

Welcome to the MIT System Design and Management Program
Systems Thinking Webinar Series

**THE CRISES IN EMPLOYMENT, CONSUMPTION,
ECONOMIC GROWTH, and the ENVIRONMENT:**

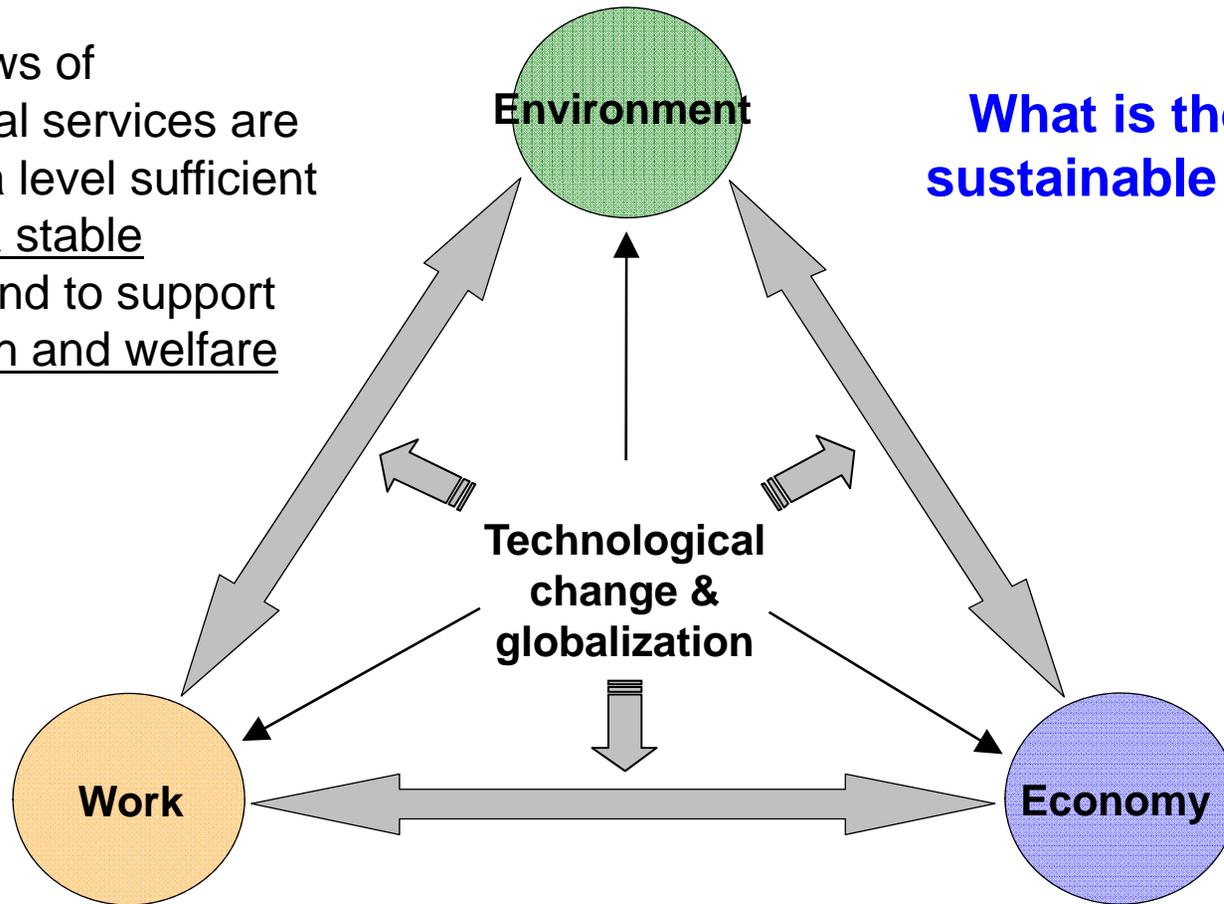
Can a Shorter Workweek and a Greener Economy Provide Relief?

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Long-run flows of environmental services are provided at a level sufficient to maintain a stable ecosystem and to support human health and welfare

What is the meaning of sustainable development?



