

Environmental Ethics and Land Management

ENVR E-120

<http://courses.dce.harvard.edu/~envre120>

Elements of Ethical Reasoning

Timothy C. Weiskel

Session 3

14 September 2011

Harvard University Extension School
Fall Semester 2011



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You may recall, last time we began at the beginning....



I used to get really nervous about cosmic mega events...



MYSTERY OF THE MEGAVOLCANO

Researchers unearth clues to
the greatest volcanic eruption
of the last 100,000 years.

Then, I realized that there were “home grown” problems
right here on Earth....





5:16 / 7:58 360p

"Super Volcano & genetic bottleneck." YouTube - pangeaprogress, (27 December 2009).





Then, just when I stopped worrying about the mega volcanoes around the world, I learned of the more immediate potential for the megaquake...



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Then, I realized – just this last year -- that we are all *really* in much more immediate trouble...potentially of our own making...



Then, I realized – just this last year -- that we are all *really* in much more immediate trouble...potentially of our own making...

"The Web's most influential climate-change blogger" — *Time Magazine*

A PROJECT OF CENTER FOR AMERICAN PROGRESS ACTION FUND

An insider's view of climate science, politics, and solutions

CLIMATE PROGRESS

Dawn of the brain-dead Senate

GOP fills candidate slate with climate zombies who deny science

September 14, 2010

A comprehensive [Wonk Room survey](#) of the Republican candidates for the U.S. Senate finds that nearly all dispute the scientific consensus that the United States must act to fight global warming pollution. In May, 2010, the National Academies of Science reported to Congress that "the U.S. should [act now to reduce greenhouse gas emissions](#) and develop a national strategy to adapt to the inevitable impacts of climate change" because global warming is "caused largely by human activities, and poses significant risks for — and in many cases is already affecting — a broad range of human and natural systems."

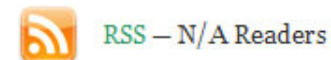
This finding is shared by [scientific bodies around the world](#). However, in the alternate reality of the fossil-fueled right wing, climate science is confused or a conspiracy, and policies to limit pollution would destroy the economy.

Remarkably, of the dozens of Republicans vying for the 27 Senate seats in the 2010 election

 SEARCH

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Why start with all the “cosmic” razmatazz?

Why start a course with narratives about “cosmic” or “geological” or “evolutionary” time?

Why bother with cosmological theories, or the “universe story” or models of the origins of the moon?

“Let’s get down to business,” so the argument goes, *“and focus on what ethics should really be talking about – that is, what is right and what is wrong, what is good and what is bad.”*

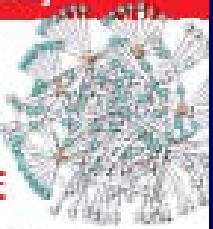
In short: what are the rules in environmental ethics.?”

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SCIENTIFIC AMERICAN

Benefits
of the New
**WEB
SCIENCE**
page 78



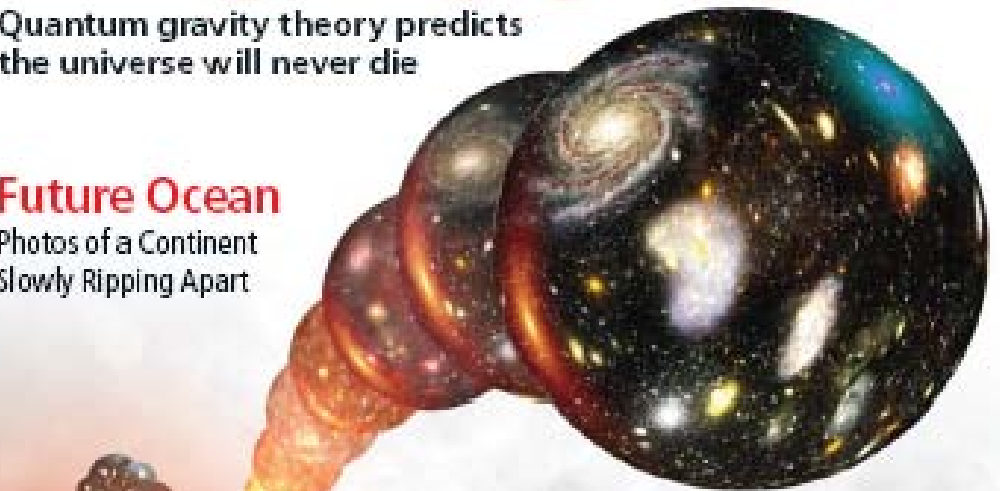
October 2000 \$5.99 www.SciAm.com

FORGET THE **BIG BANG**: NOW IT'S THE **BIG BOUNCE**

Quantum gravity theory predicts
the universe will never die

Future Ocean

Photos of a Continent
Slowly Ripping Apart



Artificial Hand

Online Designers Help Disabled Vets

Barcode of Life

Distinctive DNA Identifies Species

Actually, I have
considerable
sympathy with
the urgency of
the *“let’s get
down to brass
tacks”*
argument.....

Much of the new
cosmology
material leaves
me a bit cold....

Follow the **Bouncing** Universe

Our universe may have started not with a big bang but with a big bounce—an implosion that triggered an explosion, all driven by exotic quantum-gravitational effects

By Martin Bojowald

First of all,
theories of
cosmology
change with
disturbing
rapidity...

And they seem to
have more to
do with
metaphors of
the
marketplace
than the
physical
universe...

Some people try hard to keep up with these new cosmologies...join them if you can catch up.

R&N
HOME PAGE

www.religionandnature.com

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Upcoming Events

The Society will host its second, major, international conference, with the theme,

**“The Re-Enchantment of Nature across Disciplines:
Critical Intersections of Science, Ethics, and Metaphysics”**

at the National Autonomous University of Mexico, in Morelia, Mexico, 17-20 January 2008.

The Society has had nearly 200 proposals and invitations for accepted proposals have been sent by email. Early registration begins 22 September (or earlier) and will run through 15 October. Updated conference information, including how to register, will appear here no later than 15 September. Please check back then.

About ISSRNC

- Mission and History
- Newsletters
- Society Initiative Timeline

Members

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- Application
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Events

- 2008 ISSRNC Meeting
- Co-sponsored Meetings

A great way to keep in touch with this form of thinking is through the activities of FORE

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Events



[2009](#)
[2008](#)
[Archived](#)
[Other Event Calendars](#)

2008 Events

Awakening the Dreamer, Changing the Dream Symposium
Presented by the Pachamama Alliance
This is an ongoing symposium with multiple times and places.
For More Information, visit: <http://awakeningthedreamer.org/content/view/115/135/>

Annual Meeting of The International Association for Environmental Philosophy
Philadelphia, PA
December 27-30, 2008
For More Information, visit: <http://www.environmentalphilosophy.org/>



<http://fore.research.yale.edu/events/2008/index.html>

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A great way to keep in touch with this form of thinking is through the activities of FORE

The Forum on Religion and Ecology at Yale

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NEWS

[Rajan Zed urges Hindus to help "save the world"](#)
September 5, 2010
ANI

[Raimon Panikkar, Catholic Theologian, Is Dead at 91](#)
September 4, 2010
New York Times

[Raimon Panikkar, 'apostle of inter-faith dialogue,' dies](#)
August 31, 2010
National Catholic Reporter

[Hindus commend Pope on environmental stand](#)
August 31, 2010
ANI

[Earth's resources must be protected for future generations, says pope](#)
August 30, 2010
Catholic News Service

EVENTS

[Exhibit of New Story Accordions and Paintings by Mary Coelho](#)
August 27 - September 20, 2010

[Nature and Human Nature](#)
September 10-12, 2010

[The Cross On the Mountain: An Ecumenical Prayer Service to Renew Appalachian Communities](#)
September 11, 2010

[Earth As Ally: Facing Climate Change Together](#)
September 17-19, 2010

[Greening Your Place of Worship Forum](#)
September 23, 2010

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MULTIMEDIA



Mary Evelyn Tucker and John Grim on
"Religion and a New Environmental Ethic"
[Multimedia Page](#)



ABOUT THE FORUM

The Forum on Religion and Ecology is the largest international multireligious project of its kind. With its conferences, publications, and website it is engaged in exploring religious worldviews, texts, and ethics in order to broaden understanding of the complex nature of

Forum Coordinators

[Mary Evelyn Tucker and John Grim](#), Yale University

Forum Administrative Assistant

[Tara C. Maquire Knopick](#), Yale University

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•
But for me, ethics is not about metaphysics, nor about religion (as it appears to be at Yale).

Ethics is about the **really real world**

Actually, there is an important reason to start where we did.

The reason is that, for the purposes of this course, we consider that **ethics is firmly based in reality**.

It is **not some theoretical series of make-believe propositions about unknown or imaginary worlds**.

Ethics is above all about how we should behave in the **Real World**.

But this proposition is not without problems.



Contest of 'Realities'

Simply put, the question is this:

Whose 'reality' is *really* real?

We are seeing this play out as we speak....

It is a pre-election year. (*"Let me tell you about the realities [of getting elected, Wall Street, of the 'marketplace,' etc.]..."*)

and

Our economy – the world's economy – is suffering a "reality" crunch. If you don't believe me, just check out the discussions of the *year after.*



<http://onpoint.wbur.org/2009/09/14/wall-street-a-year-after-lehmans-fall>



Elizabeth Warren – running with a new
definition of reality...

*“I don’t think Washington gets it.... It isn’t
right and it’s the reason I am running...”*

Tim Weiskel - 16



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A New Ethic Emerges from a New Reality

In effect, people all over the world are clambering for an understanding of what is “*really real*” ...in order to know how they should act now, today and behave from now onwards....

In human history, new forms of morality *are always* forged from new concepts of reality.

So, it is important to dwell on reality and describe it carefully.



From our first two classes, you have already learned...
some simple observations about life
in the known universe.

In this context we should, perhaps, remember that
for the known universe and for life as we know it
several simple things apply:

If it can't happen...

...it won't happen

If it did happen ...

...it can happen.

If it can happen...

...it might happen.

Of course, we should always keep in mind
Donald Rumsfeld's famous words of wisdom:

"...and then, there are unknown unknowns..."

From our first two classes, you have already learned...
some simple observations about life
in the known universe.

We live in a universe governed by the first and second laws of thermodynamics.

Humans do not produce food – plants do. (Therefore ratios of trophic levels are important).

We do not produce oil, coal or natural gas, and are already a solar civilization. (But we do not realize it; mistaking a non-renewable for something with endless availability; in general beware of “*thanks to science...*” arguments)

We are not set *apart from the rest of nature* or evolution but rather *a part of it*. (We need to understand and learn to respect its laws if we expect to be part of the evolutionary species mix for very much longer.)

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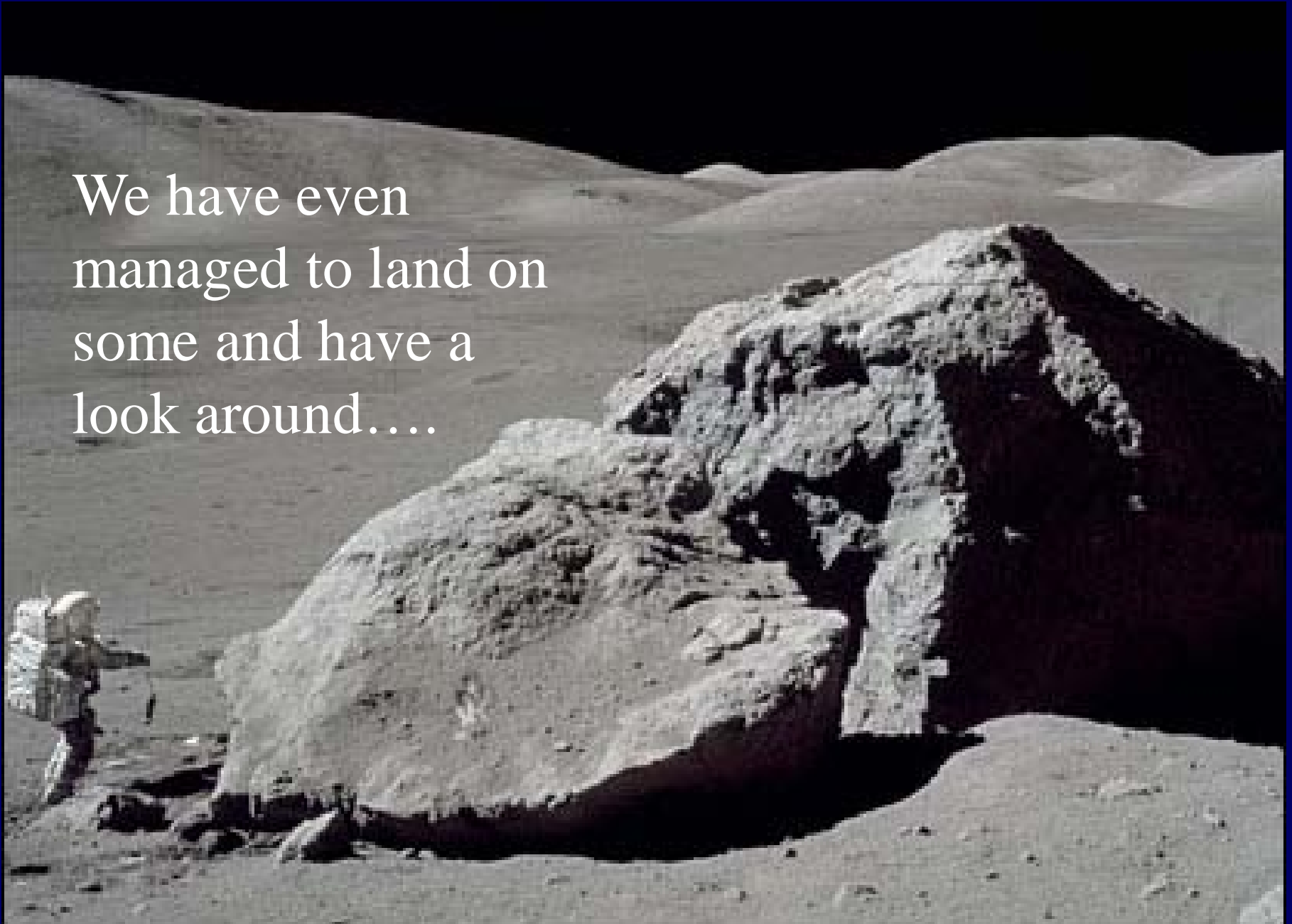
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species mix for very much longer.)

We have made gadgets
to explore our near
neighbors.



We have even
managed to land on
some and have a
look around....



We've done
there, pretty
much what we
have done at
“home...”

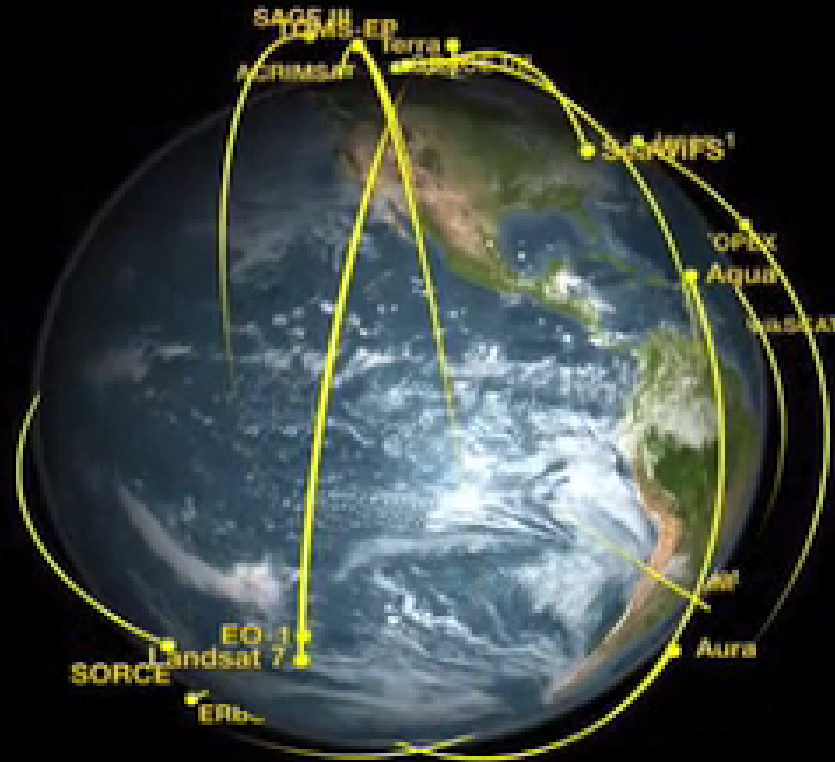




But how much do we know
about living sustainably on the
only inhabitable spaceship in the
known universe....?



