

# Ecological Literacy

MSSTA SAGE 2013

Matt Henderson

@Henderson204

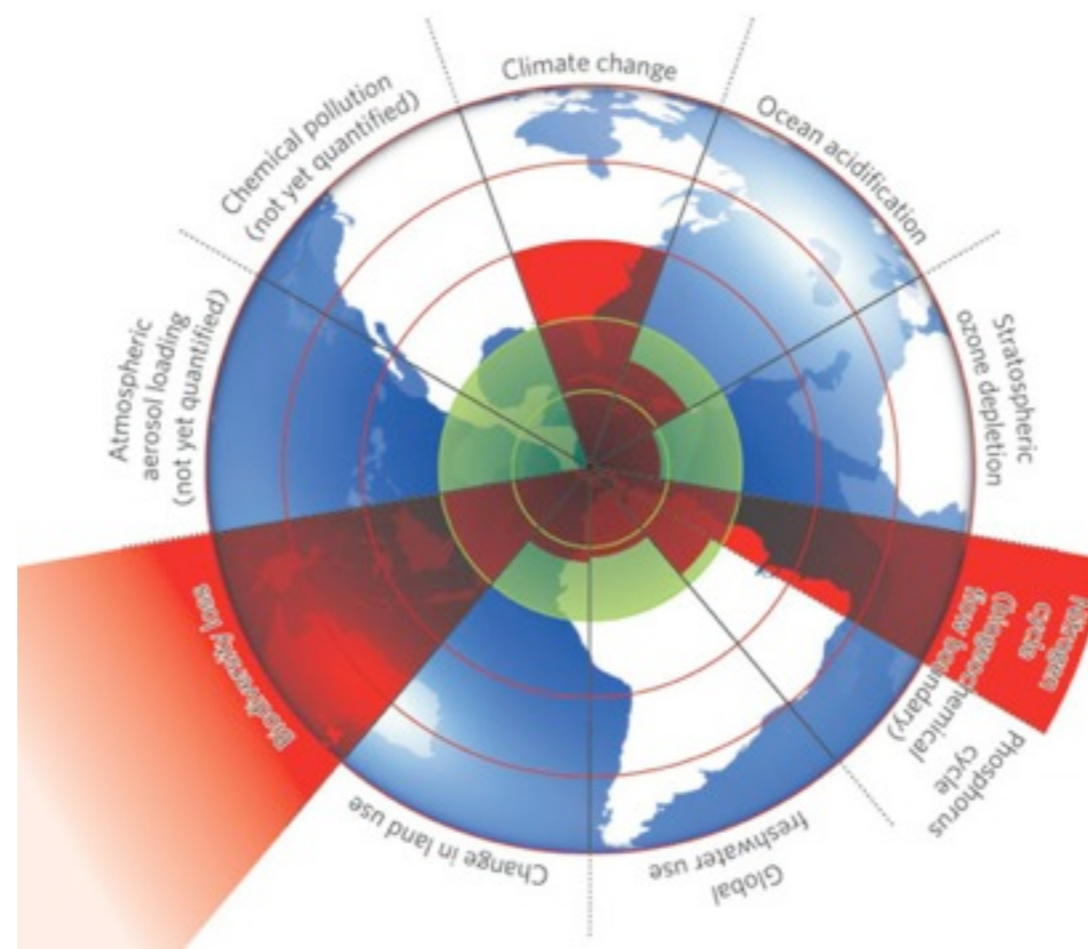
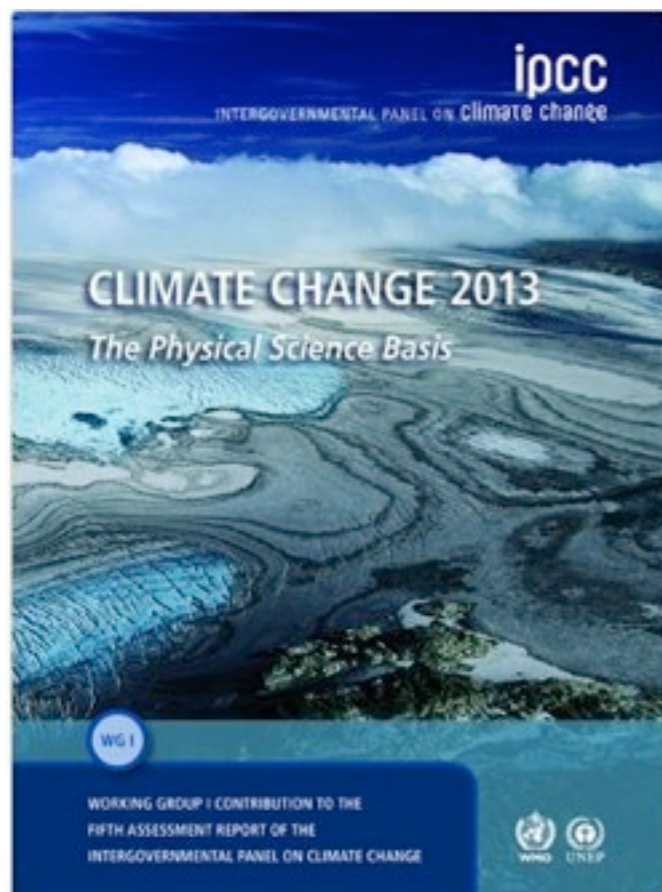


