

# Strategies for Personal and Organizational Success in a World that has Limits to Growth

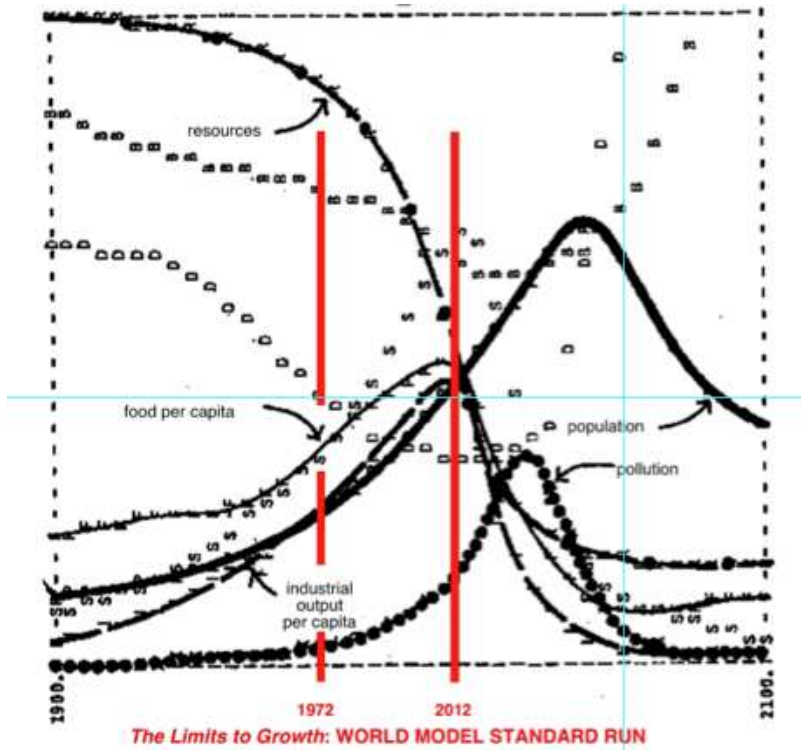
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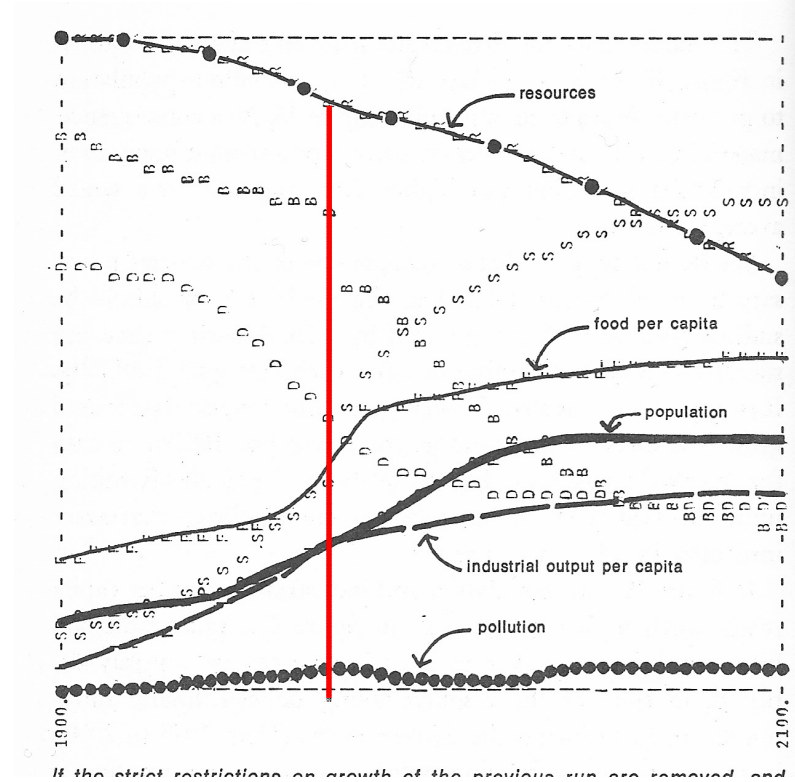
# Exercise about habits

# Main Ideas for this Session

- In 1972 there were two future paths for global society - overshoot and sustainable development.
- Sustainable Development requires the strategy of adaptation
- Our efforts to adapt have changed into strategies that fail.
- Thus we are still following the overshoot path.
- We must change our focus in three ways.
- Quit only talking and start taking action



World3: Overshoot Path



World3: Sustainable Development Path

Two possible futures from our 1972 study

# Brundtland Commission Definition

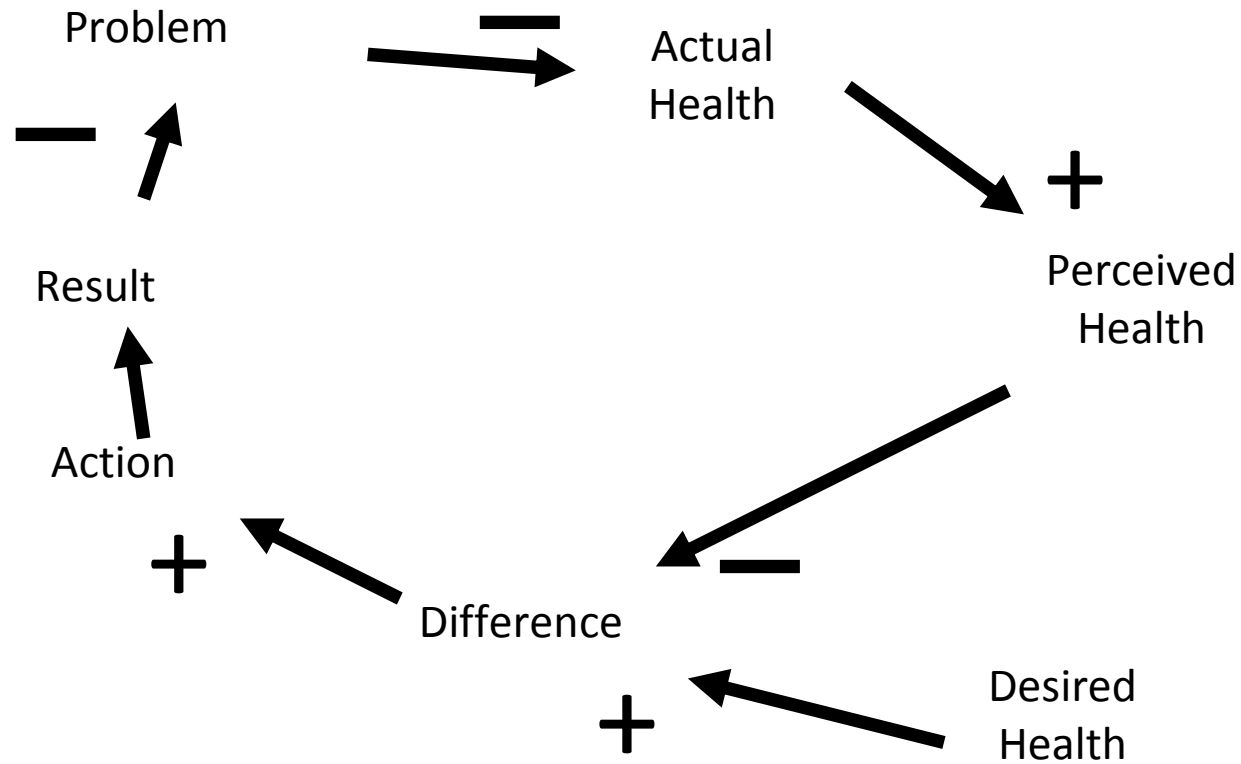
Sustainable Development is: development that meets the needs of the present without compromising the ability of future generations to meet their own needs

