

Lecture Materials of Environmental Sociology
(Dept of Sociology, Korea Univ., 2017)


ENVIRONMENTAL SOCIOLOGY

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6/30/2017

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LEARNING SUBJECTS

MARCH	WEEK 1, 8 TH INTRODUCTION TO THE COURSE	WEEK 2, 15 TH WHAT IS ENVIRONMENTAL SOCIOLOGY?	WEEK 3, 22 ND ENVIRONMENTAL SOCIOLOGICAL THEORIES/ PART ONE	WEEK 4, 29 TH ENVIRONMENTAL SOCIOLOGICAL THEORIES/ PART TWO
APRIL	WEEK 5, 5 TH HOW TO WRITE AN ESSAY	WEEK 6, 12 TH ENVIRONMENTAL RISKS AND HUMAN DISASTERS	WEEK 7, 19 TH ENVIRONMENTAL JUSTICE AND INEQUALITY	WEEK 8, 26 TH MID TERM EXAM
MAY	WEEK 9, 3 TH BUDDHA'S BIRTHDAY/PUBLIC HOLIDAY	WEEK 10, 10 TH PRODUCTION, CONSUMPTION, WASTE AND THE ENVIRONMENT	WEEK 11, 17 TH ENERGY AND SOCIETY	WEEK 12, 24 TH ENVIRONMENTAL PERCEPTIONS, ATTITUDES, BEHAVIORS WEEK 13, 31 TH GLOBAL ENVIRONMENTAL POLITICS
JUNE	WEEK 14, 7 TH CONTESTED COASTLINES, JEJU ISLAND	WEEK 15, 14 TH COURSE SUMMERY AND ROUND TABLE DISCUSSIONS	WEEK 16, 21 TH FINAL TERM EXAM	

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1/What is Environmental Sociology?

WEEK 2

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Lecture Contents

1. Definition of environmental sociology (ES)
2. Brief history of ES

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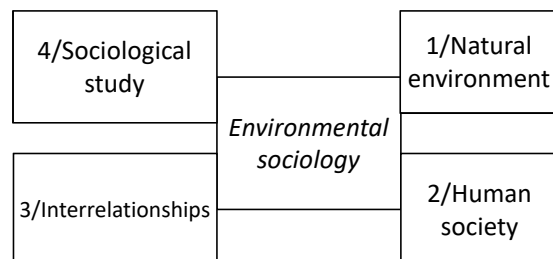
1/ Definition of Environmental Sociology

- A sociological study for the interrelationships between natural environment and human society

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The four key concepts that are used to define environmental sociology



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Environment & Natural Environment

- Environment (*hwankyung*, 環境, *l'environnement*)
 - A **relational** concept that involves a subject and an object
 - **Regarding human life as a subject, the conditions that influence human life to be shaped in certain ways are considered as environments for human life**

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Types of environments

- E.g. *family* environment, *educational* environment, *city* environment, *school* environment, natural environment, etc

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Types of environments that are interested to environmental sociologists

- Hu/man made environment, Built environment
- Bio/Physical environment, Natural environment
- Nature: something that exists on its own; that creates on its own
- **If nature does not influence human life in whatever senses, nature is merely nature, not environment for human life**

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TREES AS A RAW MATERIAL



Trees in a natural form



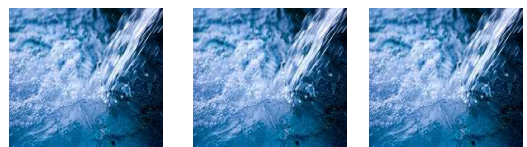
Lumber



TREES AS A MANUFACTURED PRODUCT

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Water as a natural resource for human life



Diverse ways of using water for human life e.g.??

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Nature as an environment for human life

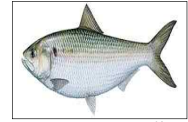
- Then, in what ways does nature *influence* human life?
- Three Generic Components
 - Natural resources
 - Environmental quality
 - Ecosystems

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Natural Environment & Environmental Problems

- **Natural resources**
 - *Provisional repository of raw materials* that enable economic activities to happen again and again
 - Provisional repository of *energy sources*
 - *Depletion* problem



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- **Environmental quality**
 - foundations for living conditions
 - Water, air quality, soil, *etc*
 - *Deterioration* problem: the quality from good to bad
 - Measuring the environmental quality



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- **Ecosystems**
 - a set of mechanisms that govern the interactions among plants and animals in relation to their environment
 - Biodiversity, flora & fauna
 - Destruction problem
 - The interconnected system of animals, plants, *etc* being broken down



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Society

- Interactions of *more than two individuals*
- **Continuity** in interactions
- The interactions are made in order to achieve certain aims



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- **Networks:**
 - inter-linkages of groups of individuals that share in common interests, values, purposes for certain things

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- Social structure:
 - **patterned** ways of social interactions, networking
- Social institutions:
 - Established ways of fulfilling human needs
 - Guided by specific norms, regulations, laws, etc
 - Education, religion, economy, politics, family, etc

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The co-evolution of natural environment and human society

- Hunting-gathering society
- Pastoral society
- Agricultural society
- Industrial society -> technological involvement upon natural environment
- post-industrial society

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Society transformation



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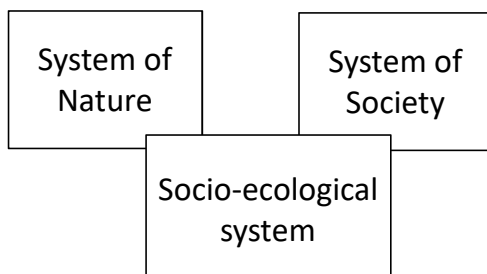
Nature transformation



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Socio-ecological system



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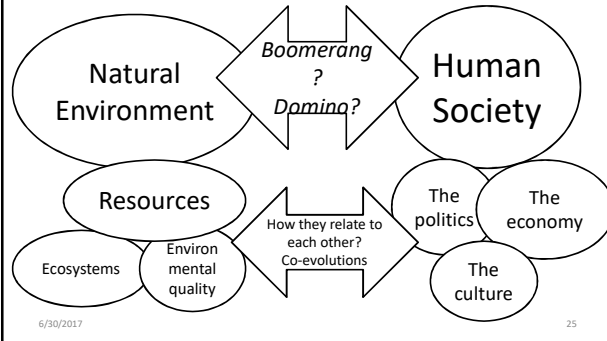
Generic Research Questions of environmental sociological research

- How natural/bio-physical environment influence human society?
- How human society impact upon natural/bio-physical environment?
- Then, how the environment impacted upon by human society, in return, influence human society?

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Environmental Sociology presented in a Diagram



2. Brief History of ES

- *The beginning:* in the late 1960s/the early 1970s in the USA

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The passage of sociology and ES

<i>The birth of sociology</i>	<i>the surge of American sociology</i>	<i>The birth of environmental sociology</i>	<i>The differentiation of environmental sociology</i>	ES NOW
<i>The 18th-19th centuries, W Europe</i>	<i>After the second world war (1945-)</i>	<i>The late 1960s</i>	<i>From the 1990s</i>	

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The backgrounds

- Strong civic movement wave for the rights of minorities
- The Oil shock 1973, 1978 – OPEC's embargo to the USA
- OPEC: Organizations of Petroleum Exporting Countries (mainly located in the middle east)
- Surging public concern about the energy crisis
- Environmental movement
- The Earth Day in 1970

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Why not before the 1970s?

• Riley Dunlap

- American environmental sociologist
- Founding father of ES
- The first president of ISA's Research Committee 24, Environment and Society
- *"Environmental sociology: A New Paradigm"* (1978) (our homework article)



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DSP vs. NEP

- Criticized the mainstream sociology for having been *blinded* to the relevance of natural environment to human society
- Dominant Social Paradigm (DSP): Human *Exemptionalism* Paradigm + Human *Exceptionalism* Paradigm
- Human Exemptionalism Paradigm: Humans are exempted from natural law that governs members in natural world
- Human
- New Environmental/Ecological Paradigm (NEP)

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The early years

- In the 1980s
- Sociology of environmental issues
- Maintaining DSP and analyzing sociological issues that include the environment in a sociological perspective
- Characteristics of environmental activists, Social bases of environmental concern, etc

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The growing years

- The 1990s
- The proposal of **ecological modernization theory** (1992) – Dutch E Sociologist, Arthur Mol
- **Risk society thesis** proposed by Ulrick Beck (1992)



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- Emergence of **social constructionist perspective** (1996) – John Hannigan, Canadian Sociologist, *Environmental Sociology – A Social Constructionist Perspective*

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The maturing years

- In the 2000s
- More diversity in theoretical orientations
- International diffusions of ES
- Global representation in terms of memberships

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RC 24 of ISA

- Greater representations in ISA (International Sociological Association)
- In the Yokohama ISA congress in July 2014, RC24 ranked fourth in terms of number of participants
- Establishment of RC 24's academic journal in 2014, *Environmental Sociology* (Routledge)
- 4 issues per year



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ISESEA

- ISESEA - International Symposium of Environmental Sociology in East Asia
- Established in 2007
- <http://www.sal.tohoku.ac.jp/soc/isesea-5/>
- <http://isesea-6.ntu.edu.tw/site/page.aspx?pid=901&sid=1143&lang=en>
- Every two years having a meeting in Japan, Taiwan, S Korea, China

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KAES

- In the year 2000, Korean Association for Environmental Sociological was established
- Publishing an academic journal, *ECO*, 2 issues (June, December) per year since Sept 2001



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Conclusion

1. ES is born out of scholarly response to civil environmental movement in the late 1960s/early 1970s in the USA
2. Riley Dunlap is a pioneer in Environmental Sociology having provided a framework to see the relevance of natural environment to human society in the late 1970s
3. ES saw a significant growth in the 1990s; and further matured in the 2000s
4. Korean Association for Environmental Sociology and ISESEA having contributed to global ES by providing East Asia's perspectives and experiences to it

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Quiz

Q1. Which one is the incorrect statement for the research scopes of environmental sociology

- ① Environmental sociologists study the relationships between natural environment and human society.
- ② Some environmental sociologists term natural environment as bio-physical environment.
- ③ Building structures are considered as human-made environment.
- ④ Some environmental sociologists are interested in the ways of physical environment of building structures influence society members.
- ⑤ None of the four statements is correct.

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References of ES in Korean languages

- 한국환경사회학회, 환경사회학이론과 환경문제, 2013년 10월, 한울아카데미
- 한국환경사회학회, 환경사회학: 자연과 사회의 만남, 2015년 8월, 한울아카데미
- 한국환경사회학회, 환경운동과 생활세계, 2013년 10월, 한울아카데미

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2/ Environmental Sociological Theories – Part One

WEEK 3

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Lecture Contents

1. New Environmental/Ecological Paradigm (NEP)
2. Critical Human Ecology (CHE)
3. Ecological Marxism
4. Treadmill of Production and Consumption (TOP)

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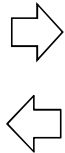
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Environmental Sociological Theories

Natural Environment Ecology

Plants, animals,
Minerals, soils, gold,
petrol,
Sky, wind, sun, etc

Grow, appear, die, go,
change, etc



Human Society Sociology

Humans
Female, male,
The poor, the rich
The urban born, the rural
born, etc

Work, play, eat, decide,
study, love, etc

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Environmental sociology compared to other sociology disciplines

- To make sense of how society works and changes
- Political sociology focuses upon the political institution
- Economic sociology focuses upon the economy institution

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- Environmental sociology also studies the political, economy institutions
- But different in that ES aims to explain the political, economy institutions in relation to the environment

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1/New Ecological Paradigm (NEP)

- Riley Dunlap
- Proponent of New Ecological Paradigm in the 1970s
- In the beginning, he termed it as the New *Environmental* Paradigm
- Criticizing the classical & mainstream sociologists for sharing the assumptions of how society works; what humans are

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- Drawing upon: Human *Exemptionalism* Paradigm, Human *Exceptionalism* Paradigm
- The reason to fail to predict the ecological crisis that American society faces in the 1970s
- NEP as an alternative paradigm to conceptualizing human society, to do another sociology, named environmental sociology
- *Dunlap had a vision for NEP to become a paradigm basis for ES*

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Anthropocentric worldview HEP vs NEP Eco-centric worldview

Human Exceptionalism Paradigm (HEP)

- Humans are unique among the earth's creatures, for they have culture
- Culture can vary almost infinitely and can change much more rapidly than biological traits
- Thus, many human differences are socially induced rather than inborn, they can be socially altered, and inconvenient differences can be eliminated
- Thus, also, cultural accumulation means that progress can continue without limit, making all social problems ultimately soluble

New Environmental Paradigm (NEP)

- Human beings are but one species among the many that are interdependently involved in the biotic communities that shape our social life
- Intricate linkages of cause and effect and feedback in the web of nature produce many unintended consequences from purposive human action
- The world is *finite*, so there are potent physical and biological limits constraining economic growth, social progress, and other societal phenomena

NEP Scales

- Empirical measurement
- Measuring empirically the beliefs among lay people about the relationships between nature and society
- The NEP scale developed in 2000
- 15 question items

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The question items of the NEP Scale

- The question items represent five conceptual ideas that comprise the NEP:
 - The reality of limits to growth
 - Anti-anthropocentrism
 - The fragility of nature's balance
 - Rejection of human exemptionalism
 - Possibility of an eco crisis

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The questions items of the NEP scale

1. The balance of nature is very delicate and easily upset
2. Humans have the right to rule over the rest of nature
3. The earth is like a spaceship with only limited room and resources
4. Human have the right to modify the environment to suit their needs
5. When human interfere with nature, it often produces disastrous consequences

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The NEP Scale (Cont.)

6. We are approaching the limit of the number of people the earth can support
7. Humans are severely abusing the environment
8. Human ingenuity will ensure that we do not make the earth unlivable
9. The earth has plenty of natural resources if we just learn how to develop them
10. Plants and animals have as much right as humans to exist

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The NEP Scale (Cont.)

11. The balance of nature is strong enough to cope with the impacts of modern industrial nations
12. Despite our special abilities humans are still subject to the laws of nature
13. The so-called "ecological crisis" facing humankind has been greatly exaggerated
14. Human will eventually learn enough about how nature works to be able to control it
15. If things continue on their present course, we will soon experience a major ecological catastrophe

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- A response can be made from:
 - Strongly Agree
 - Slightly Agree
 - Mid-point
 - Slightly Disagree
 - Strongly Disagree
- The degree of either agreeing/disagreeing to the ideas of the NEP can vary from 15 points to 75.