# The Problem

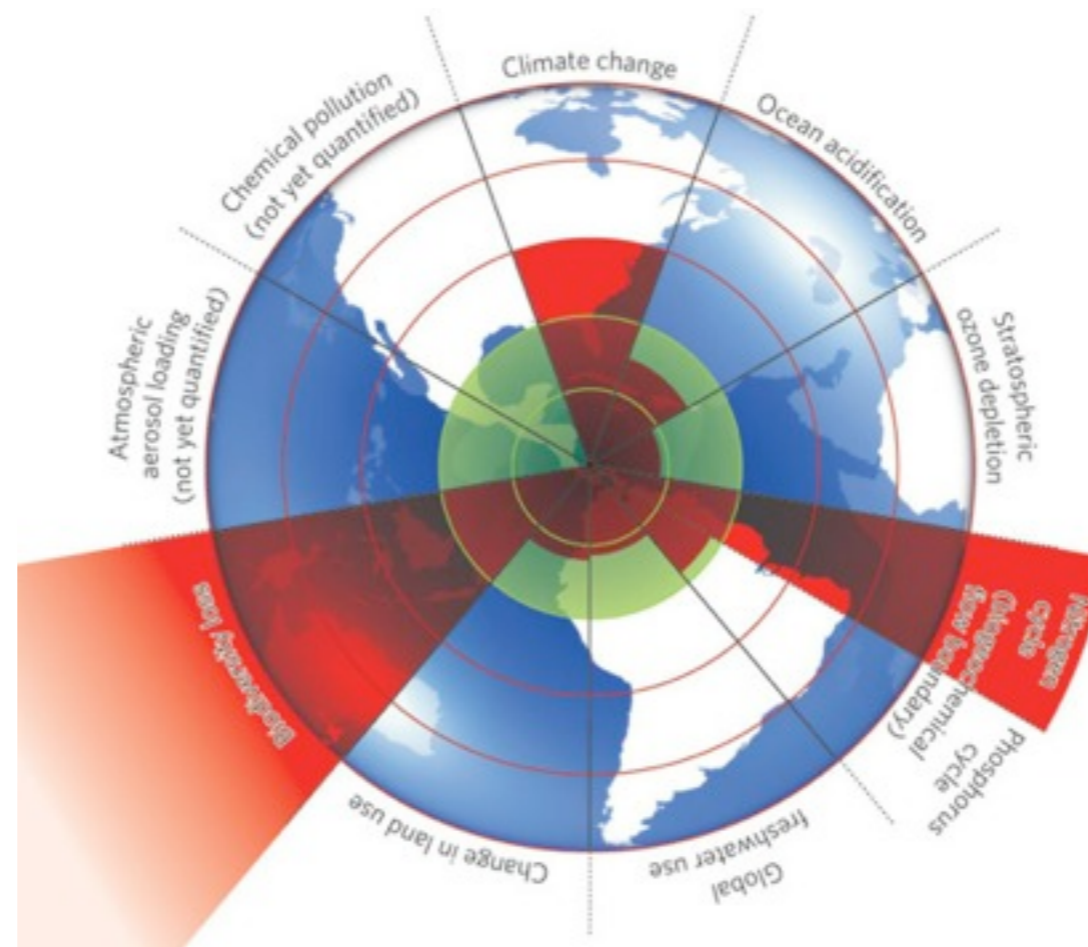
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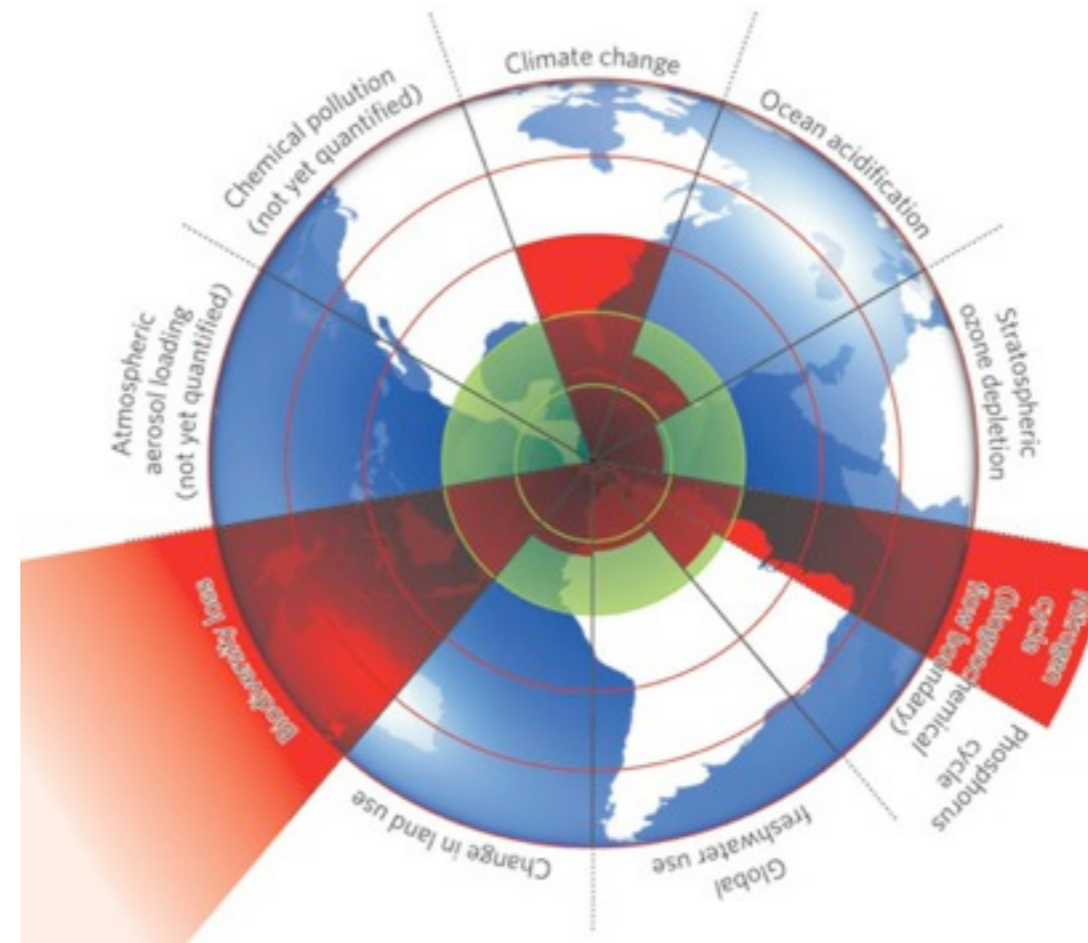
# The Problem



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“The exponential growth of human activities is raising concern that further pressure on the Earth System could destabilize critical biophysical systems and trigger abrupt or irreversible environmental changes that would be deleterious or even catastrophic for human well-being.” (Rockström et al, 2009).

