Climate Change and Global Governance

- COP 15: Copenhagen (2009)
  - The negotiations
    - Split between develop and developing countries
    - Division into voting blocs

Negotiating Positions at Copenhagen, Cancun (2010), and Durban (2011)

European Union	**Cut emissions by 20% from 1990 levels by 2020**	**Emissions reductions targets should be legally binding**	**Developing countries should reduce emissions**
United States	**Cut emissions by 17% below 2005 levels by 2020 (4% below 1990 levels)**	**Opposed to legally binding reductions targets**	**Developing countries must commit to binding emissions reductions** **Prepared to help raise $100 billion global fund to help poor countries**

Negotiating Positions

Japan	**Cut Emissions by 25% from 1990 levels by 2020**		**Rich countries should devote 1% of GDP to helping developing countries adapt to climate change**
China	**Cut C02 emissions per unit of GDP (carbon intensity) by 40-45% below 2005 levels by 2020** **Rich countries should cut emissions by 40% below 1990 level by 2020**	**Opposed to legally binding reductions targets for developing countries** **Opposed to international verification of emissions**	**Developing countries must commit to emissions reductions** **Prepared to help raise $100 billion global fund to help poor countries**

Negotiating Positions

India	**Cut emissions by 20 to 25% from 1990 levels by 2020** **Rich countries should cut emissions by 40% below 1990 level by 2020**	**Opposed to legally binding reductions targets for developing countries**	
African Union	**Rich countries should cut emissions by 40% below 1990 level by 2020**	**Opposed to legally binding reductions targets for developing countries**	**Wanted a climate fund to reach $100 billion by 2020 to help poor countries adapt to climate change**

Negotiating Positions

Alliance of Small Island States (Aosis)	**Limit temperature rise to 1.5% above pre-industrial level** **Lower CO2 levels to 350 parts per million** **Emissions should be cut by 85% below 1990 levels by 2050**	**Rich country emissions reductions targets should be legally binding**	**Rich countries should devote 1% of GDP to helping developing countries adapt to climate change**
Canada	**Cut emissions by 20% below 2006 levels by 2020**	**Called for a new global treaty to replace Kyoto**	**Developing countries must commit to binding emissions reductions** **No specific pledge of financial aid to developing world**

The Copenhagen Accord

- **No legally binding commitments to cut GHG emissions and no agreement on a "peak year."**
- Developed and developing countries agreed to produce emissions reductions "schedules" but these were voluntary.
- The Accord "recognizes" the goal of limiting global temperature rise to less than 2 degrees from 19th C pre-industrial levels.
- Provide $100 billion a year by the year 2020 to help poor countries cope with climate change.

Climate Change and Global Governance

- Post-Copenhagen
  - Goal to have a new legally binding treaty in place to replace the Kyoto Protocol

Climate Change and Global Governance

- COP 16:
- Cancun (2010)

The Cancun Conference

- **No binding agreement.**
- Commitment to “deep cuts in global greenhouse gas emissions” to hold the increase in global average temperature below 2 degrees Celsius.
- Commitment to adopting targets for peaking emissions as soon as possible, and substantially reducing them by 2050.
- Established a Green Climate Fund of $100 billion to support developing countries efforts to adapt to climate change.

Climate Change and Global Governance

- COP 17: Durban (2011)
- 12,480 participants

The Durban Platform for Enhanced Action

- **No.**
- All signatories (including US, China, India) agree in principle to carbon emission reductions.
- All signatories agree to establish a legally-binding treaty on emissions by 2015, to take effect by 2020.

Climate Change and Global Governance

- COP 18: Doha (26 Nov. – 7 Dec. 2012)

The Doha Conference

- **Nope.**
- Kyoto Protocol extended until 2020 (does not include Canada, Japan, Russia, Belarus, Ukraine, NZ, or USA (or China, India, and Brazil)
- Reaffirmation of the Durban Platform to develop a successor to the Kyoto Protocol by 2015 for implementation in 2020
- Inclusion of “loss and damage” principle: countries vulnerable to climate change may be financially compensated by countries that fail to curb their carbon emissions.