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Critiques to NEP

- Not analytical as a theory
- Nothing more than a green, radical manifesto for environmental movement
- Trying to green sociology way too much to replace the mistake that sociology overlook environmental problems in its inception

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Environmental vs. Ecological

My question: How are they different?

Your answer: ??



MY ANSWERS

- Members of plants, animals, soils, etc being *the environment* for human life
- It implies that nature is useful for human life, that's why it should be protected; utilization view
- Ecological referring to the interconnected relationships among the members of natural world
- It implies that protection of the ecosystem should be made for its own right, apart from its usefulness for human society

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2/ Human Ecology & Critical Human Ecology

- Human Ecology developed by the Chicago School in the 1920s, up to the 1960s
- The Chicago School is a group of scholars based upon the Univ. of Chicago
- Robert Park and his colleagues
- Urban context, urban ecology

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Human Ecology

- To explain diverse urban forms in terms of social interactions that involve land use
- Adopted ideas from natural ecology
- Conceptualize the environment in three terms:
 - provisional repository of resource materials
 - land for housing
 - sink of wastes
- However, the human ecologists were not aware of the possibility of environmental problems to occur

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Critical Human Ecology

- The critical version of human ecology
- Critical Human Ecology (CHE)
- Richard York and his colleague
- Marxist interpretation of human ecology
- Historical materialism

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3/ Ecological Marxism

- Applications of Marx's thoughts to ecological issues
- Ecological interpretations of Marx's writings
- After Dunlap's arguments about the HEP prevalent in the writings of classical, contemporary sociologists
- John Bellamy Foster
- Of particular, the concept of capitalism for explaining social causes of environmental problems
- Materialist, social realist perspective for understanding environmental problems

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The contradiction between the time in nature and the time for profit accumulation under capitalist production

- Trees grow full size taking from 10 yrs to 2000 yrs
- Reaching 1.5cm to 115.7ms
- In order to accumulate profit, more trees are in need for provision
- But for trees to turn into money, the social process mentioned below takes much shorter than the period for trees to grow and to grow back once they are cut off



Ecological process



Social process
Social actors are involved in cutting off trees, manufacturing photocopying paper, accumulating profits

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4/ Treadmill of Production

- Allan Schnaiberg
- First proposed the concept, TOP (Treadmill of Production) in 1980
- Social process that accentuates the continuing of producing goods



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TOP/c



Bell, Michael. 1996, *An Invitation to ES* (1st ed.) p.

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The metaphor of treadmill

- The metaphor of treadmill is used to indicate a society formation considering the relationship between the economy and the environment under the capitalist production system
- A society is stuck to a state that is parallel to a treadmill
- No moving forward, Running in one place
- This means that: an improvement in one stage (let's say increasing the amount of wealth) comes with abusing the environment (decreasing the health of nature)

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Why to focus upon production?

- The very first contact with nature by the economy institution is production realm
- Extracting natural resources, delivering NR to factories, to transform NR to a manufactured product, to use energy sources within the process
- Those powerful actors in the production realm decided the process
- Consumers are less empowered to choose products they want

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3/ Environmental Sociological Theories – part two

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Lecture Contents

1. Ecological Modernization Theory (EMT)
2. Political Ecology
3. Jevons's Paradox
4. Social Constructionist Perspective
5. The Epistemological Debates in ES

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1/ Ecological Modernization Theory

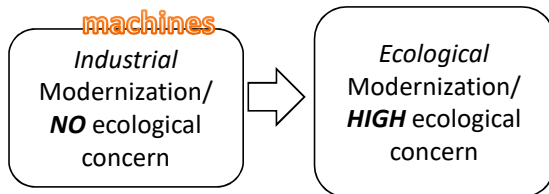
- Arthur Mol, Gert Spaargaren
- Ecological Modernization Theory (EMT)
- The 1990s
- Industrial modernization created environmental problems;
- therefore Ecological Modernization can advance modernity projects (with greening capitalist production) by fixing possible environmental harms that industrial activity brings out

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From *industrial* modernization to
ecological modernization

Manufacturing
machines



technology

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- They do NOT agree that capitalism is the cause of EP
- **Greening capitalism is possible through environmental reforms**
- Capitalist production and consumption can come together with the idea of sustainability
- Company's white report, greening production process, institutional arrangement, technological advancement
- EPs can be solved with the principle of modernity, particularly with green technology

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2/ political ecology

- Emphasizing the *political* aspects of environmental issues
- Studying those people who live upon the primary bases of nature
- Fishing, agricultural, hunting, horticultural, cattle raising, etc
- The first, the third world relationships

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3/ Jevons' Paradox

- William Stanley Jevons, 1865
- Concept to refer to the paradox that occurs when technological progress *increases efficiency* with which a resource is used
- On the surface, it indicates technological progress decreases the use of natural resource
- ***But the rate of consumption of that resource rises because of increasing demand***
- The paradox of technological progress

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4/Social Constructionist View

- Environmental problems are **socially constructed** though dynamic relationships among social actors
- Nature is a symbolic, cultural construct
- E Sociologists should rather maintain distances from providing solution measures to EP
- Duty of E Sociologists should be to examine **the social process** through which EPs are constructed
- E Sociologists are not capable to know the existence of EP due to having not received scientific training for it

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J Hannigan's Case Study

- The case of Wildlife Preservation Movement in the US
- Highlighting the changing views for wildlife
- In the late 19th century, the view for wildlife transformed significantly
 - From: threat to human settlement
 - To: new, intensely romantic depiction in which the wilderness experience was celebrated

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Why this transformation?

- Spreading urbanization
- Loss of wildness areas
- Back to nature movement
- Nature-loving sentiment becoming popular
- Leading to establishing Nature Park Systems

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5. Epistemological Debates in ES from the 1990s

- Social Realist vs. Social Constructionist Perspectives
- Marxist vs. Non-Marxist Perspectives
- Non Human-Exemptionalist vs. New Human Exemptionalist Perspectives

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Social Realist vs. Social Constructionist Views

- The confrontation began in the 1990s
- John Hannigan
- Why they confront each other?
 - Are environmental problems real, or a social construction?
 - Should sociologists be involved in providing solution measures to environmental problems?

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Social Realist View

- Environmental Problems are **REAL**, existed as an objective reality
- E Sociologists should find solution measures to solve the problems identified
- The dominant view in ES up to the 1980s

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social constructionist view

- Environmental problems are maybe real
- But the extent of them are decided by communication process among society members
- Therefore, ES sociologists should examine the social process by which certain natural objects are defined as problems

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Marxist vs. Non-Marxist Views

- Marxists and non-marxists are both social realists
- They agree that environmental problems are “REAL”
- However, they disagree over what causes environmental problems, and accordingly what measures to be arranged to solve them

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Marxists' argument

- Alan Schnaiberg, John Bellamy Foster, Richard York
- Capitalism stands at the core of environmental problems
- Capitalist production

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Non-Marxists' Argument

- Arthur Mol, Gert Spaargaren
- Ecological Modernization Theory (EMT)
- Industrial modernization created environmental problems;
- therefore Ecological Modernization can advance modernity projects (with greening capitalist production) by fixing possible environmental harms that industrial activity brings out

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Non Human-Exemptionalist vs. New Human Exemptionalist Perspectives

- How to see humans in relation to natural environment?
- Humans are part of natural system, or relate to it, but independent from the natural laws

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Non HEP

- Humans are not exempted from the laws that govern/dictate the webs of life in natural worlds
- Humans are not dissimilar to the members of natural worlds (animals, plants, insects, etc) in that their survivals are subject to the natural law
- EPs represent that the modernity project fails

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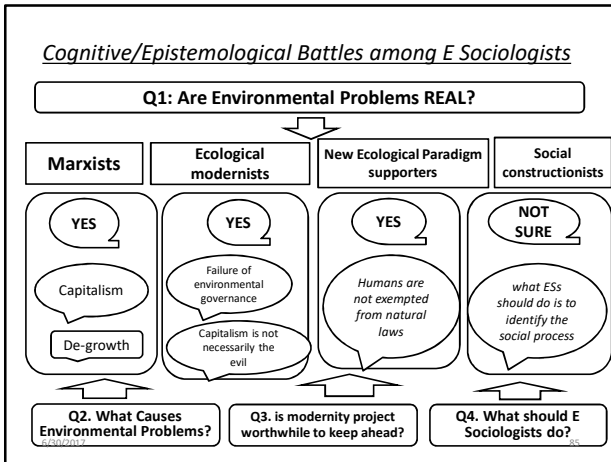
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New HEP

- The critiques made to the EMT theorists by eco-Marxists
- Humans are not necessarily like the members of natural worlds
- Humans can advance the civilization/modernity project by solving the ecological constraints
- Human activities can go greening with institutional re-arrangements
- Green technology

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4/ Environmental risks & human disasters


WEEK 6

- ### **Lecture Outlines**
1. Risk Society Thesis
 2. Types of Risks
 3. How to manage environmental risks and to reduce human disasters?
 4. Risk management of mega cities
 5. Conclusion

1 Risk Society Thesis

- His book, *Risk Society* (published in 1992)
- **Risk** being among the key concepts that are used to define the contemporary society

Ulrich Beck,
1944-2015



- **Concept of Risk Society:**
 - A society whose main features are to manage/govern *the manufactured risks that are drawn from natural worlds*
 - Natural risks vs. Manufactured risks

Risk Society and Reflexive Modernity

- Natural risks are made through the internal mechanisms of nature's dynamic processes
- Manufactured risks (or, new risks) are created by **technological involvement** upon natural environment
- Failure of modern institutions – of particular, science
- However, the principle of modernity should not be given up to solve environmental problems (manufactured risks)
- **reflexive modernity**

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Reflexive modernity

- The inventions of scientific technology opened modern society
- The modern technology gives humans comfort, convenience, free from many types of limitations – such as hunger, time, space, etc.
- However, the modern technology also creates risks that are embedded within its operations

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- Therefore, practices of technology inventions should consider the negative effects (risks) that might incur in possible future
- Practices of scientific experts should be made with awareness of what they are doing (reflexivity)

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Democracy and the Practice of Scientific Experts

- Democracy is among the modern inventions of social institutions
- Democratizing the practices of scientific experts would be the key challenge in handling possible risks
- Technological innovations determine the directions of human society to evolve

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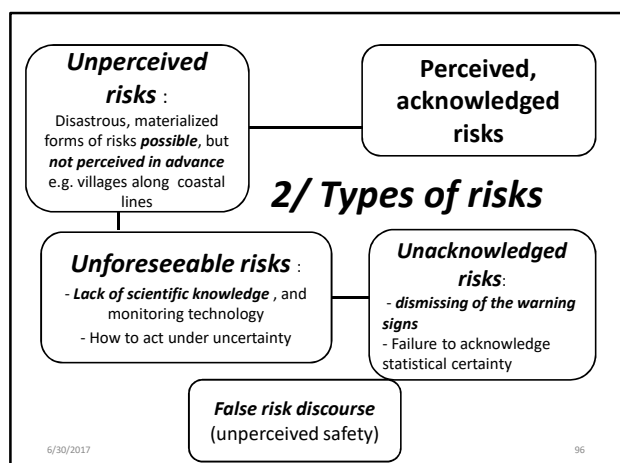
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Alternatives to expertized scientific knowledge

- Civic science
- Local ecological knowledge (LEK)
- Knowledge drawn from experiences and observations for certain events and objects
- knowledge shared by local people through long term residence in certain places
- Whether to be included for governing risks

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Environmental Risks

- *Material risks*
- Damaged effects from natural hazards – i.e. extreme events in natural environment
 - Droughts
 - Flooding
 - Landslides
 - Storming (typhoons, hurricanes)
 - Sea level rising
 - Extreme hot/cold weather

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The paradox of technology

- Technological innovations are among the key components of modern society
- However, the more you depend upon technology, the more risk you are likely to suffer
- Environmental risks becoming technological disaster

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Raymond Murphy's case study

- *Leadership in Disaster: Learning for a Future with Global Climate Change (2009)*
- The 1998 ice storming that hit Ottawa, Montreal, New York State, Northern New England
- Five days of freezing rain paralyzed the everyday life of the people in the affected regions for several weeks
- The infrastructures that supported the everyday life unable to operate – collapse down of electricity grids
- The social organizations – schools, hospitals, banks, airports, etc – stopped to function

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Implications of the 1998 Ice Storming

- The key issue implicated for the 1998 Ice storming lies at the fact that ***how vulnerable the modern technological infrastructures are for extreme environmental events***
- The Amish people in Northern NY State least affected by the ice storm



The Amish people, the image from google

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- The infrastructures that support *the everyday life of the Amish and their everyday practices least technologically involved*
- The less dependent upon technological devices, the less affected by extreme negative environmental events

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3/ How to manage environmental risks, and to reduce human disasters?

6/30/2017

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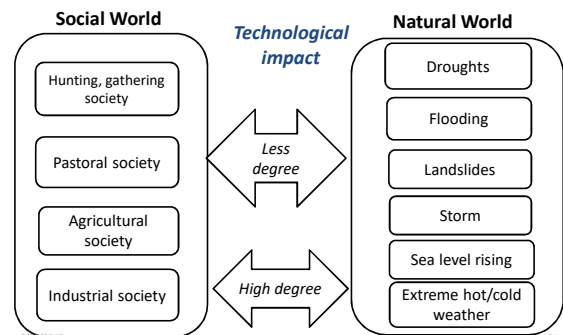
My Conceptual Suggestions:
How to Manage Environmental Risks?
 (3P & 1R)

- **PERCEIVING** accurately possible risks
- **PLANNING** adaptation, mitigation measures
- **PERFORMING** leaderships facing hazardous environmental events
- **RESPONDING** properly to the possible/real risks

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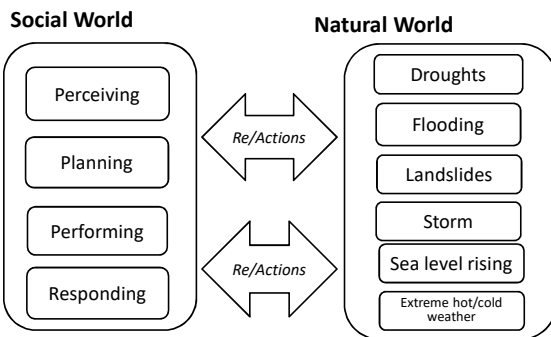
Societal change, technology, and Environmental Risks



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Managing Environmental Risks



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Reducing Human Disasters

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Perceiving the material risks

- Perceptions among:
 - Publics
 - Scientific expert groups
 - government officials
 - business people
- Whether or not the risk perceptions among different social groups differ? How?
- Then if different, which perceptions should be considered to plan measures of adaptation and mitigation for possible environmental risks?

