phil henshaw

From: Stanley Salthe [ssalthe@binghamton.edu]
Sent: Friday, October 24, 2008 3:36 PM
To: pfh@synapse9.com
Subject: RE: [Fwd: RE: [downslope_strategies] maximum entropy production principle]

Phil --

Stan,

Phil --
Stan

Phil --

Well,
Stan would have us believe that there is nothing in life but immature growth and final decay and that life always follows a chrstmas tree shaped curve of development (¸¸¸¸.··.¸¸¸¸). I, on the other hand, think that omits all the middle parts of life, the three main phases in-between (·´¯¯`·), usually called "the prime of life". If you have any period of stability in the middle the conservation laws of physics do truly necessitate having the two periods of developmental leading to and from it (¸¸¸¸.·´¯`·.¸¸¸¸). You can also directly observe and trace those developments if you examine the normal sequence for any process with a period of stability in the middle.

S: Whether there is a period of relative stability between immaturity and senescence depends upon the scale of what you are observing relative to your, observational, scale. If the observed is much bigger than you, its time scale would be bigger as well, and it will seem to have a stable interlude, which, at its own scale would be fleeting. Even our own stable period is partly illusional. For example, our mass specific energy throughput begins to decline right after fertilization; our physical abilities begin to decline in our Twenties (relative loss of neurons, etc.) and so on. You need to skew your little diagram to the left, giving a long decline on the right.

[ph] Well then, if you think shape is

S: Can be

[ph] right, "often" a matter of scale but not "always" a matter of scale. What I discovered was something you might call "the most excellent class of exceptions" to that rule, when shape is usually related to process. That class of shapes points to organizational processes in the environment you would likely be otherwise unaware of.
only a matter of scale then we do indeed have a difference of opinion. Normally scale does not have an effect on the sign reversals of the derivatives, the directions of progression and their reversals, or on the relative duration of lags between them. My little diagram is precisely aimed at what the scales of measures can not ever erase. It would not need to

change to reflect a useful set of basic questions about changing developmental direction that apply to processes of any finite scale or duration.

S: I only report that natural systems that have been measured decline skewed. The other point about scale difference between observer and observed should be obvious. For example, at its own scale the solar system might last for what we, if we were that big, might experience as, say, one month. I am of course guessing about the actual value here, which might be calculable. Many folks would likely say that this difference doesn't make a practical difference - OK.

[ph] And what I relate back to is what could be described as the "universal relevant scale" of change. You push and pull the arbitrary units for plotting the curves of change to make the event you're talking about look like (¸¸¸¸.·´ ¯ `·.¸¸¸¸). That may well, as you suggest, distort the shape of other measures or other phenomena if plotted on the same units, to seem either instantaneous or changeless. The value of making that distinction is in helping locate the actual developmental processes being considered as distinct from other things.

> ***If you were to point out that the location of the 'hockey stick' bend in an exponential curve is purely a matter of scale, that I would agree with entirely, of course. That shape does not reflect a change in behavior, though often mistaken to. When you link four of them together to make a continuity from beginning to end, with little 'glitches' where one merges into another, there is an optional duration in the middle. That's gives a minimum series of 5 different directions of development, with 6 different locations for transition 'glitches' from one form of behavior to the next. Usually people don't try to say that the "prime of life" is just another example of wasting away, as you do.***

S: It may not feel that way internally (perhaps happily! but external measurements can show it to be the case.

[ph] I think the question is not so much a measure, but whether there is a duration of time between the maturation and disintegration. Say, you grow and water a plant. Just because the soil is getting dry and the plant is responding by closing up it's pores doesn't mean it's wilting. It means you're waiting to water it. That's why I take the step of identifying the bracketing developmental processes to anchor the description of what's happening.

As the usual reason for a period of relative stability in measures of a system during the time between maturation and disintegration is the presence of an active network of self-regulation processes, that is what the data prompts me to LOOK for.

S: A period of homeostasis if the observed system is very big, or a period of homeorhesis if is just big. In one observed system it is possible that some variables would be 'stasic' while others would be 'rhetic'.

One dimensional measures don't PROVE much of anything, particularly not about the changing complex organization of widely distributed systems. To me they're signals in which one can occasionally recognize signs.