Livelihoods are secure and available that provide satisfying engagement in work and equitable reward for labor, permit the maintenance of a decent standard of living, and are conducted in a safe working environment

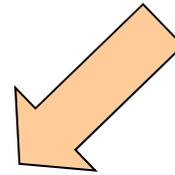
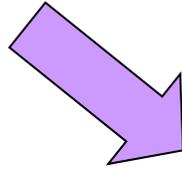
The economy provides goods and services adequate to satisfy the basic material needs of all members of society and provides abundant and equitable opportunities for the realization of human potential

How might the modern industrial or industrializing state be envisioned?

i.e., what is the system?

Supply Side

Extraction industries
Manufacturing
Agriculture
Transportation
Energy
Services
Housing
ICT



Demand Side

Consumer Consumption
Commercial Consumption
Government Consumption

SUSTAINABILITY CHALLENGES

Inadequate Supply of, and Access to, Essential Goods & Services

Toxic Pollution

Climate Disruption

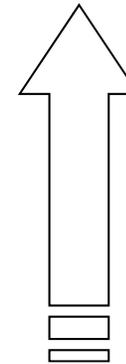
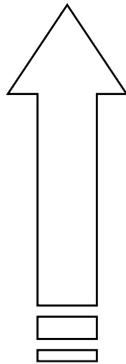
Resource Depletion

Biodiversity/Ecosystem Integrity

Environmental Injustice

Employment/Purchasing Power

Economic Inequity



SOLUTIONS

Education & Human Resource Development

Industry Initiatives

Government Intervention/Regulation

Stakeholder Involvement

Financing Sustainable Development

Supply Side

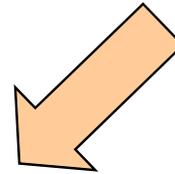
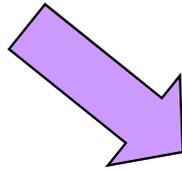
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Producer-created demand →

FINANCE
← Subsidies
← Credit →

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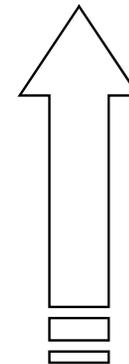
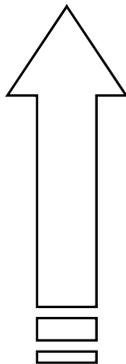
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Reform the Financial System

**WE ARE FACING CRISES IN EMPLOYMENT,
CONSUMPTION, ECONOMIC GROWTH, and
the ENVIRONMENT**

**What would be the impact of adopting a
shorter workweek and greening the
economy?**

What is the Nature of the Current Crisis?

The perfect storm: reinforcement of bad outcomes

- **FINANCE**
- **WEALTH CONCENTRATION**
- **EMPLOYMENT**
- **CONSUMPTION AND PRODUCTION**
- **ENVIRONMENT**

The Nature of the Current Crisis

- **FINANCE:**

Origin: reckless provision of credit + issuance of dubious financial instruments

Aftermath: collapse of the housing and financial markets

- reluctance of lenders to lend, and ...
- producers and consumers to borrow in uncertain and volatile futures
- This affects both the concentration of wealth and employment prospects →

- **WEALTH CONCENTRATION**

- **EMPLOYMENT**

The Nature of the Current Crisis

- **FINANCE →**

- **WEALTH CONCENTRATION**

- As financial practice increases the concentration of wealth, political and economic power is also concentrated

- (see the recent Utube Wealth Inequality in America)

- We have witnessed periods of large growth and profit-taking with little/no changes in wages

- Wealth concentration leads to erosion in fair and inclusive market rules

- Government capture and intervention on behalf of the few

- Exploitation and exclusion of poor and middle-class people

- Manipulation of democratic preferences, and

- Erosion of widespread opportunities for ownership and employment →

- **EMPLOYMENT**

The Nature of the Current Crisis

- FINANCE →
- WEALTH CONCENTRATION →
- EMPLOYMENT
 - The financial/credit crisis exacerbates the prior long-term crisis in increasing high un- and under-employment, with
 - declining skills, wages, and purchasing power (demand) for some. This in turn affects CONSUMPTION →
- CONSUMPTION:
 - The decline in purchasing power and easy credit further lowers consumer demand → further unemployment. This in turn affects →
- INVESTMENT AND PRODUCTION