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- The study of Douglas and her colleagues found out that each country prioritizes perceptions of differing groups in risk management
 - Germany – Scientific expert groups (Risk experts)
 - The US – Publics
 - Canada – Scientific experts
 - S Korea – Scientific expert groups?

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Planning adaptation, mitigation measures

- Selecting, designing possible measures
- Evaluating the measures selected in terms of:
 - feasibility to apply to
 - costs when apply to
 - effectiveness of the measures to reduce risks

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Performing Leaderships

- Who should take in charge in exercising leadership?
- How to perform leaderships?
- What qualities are important in exercising leaderships?

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Responding to extreme environmental events

- Social actors at disastrous environmental events
 - People living in affected areas – **victims of the disaster**
 - People living in non-affected areas – **the audiences of the disaster**
 - Government officials responsible to handle with the event with their resources – **the managers of the disaster**
 - People working in the media – **the messengers of the information of the disasters**

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Social interactions among the four actors

- How the four social actors communicate each other when getting through the disaster?
- How they network each other while getting through the disaster?
- Do the communicating and networking patterns vary as time goes by?
- Onset-interim-fading phases of disastrous environmental events
- If so, do the varying patterns affect the target aims of minimizing loss of human life?

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Technologically involved disasters

- E.g. Disasters from dysfunctional operations of machines
- Disasters from out of order of technological machines
- Social interactions among actors involved in the events are made in a well balanced cooperation at the beginning phase going beyond existing divided line among groups of actors
- However, as disaster evolves, the relationships are becoming destructive

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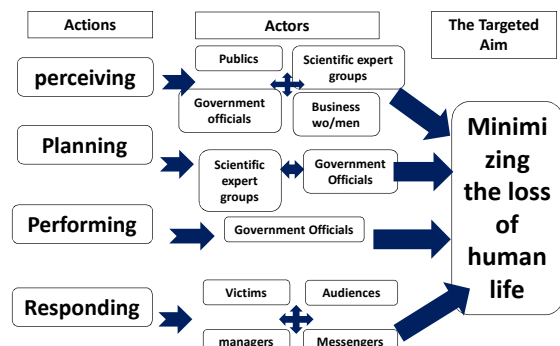
Emergence theory in disaster studies

- Norms, behavioral, response patterns, emotions, identities among people who are involved in disasters are **emerging (not fixed, different from planned, expected ways)** as disastrous events evolving
- At the onset of disastrous events, prompt/improvised responses can be more effective than pre-planned measures
- Case study of the 9.11 terror
- hundred thousand people were evacuated from Lower Manhattan by water via an emergent network of private and publicly owned watercraft

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Analytical framework of risk management



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4/ Risk Management of Mega Cities

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Mega cities in the world

- Mega cities
- Cities that have inhabitants of 10 million and over
- The urban phenomenon of the 21st century
- In 1950, NY and TK are the only mega cities
- By 1990, 12; 2005, 20
- The year 2010, 26 cities
- $26 \times 10^6 = 260\text{m}$ / out of 7000m (0.7 billion), about 4 per cent of the world population reside in the 26 cities

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List of mega cities

Rank Name Country Population Remark

- 1/ **Tokyo** Japan 34,000,000 incl. Yokohama, Kawasaki, Saitama
- 2/ **Canton** China 24,200,000 Northern Pearl River Delta incl. Dongguan, Foshan, Jiangmen, Zhongshan
- 2/ **Seoul** Korea (South) 24,200,000 incl. Bucheon, Goyang, Incheon, Seongnam, Suweon
- 4/ **Mexico City** Mexico 23,400,000 incl. Nezahualc6yotl, Ecatepec, Naucalpan
- 5/ **Delhi** India 23,200,000 incl. Faridabad, Ghaziabad
- 6/ **Bombay** India 22,800,000 incl. Bhiwandi, Kalyan, Thane, Ulhasnagar
- 7/ **New York** United States of America 22,200,000 incl. Newark, Paterson
- 8/ **Sao Paulo** Brazil 20,900,000 incl. Guarulhos
- 9/ **Manila** Philippines 19,600,000 incl. Kalookan, Quezon City
- 10/ **Shanghai** China 18,400,000

Ref. "Emerging risks in Megacities", an online document prepared by International Risk Governance Council 117

Mega cities in an environmental perspective

- High risks of vulnerability to extreme environmental events
- Due to geographical locations: Coastal lines, mountain areas
- Indicate massive magnitude of loss of populations

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Challenges in managing environmental risks in mega cities

- Scientific unknowns:
 - The urban phenomenon, unknown phenomenon
 - lack of previous experiences, data, information, difficult to design a model
- The complexity of systems in the megacities
 - : vast infrastructure networks (water, electricity, healthcare, security), formal, informal economies, social and ecological transformations, linkages on the spatial scale (local-global networks)

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- Prioritising economic development over environmental sustainability
- Risk governance for mega cities must be different from a normal city
- The importance of mega cities for a country's GDP increase – regulations should be business friendly to attract international investment

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5/Conclusion

1. Modern society is double layered in terms of the relationships with the technology: positive vs. negative effects upon human society
2. Environmental risk is one dimension of the negative effects of technological advances
3. Therefore, managing environmental risk is among the key issues that have to be dealt with in contemporary society
4. How to manage environmental risks (and to reduce human disasters) are the key questions to answer
5. Of particular, mega cities that inhabit significant size of world populations present dear importance of risk management for disastrous environmental events

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5/ Environmental justice and social inequality

Week 7

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Lecture Contents

1. An Unequal World and Negative Environmental Change
2. Environmental Justice and Climate Justice
3. Conclusion

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1/ An Unequal World and Negative Environmental Change

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Sociology and social inequality

- Sociology has well established research tradition for studying social inequality
- Social inequality is defined as:
 - *Unequal* distribution of wealth, life chances, social recognition, honors, health, etc among people in a society
 - Some people enjoy more wealth, life chances, etc
 - Some people suffer less wealth, life chances, etc

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- When sociology was founded in the 19th century in Europe, among the major research inquiries was to know differentiated/unequal impacts for different social groups by industrialization and urbanization
- The concepts social class, social stratification used to describe social inequality among people in a society

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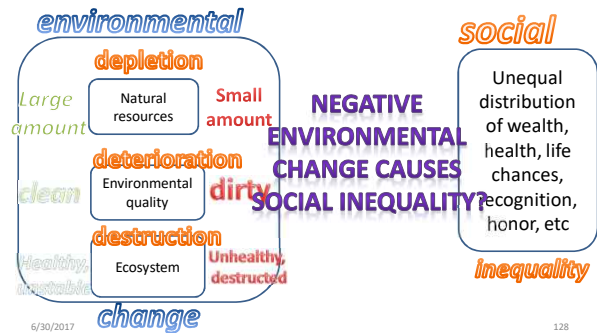
ES, social inequality and the environment

- From the 1970s, conditions of natural environment have been considered to be degraded
- Then, how the *changing* conditions of natural environment impact upon different social groups?
- How the *negative* environmental change impact upon different social groups?
- Do the negative environmental change affect social groups *disproportionately*?

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environmental change & social inequality



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Environmental Inequality: links between social inequality and the environment

- **Negative Environmental Change**
 - Natural resources -> depletion (large amount->small)
 - Environmental quality -> deterioration (Clean->Dirty)
 - Ecosystems -> destruction (healthy, stable->unhealthy, destabilized)
- **Constitution of society**
 - Collectivity of people
 - People categorized into different social groups by their socio-demographic, economic, cultural characters
- Then, are specific social groups particularly affected by negative environmental change?

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Environmental Justice & Climate Justice

1. Environmental Justice
2. Climate Justice

- These concepts are used in ES in order to address unequal effects of negative environmental change upon different social groups

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Critique of the Risk Society Thesis

- Arguments of the RST, Ulrich Beck: *Hunger is unequal, smog is equal*
- He argues that negative environmental change affects *everybody*
- Scholars of environmental justice refute the argument

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- Negative environmental change **disproportionately** impacts certain social groups -> Certain social groups are likely to be environmental victims
- **DISPROPORTIONATE**: having or showing **a difference that is not fair, reasonable, or expected** : too large or too small in relation to something

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2/ Environmental Justice, Climate Justice

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2.1/ Environmental Justice (EJ)

Justice: “The fair treatment of people of all races, cultures, incomes, and educational levels with respect to the development and enforcement of environmental laws, regulations, and policies.” (US EPA, undated)

Injustice: *Disproportionate* impacts of environmental hazards born by specific populations

- The idea of social justice combined with environmental problems
- It emphasizes that the socio-economically disadvantaged groups are affected more harms and risks than their counterparts by hazardous facilities and effects

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Differentiated impact by negative environmental change

- Disproportionately affected by environmental qualities that have deteriorated
- Air quality, water quality
- Differentiated exposures to the likeability of disasters
- Differently affected by the real risk of disasters
- Located at environmentally unfriendly living conditions – e.g. solid hazard waste incinerators

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Environmental Racism

- Within US context, EJP often regarded as environmental racism issue
- Environmental Racism refers to:
 - The unequal exposure to environmental hazards and risks by race
 - Non-whites are more likely to be exposed to those dangerous effects by their residences being located at hazardous waste incinerator facilities

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Toxic Wastes and Race in the US

- 1987
- A Report published by the Commission for Racial Justice of the United Church of Christ
- It documented and quantified the prevalence of environmental racism
- It firmly established the grounds for the problem by stating clearly the magnitude of the problem in numerical terms

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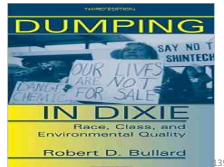
- 3 out of 5 black Americans live in communities with uncontrolled toxic waste sites
- Blacks heavily overrepresented in those metropolitan areas with the greatest number of such sites
- *Memphis, Tennessee; St Louis, Missouri; Houston, Texas; Cleveland, Ohio, and Chicago, Illinois*
- Hispanics, Asian Americans, native peoples similarly overrepresented in high-risk communities



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Robert Bullard

- In the 1980s
- Robert Bullard, father of EJ
- Sociology prof based at Texas
- He found out that in *Dixie* chemical waste incinerators are located disproportionately around residential places of black communities



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EJ movement

- The book argued that action was justified in order to reclaim for minorities 'the basic right of all Americans – the right to live and work in a healthy environment
- Bullard became a key leadership figure in environmental justice movement being chosen by the Clinton admin to participate in the Presidential transition as a representative of the EJ movement

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Three strands of environmental equity

- **Procedural equity** (governing rules, regulations, evaluation criteria to be applied uniformly)
- **Geographic equity** (some neighborhoods, communities and regions are disproportionately burdened by hazardous waste)
- **Social equity** (race, class and other cultural factors must be recognized in environmental decision making)

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Four Major Components of EJ Frame

- The right to obtain **information** about one's situation
- The right to a serious **hearing** when contamination claims are raised
- The right to **compensation** from those who have polluted a particular neighborhood
- The right of democratic **participation** in deciding the future of the contaminated community

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Vulnerability to Disasters

- Katrina attacking North/South East of the US in August 2005
- 1,833 persons dead
- The Black communities were disproportionately affected



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Health Problems

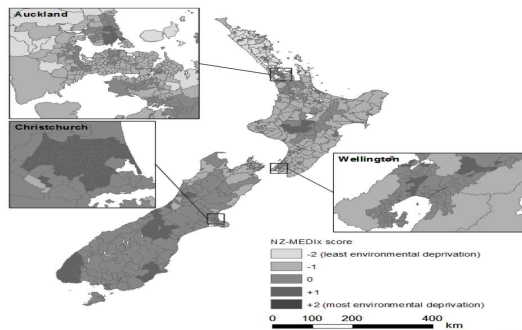
- Certain diseases/health problems
- NZ Study (J. Pierce et al., 2011): Environmental justice and health: a study of multiple environmental deprivation and geographical inequalities in health in New Zealand

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Mortality and environmental conditions – NZ Case

Figure 1. Spatial distribution of NZ-MEDix scores across New Zealand.



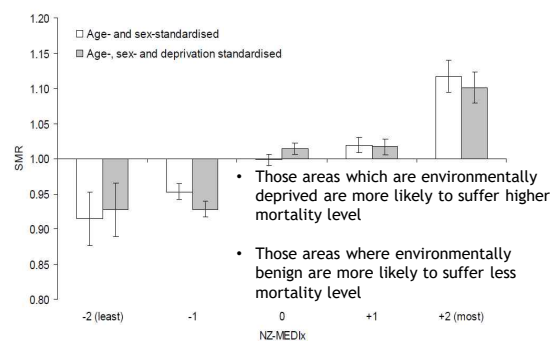
Multiple Environmental Deprivation Index

- The index is operationalized to combine area-level data on the relative levels of:
 - exposure to air pollution
 - cold climate
 - industrial facilities
 - green space
 - UVB radiation into a single value for small geographically-defined populations

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Figure 3. All-cause mortality Standardised Mortality Ratios (SMRs) by NZ-MEDix score adjusted for a) age and sex, and b) age, sex and social deprivation (NZDep2001). Bars indicate 95% confidence intervals.



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Cumulative effects

- In communities of racial or ethnic minorities and in socially disadvantaged neighborhoods
- Disproportionate location of hazardous waste sites, industrial facilities, sewage treatment plants, other locally undesirable and potentially polluting land uses
- Exposed to more pollutants
- To experience respiratory and health diseases

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Other pollutants

- Psychosocial stress, mental health impacts
- Live near busy roads
- Asthma, low birth weight, cardiovascular disease, premature mortality
- **Indoor Pollutants**
 - Lead-based paint, pollutants from industrial and transportation sources
 - Disproportionately found in poor, African American, and Hispanic households

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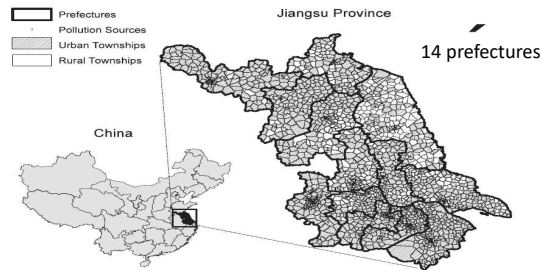
Environmental Inequality in China

- The rapid economic change in China in the 21st century
- It presents significant implications for environmental change
- A study suggests that there is a significant evidence for environmental inequality in China
- In Jiangsu province in China, rural migrants are most affected by air and water pollution

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Schoolman & Ma (2012, *Ecological Economics* 75, pp. 140-151)



Data sources: CC 2000; authors' collection.

