Physicodynamic Incompleteness

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Many versions of a certain null hypothesis have been published in peer-reviewed scientific literature over the last fifteen years. The world's scientific community repeatedly has been invited to falsify this null hypothesis.[1-15]

> "If decision-node programming selections are made randomly, or by law, (chance and/or necessity), rather than with purposeful intent, no non-trivial (sophisticated) function will spontaneously arise."

If only one exception to this null hypothesis were published, the hypothesis would be falsified. Falsification would require an experiment devoid of behind-the-scenes steering. Any artificial selection hidden in the experimental design would disqualify the experimental falsification.

After fifteen years of continuous republication of this null hypothesis with appeals for falsification, no falsification has been forthcoming.

The time has come to extend this null hypothesis into a formal unequivocal scientific prediction:

> "No non trivial algorithmic/computational utility will *ever* arise from chance and/or necessity alone."

How can such a bold, dogmatic prediction possibly be made by any reputable scientist? The answer lies first in the fact that it is just a null hypothesis designed for open-minded testing. The author of the hypothesis himself actively pursues falsification. Its deliberately absolutist tone begs falsification all the more in the challenging spirit of quality science. Second, the hypothesis itself arises from logical inference, in addition to having

seemingly universal empirical support. The statement is not just a product of inductive reasoning. The latter would be subject to overturning with minimal new data that could arise around the next blind empirical corner. The prediction is rather a logically valid inference enjoying deductive absoluteness within its own axiomatic system. Barring fallacious inference, the only possibility of falsehood would be if the logic flowed from a faulty axiom. If a presupposition (pre-assumption about the nature of reality) is "out of touch with reality (ontological, objective being)," then the prediction would probably not be "helpful." Unhelpfulness would be realized in the form of prediction failure.

Since no axiom is ever proven, science tends to proceed by assuming an axiomatic system to be *tentatively* valid. It must then be tested in many different contexts through time. In this sense, all laws of science are considered *best-thus-far generalizations* subject to continuing attempts at experiment falsification. In the meantime, we consider them laws, at least in the sense of being tentative laws in quotes ["laws"].

After another decade or two with no worldwide success at falsification, the above formal scientific prediction should become a mature generalized theory, if not a tentative law of science: ***"The Law of Physicodynamic Incompleteness."*** This proposed tentative law states that inanimate physico-dynamics is completely inadequate to generate, or even explain, formal processes and procedures leading to sophisticated function. Chance and necessity alone, in other words, cannot steer, program or optimize algorithmic/computational success to provide desired non-trivial utility.

When we see sophisticated function of any kind, we have strong evidence suggesting that the Cybernetic Cut has been traversed across the one-way-only CS Bridge.[5,6] Non-physical formalisms are the product of purposeful choice contingency.[11,12] Choice contingency is instantiated into physicality via logic gates, configurable switch-settings, the purposeful selection of tokens from an alphabet of tokens, or cooperative integration of physical components into formal systems or conceptually complex machines.[2,4,6-9,11,13,16] Mere physicodynamic constraints can accomplish none of the above examples of formal organization.[6,16] Organization and sophisticated function in the physical world are all the products of formalisms instantiated into physicality. Physicality itself cannot generate nonphysical formalisms.[17]

Physicality can self-order. But physicality cannot organize itself into, or optimize, formal algorithmic systems.[3,15,18] Physicodynamics cannot integrate parts into holistic, cooperative, functional metasystems. Inanimate physicality is incapable of producing organization because it cannot generate choice from among options or pursue the goal of function. The environment has no pragmatic preferences or values. It cannot generate non-physical Prescriptive Information (PI).[7] It cannot program logic gates or configurable switches.[16] Mass/energy interactions cannot process PI, either.[19]

Physicodynamics *does* include spontaneous non-linear phenomena; but it cannot practice the formal applied-science/math known as "non-linear dynamics." The latter is produced only by agents, not by inanimate nature.

Physical brain is an artificial intelligence system that *appears* to think and exercise intelligence of its own. In reality, physical brain is designed, engineered, programmed and processed by formalisms originating from the far side of the Cybernetic Cut. Physical brain was organized and produced by Prescriptive Information (PI) [instructions] transported across the CS Bridge from the far side of the Cybernetic Cut to the near side of physico-dynamic interactions.

Physicalism is an incomplete and inadequate worldview to incorporate all of the pieces of reality's puzzle within its perimeter. Materialism cannot explain most of what makes physical being interesting. Physical nature cannot explain all of nature. The cosmos itself cannot explain all aspects of cosmic reality.

Summary: "The Law of Physicodynamic Incompleteness" states that inanimate physicodynamics is completely inadequate to generate, or even explain, the mathematical nature of physical interactions (e.g., the very laws of physics and chemistry). The Law further states that physico-dynamic factors cannot institute formal processes and procedures leading to sophisticated function. Chance and necessity alone, in other words, cannot steer, program or optimize algorithmic/computational success to provide desired non-trivial utility.

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