological scientific) understanding of how the dynamic relationship between societal changes and environmental changes influence change, adaptation, and evolution of coupled social-ecological systems. This seminar will introduce students to theories, concepts, analytical frameworks, and research designs that will help us advance in understanding the dynamic relationship between societal changes and environmental changes. In so doing, we will study empirical cases and experimental results of real world sustainability problems.
As the two quotes above indicate, understanding dynamics of human-environment interactions is only half way to addressing sustainability of social ecological systems. The additional and more intriguing challenge is in analyzing, explaining, and understanding the circumstances under which these scientific understandings are translated into public policy and governance of human interactions. Therefore, addressing sustainability of human societies is a dual challenge. This course is conceived within the dual challenge of the need to understand how societal dynamics and ecological dynamics interact over time and how they help induce or inhibit sustainability of social ecological systems. For the lack of a better term, scholars who engage in the field of analyzing and explaining these challenges generally call their intellectual endeavor a “Sustainability Science.” In the dimension of this seminar, we will frame the endeavor as Social Ecological Sciences.

How do social changes and ecological changes interact? How do livelihood systems of individuals and groups interact with social changes and ecological changes? What are the roles of human institutions and human values in dynamic relationship between social changes and ecological changes? What do history and stories of human invented things or products inform about social and ecological changes? Why is “science” in traditional meaning of it insufficient to address sustainability problems? What does “science” mean in sustainability science or social ecological science? How does emergence occur and how does it shape complexity of human-environment relationship? What is speciation and what clues does it provide for resilience and robustness of social ecological systems? What are existing theories and methods that address sustainability science? How would you improve these theories and methods? How can these theories and concepts guide environmental policy and governance? These questions inform a source of intellectual motivation for this seminar.

There are three learning goals in this seminar. First, students will learn key trends of literature that addresses the challenge of the field amplifying the pivotal role of social dimensions in sustainability science. Second, students will gain knowledge of key concepts and theories in sustainability science that are developed and improved by scholars from multiple academic disciplines. Third, students will gain practical experience and skills of linking theories to practices of sustainability challenges by conducting individual and team research projects.

In order to achieve these goals, we will actively read and engage our class discussions on the literature on sustainability science from multiple academic disciplines; study cases that illustrate the dual challenge of understanding and developing theories in the field of sustainability science; and conduct team projects that will allow students to analyze, challenge, and develop theories and research methods by linking theories to practices. The seminar is organized with the following outline.

Course Outline

Week One: Ontological Foundations
Week Two: Epistemic Foundations
Week Three: A New Kind of Science
Week Four: Dynamics and Diversity of Ecosystems
Week Five: Dynamics and Diversity of Human Institutions
Week Six: Understanding Social Ecological Transformations
Week Seven: Collapses and Survival of Social Ecological Systems
Week Eight: Vulnerability, Adaptation, and Resilience
Week Nine: Crossing Boundaries and Building Bridges
Week Ten: Sustainability Science (a.k.a) Social Ecological Sciences

Required Texts:


Tun Myint, Citizen Science and Sustainability, forthcoming book manuscript.


Three month of subscription to www.instructibles.com for case studies of invention of products at all levels.

In addition to reading chapters from these texts, we will also read articles from peer-reviewed academic journals and also watch documentaries and videos illustrating the concepts we struggle to understand in this course. In addition to readings listed in this syllabus, I have placed additional relevant readings on E-Reserve at the Gould Library. Feel free to browse and read as relevant. Team project related readings will be provided for the teams separately once teams are established.
Expectations, Assignments, and Grading Procedures

The following five components of assignments will be used to evaluate your performance in this seminar. Percentage worth of each assignment is in parentheses. The details of each assignment are below.