At the very least, we should have learned from our space travel to turn our instruments on the “spaceship” itself and check out its changing conditions....



Scientists also monitor the arctic ice cap from space, and they're worried by what they see.

"Remarkable' Drop in Arctic Sea Ice Raises Questions," NASA, (25 September 2007).



When we've tried to measure the changes in the "white" areas, the news has been very alarming...



The Climate Consortium

"Remarkable' Drop in Arctic Sea Ice Raises Questions." NASA, (25 September 2007).



The Climate Consortium

http://www.nasa.gov/mpg/190443main_yearly_composite.mpg

http://mfile.akamai.com/18566/wmv/etouchsyst2.download.akamai.com/18355/wm.nasa-global/environment/yearly_composite2.asx

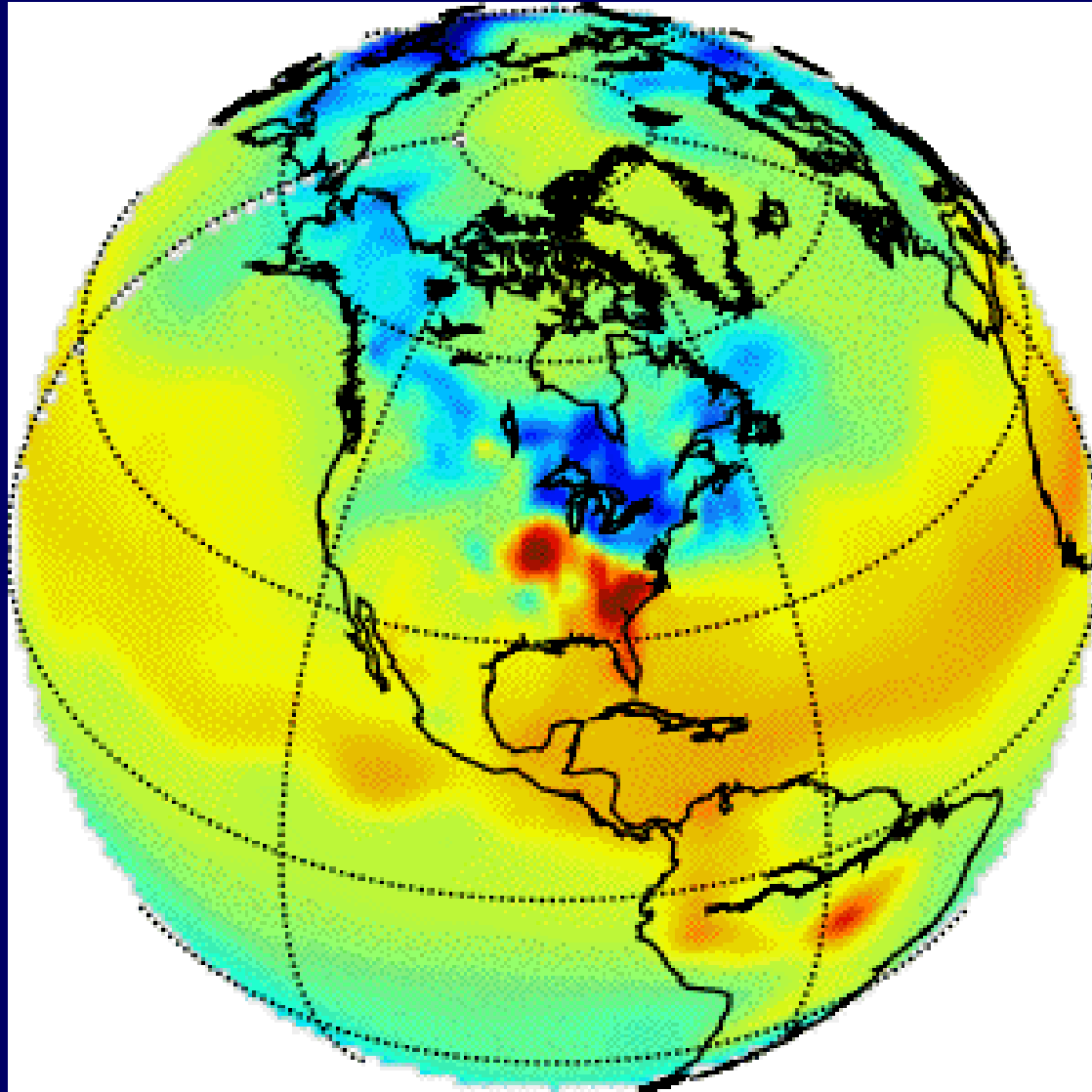


<http://www.climate-talks.net/2007-ENVRE130/Video/20070924-UNWebcast-Al-Gore-time-to-act.htm>



What are this gentleman's implicit theories of
Community? System? Authority? Change? Agency ? and Time?

What should our operative “theories” be, in light of all we have come to know about where we live?



We can begin our reflections on ethical reasoning, then, with a simple question:

Have the last 50 years of human history – with all the expanding knowledge we have acquired in this time frame about our place in the universe -- helped us to develop an environmental ethic sufficient to enable us to survive on this blue jewel planet ?

Basic argument of this course

We need to situate our discussion of environmental ethics – the principles of choice in an ecosystem -- *within the context of the system in which we operate.*



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If we want to survive, we should not design our ethical systems to contradict natural systems.



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If we want to survive, we **should not design our ethical systems to contradict natural systems.**





Even the casual observer can see evidence of patterned activity – that is, non-random events that have left their mark on our environment...



Even when we can't "see" the evidence, we are learning that it is there and that we can learn about that evidence if we extend our scientific gaze.

Dinosaur Impactor: The Chicxulub Crater



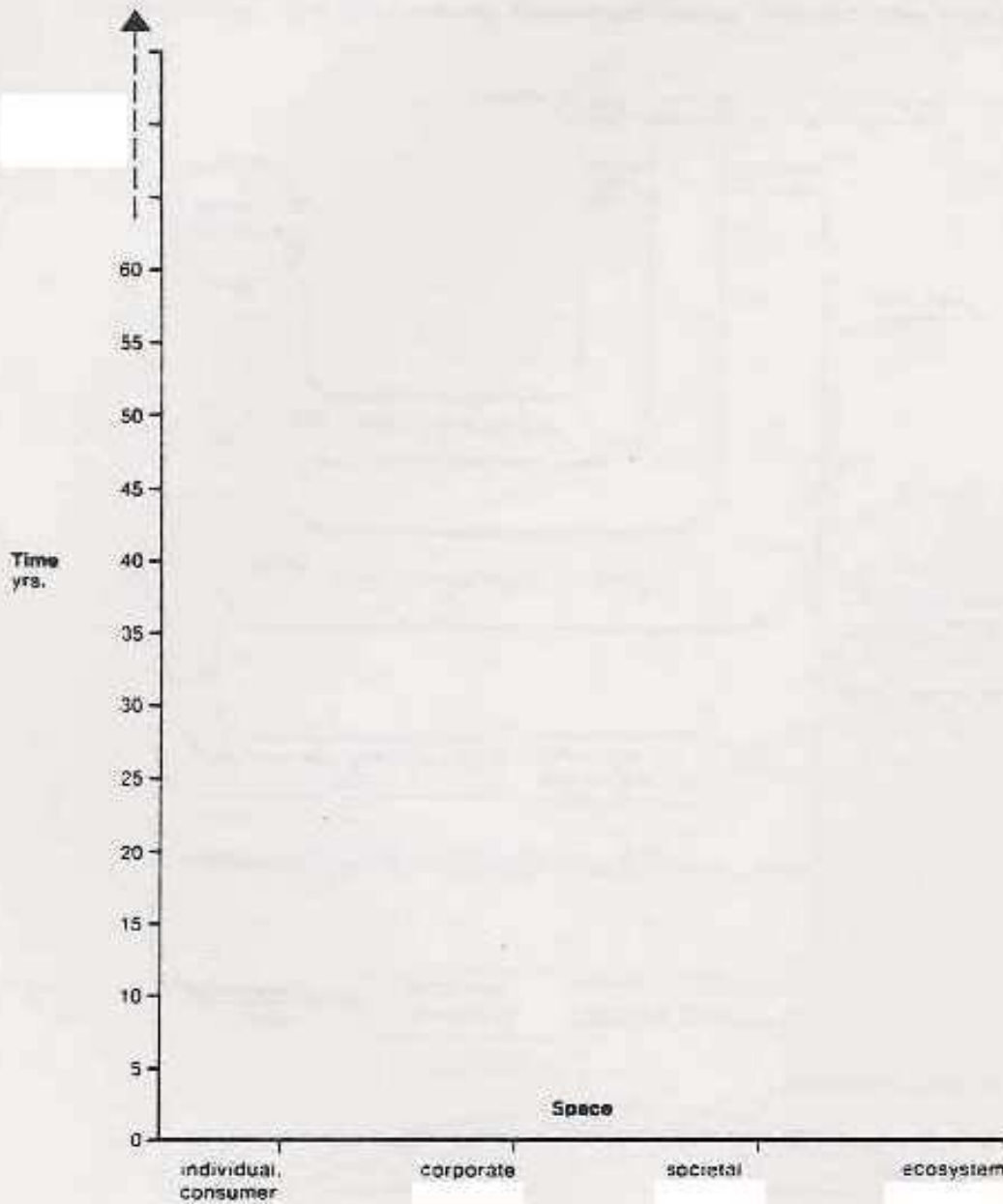
Thus, we are learning about life-transforming events in Earth's history that occurred that are not immediately visible to the naked-eye...



So, we have reminded ourselves that Earth and the life forms that have emerged on Earth have been shaped by cosmic events.

Further, these cosmic events continue to occur and “frame” all we undertake as humans.

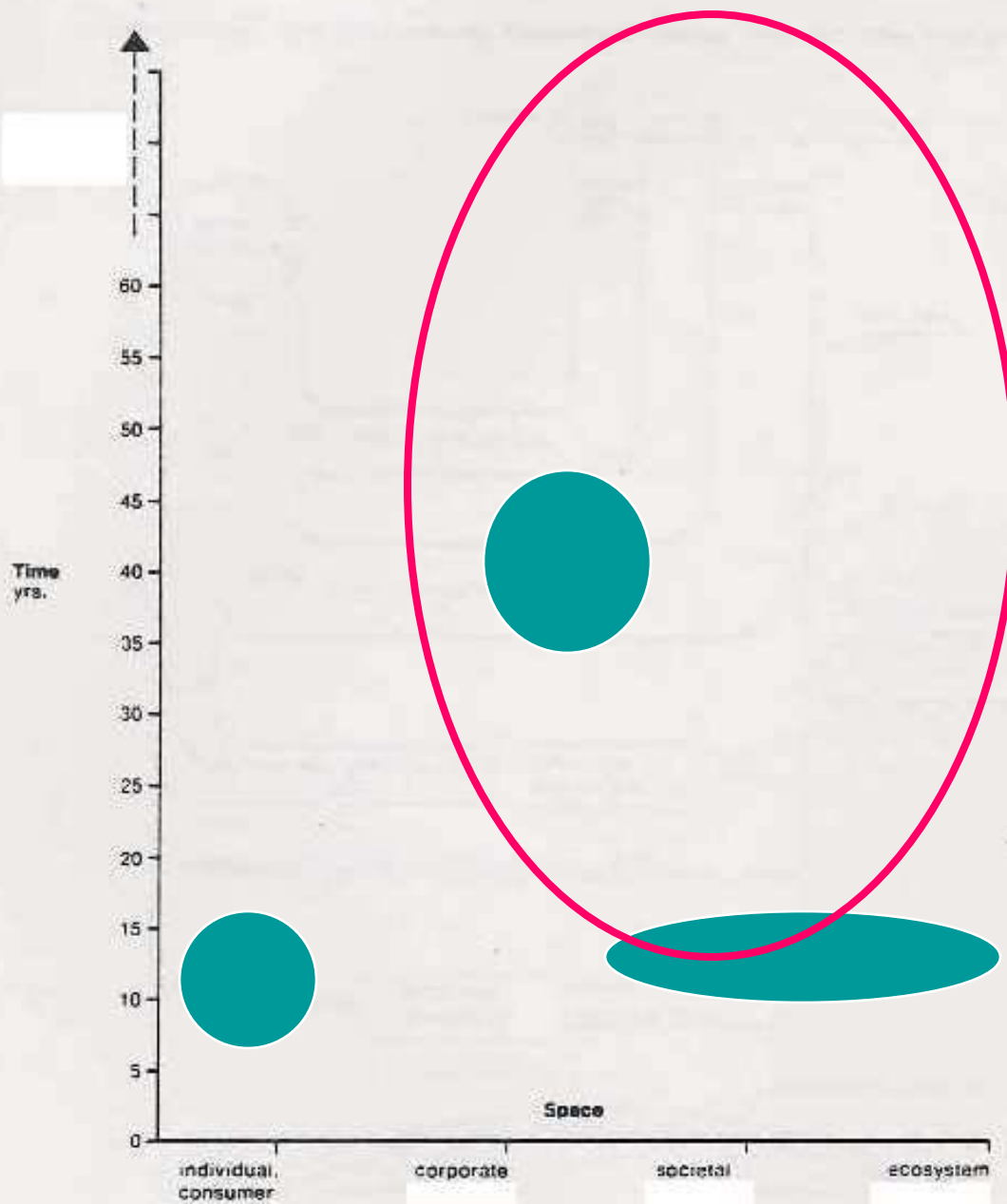
In short, **in the ecosystem some very important things remain beyond human control.** They always have been, remain now and always will be beyond our control.



Furthermore, all decisions we make are made in a time-space continuum.

That is, all ethics are “situated” in time and space.

The question is *what is the relevant time-space ‘frame’* for ethical choices in an ecosystem?



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That is, all ethics are “situated” in time and space.

The question is *what is the relevant time-space ‘frame’* for ethical choices in an ecosystem?

You are in: [Science/Nature](#)

Tuesday, 1 October, 2002, 11:30 GMT 12:30 UK

Life may swim within distant moons

From: Calculations suggest life may have an ocean*

By Dr David Whitehouse

BBC News Online science editor

Oceans of water beneath the icy surfaces of distant moons may be far more common in the outer Solar System than had been thought, according to new calculations.

Some, in theory, could harbour life, claim scientists.

Until now it was believed that oceans might be found under the icy crust of Jupiter's moons Ganymede, Europa and Callisto.

But new calculations, by Christopher England of Nasa's Jet Propulsion Laboratory (JPL), to be presented at a major astronomy conference, suggest that this may be the case on other moons, such as Titan - which orbits Saturn - and Neptune's large moon Triton.

Even Varuna, the largest so-called Trans-Neptunian object

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Considering the larger cosmic context, we have learned that life systems may not be confined to Earth....

