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Dear Don,

Well, thank you for your patience. I have been pushing very hard to keep up, having lots to think and write about, the holidays, a major push at the office. (I'm detailing a \$110M courthouse in my 'spare' time income-producing activity...). Thanks for permission put this stuff online, now if I could make the time to do it too, I'd be all set. Undoubtedly we'd only have one reader a year or something, but someone might get a sense of where we are from these ruminations about failed and possible systems theories. I ran across a nice straightforward overview of the evolution of Cybernetics from an analytic point of view by Francis Heylighen and Cliff Joslyn called "Cybernetics and Second-Order Cybernetics". Joslyn is an editor of the 'Principia Cybernetica' project [http://pcp.lanl.gov/SEARCH.html]. Needless to say their lexicon doesn't have the terms 'Inside, Interior or Internal, Outside, Exterior or External', but hey, you have to start somewhere. They have 'Externality', but not 'Internality'. So to me this marks where we are.

I browsed Coren's 'Evolutionary Trajectory', and Kurzwell's 'Singularity is Near' but didn't order them. Maybe I'd call a popular book on the subject 'The Earth is Imaginary' stating the truth that we all mostly confuse our images (and their unlimited pliability and associativity) for the complexly evolved physical things they are images of. I hope I'm making some progress, but I'm definitely not seeing an intellectual 'climate change' toward constructive original ideas or responsiveness to same. The opposite if anything. I participate on a few professional forums online, and really, about the only way I know people are thinking about what I say is that the whole forum goes silent for a couple days! It's bizarre.

I'm honored to have the other good company of all the 'swimmers in the dark' that can count only their responsiveness to truth and a resounding silence from their audience as to what they have in common. I picked up Powers' 'Making Sense of Behavior' again and still could not find any phrase which attracted me. I'm thrown of, I guess, by his using the word 'control' so much, as if the motive and impetus for control in a world made primarily of autonomous beings was not a question that had occurred to him yet. He says "people are control systems", but we're so much more too. We're divergence systems, we're passionate systems, we're playful systems. Suppressing divergences by itself will just never get you anywhere new, and a rather big part of life is about exploring to find and enjoy things that are new. So I tend to look more at divergences and what becomes of them. To focus only on control, to my way of thinking, postulates impetus for it as being 'outside' the system and makes the model



incomplete. It omits the all important animating processes of the system.

I do wish I could both word search a book and scribble in the margin! Maybe that feature will be the next hot technology. I just don't think a hierarchy of servo-mechanisms leads you any closer to answering the question of what's in control. Aren't negative feedback reflexes just instrumentalities, and making a whole with them need to postulate a shadow 'controller' outside the system to build and run them? That's why I look more at the question of what animates (makes the action of) the system, as opposed to what 'de-animates' the system.

I certainly agree that systems of thought, perhaps in particular, have very strong self-correcting mechanisms that divert or suppress new thought without exploring it for useful features. I've had a devil of a time with that simple point. Perhaps more to your comment on the stubbornness of the Western Tradition, I've found virtually all the many leaders of 'save the world' action groups that I'm in touch with to be quite unable to conceive of how multiplying good could be bad. It's remarkable how effectively systems thinking has been suppressed culturewide. To take just one for example, the feeding of the poor that is incompetent and serves to multiply the number of people and populations in severe harms way. Those involved don't know, don't care, are offended if you bring it up. A little circular thinking would sure help with that sort of thing.

Have you read Daniel Quinn's 'Ishmael'. He slips in a couple places, but also beautifully reveals some of our deep cultural 'givens' that have definite origins and consequences. I won't spoil it for you if it hasn't crossed your table and you do happen to pick it up. It reads as a story. He's one of the nontraditional systems thinkers I'd rank with all the others, along with people like Malcom Gladwell and Manuel DeLanda

Al Gore and James Lovelock just don't go far enough. The curious fact I perceive is that growth in living things is universally there for the purpose of giving birth to new living things, and that what marks the beginning of new life is the end of exponential growth process and the beginning of stabilization. That's when life starts, when a fetus is born, when an great oak tree has it's first two leaves. The idea is a little shocking, but once over the shock it seems obvious that nature is trying its best to give us a wonderful gift, and we're doing our best to reject it. Al and Jim are not going far enough at all. We could very well be in for the traditional learning method of humanity, to finally listen to those saying to turn the wheel but only after the proof that we've run off the road, but I hope not. I hope we dare enough at some moment to become inspired. I can see clearly enough that most forms of life make the turn easily and elegantly. All we have to do is copy. The problem for us, of course, is that it's an internal feedback switch that does it, specifically diverting the positive feedback before the system blows up. From the usual Western outside control point of view, with or without circular causality, that's ridiculous. It's self-control, and if systems have nothing inside there's no sense to it.

I'm not opposed to 'control' per se, though in social contexts it seems quite questionable. It's that its other half, 'divergence' missing. There's simply nothing for you to control if you don't have a little divergence first. I think the fun is having a vigorous divergence and finding just the right time to gently flip to control. Most western thinkers fear all divergence and think the fun is

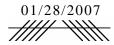


hammering things into submission with the morally correct template for perfect subservience. For me that ignores the universal map of events (,,,,,' - `.,,) that things that are going to stabilize first have to diverge, and once stabilized will reach a time of falling apart and then fading away. All in all it's better to do all these things gracefully (with out distorting confusion and jerks), and of course, you can read the jerks in the 3rd derivative! If Powers sees "the eddy is the entity" then that observation is very close to my the "the entity is the event". It says the unity is in the whole developmental succession of evolutionary processes that can only begin by beginning and end by ending. I think one of the obvious reasons why others, as you mention, Kauffman, Rosen, and Stan Salthe, don't refer to cybernetics much is that it's missing things.

