Friday
October 24th,
2014

12:00 – 1:00 pm
in Hutt Building
Room 234

UNIVERSITY of GUELPH

Updating Economics to Inform Humanity's Future

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We are living in a human-dominated epoch that many natural scientists refer to as the Anthropocene. How should the social science of economics respond? Where should leadership for this vision come from? How does "ecological economics" offer a framework in which to update economics, for the benefit of informing humanity's future in the Anthropocene? Join the conversation following a lecture from Eric Miller on behalf of CANSEE - the Canadian Society for Ecological Economics.

Canadian Society for Ecological Economics

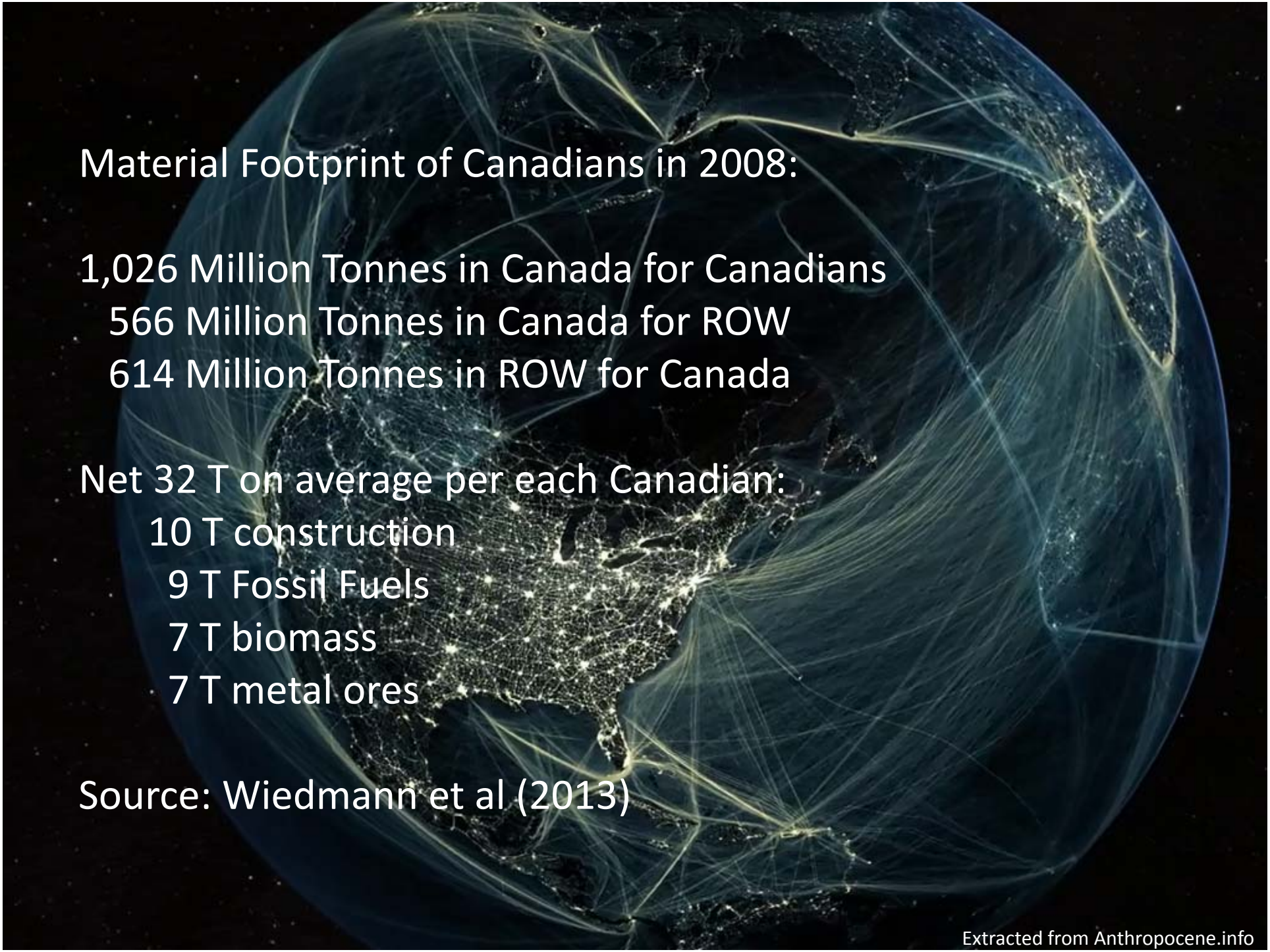
Lunch and Learn – All are welcome to attend!