Climate Change and Global Governance

- COP 19: Warsaw (11 Nov. – 22 Dec. 2013)

Climate Change and Global Governance

- **Uh-uh.**

IPCC Fifth Assessment Report
(2014-2014)

"Warming of the climate system is unequivocal, and since the 1950's many of the observed changes are unprecedented over decades to millennia."

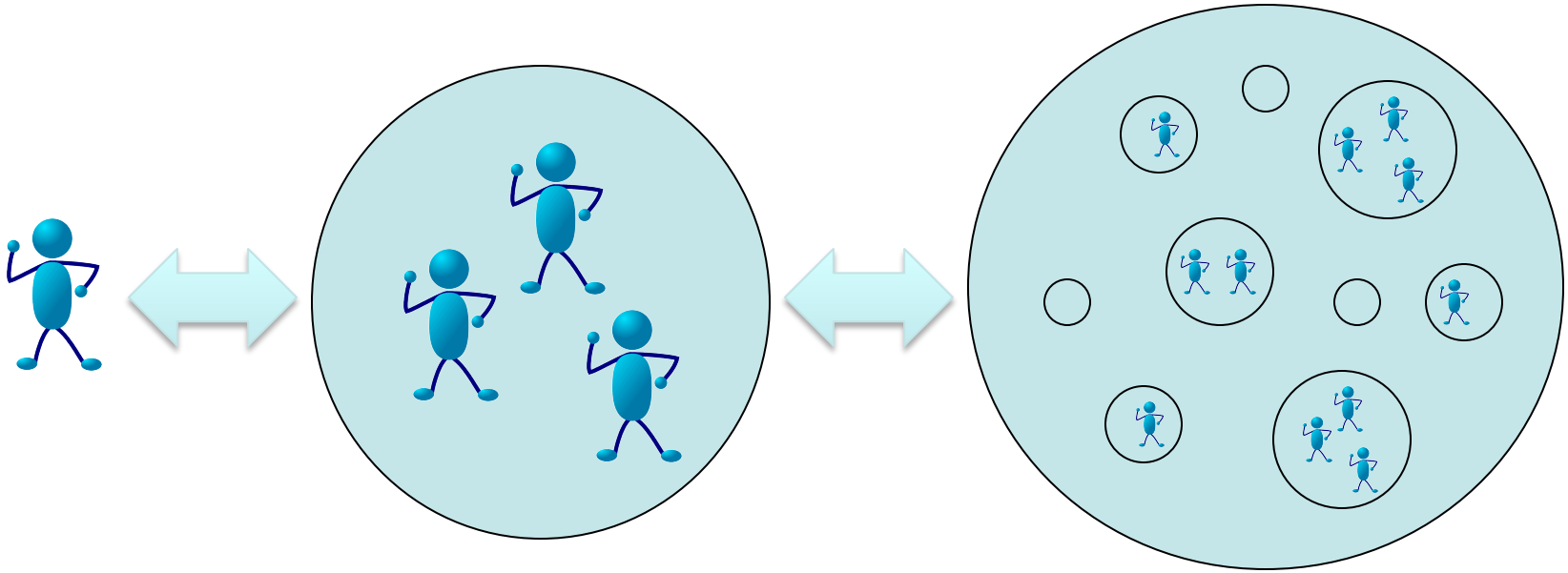
Climate Change and Global Governance

- COP 20: Lima (December 2014)

Climate Change and Global Governance

- Obstacles to progress
  - Competition and the relative gains problem
  - Divergent interests
  - The compliance and enforcement problem
  - Domestic politics

The levels of analysis: explaining agency in human affairs



1. Individual

2. State or Group

3. International System

1. The Generation Gap

1. The Generation Gap

How much are individuals and societies willing to to do now for the sake of future generations?

1. The Generation Gap

The Precautionary Principle:

“When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.”

(Wingspread Statement 1998)

2. Not just another environmental problem…

2. Not just another environmental problem…

- Chemical pollution
- DDT (Dichloro-Diphenyl-Trichloroethane)

2. Not just another environmental problem…

- Acid rain
- Sulphates

2. Not just another environmental problem…

- Ozone Hole
- ChloroFluoro-Carbons (CFCs)

3. Inequity and Injustice

- Unequal impacts
- Responsibility

Inequity and Injustice?