Fig. 1. Pollution sources in Jiangsu Province.

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China's *Hukou* registry system

- Differentiated life opportunity including income, educational attainment: rural, urban *hukou*
- Rural *hukou* moving urban areas to find jobs there
- Settlements in environmentally deprived communities
- Urban workers in china with an official rural residence is more vulnerable to water, air pollution in *Jiansu* province

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2.2/ Climate Justice

- *Climate change* has been put on a global political agenda since the 1990s
- The concept *Climate Justice* is used to address the vulnerability of certain social groups to the possible damaging effects of climate change
- Then, what does mean 'doing justice with climate change'?

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Doing justice with climate change

- Distribution of responsibility
 - *who caused it?*
- Distribution of impacts
 - *who will suffer most because of it?*
- Distribution of costs and benefits
 - *who will pay to fix it?*

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Impacts: Higher Temperature

- Heat-related deaths and illness
- *Heat alone* not really the big issue, but the impacts that higher temperatures cause on ***ecosystems***
- This is why the emphasis on the climate *changing*, not the warming itself

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Change to the climate

- New patterns of *rain*
- More evaporation
- Hot and dry means more *fires*
- Warmer ocean means more *hurricanes*

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For the wildlife

- Vegetation that once grew somewhere doesn't anymore
- Change of habitat for wildlife
 - New migration patterns- e.g. birds
 - Polar bears- ice melting
 - Coral reefs- water temperatures changing

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For human's livelihood activities

- Agriculture
 - less land suitable for arable and pastoral agriculture;
 - shorter growing season
 - decrease in yields
- Fishing
- Hunting
- Cattle ranching

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Sea level rise

- Melting glaciers, and warmer water takes up more room than colder water
- Have already risen 10-30 cm in past 100 years
- projection of another 10-100 cm

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Vulnerability

- Many impacts are inherently worse in the global South
 - Near the equator where it's already hot
 - Small islands
 - Tropics for diseases
- But additionally, global South is more *vulnerable* to climate changes
- Global South is resource dependent society

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3/Conclusion

- Do the negative environmental change affect social groups disproportionately?
- **YES:** Scholars have argued that certain social groups are more vulnerable to negative effects of environmental change
- The concept *Environmental Justice* highlights environmental inequality caused by race, social class
- The concept *Climate Justice* highlights vulnerability of people in Global South (people dependent upon natural resource use for their livelihoods) by negative effects of climate change

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6/ Production, Consumption, Waste Generation, and the Environment

WEEK 10

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Lecture Contents

1. Production, Consumption and the Environment
2. Waste Generation, Management and the Environment
3. Conclusion

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1/ Production, Consumption and the Environment

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The Economy and the Environment

- The economy is among the key institutions for human social life
- Different forms and principles of economic activities
- **The interconnected system:** production, distribution/delivery, consumption, waste generation, waste treatment

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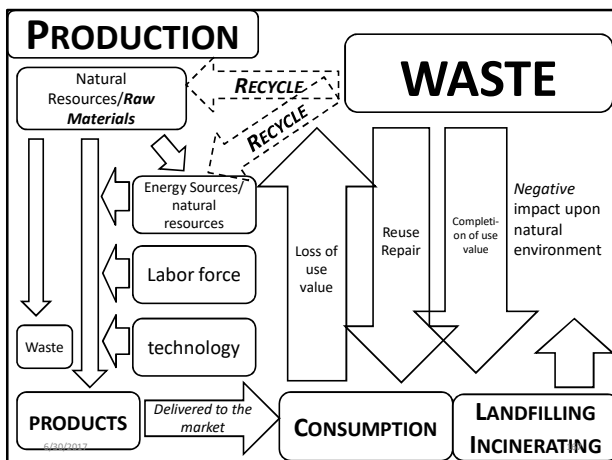
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The interconnected mechanisms

- PRODUCTION-CONSUMPTION-THE ENVIRONMENT
- WASTE GENERATION-WASTE TREATMENT-THE ENVIRONMENT

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Natural Resources

- Nature when used for certain purposes for human life
- Components of nature that are considered resources by humans differ by time periods and cultures
- In relation to economic activities:
 - Raw materials
 - Energy sources
- **Therefore, nature is the very basis through which economic activities enable to be made**

Natural Resources

- **The Natural Laws**
 - Principles, rules that govern members in the natural world
 - Systems of mechanisms within which natural world operates
- **Renewable** Natural Resources
 - Cycles of renewable natural resources to be (re)created are normally **slower** than cycles of production-consumption of a product

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Natural Resources

- Contradictions between products/society and resources/nature
- Any kinds of natural forms except for those becoming fossils
- Solar, wind, trees (wood), water, fish, pig, etc
- **Non-Renewable** Resources
 - Those natural forms becoming fossils
 - Once used up, they do not re-generate
 - Major causes for the greenhouse effect
 - Many kinds of underground geological resources, petrol, coal, etc

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Labor Forces

- Labor/Work
 - Human efforts invested in making goods/services
- Basis of survival, condition for payments
- Types of labor forces
 - Physical Labor
 - Mental/Brain Labor
 - Emotional Labor

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Products

- Natural raw materials turning into material, non-material forms
- Goods and services
- Combined with human's work, energy sources, technology
- Sold in the market – commodity
- To satisfy needs, pleasures of humans

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The Industry and the Environment

- **The primary industry**
 - A set of economic activities that use nature as nearly a raw/natural form
 - farming, fishing, raising cattle
 - Direct contact with nature
- **The secondary industry**
 - A set of economic activities that use nature as manufactured form
- **The tertiary industry**
 - A set of economic activities that use nature as a visual form, emotionally attached

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Salmon, canned salmon, salmon museum



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- **Example of the primary industry**

- Catching Salmons, Selling, Choosing, Eating, Digesting
- Salmons as *natural* form
- You can *not* sell fresh salmon any time, any place
- So, you earn small money

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- **Example of the secondary industry**

- Catching salmons, transferring to a factory, manufacturing a canned salmon
- Salmons as *manufactured* form
- You can sell a canned salmon anytime, any place
- Free from naturally imposed conditions

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Example of the tertiary industry

- Displaying images of salmon, demonstrating the way salmon breed seeds, providing infos about salmons, etc
- The museum image comes from the salmon museum located in Sapporo, Hokkaido (opened in 1984)
- Toyohira river running through Sapporo

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Natural resources, technology and wealth

- The transition from the primary industry to the secondary industry came with technological innovations
- The Industrial Revolution, The Developed World
- Those countries whose main economic activities involves the primary industry are called the Developing World
- Amount of NR, level of technology determine the level of wealth of a country

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The environment and human labor

- *Nature used as a natural form*: The primary industry and physical labor
- *Nature used as a manufactured form*: The secondary industry and physical/mental labor
- *Nature used as a visual form*: The tertiary industry and mental/emotional labor

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Sustainable Production and Consumption

- Alternative ways of producing and consuming goods and services
- The orientations of economic activities in the 21st century
- It was first suggested in 1992 Rio World Summit organized by UNEP

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Sustainable Production

- Securing sustainable provision of raw materials and energy sources of natural resources
- Natural Laws
- Each species in natural world has their own cycles of birth-death
- In order to secure sustainable provision of raw materials for economic activities, the natural laws must be considered

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Sustainable Consumption

- What does sustainable consumption mean?
- The Concept of SC
- Sustainability + Consumption
 - Consuming LESS
 - Consuming DIFFERENTLY
 - Consuming RESPONSIBLY
 - Consuming ETHICALLY

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Sustainable Consumption

- Consuming **LESS**
 - Reducing the amount of consumer goods
 - Reducing the amount of waste from consumption activities
- Consuming **DIFFERENTLY**
 - Developing newer ways of consuming, different from dominant, common ways
 - E.g. pleasant inconvenience: enjoying pleasure from being inconvenient

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Sustainable Consumption

- Consuming **RESPONSIBLY**
 - Choose products that have low emission level of CO₂
 - Choose organic products
 - Using shopping bags
 - Extending durations for consumption
 - No leftover
- Consuming **ETHICALLY**
 - Choose products that are made through ethically right process

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Consumer Citizenship

- **Consumers as a political agent**
- Consumers have a power to control the market
- Consumers have a power to control the way products are made
- Consumers have a power to control what kind of products can be sold in the market
- Green consumers as a political agent can change the production sphere of the economy

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2/ Waste Generation, Management and the Environment

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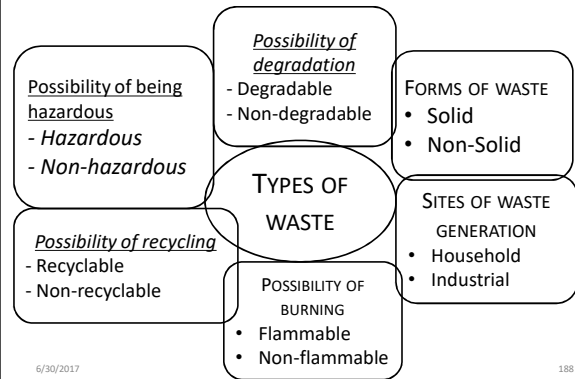
Waste

- A product turning into a useless form
- The final output after consumption is completed
- Nature turns into no value for humans
- When the use *value* of a product is totally lost
- Waste = Something useless (no value)
- However, an expiry date for a product in terms of use *value* can differ for each consumer

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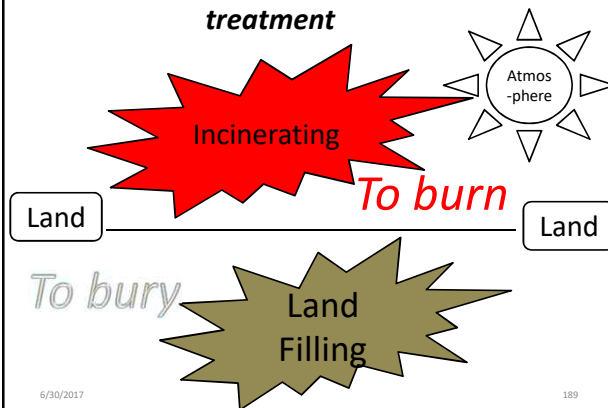
Types of Waste



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The current methods of waste treatment



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Distribution of waste treatment facilities in S Korea – landfill

Owner, manager	Landfill size total (10,000m ²)	Landfill size remained (10,000m ²)	Amount of waste buried in 2008 (10 000 ton)
Public	15 085	6 488 (54%)	431
Private	13 925	5 637	815
Total	29 010	12 125 (42%)	1 246

As of 2008 (ref. Statistical book of environments, Ministry of Environment)

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Incinerator facilities

Owner, manager	Number of incinerator facilities (1 unit)	Incinerating capacity (ton/1hour)
Public	177	572
Private	775	493
Total	952	1 065

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Business of waste management

- Rubicon Global, (US company)
- **Developing environmentally brilliant ideas about recycling** and connecting business sectors that deal with recycling



Nate morris



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Sustainability and waste managem

- **REDUCING *the amount of waste*** – zero waste society
 - No waste left after consumption completed – e.g. Laviza's edible coffee cup
 - No packaged for products – e.g. a German supermarket
<http://www.youtube.com/watch?v=W3Gu4qTvbJU>
 - New concept for lifestyle, marketing
 - <https://www.youtube.com/watch?v=pF72px2R3Hg>
 - <https://www.youtube.com/watch?v=GgBpyNsS-jU>



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- **Using *alternative, environmentally friendly packages***; so that they don't have negative environmental impact when either burnt or buried
- **Increasing *recycling rate of waste***: waste becoming raw material, energy sources

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Alternative Indicators for the Economy

- GNP (per capita): Gross National Products
- GNI (per capita): Gross National Income
- GINI Index
- Only considering the production sphere of economic activities
- Environmental impact of production, consumption, and waste treatment should be considered

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Beyond environmentally friendly

- *Environmentally innovative*
- *Environmentally smart*
- Considering in full length possibly negative impacts of production, consumption, waste treatment upon natural environment
- Innovative ideas, technologies, life style changes for having well balanced relationships with natural world

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3/ Conclusion

- The economy intricately relates to natural environment
- Natural environment plays a significant role for the economy as a provisionary repository for providing raw materials and energy sources
- Also, once products are lost their use value and become waste, natural environment functions as a depository for burying waste; and absorbing gases from incinerating waste
- Therefore, to keep natural environment health is to keep human society healthy in terms of securing economic activities

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7/ Energy and Society

WEEK 11

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Lecture Contents

1. Transformations of Society and Energy Sources for Productions
2. Energy Systems
3. Energy Citizenship and Sovereignty
4. Conclusion

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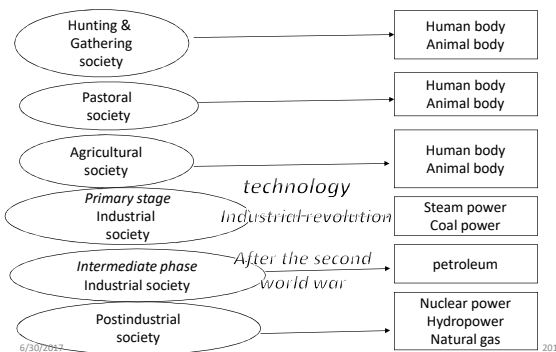
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1/ Transformations of society and energy sources for production

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Transformation of human society and energy sources for production



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The workings of society and energy sources

- Energy is the essential component for society
- Without energy power, society stops to work
- Each type of human society organization through evolution history, key dominant energy sources have changed
- Of particular, petrol-dependent society came after the Second World War

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The meaning of "energy"

Table 4.1 Summary of ways of representing energy

Energy as:	Important properties	Central values	Interest groups
Commodity	Supply, demand, price	Choice, individualism, private sector provision of energy services	Energy producers, consumers with sufficient resources (fuel rich)
Ecological resource	Resource depletion, environmental impacts	Sustainability, frugality, choice for future generations, preference for renewables	Future generations, green movement
Social necessity	Availability to social groups, meeting essential needs	Equity, justice	The poor (fuel poverty) and other vulnerable social groups
Strategic material	Geopolitics, availability of domestic substitutes	National military and economic security	Military, energy suppliers

Source: Adapted from Stern and Aronson (1984)

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Fossil fuels/ non-renewable energy sources

- Fossils that are created by geological activities of the Earth
- With the light of fire, it flames and creates energy power
- E.g. Coal, petrol, natural gas, nuclear energy
- When burnt they emit carbon dioxide-> the cause of the greenhouse effect resulting in climate change
- When used up, it takes so long years to recover: Non-renewable energy

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Non-fossil fuels/ renewable energy sources

- Any substances that exist in nature that can turn into energy forms
- *E.g.* biomass, wind, water/hydro, solar, soil heat/geothermal, etc
- Compared to fossil fuels, energy power of RES is less strong
- Compared to fossil fuels, the degree of CO₂ emission is low; therefore, considered as environmentally friendly energy sources

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Change in Energy consumption-1970s, 1990s (US, World)

ENERGY AND THE ENVIRONMENT

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Table 5.1 Energy Consumption, 1970s and 1990s: United States and World Total

	PERCENT USED			
	United States (1972)	World (1970)	United States (1994)	World (1993)
Energy Supply				
Coal	17.2	32.1	22.9	25.1
Petroleum	41.9	42.8	40.7	37.6
Natural gas	35.9	18.5	25.0	24.1
Hydroelectricity	4.2	6.2	3.4	6.8
Nuclear energy	0.8	0.4	8.0	6.4

SOURCE: U.S. Bureau of the Census, 1997, pp. 584 and 589.

