

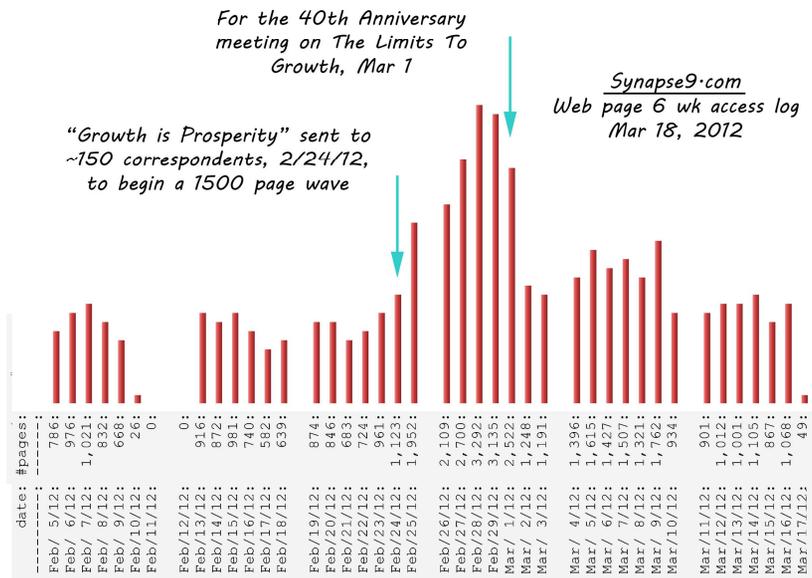
The following is the response I got on my web site, sending “Growth is Prosperity” to about 150 contacts in preparation for discussions at the 40th anniversary meeting on The Limits to Growth Mar 1, 2012.

The [blog posts most read in the wave of interest](#)

Daily Report

(Go To: [Top](#): [General Summary](#): [Weekly Report](#): Daily Report: [Hourly Report](#): [Organization Report](#): [Host Report](#): [Operating System Report](#): [Request Report](#))

Each unit (■) represents 100 requests for pages or part thereof.



The message is simple. People fail to notice growing environmental stress on the economies as natural limits to growth because the consequences of our choices are “washed clean” from our money choices by going unreported.

My [draft report on the historic 40th anniversary meeting](#)

GROWTH IS PROSPERITY



... IT HAS MEANT THAT FOR CENTURIES, BUT WHY IS IT NOW CAUSING ENVIRONMENTAL IMPACTS?

WHY WOULD GROWING PROSPERITY ALSO NOW RISK OUR USING UP EVERYTHING USEABLE ON EARTH, AS INVESTORS SEEK THE FASTEST GROWING PROFITS ACHIEVABLE?

THESE THREATS ARE NOT BECAUSE OF POLITICS, EXCEPT FOR NEGLECTING HOW LITTLE TIME WE HAVE LEFT TO ACT ON THEM.

THE NEED TO SAVE THE EARTH IS VERY POPULAR, ALL OVER THE EARTH.

GROWTH IS THE PURSUIT OF MONEY TOO,

...USING MONEY ALWAYS CONTRIBUTES TO BUSINESSES INCREASING THEIR PROFITS AS FAST AS THEY CAN.

WE STILL FIND IT HARD TO IMAGINE HOW MAKING MONEY USES AND CHANGES OUR WORLD AS A WHOLE, THOUGH....

HOW AVERAGE USES OF MONEY IMPACT THE WORLD AS A WHOLE... IS ABOUT AVERAGE! LIKE, ~1 LB OF CO2 COMES FROM \$1.00 OF GOODS, AS A WORLD AVERAGE

Jessie Henshaw - [synapse9.com/SEA](#)

18 top articles for 6 weeks to Mar 18, 2012 ... during a nice viral wave of interest triggered by # 17

Reading Nature's Signals

*A visionary world
in which scientists
study nature's real working parts
rather than their abstract theories*

whether successfully averted for the moment or not, ...

by pfh Published on: August 18, 2007
Comments: Comments Off
Tags: No Tags
Categories:alongshot, among best, Natural Economy, Natural systems, Popular, What to do

*#1 of 18 - 1,428 reads
for 6 weeks to Mar 18, 2012*

Hi folks,

...this week's global run on credit seems like a casebook example of how a natural system failure to provide growing physical returns on investment would effect financial commitments for endlessly growing financial returns. They naturally conflict.

One thing we can do is watch it closely, so others may learn from our experience. Because systemic collapse is a big physical process in a big physical system, displaying all-together new kinds of rapidly spreading behaviors, watch for that. If you see that sort of thing perhaps you'll **'believe your eyes and ears'** and not feel the observations were 'planted' in your imagination somehow.

**Remember what things seemed to mean before and after,
and make note of it.**

I've been using the mismatch between our unlimited economic expectations and their certain disappointment as a way to learn about natural systems and how they fool us for about 30 years. It's remains a rich and engaging subject.

In June I sent out my first 'system collision warning' ever, initially in a post to the AIA environment forum. I said I thought the surprise discovery by the ethanol investors in May, that ethanol couldn't have the land they wanted because milk producers raised the price, signaled the tip of the growth system's physical collision with the earth we've all been waiting for, 'the big crunch'.

The same kind of 'fishtailing' in the steering mechanisms of the world economic system I observed then in the energy markets also seems clear in the rapid, large scale, and indecisive maneuvering this week by financial institutions.

Just because growth expectations are fulfilled, even for hundreds of years, doesn't mean it's not certain that natural systems will fail them, and so our financial design that requires growth for it's own stability is a mistake.

If this week's threatened global financial collapse is just a warning, well, then do take it as a warning.

Phil Henshaw



(The eventual research article in 2011 - [A decisive moment for Investing in Sustainability](#))

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Reading Nature's Signals

My most disturbing finding

by mothernature Published on: July 18, 2011
Comments: Comments Off
Tags: No Tags
Categories:among best, For teachers, Natural systems, Popular, Scientific theory

*#2 of 18 - 908 reads, 18 plots
6 weeks before Mar 18,2012*

How to escape the mental traps causing mankind to destroy its own future and much of our living planet, is not so hard...

...but takes exceptional willingness to discover how nature works that you might have been missing. It takes learning to observe nature making new sense of things by herself.

Watching organized change develop in ways that clearly can't be following human rules or theories, and so intricate they could never be fully explained, frees a mind to drop its assumptions and attempts explain. It lets you just study and marvel at what you find, giving you fresh ideas unpolluted with the self-serving social conventions people mostly live by, that are the problem.

Watching nature work, beyond the limits of theory, builds fresh awareness, letting us put our own perception in perspective, to see and correct our misconceptions.

Consciousness is a wonderful thing, but it initially presents the world to us as if reality were physically located in our heads. It takes training to see that consciousness is a story, and the natural world works independently from it.

The differences are most obvious in how nature uses energy, requiring very complex organization that "appears to come from nowhere" to do it.

So escaping the traps of conventional thinking involves studying the difference between how our minds make sense of things and how nature does. It means using your time to notice natural processes that don't fit your expectations, and learning to stretch your imagination to fit nature's independent ways of thinking for herself.

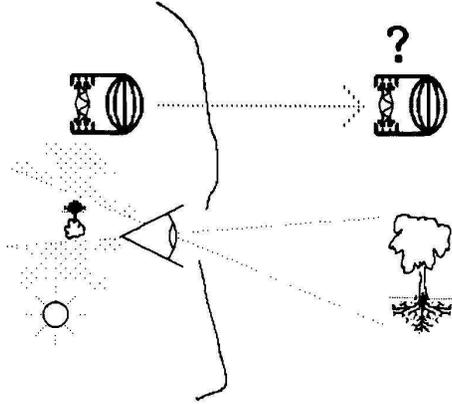
You mostly don't find one explanation will fill many different occurrences of the same kind. For how natural systems begin there's one clear common pattern. Typically new systems and relationships begin with a little explosion of events, as when two people first recognize their interest in each other.

Beyond that each case will be highly individualistic. It's the same for most other kinds of things that begin by a growth process. Each truly satisfactory explanation of any one will need to be tailored to the individual occurrence, leaving numerous open questions. That feature of growth systems makes it clear they are not in your head, but "real".

How people have so habitually considered their concepts to be the natural world they live in, has been remarkably "hidden in sight". Examples of the inescapable difference are remarkably prolific, actually found in the little explosions of change visible at the beginning of nearly any observable event.

So it's then also quite amazing they have not really been studied by science. The traditional scientific method defines what observations are for, for making a formula describing how events occur following universal rules. That effectively excludes all interest in discovering how natural systems and events develop locally and individually by themselves.

increasing by %, is key to locating the complex growth process, or "emergent system", that animates it. What's visible in any growth process is that a) there clearly is some kind of system growing and b) it's way beyond the imagination of an observer to see how something that complex could be explained. It helps you understand the inadequacy of your subjective images, and to then learn to trust observation more than hearsay and theory.



In the environment in which it occurs, the appearance of growth systems is like the environment being "pregnant" with new life. It's not in the mind of an observer. Observers see almost nothing of what goes on inside other independent systems. For nature growth represents some kind of storm or new culture, irreversibly erupting within its womb.

Just as with human pregnancies, there WILL be consequences. They're not necessarily consequences for an observer's beliefs or awareness of the changed world they are watching, no, not in the least. That's the main problem. Humans can hold realities of their own in their minds simply because they like them.

It's possible to look at a woman who is suddenly desperate to find out what to do about her life, and even ignore her decisions, without noticing her being pregnant or that it means anything at all in the world around her. It's the same way with any other explosion of new life in nature. The direct consequences are for how nature will need to accept the new life form into its environments, or not.

The physics principle that exposed just how extensively science has ignored these natural processes of self-organization, growth producing new life forms in a manner as if nature were pregnant, is called the Law of Continuity. It develops a mathematical interpretation of the Conservation of Energy, implying that to begin any process that uses energy, an explosion of local self-organization is required.

You need the twist of a key in a lock to start a car, for example. Of course, when you casually look around nature for them, that's just what you find wherever the events at the beginnings of things are observable... from a tree, to a storm to a society, to starting a car.

So what's "disturbing" about all that?? It's not just that it's "different". It's that closely watching how nature works by herself doesn't connect with our confused languages for explaining nature as working by our own concepts of cause and effect, by our cultural models and thinking.

This aspect of nature that is both theoretically necessary and prolifically observable, can't be referred to in the language of science is at the heart of the problem. It's not a formula. It doesn't fit the deterministic premise of science, and can't be represented as cause and effect, like A->B. It more raises questions for guiding an observer to look deeper into how nature world, like A-?-B would. It's about closely observing non-formulaic behavior, and finding the knowledge of nature we've been missing by treating it all as formulas.

What may attack the pride of science, and not just be confusing for it, is that non-formulaic behavior then seems to underlay rule-following behavior, and NOT the reverse. What really hurts the pride of science is that we've been representing nature as being ruled by the thoughts of scientists.

That, in particular, seems to be why we're in such stupendous trouble on earth, that it's both difficult to conceptualize, and we are loathe to admit the error. Science has been very economically productive, even led the way to inventing all our ways of exhausting all our resources. It's offered scant comment on the consequences too, but treated its discovery of ever more ways to control nature as all society needed it for.

In so doing it steered the great civilization it helped build into a mortal conflict with the self-organizing systems of the planet Earth, that science inadvertently treats as "undefined". Our worldwide consensus plan for prosperity is for nature to be an infinite womb in which we can multiply, without consequences.

collapse". Our scientific concept of prosperity on earth naturally pushes all our system's internal response systems beyond their limits of response. Other scientists have shown a clear reticence to discuss and have failed to address the rather clear problem I've been clearly describing for 30+ years. So I have to lay the blame squarely where it seems to belong. It's the conventions of science, built on the ambitions of scientists, that created the problem and now keep it from being discussed.

That the creative processes of nature need to be studied individually doesn't mean you can't study them. It just means you can't talk to scientists about what you find. Science needs a new trunk, not just a new branch. The language of science is built for representing nature with abstractions. That has made it impossible for scientists to refer to the natural self-organizing systems of the world we live in, how they're born, and the consequences. It's a problem.

[PFH – other research findings, 1978 to present](#)

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arise among the beneficiaries of growth to act as a group and bring their financial demands for growth to an end. It clearly would be in the interests of both each individual and the whole, to keep the system as a whole from becoming unprofitable. As rational as that expectation is and clear that nature seems to be presenting us with that choice, we'd still need the urge to act on it and haven't.