The Nature of the Current Crisis

- FINANCE →
- WEALTH CONCENTRATION →
- EMPLOYMENT →
- CONSUMPTION →
- INVESTMENT AND PRODUCTION
 - Firms have historically focused on increasing productivity by replacing labor with physical capital → overcapacity (unrealized profits & loss of domestic demand)
 - The result is an increasing reliance on trade to generate revenue and ...
 - the further shedding of labor
 - Decreasing demand globally and the end of cheap energy
 - increases costs → reluctance to improve the ENVIRONMENT
 - decreases profits → reluctance to improve the ENVIRONMENT, and
 - increases volatility →
 - reluctance to expand production and hire workers →
 - greater preference for using capital rather than labor. This further affects EMPLOYMENT

The Nature of the Current Crisis

- FINANCE →
- WEALTH CONCENTRATION →
- EMPLOYMENT →
- CONSUMPTION →
- INVESTMENT AND PRODUCTION →
- ENVIRONMENT
 - Excessive and polluting production, throughput, and ...
 - too much consumption by a part of society using **too much energy and natural capital**
 - Pressure to **relax or avoid environmental, health, and safety regulation** →
 - Shifting costs to government or the public
- The Perfect Storm!

What can be done about the Current Crises?

- **FINANCE** (reform the finance system)
- **WEALTH CONCENTRATION** (redistributive policies)
- **EMPLOYMENT** (shorten the workweek?)
- **CONSUMPTION AND PRODUCTION** (green the economy?)
- **ENVIRONMENT** (regulation; economic instruments)

What are additional systemic contributions to unemployment and under-employment?

- Technological displacement and attendant deskilling of labor, leading to decreases in wages and purchasing power
- Tendency to shift from utilizing labor to utilizing physical capital, driven by both costs associated with labor benefits and by volatility of the economy
- Location of production and service facilities abroad (offshoring slowing or reversing now)
- Reluctance to expand employment in volatile times
- Not a mismatch of skills supplied and demanded

What is involved in “greening the economy”?

- Dematerializing, de-toxifying, and de-energizing production, products, and services (moderate supply-side changes)
- Moving to less environmentally-damaging energy sources (moderate supply-side changes)
- If either is less expensive → more consumption, and perhaps more environmental damage (offset by the rebound effect, but size unclear)
- If either is more expensive → lower production and consumption, offset by shift to more labor-intensive production, more employment, and more consumption (net effect unclear)
- Greening manufacturing and energy → green jobs? A triple dividend? (more radical supply-side changes are possible, but jobs are likely to be redistributed between sectors with no net gain in employment; a lowering of skills may be demanded, depressing wages)
- Consuming less (serious demand-side changes)
- Travelling less (serious demand-side changes)
- Working less? (with lower wages ~ lowering demand)

The effects of a shorter workweek

- Rationale: The number of people working would increase initially
- Less stress, fatigue, and tedium; more leisure time, more time with family; more time to nurture relationships, learn languages, travel.
- If take-home wages were reduced, existing workers could save less and buy less (material- and energy- intensive goods) and make less use of services. These effects plus less savings for investment by others → less consumption and less environmental damage. But wages and purchasing power could be reduced.
- More purchases spent on leisure by existing workers by newly-hired workers could result in more environmental damage
- If wages were initially retained, more people could buy more, unless producers and service providers shift from utilizing labor to utilizing more physical capital and energy → decreasing wages and/or employment, and ultimately consumption →
- Effects would not be the same in all sectors

What would be the impact of adopting a shorter workweek and greening the economy?

These seem desirable, but the consequences of their adoption are not what one might expect if these are approached separately.