Updating Economics to Inform Humanity's Future

Presented by Eric Miller (h4x.ca)

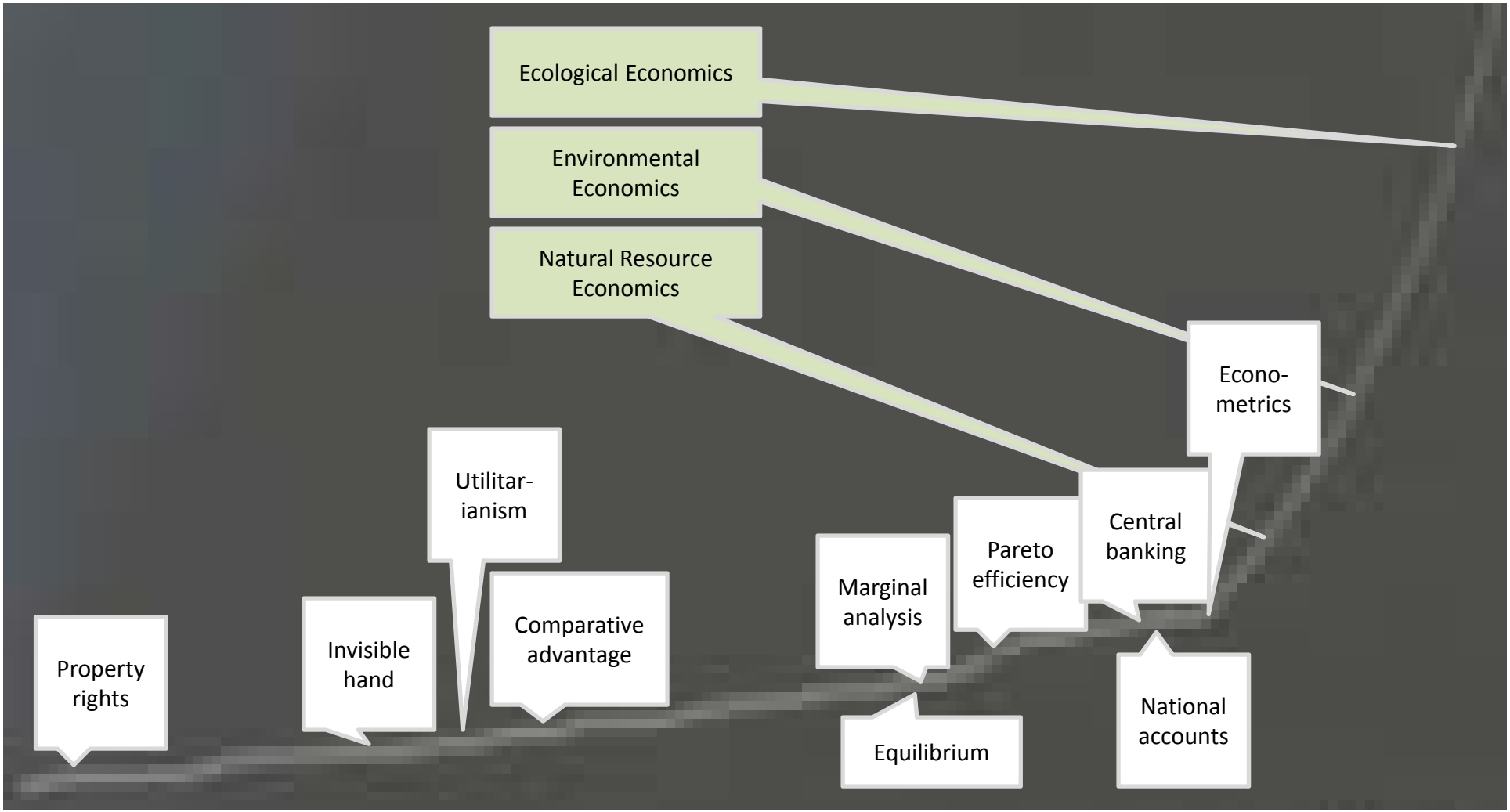
Oct 24 2014 at University of Guelph
Geography Brown Bag Speakers Series