*Our Common Future*, Report of the World Commission on Environment And Development, United Nations, 11 December 1987

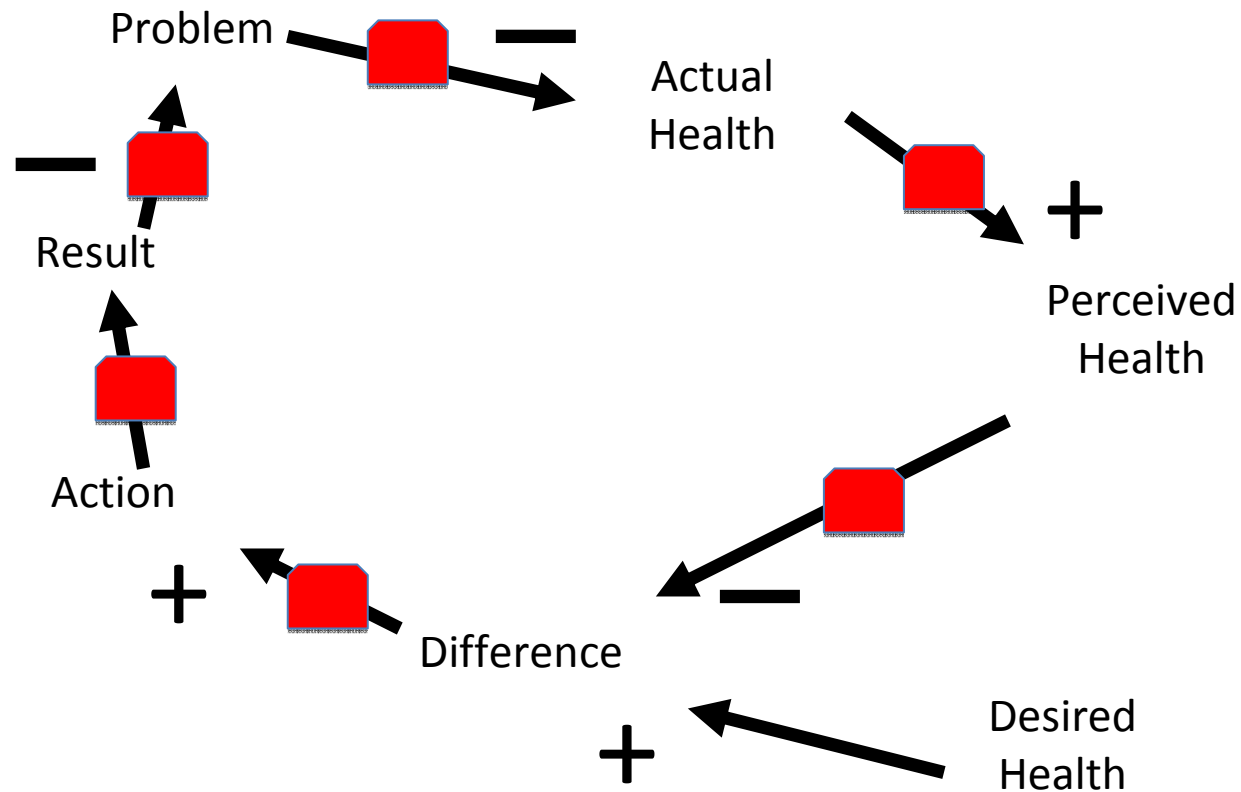
# The common assumptions about sustainable development

- The rich can keep what they have (preferably get even more)
- while the poor rise to the standards of the rich
- this will be achieved simply by adapting our current system (markets and politics)
- by developing new technologies that 'decouple' GDP growth in the use of energy and materials.