In fact, they may not have originated "here" on Earth.

You are in: [Sci/Tech](#)

Wednesday, 26 January, 2000, 19:01 GMT

How life may live on Europa

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Impression of a probe searching for life in Europa's ocean

By BBC News Online Science Editor Dr David Whitehouse

A radiation-driven ecosystem could exist in the ocean thought to lie beneath the surface of Jupiter's moon Europa, a scientist has suggested.

Ever since the Voyager spacecraft flew past the Jupiter system in the 1970's, astronomers have been fascinated by Europa and its bizarre striped surface and the prospects for primitive forms of life on the satellite.

But life needs energy. It has been suggested that on the floor of the suspected subterranean ocean there may be hydrothermal vents like those found on Earth.

These vents, which gush hot water and minerals, could provide both the energy and the food sources for primitive Europeans.

Further, we have learned that not all life systems need to be based on carbon, just because “life as we know it” on the Earth’s surface is based on carbon.

Non-carbon-based life forms may exist elsewhere because we know they exist in remote regions of Earth itself.

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The Notion of Causality

In addition, we have observed that notions of simple causality do not really work very well in a complex ecosystem.

Simple causality implies that there is a linear relationship between cause and effect.

A “causes” B

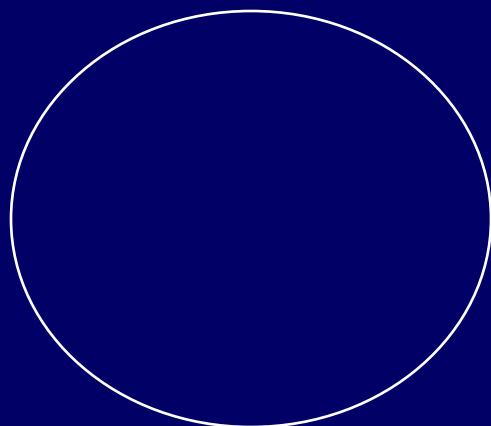
therefore, if “B” then there must be a prior causal “A.”



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But what about complex systems? with positive feedback loops? This is the *real* world we live in.



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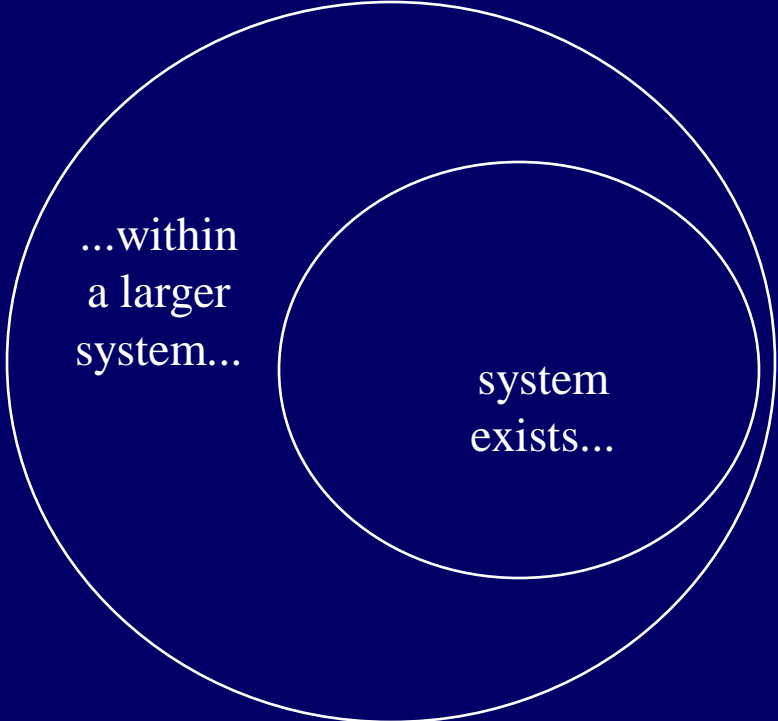


system
exists...



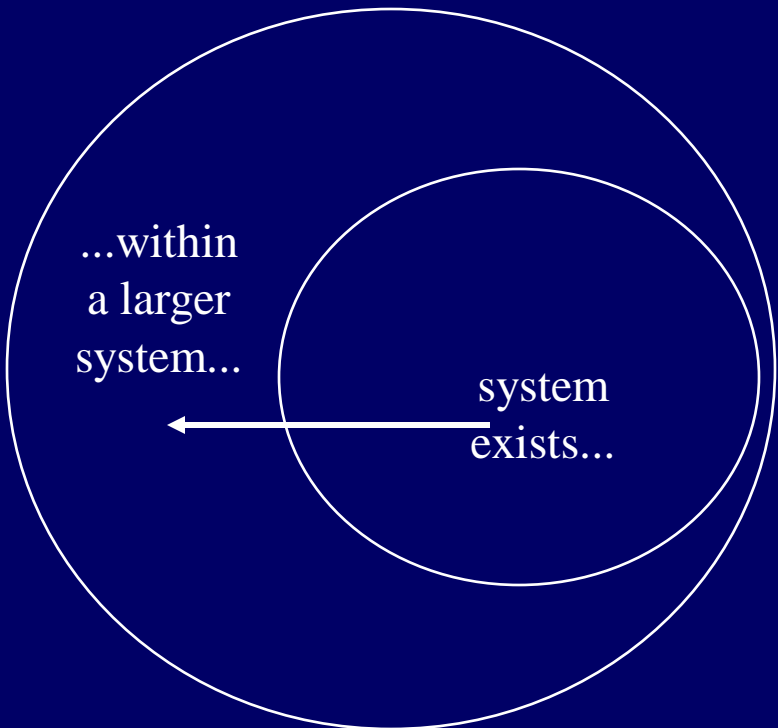
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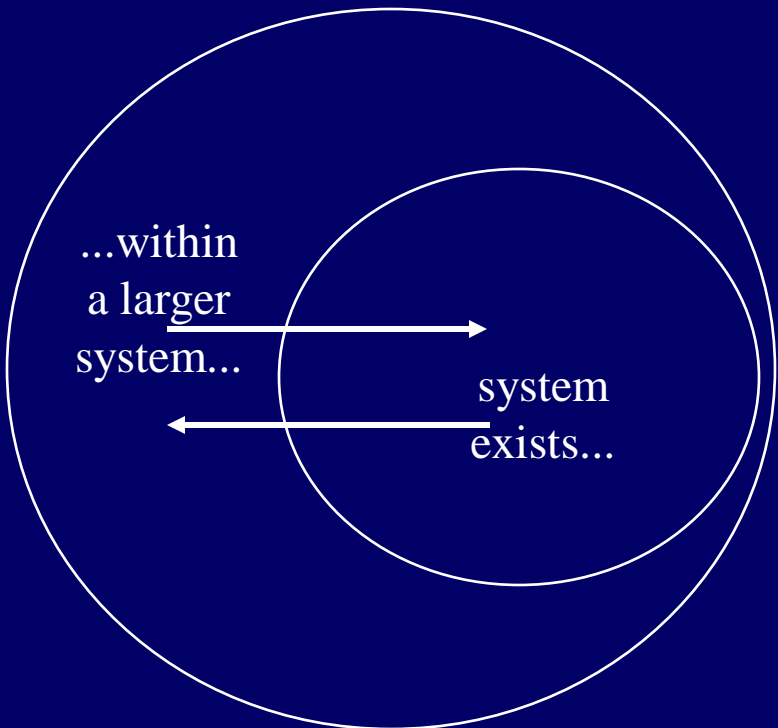
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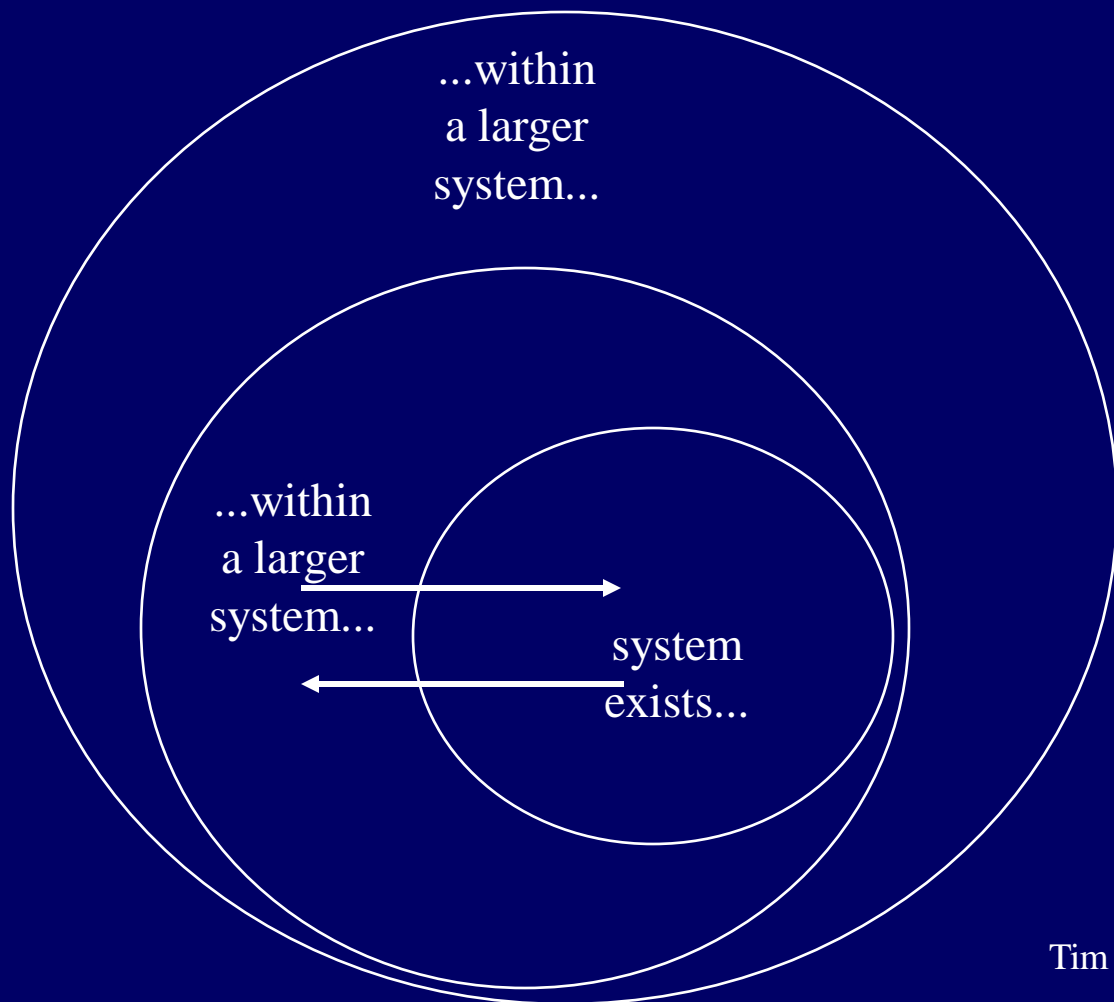
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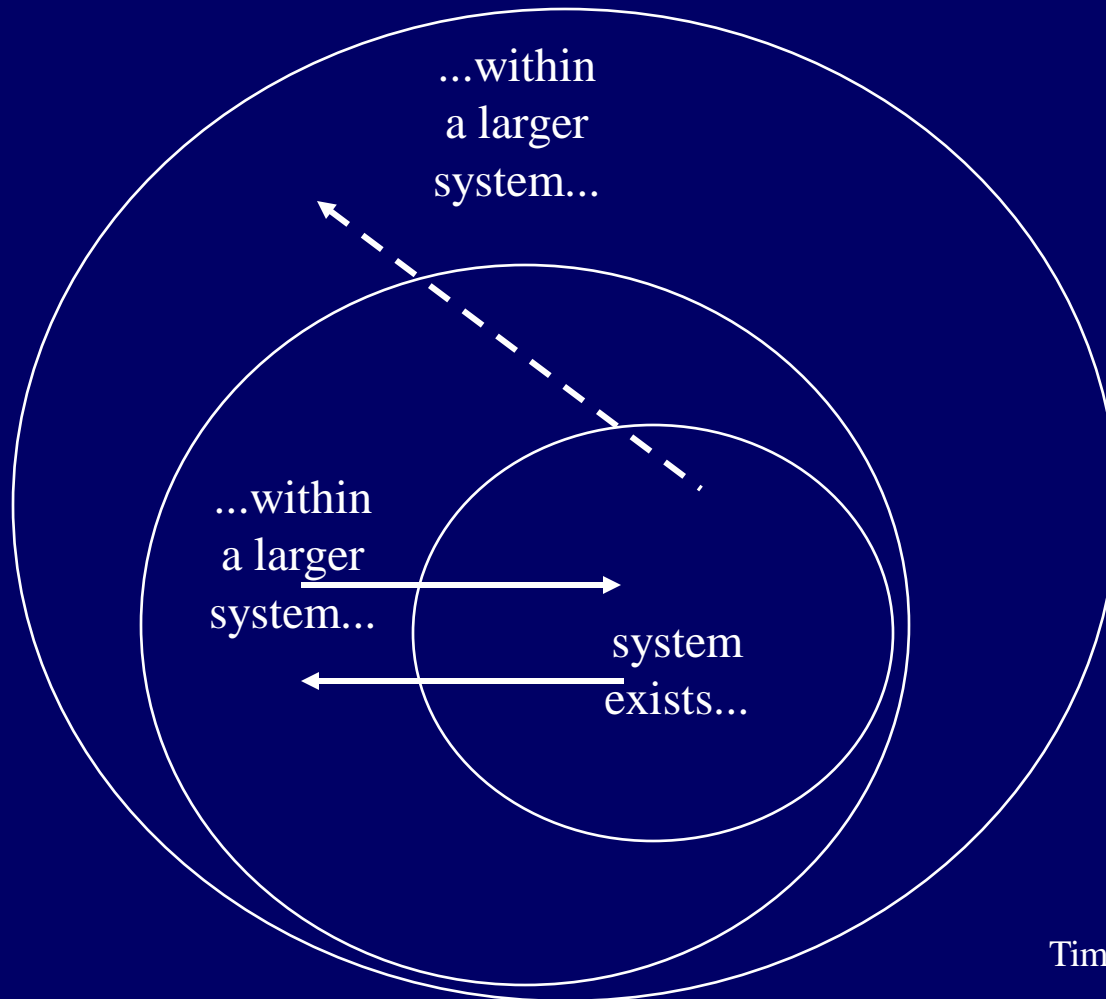
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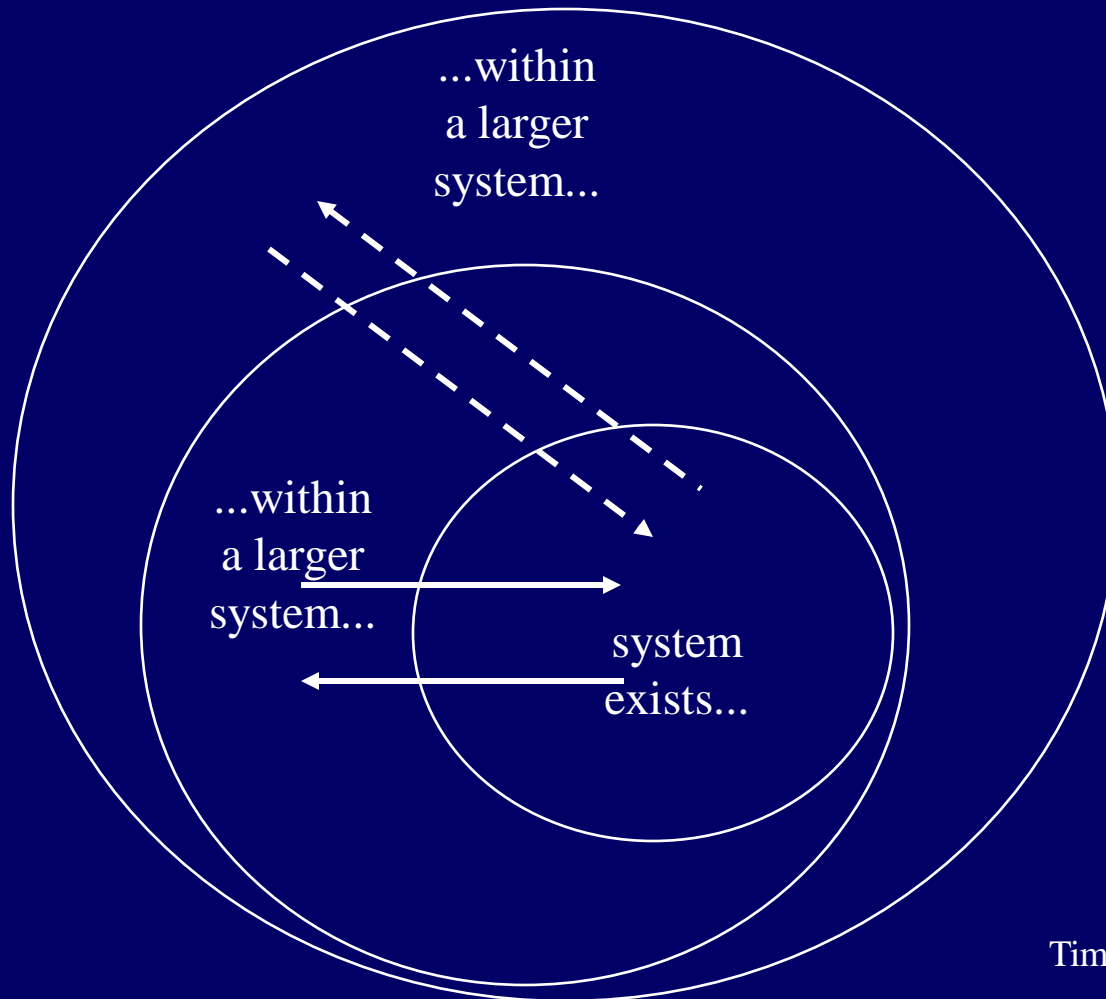
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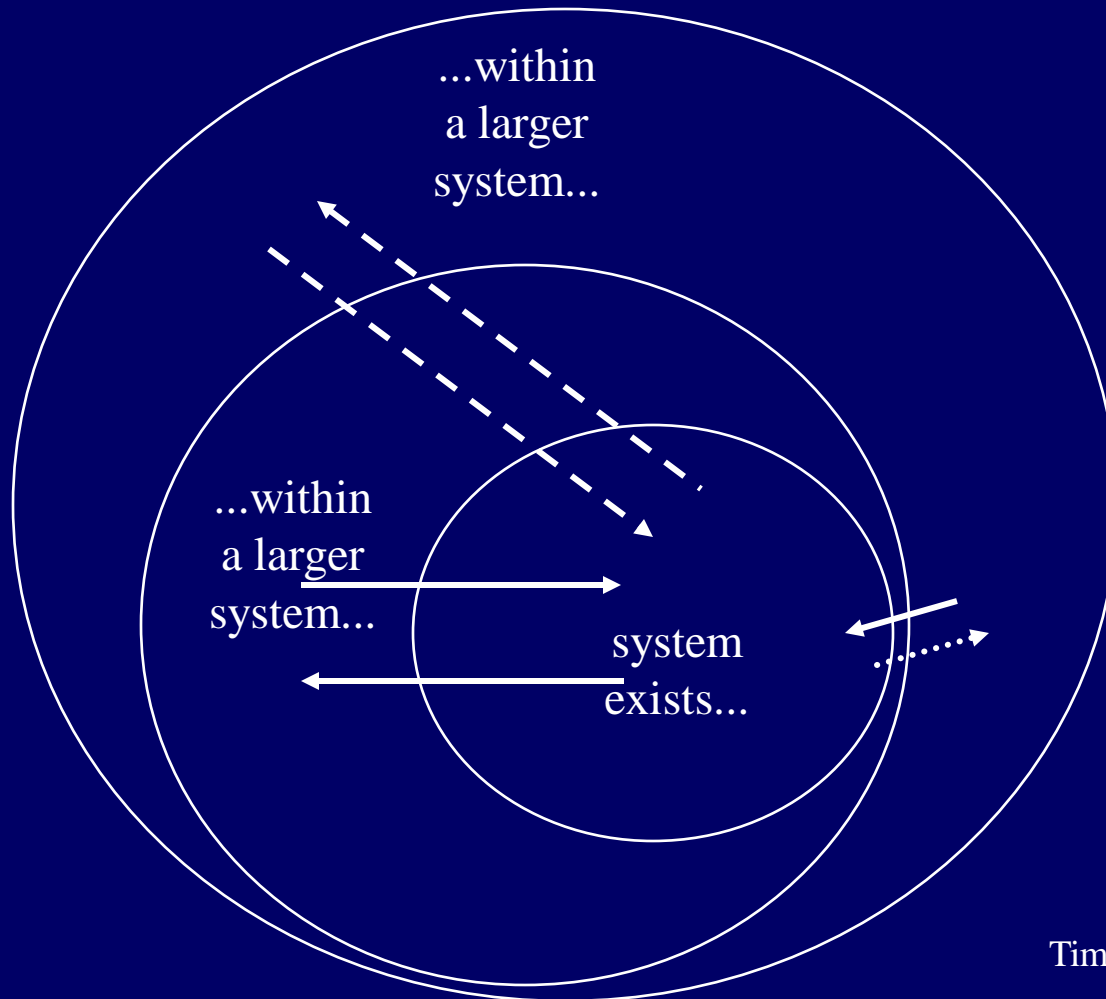
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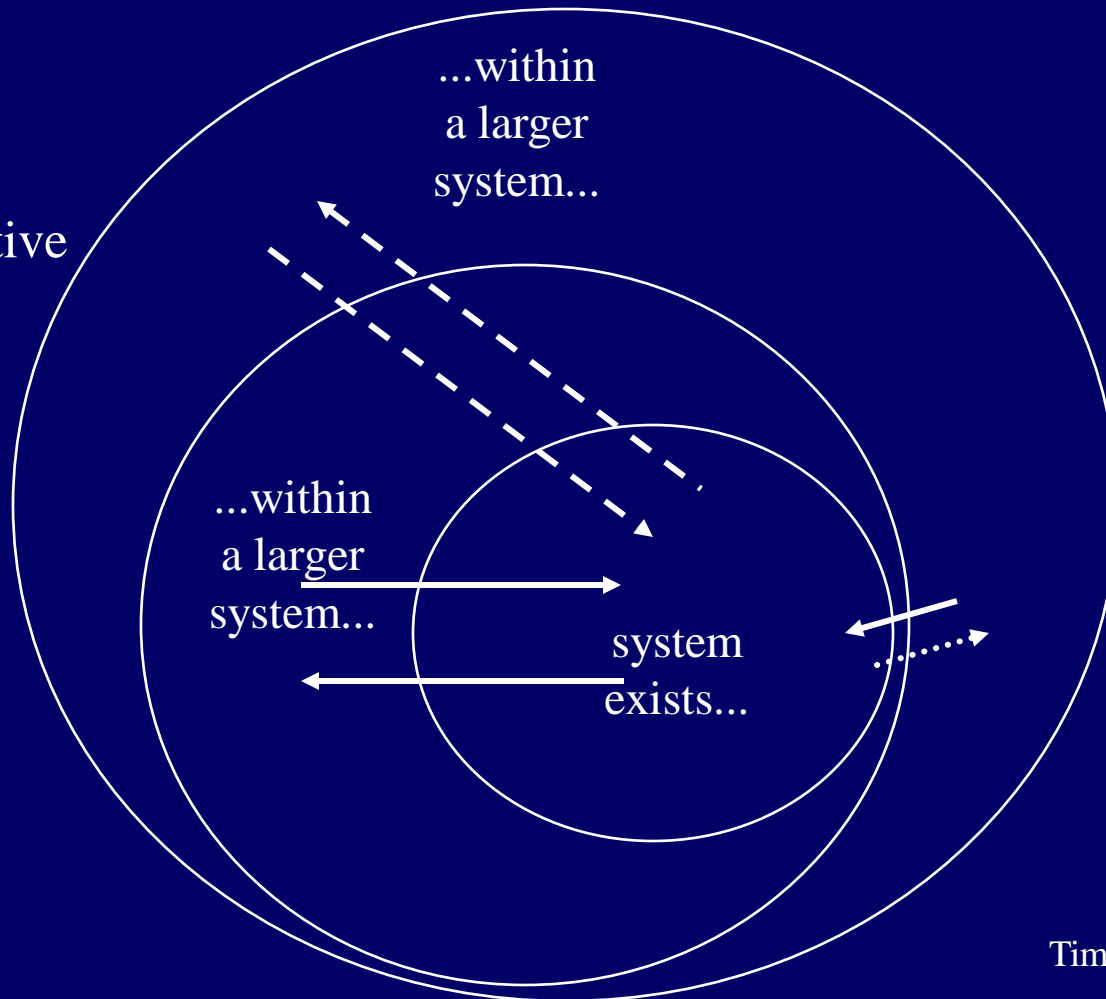
How can we locate causality in 'non-linear' systems?