1. **Active Reading and Participation (20%)**: Reading assigned materials is crucial for understanding class discussion and cases we will unpack in this seminar. Readings are assigned to be foundation for the class discussion and interactive lectures. In this sense, readings are not substitutable for class discussion and interactive lectures. Reading matrix or guide sheet is provided for each day of the class by email (see Appendix A). Students will fill out the sheet electronically and send it to me by mid-night before the day of class where we will discuss the readings. To be a good standing citizen of this course, you are required to: (1) have good attendance; (2) read assigned materials before the class; (3) have timely notification and communication with me when you have to be absent or if you need to request extension for personal reasons; and (4) exercise self-respect and responsibility of a student for success of the learning mission of this seminar and Carleton College as a whole; and (5) exercise your intellectual freedom in discussions and the assignments.

2. **Discussion Leaders (15%)**: Each students will sign up for three days to lead class discussion. A student will lead one or two before mid-term and one or two classes after mid-term. You are highly recommended to bring visual materials such as video clips or news articles that relate directly to your discussion questions for the readings. Students will sign up for three dates on March 29 when I will have signup sheet. Appendix A and B provide samples for discussion guide. This component will be worth 15 points. You do not need to fill out reading matric (Assignment #1) for the day you lead discussion. Your discussion guide should be sent to class email list by mid-night before the day of the class.

3. **An Essay on Your Social Ecological System: (25%)**: Each student will recollect items brought to Carleton College in their freshman year and list all the items, the cost, place of origin, and usages in a log sheet. Students then will select three items that were deemed necessary (frequently used) for livelihood on campus (food, fashion, and entertainment). After selection of these three items, student will draw a livelihood map of a freshman student life at Carleton College during their respective freshmen years. Key activities that were directly related to the three items must be described, discussed, and analyzed to write about the relationships between an individual livelihood system and the nature through three items. Along with study of their own livelihood systems, students will interview a parent, a relative, a teacher, or a person who went to a college before 1995, the year the World Trade Organization was officially established to facilitate free trade around the world. If you have parents who did not go to college, ask your uncles or aunts. If
none of your relatives went to college in the United States, then conduct an interview with one of your professors, staff members at Carleton or a resident in Northfield. This paper requires in-depth investigation of your own livelihood system and that of one other individual. This paper should be 10 to 12 pages excluding diagram, tables, and references. More detailed guidelines will be provided in a separate handout on April 4. This analysis is due on **May 4 at 5 p.m.**

4. **Innovation for Sustainability (30%)**: This assignment requires you to invent a product that will be useful for addressing sustainability problem you defined based on reading Kennedy’s book and also based on your own experience with the problem. You will also use [www.instructables.com](http://www.instructables.com) website as your resource for ideas after searching and reading unique items that are invented by users. Your final project manual and product will also be deposited to the website for larger public consumption. For this project, a group of two or three students will work together to define the problem you want to solve with the product, develop ideas for the product, design the product, and make it. More detailed guidelines will be provided during the second week.

5. **Documentation, Demonstration, and Presentation of Your Invention (10%)**: Each team will present the product and explain the instruction to make it. The final report of the product designed in assignment No. 4 will include: (1) background to your problem definition and your ideas to develop the product; (2) your process in developing the design; (3) implementation of the process and selection of materials; (4) installation instruction; and (5) connecting theories/concepts and the product. You will deposit this instruction to [www.instructibles.com](http://www.instructibles.com) at the end of the term for larger public purpose. The report should be about 15 pages in length excluding diagram, charts, figures, and tables.

**IMPORTANT NOTE**: All assignments should be written with 12 point Times New Roman font on double-spaced pages with page numbers inserted on 1 inch page margin of A4 size. It is highly encouraged that students use the Write Place or available writing services on campus to achieve high quality product. For all final products (excluding drafts), you have to submit both a hard copy and electronic copy in pdf or rtf format.

**Schedule of Assignments and Due Dates**

3/29 - Sign up for discussion leaders
4/3 - Distribute assignments and guidelines for team project

**MIDTERM BREAK 4/28 – 4/30**

5/4 - Livelihood System Analysis paper is due
5/14 - First draft of product design ideas is due
5/22 - The final draft of product design and product is due
5/24 - Assemble innovation
5/30 - Team Presentations
6/1 - Final report on innovation for sustainability is due. Your product Manuel an
photos and designs of the product should be submitted to www.instructibles.com
by today.