This suggests addressing the problems of employment and environment within a larger systems framework

Supply Side

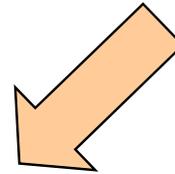
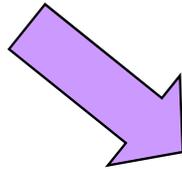
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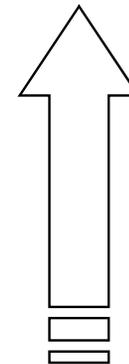
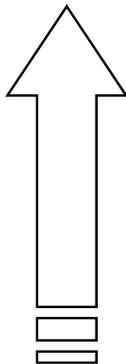
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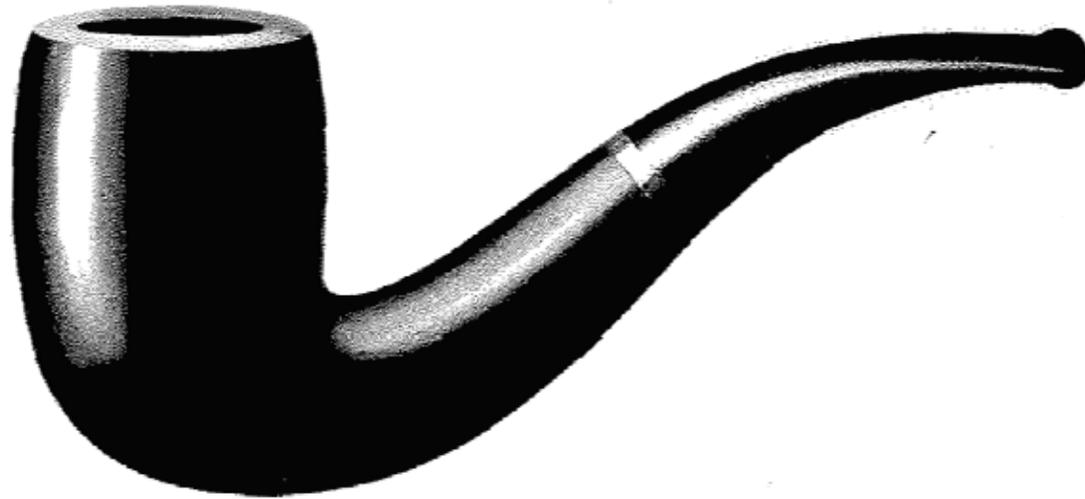
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Additional ways of increasing earning capacity and improving the environment

- Income and wealth transfers to the poor
 - » changes in the taxing of income
 - » tax excess profits
- Provide incentives for hiring labor and remove those for capital acquisition and energy use.
- Tax pollution and energy, instead of per-capita labor costs
- Collect employer-based labor benefits as a percentage of sales, rather than on a per-worker basis
- Prohibit elimination of jobs (~Germany ~ 9% growth)
- Increase labor's claim on profits from production/services
 - » By **designing work back into production and services**

Additional ways of increasing earning capacity and improving the environment, cont' d

- Meet *essential* needs of consumers in a different way (**shift to product services**) – lowering consumption, environmental impacts & costs to consumers; and increasing wages.
- Encourage the production of **essential goods and services** and discourage others – regulate advertising; tax the “bads”
- Invest in **labor-intensive production and services**
- **Change workers into owners** – thru changes in business ownership and corporate structures
 - » By allowing them to acquire capital with the (future) earnings of capital (two-factor economics – R. Ashford)
- **Tax Corporations which shift production/services abroad**
- **Educate workers/consumers for the economy of the future**



Ceci n'est pas une pipe.

Magritte

THIS IS NOT A PIPE RENE MAGRITTE 1929

NICHOLAS A ASHFORD

RALPH P HALL

TECHNOLOGY, GLOBALIZATION,
AND SUSTAINABLE DEVELOPMENT

TRANSFORMING THE INDUSTRIAL STATE



environment • economy • employment

THIS IS NOT (JUST) A TEXTBOOK

ASHFORD & HALL 2011
YALE UNIVERSITY PRESS

Book website:

<http://ralphphall.wordpress.com/technology-globalization-and-sustainable-development/>

Papers related to this webinar:

<http://www.europeanfinancialreview.com/?p=5884>

and

Kallis, G. et. al. *Sustainability* 2012(4) in press

March 11th webinar: recording and slides available later this week

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