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Nuclear Energy and Risk Society

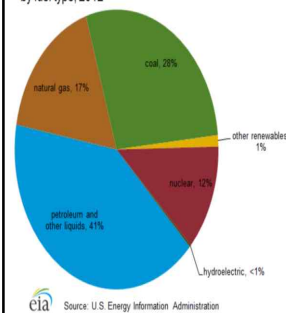
- Accidents of Nuclear Power Plants
- The Chernobyl accident in 26 april 1986
- U Beck had an insight of risk society thesis from the Chernobyl accident
- Manufactured risks

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S. Korea, 2012

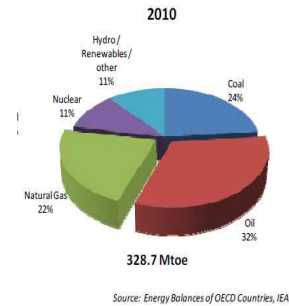
South Korea total primary energy consumption by fuel type, 2012



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Germany, 2010

Germany total primary energy consumption by fuel type, 2010

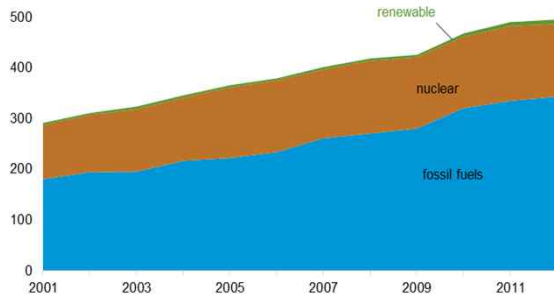


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South Korea's net electricity generation by type, 2001-12

billion kilowatt hours

600



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Source: U.S. Energy Information Administration

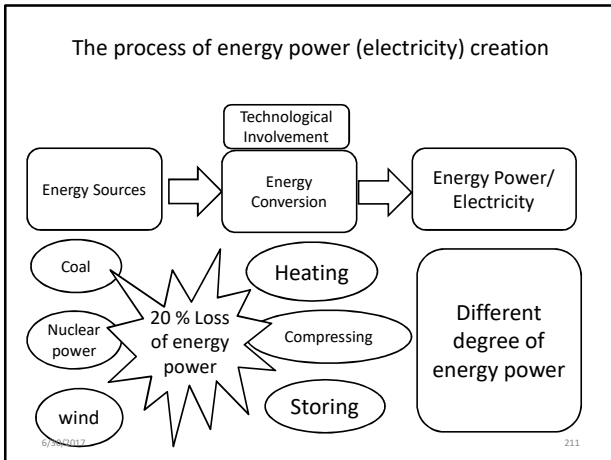
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Technology and energy efficiency

- Maximizing energy efficiency
- **To reduce loss of energy power through energy creation process**
- From raw materials of energy sources to energy power
- Technological involvement for creating energy power from raw materials
- However, in the energy conversion process about 20 percentage of energy power lost
- Technological innovation can reduce the loss of energy power

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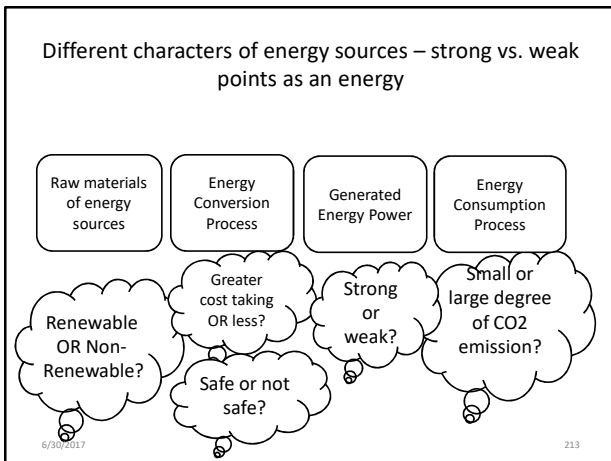
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Energy efficiency in energy consumption

- Reducing loss of energy power during consumption process
- Certified system of efficiency in energy consumption labelled at certain manufactured products
- E.g. refrigerator, passenger car, microwave, etc
- Then, it is important how much this labelling system is effective to attract consumers to decide their purchasing behaviors

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Energy transition in the 21st century

- **Sustainability transition**
 - from using non-renewable energy sources to renewable energy sources
 - Target to achieve low carbon society
 - *Clean Development Mechanisms*: one of methods recommended in the Kyoto Protocol to reduce the greenhouse effect
- **Increasing energy efficiency**
 - Recommended in the Kyoto Protocol to reduce the greenhouse effect

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Wind energy development in S Korea

- South Korea imports 97 % of energy resources
- Energy dependency is significantly high
- Wind energy development is :
 - To increase energy sovereignty by securing energy production by capturing wind within the national territory
 - To achieve low carbon society
- Implementation measure of Green Growth
- Recommendation measure by the Kyoto Protocol

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Wind energy business in S Korea

- Korean firms entered the wind industry in 2006
- Nine firms have played as a major developer for wind turbine technology and also wind turbine construction
- They are: Daewoo, Doosan, Hyosung, Samsung, Hyundai, Hanjin, STX (formerly Ssangyong), Rotem, and Unison

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- The Korean wind industry focuses upon developing advanced wind power technology and particularly offshore wind technology, this targeting overseas market
- Due to less potential for domestic market Korean company of wind industry aims to sell their technology and products overseas
- Unison built a factory even in China to compete with the Chinese for the turbine market in China

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Constructions of wind farms: NIMBY-ism or PIMFY-ism?

- **Public attitudes towards constructions of wind farms**
 - Wind farms involve siting wind turbines at local places
 - The wind turbines are very tall – the tallest 220 meters in Denmark
 - Even though people agree with wind energy development plan, people do not want wind turbines to be located at their residential places
 - In Europe, Australia, N America, this social phenomenon is called NYMBY-ism to wind turbines siting

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Wind farms in Jeju Island



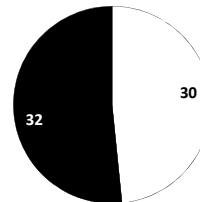
- Jeju Island has been famous for strong, plenty of wind
- Wind in the past being considered hindering local livelihood's activities – such as farming, fishing, in the 21st century Jeju Island's wind has represented new meaning as a life supporting base for local people

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Wind turbines in Jeju Island (as of 2012)

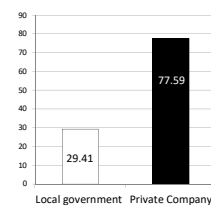
Number of tubines by ownership



□ Local government ■ Private Company

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Production capacity of wind turbines by ownership (unit: megawatts)



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Wind turbines in Jeju Island



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New crops for local development

- The major industry for islanders' livelihoods is the primary and the tertiary industry
- The primary industry: fishing and farming activities
- The tertiary industry: tourism – the most visited tourist destination within S Korea
- The primary industry being waning – particularly the fishery industry with negative marine ecosystem change, wind farms have provided a new income source for local people through compensation arrangement for using their lands
- The case of PIMFY-ism (Please In My Front Yard)

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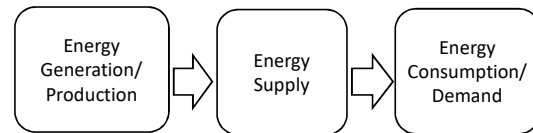
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2/ Energy Systems

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Energy Systems



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Energy Systems

- Interconnected mechanisms of energy production/generation, supply and consumption
- Indicates how a society works in relation to energy
- Indicates how members of society relates to nature in terms of energy production, supply, and consumption
- Energy production/generation indicates the capacity of a country to produce energy power with their own resources and technology - *energy sovereignty of a country*

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- Energy supply indicates the governance system of energy in society – *centralized, de-centralized system; robust, flexible*
- Energy consumption indicates the size of economic activities (production, consumption) of a society
- As the economic size is getting bigger, and the population is increasing, the demand for energy supply is greater

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Where do generated energy power go?

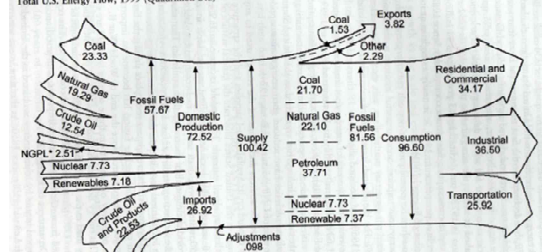
- **The Economic Production – The Industry sector**
 - The primary industry sector
 - The secondary industry sector
 - The tertiary industry sector
- **The Consumption**
 - Household
 - The transportation sector

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An Example of Energy Flow Chart, 1999 (USA)

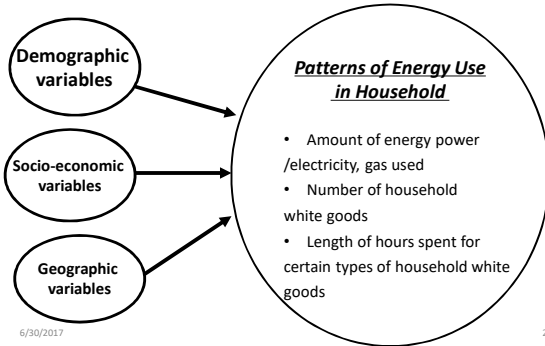
Figure 8.1
Total U.S. Energy Flow, 1999 (Quadrillion Btu)



NGPL = Natural Gas Plant Liquids.
Source: U.S. Energy Information Administration, Annual Energy Review, 1999.

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Framework for an empirical study - Energy use in household



3/ Energy Citizenship and Sovereignty

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Energy Citizenship

- The public beyond simply considered as *consumers* of energy
 - The public as a political agent who can influence the process of the energy system
 - The public as a civic actor who is responsible for his/her use of energy resources
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Energy Sovereignty/Security

- Ability of a nation state to obtain energy sources within their territory
 - Otherwise, energy sources have to be imported from other countries
 - It increases *energy dependency* upon other nations that have much energy sources
 - It increases vulnerability to international politics and the fluctuation in prices of energy sources
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4/Conclusion

- Energy power enables society to operate properly; without energy power, society stops to function
 - Human society has used different energy sources through different time periods in the evolution history
 - The key challenge in energy use in the 21st century is how to secure sustainable provision of energy sources and to transit to non-fossil fuels
 - While S Korea being heavily dependent upon overseas energy sources, transition to renewable energy is emerging with Jeju Island having been a mecca of wind farm constructions
 - In the sustainability transition of energy use, the public should be considered as citizen, rather than just end users
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8/ Environmental Perceptions, Attitudes, and Behaviors

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Lecture Contents

1. Collectivity of people and membership references
2. Membership categories and understandings about environmental problems
3. Results of empirical analyses
4. Conclusion

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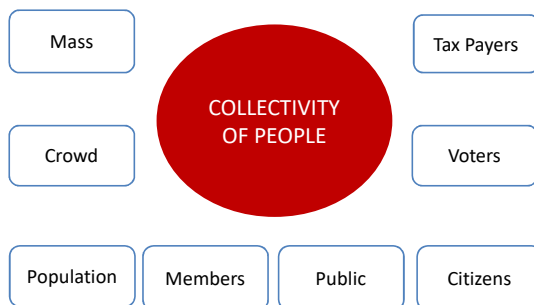
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1/ Collectivity of People

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Collectivity of People



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Reference Categories of Membership for Constituting of Society

- **Occupations:** what do you do for a living?
- **Employment status:** are you employed in labor market?
- **Income (household, Individual):** how much do you earn per month?
- **Wealth:** the ownership of buildings, land
- **Social class:** what is your role at work place?
- **Gender:** male or female?
- **Race:** which racial groups do you belong to?

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- **Age groups:** in which year are you born?
- **Educational attainment:** how long have you attended educational institutions?
- **Religious affiliations:** which religious institution do you belong to?
- **Marital status:** are you single, married, or divorced?
- **Ethnicity:** which language do you speak at home?
- **Residential places:** where are you living?
- **Political ideology**
- **Political party identification**
- **What else?**

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Location of an Individual in Society

- **Socio-economic factors:** *social class, occupations, income, wealth*
- **Socio-cultural factors:** *religious affiliation, ethnicity, marital status*
- **Socio-demographic factors:** *gender, age groups, race*
- Socio-demographic factors define one's ascribed status
- Socio-cultural, socio-economic factors define one's achieved status
- The factors define where an individual is located at in society

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Social groups and social identity

- Individuals who belong to same categories of reference are considered similar to each other in terms of psychological, behavioral characters – similar social identity
- Social psychological basis for *networking*
- Social psychological basis for *social movements*
- Different social groups who belong to different categories are likely to develop different social identity
- Conflicts among different social groups
- The confrontational line, violence (war), hate crime

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2/ Membership Categories and Understandings about Environmental Problems

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Membership Categories and Understandings about Environmental Problems

- Then, whether do certain membership categories one belongs to affect his/her understandings for environmental problems?
- If so, in what way? And why?
- Public opinion survey and large sampled social survey
- The key research topic when ES emerged in the 1970s in the US

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Profiles of environmental movement organizations

- The upsurge of modern environmental movements in the 1970s, 1980s in the US
- Profiles of Leaders, activists of environmental movement organizations
- Do they hold different characters – demographic, socio-cultural, socio-economic – from general public?