# Adaptation

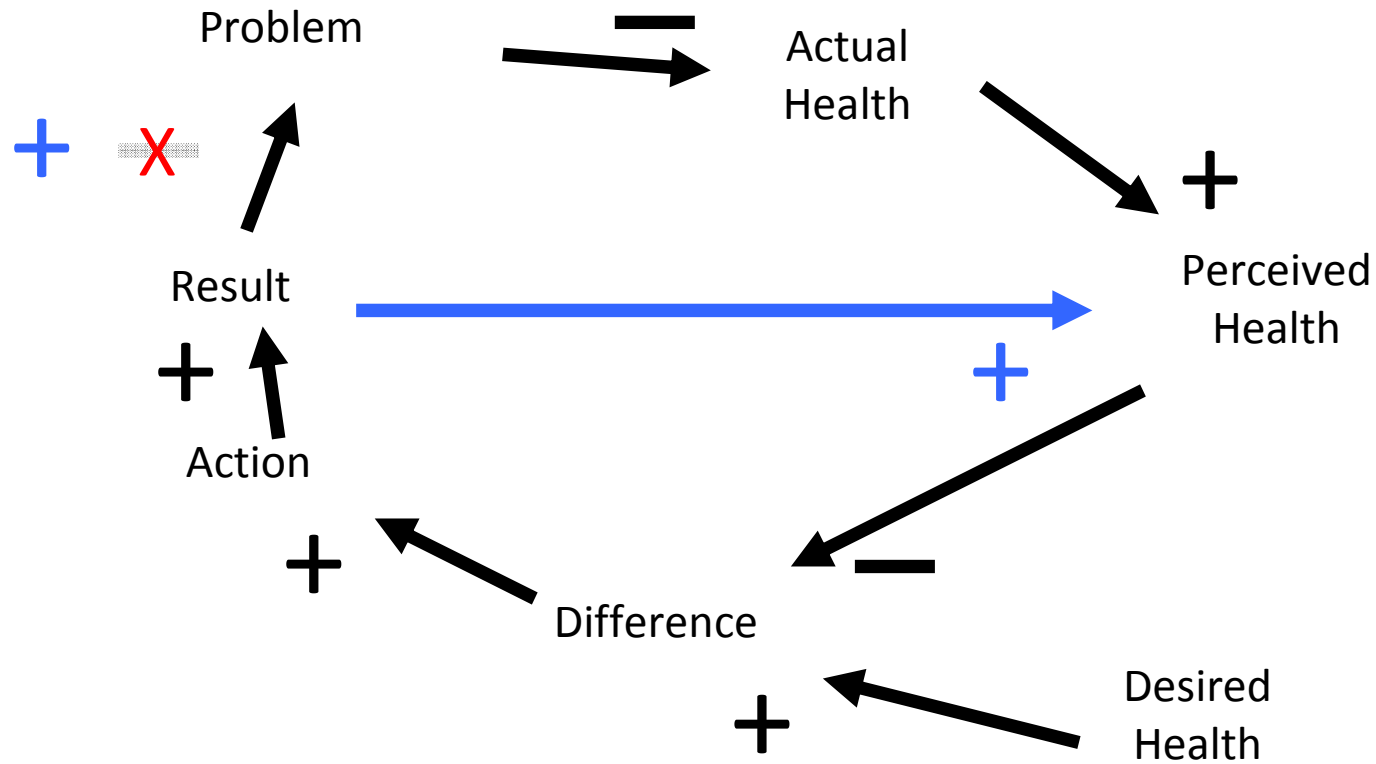


# Delays in Adaptation

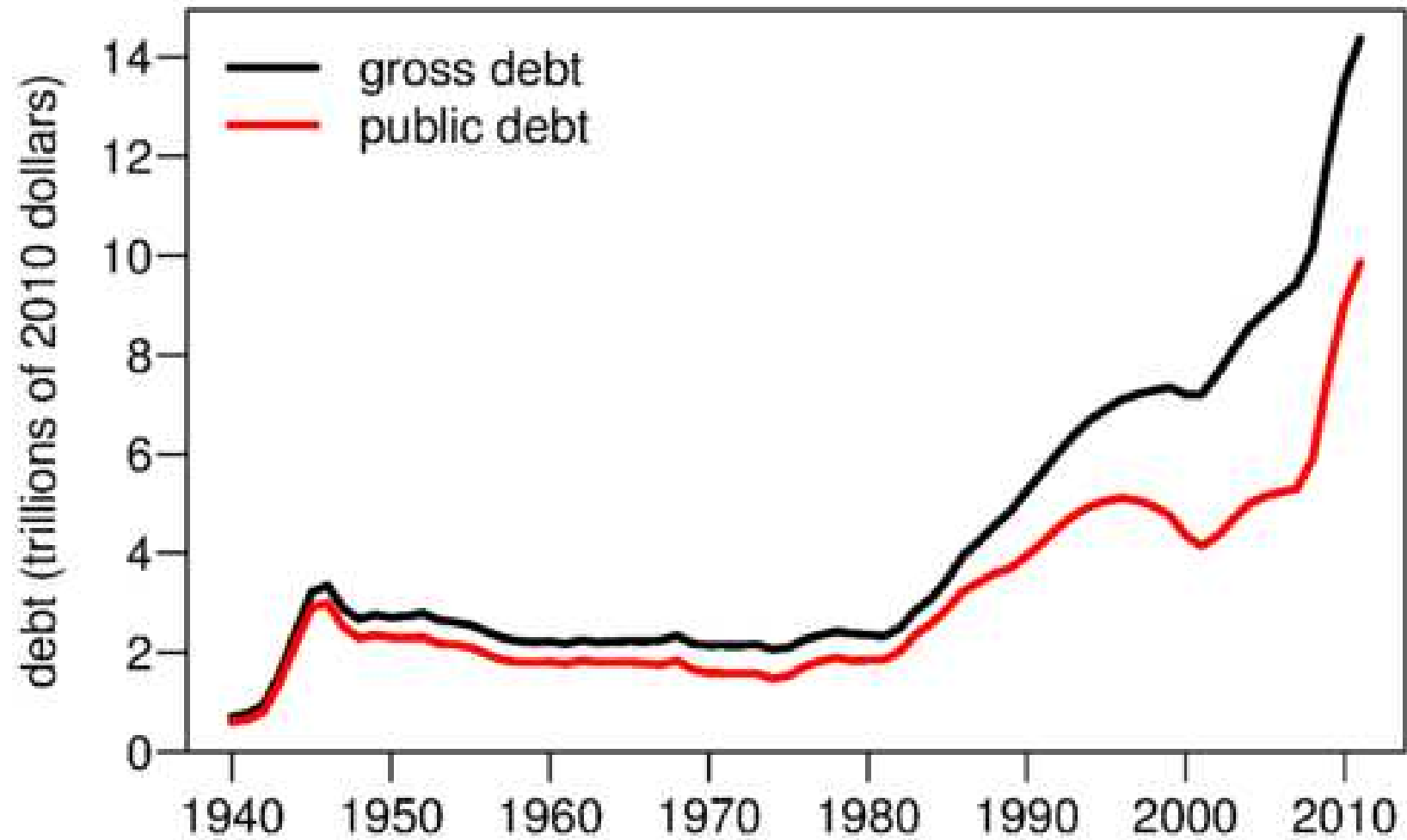




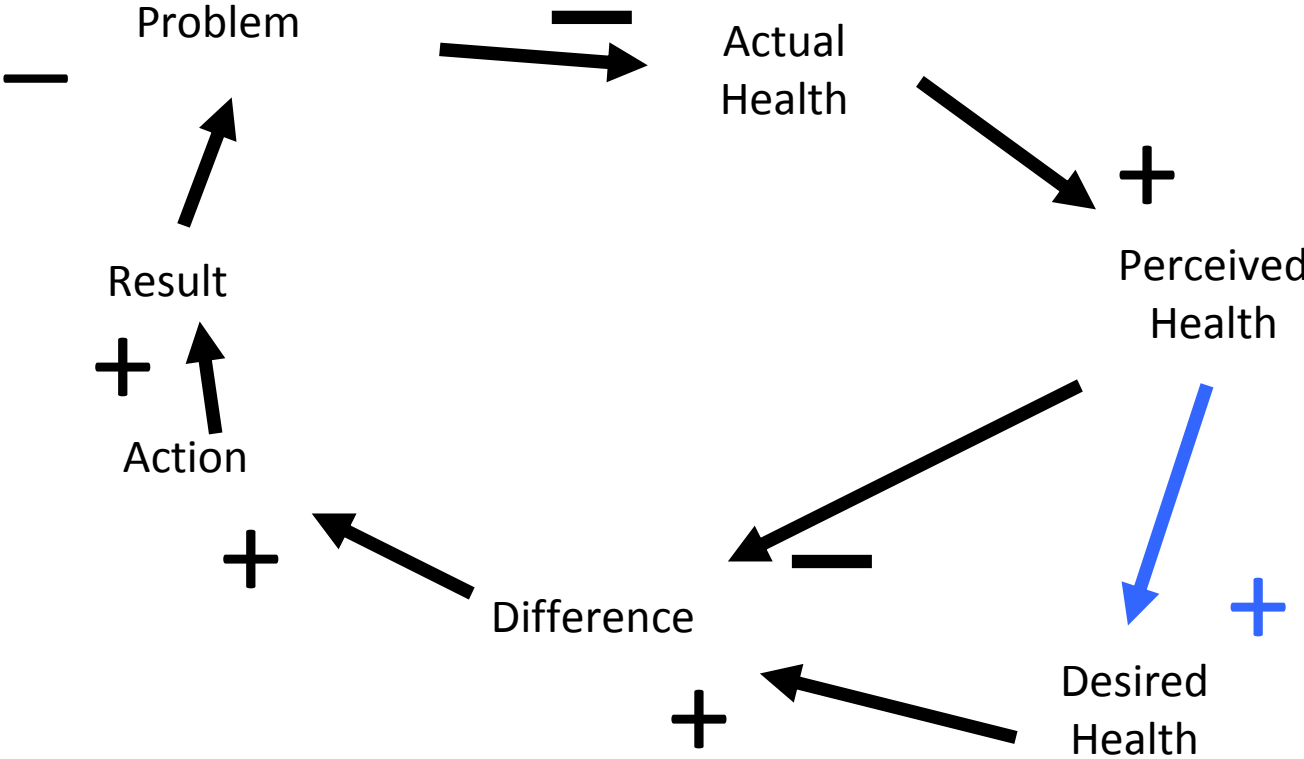
# Addiction



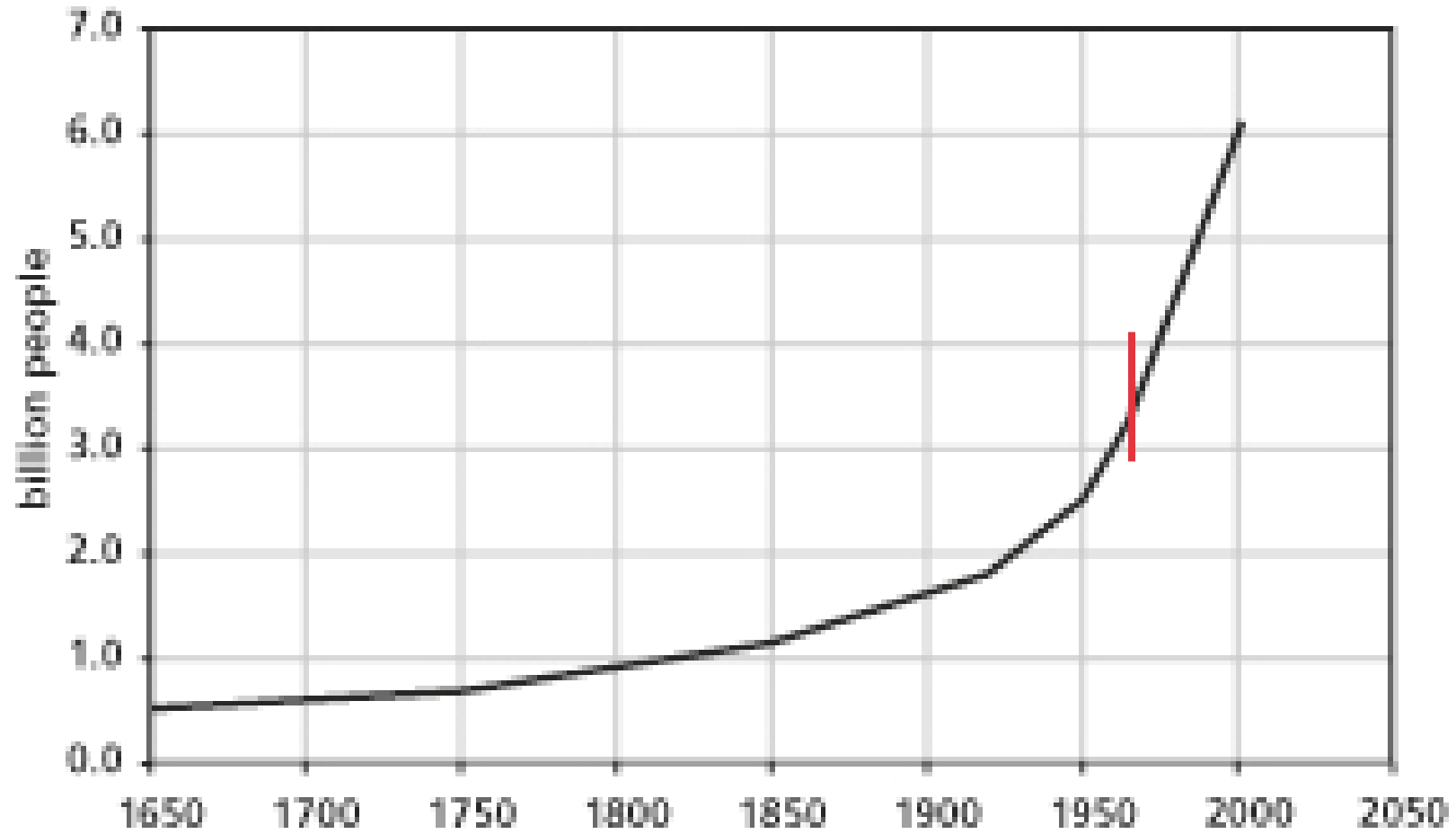
# History of US Debt



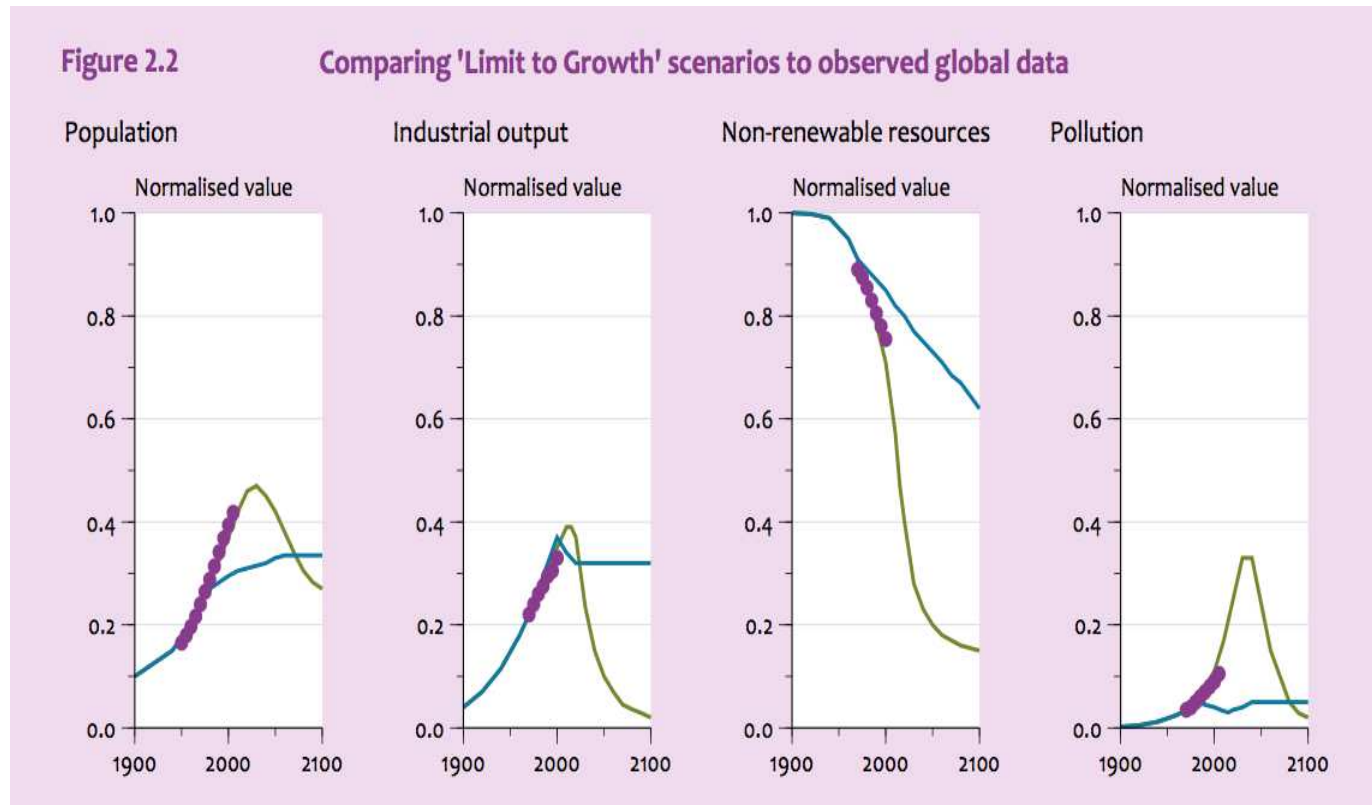
# Acceptance



# World Population



# Global society is following the overshoot scenario

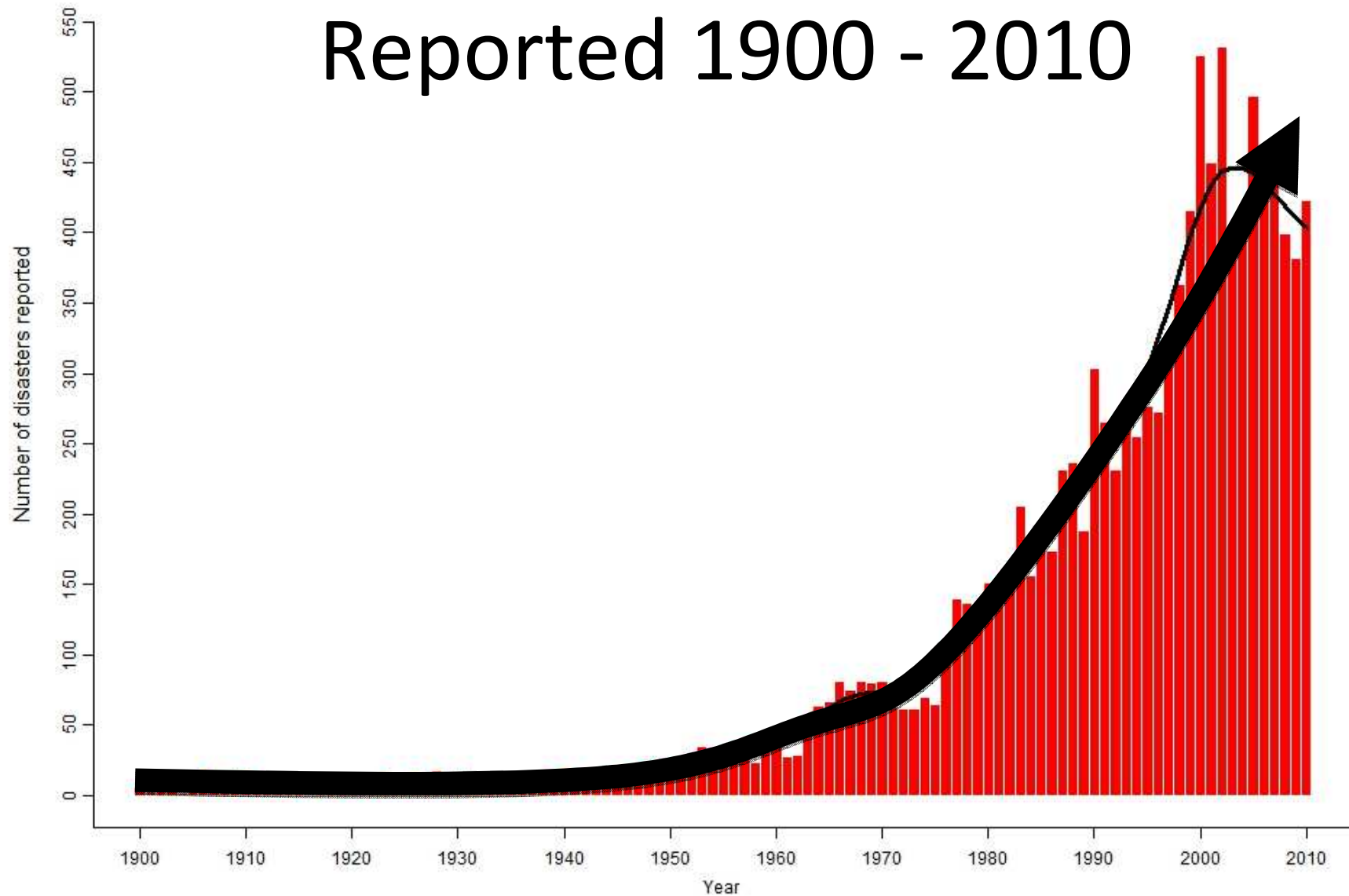