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Urges, arousal, and Keynes' "animal spirits"

by mothernature Published on: July 27, 2011
Comments: Comments Off
Tags: No Tags
Categories: among best, Mail & Comment, Natural Economy, Natural systems, Popular

#3 of 18 - 538 reads, 14 prints
for 6 weeks to Mar 18, 2012

This is a comment on The Concept of "Animal Spirits" is a Red Herring, a June 27, 2011 blog post, by the blogger "Lord Keynes", on exploring what Keynes really meant by people needing the urge to act, as well as a rational expectation...

Thanks for helping clarify the original meaning of "animal spirits" and helping bring out "the real J.M. Keynes". I agree:

Keynes uses "animal spirits" in the sense of "a spontaneous [human] urge to action rather than inaction."

The sense in which his use and Descartes', as

"the fiery particles of the blood"

are consistent is seen when observing that both would be referring to how people need to be aroused and have inspiration to act, i.e. to make emotional leaps in decision making, and not just form rational expectations.

That is indeed quite different from our having to be subjective in forming expectations with uncertainties. As you say "The concept of "animal spirits" as used by Keynes is not even necessary to the modern subjective expectations theory." But then that is the subject you discuss, and seem to drop the question of what Keynes really thought was important about the need for "animal spirits" to allow people to act.

A related puzzle for understanding "the real J.M. Keynes" is his mysterious Chapter 16 of The General Theory. It's his concluding chapter to his grand theory of how to stabilize growth. He oddly spends the whole chapter on the natural limits of his own model, however.

Missed by nearly everyone it seems is that he is discussing what to do when growth becomes unprofitable, and a new model for stabilizing the economy will be needed. A compact summary of my writings on it, from a natural systems perspective, interprets Keynes' insight into natural limits of money as it would apply in today's terms of discussion.

What's special about a natural systems view is that the self-organizing systems of nature generally develop by a growth process, much like economies do. *Growth itself displays a kind of "animal spirit" of nature, an "urge to act" without foreknowledge of the consequences.* Growth is a process creating unique individual things beginning with a burst of self-organization that then only discovers its end when emerging into a new environment.

You see it in the germination for plants, nucleation of new cultures or storms of any kind, and in the gestation for new organisms, visible as a distinctly explosive growth process that is clearly instrumental. It's also implied theoretically, from the physics of energy conservation, that bursts of self-organization are needed for bridging small and large scales of change. So it seems to be at the heart of nature's way of solving the "chicken and egg" problem, of

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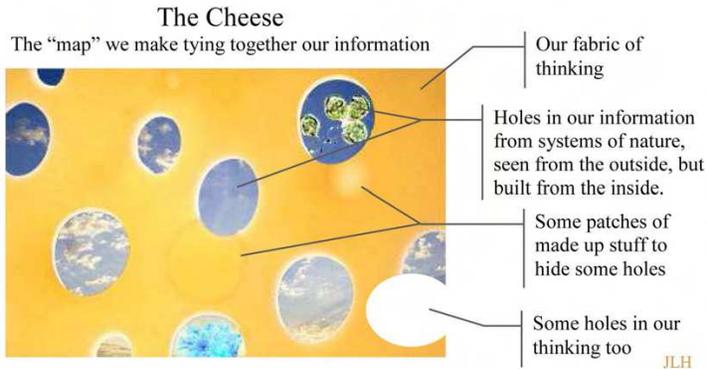
Are the holes in your map helping you read the territory?

by mothernature Published on: February 5, 2012
 Comments: Comments Off
 Tags: No Tags
 Categories: among best, Natural systems, Popular, Scientific theory

#4 of 18 - 514 reads, 16 prints
 for 6 weeks to Mar 18, 2012

This is an exchange with Frits Smeets on Azimuth, John Baez's wide ranging mathematical physics blog. The original topic is the 12/13/11 "What's up with the solar transition", and why isn't it happening when seeming so "logical" to so many.

The exchange starts on that topic, and in the last two entries turns to the deeper problem of why the natural **holes in our information about nature are missing from the physicists notion of a world describable by equations, or "phase space"**. fyi, you might browse at the start and read carefully toward the end.



Holes in our information for things built from the inside. (Oh gee, never thought of organization as something different from enumeration...)

1. F.S. Reply to the J. Baez article



Frits Smeets says: 1 February, 2012 at 10:29 am

There's this thing I can't get out of my mind. The real problem with solar energy isn't technological, I'm confident engineers can & will take care of that. Nor is it a matter of finance, although I agree with P.F. Henshaw's point about

the breakdown of the Berlin Wall international politics is not about territory, it is not about ideology, it is mainly about securing fossil energy supplies. Solar energy is the sword that threatens to cut the knot. Again, I don't doubt that engineers and financial project-managers can take of their businesses – if we let them.

2. Reply



P.F. Henshaw (@shoudaknown) says: 2 February, 2012 at 1:22 am

Frits, It's very true that changing ideological systems takes more than having a practical reason to do so.

It's not just the "vested interests", it's all the kinds of systemic integration of systems to work as a whole, making them more resistant to change than the popular "single value theories" might suggest. John Sterman of MIT has looked at the great effort it takes to build models that will expose those "hidden infrastructures" of systems that develop by growth. My work is often about discovering the hidden barriers to change, and understanding why they seem so easy to grow and unexpectedly hard to change.

Tonight's news was about the storm damage to overhead power lines. It seems to never pay to put them underground if they started above, so much other stuff has to be moved. It's the same for technologies, that become uniquely integrated as they grow, as people fit in new things to complement what was already there. The starting points of growth (as a process of accumulative design) generally need to be part of any future. You see that in diverse examples to how evolution never loses its origin to how the roads around Boston are generally just expansions of old cow paths and wagon trails.

For solar one of the problems is fueling, that where electric cars get recharged won't correspond to where people get other kinds of services for their cars. The distribution of gas stations was based on getting full service at a quick stop. Electric recharge will be for only one service, leaving the car for a long time... and so incompatible with the geometry of car service habits without a other kinds of change too.

Ideological rigidity of that kind develops too. How professional and social languages generally adapt to fit their environment produces history dependence. Local language often becomes integrated with social roles and "frozen in place" as a "silo" of thinking, and a mental fixation for the social networks involved. How "sustainability" developed as a social movement around increasing resource supply rather than reducing demand, extends supplies by accelerating actual depletion, is a kind of trap that froze thinking in a changing world produces.

I'd love to know it there's an actual literature on the subject. The problem is also discussed as "systems inertia" or as "scar tissue", neither of which gets at the real source of the natural resistance to change for things that are already built. It's that changing things that are already built means reorganizing them too. I discovered that as a pivotal insight as I started my work in the 70's, and that it conflicted in a big way with growing the economy by changing resources and technologies ever faster as a way to solve resource depletion by substituting new ones all the time.

So, I agree with you, that various kinds of "geo-political entanglement" will create stubborn resistance to converting to solar. Organizational rigidity is also a natural property of all things that develop by growth. I first noticed it affecting my work on passive solar in the 70's, which has been economical in many ways all along but mostly never adopted. To make good use of passive solar you need to adopt a "solar ideology" of a sort, and become attuned to the variations in weather as a way to live. "That's just not how people think", is what I ran into.

3. Reply



Frits Smeets says: 2 February, 2012 at 10:10 am

P.F. we're talking about natural resistance to change things that are already built. For one thing, we must not forget that we got were we are through our policies – and policy is the only way out. There's no way around it. So try this as an exercise. Changing from fossil to solar implies the relocation of the bigoilwar taxdollar, for starters. Which means transforming the military-industrial complex into something else. For obvious reasons that's not going to happen unless people get lured into it. And the only way is 'show, not tell.' Now imagine a mayor or senator who wants to start a pilot project and asks your advice for the trip. I don't know what your advice would be but you'd better take account of five epidemiological rules of thumb:

- goal-oriented design is rigid, means-oriented design is plastic.
- energy demand (question) is quantitative, supply (answer) is qualitative.
- quantity is a product of measurement, numbers is counting.
- you never know what rule operates to explain any open series of numbers. New facts change rules.
- maximization of the value of any variable equals shortcuts equals loss of flexibility.

I guess any mayor or senator gutfeels that the risk of rigid design is its sudden death. What he probably doesn't know is that the risk of flexible design is its possibility of new pathology. There's no easy way out of fossil energy and no easy way into the sun, yet it has to be done and since we're consciously trying we'd better be prepared for mistakes during the process. The way to be right is to accept the possibility to be wrong. That's as far as my imagination gets and why I end up with the above rules of thumb.

4. Reply



P.F. Henshaw (@shoudaknown) says: 2 February, 2012 at 3:08 pm

OK, One also might apply your own principles to the starting definition of the problem as "solar transition", and find perhaps that it's actually a rigid goal-directed idea, and not sufficiently plastic to fit the real world of complex

confronting in the rigid social structures of the old system also seem impossible to change too. So... it might help... to back off a bit and think about the big picture of where rigidity in design generally comes from.

I think it's generally from extending a flexible design to its natural point of inflexibility. Developmental change is inherently about adding successive changes to "things that are already built". For example, once you start a building as a single family home, it's hard to convert it to becoming a multiple dwelling, even if the market changed and you'd like to. That's what organizational rigidity is, a limit to what you can do with the foundations first built.

So "solar transition" may have begun with the very versatile idea of "love the earth", but then was developed to fit a BAU growth model. It also seems an idea of simply swapping solar for existing energy systems like bubbles on a flow chart, but actually to have become a rigid strategy before finding a means of application. The existing economy wasn't built on that energy source foundation, though. Maybe that's why it just doesn't quite fit.

Growth as a natural process is the accumulative design of an emerging new way to use energy. It invariably starts without great applications, but slowly finding applications for its unproven seed of new organization. When successful it then becomes an explosion of applications of what then seems like a quite reliable "great old idea", but that also distracts us from the tentative ideas it really came from, and what the successful strategy's real natural limits are. The first principle is that "accumulative design extends a fundamental design". Then the natural limits of rigidity for the fundamental design are what emerge when development stops finding new things it can do, and can only be expanded by improving efficiency. I think it's important to consider that general case when considering any particular case.

So, the "mayor or senator gutfeels" they are facing a wicked problem. They're feeling tempted to either throw their up their hands in frustration or do something drastic and dangerous.... That circumstance is often accompanied by finding, if they look around, the one kind of rigidity they're focusing on is part of a whole network of other rigidities. So removing the one, even if possible, would not foster change or alter the larger system's natural organizational limits. It would just waste money, energy and social capital on efforts that would be ineffective, dangerous or truly self-defeating.

Nature's ways of solving that kind of extreme re-design dilemma don't include getting rid of one thing to replace it with another. Systems don't have "interchangeable parts" like a bubble diagram does or a machine. That's like a tempting "bridge to nowhere" approach, a lot of people DO seem to think of as their only choice, though. To avoid the high hazard of that kind of poor choice, to try a "death and regrowth" strategy, redesign would need to proceed by atrophy of one thing as some more versatile and satisfying thing takes root, using the profits of the thing being allowed to atrophy as a "cash cow" of sorts.

That approach avoids treating "what to do" as a political choice, turning it into an investment allocation choice to stop investing dead end strategies. It then lets the investment markets find something better to do. With great regularity "problem solvers" have done the opposite, though, struggling to find new ways to invest in keeping pushing the old systems toward their point of maximum efficiency, and rigidity.

Perhaps a smooth transition to solar, or something else arising organically, might have occurred already if our rigid thinking had allowed it to. For many decades now, we've been investing in increasing our rigid dependence on faster resource depletion to fulfill our rigid commitment to maximizing profit growth for those with the most profits, and things like that. We should have let the economy coast, to look for new ways to put down roots, allocated the investment resource for looking around for better things to do.

5. Reply



Frits Smeets says: 2 February, 2012 at 7:07 pm

Well, there's a difference between a goal and a target. It's the difference between football and basketball. Goals are larger than the player, targets are smaller. Let's assume that our goal is transition from fossil to solar energy. And for practical, Azimuth-like reasons Iet's concentrate on the logical steps necessary for such transition to be feasible:

- 1) handling numbers. Numbers are beautiful because they are fast. They are good because they calculate precisely what we tell them to calculate. But, alas, they are not true. Any experienced piano tuner wrestling with the Pythagoras Comma will tell you so. And so did Gödel. So we have some elbow room – and so has our adversary.
- 2) differentiating between numbers and quantity. Numbers are the product of counting, quantities are the product of measurement. We can have exactly three tomatoes but we can never have exactly three gallons of water. Numbers are relational, pattern-like, a matter of digital computation. Quantity is analogic, probalistic, a matter of (non)consensus. Few senators realise this so you'd better realise it yourself.
- 3) cherry picking from the mess-to-be measured. In other words, the quantity of precisely what shall we measure & count: terawatts? barrels of oil? miles? working hours? taxdollars? Wallstreet index? the happiness curve? life expectation of (grand)children? climate prediction? Ah, lots of elbow room, so be prepared.
- 4) incentive imagination. In the U.S imagination is ruled by the myth of the pioneer. So don't tell your senator why it's a mess in the East, tell him to go the proverbial West.