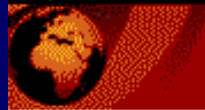


How can we locate causality in 'non-linear' systems?

Causality is:

- nested
- reciprocal
- and cumulative





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Last Updated: Thursday, 1 April, 2004, 15:57 GMT 16:57 UK

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Double whammy link to extinctions

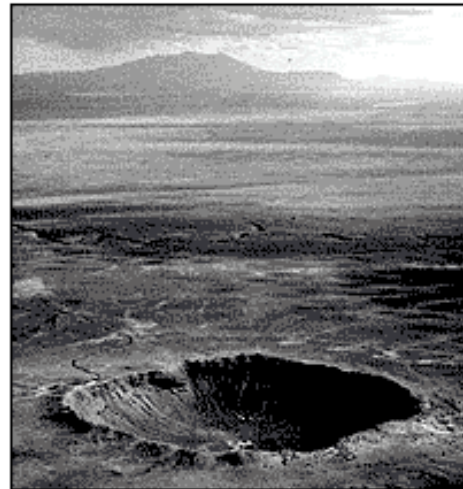
By Paul Rincon
BBC News Online science staff

The chances that asteroid impacts and huge bouts of volcanism coincide randomly to cause mass extinctions may be greater than previously imagined.

UK researchers conducted statistical tests to determine the probability of such catastrophic events happening at the same time in Earth history.

They found massive releases of lava and space collisions should have overlapped three times in the last 300 million years.

Details will be published in a future issue of the geological journal *Lithos*.



What are the chances of such great events occurring together?

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01 Mar 04 | Science/Nature
- ▶ Earth almost put on impact alert
24 Feb 04 | Science/Nature
- ▶ No fiery extinction for dinosaurs
09 Dec 03 | Science/Nature
- ▶ Mammals' lucky space impact
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- ▶ 'Quick' demise for the dinosaurs
08 Mar 01 | Sci/Tech
- ▶ UK's first impact crater discovered
01 Aug 02 | Sci/Tech

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- ▶ University of Leicester, Department of Geology
- ▶ Lithos

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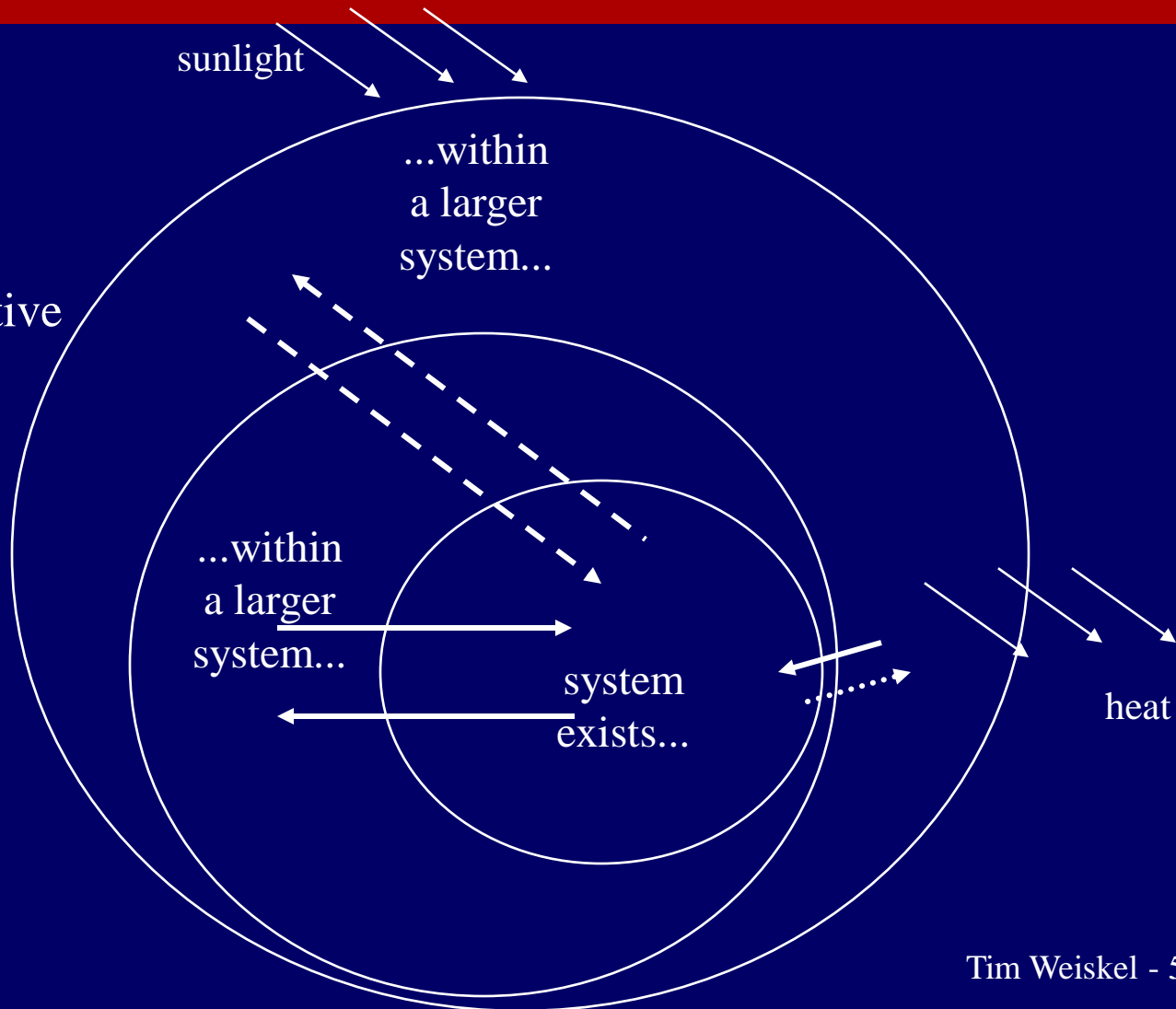