S: Yes.

If we can find the same signs in nature (i.e. reliable signs, like ¸¸¸.·´¯`·.¸¸¸), then I think the chances of people speaking about "real things in common" is much greater than by making agreements on words of explanation. Is that a fair statement of method? Call it step A and B. If A then maybe B, but If only B then probably not A. Is that about right?

Looks OK to me.

STAN

Phil

Perhaps we could look to see what thing in the physical world we might be referring to in common. I see a distinct 'glitch' event in the "coming of age" as we leave adolescence to become adults, and in "retirement" 'glitch' that signifies a different kind of major change in the development path for people. The period between has a very definite <u>finite duration of neither</u> exponential growth nor decay in-between . Do you see that?

Yes, of course.

STAN

Immature growth is indeed always the beginning of beginning, but can definitely end with a turn from multiplication toward integration with one's surroundings, resulting in that main middle period of stability that life is really for.

S: !?

At some point toward the end of that middle period things do inevitably start to fall apart, and in an accelerating way (an inverse of compound growth in compound dis-integration). That disintegration process then turns to an ever slower wasting away till some final point of failure and end. Sure, there's more than one inexplicable part of that, but hey, there are numerous examples we can all see in common and that's life!! It's only period #1 that is compound growth and only period #5 that is the advanced state of senescence.

I think when people like Soros speak of the "business cycle" they're actually also leaving out the same "prime of life" period in the middle too, assuming the same Christmas tree curve is the only choice and nothing exists but immature multiplication or terminal decay. It ain't true. They speak of the "business cycle" exclusively as a "pause in growth" as if any transition to stability is a kind of total system failure, an end of life. It looks to me like

the same kind of basic misunderstanding. Initial growth is inherently unsustainable. Why it is does not seem as well answered by the natural necessity of eventual decay as by the "prime of life" in the middle we'd rather not miss. It's that important middle part, during which living systems both become foundations for higher order systems and capable of their own reproduction, engaged in bridging both higher and lower scales of nature, that's missing from both.

I am, of course, somewhat mystified why Stan has sometimes talked about that middle part without insisting it can only be described as decay, and then unexpectedly leaps back to the standard physics model he often follows that says that there is no kind of change in nature but decay. I think there's also development, and lots of choices along the way. Defining the categories of observables according to classical physics is perhaps an option, but it definitely leaves out stuff. If the reason for extending a model that clearly leaves things out, is only to propagate its self-consistency, in a world full of quite natural inconsistency, I find that an insufficient reason for the model.

S: The relative importance of a period of pause between growth and decay depends upon the kind of system you refer to. In the above you seem to be talking about human organisms. I generally have not been talking about that, but my views apply there too (as above). I suppose I've been lucky in not having found the decline to be much different from the stable (seeming) period.

[ph] I do wander back and forth between referring to one or another type of system and to the general questions that apply to systems in general. The signs of a period of systemic stability may vary, but would likely include evidence of the continuation <u>of a system that first grew and then stabilized</u>. You seem to rely on identifying a system without first having observed it grow and then stabilize. That is indeed more difficult. Even just verifying that a system you firmly confirmed did grow and then stabilized still exists requires holding open the possibility of things existing beyond one's evidence. Lack of change could be evidence of nothing at all happening, or quite a lot happening. Is a person a 'sentient' being when unconscious? Or is that the wrong question?

With environmental systems you also have the gaps in time between when there is any evidence of the continuity of the system. There's also the chance that lack of evidence means they might simply have moved elsewhere. Then the only issue is the trivial question of whether the tree in the woods falls in its own time whether you happen to see it or not. The real question is not whether there is a 'pause' between growth and maturation to begin, and the breakdown and decay that would follow. The question is whether systemization occurs at all, or whether all we see is noise shaped by other noise with no form of its own or not.

I see the answer clearly in being able to identify local networks of emerging self-referencing relationships that can't have been communicated from elsewhere by watching them grow together. Seeing them go through dramatic changes in scale corresponding to changes in kind, first multiplying as if without limit and then changing in developmental rates in pace their complex environmental integration, while retaining a continuity for the original internal cell of organization they started with, is convincing. It's anyone's guess whether the continuity of change clearly implied by the conservation laws and evident in how well observed things come and go will be discovered in any particular case. That systemization really is very directly implied as a necessity of energy continuity equal to the reliability of the conservation of energy, to avoid infinite rates of change is worth checking out. We do indeed observe systemization taking place reliably nearly wherever you would expect to find it. That too makes me believe at least it's worth the trouble to look for it and use what I find.