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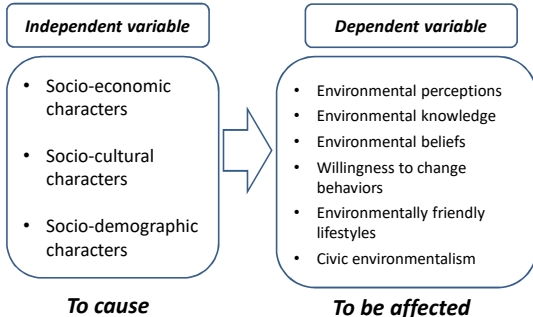
Aspects of environmental understandings

- Environmental Perceptions, Awareness
- Environmental Knowledge
- Environmental Beliefs
- Willingness to change behaviors for the sake of the environment
- Environmentally friendly lifestyles, green behaviors
- Civic environmentalism – voting, participations in green movement

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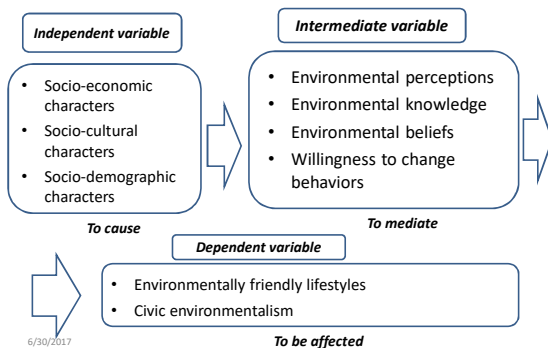
Analytical Framework 1



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Analytical Framework 2



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Measures and statistical significance

- Sets of question items that represent each aspects of environmental understandings
- Response patterns to the question items can be statistically tested with probability of significance level ($P=0.10, 0.05, 0.01$)
- Analysis of variance (ANOVA), multiple regression analysis, chi-square test

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3/ Hypotheses and Findings

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Hypotheses

- Within quantitative study settings, hypotheses state that certain groups defined by specific characters are more/less likely to be environmentally friendly
- *In terms of:* perceptions, awareness, knowledge, willingness, lifestyle, voting, participation

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Findings

- ISSP (International Social Sciences Program) Survey 2010 – the case of S Korea

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The ISSP Survey– the case of S Korea

- Data collected in 2010
- Survey research center in *Seongkyunkwan* Univ. in Seoul
- Simple random sampling
- 1,576 samples collected on a national basis

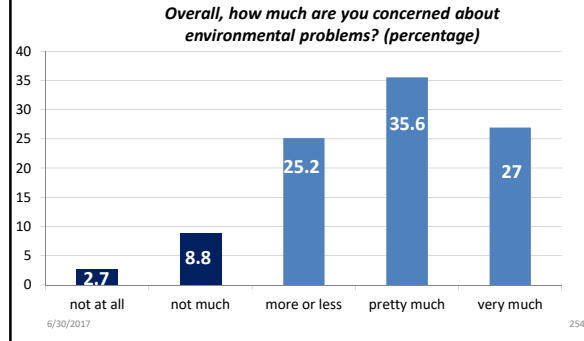
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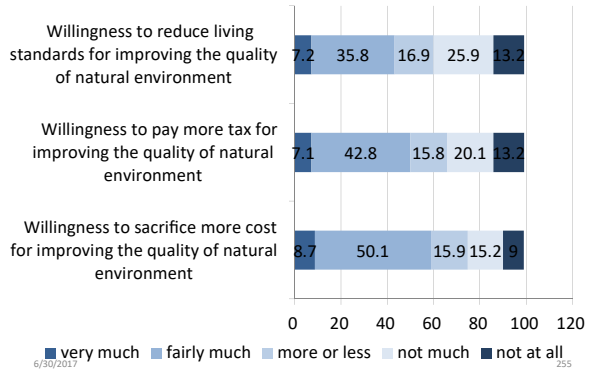
Response Patterns to the Independent Variables

Independent Variable	Distribution of responses in the sample (%)
Gender (n =1 576)	Male (47.2) Female (52.8)
Age group (n = 1 570)	18-39 (42.2) 40-59 (36.7) 60+ (20.7)
Educational attainment (n =1 574)	Primary level schooling (14.3) Secondary level schooling (38.9) Tertiary level schooling (40.7) Postgraduate study (5.9)
Monthly household income (n =1 379)	0-999 USD (13.4) 1,000-2,499 (19.7) 2,500-4,499 (28.7) 4,500-7,499 (17.7) 7,500-9,999 (3.9) 10,000+ (4.1)
Self-ascribed status of social stratification (n = 1 563)	The bottom (6.2) the lower (36.8) the middle (44.3) the upper (11.6) the top (0.3)
Political ideology (n =1 491)	The left (31.2) The center (32.9) The right (30.4)
Religiosity (n =1 556)	Strong (23.6) Middle (22.4) Weak (52.7)
Religious affiliation (n =1 576)	Buddhism (24.2) Christianity (24.0) Catholic (7.6) Other (1.0) The nonreligious (43.3)

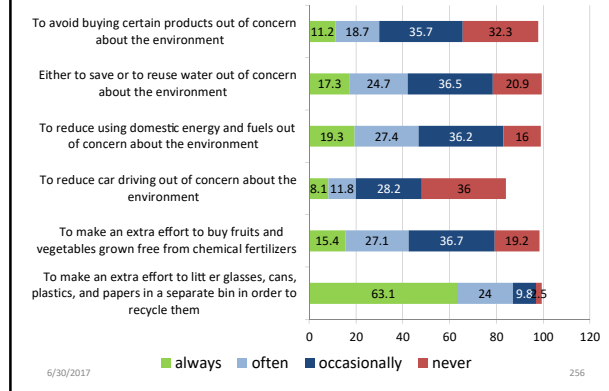
Response Patterns to the Dependent Variables



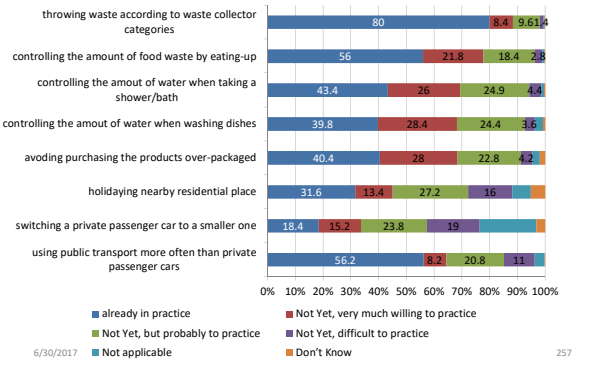
Monetary commitment for the environment (%)



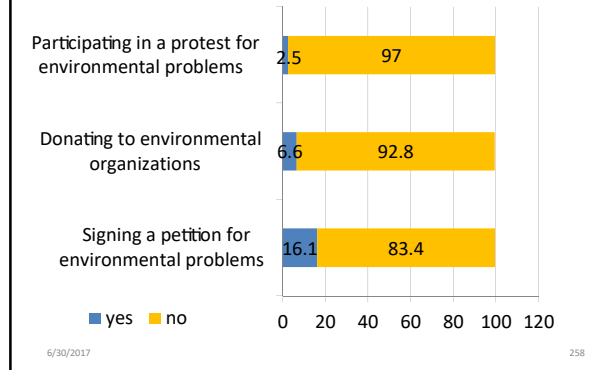
Practicing everyday behaviors in an environmentally friendly way



A willingness pattern for everyday low carbon practice in S Korea (N=500, data collected in 2006)



Practicing civic engagement in environmental issues



Concern about environmental problems						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	3.617 (.080)***	3.368 (.155)***	3.375 (.174)***	3.293 (.177)***	3.291 (.176)***	3.360 (.180)***
Female¹	.081 (.052)***	.090 (.053)***	.097 (.056)***	.099 (.057)***	.069 (.058)*	.075 (.058)**
Age	.020 (.002)	.054 (.002)	.069 (.002)*	.090 (.002)**	.057 (.002)	.048 (.002)
Educational attainment		.059 (.022)	.054 (.025)	.037 (.025)	.022 (.025)	.007 (.026)
Household income			.028 (.006)	.023 (.006)	.019 (.006)	.018 (.006)
Self-ascribed social stratification status			-.031 (.018)	-.027 (.018)	-.027 (.018)	-.029 (.018)
Political ideology ²						
The right				.010 (.069)	.008 (.068)	.008 (.069)
The left				.087 (.068)**	.079 (.068)*	.080 (.068)**
Religiosity					.137 (.011)***	.179 (.019)***
Religious affiliation ³						
Buddhists						-.062 (.089)
Christians						-.053 (.123)
Catholics						.003 (.135)
R-squared	.007	.009	.012	.021	.038	.042
Adjusted R-squared	.006	.007	.009	.016	.032	.034
N	1,558	1,556	1,363	1,315	1,302	1,288 ²⁵⁹

Willingness to pay more tax, price, and to reduce living standards out of concern about the environment							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	9.944 (.228)***	6.735 (.430)***	5.831 (.478)***	5.623 (.488)***	5.523 (.486)***	5.638 (.493)***	3.424 (.538)***
Female¹	-.109 (.148)***	-.069 (.147)**	-.075 (.156)**	-.069 (.156)**	-.092 (.159)**	-.080 (.160)**	-.102 (.155)***
Age	-.020 (.005)	.135 (.005)***	.171 (.006)***	.188 (.006)***	.166 (.006)***	.168 (.006)***	.157 (.006)***
Educational attainment		.270 (.061)***	.218 (.070)**	.212 (.069)**	.208 (.069)**	.204 (.070)**	.203 (.068)**
Household income			.043 (.018)	.037 (.017)	.035 (.017)	.030 (.017)	.024 (.017)
Self-ascribed social stratification status			.102 (.049)**	.095 (.049)**	.093 (.045)**	.087 (.049)**	.093 (.048)**
Political ideology ²							
The right				-.011 (.189)	-.013 (.188)	-.019 (.189)	-.027 (.183)
The left				.088 (.187)**	.083 (.186)**	.084 (.243)**	.062 (.181)**
Religiosity					.115 (.03)***	.129 (.053)**	.090 (.051)
Religious affiliation ³							
Buddhists						-.073 (.243)*	-.059 (.236)
Christians						-.016 (.337)	-.005 (.326)
Catholics						.021 (.369)	.019 (.356)
Environmental concern							.238 (.075)***
R-squared	.012	.059	.073	.080	.095	.102	.156
Adjusted R-squared	.011	.057	.070	.075	.090	.094	.148 ¹⁶⁰
N							1,288

Practicing everyday behaviors in an environmentally friendly way								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	10.397 (.251)***	9.193 (.474)***	9.256 (.538)***	9.236 (.546)***	9.117 (.546)***	9.256 (.554)***	6.736 (.606)***	6.019 (.607)***
Female¹	.139 (.161)***	.152 (.163)***	.156 (.174)***	.162 (.175)***	.146 (.178)***	.143 (.180)***	.125 (.175)***	.147 (.174)***
Age	.220 (.005)***	.271 (.006)***	.267 (.007)***	.277 (.007)***	.260 (.007)***	.241 (.007)***	.229 (.007)***	.196 (.007)***
Educational attainment		.091 (.067)**	.091 (.078)*	.077 (.078)*	.072 (.078)*	.062 (.079)	.059 (.077)	.022 (.077)
Household income			-.030 (.020)	-.040 (.020)	-.041 (.019)	-.042 (.020)	-.046 (.019)	-.054 (.019)
Self-ascribed social stratification status			.015 (.054)	.007 (.055)	.007 (.055)	.009 (.056)	.015 (.054)	.004 (.053)
Political ideology ²								
The right				.000 (.212)	-.006 (.212)	.000 (.213)	-.002 (.207)	.003 (.204)
The left				.053 (.209)	.043 (.209)	.049 (.210)	.029 (.204)	.016 (.202)
Religiosity					.098 (.033)***	.149 (.059)***	.105 (.058)**	.092 (.057)
Religious affiliation ³								
Buddhists						.004 (.373)	.019 (.365)	.029 (.362)
Christians						-.066 (.378)	-.055 (.367)	-.056 (.361)
Catholics						-.006 (.416)	-.007 (.404)	-.013 (.397)
Environmental concern							.239 (.084)***	.196 (.086)***
Willingness to pay								.182 (.182)***
R-squared	.068	.073	.076	.088	.099	.100	.147	.184
Adjusted R-squared	.067	.071	.072	.083	.093	.093	.155	.261
N								.176

Practicing civic engagement in environmental issues								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	1.332 (.043)***	.806 (.081)***	.780 (.094)***	.751 (.098)***	.748 (.099)***	.773 (.100)***	.620 (.113)***	.471 (.113)***
Female²	-.032 (.028)	.002 (.028)	.010 (.030)	.015 (.031)	.002 (.032)	.001 (.032)	-.005 (.032)	.017 (.032)
Age	-.040 (.001)	.095 (.001)**	.090 (.001)**	.097 (.001)**	.081 (.001)*	.061 (.001)	.057 (.001)	.023 (.001)
Educational attainment		.235 (.011)***	.201 (.014)***	.186 (.014)***	.179 (.014)***	.175 (.014)***	.176 (.014)***	.132 (.014)***
Household income			.085 (.003)**	.080 (.004)*	.078 (.004)*	.066 (.004)*	.064 (.004)*	.058 (.003)
Self-ascribed social stratification status								
Political ideology ²								
The right				-.004 (.038)	-.006 (.038)	.000 (.038)	-.001 (.038)	.006 (.038)
The left				.077 (.038)**	.075 (.038)*	.078 (.038)*	.070 (.038)*	.059 (.038)
Religiosity					.067 (.006)**	.181 (.011)***	.166 (.011)**	.149 (.011)**
Religious affiliation ³								
Buddhists						-.041 (.049)	-.036 (.049)	-.023 (.049)
Christians						-.135 (.068)**	-.131 (.068)**	-.132 (.067)**
Catholics						-.059 (.075)	-.059 (.075)	-.065 (.074)
Environmental concern							.082 (.016)**	.029 (.016)
Willingness to pay								.215 (.006)***
R-squared	.003	.038	.046	.048	.052	.056	.062	.101
Adjusted R-squared	.001	.036	.043	.043	.047	.048	.053	.092
N	1,561	1,559	1,364	1,313	1,300	1,286	1,283	1,275

4/Conclusion

- Members of society can be differentiated into many different groups according to demographic, cultural, and economic references
- Whether or not different memberships of certain reference categories makes it difference in environmental perceptions, knowledge, belief, willingness, behavior has stand an important research inquiry for environmental sociologists
- According to the ISSP 2010 Survey data that tested 1, 576 samples collected from South Korean population, demographic, cultural, and economic factors do make difference to diverse aspects of environmental understandings

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9/Discourses of Global Environmental Politics