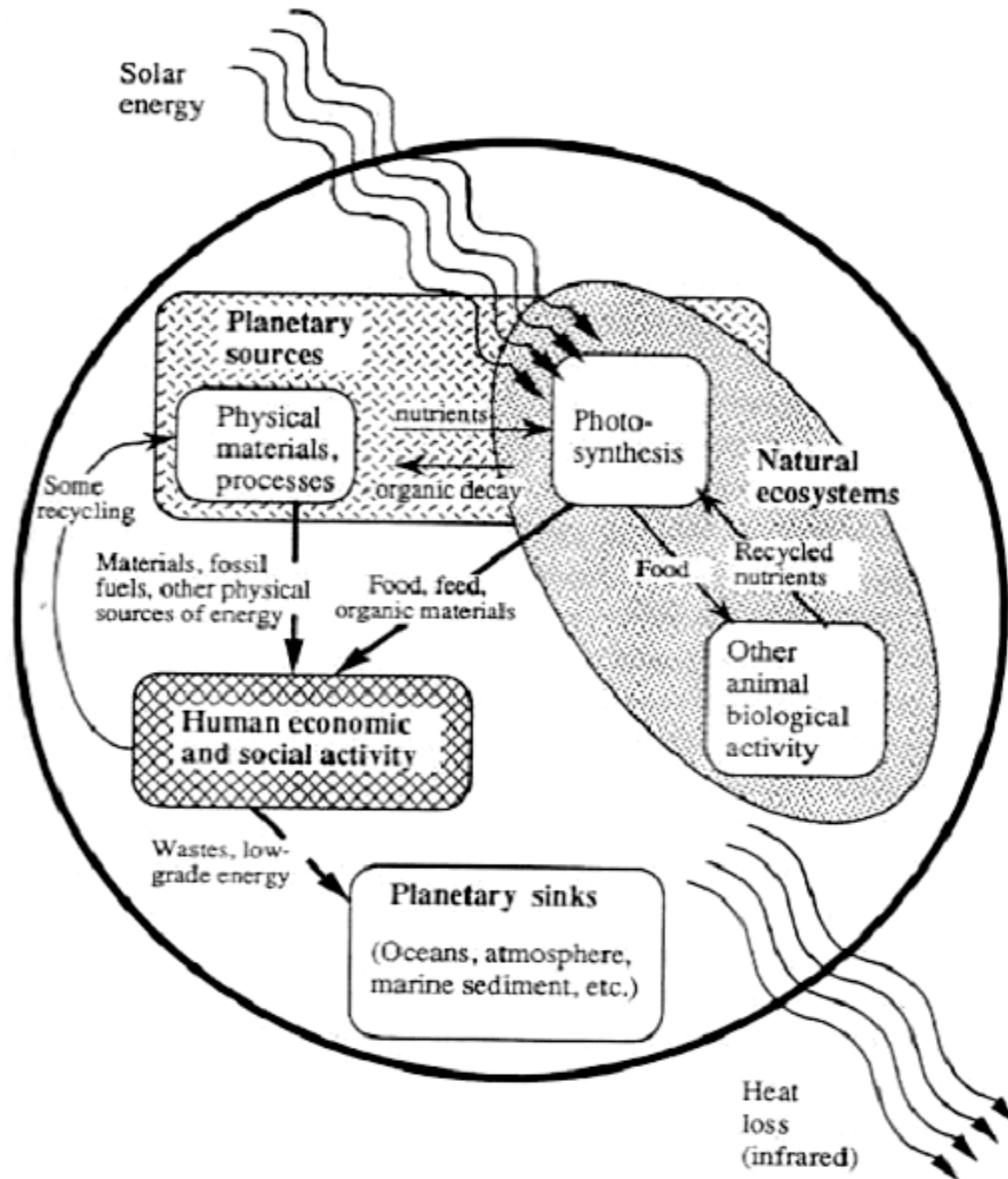
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Causality is:

- nested
- reciprocal
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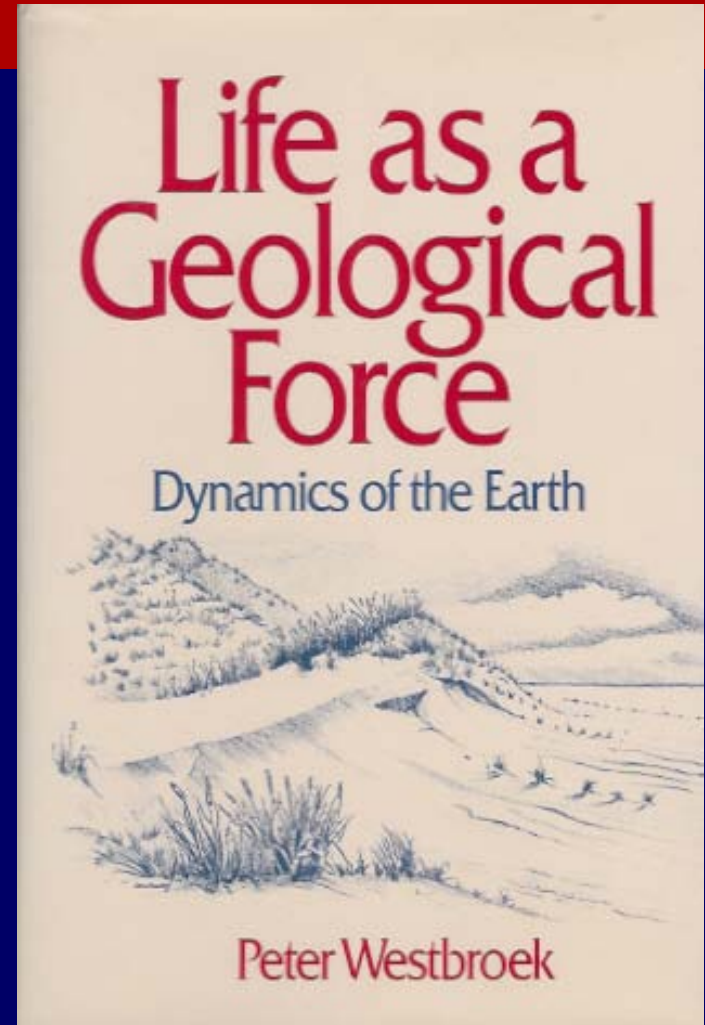
... in an overall system governed by the first and second laws of thermodynamics.





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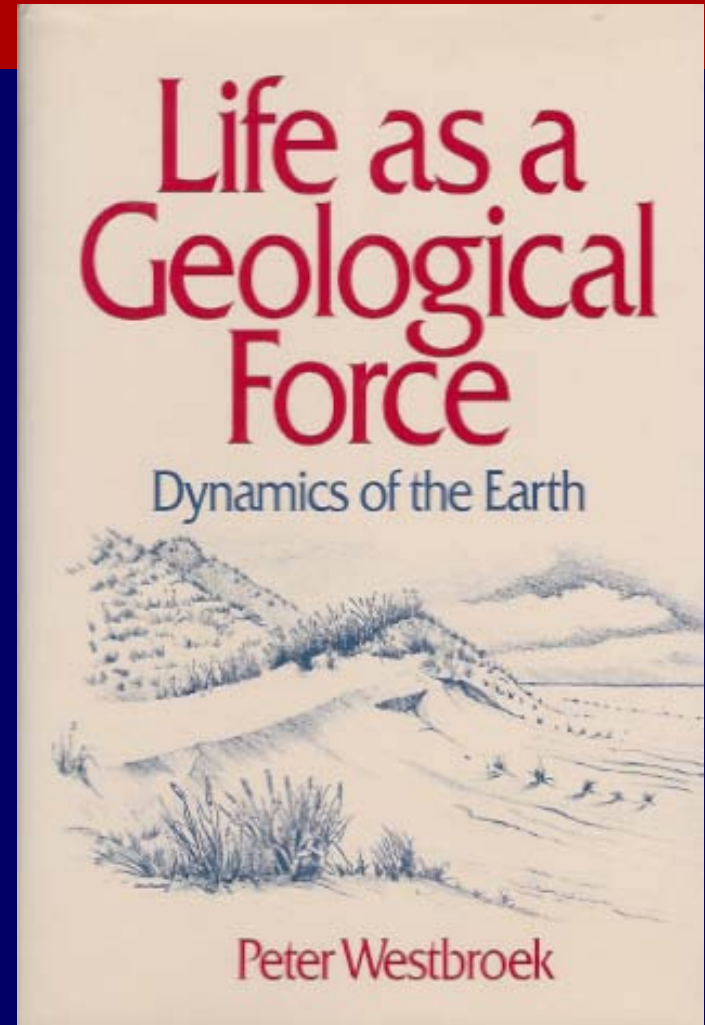
So, with nested, reciprocal and cumulative causality, while larger systems seem to condition smaller systems within them, the reverse is also true.



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So, with nested, reciprocal and cumulative causality, while larger systems seem to condition smaller systems within them, the reverse is also true.

Geological systems condition the emergence of life forms, but, over time, life forms can also alter geology. Our atmosphere is the result of the waste of bacteria. The “Cliffs of Dover” are rock that used to be “alive.” Coral reefs are still alive ... let’s hope.



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Tuesday, 1 October, 2002, 17:23 GMT 18:23 UK

Land use 'alters climate'

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References to snowy areas can change the climate

Talking Point

By Alex Kirby

BBC News Online environment correspondent

Country Profiles

In Depth

The way humans alter the surface of the Earth may be a key factor in climate change, scientists believe.

Programmes

They say land-use changes are probably just as important as greenhouse gas emissions.

BBC SPORT

They think tropical land surface changes are probably a greater influence on climate than the seasonal El Nino weather disturbances in the Pacific.

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And they suggest a new formula for measuring all human-caused climate influences.

The scientists, whose work was funded by the US space agency Nasa, published their findings in the Philosophical Transactions of London's Royal Society, the UK's national academy of sciences.

Text Only

Feedback

And we are learning that changes in behavior of some species can lead to changes in the larger systems of which they are a part...

You are in: Science/Nature

Tuesday, 1 October, 2002, 17:23 GMT 18:23 UK

Land use 'alters climate'

News Front Page



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References to snowy areas can change the climate

By Alex Kirby

BBC News Online environment correspondent

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They say land-use changes are probably just as important as greenhouse gas emissions.

They think tropical land surface changes are probably a greater influence on climate than the seasonal El Nino weather disturbances in the Pacific.

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Feedback

And we are learning that changes in behavior of some species can lead to changes in the larger systems of which they are a part...

For example, the way landscapes change over time, may in turn change climate in some measurable ways.

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Sometimes Humans behave as a “Geological Force”

Human behavior has been an increasingly important ‘geological force,’ altering land, water and air.



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Sometimes Humans behave as a “Geological Force”

Human behavior has been an increasingly important ‘geological force,’ altering land, water and air.

But all human activity operates *within the “laws of nature.”*

(On this issue, among others, some of our leadership -- both corporate and governmental -- is sadly mis-informed.)



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Laws of Thermodynamics Govern the Known Universe

First Law:

Energy is neither created nor destroyed; it changes form from one form into another.



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Laws of Thermodynamics Govern the Known Universe

First Law:

Energy is neither created nor destroyed; it changes form from one form into another.

Second Law:

In spontaneous transformations, energy moves from more highly organized forms to less organized forms. That is, for example, from the high energy wave lengths of light to the dissipated long wave lengths of heat.



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Laws of Thermodynamics Govern the Known Universe

First Law:

Energy is neither created nor destroyed; it changes form from one form into another.

Second Law:

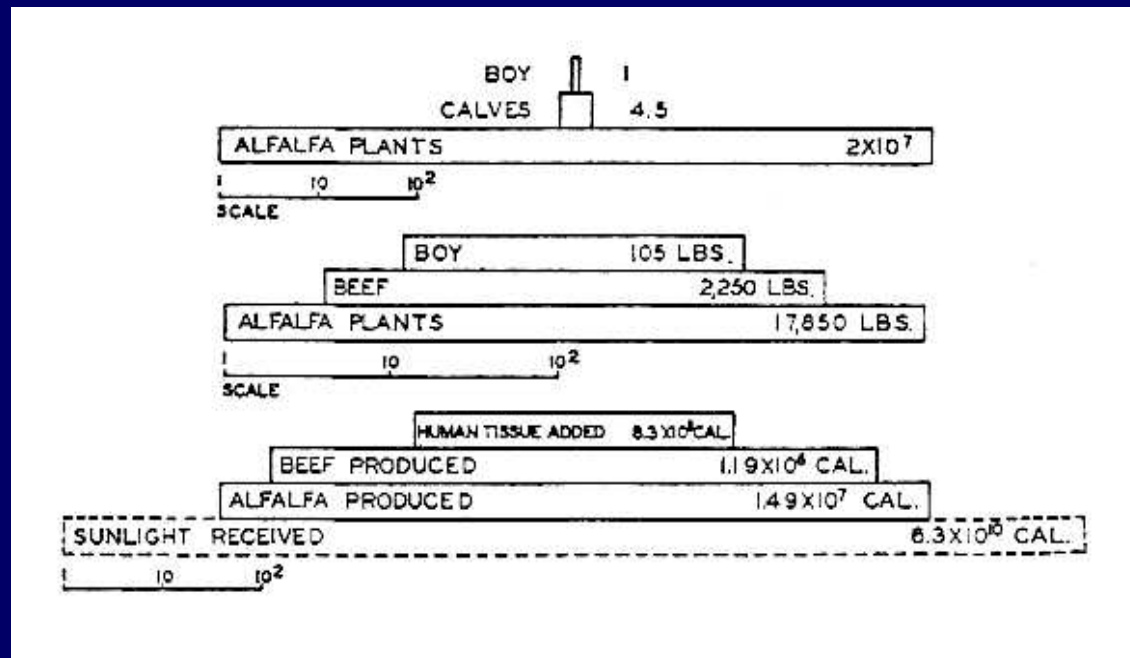
In spontaneous transformations, energy moves from more highly organized forms to less organized forms. That is, for example, from the high energy wave lengths of light to the dissipated long wave lengths of heat.

Thus, all “work” in the system requires the dissipative expenditure of energy. This is the “**no free lunch principle**” of the universe.

