

Tying Together the Gravity Principle of Life Formation to Dissipative Systems Concerning Life Formation in the General Theory and Self-Organization

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Abstract: Some clarifying statements are made concerning the ability for a star to create life essentially from scratch. This paper is to set the stage for future statistical analysis of the probabilities involved, and only contains simple generalizations. This paper will need to be edited in the future, but that is because the idea of evolving stars being the location for the beginning of life is still new.

According to the general theory most stars evolve into life hosting planets, thus stellar evolution is planet formation. Some stars host life for longer periods of time with greater biological complexity than others and some never form life at all. The cutoff for such calculations will eventually be reviewed and worked out inside of the Taylor Threshold, in light of the mobility, gravity, container and time principles of life formation.^[1]

To begin, what we have is a previously not considered mix of ideas that set the stage for the beginning of life.

1. Life is formed from the energy of a single star's evolution. Life is a process that self-organizes from the energy of an evolving star, directly.
2. Life is extremely complex, many magnitudes greater than human imagination can really comprehend. (We cannot really comprehend our own stupendous complexity.) This means we have to chop it down to the smallest parts, at all levels of abstraction and work all the way up to fully comprehend.
3. Placing the probabilities of life forming from ionized, individual atoms all the way to extremely complex organisms such as a cat, tells us we are dealing with matter from a multi-faceted view. This means probability calculations will overlap on multiple avenues.
4. Pure randomness would never form life, there has to be a direction for all the chemicals to synthesize and replicate, meaning there has to be some over-reaching, stationary, extremely stable, long term force that can mix huge amounts of material together, constantly, for billions of years, which means...
5. Gravitation removes randomness during the formation of life, only, it is directed by the large scale dissipation of a single star's energy, meaning it is not pure randomness.
6. To form life a dissipative system greater than life itself is required, so that energy remains in boundless supply for billions of years.
7. Stars are the dissipative systems (open thermodynamic systems) that form life, but since life is quite complex, it is required that the dissipative system die down considerably on par with the amount of complexity that has arisen. In other words, the more energetic the system, the less complex the molecules will be found, and the calmer the system, the more complex molecules will be found as a general rule of thumb. Turbulence and violence suit early

dissipative systems, but the very turbulence and violence that was useful for the beginning changes and becomes more calm and flowing. This can be applied to the differences between Uranus and Neptune. Neptune having the strong violent winds would pale in comparison to the molecular complexity that currently exists inside of Uranus, due to its calm nature. It should also be noted that scientists have referred to Uranus as “boring”, in fact, not seeing huge bands and clouds rushing about the surface is a good thing if you are interested in what is stirring about in its interior. It is unfortunate scientists would rather waste billions of dollars on detecting non-existent dark matter and gravitational waves than spend money on satellites to study the very next star in our system that will become Earth-like.

8. Self-organization, also called (in the social sciences) spontaneous order, is a process where some form of overall order arises from local interactions between parts of an initially disordered system. The disordered system is the young star like the Sun, and the ordered system is the highly evolved, differentiated, life hosting star, similar to the Earth. This of course is placing the order inside of the organisms that contain multi-level organization, such as organelles from complex molecules, cells to tissues to organ systems.

9. The self-organization process happens with stars because sufficient energy is available, not needing control by any external agent. A star’s own gravitational collapse produces the energy required for the energy transformations required for life to arise.^[2] This firmly neglects the assumption that the Sun is the total ends and means to life on Earth. It is the Earth that is the self-organizing system which created its own life, from its own gravitational collapse, completely independent of the Sun, as do all stars which evolve slowly enough.

10. Self-organization is often triggered by seemingly random fluctuations, amplified by positive feedback. The positive feedback loops are sustained by the star gravitationally collapsing over hundreds of millions of years. This means gravitation removes the randomness, it is more a directed randomness, a mix between pure capitalism and government oversight.

11. The resulting organization is wholly decentralized, distributed over all the components of the system. The system in the case of stellar evolution is that life arises all over the surface and in the oceans of the evolving star. This is why life is all over the surface of the Earth, life arises highly decentralized. It did not start at a single point on the Earth.

12. As such, the self-organization is typically robust and able to survive or self-repair substantial perturbation. This is why life comes back after extinction events. So regardless, the Earth had orbit changes, and the process of life formation and evolution is sustained because there is always sufficient energy available. If there were an extinction event and no extra energy could be provided, then all life would die, as is the case of Venus, Mars, Mercury, the Moon, etc.

13. Chaos theory discusses self-organization in terms of islands of predictability in a sea of chaotic unpredictability.

14. Self-organization occurs in many physical, chemical, biological, robotic, and cognitive systems.^[3] Examples of self-organization include crystallization, thermal convection of fluids, chemical oscillation, animal swarming, neural circuits and stellar metamorphosis.

To discuss what is meant by directed probabilities we could take a penny and flip it so that it lands heads or tails on the ground. We say that the penny is nearly 50%/50% each time to land on heads or tails. What is forgotten is that there is a person doing the flipping. So sure,

there is a probability there for the coin to land on heads or tails, but it is a directly probability. Someone is doing the coin toss. The coin does not toss itself. The same argument is now being made for life formation on a single star. Sure, we could calculate probabilities for a star to combine elements into extremely complex molecules, but that is irrelevant. What needs to be taken into consideration is that the process is directed by a single force, and that is gravitation. A star gravitationally collapsing fuels the energy required to form life, even in the most unlikely event that life could form, it surely has, as we are here now. All the calculations for the beginning formation of life need to take this into account.

[¹] <http://vixra.org/pdf/1608.0115v1.pdf> The Mobility, Volume and Gravity Principles of Life Formation in Stellar Metamorphosis, Jeffrey J. Wolynski

[²] <https://vixra.org/pdf/1712.0472v1.pdf> Tying Gravitational Work to Energy Transformations and Other Principles in the General Theory of Stellar Metamorphosis, Jeffrey J. Wolynski

[³] *Bonabeau, Eric; Dorigo, Marco; Theraulaz, Guy (1999). Swarm intelligence: from natural to artificial systems. OUP USA. pp. 9–11. ISBN 978-0-19-513159-8.*