WEEK 13

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Lecture Contents

1. A brief history of environmental problems as a global agenda
2. The case of global actions: climate change
3. Discourses of global environmental politics (GEP)
4. Conclusion

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1/ A brief history of environmental problems as a global political agenda

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1970s

- International meetings/events for discussing environmental problems
- The year 1972 in Stockholm, Sweden
- The United Nations Conference on Human Environment
- The very first *international* conference on environmental problems
- Attended by developed nations only
- The key topic for discussion: possible unavailability of **natural resources** for continuing economic growth

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Institutionalizing environmental problems on a global scale

- Founding United Nations on Environment Program (UNEP) after the conf
- Headquartered in Nairobi, Kenya



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The Club of Rome

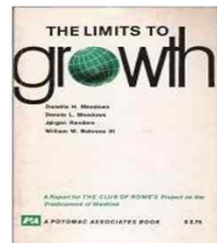
- Founded in 1968
- A circle of scientists based in Rome
- Italian industrialist Aurelio Peccei & Scottish scientist Alexander King initiated the group
- Transferring headquarter to Winterthur, Switzerland from July 2008
- Global think tank for future studies



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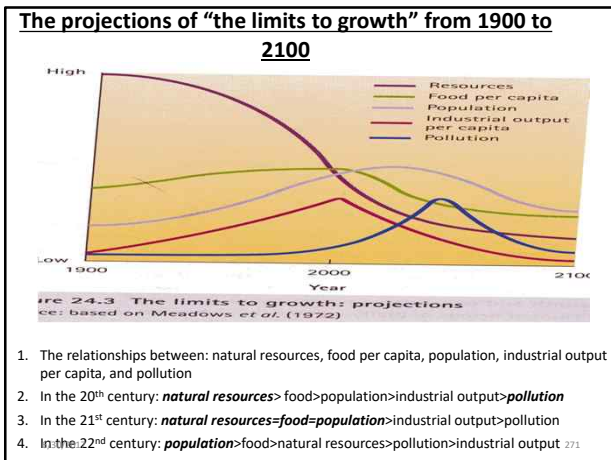
The limits to growth

- A book published in 1972 by four scientists affiliated with the club of Rome
- The key argument of the book is that the world economy cannot keep growing due to possible shortage of natural resources
- The history of industrial production will end at the 22nd century due to unavailability of natural resources



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The limits to growth thesis

- Natural resources that were abundant in the 19th century keep decreasing until the 22nd century
- Industrial output keeps increasing until the 21st century; however once it hits the top in the 21st century, it keeps decreasing into the 22nd century
- As a result, the industrial output in the 22nd century almost equals to that of the 19th century
- In the 22nd century, population exceeds food per capita; therefore, food provision is a problem

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1980s

- World Commission on Environment and Development (WCED) under the auspices of UN set up in 1983
- Leader of the Commission was then environment minister of Norway, Gro Harlem Brundtland (1939-)
- Being a prime minister (1981. 2.-1981.10/1986.5-1989.10/1990. 11-1996. 10)
- The commission proposed "Environmentally Sound and Sustainable Development" (ESSD) as social development ideology on a global level for the 21st century
- Published a commission report, *Our Common Future* in 1987

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1990s

- United Nations Conference on Environment and Development in Rio de Janeiro, 1992; 20 years after the Stockholm conf
- The very first international meeting attended by political leaders of both developed and developing nations
- ESSD adopted as a key direction for social development for both developed and developing nations
- Emphasized global cooperation and actions for achieving the aim

• Rio+10, 2002 in Durban/ Rio+20, 2012 in Rio

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ESSD

- Sustainable Development is defined as:
 - Development that meets the needs of the present without compromising the ability of future generations to meet their needs
- The key conceptual components of ESSD:
 - intra-equality equality between developing and developed countries
 - inter-equality equality b/w current and future generations
 - The aim of economic development: to fulfil the need of human beings

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- Maintained the necessity to continue economic development
- However, it acknowledged the limit of natural environment

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International Panel on Climate Change

- Climate change has been the key phrase in global environmental politics since the mid 1990s
- For global actions, greenhouse gases reduction targeted to achieve
- 1997 Kyoto Conference: the Kyoto Protocol

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- Establishing IPCC as a task force for observing, designing, and preparing strategies for GHG emissions for a global level
- United Nations Framework Convention on Climate Change (UNFCCC)
- Series of Conference of the Parties (COP) from 1995 to 2012
- COP1 (1995)-COP18 (2012, the final year targeted by the Kyoto Protocol for reductions of GHS emissions)

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2000s

- 2002, Rio+20 conf in Durban
- 2012, Rio+30 conf in Rio
- Specifying, designing further actions for the Kyoto protocol

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2/ The case of global actions: climate change

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Climate change and greenhouse gases

Naturally Produced

- Water vapor
- Carbon dioxide (CO₂)
- Methane
- Nitrous oxide
- Ozone

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Produced Directly by Human Activities

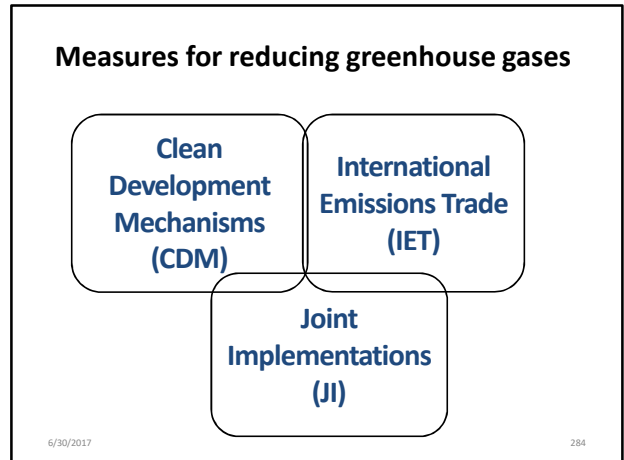
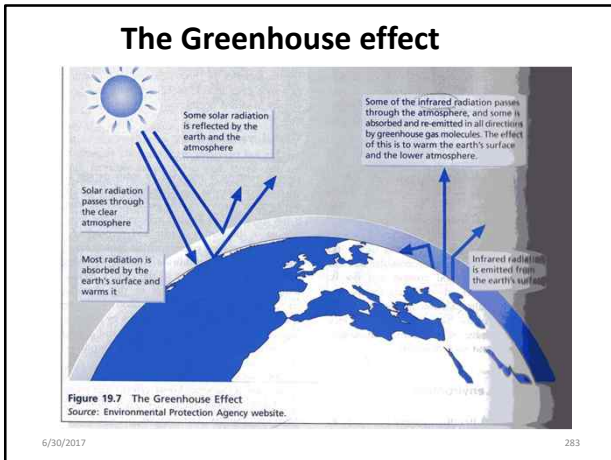
- **CO₂**: when solid waste is burnt; When fossil fuels (petrol, natural gas, coal) are burnt; when trees are burnt; products made with timbers are burnt
- **Methane**: when fossil fuels are extracted and delivered; when solid waste are decayed; when livestock is raised
- **Nitrogen monoxide**: agricultural, industrial activities are carried out; solid waste, fossil fuels are burnt

Produced Indirectly by Human Activities

- **Chlorofluorocarbons (CFCs)**: refrigerants, byproducts of air conditioners
- **Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs)**: Emitted through industrial processes

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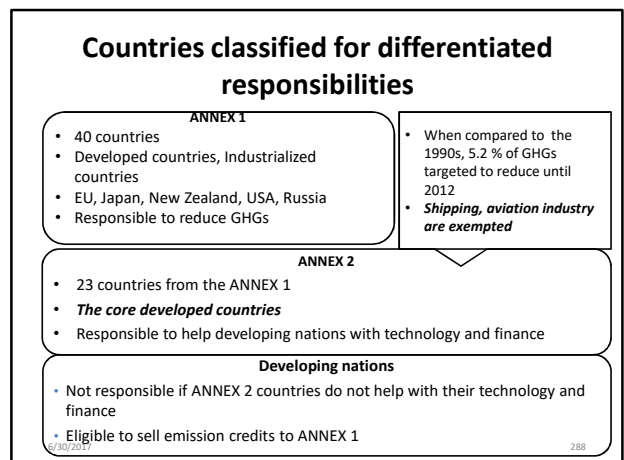
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- ### CDM
- Commenced in 2001, and ended 2012
 - 1.5 billion tons of carbon dioxide expected to be reduced
 - **Target areas: by using renewable energies, by increasing energy efficiency, by switching fuels**
 - Certified Emission Reductions (CERs) granted
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- ### International Emissions Trade
- Trading Greenhouse gases emission
 - Cost for reducing GHG emission differ among countries
 - Those countries belonged to ANNEX 1 can reach the targeted level through IET by saving the costs
 - Those countries where reduction costs are least are given a priority to reduce
 - This measure is designed to maximize the efficiency of Kyoto protocol in its implementation
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- ### Joint Implementation
- Commenced since 2008
 - Targeted to reduce until 2012 One tenth of amounts of CO2 that is reduced by CDM
 - A country which belongs to Annex 1 can reach their reduction target in other countries in annex 1
 - Emission Reduction Units (ERUs)
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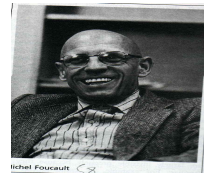


3/ Discourses of Global Environmental Politics

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Discourse Analysis



- Michelle Foucault (1927-1984)
- French philosopher
- *Archeology of knowledge*
- Analyze the transition to modern society in France (Europe) by looking at how discourses about certain social groups – of particular, the mentally ill, the criminal – had transformed
- Discourse formations are influenced by power relationships in a society
- Discourse analysis as a research method for analyzing language performances in styles and contents

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Global Environmental Politics (GEP)

- Environmental *policy* discourses that have their own storylines, reasonings, and identifications for causes-solution measures for environmental problems
- The solution is targeted for global actions/cooperation

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Discourses of GEP

- John Dryzek, *The Politics of the Earth: Environmental Discourses* (3th ed. 2014)
- This book analyzed discourses of global environmental politics that appeared from the 1970s
- The first, second edition published in 1997, 2005
- Literature among the most cited in GEP

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Analytical Schemes for DGEP

Questions to ask about discourses

- Basic entities recognized or constructed
- Assumptions about natural relationships
- Agents and their motives
- Key metaphors and other rhetorical devices

Questions to assess the effects of discourses

- Politics associated with the discourse
- Effect on policies of governments
- Effect on institutions
- Social and cultural impact
- Arguments of critics
- Flaws revealed by evidence and argument

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Four typologies of discourses of GEP

Solution measures	Political actions demanded	
	Reformist	Radical
Prosaic/non-imaginative	1/ Problem solving	3/ Limits and survival
Imaginative	2/ Sustainability	4/ Green radicalism

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Problem Solving vs. Sustainability

Environmental Problem Solving

- Taking the political-economic status quo as given
- But in need of adjustment to cope with environmental problems
- Especially through *public policy*

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Sustainability

- Rises in the 1980s
- Imaginative attempts to dissolve the conflicts b/t environmental and economic values that energize the discourses of problem solving and limits
- The concepts of growth and development are redefined

Limits and survival vs. Green radicalism

Limits and survival

- Unchecked economic expansion and population growth will eventually exceed the Earth's stock of natural resources
- The capacity of its ecosystems to support human agricultural and industrial activity to have limits

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Green radicalism

- Reject the basic structure of industrial society
- Debates between social ecologists and deep ecologists
- Debates between green romantics and green rationalities

4/Conclusion

- Environmental problems have been a global agenda since the 1970s
- UNEP was institutionalized in 1972 in order to negotiate environmental issues in an international level
- From 1972, each decade sets a different agenda for negotiating possible policy measures for environmental problems on a global level
- From 1997 Kyoto conf, the key global agenda for environmental issue has been climate change
- According to J. Dryzek (2014), discourses of global environmental politics are categorized into four types: problem solving, limits and survival, sustainability, green radicalism

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10/ The transformations of coastal lines of Jeju Island

WEEK 14

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Lecture Contents

1. Jeju Island
2. Fishing Community in Jeju Island
3. Negative Marine Ecosystem Change in Jeju Island
4. Emerging Forms of Touristic Transformations of Fishing Community in Jeju Island
5. Conclusion

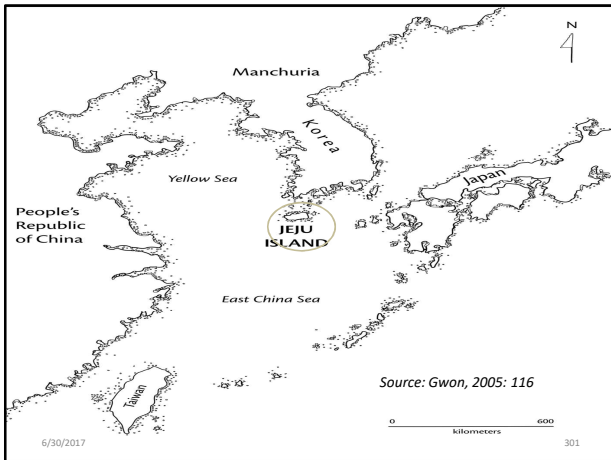
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1/ JEJU ISLAND

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- The island is 32 km long; 74km in wide, with a total area of 1,848km² and its peak, Mt. *Halla* (elevation 1,950m).
- About 620,000 people live in the island. Three quarters of the people live in the north part of the island, especially Jeju city area being concentrated; and another one quarter of the people in the south part.

- Ecologically two different residential regions are formed: one along the coastal lines, the other around Mt Hall area (which 100-300 meters high off the sea level).
- The villages of fishers and women divers are located along the coastal lines. However the distribution pattern in terms of numbers is quite dissimilar.