To sum it up in terms of problem solving:

- appeal to sentiments (see 4)
- pick the types of quantities you'd best address to your public at hand (see 3)
- stand your ground for the types of quantity but never rake in their numbers (see 2)
- don't forget that numbers tell a lot but show nothing (see 1)

6. Reply



P.F. Henshaw (@shoudaknown) says:

2 February, 2012 at 9:45 pm

Well, you seem to be taking off in a new direction, not where we started with identifying natural world barriers to the "logical course" of our adapting to how we changed the earth.

We were beginning to discuss what kinds of responses are possible or impossible, better or worse. Now you seem to be looking for what kind of theory to use. I think the kind of theory to use is to identify the natural world barriers and what to do about them.

As for using math, I don't see the critical difference as between "measuring" and "counting" but more on "what you're measuring" and "what you're counting". Do your numbers correspond to anything's working parts, or are they just "statistics". My scientific method focuses on finding answerable questions to ask, in the hopes of avoiding the calculation of precise results for questions that may not really mean much.

Following that approach I recently published a paper called "Systems Energy Assessment (SEA)" for how to count up the fuel uses required for operating businesses. The finding is really strange. It's that because economists have been only counting up the energy purchases recorded on slips of paper that business accountants keep on file, they miss counting on the order of 80% of the energy uses that businesses purchase from outsourced services, businesses need to operate.

So, the problem then, is what better way is there to define what energy uses to count, when the real problem for the accountant is that they ran out of information to categorize? Somehow we need to estimate the total energy demand of running a business in the real world, to understand the real energy problem we face, closer than +/- 500%.

7. Reply



Frits Smeets says:

3 February, 2012 at 10:46 am

Well, I don't feel it's a different direction. I first gave some rules of thumb on how to deal with barriers to the transform from fossil to solar. Next I paid attention to some logical steps to avoid traps in designing a transform 'program,' one of the steps being to differentiate between numbers and quantities. I looked at your article and saw that what you sure did is differentiating between the two. It's a good example of 2) and 3) of my last posting. Fine piece of work, seems to me. I hasten to add that I'm nothing of an energy expert. I'm a philosopher interested in epistemology, especially in the concept of epidemiological 'first steps' pioneered by Gregory Bateson. F.S.

7 Reply



P.F. Henshaw (@shoudaknown) says:

3 February, 2012 at 3:21 pm

Frits, Great! I've learned a lot from philosophy, but started looking at how both philosophers and scientists think of reality as built in their minds, and so a source of error. If the common currency of intellectual discussion is "looking for the better model", I think it means we're studying models, and not "exploring reality" in fact.

There does seem to be a real world, but it's also confusing that "what we see is not what we're looking at". What we see in our minds is physically our own mental environment. That's only a personal version of a social construct for our personal experience of the world. That's not reality, and even hard to distinguish from a complete dream world.

I think that's physically where the "six blind men and the elephant" dilemma comes from. We all have a strong tendency to think of consciousness as being the world everyone else lives in. It may be a "nice world" but the reality is only we ourselves live in the world of our own imaginations. In so many demonstrable ways consciousness is a world we construct for ourselves.

So, for learning how to "do math" to help us with the real world we'd need some way to distinguish features of the real world from others we create by our own thoughts. That's tricky... because so very much of what we think about is our own fictions. The curious thing I found with SEA is how very common it is for people to theorize that the world is whatever makes sense of their information. That completely overlooks the profound gaps in our information caused by the self-managing systems of the natural world. Because they are internally organized, they just don't expose to us how they work.

So, to counter that I looked for ways to help identify elements of nature independent of my thoughts. One is finding the bursts of new relationships that coincide with growth processes. That particular continuity of regular positive proportional change (i.e. explosions), exposes "persistent heterogeneity" in individual local processes that theory can't explain at all. To me those seem to exist as realities outside our theory. It sure stumps the physicists and economists anyway! ;-)

So, that's where I started using a general "two reality model" (sort of like Robt. Rosen does) as a step toward sorting out which human social realities are self-serving constructs misleading us about the real planet...

8. Reply



Frits Smeets says:

O.k. Allow me to point out two epidemiological knots in your posting where it says near the end "So, to counter that, I looked for ways to help identify elements of nature independent of my thoughts."

The first knot is that it is impossible to identify anything independent of your thoughts. The reason is that any identification is an act of plotting perceived differences onto some map. There's no way around the difference between map and territory – not for bees, not for monkeys, not for human researchers. No map ever covers the territory and all territories mess around outside maps.

The second knot is more complicated. Please note that your intention is to counter something, meaning that you intend to create an alternative map. The interesting thing with a map is its triple epidemiological functionality: it offers me a certain description of a territory, it more or less persuades me to accept what I read, and it instructs me (un)successfully to follow the interests of the mapmaker.

Now, the bottom line is that you don't trust the energy map you're presented with because it doesn't plot the differences in the territory you do perceive and find important. So you design your own map with the intention "to counter" the other. I'm afraid that's where you're likely to go astray. What you should keep in mind is that, for travelers (your average mayor or senator), maps are not related in terms of pro/contra. For them maps are related in terms of differences in descriptive relevance, persuasive potential and instructive power. The only way to transform from fossil to solar is getting travelers to buy the new map.

9. Reply



J.L. Henshaw (@shoudaknown) says:
3 February, 2012 at 10:22 pm

Well, that's semantics for you! It leaves traps for our tendency to not consider the multiple interpretations of the words available. I do acknowledge that all my meanings of things are in my mind, whatever name I might give them. It's the things of nature that I have no way to define in my mind, except by "pointing" to something else, that I find opens my "maps" to a real world "independent of my mind".

Pointing seems to be the normal use of words for referring to things by name we have no way to know how to define. Referring to them, like saying "is that a rose" or "pass the plate", gives us a point of takeoff for exploring or interacting with complex subjects, needing only a simple definition for pointing to them.

That seems imprinted in the evolutionary design of language, too. Looking at root meanings of words they seem to fall into categories, in my view, with all the old ones mostly meaning "like". "Like what?" is the question that seems answered by "undefinable things observed that people wanted to refer to" and found words a good way "pointing" to those otherwise undefined subjects.

What confirms to me that directing our thoughts to "things not of our thought" is happening is the reliability of my being able to then explore their features and find out valuable things I simply never could have imagined about them.

Seeing an apple produces a meaning in my mind using the metabolic energy of my body, some of which may have come from eating apples. Apples can, though, be found to have been produced by a tree, using energy direct from the sun not having gone through my body, for example. That the tree may have been planted there because I like eating apples doesn't seem to mean the same thing as "I created the apple in my mind", so a separate question.

So what in means to have words that point to things of nature, that exist independent of our minds, is that we get a "map" of the world just chock full of holes. Those holes are where we can usefully and reliably mine information for our maps that fit "other realities". Another value of having "maps" full of holes, that "point to" things we can locate but not define, is it lets an observer separate the two aspects of reality in their own maps. It also allows two observers to confirm they are each discussing their independent explorations of *a corresponding hole* in their own maps. The method of pointing that creates the "hole in the map" itself, can be defined and communicated.

Without all that I guess it's natural for you to think what I said was presenting a contest between a popular map and one of my own invention. It's the explorability of the holes in one, and lack of similar explorability for the other, that is the difference I think makes more of a difference.

10. Reply



Frits Smeets says:
5 February, 2012 at 9:48 am

No, it's definitely not semantics for me, so I didn't read that remark :)
What I do read is that you concentrate on the map-territory relationship, whereas I concentrate on what a map does in terms of epistemology. Interesting difference.

Let me sneak up from another angle. In discussing the map-territory relationship you use the phrase 'pointing to.' That is a very mystifying way of putting things, and I'm not talking semantics. Maps point to nothing, what they do is suggesting. They are metaphors. To be precise: a map transforms, by way of some code, classified differences of a certain logical type into another logical type of classified differences. High/Low in the love affair gets transformed into eyes opened/eyes closed in the poem; High/Low in the hills gets transformed into red/blue on the sitemap; High/Low in oil pipe pressure gets transformed into +/- in statistical flow charts; High/Low in expected energy demand gets transformed into an up/down of the Wall street index. Metaphor rules.

If I understand you correctly, you use a map as a heuristical tool for spotting uncovered territory, 'holes,' in a in

function of metaphor: they describe, persuade, and instruct. In short, they are a beautiful mess. The beauty of it is obvious. A mess, because a map can & will be used by travellers having intentions completely different from the motives of the maker. That's why I jumped in on this blog: to remind that the transformation from fossil to solar follows the rules of metaphor. Hope it helps.

11. Reply



J.L. Henshaw (@shoudaknown) says:
5 February, 2012 at 1:24 pm

Well, even highly articulate people tend to make assumptions that create insolvable problems for communicating, I find more and more it seems (1). I'm not exactly talking about the meanings of "the map-territory relationship". It's not that I'm not interested in that, but initially more interested in how a map is grounded, and ways to discover whether it is connected to ANY territory. You might also think of that as a question of how to "tether the map" to the territory.

The important part seems to directly conflict with the physicist's usual notion of "phase space". So I need to find devices to bring up that part without being dismissed before getting to discuss them. It's the quite interesting vast gaps in our information for any natural system we can readily observe from the outside, but is evidently organized and operated from the inside.

Those critical large gaps in our information are what I refer to as "holes" in what is observable to us. They are then naturally reflected in any information map. So far they seem to be completely missing from the normal concept of phase space, however. It makes an enormous difference for understanding why so much of nature doesn't behave like equations.

So, I'm interested in finding a way to discuss those odd holes (or "voids") in our "maps" of definable relationships. They seem to be filled with identifiable natural structures from "another reality", that we can readily locate and are what give original meaning to the maps we make, but still remain holes in our information we can't define. So some version of "pointing" seems needed.

For example, if I say in conversation at your home "your daughter looks ill", where would you look to discover what I'm talking about? Would you look around the room to see if she is there, and at her face to see if she looks ill, perhaps? Or would you look up the words in a dictionary in hopes that will tell you what they mean, or would you maybe look to your own feelings about her and me, and try to guess why I would intrude in personal matters I know nothing about? So it's a question of how the map tells you where to "point" your attention.

I'm commenting here a bit like you, I guess. My interest is to find anyone curious about how things like "the transformation from fossil to solar" needs to involve a natural world outside our definitions, a world of material relationships not contained or containable in theories or explanations, a "non-map" world that needs to be navigated not explained. So to add to your list of the map functions of interest "to describe, persuade, and instruct", I'd also add "to question" and "to misrepresent".

"To question" refers to the need to go back and poke around in the voids in our information to find clues about what nature is doing in there. It can lead to new discoveries and help resolve contradictions or identify contradictions, as when exploring "promises too good to be true" that may appear in your map.

"To misrepresent" refers to the need to have doubts about the patches your map making process naturally creates, made for covering over the cracks and voids in your information with useful fictions. They're partly of interest for being able to turn your map into a kind of ungrounded fabric of magical thinking if you're not quite careful.

1)Did we turn "Big Media" into "Big Brother"?

and following on 2/6/12

11 Reply



Frits Smeets says: 6 February, 2012 at 10:31 am

From my epistemological point view your approach to "a non-map world that needs to be navigated not explained" shows two 'holes'. It skips the fact that you can't navigate without some map. And it skips the fact that a map for transition from fossil to solar inevitably will be a map of maps.

In the business of scientific (re)search 'map' reads as 'hypothesis.' Hypotheses get tested, verified, falsified, corrected, etc. in cycles of ongoing research. It's in the process of cycling and recycling where the functions of 'questioning' and 'misrepresentation' take place – not in the hypotheses.

11 Reply



J.L. Henshaw (@shoudaknown) says: 7 February, 2012 at 5:41 am

Well, the epistemology use does require adjustment. Reading a mental "map" of your own construction is a different exercise from being led by the responsiveness of things in your environment you can identify, but are unable to define, explain or predict. That is like reading a map you didn't write, being drawn by something else.

