Mega-Narratives of Scientific Technology: A Time of Crisis

Langdon Winner

Thomas Phelan Chair of Humanities and Social Sciences
Rensselaer Polytechnic Institute
Troy, New York

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winner@rpi.edu

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Often what matters is less a question of precise reasoning than of the character of expansive, often dramatic stories – mega-narratives -- about what is ultimately at stake in technological involvements.

"Mega-narratives" provide the stage settings and trajectories for action in which particular persons, groups and whole societies situate themselves as they ponder the prospects for wellbeing associated with scientific technology and its specific projects.

My view:

Today some important, widely embraced meg-narratives have arrived at a point of crisis, having lost much of their credibility and capacity to anchor fundamental meanings and expectations.

Favorite American Mega-Narrative: Technology as a "Second Creation"

Trans-continental railroad, 1869

Spiritual Machines?
early 21st century
(Kurzweil and others)

Mega-narratives that depict people and technology often express themes of themes of nationalism, conquest, empire, and dominance.

How do prominent narratives associated with technology arise?

Example:

In the twentieth century, a dynamic combination of advertising, marketing, design, and public relations psychology promoted mass consumerism.

Key to its success was a narrative of modern life, namely the belief that products made widely available as consumer goods – automobiles, appliances, plastics, etc. – offered *ways for ordinary people to participate in the tremendous power of technology.*

Power fantasies of consumerism

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"....we shall find in the experience of the past,
in the observation of the progress that the
sciences and civilization have made thus far...
the strongest motives for believing that nature
has set no limit to our hopes."

Marquis de Condorcet
1743-1794

Modernity brought the almost universal conviction that humanity's prospects depend upon continuing expansion of scientific knowledge, embodied in technological advance, leading to inevitable improvement in nutrition, health, mobility, and other kinds of general material wellbeing.   (A reasonable expectation!)

So thorough was the victory of this idea that discussions about it became remarkably one-sided, stressing only expectations of better times ahead; the upside was applauded, reports of any downside were almost always ignored or dismissed as mere "pessimism."

W. W. ROSTOW

The stages of economic growth

A non-communist manifesto

Third edition
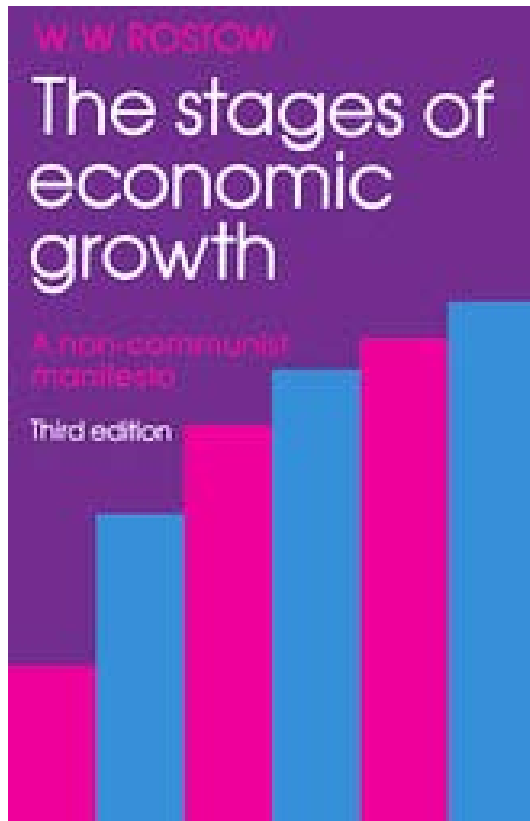
While the mega-narrative of progress was always *universal* in its basic story line, an important restatement of this theme occurred in the decades following World War II:

The Gospel of Prosperity

**Lyndon Johnson and
W.W. Rostow**

(planning the Vietnam war)

Rostow's Model - the Stages of Economic Development

http://www.bized.co.uk/virtual/dc/copper/theory/th9.htm

In 1960, the American Economic Historian, WW Rostow suggested that countries passed through five stages of economic development.