“I’ll tell you one thing I’m not going to do is I’m not going to let the United States carry the burden for cleaning up the world’s air, like the Kyoto treaty would have done. China and India were exempted from that Treaty. I think we need to be more even handed.”

-Former US President George W. Bush

(With 4 percent of the world’s population, the US emits 20% of all greenhouse gases).

3. Inequity and Injustice

"The average rates at which people consume resources like oil and metals, and produce wastes like plastics and greenhouse gases, are about 32 times higher in North America, Western Europe, Japan and Australia than they are in the developing world."

–Jared Diamond

4. Social Change is Hard

We are all going to die…

…under all of our stuff…

“…as the most fully realized consumer society in history, we’ve defined ourselves almost entirely as individuals, without any limits on what we should want. Any call to group action is dismissed as interfering with economic growth, with our personal quest for more.”

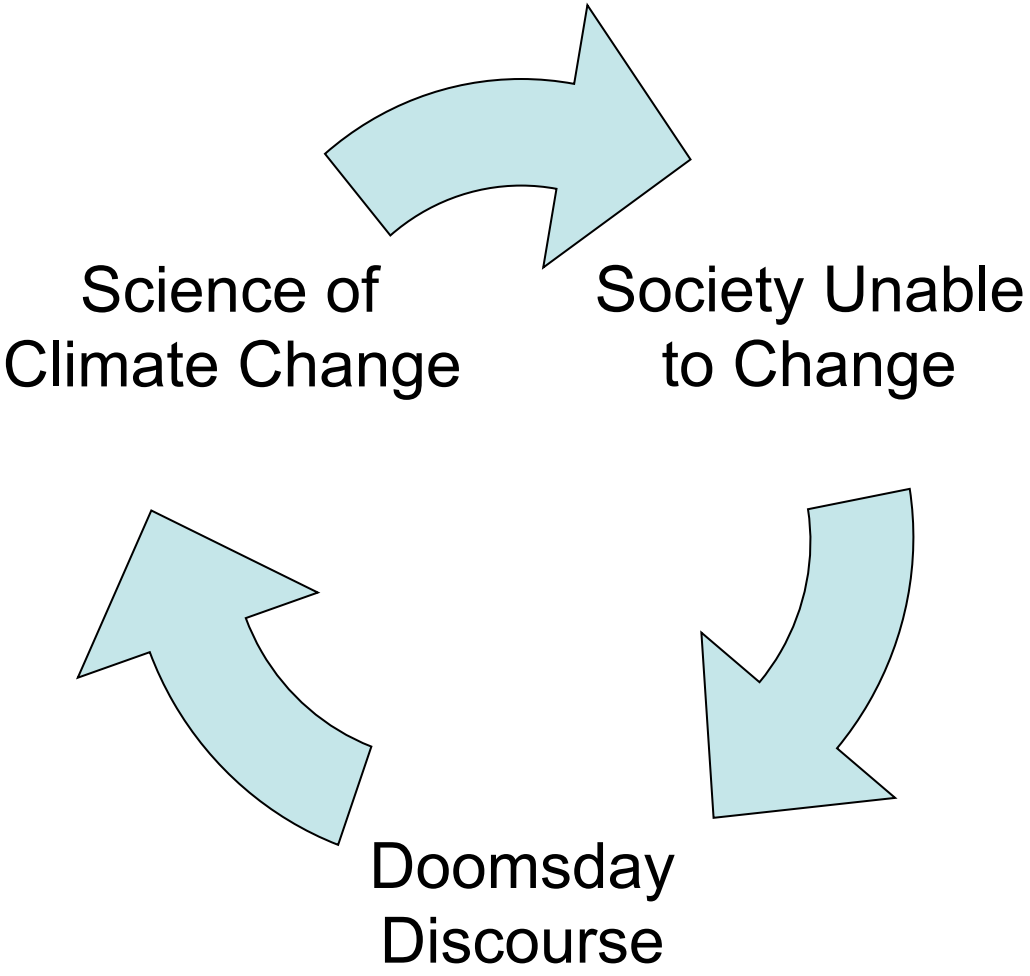
Bill Mckibben (writer)

…and we can't help it.