It's like smiling at another person you just don't know what's going to happen. Without what DOES happen you often

remains undefined as you are more or less groping along. That's the switch that lets you out of assuming all the world is a subjective construct, the clear navigable evidence that you're "not making this up" but being led by the constructs of something else.

So, as I think Robert Rosen suggested, that leaves scientific methods a necessity of needing to use both those "map using" methods. One is making and using your own map and the other is finding and being led by the "maps" of others. As the two quite separate orientations, I think probably for semantic coordination they're better termed as "two separate realities".

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Can we shut down the system for repairs?

by mothernature Published on: September 18, 2011

Comments: Comments Off

Tags: No Tags

Categories: among best, Natural Economy, Natural systems, Popular, Scientific theory, What to do

*#5 of 18 - 473 reads
for 6 weeks to Mar 18, 2012*

My response to George Mobus' last reply to me, got a little long, so I only posted the first few paragraphs as a comment on his discussion of "The Goal - Episode I: The Basic Requirements"

+++++

Can we shut down the system for repairs?



[The first learning steps beyond the impasse, on a new path.](#)

Well, shutting down the world for repairs would be conceptually neat, but does not seem to use the path finding mechanisms that nature typically uses. She offers myriad examples of how run-away growth systems can change by maturing to become stable self-managing ecologies. That's what we need to do, and learn how to mimic, that our culture knows little about, importantly because science has avoided studying the opportunistic learning of natural systems all but entirely.

I know this approach is problematic for someone accustomed to representing systems with equations. Real ecosystems are niche making learning and development processes, though, largely involved in "rule making" not "rule following". The far better conceptual models for them are of collective learning and environmental

and the break from it to find and cling to another model, when that is opportune, because the parts are actively learning as they go.

One of the basics of learning systems is they can't shut down to change. Their learning is an active process and they need forward motion to be able to find new paths. It's just like a sailboat can't navigate if it's dead in the water. It would only be an outside control agent that would shut things down to fix them. Learning and development systems work with active internal agents instead.

There are lots and lots of examples. Most of them don't have any goal seeking structures, like DNA, either. What they rely on most is exploratory search. That's what exposes and leads them on their new pathways of development. The search processes of such systems as a whole come from the active learning of their parts, discovering new ways to work together as they and their environments change, with whole system taking on their learning swarm behaviors.

One can also be very definite about some general features of what growth systems must do to transform into stable systems. As a learning process, growth starts with searches for ever bigger and bigger steps of scale and complexity. Then to stabilize they need to home in on a new stable state, and that takes using smaller and smaller steps.

They need to switch from organizationally diverging to converging. Not doing so is, of course, quite suicidal, and you can find lots of examples of how growth systems self-destruct when failing to end growth and mature. That switch in the style of organizational change is typically visible at the inflection point in their "S" curve.

Knowing only that, one can be completely certain that to be successful our transition will NOT be based on compound investment for ever multiplying capital accumulation. When you study the choices for using a system's net surpluses, one of the amazing things you find is that nothing in the system relies on how they are used, nothing at all. That is nothing except for building the system's directions of change in the future. It's free to be used for anything, as a growth driver or a growth stabilizer.

How the switch in using the surplus is typically made is by responding to signals that a past use of it is becoming unprofitable, such as the approaching end of the systems' seed resource, its "fossil fuel" store that all systems get their first start with. It prompts them to switch from short horizon investments to long ones, like by putting down roots.

The successful examples all seem to do just what people intuitively WANT to do, but seem quite clueless as to how. Science has simply not studied it at all, is part of the problem, and even though I have a large store of high value and readily actionable guidance to offer on the subject, no one is even asking questions.

For us a critical first step is to relieve the procedures requiring our economy's surplus resources be used for multiplying it's both physical and financial returns. So what does that look like? What is enduring financial investment without multiplying returns?

It looks like a system that remains profitable and spends its net-returns on things satisfying ****other purposes****, other than multiplying its own unsustainable scale. That might be using the profits from investments to sponsor good works rather than accelerate resource depletion, or lots of other things.

Most people react judgmentally and walk away, as if thinking "Oh people can't do THAT(!), whether it's necessary for our cultural survival or not!", as if it would be just too much of a bother to check out why nature absolutely requires things to do that to survive. The physics is quite unequivocal, that any human culture that survives will not be relying on compound investment of their surplus resources.

Still, it is somewhat of a bother, to shift paradigms in mid-stream, but if you study how nature manages successful systems, that's precisely what they ALL do to survive at the end of their compound growth.

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the Heart of it "from scratch", from two systemic views

by mothernature Published on: November 25, 2011

Comments: Comments Off

Tags: No Tags

Categories:among best, Natural systems, Popular, Scientific theory

#6 of 18 - 403 reads, 19 prints
for 6 weeks to Mar 18, 2012

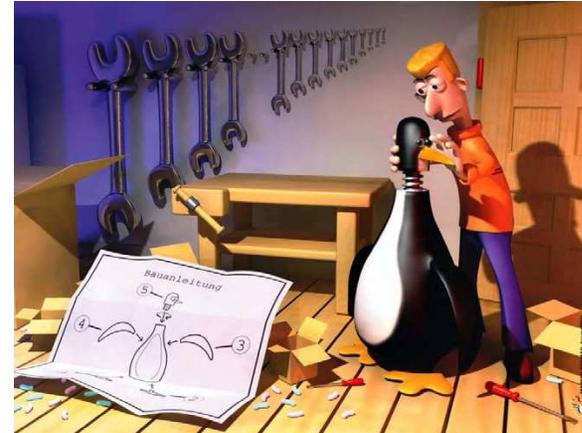
The heart of the problem "From Scratch" from two systemic views.

1. **Yaneer Bar-Yam** is president of the New England Complex Systems Institute and Highlights the scientific research supporting the Occupy Wall Street movement.

2. **Marc Calabria** is a researcher at the CATO Institute who emphasizes as discussed on the PBS Newshour 11/24, the importance of addressing the stubborn structural causes (being widely ignored) of the growing inequity and instability, that are no one's fault.

I quite agree with where each starts, and then draw the picture showing how our situation displays a direct conflict with nature, and a puzzle for how to apply the universal solution for ourselves.

[Recognizing the natural mechanics of growth economies that would give us leverage and choice in the outcome.](#)



A theoretical complex systems view

PH - I share Yaneer's view that the problem the "Occupy" movement points to is real and critical to respond to. It's not a social problem alone, however, but also seems to have a fairly clear systemic dimension, that one would need to understand in order to respond to.

The distortion in our society caused by one group of people earning by multipliers, while others earned incomes by constant units, isn't caused by social values so it won't be affected by social pressure. Only if the social pressure interferes with the mechanism causing the divergence in the two ways money is accumulated can it have an effect.

Of course, this is an age old problem, one that people have not thought through yet. For the last couple centuries the "bottom line" has been to alter the divergence by hoping that productivity growth would allow all incomes to multiply, so working people wouldn't have so much to complain about. It's the current failure of that solution we're now dealing with.

We've actually been waited for the economy to "recover" it's "lift all boats" behavior for 40 years. It was 1970 when the median wage in the US essentially stopped growing as spending and the earnings of finance continued to grow. The period since has been essentially built on promises of growing real earnings, that didn't materialize and so turned into growing debt instead. That's a simplified sketch of the situation, but accurate enough to begin trying to untangle where we really are.

The split seems to be between promises to have the future be like the past when earth seemed to have no limits, and related to our historical difficulty with understanding the difference between linear and exponential math, accumulating by units and by %'s. The ability of an economy to maintain ever growing accounts of its own wealth without similar wealth to back it up, is naturally temporary.

An structural procedures view.

PH - Marc, Your view expressed so clearly showed you understand a lot. Yes, study the systemic problems.

I've studied it extensively for many years, and used it to develop the new economic science needed to solve it. As any "new way of thinking", it takes people interested in looking at what familiar theories don't explain. What you find are roots in how the rules change for growth systems in nature. The investment principles change as growth systems go from "small" to "big". There's a universally proven response to that, which due to our ignorance we are, in effect, institutionally making every effort to avoid making.

I'm sure you know that systemic problems arise from previously having put trust in mistaken solutions. It means the real solutions will sound a bit "anti-social", or something. I have lots you can explore related to the subject on "Reading Nature's Signals", my blog of that name <http://synapse9.com/signals>, but do as questions. Much of what I found requires a new approach to really understand it.

So in outline, the central problem is that "Wall Street" is doing exactly what society is asking it to. The problem is what the people are asking for. Institutionally what the markets are trying to provide are predictable compounding returns for investors, with the Fed going to every effort to help stabilize that.

The problem is that as the economy grew it changed the earth, and so natural responsiveness of both the economy and the earth also changed. We didn't notice it meant the natural laws of economics changed too. We just spent a few decades trying to cover up the mismatch with growing debt. That is what is now backfiring.

Even as we are coming to a second collapse as a result, we still have not changed plans or even questioned whether we should, really. So providing compound returns has now become self-destabilizing, as it further strains an economy. The economy is not responding to the demands of money as a stimulus. It's responding to them as a deeply undermining tax.

I'd be pleased to talk.

Yours, Jessie Henshaw

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Reading Nature's Signals

It's the leeches that make us strong!!

by mothernature Published on: August 5, 2011
Comments: Comments Off
Tags: No Tags
Categories: Mail & Comment, Natural Economy, Popular, What to do

*#7 of 18 - 395 reads, 13 prints
for 6 weeks to Mar 18, 2012*

I say it in that ironic way to emphasize the changing role of putting money into the economy to take more out. It does make the economy grow stronger at first. Standing outside the struggle of its creative struggle, letting your idle money milk it for more money, first has a stimulus effect on growth, but in real terms is always being being a leech on the system too.

While the system is discovering ever more opportunity to expand the more it expands, then "being a leech" at first does indeed make it bigger and stronger. That corresponded to the period roughly from 1600 to 1950.

From then on it has successively weakened and foreshortened the future for economic system as a whole. It's the **continuing use** of money to demand ever growing earnings from one's idle savings from the past, past the point in time when it starts accelerating the depletion of economic resources and opportunity, is the

"Mr Hyde" that automatically follows the "Dr Jekyll"

of magic productivity that being a financial leech begins with.



If you treat your information as reality you can get the entirely wrong idea, as it seems that accelerating the consumption of depleting resources is highly profitable... It's really not. You need other kinds of measures to discover the what level of profitability is sustainable, starting from the complete certainty that ever growing profits from anything is a false idea.

Our trouble is that we built our economic culture during the period when

the leeches actually did make us stronger!

...and now that the environment has reversed its response to it, we're not ready or really even aware of the need to

in on as a permanent lifestyle. It's madness, for nice people to define their world of entertainments that way, pure disassociation between mind and reality.

Who are the leaches, the people who need to change their ways for our productive life support system to survive? Well, it's very precisely all of us who have some surplus earnings that are managed to accumulate ever more unearned income.

The cruel irony can also be our freeing insight, though, to see that the heart of the problem is as much with the retirement savings of the American middle class, as anything else. It's the way their own savings are being managed that is the clear culprit, driving the destruction of the cultures, lifestyles and communities of the American and European middle class.

More generally it's any and every institution designed to rely on leveraging savings to multiply investment earnings. A promise too good to be true like that... a "guaranteed ever growing free lunch" no less, is a clear sign of dangerous magical thinking. It relies on bleeding the productive economy and the earth at exponential rates forever... and becomes decidedly unprofitable.

but going too far they are now draining us dry

It's not the physical world that stopped working, but our concept of endlessly living ever more richly. We've become the leach bleeding our own world dry,

believing that is the way to invigorate it.

It's not. The physical world changed direction, and we need to acknowledge that and learn to follow.