Stage 5 High Mass Consumption
consumer oriented, durable goods flourish, service sector becomes dominant

Stage 4 Drive to Maturity
diversification, innovation, less reliance on imports, investment

Stage 3 Take Off
Industrialisation, growing investment, regional growth, political change

Stage 2 Transitional Stage
specialization, surpluses, infrastructure

Stage 1 Traditional Society
subsistence, barter, agriculture

According to Rostow development requires substantial investment in capital. For the economies of LDCs to grow the right conditions for such investment would have to be created. If aid is given or foreign direct investment occurs at stage 3 the economy needs to have reached stage 2. If the stage 2 has been reached then injections of investment may lead to rapid growth.

Writings of this kind gave an explicit or implicit answer to a major problem: **inequality** -- the obvious gap between rich and poor within the world's populace.

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Two metaphors illuminated the basic promise of the Gospel of Prosperity:

1.The expanding "pie"

2.The "rising tide"

Share of the World's Wealth

Share of the World's Wealth

(just make the "pie" larger)

Low tide

A rising tide (economic growth)
. . . lifts all boats

Problems in The Gospel of Prosperity:

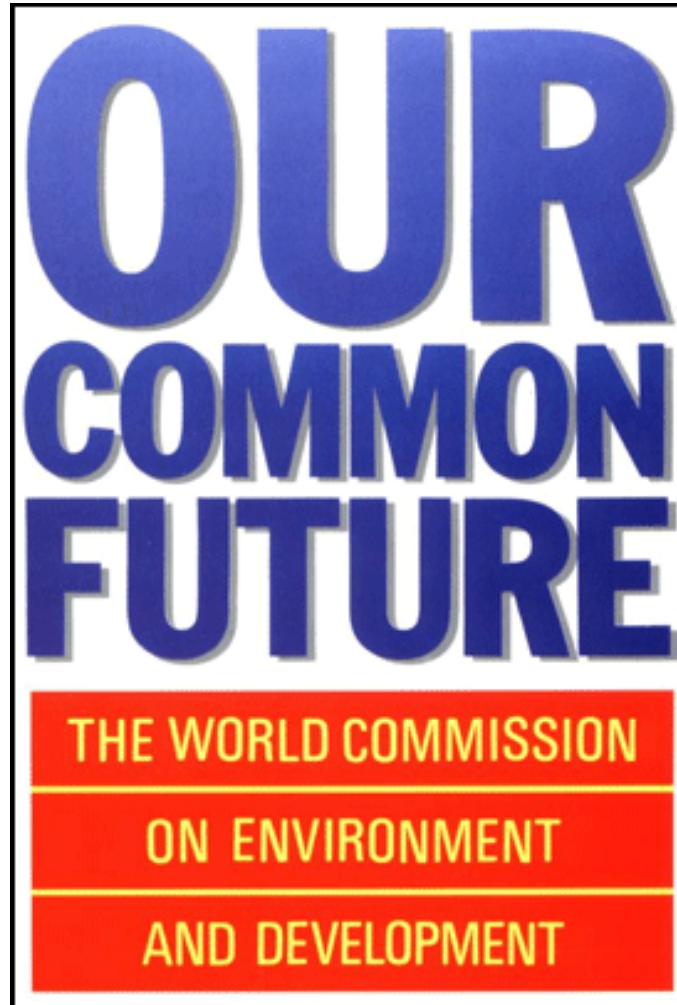-- > Inequality persists

The World Bank reports that half of the world's population still lives on $2.50 a day or less.

By the 1970s and 1980s another problem in the Gospel of Prosperity had become increasingly obvious.

Modern industrial and agricultural production bring serious **environmental damage.**

Gro Harlem Brundtland

"We see around us growing evidence of man-made harm in many regions of the earth: dangerous levels of pollution in water, air, earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources; and gross deficiencies, harmful to the physical, mental and social health of man....."

-- *Our Common Future*, 1987

"What is needed now is a new era of economic growth – growth that is forceful and …socially and environmentally *sustainable*."

→ The report served as the basis for the Rio Summit, 1992

The follow-up U.N. summit meeting in

Johannesburg 2002 showed little improvement.

"...a triumph for greed and self-interest, a
tragedy for poor people and the environment."

