Review of: "Thermodynamics, Infodynamics and Emergence"

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From the list of references, it is evident that the author is familiar with the work by Adrian Bejan and, in particular, his constructal law and constructal theory. However, there is only one reference to Bejan's work. Nevertheless, many inanimate and animate processes (including emergence of complex systems – physical, biological, and social) have been studied and explained / modelled within the framework of constructal theory. Hence, in this respect, the present work offers nothing new. Moreover, gravity is the fundamental physical force, which is responsible for balancing the “destructive” effects of the Second Law. As the Universe cools down in the course of its evolution (expansion), the thermal energy is transformed into gravitational energy (mass). This mass, constantly generated within the expanding Universe, serves as building blocks for all complexity found within the Universe. As the gravitational mass of the Universe increases, increases the total complexity of the Universe and, hence, the total amount of information contained within the Universe. If one assumes that the total amount of entropy generated within the Universe equals the total amount of information contained (generated) within the Universe, the Second Law becomes but a conservation law, in which the positive amount of entropy is balanced by the amount of information (negative entropy). Unfortunately, the role of gravity and its connection to entropy / information generation, and, hence, emergence is not considered in the present work. To conclude: in my opinion, if the present work aims at being a “theory of everything”, it should include a detailed treatment of the most fundamental physical concepts (e.g., gravity and its role; perhaps, even quantum gravity – which may not be available yet).