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Reading Nature's Signals

Kin and Kind – Some learning in progress?

by mothernature Published on: February 29, 2012

Comments: Comments Off

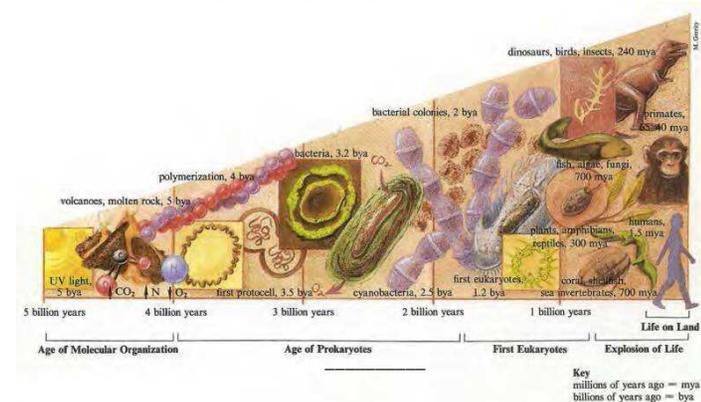
Tags: No Tags

Categories:among best, Mail & Comment, Natural systems, Popular, Scientific theory

#8 of 18 - 378 reads, 12 prints
for 6 weeks to Mar 18, 2012

"Kin and Kind" is an article in the Mar 5 **New Yorker** by Jonah Lehrer, on the remarkable career of E.O. Wilson and his quest to explain apparent "altruism" in animal behavior. The reigning explanation for evolution is pure competition, and he's beginning to think there must be more to it, asking "...is goodness an adaptive trait?" I note that the very first ecologist to study complex ecological behavior, S.A. Forbes, had much the same way of raising the question, in 1887.

The question, possibly, is not how mutations affect behavior, but our having not looked squarely at what is common to the behaviors of life that are so successful.



for The Mail,

E.O. Wilson is remarkable among scientists for being willing to question his own dogma. Where the article ends is with his next seeming breach of scientific etiquette, his now beginning to ask if "goodness is an adaptive trait".

Very surprisingly, that is where the very first scientist to study complex organization in ecologies, S.A. Forbes actually began. In 1887, in "The Lake as a Microcosm", Forbes observed that somehow networks of many species evolved to respect each other enough to not make food chains highly unstable, as they would be if their competition had winners.

Maybe the question is better asked as, why doesn't evolution seem to follow the rules itself, as if somehow the wrong

Reading Nature's Signals

Maybe it's a little like a management scientist asking how employees manage to succeed when, looked at closely, it's found that the instruction "get to work" contains no information on what to do... something about their behavior is doing much more than following the rules.

When looked at closely, rules like "get to work" and all other behavioral rules too, have "mismatched variety" with the successful behaviors supposedly "ruled by them". Some other agency such as the employee's obvious need to "learn on the job" is required. Otherwise behavioral rules would have no way to apply.

If you ask the question that way, and look around, the answer is among the most obvious things about animal behavior generally, every kind of living thing is actively learning on the job too! So that changes the question to asking what kind of "learning on the job" might result in species evolving a "live and let live philosophy", or other kinds of "altruism"?

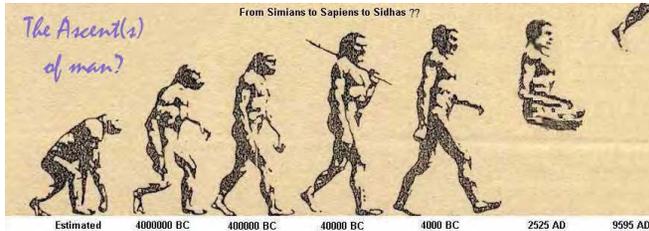
Maybe what successful mutations do is not give us new rules to follow but new talents for learning about our complex situations. Maybe the "instincts" we recognize in behavior are there to give animals curiosity about particular situations, rather than to impose rules on their supposedly chaotic guesswork.

It's sounds silly, but, could it be that maybe animals are animate?

To me it looks as if our scientists are often caught up in mistaking the rules they develop as patterns in their observations, and for predicting behaviors, with the behaviors causing them. It's basically very puzzling why we'd be confused by that, but we seem to often be.

For centuries it seems we've been describing such a lively thing as the ecology of life, that we're also a lively part of, as following a handful of lifeless rules. It's as if we've only been interested in the rather small parts of nature our rules seemed to let us control.

Jessie



[Ascent\(s\) of man ?](#)

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What would release the logjam?

by mothernature Published on: August 1, 2011
Comments: Comments Off
Tags: No Tags
Categories: Mail & Comment, What to do

#9 of 18 - 353 reads, 13 prints
for 6 weeks to Mar 18, 2012

On our largely ineffective defense of the earth and of our own prosperity

My critical reading of events is that "everything's on hold", speaking broadly about our need respond to how we're altering the earth. As I see it, for as long as I've been watching every "hopeful response" that gets made has been gutted, when someone needed to add either a prominent or hidden "business as usual" escape clause.

The IPCC climate mitigation protocols are an example, saying that the costs are not to reduce the long term rate of economic growth. It's as if to say "OK we'll fix the problem as long as we can keep multiplying the causes". People always feel forced to concede to money interests and when pressed admit they don't know if multiplying the economy's physical impacts will keep producing multiplying problems for us and nature, as we've been watching take place.



[Where we all are today, spinning our wheels](#)

the same effect. We're still firmly on track for a true dead end growth induced societal collapse.

I expect you'd also see our problem as kind of "logjam", but might describe it differently. I'd love to hear how you think it works, but be as specific as you can to make it constructive.

What I'm really suggesting is that we need to find a weak point in it. There's one I've mentioned before, though I suspect others probably saw it "not so important". I've looked at as a deep weak point that is sort of "undefendable". The logjam seems to depend on deceits, that put the burden of proof on the person being deceived, against paid professionals using a "catch me if you can" approach.

I think there's a way to sort of reverse that, while also connecting financial law to the natural world. That would be using the principle of fiduciary duty as an obligation to others to manage their affairs in their interests. Fiduciary law is stated in just such broad terms, worded in natural language rather than legalese.

So naturally it would become an obligation of fiduciaries to not be misleading about the interests of others, and to correct themselves if found to have been. That's not our current standard of truth in advertising, or in court or in business practice, but more "catch me if you can".

I think what might break the logjam is that phrase, "not be misleading", taken as a natural obligation for fiduciaries that depends on whether others understand what they've been told. It would seem to apply to political campaign finance by corporations too, for example, to not sponsor deception.

As it refers to the natural interests of others it would seem testable in court under tort law too. So if there's a lawyer out there who is also frustrated by our "racing in place" as a way of responding to our mounting disruption of the planet..., I'd like to spend an hour or two talking about the range of ways this could be approached.

Of course, I'd also like to hear any other ideas. ~~~~~Phil

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Reading Nature's Signals

Coping with every culture having a different reality! (& what's multiplying them)

by mothernature Published on: February 26, 2012
Comments: Comments Off
Tags: No Tags
Categories: among best, Mail & Comment, Natural systems, Popular

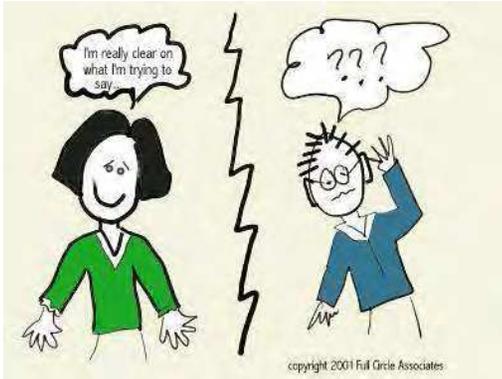
#10 of 18 - 327 reads, 13 prints
for 6 weeks to Mar 18, 2012

With more and more information, and noticing that much of it travels in circles, there's both "information overload" and "separate information worlds". They're barriers to communication, and can easily turn into "worlds of miss-information" leading everyone in them astray.

there's both "information overload" and "separate information worlds"

CLAY JOHNSON has good links and discussion on the problem, relating to his interesting "Information Diet" book and "Information Diet Pledge". By self-selecting our information sources we can create a world of miss-information for ourselves, so he suggests some rules for a healthy information diet. I wrote him the following comment on the "next steps" his "Information diet remainders". Below that is my comment on his radio program on WNYC on 2/9/12.

Clay, There's an easy step beyond noticing that no one is really the author of information that travels in circles. It's seeing that the author is really the social network it develops in, using the information as part of a social story of one kind or another.



m.n.
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People speaking different languages have different realities.

The next step is noticing that such authoring social networks and cultures invent rather strongly held circles of storytelling, which are very different from each other's. They become the "reality" the culture creates and form "silos" of thinking that people in them are then structurally separated from others by.

How strongly our cultural story-worlds are makes what they know of as "knowledge" into a private social construct. How strongly held and different those private realities can be, and how evidently disconnected from the natural world's common stories, is a further intrigue, and today evidently a grave danger to us.

It takes effort for disparate cultural languages to learn to "speak to each other". We're being force to learn how, though, by all the great cultures on earth coming into conflict, as we exhaust the limits of the earth. I think it means we should address the larger "disconnect" problem too, how our cultures of "knowledge" don't recognize the circular stories of nature, as the common "realities" for all human cultures.

The circular stories of nature, that no human is the author of, can be observed as "systems that take care of themselves", like human cultures. Many kinds can be directly recognized that way, and there are scientific techniques for it too. They could *potentially* become points of common attention and sources of meaning that all cultures might discover, as of importance to them both separately and together.

On Clay's discussion on "Information Diet" on the Brian Lehrer radio show

Great topic for a natural systems scientist. Thanks to Clay and you for bringing it up. How people simplify "information overload" frequently ends up as "empty thinking" is a problem for living in an ever more complex society.

From a conversation systems view the "diet" idea really boils down to whether you're getting support for you views from "inside the loop" or by poking around the environment "outside the loop".

All cultures, whether it's the conversation network that created the housing bubble (that crashed our world), or social movements of any other kind, all are the creation of the "social circles" organized around loops of a self-affirming conversation. They're the source of all our common beliefs serving as our "cultural realities".

That includes how we trust our affinity group for our personal beliefs, whether it's which God to believe in, having faith in "the infinite earth" or at least "infinite uncertainty" theory of endless growth. They're also the way people lose track of how to check "assumed facts" for themselves, either knowing how to find the sources or from their own direct observations. So in those ways, they're truly an "abandonment of reason" at the same time each person's affinity group is the center of our lives.

As suggested, it's both one of the core features of human culture, and a source of all the manias of human history. "Mania" is itself a word for one form of misplaced social reality, created and sustained by a self-affirming circle of conversation.

One of the enormous gaps visible today is between 1)the world consensus idea that "restoring growth" is the key to prosperity and 2)the physical certainty that an exceptionally broad range of our essential affordable resources are being exhausted ever more rapidly by that.

There are quite a few other very instructive examples I might suggest you study. The large scale one is how we developed the whole belief system and institutions for modern society in an environment we no longer have. We developed "the American dream" and our scientific, finance and business habits during the years when the people generally prospered from being ever more productive in consuming the limitless resources of the earth.

Now our whole society appears confused by the increasingly prohibitive complications of that. Interestingly, there are lots of aspects of our personal lives where we respond to growth limits in our personal environments, with true skill and grace, that would have lots of lessons to apply to the areas of life where we've lost touch with how to do

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My design that rather failed the test at conceptual design, never getting to schematic, was the last studio project in first year architecture school. I had decided to try to design the space of the building without the form...! Well, it didn't work and it was rather painful, and I was politely invited to do a summer studio, and to please complete something to continue next semester. I ended up salvaging something from that, surprising myself and everyone else.

Mankind has designed things for growth without end quite frequently, and watched as they failed disastrously without learning from it, over and over too. So our linear thinking is clearly a problem for us, and we are in desperate need of a shock of some kind to get us out of it. It's the story of all "bubbles" and megalomaniacs, and we have lots of them.

The problem with linear thinking is having purposes that don't become responsible, and respond to the world they're to become part of. In the extreme, it leads people to not even recognize that they live in a world, but just come to trust in their own world of mental fixations, finding belief to be culturally affirming and observation not. We lose track of the need for every beginning to find its own completion.

So, in our work, architects are already quite accomplished at that and enjoy learning new ways to bring projects into harmony with the environments they're part of. The one place we may fall down is in playing along with the linear thinking of others, who do not think of that at all, and use us to help them multiply their expanding unfinished business. So I think what we need to do is find how package our awareness of the whole design cycle, our ability to change gears in midstream, and sense of process, and somehow convey it to others. The world really desperately does need both the idea and techniques for asking "what in the world are we building here"?

Phil

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Organic thinking and making things whole

by mothernature Published on: July 1, 2011

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Categories:among best, Mail & Comment, Natural systems, Popular, Transformation

#11 of 18 - 299 reads
for 6 weeks to Mar 18, 2012

Walter Hosack AIA posted on the AIA Environment forum [to which I replied](#), about organic thinking as something architects could advance as a key to the survival of our place on earth, noting that design is always two things: "...The first is a gift. The second is a responsibility", and suggesting architects have a broader responsibility to learn how to think and design organically, and help bring about a Symbiotic Period of life on earth.