Overshoot Path 

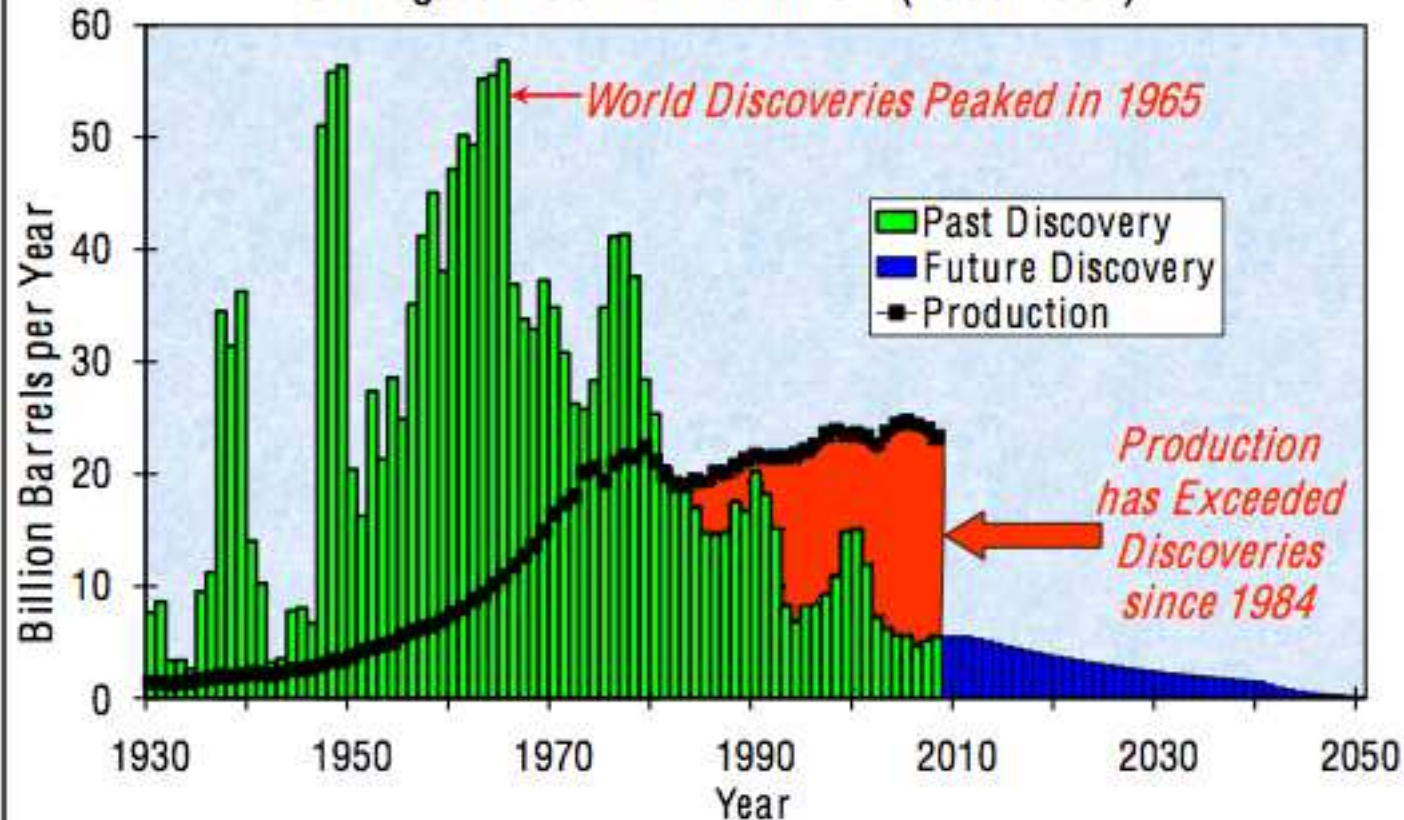
Sustainable Dev. Path 

Historical Data   

# Natural Disasters Reported 1900 - 2010



### The Growing Gap between Production and Discovery of Regular Conventional Oil (1930-2050)



Past discoveries have been backdated with revisions to reflect **“Reserve Growth”**