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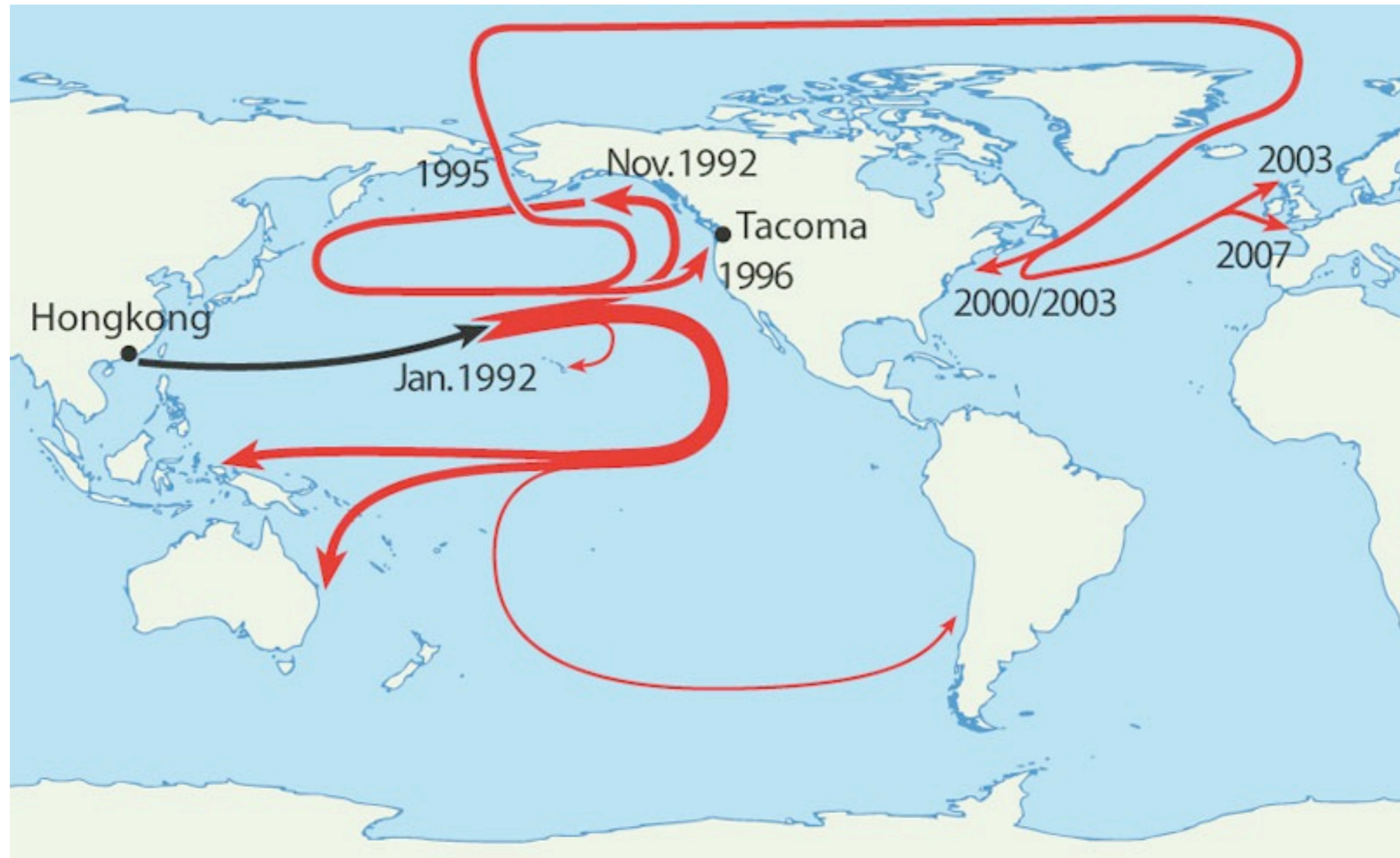
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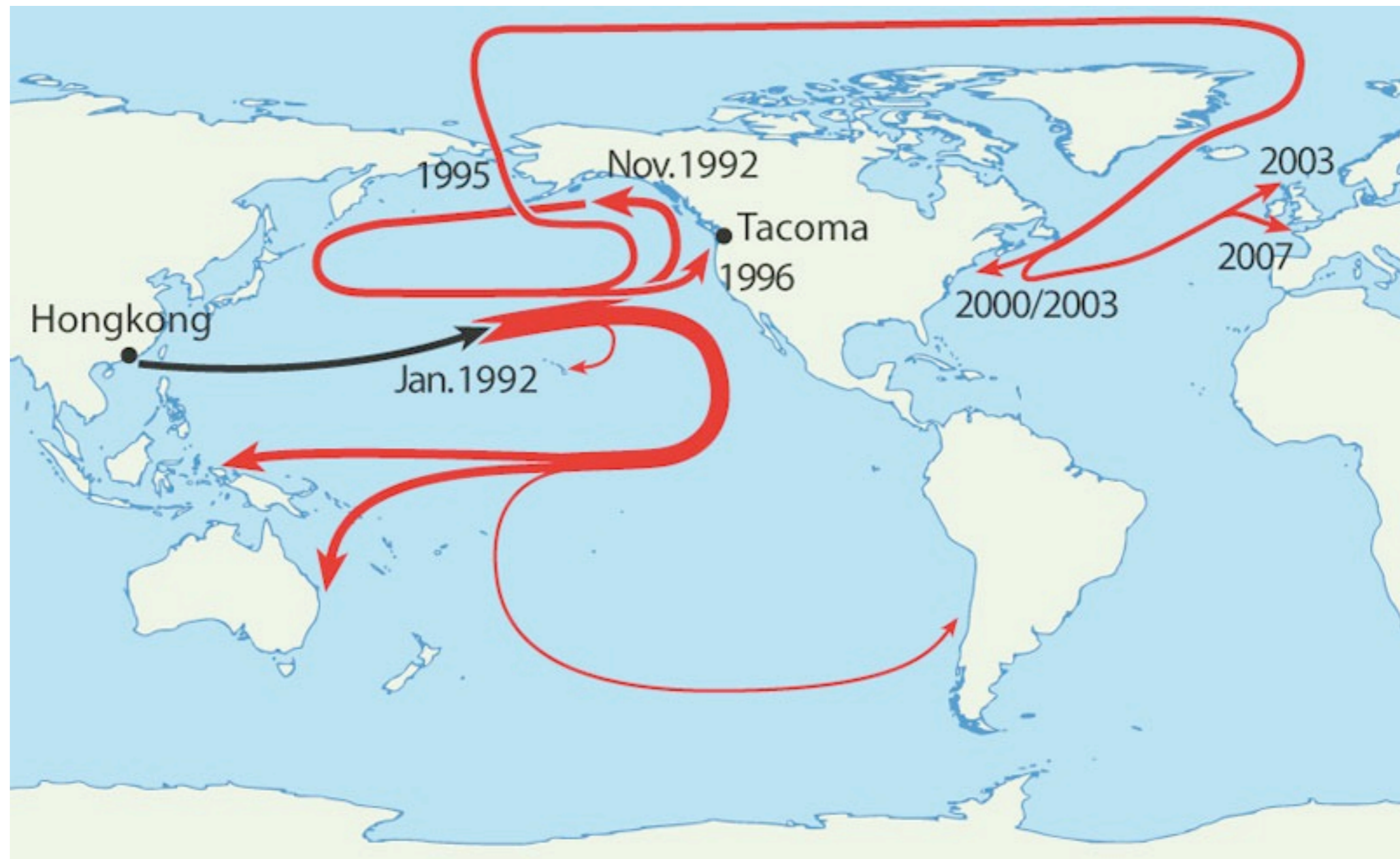
**How do we begin to close this gap?**