Walter,

In principle I couldn't agree with you more, but to escape long standing habits of linear thinking in our culture we would need lots of true examples of organic thinking, and develop an awareness, motivation and technique. The surprise answer I come to is that architects are already quite good at it, but have not quite understood how their approach to design could widely apply.

When we find out just how numerous and varied the true working examples of organic design in action are, that our culture remains quite unaware of, it's almost so embarrassing as to be humorous. It's in virtually every action in nature. Every breath we take, every project on the boards, every smile, begins just like pregnancy does, with an explosion of things fitting together that would become unmanageable if it didn't change. So, the rule architects know about needing to move to design development and not spend the whole fee on conceptual and schematic design, is what's missing from our world's plan for economic growth.

You see it in our rather advanced design to make our uses of the earth keep getting bigger to just get bigger, which like the start-up explosion plan for anything just get's abandoned. The question for organic design is what will be left when the start-up is over. So we might give special study to the great efforts to give birth to new things that leave something of value despite largely failing to achieve their initial apparent goal. Dinosaurs gave us birds, for example. There are also design projects that proliferate so many visionary options that at the end of conceptual design there's only one small scrap of paper left, after discarding an enormous pile.

It's really our linear thinking that keeps us from seeing the organic design in every creative building process in life, so we generally just don't notice that growth of every kind is quite a challenging experience for the thing that is growing, having periods like pregnancy when the whole world has to change to accommodate. Every growth process has its quite necessary milestones along the way, deadlines, graduation dates, needs to get a roof on before winter. If you don't make the turns and get through the gates of using each stage as the foundation for the next, and move on, the process fails and stops.

I had a failed design project that I think prepared my mind to begin noticing the stages of creating new form in nature's way doing design. The start-up period of runaway physical expansion really must change to a calming process of integration for both the growing thing, within itself, and for its environment. It's exemplified by how a building project starts up boldly, without quite knowing what to become, and eventually finds how to become the heart of enduring new relationships for a community. It may be a struggle along the way, with making it whole the one

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As we engage ever more intensely within our social networks, our social consensus realities become ever more detached from the real world they affect and are affected by. So,... our society becomes a prisoner of the social realities people invent for themselves, based only on agreement with their own cultural values.

It means that as complex societies go into their "information age" at the peak of their development, their cultural decision making processes become physically detached from reality, and from the decisions that they make. The scientific meaning is to give you a better way to raise questions. It's a well founded "model idea", a hypothesis generator, to be used for raising better questions about the real observations one can make.

That our society evidently has an extreme problem with clinging to false ideas, at a time when nature is strongly urging us to change, is rather undeniable though.

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Does living in social networks change how we think??

by mothernature Published on: August 6, 2011

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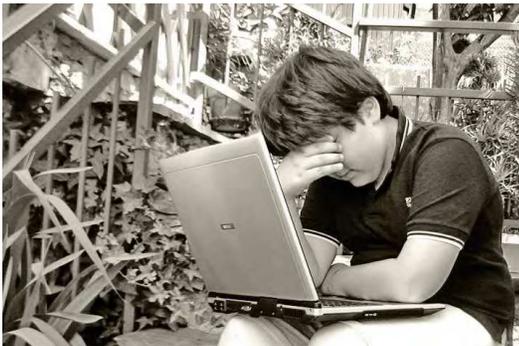
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Categories:among best, For teachers, Mail & Comment, Natural systems, Popular

*#13 of 18 - 295 reads, 22 prints
for 6 weeks to Mar 18, 2012*

The WNYC radio program On The Media, with Brook Gladstone and Bob Garfield is always insightful, and this week addressed The Personal Impact of the Web, and how the internet is changing human culture & society. There has been some question whether the dramatic changes in how people think and behave are good or bad, or just "change" that older generations feel left out of...

Of course it's "all of the above", and I added the following as a comment regarding how in an information age, social networks naturally tend to create their own realities to live in, with the consequence of becoming detached from the changes in the natural world occurring around them...



"Cyberboy" learning that nature is now the network?

Bob & Brooke, Your ideas about how the internet is changing us are insightful and entertaining as always, but honestly, you're missing the physics of it. The "internet generation" somewhat corresponds to the "productivity people", the driving force of economic activity and growth around the world, and the internet is a major productivity tool, allowing us to control more and more with less and less awareness of it.

If your productivity goes up 10%, as may be expected or demanded by your employers, the certainty is that both the complexity and scale of your influence the world at a distance from you increases by 10% too. Productivity is real control of real stuff. It is a measure of your engagement (entanglement) with the real complexity of the natural

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have quite understood how to anticipate it, or that the line would be crossed as easily as going over the crest of a hill. Like a race car following a plan to accelerate forever, continuing that plan past the crest of a hill would turn downward in a hurry. Even today physical economists are only very clumsily struggling with how to measure the physical responsiveness of the earth to us, to know exactly where the "crest of that hill" is or how to have anticipated it. It's always been a clear inherent risk in our plans for managing investments for infinite returns though...

Getting lost in the infatuations of life generally ends with ignoring the greater responsibilities at hand. It turns promises of great love into bitter tragedies and separations. It's remarkably easy to do. It's also remarkably easy to not learn from it and not become wiser next time too. It seems to be that infatuations themselves are kind of exploding belief systems, and the time to let go of them is when they seem to have the most freedom to further expand.

Mankind has been "not learning a thing" from the experience of creating vast promises of wealth that only collapse the environment they're in since the very beginning of history it seems. We repeatedly get an infatuation with stabilizing greed, treated as a general solution for prosperity, over and over and over, to our bitter disappointment. Our culture has just never learned from it. Today open general discussion of why stabilizing ever greater greed might not work, and questioning the institutions of perpetual growth that go with it, is avoided rather than treated as urgent.

The time to put aside the feeling of infatuation with a new love, in order to make it real, is at the very first hint of approaching limits. It's not delaying that recognition as long as possible. It's the test of every love affair small and large, as apparently every kind of new living thing in nature starts with a self-infatuation beginning with dreams of infinity. Following the path of the successful ones is to see how to let go of the glimmering promises that inspire you to reach for all you can, as in reaching you find something much better than promises.

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Our great love affair with change

by mothernature Published on: July 22, 2011

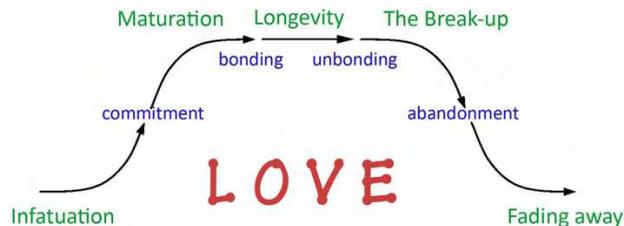
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Categories: For teachers, Natural Economy, Natural systems, Transformation

#14 of 18 - 291 reads, 11 prints
for 6 weeks to Mar 18, 2012

Love affairs begin with the thrill of an infatuation, and there's always a risk of neglecting what's more important. We've had a long growing infatuation with technology, and reinventing our lives over and over, for example. Such infatuations become just fond memories for how a true love began, if it's true love that emerges from it, of course. Whether it's the beginning of a true love or not, is the question, as for any dream of expanding promises.



life is a love affair, a burst of investments followed by refinements

Write your own story of a love, a dream of promises either kept or not, as hasty as a smile shining light into two lives or as drawn out as the dreams of mankind and our many centuries of wandering from one wilderness to another in search of why some loves do last. but so many just don't.

Getting lost in infatuations is one way, as with dreams of wealth, and so making the great errors of expectation and so losing it all. Our infatuation with rearranging our planet ever more rapidly, consuming it as we go, has really gotten the best of us, and it has to do with money. What would get us to commit to being its partner rather than its ruler? That seems to be the question.

As an infatuation ends it will be measured by how responsibility was taken for making its promises come true. Nothing at all comes from the thrill of making empty promises. That's more the character of our many decades of projecting limitless growth in using our environment, to keep the money of money makers growing, as it is being committed to in the face of proliferating ways in which our physical environment is deteriorating.

Keynes faced severe criticism and was largely ignored for pointing out that would happen. Using his model for stabilizing economic and monetary growth, the viability of the model itself would come to a fairly abrupt end. It becomes unprofitable to keep increasing demands on a natural world at maximum accelerating rates as a system for seeking maximum returns does. His economic model would stop being self-sustaining, and society would need to give up its infatuation with using greed as a solution to problems of prosperity.

Keynes clearly saw and repeatedly said that environmental conditions would cross a line and the economic model

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"Organizational Rigidity" as a natural limit of growth

by mothernature Published on: February 2, 2012

Comments: Comments Off

Tags: No Tags

Categories: among best, Natural Economy, Natural systems, Popular, Scientific theory

#15 of 18 - 288 reads, 21 prints
for 6 weeks to Mar 18, 2012

Things that develop their organization by new parts being added to existing ones, develop accumulative designs that become harder to change over time. It leads to organizational rigidity, that can either be seen as inhibiting change or enabling structure. These are aspects of the systems physics of self-organization.

Accumulative designs become harder to change over time

Crystallization works by replicating a pattern from a starting pattern, that remains the origin of the pattern throughout the process, like the process that creates snow flakes of a single design. It's similar with road systems, that as you add connecting roads it becomes both unnecessary to add more and harder to change the established network.

Even with advanced computers the world financial system gets built around trusted expectations, leaving a rigid imprint of past thinking in our models for the future. If it becomes unmanageable and overwhelmed by floods of new kinds of information the models don't contain, the system is not designed to make any response.



At the limits of Lucy's organizational abilities, confusion reigned

designs may have been highly versatile for the variety of problems it started with. It naturally becomes mired in inefficiency at some natural point of piling on ever increasing demands of new kinds.

You could say that is "the scientific explanation" for the famous inefficiency of government: not possible to design for managing an ever more rapidly growing and complex world. We keep multiplying the new kinds of tasks government is asked to do, and it's design for doing the tasks of the past keeps failing.

In general, any kind of system that is built by a series of additions to its original design, faces breaking points at the organizational limits of each scale. That's very visible in the waves of "creative destruction" that increasingly characterize economic growth. It also limits economic growth, needing to build only on it's own foundations. That becomes its downfall if the old design was not flexible enough to adapt.

Kodak was unable to make use of its own invention of digital photography, for example. The networks and ideas of the new industry were so different from the old ones, it couldn't prosper as an extension of the old one.

These are examples of developing "functional mismatch of variety" similar in meaning to "information mismatch in variety" described by Ashby's "Law of Requisite Variety" for communication systems. There may be valid statistical equations for communicating information. For the nature of organization in complex systems, though, there may be no meaningful equations, due to the mismatch in functional design between equations and complex systems.

These were the kinds of insights that in 1979 prompted me to write about the very real danger of pushing our economy to a "Growth induced collapse", pushing it past its natural organizational limits. Taking the demands of growth toward exceeding the organizational limits of people and institutions is part of the "The Unhidden pattern of events" we see today much more clearly than then.

I've yet to write effectively on the subject thought, and should try now that a few extra pieces of the puzzle are falling into place. I've being overwhelmed by needing to invent a new science to substantiate it, and searching for how to explain the complementary opposite process, the part of "The Unhidden pattern of events" that answers the riddle.

The riddle is, "How do things that begin by growth *so often* not end in chaos, but with find endurance and perfection in their designs instead. There's a very real answer, that the mental rigidities of our growth culture, keeps hidden from view.

The way growth systems of many kinds change from a course of multiplying their own complications to reducing conflict in seeking perfections, is also naturally hazardous. It's one of those profound kinds of changes where very small differences make a huge difference.

The danger of attempting it and reward of success are often closely intertwined. You see that in how "birth" ends growth and begins maturation and commonly a very parlous moment. Maturation is the path to security and perfection, but to get on that path requires cutting the umbilical chord and being thrown into an exceedingly complicated new environment. Nature does it so often in so many ways, you have to admit the method does seem to work, though.

- Google finds interesting papers on organizational rigidity

Recent good blog comments on blogs.

On John Baez's Azimuth

Frits Smeets: 1 February, 2012 at 10:29 am On Azimuth, discussing "What's up with solar power"

Frits suggests the social rigidity of economic power structures, termed "geopolitical entanglement" as a barrier to a solar transition...