Course Conduct

a. Attendance: Attendance is required for this course. If you need to be absent from the class, it is
your responsibility to notify me in advance. When you are absent, it is in your benefit to borrow
notes from your classmate or ask your classmates to learn what you missed. If you wish, I will
be available during office hours or by appointment at your request to meet with you and go over
what you missed while you were absent.

b. Plagiarism: There is zero tolerance for plagiarism. A summary of the College’s policy on pla-
giarism states: “At Carleton College, an act of academic dishonesty is therefore regarded as
conflicting with the work and purpose of the entire College and not merely as a private matter
between the student and an instructor; all cases involving such dishonesty are referred for ap-
propriate action to the Academic Standing Committee (ASC) via the Associate Dean of Stu-
dents or the Associate Dean of the College.” For more information on Carleton’s policy on aca-
demic honesty, please consult http://apps.carleton.edu/campus/dos/handbook/aca-
demic_regs/?policy_id=21359

c. Late assignments: Assignments are due on the dates specified in this syllabus or in the assign-
ment sheet. Late work will receive half point reduction per late day. If you are unable to
complete an assignment on time due to illness or personal emergency, you can request an ex-
tension with the supporting documents such as a medical note from a doctor or the Wellness
Center.

d. Special needs: If you require special accommodation due to a documented physical or medically
classified different learning strategy, please come see me during the first week of class or any
time throughout the semester to discuss how I might best assist you in meeting the objectives and
requirements of this course. NOTE: This is a provisional syllabus and subject to change.

Schedule of the Course and Readings

WEEK ONE: ONTOLOGICAL FOUNDATIONS

March 27: Introduction to the Seminar

Essential readings:

This syllabus. Overview and the roadmap of seminar.
March 29:     Defining Sustainability Problems in 2017

   Introduction (everyone reads introduction)
   Each of you will pick two chapters from Part One and Two respectively.

Your Definition Tree diagram should be drawn and based on class discuss we have on the first day. Bring the diagram to class for discussion.

WEEK TWO:     EPISTEMIC FOUNDATION

April 3:     Imagining Sustainability Solutions in 2017

   Each of you will pick two chapters from Part 3 and 4
   Everyone will read Part 5

Read Two product manuals from www.instructible.com [Note: You will need subscription to download manuals of product]. The products you select have to be related to addressing sustainability issues.

April 5:     The age of Anthropocene?


   Introduction
   Chapter 1: Domestication of Fire, Plants, Animals and … Us
   Chapter 2: Landscaping the World

WEEK THREE:     SOCIAL ECOLOGICAL COMPLEXITY

April 10:     Society and Ecosystems


   Chapter 3: Zoonoses
   Chapter 4: Agro-Ecology of Early States
April 12: Understanding Social Nature of Life

*Essential readings:*


WEEK FOUR: DYNAMICS AND DIVERSITY OF ECOSYSTEMS

April 17: Concepts, Theories, and Paradigms of Sustainability

*Essential readings:*

  Chapter 4: Life and Leadership in Organizations, p. 97 -128.
  Chapter 5: The Networks of Global Capitalism, p. 129 - 157
  Chapter 6: Biotechnology at a Turning Point, p. 158 - 185.