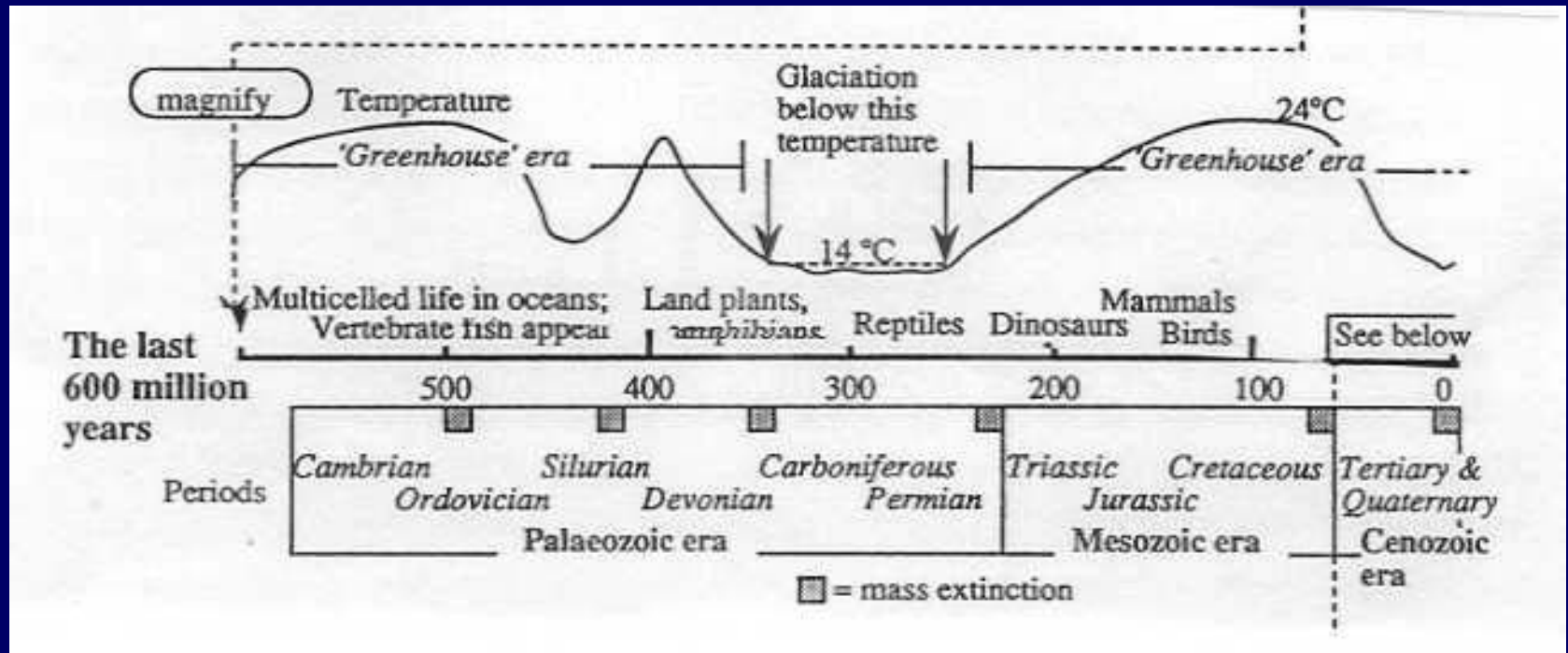


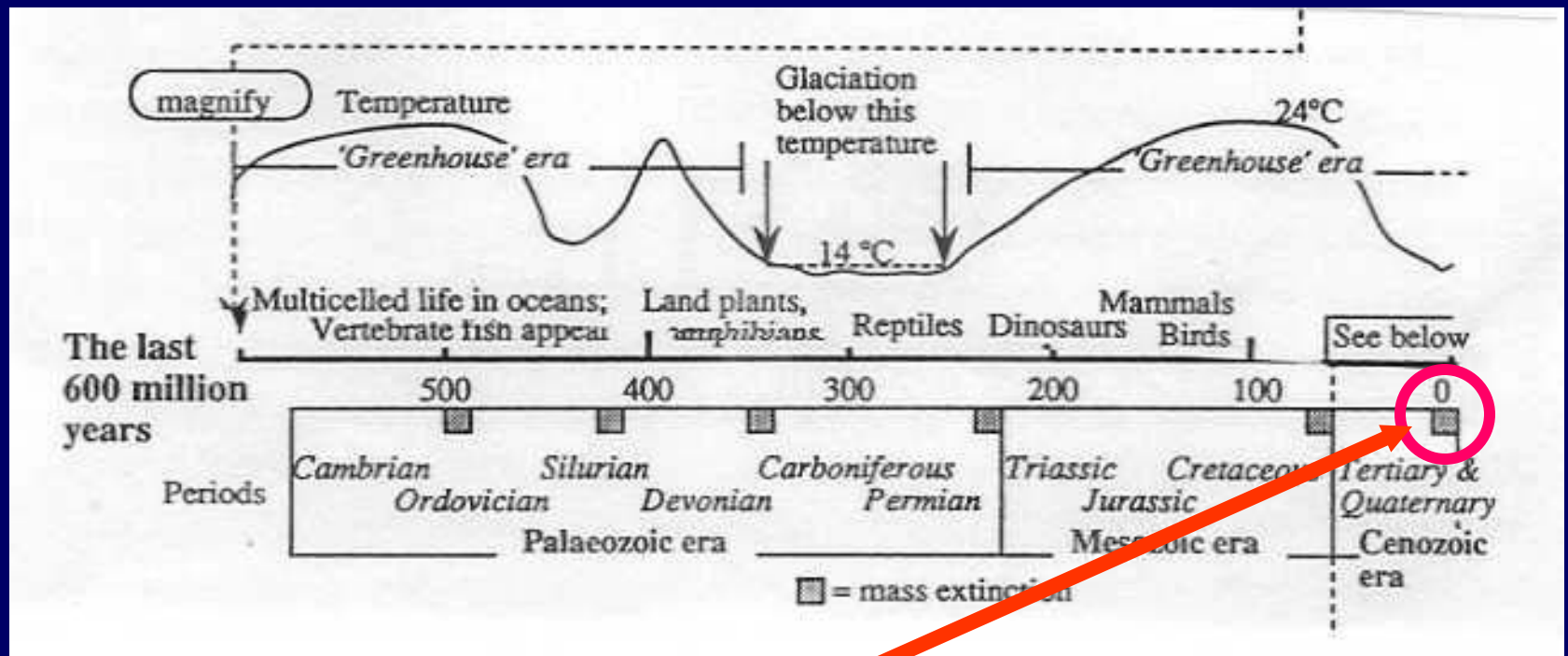
Where are we located in the trophic structure of this system?

Where are we located as individuals -- and as a *species* --
in the circulation of materials and the flow of energy?
Where are we in the web of life on earth?



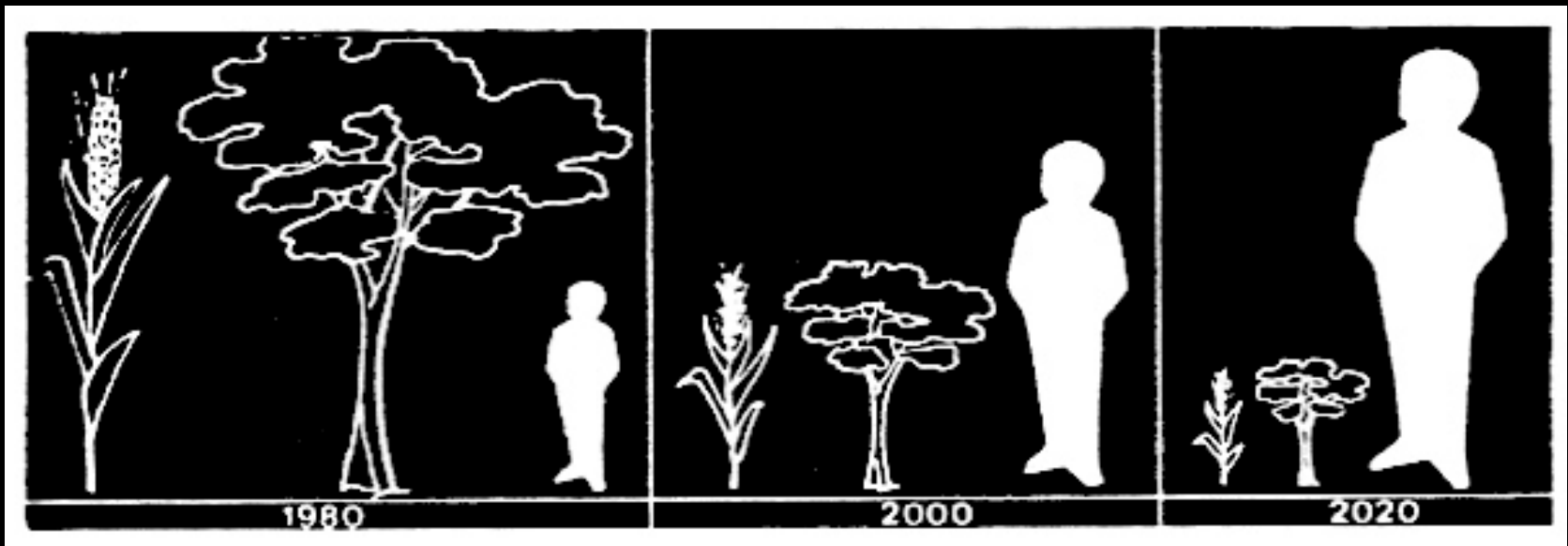
Where are we in the continuum of life-forms?





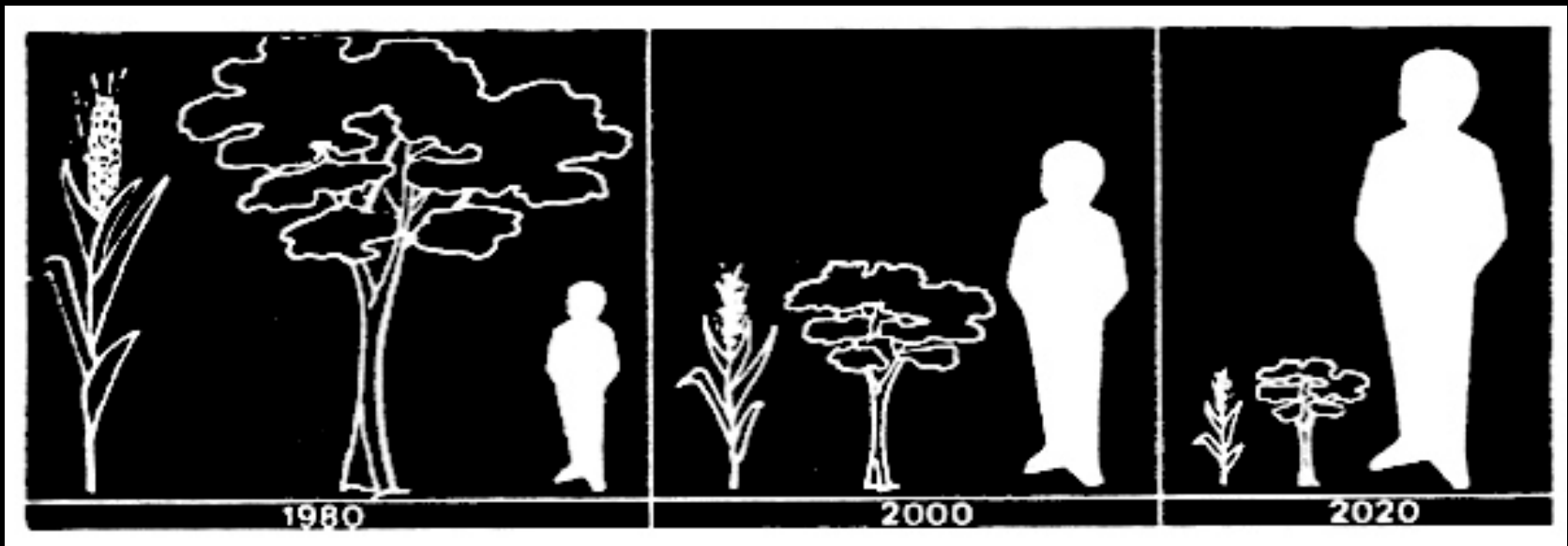
Sixth major mass extinction “episode” = now





Schematic representation of species ratio transformations through time. *Note bene* the pace and magnitude of the transformations we have become accustomed to as “normal” are systemically quite abnormal and cannot persist much longer.





Remember, ... the trophic structure of the ecosystem is crucially important.

Therefore, in an ecosystem *ratios really matter*.



Naturalists have been warning scientists for quite some time about the “biodiversity crisis.”

Richard Leakey
and Roger Lewin



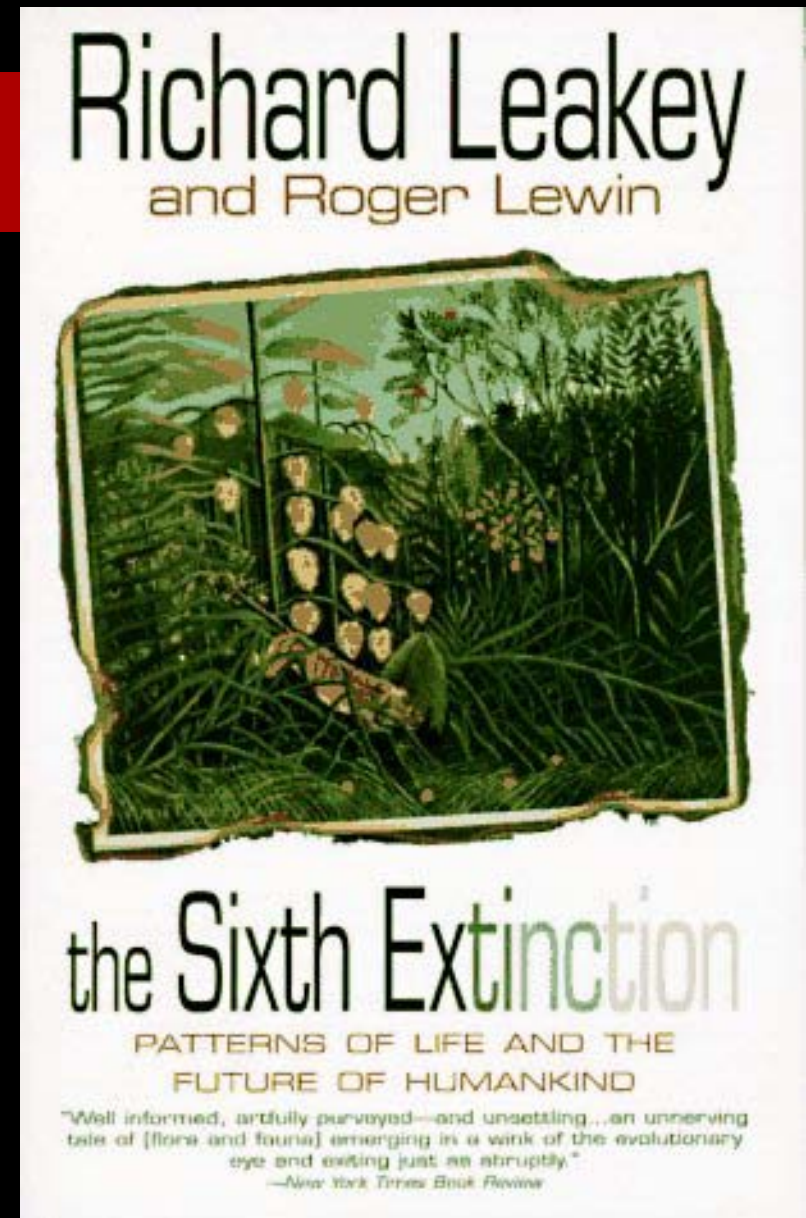
the Sixth Extinction

PATTERNS OF LIFE AND THE
FUTURE OF HUMANKIND

"Well informed, artfully portrayed—and unsettling...an unnerving tale of [flora and fauna] emerging in a wink of the evolutionary eye and exiting just as abruptly."
—*New York Times Book Review*

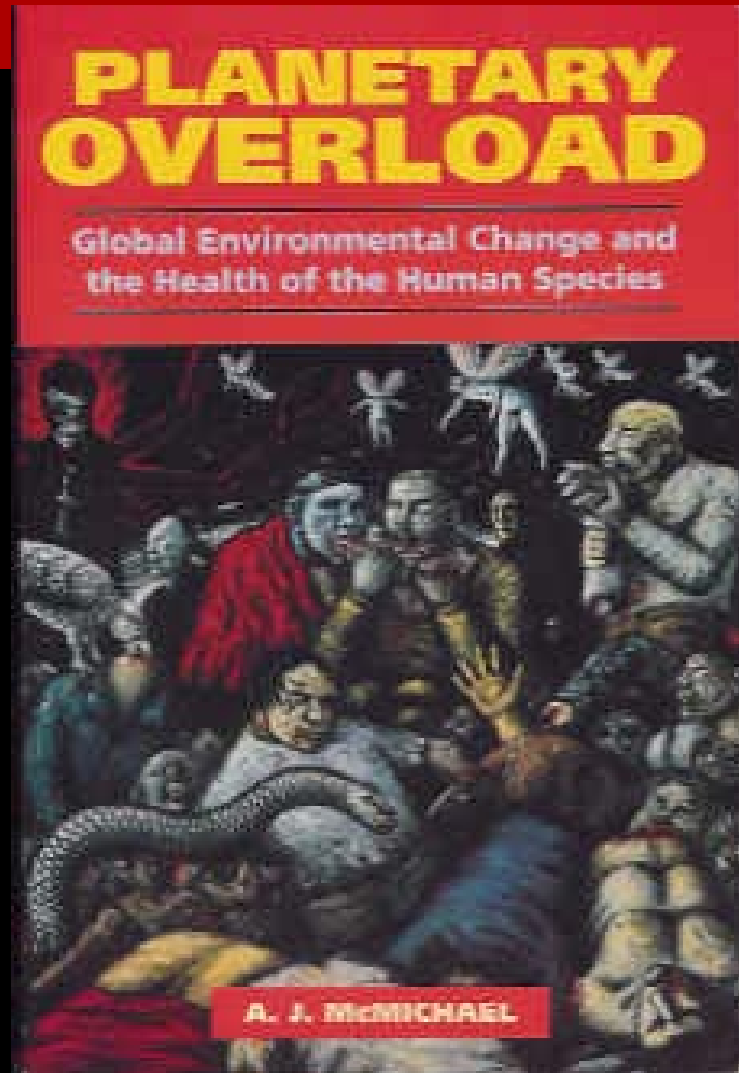


Naturalists have been warning scientists for quite some time about the “biodiversity crisis.” The “loss,” destruction or displacement of biodiversity appears to be taking place on the scale of a “geological extinction event” — comparable in scope and scale to those witnessed before in Earth’s history.