- ### The Island of Quelpart
- The island of Quelpart as introduced to the western world
 - through Hendrik Hamel's diary of a 13-year stay (1653-1666) in Korea published in 1668 in Dutch language
 - In the English writings, two academic publications available by geographers:
 - H. B. Hulbert, (1905). "The Island of Quelpart", Bulletin of the American Geographical Society 37 (7): 396-408
 - R. Burnett Hall. (1926). "Quelpart Island and Its People", Geographical Review, 16 (1): 60-72

- ### The periphery
- Politically, economically, culturally
 - Political terms: historical legacy of unequal relationship to mainland Korea
 - *Up to the 19th century*: a place for political exiles, a 200-year old ban for mobility to the mainland (1629-ca.1850), tributary relationship to the central power in mainland Korea
 - *The 20th century*: Ideologically charged political turmoil/ the April 3rd (1948-1953)
 - Economic terms: poor, underdeveloped
 - Cultural terms: traditional/un-modernized/unsophisticated

2/ FISHING COMMUNITY IN JEJU ISLAND

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Fishing Village Cooperatives

- Institutional organisational unit for fishing activities
- 100 fishing village cooperatives/ 12 994 members in total, Established drawing upon fishery cooperation law in 1962
- About 8 per cent of the total membership on a national basis; Fishers/women divers (who are active and non active)
- Membership size differing from: 19 to 639 members by fishing community cooperatives
- Common fishing grounds: 15,593 hectare

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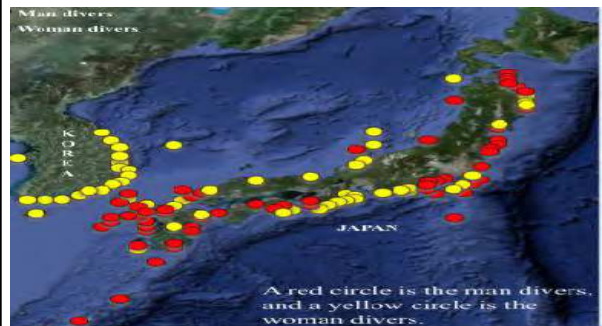
Factors that structure the survival of fishing community in the future

- *Four factors in play*
 - Fishing ground difference: biodiversity
 - Size of women divers in number
 - Natural scenery, sand beached
 - Diversity in sorts of agricultural products

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Wo/men divers in Japan, S Korea



Il, Sun-Ae (2012) P. 49.

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Diving Women of Jeju Island



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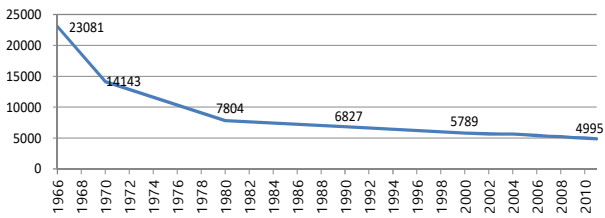
Collecting sea plants, sea shells



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Decrease in Numbers of Women Divers, 1966-2010

Figure 1. Number of Women Divers in Jeju island: 1966-2010



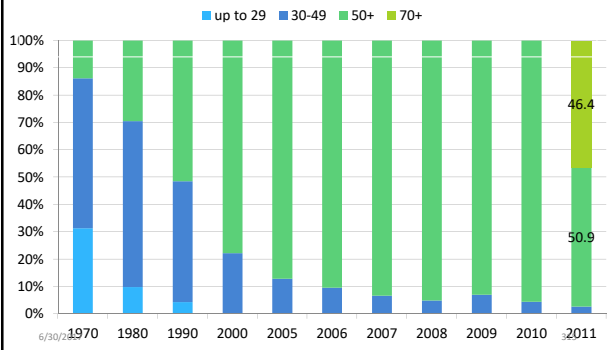
Data: the year 2011, 2010, 2009, Department of Marine Fishery, Jeju Provincial Government

Why decrease of women divers in numbers?

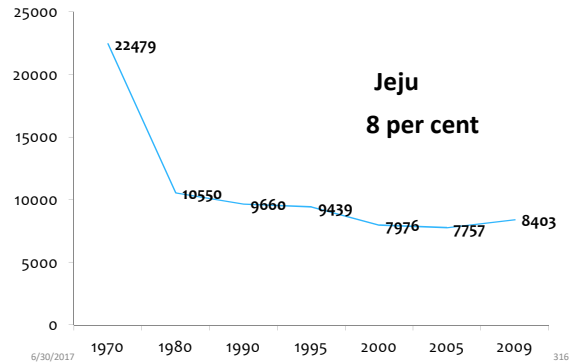
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Change in Age Distribution of Women Divers: 1970-2011



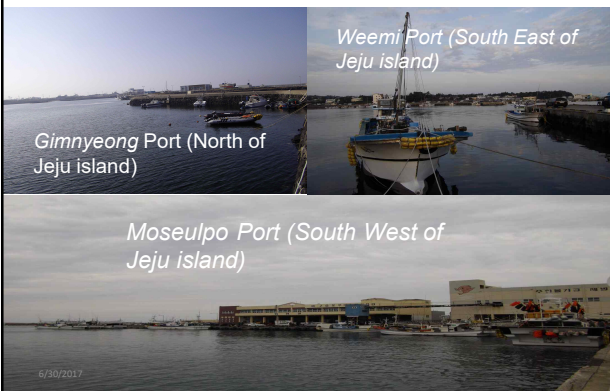
Members of Fishing Community, Fishers/ numbers 1970-2009 (unit/ persons, %)



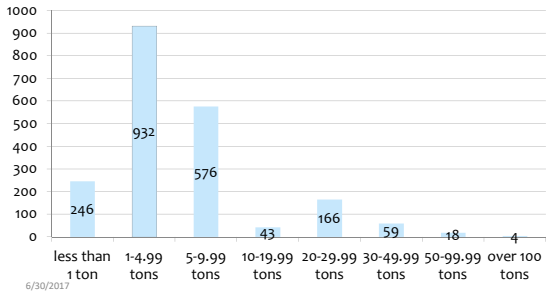
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Fishing Ports



Registration of Fishing Vessels (total number=2,044, as of 2012)



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3/ NEGATIVE MARINE ECOSYSTEM CHANGE IN THE ISLAND

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Spotted in naked eyes

1/ Barren grounds expanding along the coastal lines



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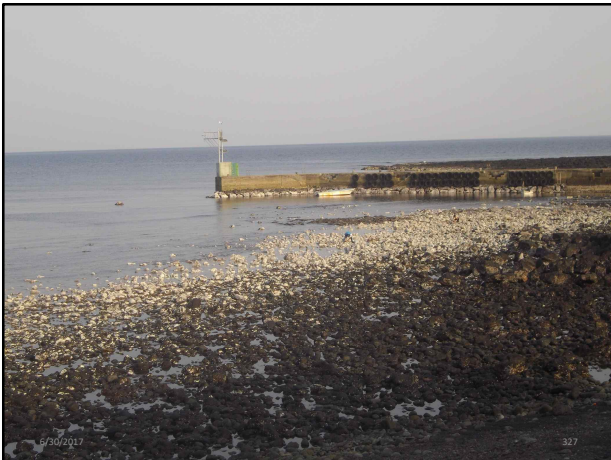
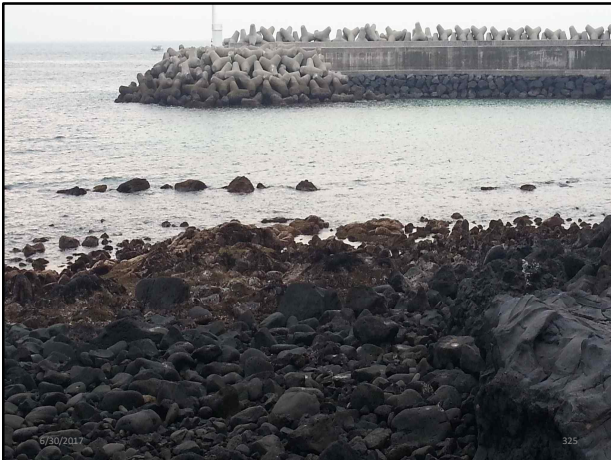


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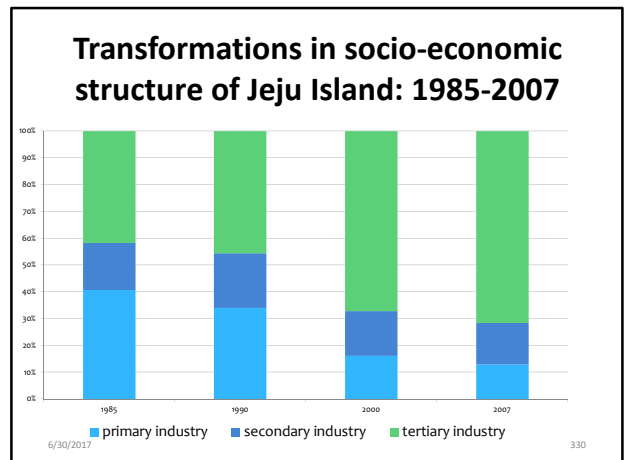
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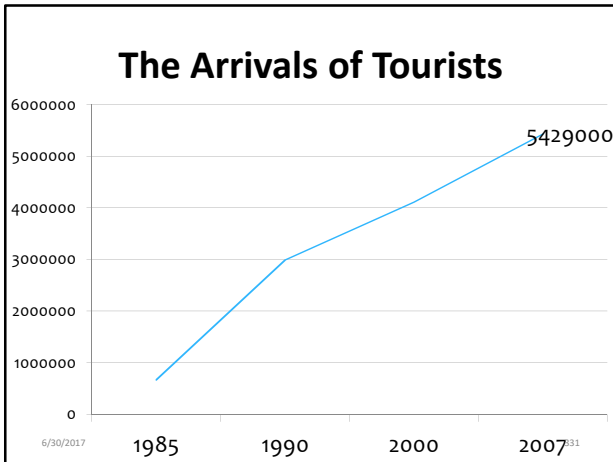


Decline in the amount of fishery products

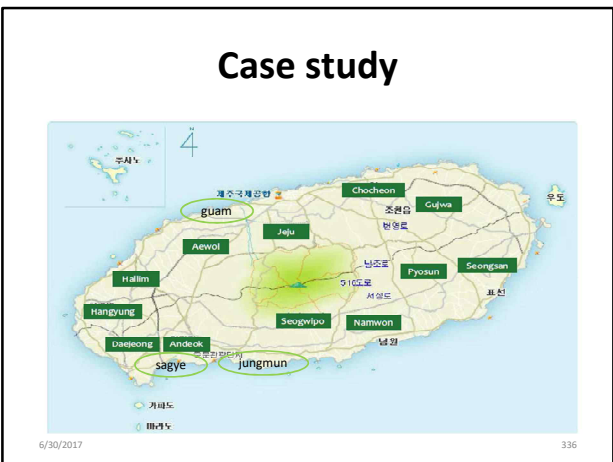
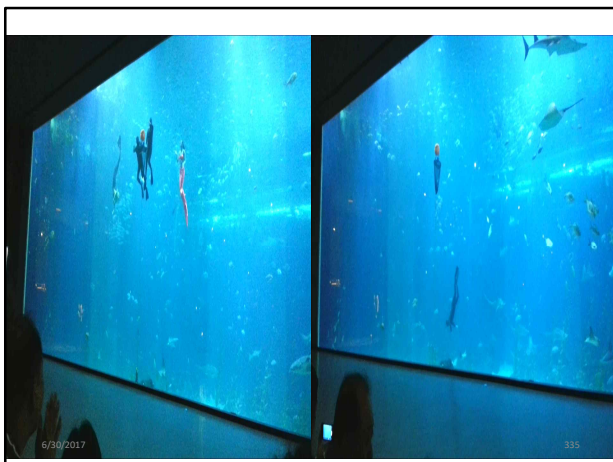
- Sea plants, sea shells, fish are reported by fishers and women divers to have disappeared
- The connected system

4/ EMERGING FORMS OF TOURISTIC TRANSFORMATION OF THE ISLAND'S FISHING COMMUNITY





- ### Increasing flow of tourists' arrivals
- 10 million in 2012
 - Income increased among urban residents; Rapid, over urbanization in the mainland – polluted urban environment; A five day working shift
 - *Jeju Olle* - Walking routes along the entire coastal lines
 - Residents' population increasing/ immigrants from the mainland – young people (40s)
 - For opening cafes, guesthouses, etc



Government initiated tourism project

- Involving tourism activities for addressing the difficult situation of fishing community
- Government introduced several projects among which fishing village experience program
- The three case study sites chosen for the program on a national competition
- Receiving financial assistance to perform tourists activities

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Specific tourist activities



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Specific tourist activities



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Specific tourist activities

- Running seafood restaurants
- Scuba diving program that allows two fish with a fish spear
- Turban shell collection at seashore

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Mobilization of fishing community members for the activities

- Fishers members only participating in fishing boat trips
- All the rest of the activities run by women divers
- Thus, *sagye* cooperative with much higher number of women divers are most active in tourism activities
- Also, *sagye* with a good scenery attracting a lot more tourists

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Distribution of income from tourist activities

- Fishing boat trip being the most income generating activity
- Fisher members who own a boat take part in and take all the income himself
- Except for *sagye*, and for certain activities, income from tourism activities does not return to the cooperative; but to individual members who work on it

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5/ Conclusion

- Jeju Island has been the peripheral in terms of political, cultural, economic senses in S Korea
- However, since the early 2000s, significant social change has taken place in the island
- Population increase with immigrants from the mainland/ Steep increase in tourists' arrival
- New dimensions to understand socio-ecological change in Jeju Island

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COURSE SUMMARY & ROUND TABLE DISCUSSIONS

WEEK 15

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The Course Aims

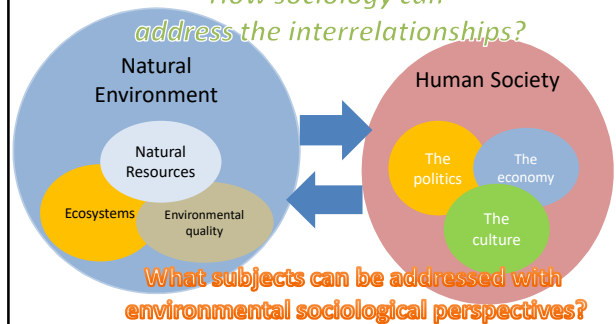
- To introduce and discuss environmental sociological concepts and theories
- To demonstrate the interconnectedness of natural environment to human society
- Sociological perspectives emphasized

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Research Areas of ES

How sociology can address the interrelationships?



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Visions for organizing human society in the 21st century considering natural environment

- Environmentally *friendly*
- Environmentally *considerate*
- Environmentally *smart*
- Environmentally *creative*
- Environmentally *innovative*
- Environmentally *cooperative*
- Environmentally *equitable*
- Environmentally *sustainable*

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The Norwegian vision

No cars from the capital city, oslo by 2019 within 15 years

Ref: The Huffington post

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The Australian vision

The Australian Green Party targets reaching **90 % renewable energy** by 2030 for the country
To double **energy efficiency** by current levels

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Paris COP (Conference of Parties) 21

To end the fossil era

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The S Korean Vision, Seoul

The civic meeting, 27 May 2017
Free Public Transportation when the fine dust level rises peak

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ROUND TABLE DISCUSSIONS

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THANK YOU....

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