April 19: Fundamental Questions

*Essential readings:*


April 22: Documentary screening – Queen of Tree

Available online at: https://www.youtube.com/watch?v=xy86ak2fQJM

WEEK FIVE: DYNAMICS AND DIVERSITY OF HUMAN INSTITUTIONS

April 24: GAIA: A Mystery or Complexity

Essential readings:

  Chapter 1: Introductory, p. 1-11
  Chapter 2: In the beginning, p. 12 - 29
  Chapter 3: Recognition of Gaia, p. 30 - 43
  Chapter 8: Living within Gaia, p. 115 - 132

April 25: Documentary screening – Mystery in Alaska

Available online at: Library

April 26: Ecosystem Rules as Sources of Dynamics and Complexity

Essential readings:


Chapter 1: In Quest of a Theory of Adaptive Change


MIDTERM BREAK APRIL 28 – 30
WEEK SIX:  ECOLOGY, ECONOMICS AND INSTITUTIONAL CHANGES

May 1:  Why some social ecological systems collapse and some don’t

Essential readings:


May 3: Foraging Experiment in the Idea Lab

WEEK SEVEN:  GOVERNING THE COMMONS

May 8:  Emergence of Rules and Collective Action

Essential readings:


[Optional Readings: Extensions of “The Tragedy of the Commons,” by Hardin at [http://www.sciencemag.org/cgi/content/full/280/5364/682](http://www.sciencemag.org/cgi/content/full/280/5364/682) ]

May 10: Social Ecological Systems

Essential readings:


**WEEK EIGHT: ADAPTATION, VULNERABILITY, AND RESILIENCE**

**May 15: Anthropocene to Urbanocene**


Chapter 1: The Big Picture  
Chapter 5 From the Anthropocene to Urbanocene  
Chapter 8: Consequences and Predictions  
Chapter 10: The Vision of Grand Unified Theory of Sustainability

**May 17: Emptiness, Polycentricity, and Science**

*Essential readings:*

   Chapters 1, 2, 5 and 10

Elinor Ostrom, Nobel Prize Speech, to be handed out.


**WEEK NINE: CROSSING BOUNDARIES AND BUILDING BRIDGES**

**May 22: Empirical Evidences**

*Essential readings:*


Hodell, D.A., Curtis, J.H. and Brunner, M., 1995. ‘Possible role of climate in the collapse of the


**May 24:**  Team project assembly and practice

**WEEK TEN: SOCIAL ECOLOGICAL CHANGES AND SUSTAINABILITY**

**May 29:**  Team project presentations
Appendix A: Reading Matrix for Sustainability

POSC333 – Global Social Changes and Sustainability
Carleton College, Northfield, MN

Name: __________________ Date: __________________

Please take note while you read. Write down: (1) terms and phrases that caught your attention; concepts and theory you find from readings that caught your attention; and provide comments and questions you want to address in class discussion. The following is the reading matrix and I provide a sample for you. Keep this electronic copy for each class.

<table>
<thead>
<tr>
<th>Author</th>
<th>Terminology/Phrases</th>
<th>Concepts/Theory in the reading</th>
<th>Comment/Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. Pagan Kennedy (Ch. 1)</td>
<td>Invention, innovation, Cartoonish action of water, scratched two itches, etc</td>
<td>- The difference between invention and innovation is important part of understanding how and why some invention led to ripple effects and some just died. - Etc</td>
<td>- What are the role of cultures, institutions, and media in making invention successful? - Why are some innovation that are ecologically destructive gained market ground why some that are sound for sustainability died in the market?</td>
</tr>
</tbody>
</table>
Appendix B: Discussion Leader’s Guide (Sample 1)

Anonymous

10/26 Discussion Guide

“Our Daily Bread” (Nikolaus Geyrhalter 2005)
1. What is so important about the lack of narration or guided commentary throughout the film? How does this change our perception of its images?
2. What is symbolically poignant about Geyrhalter’s choice not to disclose location or identifying information about the subjects of the film?
3. How does the film demonstrate some of the essential theoretical dilemmas we have discussed throughout class; such as the shrinking space for individual decision-making, the elimination or morality from the market economy, our growing cognitive dissonance, and the commoditization of both human activity and the environment?
4. How does the film portray our ultimate distortion in understanding of what is natural and what is unnatural?
5. Do you think that simply seeing the brutality and waste of the industrial food production system is enough to change the way people consume?