There's this thing I can't get out of my mind. The real problem with solar energy isn't technological, I'm confident engineers can & will take care of that. Nor is it a matter of finance, although I agree with P.F. Henshaw's point about reform of the financial system, i.e. allocation of investment funds on the basis of real cost calculation.

The problem is that solar energy is the ultimate threat to (geo)political entanglement of interests. Let's face it: since the breakdown of the Berlin Wall international politics is not about territory, it is not about ideology, it is mainly about securing fossil energy supplies. Solar energy is the sword that threatens to cut the knot. Again, I don't doubt that engineers and financial project-managers can take of their bussiness - if we let them.

AZ response 1: Henshaw 2 February, 2012 at 1:22 am

Frits, It's very true that changing ideological systems takes more than having a practical reason to do so.

It's not just the "vested interests", it's all the kinds of systemic integration of systems to work as a whole, making them more resistant to change than the popular "single value theories" might suggest. John Sterman of MIT has looked at the great effort it takes to build models that will expose those "hidden infrastructures" of systems that develop by growth. My work is often about discovering the hidden barriers to change, and understanding why they seem so easy to grow and unexpectedly hard to change.

uniquely integrated as they grow, as people fit in new things to complement what was already there. The starting points of growth (as a process of accumulative design) generally need to be part of any future. You see that in diverse examples to how evolution never loses its origin to how the roads around Boston are generally just expansions of old cow paths and wagon trails.

For solar one of the problems is fueling, that where electric cars get recharged won't correspond to where people get other kinds of services for their cars. The distribution of gas stations was based on getting full service at a quick stop. Electric recharge will be for only one service, leaving the car for a long time... and so incompatible with the geometry of car service habits without a other kinds of change too.

Ideological rigidity of that kind develops too. How professional and social languages generally adapt to fit their environment produces history dependence. Local language often becomes integrated with social roles and "frozen in place" as a "silo" of thinking, and a mental fixation for the social networks involved. How "sustainability" developed as a social movement around increasing resource supply rather than reducing demand, extends supplies by accelerating actual depletion, is a kind of trap that frozen thinking in a changing world produces.

I'd love to know it there's an actual literature on the subject. The problem is also discussed as "systems inertia" or as "scar tissue", neither of which gets at the real source of the natural resistance to change for things that are already built. It's that changing things that are already built means reorganizing them too. I discovered that as a pivotal insight as I started my work in the 70's, and that it conflicted in a big way with growing the economy by changing resources and technologies ever faster as a way to solve resource depletion by substituting new ones all the time.

So, I agree with you, that various kinds of "geo-political entanglement" will create stubborn resistance to converting to solar. Organizational rigidity is also a natural property of all things that develop by growth. I first noticed it affecting my work on passive solar in the 70's, which has been economical in many ways all along but mostly never adopted. To make good use of passive solar you need to adopt a "solar ideology" of a sort, and become attuned to the variations in weather as a way to live. "That's just not how people think", is what I ran into.

AZ Response 2 Frits Smeets: **2 February, 2012 at 10:10 am**

P.F. we're talking about natural resistance to change things that are already built. For one thing, we must not forget that we got where we are through our policies – and policy is the only way out. There's no way around it. So try this as an exercise. Changing from fossile to solar implies the relocation of the bigoilwar taxdollar, for starters. Which means transforming the military-industrial complex into something else. For obvious reasons that's not going to happen unless people get lured into it. And the only way is 'show, not tell.' Now imagine a mayor or senator who wants to start a pilot project and asks your advice for the trip. I don't know what your advice would be but you'd better take account of five epistemological rules of thumb:

- goal-oriented design is rigid, means-oriented design is plastic.
- energy demand (question) is quantitative, supply (answer) is qualitative.
- quantity is a product of measurement, numbers is counting.
- you never know what rule operates to explain any open series of numbers. New facts change rules.
- maximisation of the value of any variable equals shortcuts equals loss of flexibility.

I guess any mayor or senator gutfeels that the risk of rigid design is its sudden death. What he probably doesn't know is that the risk of flexible design is its possibility of new pathology. There's no easy way out of fossile energy and no easy way into the sun, yet it has to be done and since we're consciously trying we'd better be prepared for mistakes during the process. The way to be right is to accept the possibility to be wrong. That's as far as my imagination gets and why I end up with the above rules of thumb.

• **AZ Response 3** Henshaw : **2 February, 2012 at 3:08 pm**

OK, One also might apply your own principles to the starting definition of the problem as "solar transition", and find perhaps that it's actually a rigid goal-directed idea, and not sufficiently plastic to fit the real world of complex circumstances it needs to grow in. If the rigidity of the idea is part of why it's hard to apply, the barriers it's confronting in the rigid social structures of the old system also seem impossible to change too. So... it might help... to back off a bit and think about the big picture of where rigidity in design generally comes from.

I think it's generally from extending a flexible design to its natural point of inflexibility. Developmental change is inherently about adding successive changes to "things that are already built". For example, once you start a building as a single family home, it's hard to convert it to becoming a multiple dwelling, even if the market changed and you'd like to. That's what organizational rigidity is, a limit to what you can do with the foundations first built.

So "solar transition" may have begun with the very versatile idea of "love the earth", but then was developed to fit a BAU growth model. It also seems an idea of simply swapping solar for existing energy systems like bubbles on a flow chart, but actually to have become a rigid strategy before finding a means of application. The existing economy wasn't built on that energy source foundation, though. Maybe that's why it just doesn't quite fit.

Growth as a natural process is the accumulative design of an emerging new way to use energy. It invariably starts without great applications, but slowly finding applications for its unproven seed of new organization.

When successful it then becomes an explosion of applications of what then seems like a quite reliable "great

design". Then the natural limits of rigidity for the fundamental design are what emerge when development stops finding new things it can do, and can only be expanded by improving efficiency. I think it's important to consider that general case when considering any particular case.

So, the "mayor or senator gutfeels" they are facing a wicked problem. They're feeling tempted to either throw their up their hands in frustration or do something drastic and dangerous... That circumstance is often accompanied by finding, if they look around, the one kind of rigidity they're focusing on is part of a whole network of other rigidities. So removing the one, even if possible, would not foster change or alter the larger system's natural organizational limits. It would just waste money, energy and social capital on efforts that would be ineffective, dangerous or truly self-defeating.

Nature's ways of solving that kind of extreme re-design dilemma don't include getting rid of one thing to replace it with another. Systems don't have "interchangeable parts" like a bubble diagram does or a machine. That's like a tempting "bridge to nowhere" approach, a lot of people DO seem to think of as their only choice, though. To avoid the high hazard of that kind of poor choice, to try a "death and regrowth" strategy, redesign would need to proceed by atrophy of one thing as some more versatile and satisfying thing takes root, using the profits of the thing being allowed to atrophy as a "cash cow" of sorts.

That approach avoids treating "what to do" as a political choice, turning it into an investment allocation choice to stop investing dead end strategies. It then lets the investment markets find something better to do. With great regularity "problem solvers" have done the opposite, though, struggling to find new ways to invest in keeping pushing the old systems toward their point of maximum efficiency, and rigidity.

Perhaps a smooth transition to solar, or something else arising organically, might have occurred already if our rigid thinking had allowed it to. For many decades now, we've been investing in increasing our rigid dependence on faster resource depletion to fulfill our rigid commitment to maximizing profit growth for those with the most profits, and things like that. We should have let the economy coast, to look for new ways to put down roots, allocated the investment resource for looking around for better things to do.

On Daniel Lemire's blog

Daniel Lemire – Why aren't we getting richer? The scarring tissue theory

He raises the problem as: "However, we now have too much organizational scarring tissue"

.... concluding

Thus, scientific progress may be stalling. But scientific progress merely makes innovation easier. New science might enable new inventions, but without adoption, it is worthless. During the cold war, the Russian scientists were a match for American scientists, but the USSR could barely copy American innovations. And today, again, bureaucrats are winning. Worstall gives several insightful examples:

- *Why is it nearly impossible for individuals to purchase small equity in new ventures through sites like Kickstarter?*

- *Why is online banking so convoluted? In Africa, they are using mobile phones to pay each other, across countries. There is much room for innovation but it is stalled by regulations.*

Today, I could probably install solar panels on my house and generate my own power, but my electricity provider makes it extremely difficult. Last time I was in hospital, it was full of red tape, and they are still talking about implementing an electronic health record (in 2011!). Classrooms today look just like they did in 1950, except that we (sometimes) have a desktop computer in the back of the class. I am still not allowed to use a Segway where I live, let alone more innovative transportation solutions.

My take: After WWII, everything had to be constructed. Entire countries had literally to be rebuilt. The baby boomers were, to some extent, starting from scratch. They could create new government agencies, build new roads... new industries... This is still happening in China, and has happened recently in Germany because of the reunification. However, we now have too much organizational scarring tissue. So why do we see so much innovation online? The computer industry, and more recently, the web, have much less scarring tissue compared to the mining, transportation or health industries. In effect, the web remains a frontier... and this is where the wealth is being generated. Soon enough, governments will successfully tame the web. But for now, we can enjoy Facebook freely...

So, how do we renew with prosperity? I believe we need some form of reboot. We need a major disruption. We don't need to keep General Motors alive, we need to reinvent transportation. We don't need to save Wall Street, we need to reinvent banking.

DL Response 1: Henshaw — 10/10/2011 @ 19:56

There are lots of good analogies between biological systems and economic systems. Both are actually organisms built around natural ecologies, though you might not want to tell the humans who would be embarrassed by that sort of thing.

To understand societies as organisms you need to give particular attention to their stage of development. Sure

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macro/micro economists who did a fantastic job of matching the working parts of things. Today's economists don't seem to actually know how anything works and just play with wild theories and equations that don't. There is major "scar tissue" binding them to ideas that were true for a while but stopped being true ~50 years ago, is one problem.

The stage of development of modern economies in that they were built for ever more rapid expansion on ever cheaper energy and other resources. That's what the historical record around which we built our modern society and academic institutions told us. Now that promoting growth as a limitless solution for all has completely backfired what we are most lacking is any other vision. The vast majority of the general population think planting some vegies and saving plastic bags will transform a global finance system that needs doubling real returns from the earth every 15-20 years, endlessly into the future. It's not going to work, and there seems to be no place to hide.

DL Response 2: Henshaw — 17/1/2012 @ 18:50

Looking at this again made me realize my comment (#3 above) should have addressed what "scarring tissue theory" seems to correspond to in the natural stages of development observable in common ecological, business and biological systems.

There is something that regularly corresponds to "scarring tissue" as described above, that does indeed prevent further growth. It is the physical organization of the system that grew, left behind as the product of the growth process. Growth in nature is invariably a process of building an energy using system.

Growth is a construction process that self-organizes as it builds on itself over time. That leaves itself in place as "scarring tissue" that is both quite hard to abandon once its organization is complete and leaves little option for further growth too. Construction projects of all kinds reach that sort of natural end, the infrastructure that growth built.

In the gestation of organisms that "scarring tissue" and end of growth is the organism, though. It's not dysfunctional left over fiber at all, as suggested by "scarring tissue". It does indeed exhaust the need for growth as the initial multiplication of parts is followed by their integration and refinement, then education, in making it ready for something else.

What happens in nature is a "succession" of projects, with one project coming to completion as a preparation for its roles in ****the next project****. So, the end of growth does naturally make further growth kind of useless. It ends growth so the organism can go on with ****having its life**** as its next project and perhaps reproducing.

I agree with many of your observations above, and I think you'll agree with my final conclusion, but you see my general picture of how the parts fit together is completely different. When growth becomes unprofitable, completing the system to work by itself allow it to survive beyond its growth.

From my fairly broad study of this, this seems clearly to be the growth strategy of complex systems in nature that last significantly longer than their growth periods.

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the Story of Broke – Part II (the end of broke)

by mothernature Published on: November 8, 2011

Comments: 5 Comments

Tags: No Tags

Categories:among best, For teachers, Mail & Comment, Natural Economy, Popular

*#16 of 18 - 288 reads, 11 prints
for 6 weeks to Mar 18, 2012*

The authors of "The Story of Stuff" published a nice little update called "The Story of Broke", about the vast sums of money the government spends on subsidizing private business... This sequel "Part II (the end of broke)" was first posted in a comment, on how the still bigger story of broke, debt piling on top of debt, both was missing from the list of now overwhelming government costs, and has a ... very natural end. Government debt provides guaranteed growing returns, whether the economy grows or not. Lenders take government interest payments and add them to what they lend back, multiplying their lending and returns. It builds up, slowly at first then explosively, as the world's debt burden

grows on little but the good faith and credit of government guarantees.