"Certain familiar sorts of motivation are not available to support policies demanding serious sacrifice for the sake of future generations, and we may well be discouraged by the further apparent fact that the cultivation of a form of motivation directly supportive of such policies might require something close to an overhaul of main elements in the makeup of society which influence the moral psychology of citizens."

Norman Care (Philosopher)

Society and Prediction: *Zeitgeist*



5. Economics

…but economics struggles with climate change

5. Economics

- **not particularly good** at weighing the welfare of the current generation against the welfare of future generations;
- **not good at all** when comparing the costs of climate change to rich peoples against the cost to poor peoples;
- **downright lousy** when it comes to measuring the costs associated with damage or loss of ecosystems, plant and animal species, etc.

5. Economics

- How we got here (according to economics)
  - The Tragedy of the Commons
  - The Public Good Dilemma
  - The Free Rider Problem

5. Economics

- “The Tragedy of the Commons”
  - Published by ecologist Garret Hardin in *Science* in 1968

The Tragedy of the Commons (according to economists)

Tragedy of the commons occurs when over exploitation of a limited-capacity resource due to unrestricted entry leads to its total collapse.

5. Economics

- The public good dilemma
  - public goods possess two qualities:
    - they are **nonexcludable**: they are goods that are readily available to everyone (even if all persons do not contribute to their creation or maintenance) and cannot be easily denied to others;
    - they are **nonrival**: use of the good by one actor does not serious deplete the amount available to others

5. Economics

Public goods require management…

…or they erode.

5. Economics

Individuals or states over-exploit the planet's atmosphere because they gain material advantages from the activities that contribute to global warming but suffer only a fraction of the environmental costs. The incentive to manage the public good is therefore low.

5. Economics

- The “Free Rider” problem
  - "free riders" are those who consume more than their fair share of a public resource, or shoulder less than a fair share of the costs of its production.
  - Or: a non-paying user of non-excludable goods

5. Economics

Individuals and states are typically unwilling to reduce GHG emissions unilaterally because they would pay the full price of reducing their emissions, but gain only a fraction of the benefits and would make sacrifices that are likely futile if others free ride on their efforts.

5. Economics

- The economics (and politics) of emissions

5. Economics

- The economics (and politics) of energy conversion

5. Economics

- The economics (and politics) of energy conversion
  - The key issue in climate change economics is the cost of energy conversion away from fossil fuels

5. Economics

- The economics (and politics) of energy conversion
  - The key issue in climate change economics is the cost of energy conversion away from fossil fuels
  - This cost is usually calculated in terms of estimated impact on Gross Domestic Product (GDP), the value of all goods and services produced in a country in one year

5. Economics

- The economics (and politics) of energy conversion (using GDP)
  - Cost estimates ranges from slight increase in GDP to 5 percent of GDP per year
  - Largest study by Nicholas Stern gave cost of 1% of global GDP per year to 2050 to convert (later revised to 2% of global GDP)
  - Estimated costs of doing nothing range from 5% to 20% of current GDP

5. Economics

- Comparing the costs of energy alternatives… (or when economists start having fun)

Energy Source Comparisons

Source of energy	Estimated Cost	Advantages	Disadvantages (hidden costs)
Coal	**4.8 cents per kilowatt-hour**	**•Inexpensive •Deposits Widely distributed •Transportable**	**•Emits 1.9 pounds (.86 kg) of CO2 per kilowatt hour**
Coal with Carbon Capture	**6.5 – 7.7 cents per kilowatt-hour**	**•Effective way to capture CO2 (90%) •New Technologies could lower capture costs per ton of CO2 from $40 to $24**	**•Technologies not developed •Storage of captured CO2 •Captured CO2 sometimes used for enhanced oil recovery**

Energy Source Comparisons

Nuclear	**39.6 cents per kilowatt-hour**	**•No CO_2 emissions •Improved safety •Produce electricity and hydrogen for fuel**	**•Nuclear waste •Nuclear proliferation •Construction costs •Very modest projected increase in use •Public opposition**
Wind	**4 – 6 cents per kilowatt hour**	**•No CO_2 emissions •Fuel is free**	**•Strong winds not always close to major energy markets •Wind does not always blow during peak demand times**