1. “The unequal distribution of information can never be entirely eliminated, but it can be ameliorated, in part through institutional innovations designed specifically for developing-country settings and the special problems confronting poor people” (p.3).
   a. Is this conclusion translatable to an understanding of inequality, such that inequality, like information, can never be eliminated completely? Do you agree?
2. “[The Green Revolution], breeding new seeds for enhanced agricultural productivity, was undertaken in the early postwar years by a vast array of agents—nonprofit organizations, governments, multilateral institutions, private firms, banks, village moneylenders, land-rich farmers, and landless laborers—all working, deliberately or not, to improve the daily bread (or rice, or maize) of people everywhere” (p.4).
   a. Does the success of the Green Movement provide an answer to our earlier question: whether or not intentions matter? Does this cooperatively created progress offer evidence to support the successful, if not slow, functioning of the market economy?
3. “A public good is one whose full benefits in the form of profits cannot be captured by its creator but instead leak out to society at large, without the creator receiving compensation. Because private entrepreneurs have diminished incentives to provide such goods, the tradition of entrusting public entities with providing them is long” (p.4).
   a. Do you agree with this definition of a public good? Is there really no room for “the creator” to receive compensation?
   b. Is this definition only appropriate within the framework of the market economy? How would the definition change if extricated from the double movement system and market-centric society we have created? For example, if applied to a world without a market system in which incentives are based on social relations?
“Capitalism, Globalization, and the Environment” in Global Environmental Politics: Power, Perspectives, and Practice (Ronnie Lipschutz 2004)

4. “…that environmental degradation is not a natural phenomenon but one resulting from these patterns [of a man-made market system] suggests that it might be possible to organize capitalism in ways that are more environmentally friendly” (p.88).
   a. Should such a goal, the reorganization of capitalism, be simply a short-term solution to our most immediate and pressing issues? Should a long-term plan seek to eliminate capitalism all together, or might reorganization be enough to make capitalism a fair and ethically sound system for future developing societies?

5. “It is difficult to imagine life without all of your possessions. Yet, for thousand of years and for billion around the world, life has gone on without them” (p.103). “Reducing the flow of consumables, by making things more durable and deemphasizing style, would reduce waste (p.108). “Changes in […] the very conception of the ‘good life’ would all be essential to effective ecological modernization” (p.129).
   a. How might we go about attempting to influence such a major change in social values? How can we change this conception of the “good life?” Does this seem a realistic prospect?

6. “For the well-off, there would be fewer choices in the marketplace, less opportunity to travel, greater regulation for the public good, higher taxes to pay for necessary public services, in short, many of those things that contemporary governments are so afraid to contemplate, much less legislate. And none of these objectives can be accomplished simply through the market; not only do they require political intervention into markets in order to internalize social costs, they also require political mobilization to generate public support and motivate directed action. In other words, the decision to modify our current economic practices must fall into the provenance of politics” 130
   a. The ultimate conclusion here suggests that politics (more often than not top-down operations in today’s world) above all else must be the primary driver of change - do you agree? Does this diminish the importance and capability of locally grown bottom-up initiatives?

“Capitalism Beyond the Crisis” (Amartya Sen 2009)

7. “While he wrote that ‘prudence’ was ‘of all the virtues that which is most useful to the individual,’ Adam Smith went on to argue that “humanity, justice, generosity, and public spirit, are the qualities most useful to others” (p.5).
   a. How has Smith’s thinking about the economy been distorted over time? Consider evidence from “Our Daily Bread” that demonstrates our selective acceptance of Smith’s theories.