# Rodrigo's Question

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# Rodrigo's Question



“If I am a person who really wants to help the environment, then why do I do things like use plastic cups when I know that it is bad.”





**Awareness**

**New Literacy**

**Awareness**



**New Literacy**

# Conceptual Pillars

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Ecological Literacy

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Ecological Literacy

Systems Thinking

# Conceptual Pillars

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Systems Thinking

Experiential Education

# Ecological Literacy



# Ecological Literacy

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- Education for sustainability or ecological literacy means to teach ecology in depth, in a systemic and multidisciplinary manner (Duailibi, 2006).
- Our ability to understand the basic principles of ecology and to live accordingly (Capra, 2012).
- Students understand the natural systems that sustain life on earth and apply the principles guiding ecosystems to help create sustainable human communities (Manitoba Education, 2011).

# Systems Thinking

Living systems and relationships are used as the perspective for sense-making. When this type of thinking is employed, we no longer deal with linear causal relationships, but deal with the larger contexts which these relationships engage.

“...living systems are nonlinear - they are networks - while our scientific tradition is based on linear thinking, chains of cause and effect” (Capra, 2007, p. 11).

As a species dependent on the land and all systems, humans used to think in this manner - that we were part of a larger system (Miller, 2007, p. 4).

# Systems Thinking

Photo from [www.fritjofcapra.net](http://www.fritjofcapra.net)

# Systems Thinking

- *From structure to process:* Systems develop and evolve. This shift is embodied in project-based learning, which emphasizes the application of knowledge within evolving real-life contexts (2007, p. 12).

