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Dear Don,

A couple issues.

I'm interested in how your toroids serve as a model. What you see in them isn't obvious. What's special about a toroid to me is that it's a 2D shape with addition 3D connecting paths. Is surface geometry important to you, like seeing systems as operating in a kind of 'Flatland' imbedded in warped higher dimensional space?

The path up the center and down the outside back to the roots is a feature of most throughput systems, but it doesn't seem to make use of the horizontal ring pathways (non-intersecting perpendiculars) that make toroidal surface topology different. Is that important, or just suggestive of complex interconnectedness?

You know my approach has come to center on the one fairly reliable datum for natural systems I can find, their growth phases, which gives me dominant interest in time and processes of change. In your image do systems begin and end as toroids or are there transitions with other things, etc?

I suppose I should know, but you used the term 'set points'. Does that mean the same as 'state' or is it a metaphor for 'attractors' and 'tipping points' etc. I tend to see changes of state as properties of the whole, where many subsystems may asymptotically approach a mutual fixed point, but I can also imagine using 'set points' to refer to tipping points of many kinds, maybe the width of a pathway creating a set point where flows in it become turbulent, etc.

I started reading Ashby's Intro to Cybernetics. You used the term as a verb and I looked it up and decided to read Ashby a bit at a time. I've actually never read it. In just the first few pages I gleaned enough to note he limits 'system' to sets of defined rules, and does not include anything undefined such as natural systems. Is that just because he was writing at a time when everyone thought nature followed rules? He also does seem to be missing what I consider the principal principle of self-control, ...(the simple rule for how to transition from growth to stability, and why growth without limit risks loosing control). I find that odd, and emailed a bunch of people over a week ago but gotten no response). Still, I'm really out of the loop on lots of things I think. Is there any history on this question you know of? fyi my statement of it is at [www.synapse9.com/prpr.htm]

Your toroids are all 'individuals', but I see a basic problem. I can define system individuals as 'loops that grow', but frequently everything is actually disconnected, and there aren't any actual loops (one hunger, one meal – any other is an entirely separate event). There are all kinds of breaks in any system's continuity it seems continuity. One could use 'probability fields', particularly in



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planning models, but I think that'll miss design content.

In my early models the torus was a creature with a gut, and a loop network internal circulation. Do your toroids have a particular internal circulation? My model was as much for referring to the hierarchy of many individuals sharing inputs and outputs through a resource pool, connecting with others through 'stuff left lying around'. That's more or less what I observe in nature, that unordered resource pools are the main structure.

One possibility in a torus is that each annulus slice is a kind of universe, but that's a little complicated. The problem with models I see is the difficulty of adequately representing the multidimensionality of systems. To me the whole physical model thing is really just to make a data collecting/filing scheme, some of list of lists with symbolic correspondence. I think the actual organization of systems (both mental and physical) tends to have several trunks and several levels so a simple tree diagram (folders of folders) is inadequate.

What do you think of the attached! I guess things are getting a little busy with a few good correspondents and other things happening. I certainly don't clearly see the beginning of anyone taking the earth's little problem seriously... but, who knows!

Best regards,

Philip F. Henshaw