I think the great problem is not that people don't take the 'right' approach, but that they don't connect what's right in each other's different approaches. The model in my brain, or yours, or anyone else's, is not transferable, though we may have continually recurring delusions about that. Any one who gets any piece of someone else's thinking, does their own reconstruction of it in the process of incorporating it into their own. If we look to see who's right we'll mostly be excluding who's 'wrong' and not combining things from different points of view to build our own appreciation of the whole. If there's any piece of mine I hope to share it's that it's great and important to have well constructed and useful models, so long as you spend half your time looking at what they don't fit, because what a good model doesn't fit is your best window into reality. fact that every model is incorrect is demonstrated with every run of every experiment, which most scientists treat as just being evidence that we know better than nature! That our models are 'incorrect' but still very useful is clearly factual, the point is just that one of their best uses is for seeing their incorrectness and gaining an appreciation of the true thing itself, what the model was built to simplistically represent.

Your comment that you got thrown out of conferences for wanting to talk about the evolution of simplicity when others wanted to talk about the evolution of complexity reminds me of when I got disgusted with the hot competition of everyone in design school, trying to climb all over each other up the big hill of the latest fad. I decided a more interesting problem, that would also get me away from all the racket, would be to see how small a hill I could climb! Turns out I could climb a very very small hill:-), but couldn't find any that didn't have the same smooth transitions between the up over and down features. Climbing the biggest and smallest all took the exact same process!

'Simplicity' seems trickier. Perhaps one would need to talk more about what kind one is referring to, though you do mention 'recognizable states' and 'persistent standards'. I get confused with simplicity because it's harder for me to distinguish between which part is in my mind and which is in the world. There's also a Malcolm Gladwell notion of the difference between 'mysteries' and 'puzzles' (New Yorker Jan 8), (something like the difference between questions that are simply answerable and ones for which you can't really even understand the question and just have to cope). I think it's both a physical difference between the orders of things and a definite difference in how we sometimes look at things. We can more easily make a mystery out of a puzzle than a puzzle out of a mystery, though.



The question of simplicity also reminds me of my current conversation with my friend John from Hamilton who's seen a similarity between my harping on the autonomy of the whole and its mysterious insides, the ideas of Leibniz' and the concept of 'windowless monads' as sort of the immutable molecules of being. Leibniz was not doing observational systems theory, or doesn't seem so to me. That he found some logic to there being unique identity and mystery in each individual entity has a plenty strong enough similarity to where I end up for my interest, even the 'windowless' part. What I see as the loops of events that grow and if lucky stabilize, seem to build the unique identity of individuals from the inside. As such they also become a kind of a universe unto themselves, that divide inside from outside forming a boundary that both connects and separates. In that construction you could surmise that the uniquely special thing about human beings is that... "we are us", strongly connected by our separation from everything else.

Your wish that any system images retain a complex topology is unavoidable it seems to me, in that exploring systems inherently involves looking for flows perpendicular to whatever direction you happen to be taking at any time, and the toroid to simply represent that principle. To me that's could be used as a definition of heterarchy, that there are cross currents to every current. Whether one is able to distinguish between cross currents of relationships located in one's mind from those in the world is perhaps harder than just being open to discovering intersecting relationships that are different in kind at every turn. It's a good formula for getting lost too I suppose, but that can be quite interesting as an excursion in itself, given the confidence that the brain has a reset button called 'sleep' that gleans more than one might guess from a day's wanderings.

The connections between how systems theory evolved and stalled, and the events of the last half century are many of course. The whole period is hugely influenced, in my estimation, because of its being the turning point in our 600 year phenomenal growth and that our growth system lacks an on/off switch. The major economic evidence of this is seems to be that earnings from wages in the US leveled off in 1970 and haven't risen since, while the earnings from (roughly categorized) talent and money have continued to multiply even more rapidly than before. To me that says the system is coming apart, though like Al Gore's frog cooking in a pot, we don't notice. Wage earners have enough toys and comforts that they're not ready to shed blood for their fair share, and the rich and talented can dump all the cost of their multiply complications on government, other countries, and old Mother Nature. Then there's the strain on the conceptual system that no longer fits the real world, and it's defensive reinvigoration and suppression of alternates. Well, you can see I'm really optimistic!!

I guess I don't see any of the items on your list that isn't a part of that, and a good bit more. It might be worth exploring how to describe the connections between these kinds of things that wouldn't sound like just another flavor of conspiracy theory. I think we mostly make these connections based on a qualitative impressions that would be hard for others to retrace. My more traceable method is to have well defined time series measures for some 'tag' close to such things, and watch the curves for common dynamics and turning points. One of the things I would add to the list is 'growing confusion' generally due to the complications of multiplying the complexity of the economy



qualitative impressions that would be hard for others to retrace. My more traceable method is to have well defined time series measures for some 'tag' close to such things, and watch the curves for common dynamics and turning points. One of the things I would add to the list is 'growing confusion' generally due to the complications of multiplying the complexity of the economy and our widening impacts. Complications like global warming and globalization were unheard of back in the 70's. It's also fair to say there's also an amazing new mountain of regulations for every one to put up with. Odd that no one seems to be alerted to that approaching wall of incompetence rushing at us as we make our problems ever more insolvable. As to the "real culprits who have already taken the money and run", I'd perhaps observe that money itself can't hide. It's plugged in all the time.

My most digestible piece on the money problem is a post this week to the AIA environment forum, attached. I also attach a piece of my ongoing correspondence with Stan. I'll be coming up your way on the 16th or the 18th of February. As soon as I hear which Stan would prefer I'll call you and make a date.

All the best,