

Book Review

Beware of Theories of Everything

A review of *Nature's Magic: Synergy in Evolution and the Fate of Humankind* by Peter Corning. Cambridge University Press, 2003.

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Peter Corning wants you to know that synergy is everywhere. The center of gravity of your car is synergistic. The whirlpool in your bathtub is synergistic. Metallic alloys, drugs used in combination, the alphabet, complementary foods, symbioses and geodetic domes are synergistic—and that's just the first three pages.

As a scientist who studies synergy (my work is enthusiastically covered along with many others) I was disappointed by this book. To say that synergy is (nearly) everywhere is to say (nearly) nothing. It is precisely because the world is so complex that we need theories to avoid becoming overwhelmed by it. These theories are invariably simpler than the world itself. They partially succeed and their failures are used to add complexity as needed. This kind of theory building to comprehend complexity is hard work and having someone insist again and again that the world is complex is no help at all.

This is not a book for practicing scientists but perhaps its extremely brief treatment of hundreds of topics is more suitable for the general reader. Chapter titles such as “The enchanted loom”, “The magic castle”, and “The sorcerer's apprentice” convey the story-telling quality of the book, intended to engage interest rather than explain in detail. To his credit, Corning does avoid some of the most common errors of past grandiose thinkers. For example, he correctly stresses that synergy is not necessarily benign (in contrast to Lovelock's Gaia hypothesis and Teilhard de Chardin's progressive view of evolution, for example) and can lead to negative outcomes.

The closest that Corning comes to hypothesis testing is his so-called synergism hypothesis, in which selection acts upon synergistic systems. Sponges are provided as an example based on the following evidence (p 121): “How do we know this is a synergistic system? Just take away a major part—say the amoebocytes, or the collar cells, or the epithelial cells, or the skeletal spicules.

Sponges would not exist without the synergy that their parts produce together.” This is so self-evident that all conventional evolutionary theory counts as “evidence” for the synergism hypothesis and nothing new is said at all. Selfish genes are presented as a concept that ignores synergy, but much as I have criticized selfish gene theory in other contexts, it is obvious that it acknowledges synergy in the form of the “vehicle” concept.

On page 34, Corning recounts a conversation with a mathematically oriented complexity theorist who asked “what can I do with something that’s everywhere?” Corning was evidently startled by this question and replied “Just because it’s everywhere doesn’t mean that it’s not important.” My sympathies are with the theorist. Perhaps I can make his point better by asking my good friend Peter to imagine two people in a leaky boat. One exults that water is everywhere and is very important. The other replies “I know! I know! Now get to work and start plugging some of these leaks!”