Energy Source Comparisons

Solar	**12 – 14 cents per kilowatt-hour (solar thermal)** **18-40 cents per kilowatt-hour (photovaic)**	**•Does not emit CO2** **•Operational costs low** **•Output more predictable (weather forecasting)**	**•More expensive than coal with carbon capture**
Biofuels	**Ethanol from corn Currently sells at price of gasoline in US**	**•Lower CO2 emissions** **•Emerging technologies will lower cost** **•Sugar and cellulose options**	**•Demand has pushed up food prices** **•Production emits C02** **•Clearing of forests to grow biofuel will increase carbon in atmosphere**
Energy efficiency	**Large savings available at 4 cents per kilowatt-hour or less**	**•Lower emissions with little investment** **•No need for new infrastructure**	**•Current market provides no signal to consumers of overall cost** **•No strong incentives to increase energy efficiency**

5. Economics

- Possible Strategies:
  - **Carbon taxes** to increase costs of carbon emissions to create incentive for reduction in emissions
  - **Subsidies** to alternate energy sources (wind, solar)
  - **Regulations** requiring utilities to provide a certain portion of their electricity from renewable sources
  - **Innovation** incentives (research and development): tripling global investment in research and development for alternative energy would restore funding to 1970s levels
  - **Carbon Trading** create a "cap and trade" system and a market for carbon credits to encourage reductions

5. Economics

- Possible Strategies:
  - **And there is always consumption…**

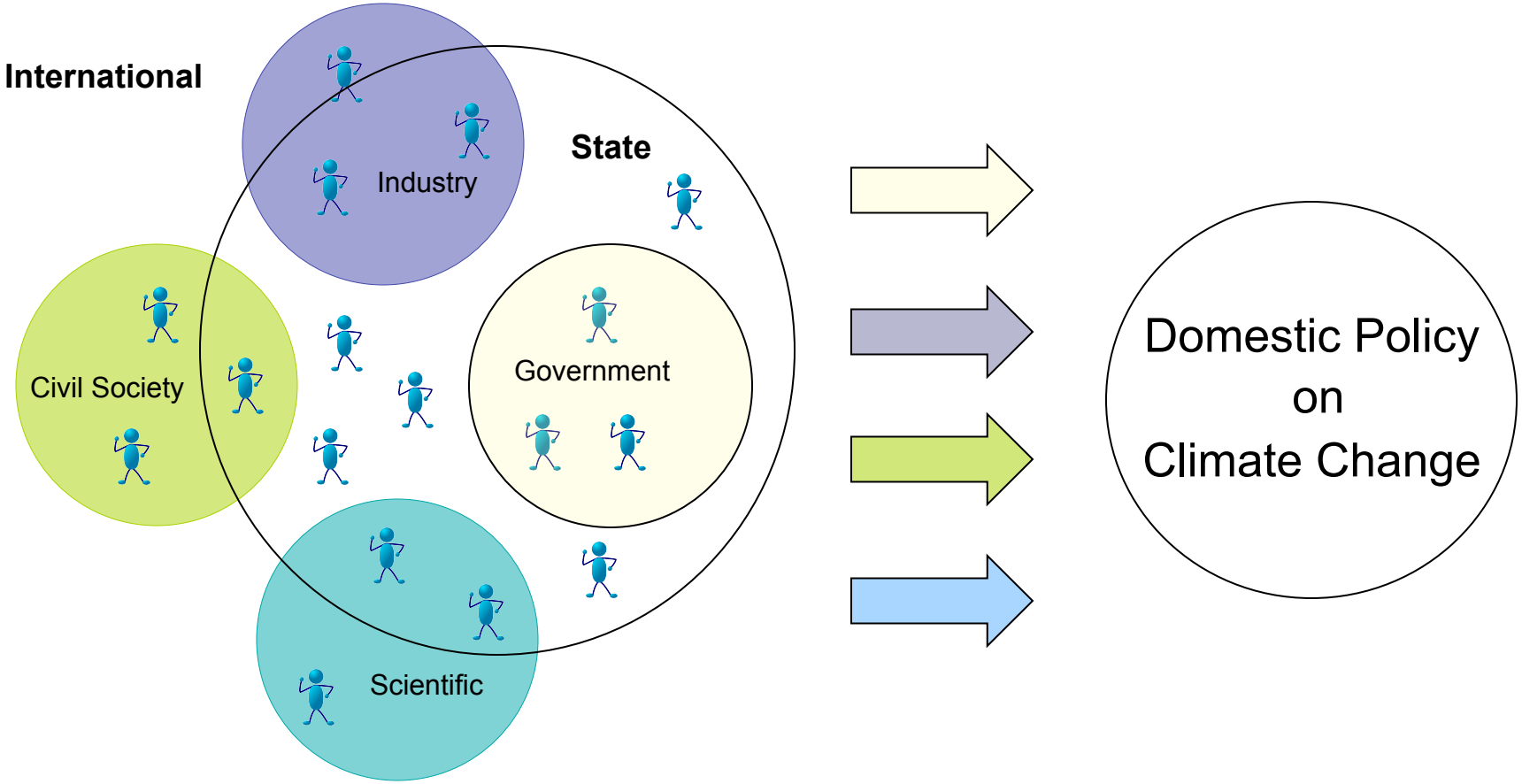
Pop Quiz Time!!

