Review of: "Infodynamics, a Review"

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This is an interesting paper full of information and courageous claims for understanding infodynamics. I congratulate the author for his efforts and his comprehensive work in revealing the ‘dynamics’ of the ‘info’.

However, I’m a bit pessimistic about establishing the mathematical formulas of infodynamics with the current scientific approach. The ‘information’ related to entropy through the Boltzmann/Shannon equations is achieved from ‘probability’ or from the ‘order/disorder’ of the state. In classical thermodynamics, entropy depends on two parameters: one on ‘bulk configuration,’ which is related, for example, to how far the piston in a cylinder moves, and the other is the temperature of the gas in the cylinder, where entropy depends on the temperature of the gas, which is the distance of the paths traveled by the gas molecules before collisions. The lengths of paths before the collisions of two gas molecules are also associated with the molecular kinetic energies. The dynamical changes, in the very general sense, either occur due to the advancement of an object in space so that the probability of finding it at a certain point decreases, or it undergoes internal changes like the decay of an organic object where molecules decay, increasing entropy. In both cases, the entropy has something to do with the ‘trajectory’ of the molecules. For instance, the shape entropy of a spiral depends on how fast it expands. Its expansion resembles the globule-to-helix transition in some macromolecules. By the same token, the shape entropy of a sinusoidal curve depends both on its amplitude and its frequency. Either the shape of the trajectory of a moving object or the shape change of a decaying or growing object can help us to construct the mathematical expression for infodynamics. Thus, it becomes possible to find out how information is created, and how much it is.

Here is my work on finding the entropies of shapes and curves:

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There are also other approaches to shape entropy in the literature.