8. “The present economic crises do not, I would argue, call for a “new capitalism,” but they do demand a new understanding of older ideas […]. What is also needed is a clearheaded perception of how different institutions actually work, and of how a variety of organizations—from the market to the institutions of the state—can go beyond short-term solutions and contribute to producing a more decent economic world” (p.10).
   a. Do you agree with Sen’s final conclusion here? Considering the huge wealth inequality that exists today and the often enormously exploitative nature or market systems around the world, is it feasible that simply reframing our understanding of economic systems and institutions might be enough to produce “a more decent
economic world”? Or does this fail to realize how deeply embedded the double movement system has become, such that only a more dramatic transformation might successfully create a better world?
Appendix C: Discussion Guide (Sample 2)

Anonymous

Discussion guide: Social entrepreneurship

“The dynamics of social innovation” by H. Peyton Young:

1. “Relatively little is known about the ways in which new institutions are created and how they become established within a given social framework” (Young). According to Young, why is it important to understand how new institutions are created? Do you believe that formal or informal rules are more important in a society? What examples of the creation of institutions in modern society did you think of when reading this article?

2. “The reason is that, when a social innovation first appears, it will typically gain a foothold in a relatively small subgroup of individuals that are closely linked by geography or social connections” (Young). Which variables listed in the paper cause social changes to occur, and how are these changes spread from individual to individual and group to group? Which of these variables do you feel is the most important for social change? How does this idea of social change relate to Polanyi’s concept of the “double movement?”

3. “The idea is that autonomy allows the innovation to gain a foothold quickly on certain key subsets of the network, after which contagion completes the job” (Young). Why do small groups foster innovation more than large groups, and how does this lead to contagion as discussed in this article?

4. Which of these images below represents a sharing network in a small group, and which represents a sharing network in a large group? Were you surprised by this, and how does this relate to our previous class discussions on social relations in primitive societies? How does this point relate to the cases we examined in Beverly Schwartz’s book, *Rippling*?
Political model of social evolution” by Daron Acemoglu, Georgy Egorov, and Konstantin Sonin:

1. “The society consists of agents that care about current and future social rules and allocations that are comprised of economic as well as social elements” (Acemoglu, Egorov, and Sonin). According to the authors, are current or future rules considered more important to agents? Under what circumstances is one considered more important than the other, and how does this relate to the article’s discussion of uncertainty?

2. As an agent, do you consider current or future social rules more important? In the following examples, discuss whether short-term or long-term changes in these issues matter more to you and why. Is it for moral reasons, practical reasons, because you are an informed citizen, etc.?
   a. Climate change and how it will cause a decrease in natural resources, war, and increased income inequality.
   b. America’s rapidly aging population and the need for Social Security reform.
   c. America’s economic dependence on China.

3. “We also show, using a simple example, how the set of possible equilibrium configurations is both history-dependent and contingent on the nature of stochastic events” (Acemoglu, Egorov, and Sonin). According to the reading, how do the circumstances of the time period and stochastic events influence social evolution? How does this relate to Polanyi’s discussion of the circumstances behind the formation of our current market society?

Social Enterprise: Theory and Practice, Ch. 1, by Ryszard Praszkier and Andrzej Nowak:

1. “The question becomes: if they are such as diverse groups, what characteristics do they have in common that allow us to identify them under one unifying rubric?” (Praszkier and Noward, 1). In the two examples given in the reading (Munir Hasan from Bangladesh and Steve Bigari from the USA), what similarities did these two very different individuals share? What do you think is the most important characteristic all social entrepreneurs must have to not only ensure their success, but compel them to begin their work in the first place? Do you agree with the five main dimensions of social entrepreneurship that are listed in the reading, or are there other dimensions you believe the reading left out?

2. “The social entrepreneur generally enters the scene at the point when a situation seems protracted and intractable—in a word, insurmountable” (Praszkier and Noward, 17). Do you agree that social entrepreneurs can make the impossible happen? How important do you believe creativity is in causing this change to happen?
3. “There are also social activists who, although they may excel at helping people, nevertheless do not meet all of the criteria. For example, they may not offer any new ideas or develop the project beyond local boundaries” (Praszker and Noward, 28). Do you agree with the author that to be a social entrepreneur, a person must “develop the project beyond local boundaries?” In what ways would focusing on a specific area allow social entrepreneurs to actually be more effective? How does this point relate to the cases we examined in Beverly Schwartz’s book, *Rippling*?