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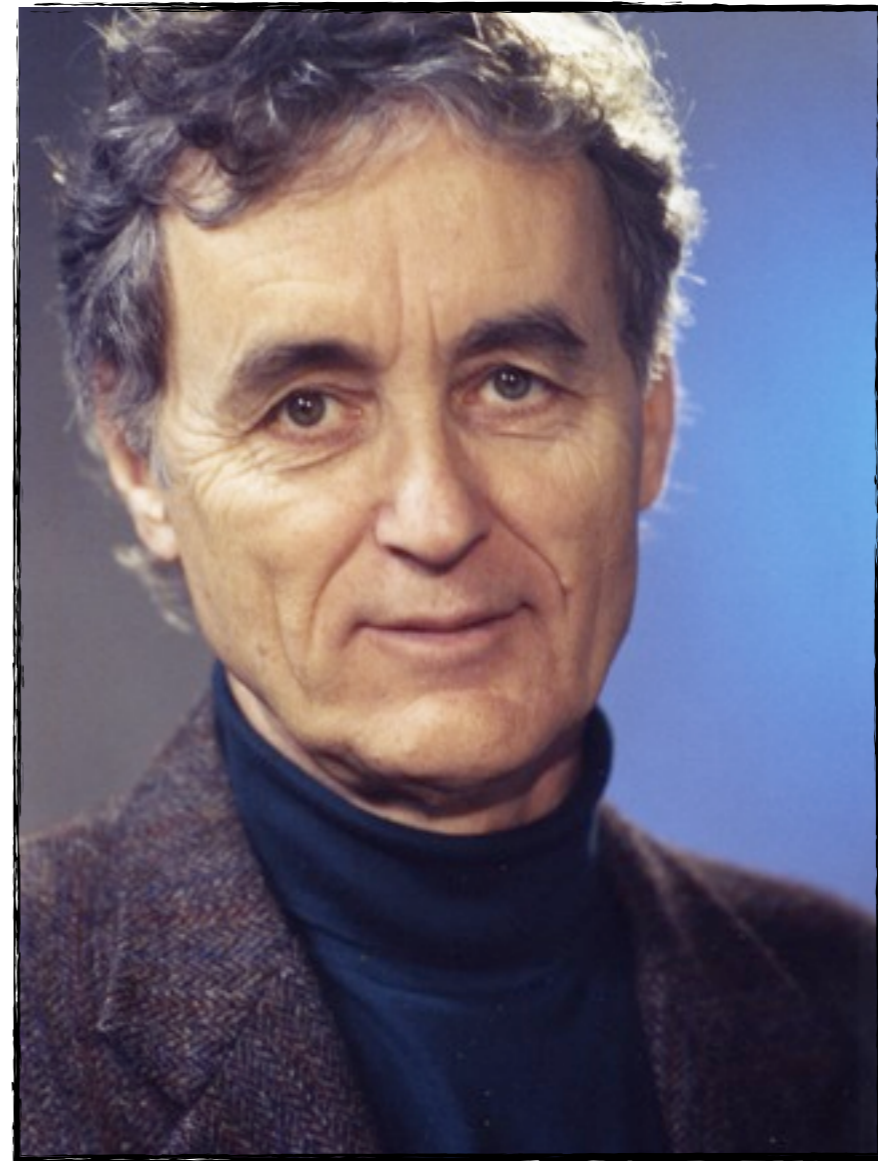
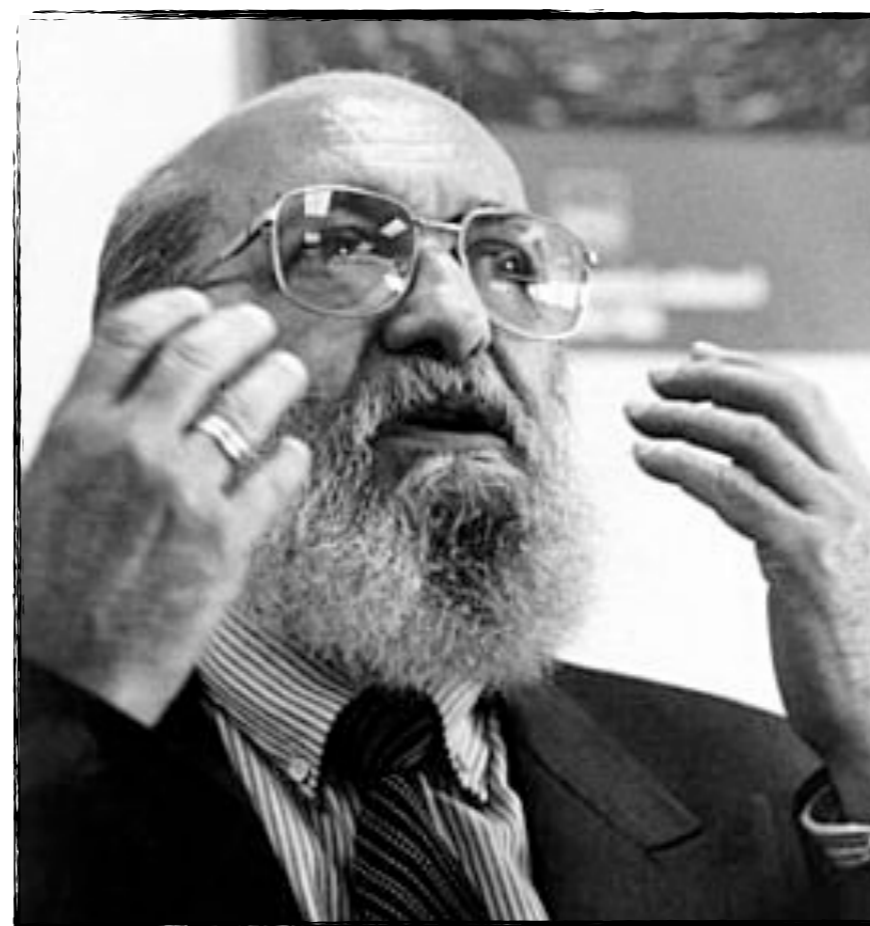