- Question: Which of the following foodstuffs emit the most C02 per 100 kilocalories of product during their production? Rank them 1 (highest) through 10.
- Eggs; Pork; Chicken; Fish; Beef; Corn; Lamb; Shrimp; Apple; Vegetables

6. Domestic Politics

- Where does domestic policy on climate change come from?

Influences and Determinants of Domestic Policy on Climate Change



6. Domestic Politics

- Not the same across states…enter Comparative Politics!

6. Domestic Politics

- State Responses:
  - Tax
  - Regulate (Cap and Trade)
  - Legislate (laws)
  - Beg
- Assumes political will and public support

The State and Government

Japan	Top down Government maintains that economic growth and climate change mitigation are not exclusive
The Netherlands	Collaborative Government works with civil society actors and industry to forge national consensus
The US	Combative Government opposition to climate change science and policy initiatives

From an internal memo by Republican pollster Frank Luntz

- “The environment is probably the single issue on which the Republicans in general, and President Bush in particular, are most vulnerable.”
- “Be even more active in recruiting experts who are sympathetic to your view, and much more active in making them part of your message.”
- “Should the public come to believe that the scientific issues are settled, their views on global warming will change accordingly. Therefore, you need to continue to make the lack of scientific certainty a primary issue.”

The Market and Industry

Japan	Supportive Industry consulted and generally supportive of government position
The Netherlands	Resistant then acceptant Industry resistance changed to business opportunism in face of government position
The US	Opposed Industry mobilized to undercut public and government support for climate change mitigation

The 2000 US National Assessment of Climate Change Impacts on the United States

- Based on the work of hundreds of scientists over ten years
- Report warned of serious climate change impacts on US
- Lawsuit mounted against its release by some members of Congress, charging it was unscientific and unethical
- Charges dropped, but report was never widely distributed, never reached public debate

Civil Society

Japan	Marginal impact Not major players, added voice in support of government
The Netherlands	Highly engaged Major participants in policy deliberations with government
The US	Polarization “debate” fueled by industry-funded civil society actors; no coordination or cooperation between environmental groups and government

The Greening the Earth Society

- “…the science behind global warming is not uncertain, its just wrong…there has been no steady rise or steady decrease…the warming that did occur, occurred before 1950, before most of the carbon dioxide from industrialization was put into the air, so the warming had to be natural…”

Executive Director, Greening the Earth Society
(Sponsored by the Western Fuels Association)

