

Note to File
Author: G Boyle
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I put the MppLab video on Youtube at the following URL.
<https://youtu.be/1NsRF4Bi0Zc>

This is the text:

MAXIMUM POWER PRINCIPLE (MPP) - This video is a set of screen grabs from a specially modified version of MppLab. It follows the evolution of a trophic web with up to six trophic levels as a demonstration of the ability of the MPP to create complexity out of simplicity.

The bottom graphs are histograms in which the x-axis is a gene that controls who can be eaten, so a tall bar indicates many organisms with the same gene value. The population of plants (autotrophs) are on the right (gene value 128). The video starts with a small population of omnivores (blue). This is how the genes work. Those located to the left (smaller gene) may eat any organism located to their right (larger gene), so all omnivores can eat autotrophs to their right (having larger genes). But, they can also eat, with some difficulty, other omnivores to their immediate right. As the gene distribution of the population naturally spreads due to genetic mutations, those on the far left have more opportunities to eat their fellow denizens, and so the numbers on the right are depleted, while those on the left grow. Eventually, there are waves of evolving organisms forming trophic levels moving leftwards. Ultimately, those on the furthest left have evolved to be apex predators, that eat only carnivores, that eat only herbivores, that eat only autotrophs.

The top graph is a histogram showing the distribution of the efficiency of each predator/prey interaction. Efficiency is controlled by the genes of both predator and prey. Any organism can capture and eat any organism with a larger gene (i.e. to its right). As you can see, the efficiencies are all over the place, from terribly efficient to barely efficient. This implies a wide range of eating patterns. However, if you watch the data monitor at the bottom right of the panels, you will see that the system, as a whole, evolves to a state in which the average efficiency of all predation events is 50%, as was predicted by the MPP. The "goal" of 50% average efficiency is achieved by structuring the waves of the trophic web.

The MppLab software is available at <http://orrery-software.webs.com>. Come visit my website to learn more about the MPP, and sustainable economics.

This is the covering message

I have finally found some time to move some of my recent work online. This is a video I produced back in September in preparation for my presentation at CANUSSEE/BPE conference in October.

It is my best "proof", so far, that the MPP is a real phenomenon with the ability to produce amazing complexity out of simplicity, and to do it very quickly. I am hoping this will ultimately lead me to a deeper understanding of the dynamics of economic systems, in general.