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# Experience



Photo from: <http://dewey.pragmatism.org/dewey.gif>



<http://www.pedagogyoftheoppressed.com/wp-content/uploads/2010/04/paulo-3.jpg>



# Experience

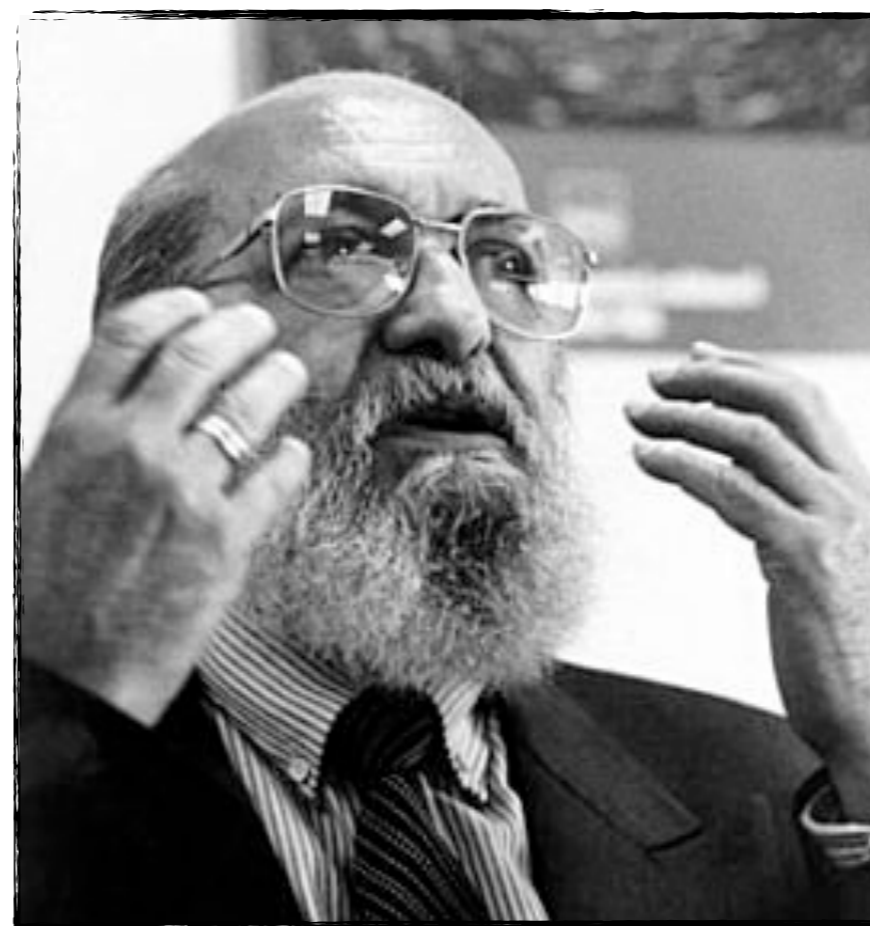


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“Real learning is participatory and experiential..” (Orr, 1992)

# Types of Experience

# Types of Experience

Experience as Disequilibrium

# Types of Experience

Experience as Disequilibrium

Experience as Event

# Types of Experience

Experience as Disequilibrium

Experience as Event

Experience as Further Action

# Experience as Disequilibrium

# Experience as Disequilibrium



# Experience as Disequilibrium





# Experience as Disequilibrium





**Silas K.** - I would disagree with Wade, and say that we are underpaying for many of the products that we enjoy today. The rest of the cost is paid for by others, like child workers in third world countries who are being paid less than minimum wage so that the products here are cheaper, or like the forest that would be cheaper to harvest lumber from, even though doing so would destroy the precious habitats of animals. This is exactly what it means to live in a society that is not sustainable, because when we let others (like the environment) pay for the cost of the products that we are consuming, we damage everything around us, and will eventually reap the rewards. The main point of the articles here I think, and the connection between them, is that consumerism, and being wealthy, doesn't necessarily lead to happiness, and that it does lead to other bad things. So if happiness is the goal, and consumerism doesn't make us happy, how can we change society to value the important things in life, instead of money? [less...](#)

Oct 22, 2012



**Me** - Silas - I think you just nailed it. You should watch a doc called "Last Train Home." It describes who we deem "disposable." Wow.

Oct 22, 2012

# Experience as Event

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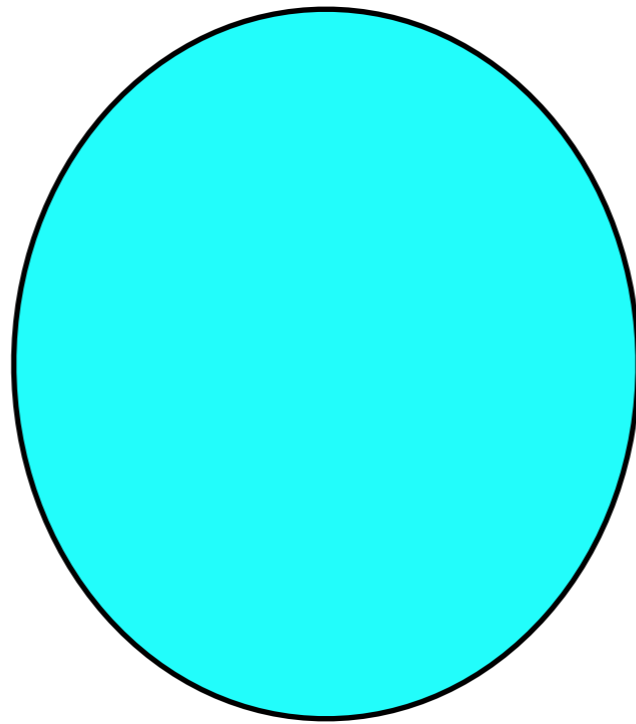