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(data from Campbell), personal communication, October, 2009)

# Exercise on Secret Code



# Meadows Definition of Sustainable Development

Sustainable Development is: development that prepares the present system to deal with shocks and chaos in ways that minimally compromise the ability of future generations to meet their own needs

# Increase Resilience Even if you Have to Reduce Efficiency

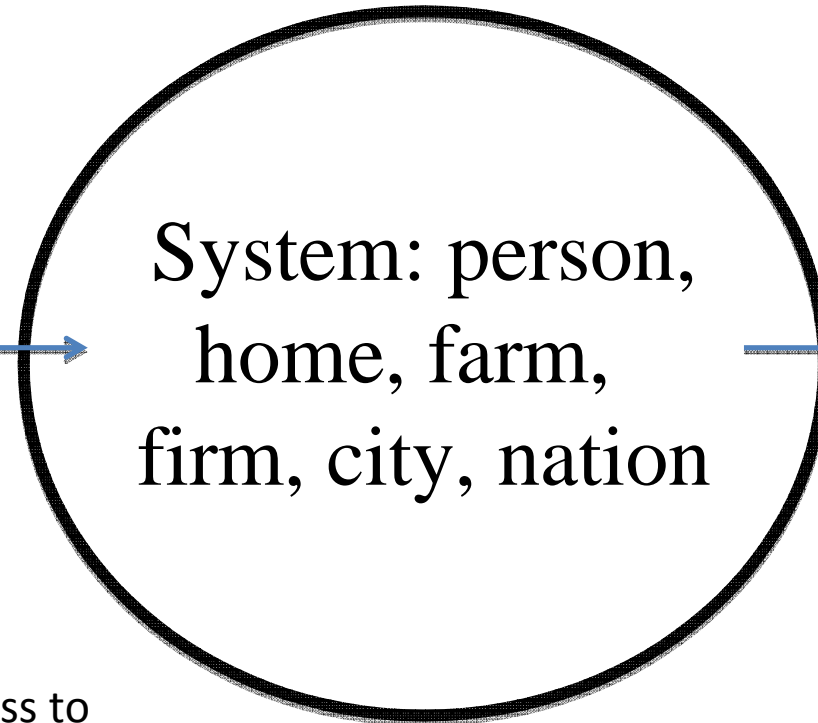
Resilience is the ability to continue providing essential functions after receiving a shock:

- food, transport, health care, warmth,
- profit, market share, employment, reputation, dedication

Efficiency is the amount of output you get from a unit of input:

- km/liter, € output/hour of labor, hours of warmth/BTU of energy used, kg of food/kilo of fertilizer

Essential Inputs

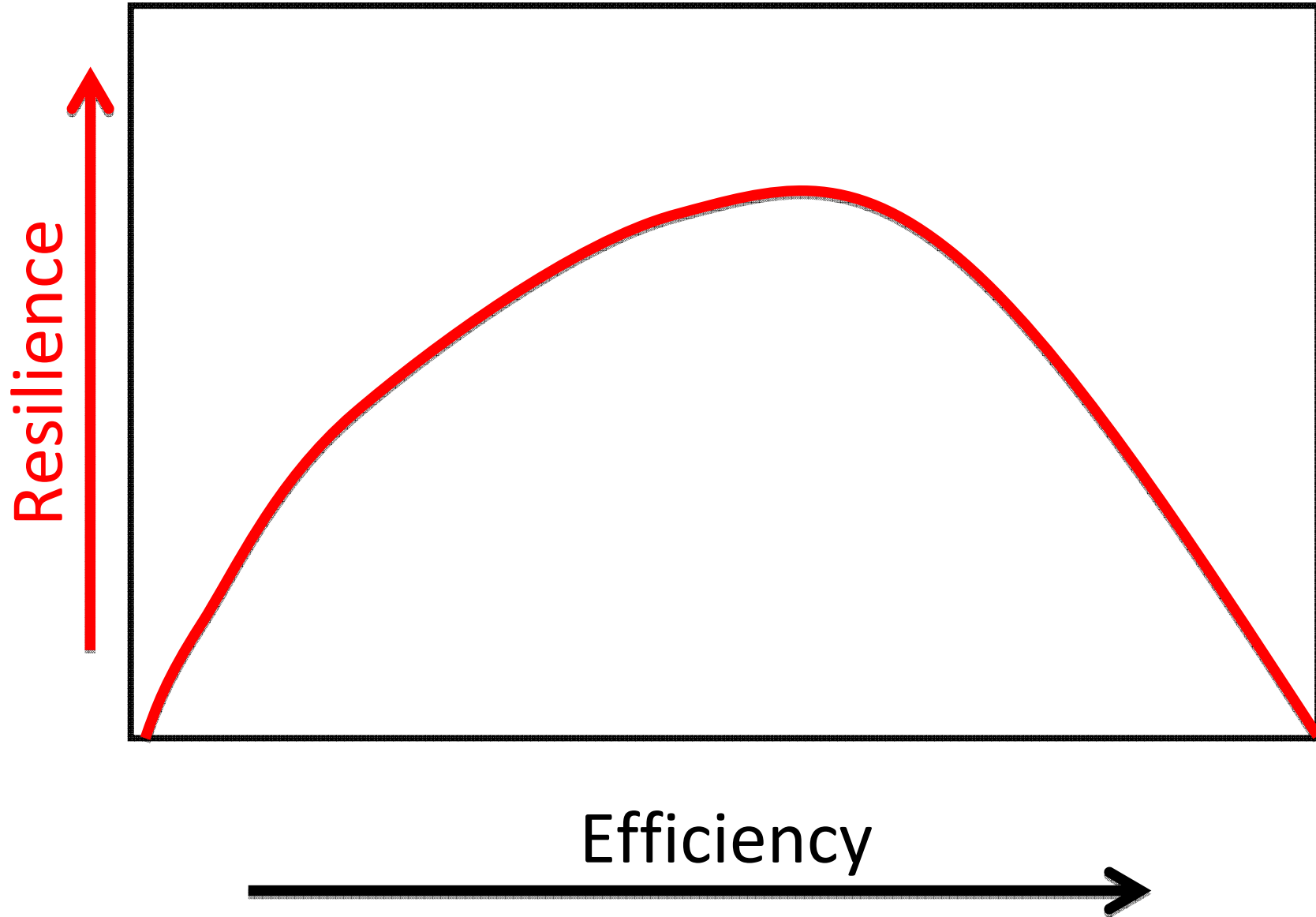


Essential Outputs



Money, energy, access to the internet, information, clean water, raw materials, manufactured parts, labor, income

wastes, reputation information, products, payments



# Focus on Universal Problems

- Global problems affect everyone (climate change, spread of nuclear weapons, epidemics, etc.). Solving them requires everyone to agree and act. Costs here and now give benefits there and later.
- Universal problems affect everyone (city air pollution, soil erosion, flooding, etc.). Solving them requires only a small group to agree and act. Costs here and now give benefits here and soon.

# Forget Simple Solutions

$$\text{CO}_2 \text{ Emissions} = \text{Number of People} \times \text{Units of Capital Per Person} \times \text{Energy Required per Capital Unit} \times \text{Fraction of Energy from Fossil Fuels}$$