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We can begin to ask about “overload” questions, but answering these questions will inevitably raise further (perhaps embarrassing or revealing) questions about ratios.



Georg Borgstrom

\$2.95

author of The Hungry Planet

An international food science authority spells out the stark realities facing man if we continue to push our earth to its biological limits.

TOO MANY

AN ECOLOGICAL OVERVIEW OF EARTH'S LIMITATIONS

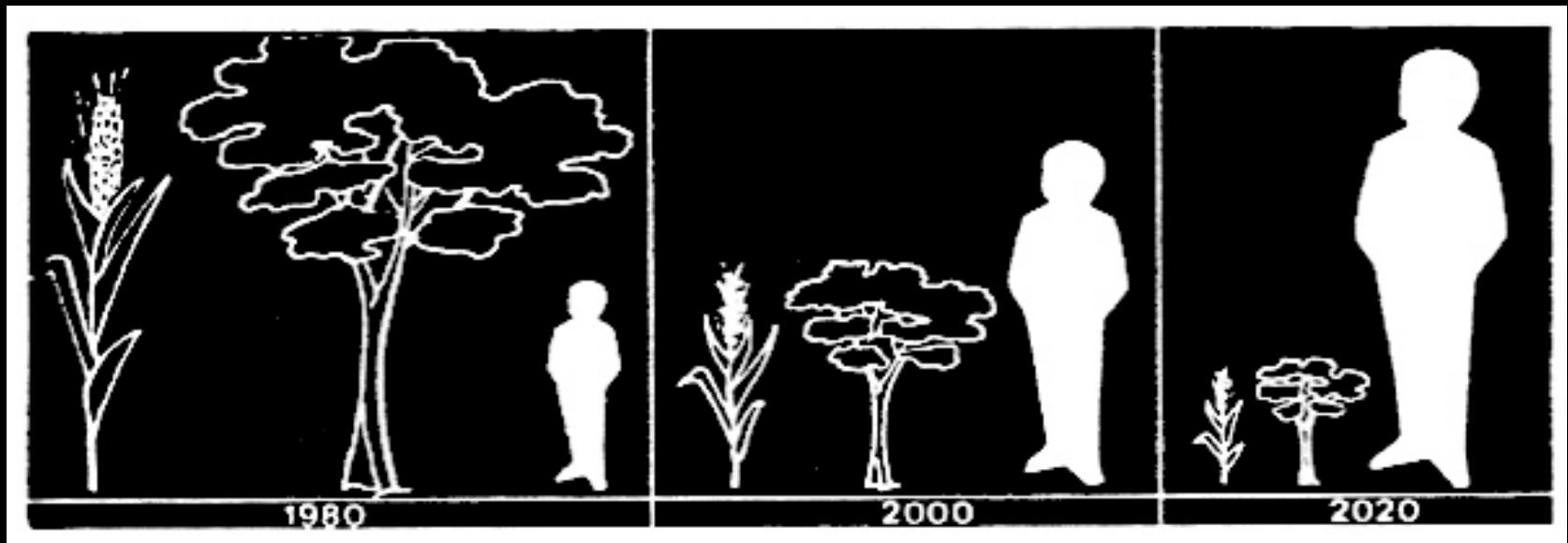
"Level-headed, factual and scary . . . not a book for those who would remain complacent."
—*Los Angeles Times*



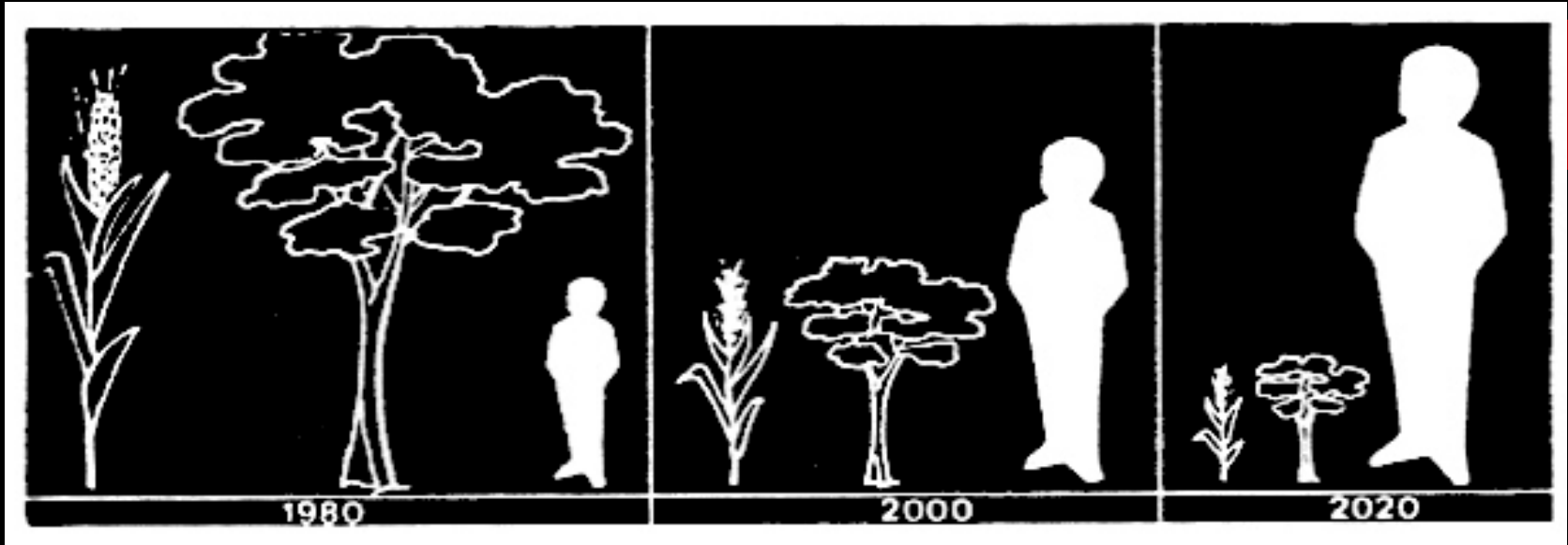
Some have already argued that there are too many humans currently alive and about to live for the planet to sustain them.



The international scientific community has been convened to address this question. And they have issued the *Millennium Ecosystem Assessment Report* (March 2005).



David Malakoff, "*Report Urges Action Against Ecosystem Damage.*" *NPR - Morning Edition*, (30 March 2005).



Part of the problem comes from transforming the ratios between the “wild” species (forest tree), the “cultivated species” (stalk of wheat) and ourselves.

This 1995 UN Ecosystem Assessment Report is the largest and loudest warning signal from the environmental scientists ever.



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Page last updated at 06:37 GMT, Sunday, 13 September 2009 07:37 UK

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Agriculture pioneer Borlaug dies

Norman Borlaug, the man known as the father of the Green Revolution in agriculture, has died in the US state of Texas aged 95.

Prof Borlaug won the Nobel Peace Prize in 1970 for agricultural innovation and the development of high-yield crops.

The Green Revolution helped world food production more than double between 1960 and 1990 with Asia, Africa and Latin America in particular benefiting.

The Nobel Institute said he had helped save hundreds of millions of lives.

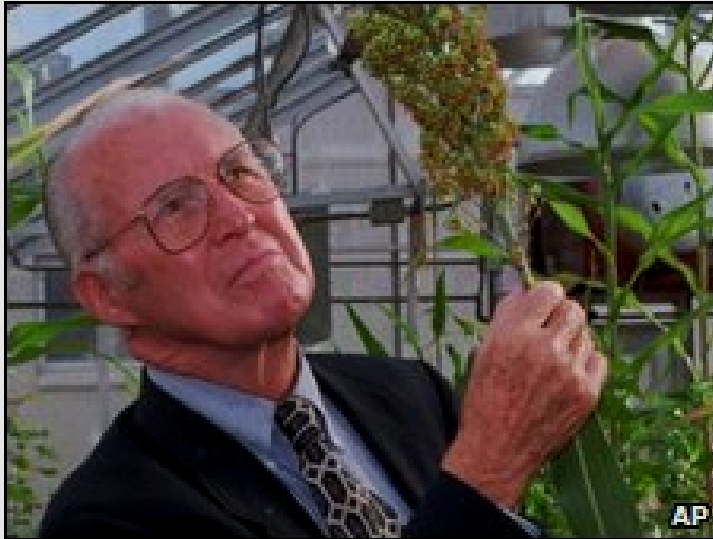
Prof Borlaug died late on Saturday evening at his home in Dallas from complications with cancer, said a spokesperson for Texas A&M University, where he had worked.

'A better place'

In the early 1960s Prof Borlaug realised that creating short-stemmed varieties would leave food plants more energy for growing larger heads of grain.



Borlaug won the Nobel Peace Prize and US Congressional Gold Medal



Borlaug won the Nobel Peace Prize and US Congressional Gold Medal

BBC

"Green Revolutionary
Norman Borlaug Dies."

NPR News
Weekend Edition, Sunday
13 September 2009

"Agriculture pioneer Borlaug dies." BBC
News Online, (13 September 2009 07:37
UK 06:37 GMT, Sunday).



Click to Play, Pause, Stop

<http://www.climate-talks.net/2008->

[ENVRE130/Audio/20090913-NPR-Borlaug-dies.htm](http://www.climate-talks.net/2008-ENVRE130/Audio/20090913-NPR-Borlaug-dies.htm)



BBC, Newshour, 13
September 2009

<http://www.climate-talks.net/2008-ENVRE130/Audio/20090913-BBC-Borlaug-Newshour-obit.mp3>.

Norman Borlaug
(1914 – 2009)

Population Growth Requires Second Green Revolution

Norman Borlaug Interview



Norman Borlaug accepting Congressional Gold Medal from President George W. Bush (July 17, 2007)

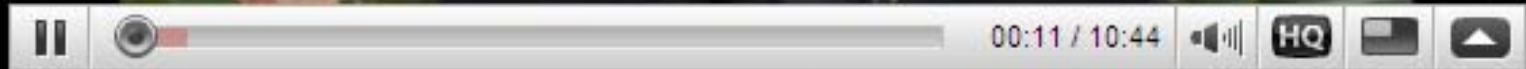
te!! a Friend [f](#) [t](#) [M](#)...

Norman Borlaug (March 25, 1914 - September 12, 2009) is known as the father of the Green Revolution.

His work with high-yield, disease-resistant wheat varieties is credited with saving as many as a billion people from starvation worldwide.

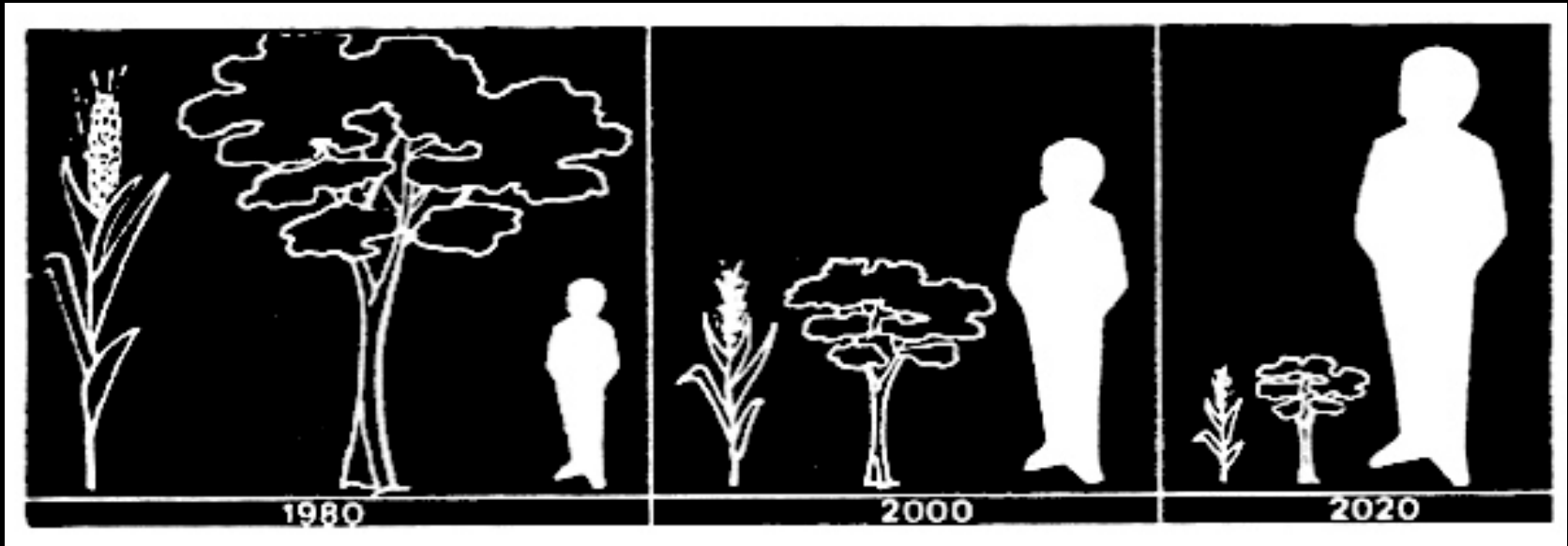
Borlaug was awarded the Nobel Peace Prize in 1970 in recognition of

his contributions to world peace through increasing food supply.




"Greatest Man to Ever Live: Norman Borlaug."
YouTube - CommonReason, (13 September 2009).

<http://www.climate-talks.net/2008-ENVRE130/Video/20090913-YouTube-Borlaug-Promoter.htm>



But our basic problem is that...

we've 'forgotten' (and it may be that many of our leaders never knew) the basic ecological insight about our collective "niche" as a species in the global ecosystem.

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The Nobel Peace Prize 1970 Norman Borlaug

[The Nobel Peace Prize 1970](#)[Norman Borlaug](#)

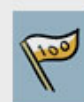
Biography



A central figure in the "green revolution", **Norman Ernest Borlaug** (March 25, 1914-) was born on a farm near Cresco, Iowa, to Henry and Clara Borlaug. For the past twenty-seven years he has collaborated with Mexican scientists on problems of wheat improvement; for the last ten or so of those years he has also collaborated with scientists from other parts of the world, especially from India and Pakistan, in adapting the new wheats to new lands and in gaining acceptance for their production. An eclectic, pragmatic, goal-oriented scientist, he accepts and discards methods or results in a constant search for more fruitful and effective ones, while at the same time avoiding the pursuit of what he calls "academic butterflies". A vigorous man who can perform prodigies of manual labor in the fields, he brings to his work the body and competitive spirit of the trained athlete, which indeed he was in his high school and college days.