# Experience as Action

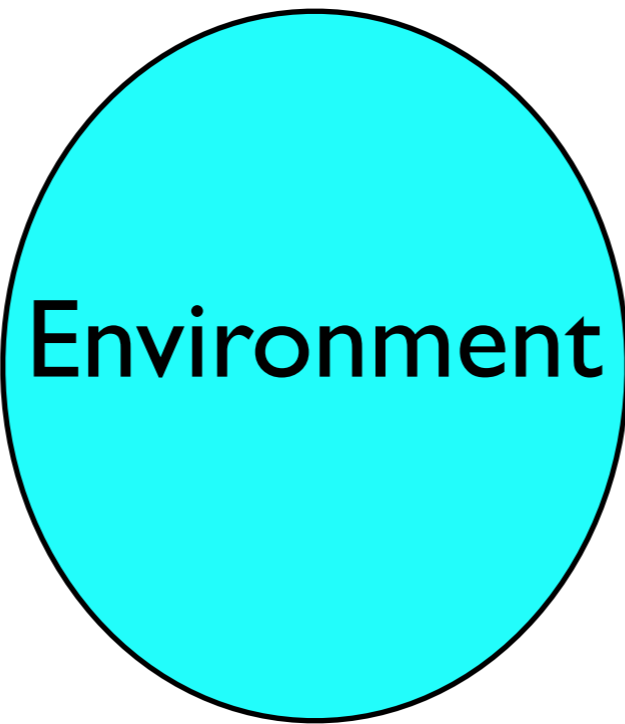
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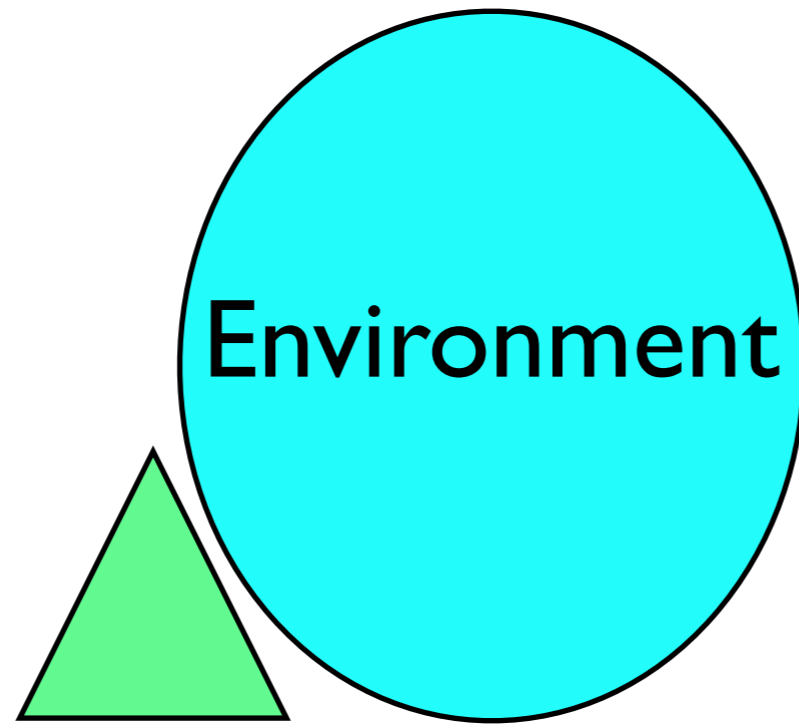