-- Oxfam

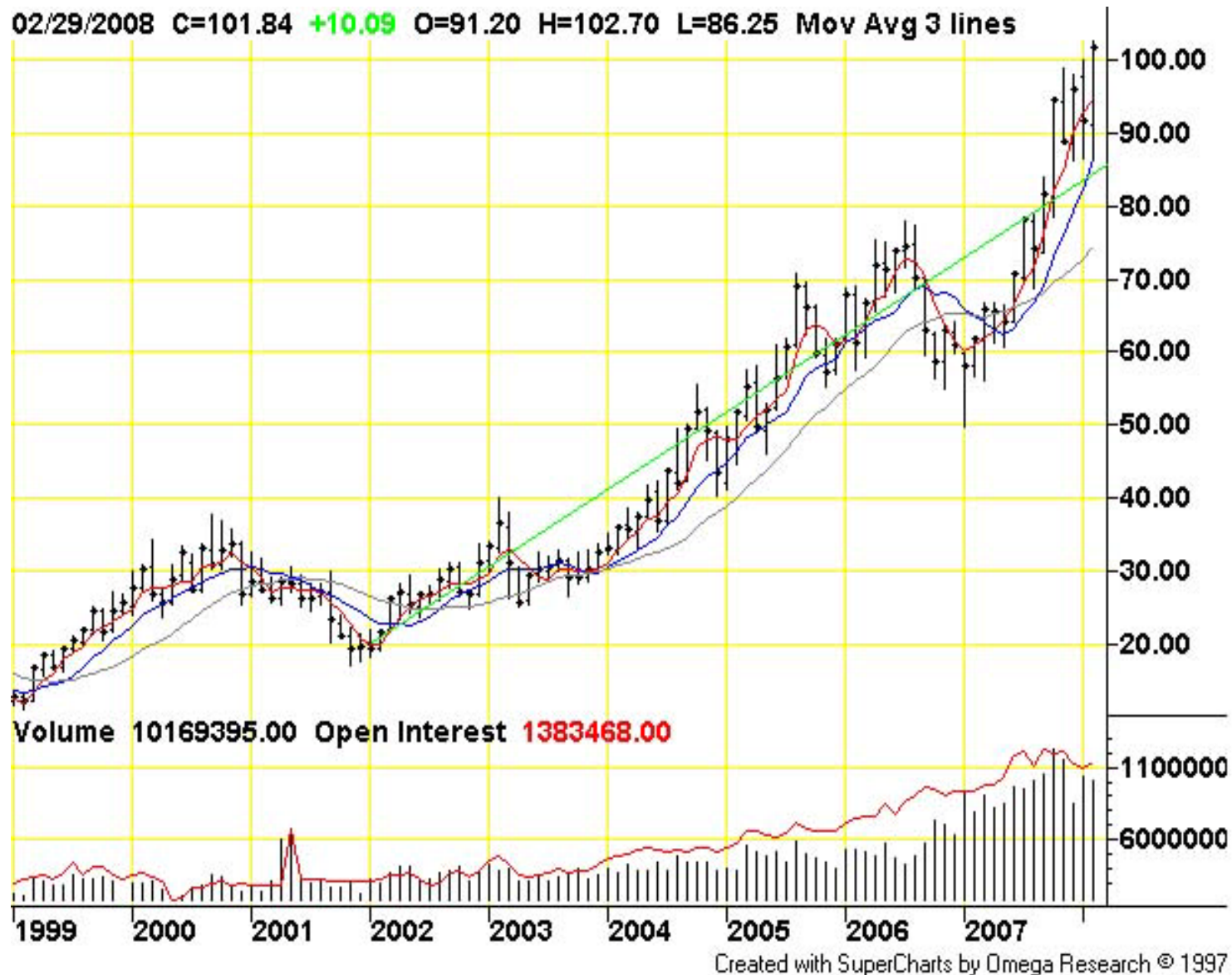Two additional crises surfaced in the late 20th & early 21st centuries:

Renewed Recognition of the Energy Crisis
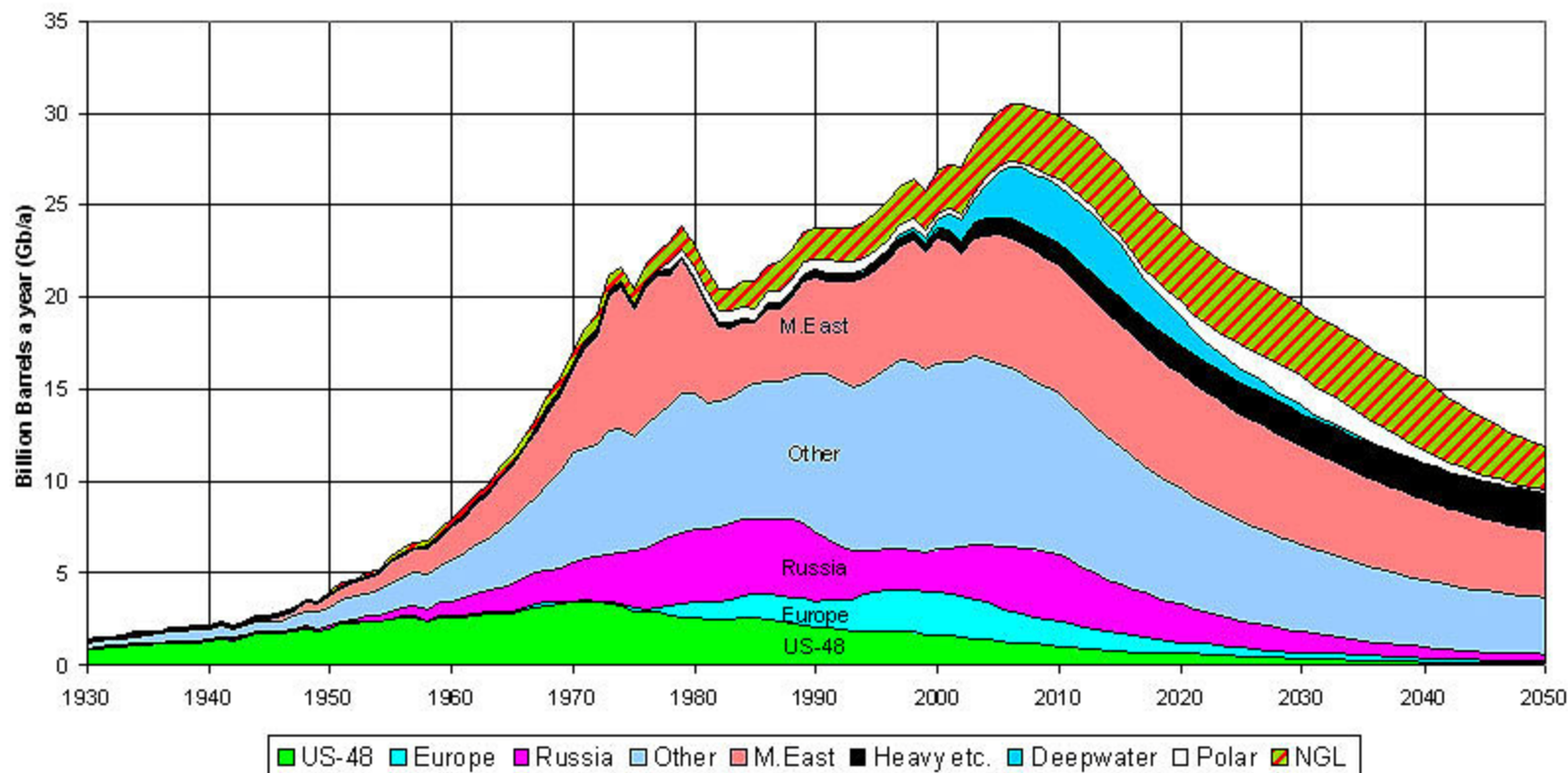
(already evident in the early 1970s)