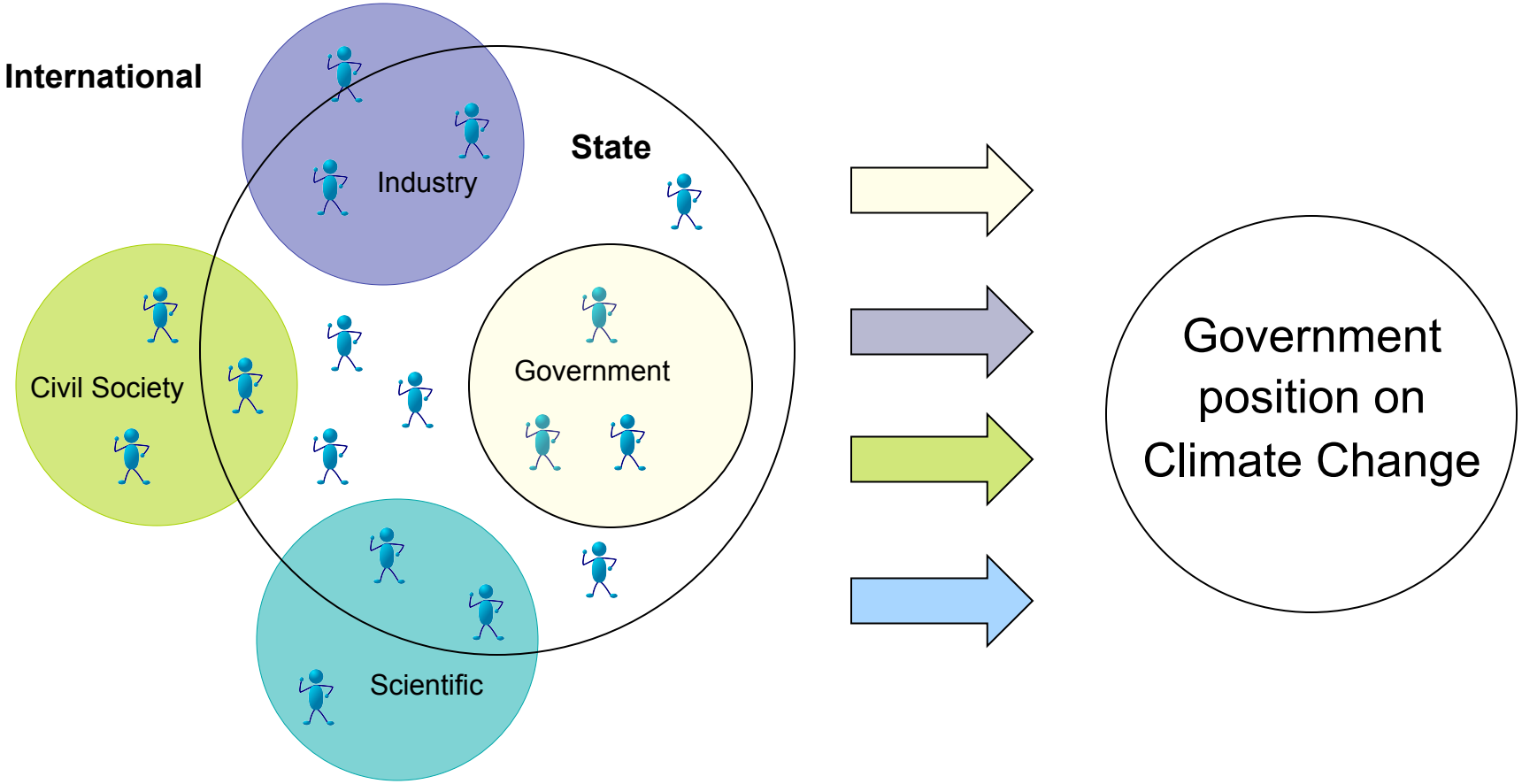
Science

Japan	Little challenge Widespread agreement with fundamentals of climate change science
The Netherlands	Little challenge Widespread agreement with fundamentals of climate change science
The US	Significant challenge Frequent attacks on climate change science

- “With all of the hysteria, all of the fear, all of the phony science, could it be that man-made global warming is the greatest hoax ever perpetrated on the American people? It sure sounds like it.”

Senator James M. Inhofe July 28 2003

Influences and Determinants of Government Position on Climate Change



International (UNFCCC Framework)

Japan	Initially reluctant, then supportive
The Netherlands	Supportive
The US	Opposed

The Group PBL Assignment

Head right to your group tables next week!

There will be directions in front of the lecture hall…some groups will be in the breakout room, some in the lab, and some in the lecture hall.

Bring your laptops!