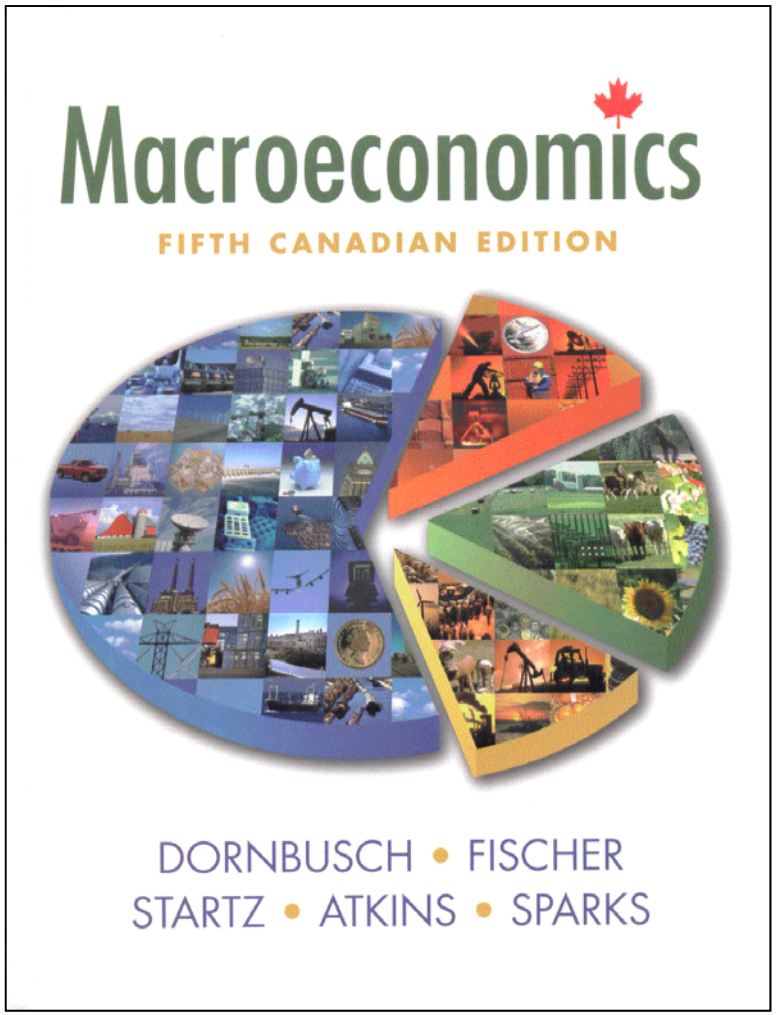
Anthropocene


Material Footprint of Canadians in 2008:
1,026 Million Tonnes in Canada for Canadians
566 Million Tonnes in Canada for ROW
614 Million Tonnes in ROW for Canada
Net 32 T on average per each Canadian:
10 T construction
9 T Fossil Fuels
7 T biomass
7 T metal ores
Source: Wiedmann et al (2013)
Extracted from Anthropocene.info

“Welcome to the Anthropocene” video from anthropocene.info

Origins of important economic concepts and practices





Production uses up natural resources, in particular energy. Is it true, as is sometimes alleged, that exponential growth in the economy will eventually use up the fixed stock of resources? Well yes, it is true in the limited sense that current theories suggest the universe will one day run down. However, this seems more of a concern for a course in astrophysics, or perhaps theology, than for a course in economics. Over any interesting horizon, the economy is protected from resource-depletion disasters by two factors. First, technical progress permits us to produce more using fewer resources. For example, the energy efficiency of room lighting has increased by a factor of 4,500 since Neolithic times.[12] Second, as specific resources come into short supply, their prices rise, leading producers to shift toward substitutes.

Environmental protection is important, however. Even here, technology can be directed to assist us. For example, the conversion of urban transportation systems from horses to internal combustion engines has eliminated most of the pollution associated with transportation.[13] As incomes rise and populations move away from the edge of survival, people and governments choose to spend more on protecting the environment. Unlike other consumption choices, environmental protection is often "bought" through political choices rather than in the marketplace. Because the benefits of environmental protection flow across property boundaries, there is greater reason for the government to intervene on environmental issues than there is with respect to purely private goods.