You've heard of government debt called a "safe haven". It's where investors put money to be "safely assured of ever multiplying returns" when they can't find even better growing returns elsewhere. Where that debt spiral comes from and goes to has been a subject of many have tried to explain. The view Keynes came to, that I think is the most clear headed of all, outlines the necessities for surviving a debt spiral for a market economy. Nature would surely not shape her facts of life on earth for our approval, but most people react to the facts of life for surviving debt spirals as if to reject nature's requirements as "socially unacceptable", ... apparently not seeing Keynes' elegantly clear logic. So this is written in the story telling style of Free Range Studio in their Story of Stuff. —

The End of Broke, the True Whole Story of Debt!

The BIGGER "Story of Broke" is one that starts quite small, but is designed to actually keep growing ever bigger. As it does so it also casts its own vote in the story of business influence in government and demand for subsidies and preferential services, persuading government that's the way to get money to pay its ever growing debt! It's the story of how a small amount of debt naturally grows relentlessly big, with no natural end other than either creditors spending it or both government finance and economic collapse.



Drowning in the spiral of dreams

The whole story of debt is a very very simple little thing. It's that some of us earn by \$units and others by %'s... and by providing guaranteed returns to lenders, **in an economy you can actually earn by %'s till the economy collapses**. What seems like a totally innocent "little difference" in measurement, between units and ratios, makes AN INFINITE DIFFERENCE over time in life. Some people have called it "our misunderstanding of the exponential curve", others simply call it "greed". The problem with this kind of greed is how very addictive it is and that it grows explosively, making a "little greed" become SO.. GREEDY, with its promise to multiply the rewards of greed forever. Greed of this kind, based on guaranteed % returns a lender can reinvest, is **only designed to multiply as if forever of course**, so the actual design is to multiply either until the whole economy has \$0 profit to keep its debts from growing further (the important part Keynes figured out) or breaks down from the strain before that. That means it's not just you and me and our government that goes broke, by someone skimming a little profit to then use it to skim a little more and more all the time!!!

What's so very tricky about it is it becomes a whole society's addiction. How it starts looks like it's making more and more wealth FOR EVERYONE, seeming to be an ever growing "free lunch" for all. How it ends is with all the wealth in one pile of course, a "super pile of money", that is only used to feed the severest addiction any gambler or any society can get. It's now in the news every day... and no one seems to have a clue where it came from.

It came from a very small amount of money and continually adding small %'s That's the addiction a gambler gets when they look at their odds and IT LOOKS LIKE THEY HAVE A SURE BET !\$\$!\$\$\$. With a sure bet WHAT PEOPLE ALWAYS DO is the most addictive thing. They take their winnings and add them to their bets, to keep their bets "multiplying like rabbits" as the phrase goes...

The only catch is that in the frenzy everyone gets so disoriented that they don't notice that taking sure winnings from your own society brings about the collapse of its whole financial environment. So that's the story of broke we really need to get across, because our "super pile of money" is still "multiplying like rabbits" with our whole society still completely addicted to feeding it.

The delusion is that it's a source of revenue,... not just ballooning debt to ourselves that can't physically be paid. We're all still addicted to pouring ever more money down the magic money hole, not looking to where the money that flows out of it has to come from. It has to come from us, of course. It has to come from us through that completely hidden but ever inflating tax, the one you never ever get a receipt for, **the hidden tax of ever growing universal debt**.

As we said at the top, our fate is sealed only if people remain mesmerized by its false appeal. The true escape from "lending money to use only for lending more money" (squeeze the whole economy for growing returns till it goes broke), is to require that its earnings be creatively spent instead of reinvested. What seems "socially unacceptable" about that is the idea of expecting anyone to actually WANT to give up a limitless source of free multiplying wealth.

People would need to spend their finance earnings instead of compounding them. That's needed to both relieve the financial pressure on debtors by giving them earnings to help balance their books, and by also "turning off the pump" that is multiplying the lending. It's the one way our economy can survive it's most deadly addiction, but so far also ...

A dollar saved in the past is promised an ever growing return in the future, but actually would not even return \$1 of value to its owners, if the society that owes those ever growing sums in the future collapses from how much it can't pay. In fact that society will end up not being able to pay earnings to anyone.

So, this systems physics says **it's just like with Scrooge**, that the surest trap of the rich is hoarding money for robbing the poor. The surest escape is the same too, for the holders of credit to discover their own humanity, and the original purpose they had in wanting more money to begin with, before they became addicted to hoarding wealth. People addicted to the false bet of their money endlessly making them ever more money, just have to rediscover the true higher values they wanted to spend it on in the first place.

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5 Comments

• **Leland Lehrman** November 9, 2011 at 4:14 PM
 Jesse -
 Fantastic. Check out Sylvia Nasar's discussion of Dickens at the beginning of her new book, Grand Pursuit, the Story of Economic Genius.
 Dickens was really on to it.
 Leland

• **mothernature** November 9, 2011 at 8:23 PM
 Thanks, I didn't find the exact quote to respond to, but I found the New Republic review. They said she didn't get beyond Dickens' plea for a more humane political economy and then spent the book on the life stories of a handful of "great men", so a piece of journalism rather than intellect. It seems to me that even Dickens only understood his tale as a moving bit of social morality, and missed the gem of systems science that held it together as a wider truth.

It seems that's what you get with "populist thinking" generally, the good luck occasionally of people hitting on a story line that has "resonance" but mostly who chant things that have no resonance with the larger truths of nature. Those are hard to find, especially if that's just not what you're looking for. As the "Occupy" and "no-growth" groups of different kinds start finding their voices what bothers me is how confident their social values are "leading the way" while placing no value at all in understanding how nature works, that I can see anyway. I don't seem to have a cure for that particularly impractical human infatuation.

The only real way to tame the growth system we see many the harmful effects of is understand it as a construction process. The proper way to finish a build is to put on a roof. It has no effect to simply change the name, calling the building "mud" or whatever if you stop liking it. If you want to change it you need to use how it builds, to bring its building to a stable climax. "Putting a roof on it" is what would happen if "the rich" rediscovered the values for which they wanted money in the first place, **because the ONLY end use of money is to give it away**. They need to find their "Rose Bud", as it were, and give every child on earth two or three perhaps... anything at all but to keep hoarding money in ever growing piles till there's so little spending on earth no one is able to pay their debt.

How Keynes put it was:

"In so far as millionaires find their satisfaction in building mighty mansions to contain their bodies when alive and pyramids to shelter them after death, or, repenting of their sins, erect cathedrals and endow monasteries or foreign missions, the day when abundance of capital will interfere with abundance of output may be postponed. To dig holes in the ground, paid for out of savings, will increase, not only employment, but the real national dividend of useful goods and services."

• **John Freestone** November 15, 2011 at 4:51 PM
 Lolwut? I don't get this. You seem to define the problem as lending with interest, but after waxing lyrical about it for some time, describe the solution as people spending their money, on "true higher values" instead of hoarding and gambling. The two problems I see with this are (a) it's a slightly more sophisticated way of saying "people should stop being greedy", and we've had at least 2000 years of that, and (b) the greedy people who rip us off the most - the private banks - will love to profit from more gullible people spending their money and not being greedy gamblers. I wonder if you've understood the pattern of nature at all.

• **mothernature** November 15, 2011 at 10:42 PM
 I guess what you call "waxing lyrical" may have been for you "junk DNA", full of critical guidance on my reasoning that needed to be unlocked, by some other process. There are two important results of using spending **from investment funds** to deplete them. One is that it reverses the growing disparity of wealth in the society, and the other is it ends our automatic growing demands on the earth. What you seem to miss is that ending the means by which wealth is concentrated is directly a constraint on the power of "the private

• **mothernature**

February 26, 2012 at 6:00 PM

I guess that didn't catch your interest as I'd hoped. I'm not seeing the problem as "*lending with interest*" but "*lending with compounding*".

The latter guarantees the lending will keep doubling, till something interferes with the compounding.

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Growth is Prosperity

by mothernature Published on: February 24, 2012

Comments: Comments Off

Tags: No Tags

Categories: among best, Natural Economy, Popular

*#17 of 18 - 280 reads, 13 prints
for 6 weeks to Mar 18, 2012*

GROWTH IS PROSPERITY



... It has meant that for centuries,
but why is it now causing environmental impacts?
Why would growing prosperity also now risk our
using up everything useable on earth, as investors seek the fastest growing profits achievable?
These threats are not because of politics, except for neglecting how little time we have left to act on them.
The need to save the earth is very popular, all over
the earth

Growth is the pursuit of money too.

...using money always contributes to businesses increasing their profits as fast as they can.

We still find it hard to imagine how
making money uses and changes our world
as a whole, though....

How average uses of money impact the world as a whole... is about average! Like, ~1lb of CO2 comes from \$1.00 of goods, as a world average

Notes on the hard science for why "average" is also an accurate estimate for energy use, not just logical.

1. If you make \$40,000/yr, then it's a probably accurate guess that using your income will release a real 40,000 pounds of CO2 into the atmosphere a year, as that's the world average.
2. In the past 40 years there have been lots of efforts to increase economic efficiency and develop alternative sources of energy. They have produced more goods, more efficiently, but has **not changed the growing rate of fossil fuel use**, as that's still the most profitable fuel to use.
3. The ability of more successful competitors to pay the rising prices of the food and fuel resources being depleted is squeezing everyone else harder and harder.
4. We need another way to maintain prosperity than by expanding our use of the earth's resources ever faster.

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Deep Change in Reality – Reversing Productivity of Productivity...

by mothernature Published on: January 24, 2012

Comments: Comments Off

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Categories: among best, Natural Economy, Natural systems

*#18 of 18 - 255 reads, 29 prints
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How improving productivity always reliably made thing cheaper and easier to do, is ending. It naturally ends as any direction of progress does, if taken to its limit. Now we see our "productivities" coming into costly conflict with each other and the environment, making everything more costly and complicated, the exact opposite of what we expect.

It reverses an expectation humans have had for how to solve problems that appears to be much older than recorded history, as all of human evolution is a record of great leaps of increasing productivity, using less to get more. Becoming productive in cooperating with our environment rather than conquering it, no longer "productive", is a very big change in thinking for us.



Musical chairs for earth as a whole - the natural limit of productivit

Musical chairs for earth as a whole - the natural limit of productivity

Continuing our old model of "productivity" would make economies completely unworkable, so very costly to operate that they would become unprofitable, and have to cease working. We're seeing a large scale version of how many ancient skilled "problem solving" societies of the past created problems for themselves they couldn't solve and environments that would no longer support them.

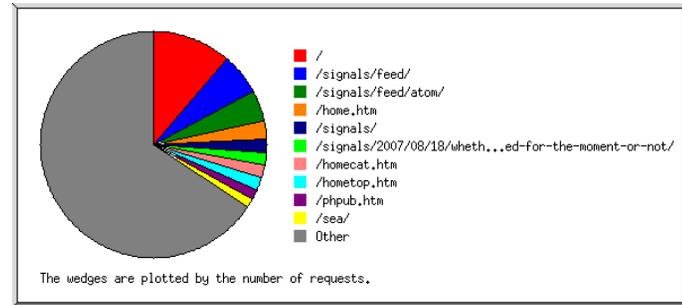
Even "downsizing" is hazardous, as economies develop by accumulative design (growth) and so "the new" frequently relies structurally on not changing the old. A growth system's design becomes a barrier to its own radical reorganization, causing decline to result in shedding whole formerly integrated sectors at a time, and so "growing together" but slimming down by "breaking apart", growth as "lifting all boats" to become "musical chairs" as the natural response to pushing the limits. Gail Tverberg's *Where do continued high oil prices lead us? drills down nicely into the why avoiding this dilemma is likely to fail given our present way of "solving" the energy crisis by making it constantly worse.*

That using productivity to grow the economy would at a point rapidly reverse it's value to the economy, has been clearly visible approaching for more than a century now. It can also help us turn our attention to the right subjects. #1 Sustainability Issue Today... How to read the evidence and respond societally is discussed in: A decisive moment for Investing in Sustainability

For philosophers, it points to a fascinating case of a Type III error, trusting the wrong model and accepting the wrong questions it keeps giving us. We have been treating nature as the models we make from the information we collect. We haven't been watching, for changes in how the systems of our environment naturally work by themselves. So it has left us "in the dark" just because natural systems that work by themselves also change by themselves, not reporting to us how.

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