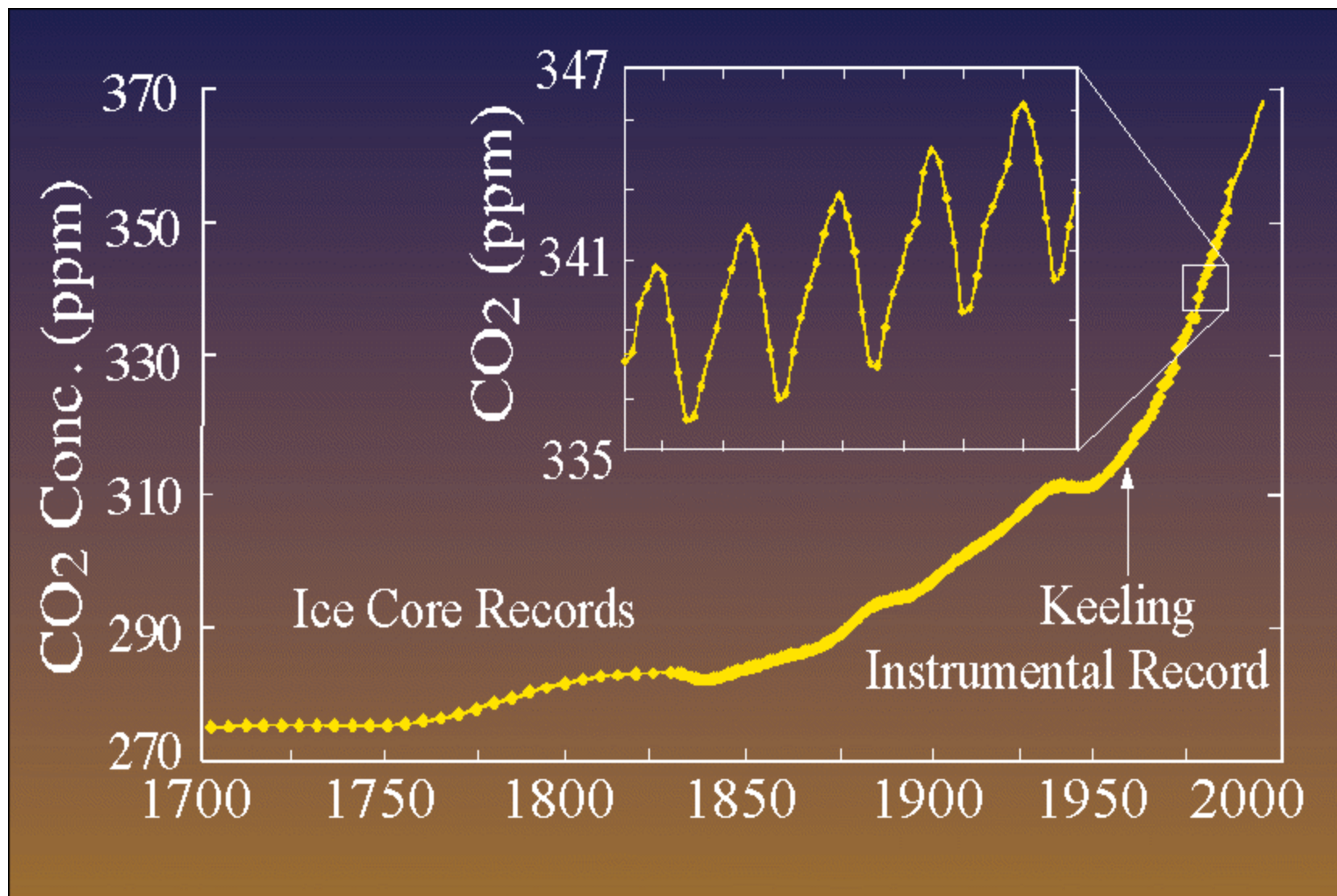
Recognition of the Crisis of Global Climate Change