Phil

STAN

Best,

Phil Henshaw ¸¸¸¸.·´ ¯
`·.¸¸¸¸
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~~~~
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"it's not finding what people say interesting, but finding the interest in what they say"

From: downslope_strategies@yahoogroups.ca [mailto:downslope_strategies@yahoogroups.ca] **On Behalf Of** Steve Kurtz
Sent: Wednesday, October 22, 2008 12:39 PM
To: downslope_strategies@yahoogroups.ca
Subject: [Fwd: RE: [downslope_strategies] maximum entropy production principle]

As Phil's post was delayed due to Yahoo spam detector ;-)...I'm taking the liberty of posting Stan's response. I need lunch before thinking more about all this.

Steve

-------- Original Message --------

Subject:

RE: [downslope_strategies] maximum entropy production principle

Date:

Wed, 22 Oct 2008 10:59:22 -0400

From:

Stanley Salthe <ssalthe@binghamton.edu>

To:

otwo@synapse9.com

CC:

amerikalistan@mg.skola.mark.se

References:

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<011701c93454$3ffa3830$bfeea890$@com>

Replying to Phil --

Steve,

Well, You ask why the MEP principle is hard to grasp. It's just wrong is part of it. I quite disagree that natural systems display MEP as a rule. Some do, but the 'rule' is purely one of human perception, a feature of our 'orderly' way of explaining things and not looking for the wide range of intriguing exceptions (the fat tail). There are just huge varieties of systems that begin their development with maximizing their rate of increasing entropy, and then stop that long before they hit externally imposed limits. That's what humans should be studying, finding nature's real survival trick.

What Phil refers to here is the development of all dissipative structures into senesence, which is accompanied by a decline in their energy throughput / entropy production. I have been saying that our culture should realize that we are now senescent, and stop trying to pretend that we are still immature. So, I deny Phil's saying that MEP is WRONG. It is just that all dissipative structures eventually fail to be able 'live up to it', and get recycled as a result.

For example, the financial recovery plan is to stabilize money and then hope the economies don't decline too far and go into deep recession.

Depression.

They won't have the "quite a party" spending spree that was based on debt and gave us the elevated prosperity of recent decades. Economies tend to not 'grow backwards' very gracefully either·

It is best if they recognize the Iron Law of senescence!

Trouble is, the money being stabilized is going to continue needing an exponentially growing return to remain in circulation at all, even as the physical system slides for the next few years. That will naturally drive the economies into much deeper decline. This is an example of how MEP systems work in conflict with each other. Wouldn't it be nice to know how not to do that?

It would be better to acknowledge MEP and try to work with it, somehow.

I was at a talk with Soros, Rabini and Sacks yesterday. They mostly just repeated the 20-20 hindsight views you commonly hear, with one exception.

Soros in any case, does recognize the developmental trajectory, and has written about it as the business cycle.

All three seemed genuinely concerned that the economies of the 'periphery' that the US Fed does not bail out and can't expand their borrowing like we can, will be in really deep trouble in the near future. Only the US can borrow as much money as it likes despite being bankrupt itself technically. Other countries can't. I think the dominant position of the Fed as the world's only truly global bank creates the illusion that after borrowing our way into bankruptcy we can now borrow our way into recovery too (I.e. that it's an illusion). Those two dimensions expose huge future liabilities, especially if someone like me is not involved in helping people understand how whole natural systems operate.

They would first need to understand MEP and its natural decline.

STAN

Phil Henshaw

> **From:** downslope_strategies@yahoogroups.ca [mailto:downslope_strategies@yahoogroups.ca] **On Behalf Of** Steve Kurtz
> **Sent:** Tuesday, October 21, 2008 5:53 PM
> **To:** undisclosed-recipients:
> **Subject:** [downslope_strategies] maximum entropy production principle
>
> Why is it so hard for people to grasp this?
>
> Steve

(snip)

__._,_.___

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