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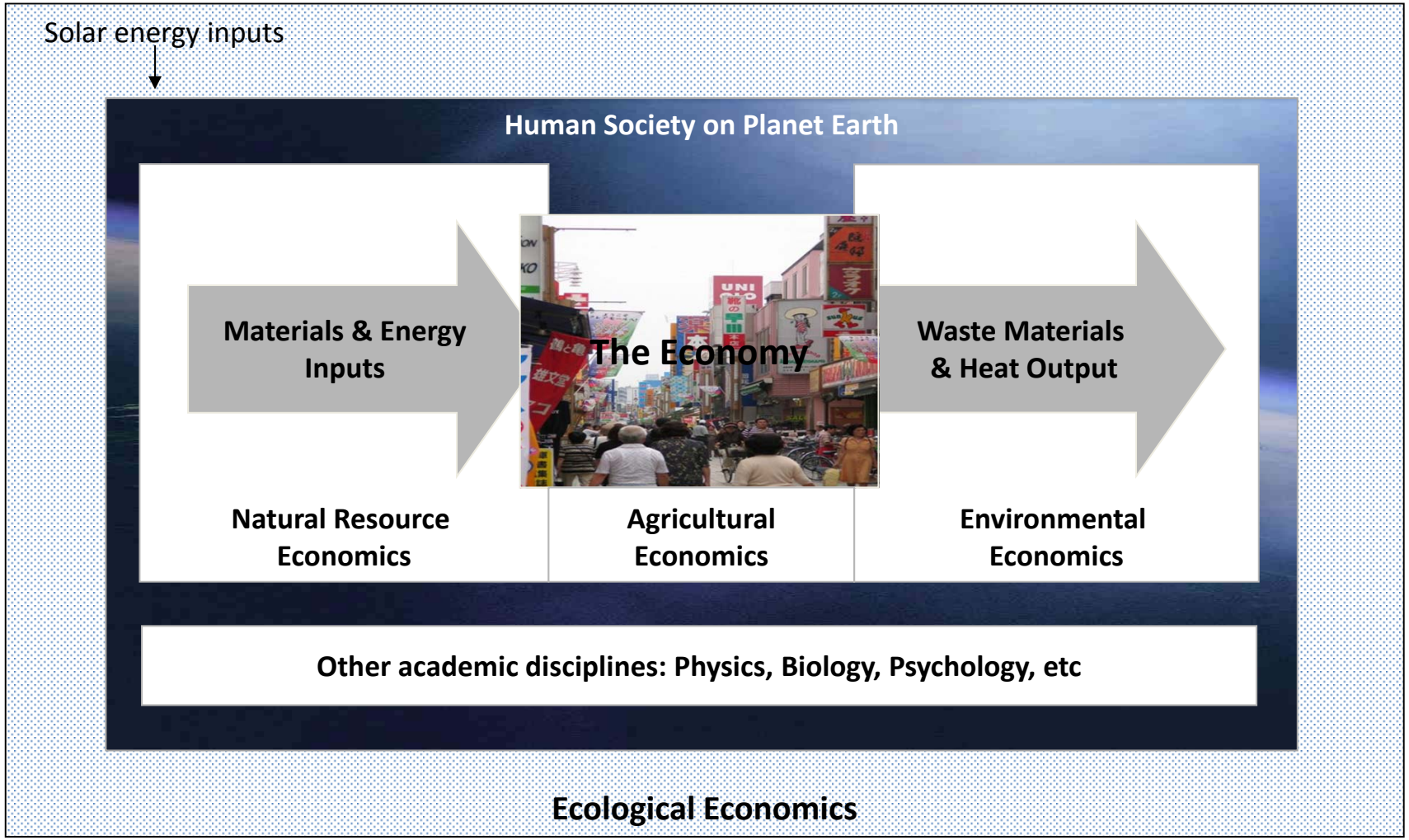
[11]Barro and Sala-i-Martin, *Economic Growth,* table 10.1.

[12]Actually, people in Neolithic times probably didn't have "rooms" per se. For a more recent benchmark, the energy efficiency of room lighting has improved by a factor of 20 since 1900. See William D. Nordhaus, "Do Real Output and Real Wage Measures Capture Reality? The History of Lighting Suggests Not," Cowles Foundation Discussion Paper 1078, 1994.

[13]Think about it for a minute.

Scanned from Dornbusch et al (1999: 98)


Solar energy inputs
Human Society on Planet Earth
Materials & Energy Inputs
The Economy
Waste Materials & Heat Output
Natural Resource Economics
Agricultural Economics
Environmental Economics
Other academic disciplines: Physics, Biology, Psychology, etc
Ecological Economics

How should economics respond?

- Updated theory of production
- Updated consideration of time
- Consideration of space and place
- Updated concept of humans
- Updates to other aspects relevant to human-environment relations

Where should leadership come from?

Canadian Society for Ecological Economics

www.cansee.org

as a chapter of

The International Society for Ecological Economics

www.ecoeco.org

References Cited

- Dornbusch, R. 1999. *Macroeconomics*. 5th Canadian Ed. Toronto, McGraw-Hill Ryerson.

- Wiedmann, T.O, H. Schandl, M. Lenzen, D. Moran, S. Suh, J. West, K. Kanemoto. 2013. The material footprint of nations. *Proceedings of the National Academy of Sciences of the United States of America.* doi: 10.1073/pnas.1220362110

Slide 3 is a screenshot of the video shown in slide 4, which is from Anthropocene.info which is a collaborative project between researcher and communicators from some of the leading scientific research institutions on global sustainability, including the International Geosphere-Biosphere Program (IGBP).