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The Nobel Peace Prize

[Read more about the Nobel Peace Prize during its first 100 years](#)

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Who Are the 2010 Nobel Laureates?

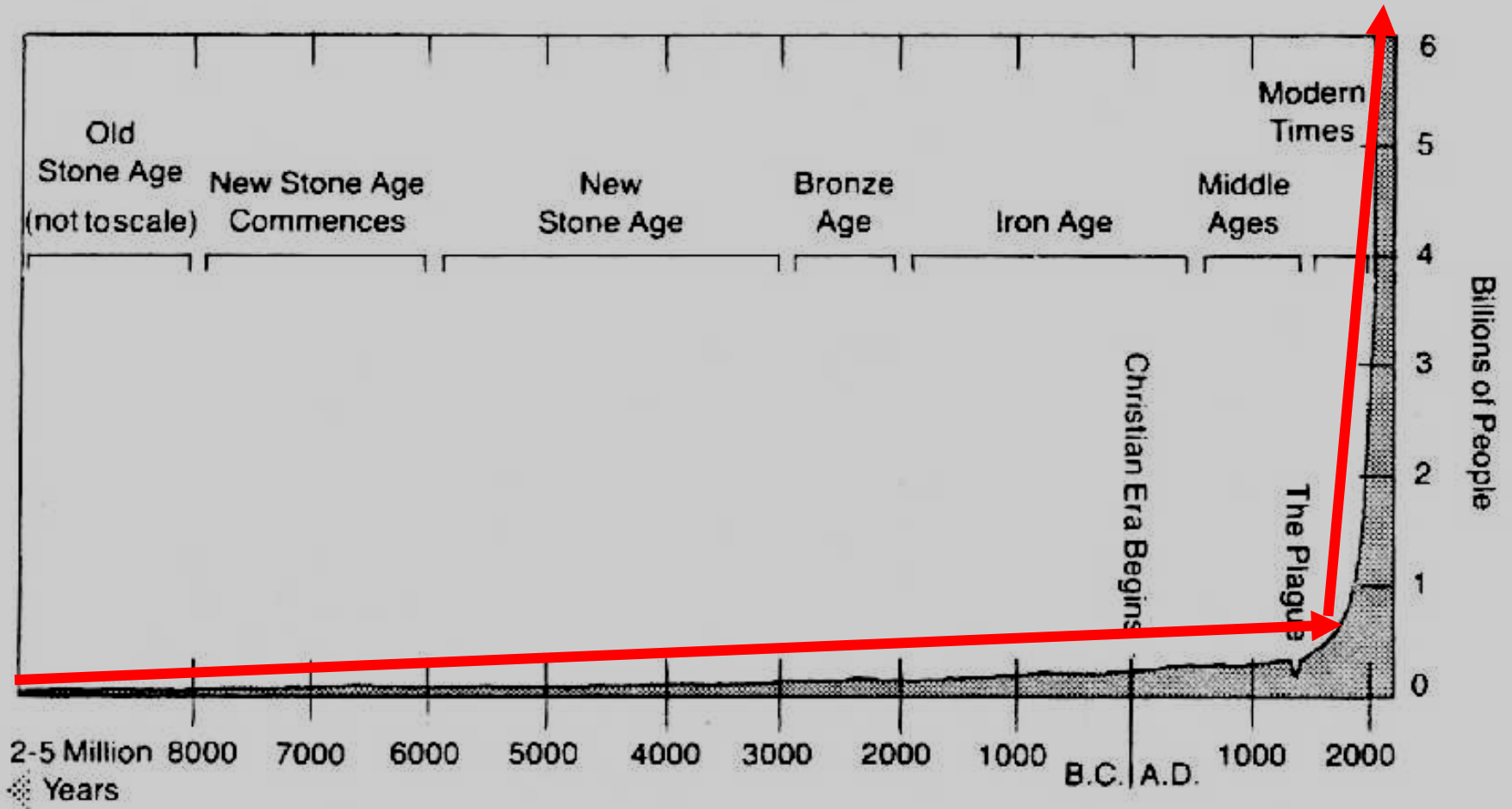
[See a list of the eleven Nobel Laureates of 2010](#)

HAVE YOUR SAY!

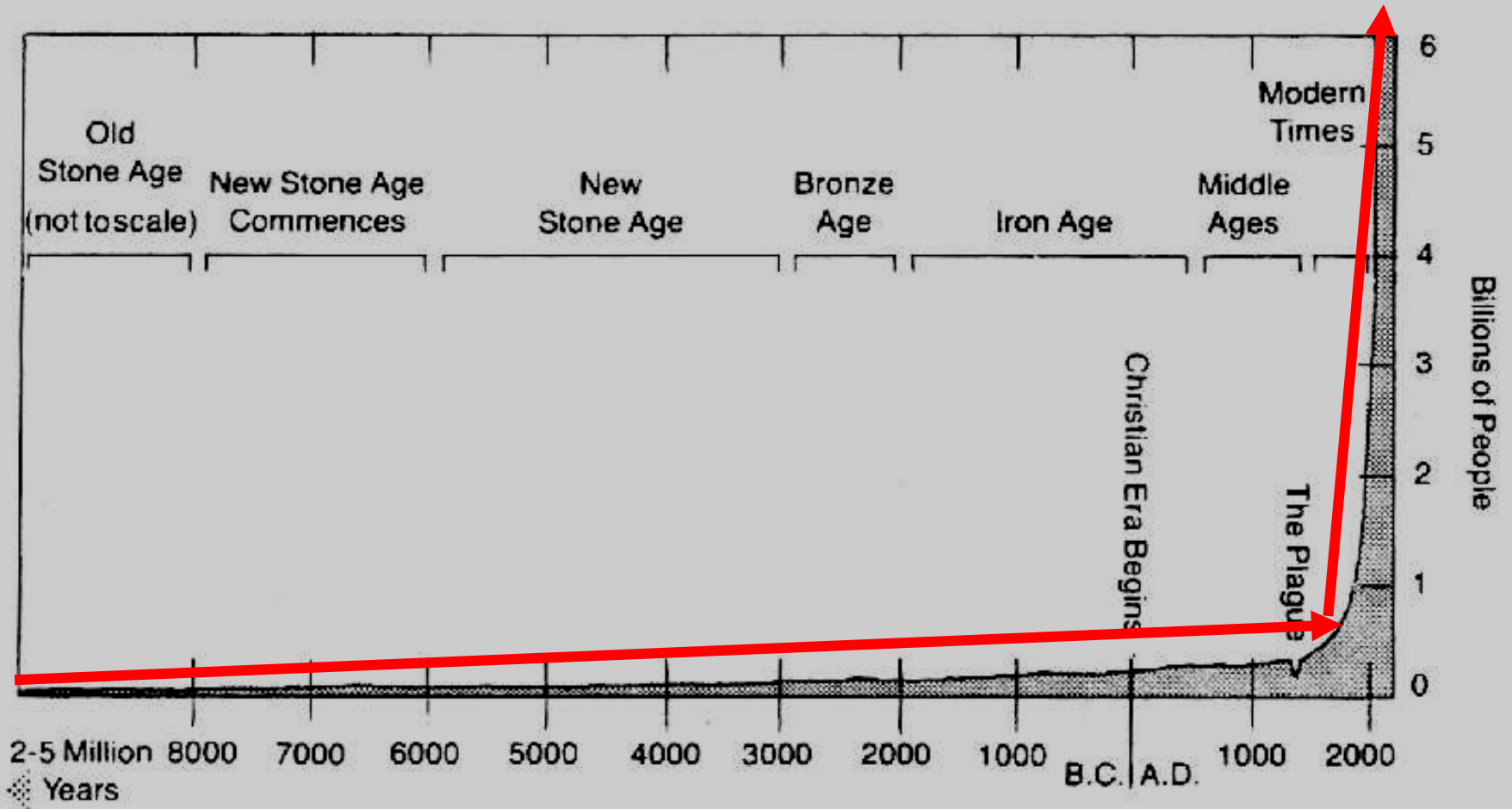


What do you hope to achieve in the future?

World Population Growth Through History



World Population Growth Through History



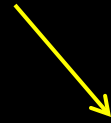
Never before...and never again.

Norman Borlaug addressed the

The “Food” Problem

Norman Borlaug addressed the

The “Food” Problem



... but we have come to understand that
this is only part of:

The Food/Population Problem

Norman Borlaug addressed the

The “Food” Problem

... but we have come to understand that
this is only part of:

The Food/Population Problem

... and that, in turn, is only
part of:

The Food/Population/Environment Problem

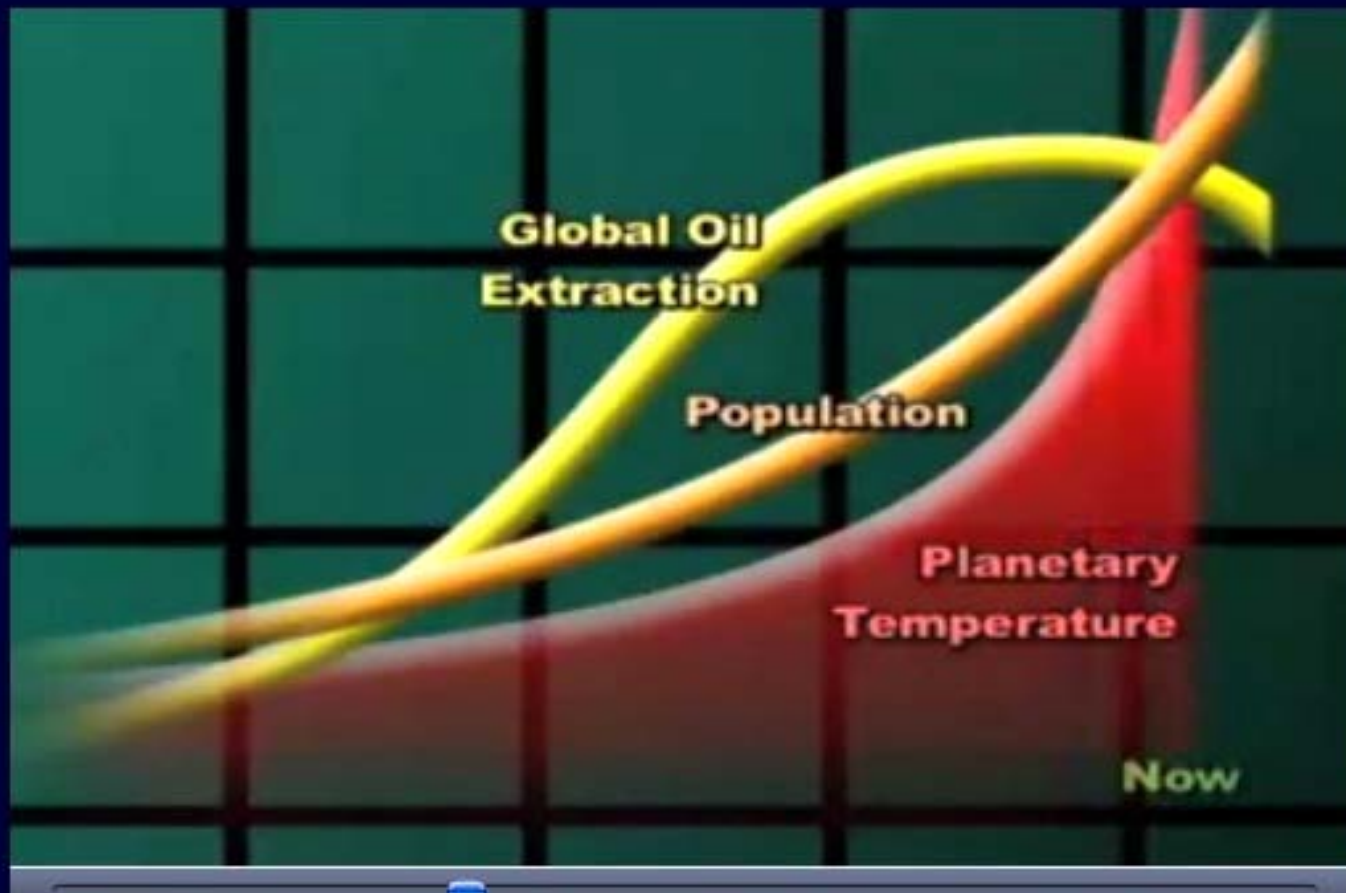
(This Requires a Paradigm Shift)



Norman Borlaug (1914 – 2009)

The Crucial Question Is:

Will the students and followers of Norman Borlaug be able to make the paradigm shift to **sustainable agriculture** that is now required for our collective human survival?



If they cannot make this needed paradigm shift – if we cannot collectively make that shift – then, we can expect some very rude and costly disruptions in the global food system in the relatively near future.

Consider the “conversion experience” –the “epiphanal experience” described by Ray Anderson....



Ray Anderson

CEO Interface, world's largest commercial carpet manufacturer

<http://www.youtube.com/watch?v=-hG-c1KY7Y4&feature=PlayList&p=FA50FBC214A6CE87&index=7>



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[Timothy C. Weiskel](mailto:TWeiskel@FAS.Harvard.Edu)

TWeiskel@FAS.Harvard.Edu

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No amount of genetic engineering will address the ethical problem of limit posed by the most recent scientific studies.

“...people like me should be in jail....”



Ray Anderson

CEO Interface, world's largest commercial carpet manufacturer

<http://www.youtube.com/watch?v=-hG-c1KY7Y4&feature=Playlist&p=FA50FBC214A6CE87&index=7>

Which of these two gentlemen is closer to understanding the ***ethics of sustainability?***



Norman Borlaug

OR



Ray Anderson

...blog on.

Paradigms – or worldviews – have enormous implications for ethics and for public policy...

In the middle of the 20th century – *largely following the paradigm championed by Norman Borlaug* – humanity transformed agriculture from solar based systems to a global petro-dependent one.



If we are ethically responsible for the foreseeable consequences of our own behavior what does this mean for the ethics of agriculture?

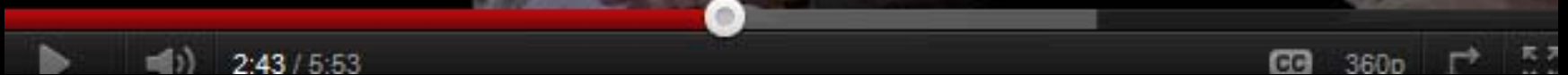
What about the larger “ethics of growth?”

FORA.tv



Geoffrey B. West

Why Cities Keep on Growing,
Corporations Always Die, and Life Gets Faster



Where do you stand in the midst of these paradigm shifts?

You need to pay attention to how your mind and heart are being “furnished.”

If you don't someone else will do it for you.

Higher education is your last best chance....That's what it is for. It can prepare you for the paradigm shifts that you will have to undertake in your own life...

Because we now realize that we are alive — with millions of other species — on the only blue, life-supporting planet in the known universe we are in need of a new human ethic of sustainability. We must now learn, as cosmic citizens, to....

...embrace the full range of humanity in all of its unfamiliar forms,...

...struggle *together* toward a common goal of global sustainability,...

and

...cherish the time that now remains of the human moment in Earth's self-renewing and ever changing web of life.



"Let the world change you..."

... and you can change the world."

Che Guevara

Your task in this course — and well beyond it — will be to find your voice, join the chorus, and sing your heart out with all the passion and commitment you can muster. Sing as if your life depended upon it....because, in fact, it does.

T.C. Weiskel

Environmental Ethics and Land Management

ENVR E-120

<http://courses.dce.harvard.edu/~envre120>

Elements of Ethical Reasoning

Timothy C. Weiskel

Session 3

14 September 2011

Harvard University Extension School
Fall Semester 2011