Cost of a barrel of petroleum

OIL AND GAS LIQUIDS
2004 Scenario

Looming crisis of peak petroleum

Historical Levels of CO2

Along with continuing evidence of global **inequality**, **poverty** and of many varieties of **environmental damage** . . .
the situations presented by **peak oil** and **climate change** cast a shadow across the happy sentiments embodied in the mega-narrative of progress and its refurbished twentieth century variants.

The significance of these combined crises (of inequality, energy, environment, and climate change) . . .

. . . has already been tacitly acknowledged by relevant communities of scientists, technologists, businessmen, and intellectuals.

A key indicator of this recognition, in my view, is that **no one talks much about mega-narrative of "progress" any longer** – "progress" understood as a kind of world historical drama in which all people play a positive role, making incremental steps to achieve a universal benefit destined to be shared within the world's populace as a whole.

Two new narratives now describe the actions of scientists, technologists and whole societies *in our time*.

At universities, technology parks and business firms, if you ask:

What are you doing? What is the basic, general activity in which you are involved?

There is a common answer: . . . .

Now free of any metaphysical baggage, disconnected from the idea of historical necessity, independent of any grand ideal of continuing, universal improvement in the human condition, a new narrative increasingly defines how high tech communities imagine themselves and their projects.

A fashionable replacement narrative today is **"Innovation"**

"innovare" – (Latin: to renew)

Make a new cell phone, iPod, Viagara, technique for digital animation , etc. . . .

Hsinchu Science Park, Taiwan (one of a growing number of Innovation Meccas)

If the product is new, finds a market, makes profits, and helps a firm or university achieve a competitive edge, the promise of science, technology, industry and education have been exquisitely fulfilled.

EMPAC (experimental media center) at Renssealer

iPhone

Viagara

Seldom noticed in this new form of devotion is how the work of scientific and technical professionals and of public and private organizations that employ them have been rather deliberately severed from any broader human or humane purpose, hopes that were (however inadequately) central to the old idea of progress.

On university campuses and in high tech meccas, the notion of innovation is greeted with enthusiasm and a sense of awe.   Above all else we must be "innovative"! ! !

The dirty little secret of the *innovation narrative* is that it is overwhelmingly focused upon the needs and prospects of the world's wealthy few.

Example of today's innovation follies:

the "self parking" system of the Audi A3 Cabriolet

There is a second revision of the mega-narrative of progress that engages people's attention these days.

It is similar to "Innovation" in the sense that it points to a range of scientific and technological projects that seem attractive to a great many people.

This second mega-narrative has the name **"Sustainability".**

Seen as the *quest for sustainability or sustainable technology*, it is a project in which people become involved and feel better about their lives and their work.

But the underlying question that gives rise to this project is distinctly unsettling:

Can the world that has arisen from standard practices of modern scientific technology and industrialism *be sustained at all?*

The very notion of "sustainability" suggests that the fabulous Gospel of Prosperity held out by notions of "modernization," "development," and "growth" may be (in the long run) *a prescription for disaster.*

According to the mega-narrative of "Sustainability":

If the good scientists, technologists, citizens, and policy makers can come together to address key issues of energy, global warming, and environmental ills, there is hope for a "sustainable" economy based upon "sustainable" technologies, a framework for living that can forestall environmental, social and political collapse.

Today there are conferences held on "sustainable energy," "sustainable agriculture" and the "sustainable city."

We should wish them well.

But an air of *unreality* surrounds some of these efforts.

Are the central claims about "sustainability" just slogans?   Or is there genuine substance to them?

Jimmy Carter installs solar panels on the White House (1979).
Ronald Reagan removed them c. 1981.

"Sustainable City"? ? ? ?

"The sustainable city" is a concept similar to that of a "vegetarian tiger."

- Gray Brechin

There are some troubling questions that vex the unfolding mega-narrative of sustainability.

What is the likelihood that global warming will be curtailed in the decades just ahead through technological change and ingenious public and private policies?

What is the likelihood that the seas will not rise and not render major places of human habitation unlivable?

What is the likelihood that some important regions of the world upon which people depend for food, water and habitation will not become windswept deserts, forcing mass migrations?

What is the likelihood that our warming, over-stressed, gradually acidifying oceans will continue to be major sources of food for the world's populace?

(There are many such questions....)

(If these looming possibilities actually happen . . . . What then?)

There are some notable attempts to envision fundamentally different understandings of humanity, nature and technology than have prevailed during the past three centuries.

These often point to a far more humble view of human roles and powers and a more demanding sense of ethical and political responsibility within the biosphere and society than has been common in modern thought.

(This is a topic for a wider discussion.)

CONCLUSION -- I have argued:

There is a crisis in the mega-narrative that has largely defined the unfolding drama of modern technological society and that has to a great extent defined our roles and actions.

Some refurbished, alternative narratives that have recently gained popularity -- "innovation" and "sustainability" -- are themselves deeply problematic.

As yet there is no clearly visible, widely accepted, hopeful, alternative story line to shed light on humanity's present and future.

For the time being, we remain transfixed by stories and power fantasies inherited from the past.

Scientists, philosophers, engineers, citizens, and political leaders need to come together in dialog to:

(1) openly discuss the worn out narratives we still blindly follow

and

(2) ponder more realistic and (perhaps) promising stories about humanity's future.