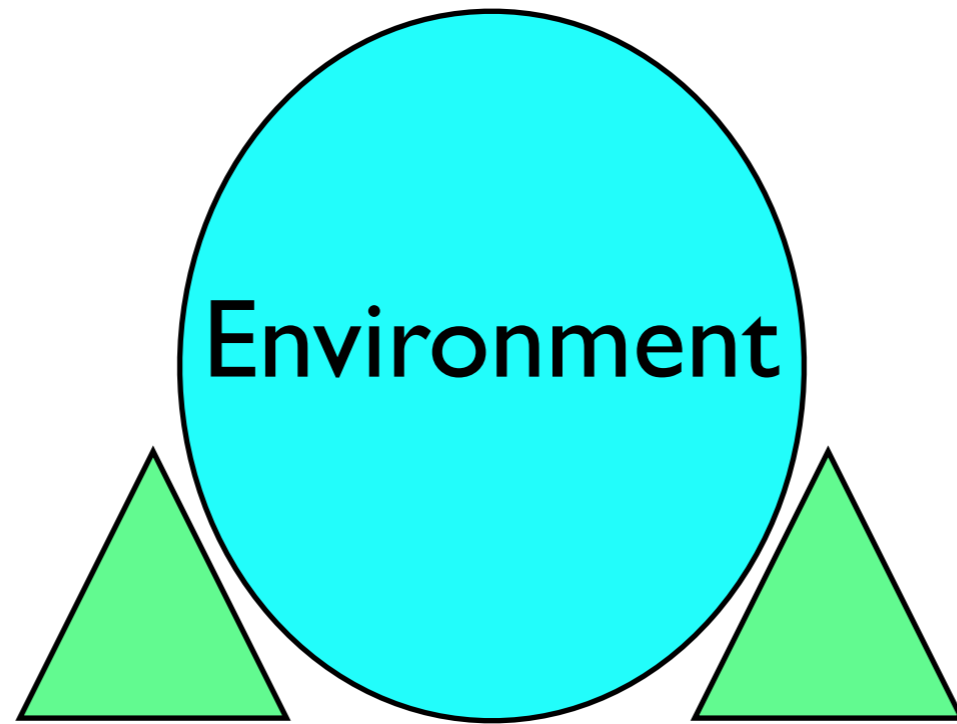


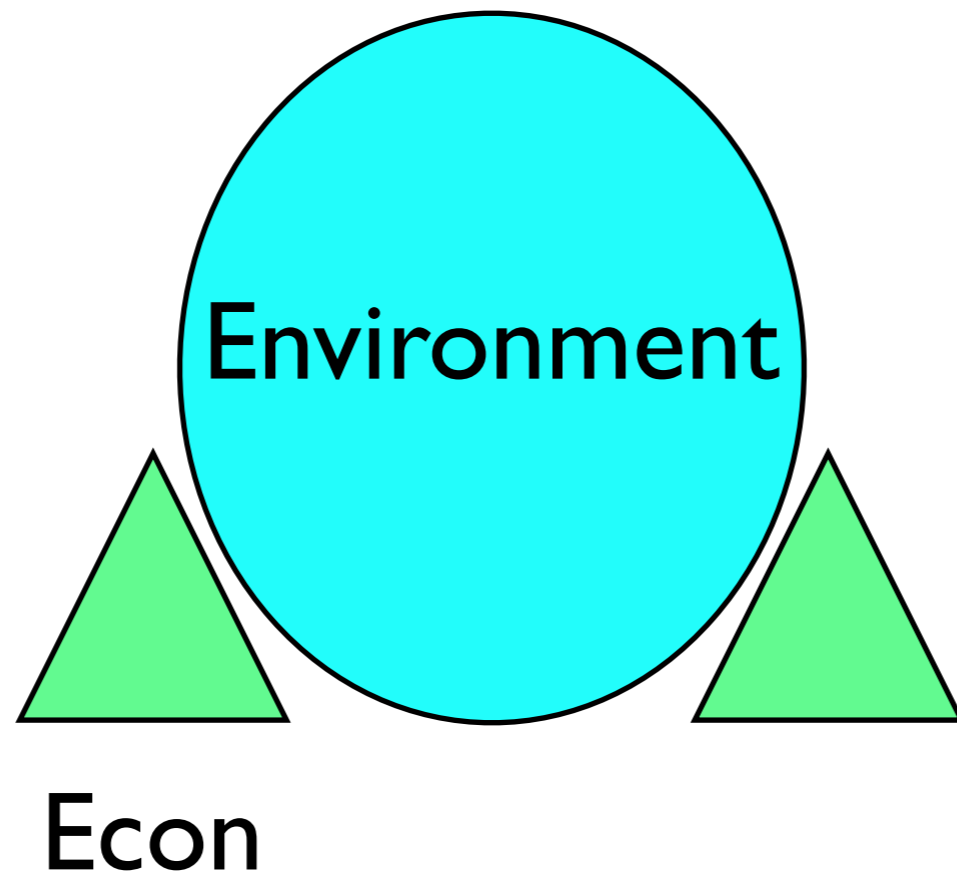


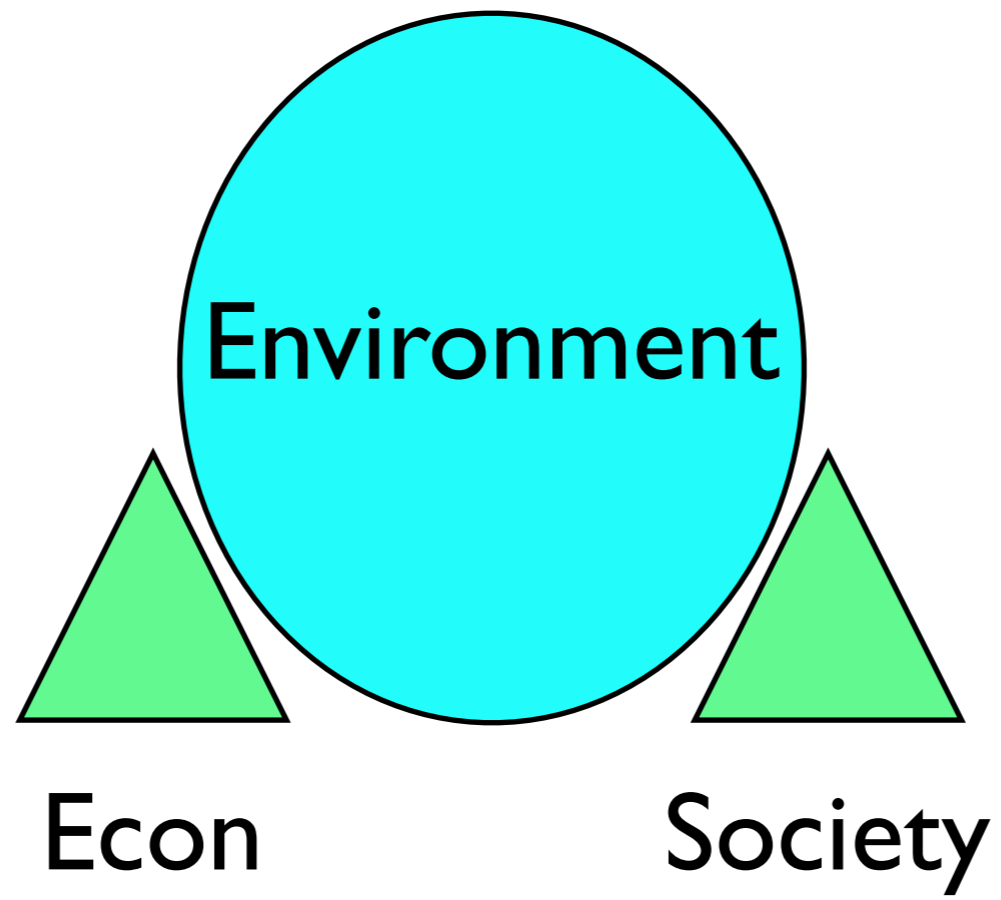


















## Test your observational skills.

Look closely at this image and compare it to the one on the following page.





## Can you spot the changes?

If you compared this image to the one on the previous page, you probably noticed a lot of differences. The real question is what do most of those changes have in common. The answer has a lot to do with the way Manitobans use electric power. Since the 60s, our needs have increased every year. And we're going to need more generating stations just to keep up with local demand.

Manitobans made a huge investment in our hydroelectric system a generation ago. Now, it's one of the most affordable and reliable power utilities in the world. We're committed to continuing our legacy of clean, abundant energy for Manitoba. That's why we're proposing new hydroelectric generating stations to keep our economy rolling and to provide the electricity needed to serve the next generation of Manitobans. It's our turn to invest.



This is where our power comes from.  
[hydro.mb.ca/projects](http://hydro.mb.ca/projects)