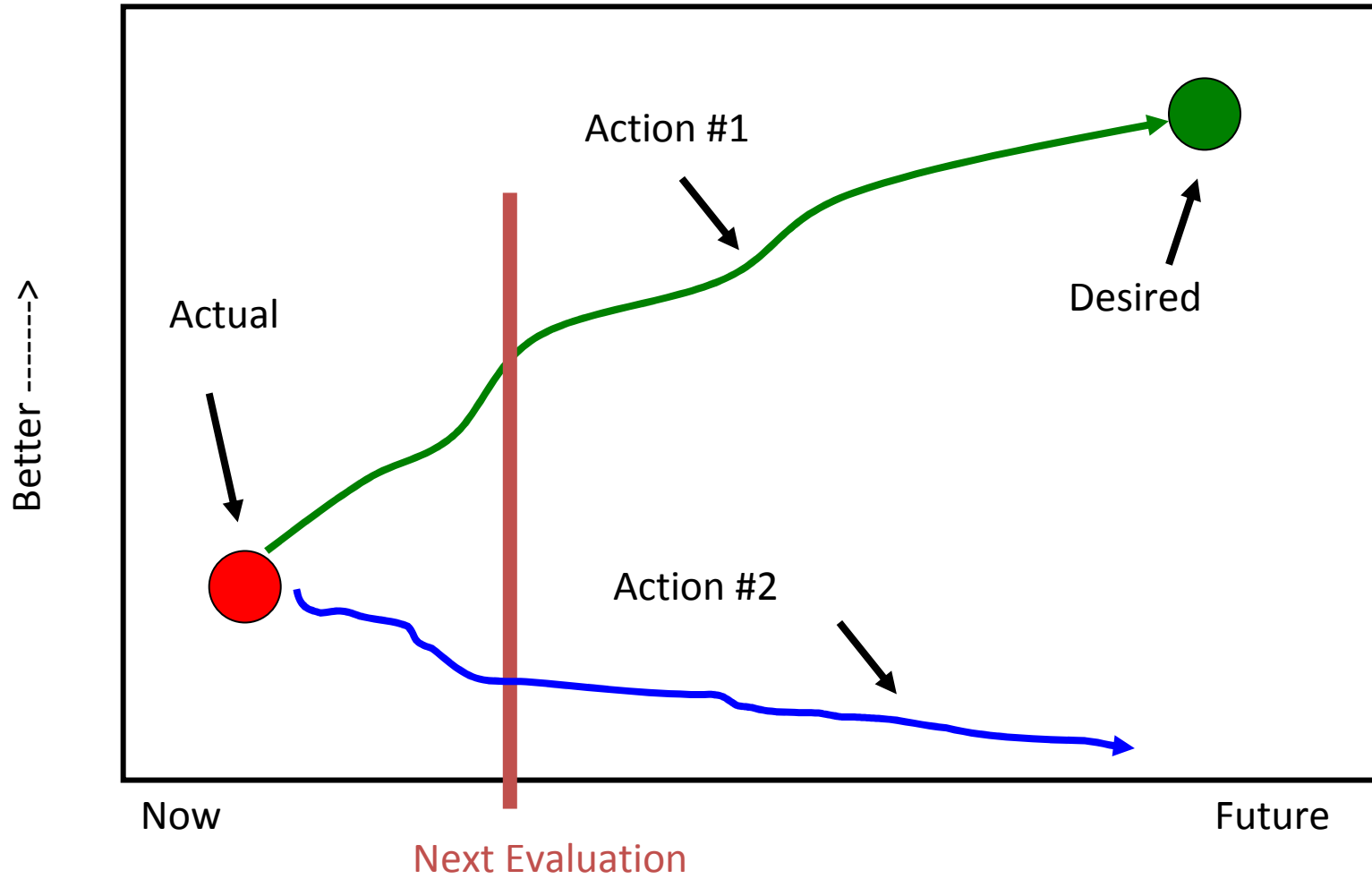


Social & Cultural Factors

Technical Factors

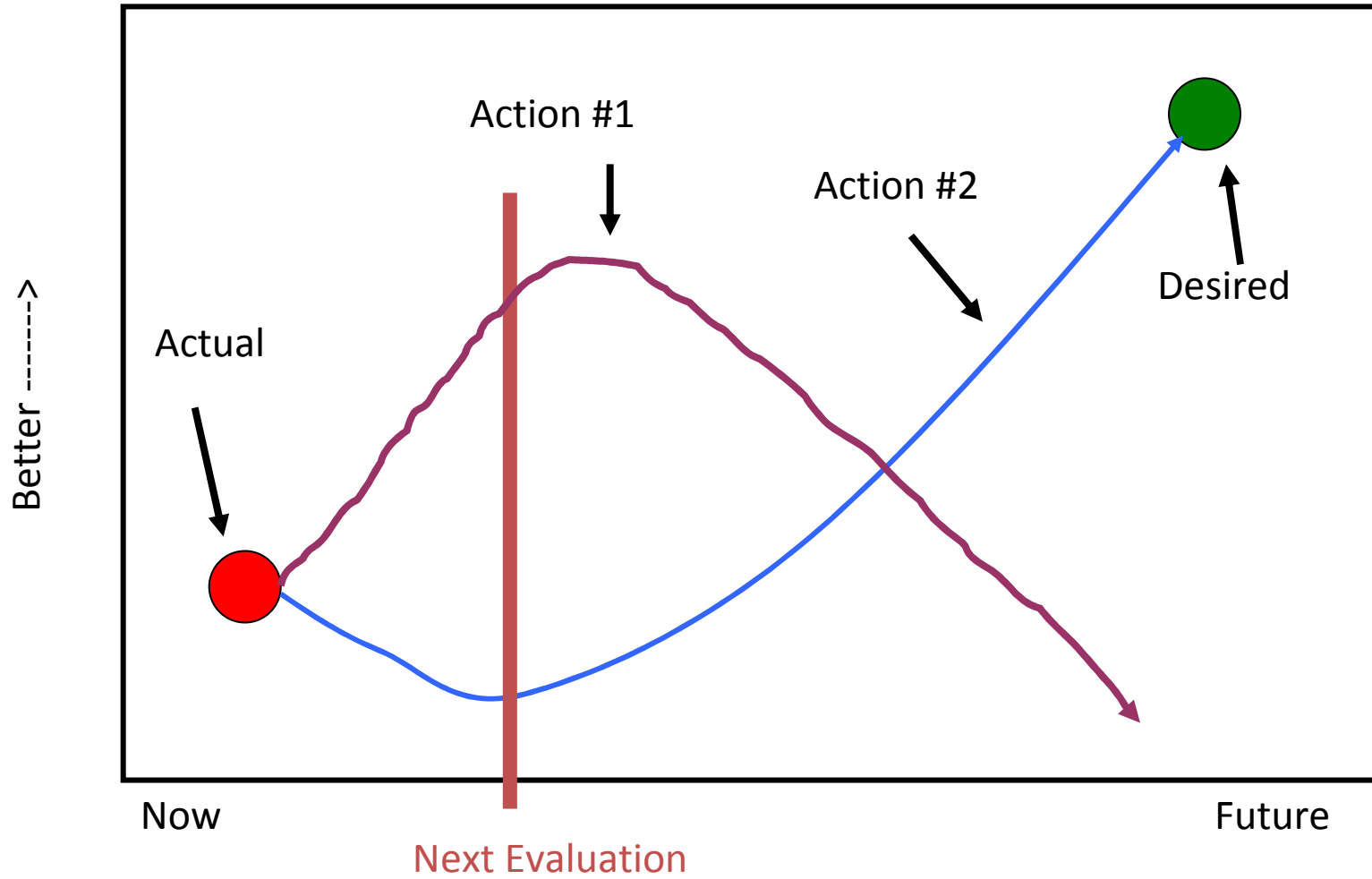
Look Far Ahead in Time

# Easy Problems





# Hard Problems



# Personal Strategies

- Remember that everyone makes mistakes in predicting the future.
- Accept that you cannot solve the whole problem.
- Your moral obligation is to do your share.
- Reduce your boundaries of action until you can see the results of your actions.
- Create personal space away from global problems.
- Design resilience into your life style.
- Value your friends.

# University Strategies

- Remember that some of the data we teach is wrong now and much will become obsolete soon.
- The goal of teaching is not to give information but to teach skills.
  - Interaction with real world problems,
- Teach about paradigms
- Students' ethics are an appropriate and important topic for classrooms.
- Expand the boundaries of professional responsibility.
- Teach about resilience: measuring, increasing
- Recognize that lifelong friendships are one of the most important products of university life

# Exercise about Action