

A Theistic Science of Intelligent Default: Evolution That Makes Sense

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Saying “theistic Science” and doing it are two different things. We need to know what theistic science looks like. Here is an outline of how I think it works, at least in my area of interest, which is the evolution of organic forms.

I am proposing the concept of *Intelligent Default*, that sees organic forms as “default settings” for matter in its various configurations, under various conditions. Human Form flows in (Swedenborg called this *formative substance*), and matter responds according to set laws and physical constraints, producing natural images of spiritual uses. These natural laws and physical constraints are none other than the Creator Himself, accommodated to the conditions of the natural world.

What is critical to know is how this (infinite) spiritual influx comes into nature from the other side. This is the problem of the *nexus*, which is a poorly understood quantum operation. The Theistic Science Group is focusing on this problem, and you will hear much from us about how this might actually work.

Simply put, formative substance flows through this nexus at the inmost level of nature. Using Swedenborg’s *Principia* as a guide, I envision a stepwise building up, or compounding, of pre-geometric proto-matter entities into stable, three-dimensional matter. His was enlightened speculation; we now know a lot about these little entities. At the end of this series we have atoms, that behave in combination with other atoms according to these same laws and constraints to produce molecules. Molecules compound into macromolecules, and as all of the things that follow – atoms, molecules and macromolecules, cells, tissues, organs, etc. – interact, they do so according to these same laws. Always these simple starting conditions, compounding over time into emergent order and complexity in an infinite variety of forms. I explore these ideas in detail in my book, *Intelligent Default: Swedenborg’s Theistic Science and the Problem of Organic Form*.

I am interested in organic forms. Is there an infinite variety of them? Apparently not, in terms of ultimate expression. There is an infinite variety of forms in nature, to be sure, but observation shows that all these forms fall within a finite number of general forms in place since multicellular life appeared on the planet – all in place by the end of the Cambrian Period, 500 million years ago. Stephen Jay Gould called this the “Cambrian explosion,” but no one has effectively explained it.

What’s this all about? To what spiritual reality might these five general forms correspond? The anatomical divisions of the Human Form Divine? That sounds Kabbalistic... I like it. Human systems and their components? Levels of the divine mind? Who knows?

We might call these five primordial forms *archetypes*, and we might say that within each of these there is a propensity for infinite variation. Even at this level of organization we find discrete degrees of order at work; new forms are the natural “leaves” of this otherworldly phylogenetic tree.

New forms appear and evolve as natural manifestations of the uses to which they correspond. Gould¹ identified *macroevolution* as the agent of this change, not Darwin's *natural selection* at all. This is disruptive to the "settled science" of evolution. Stuart Kauffman² locates the region of emergence – where order flows into living systems – as the interface between restriction and chaos. Stephen Wolfram³ shows how great complexity comes from the simplest of starting conditions, another disruption to "settled science." And yet with all of their enlightenment, none of these men could see the spiritual causes behind the principles they discovered. How ironic that three of our greatest scientific materialists deliver the central postulates for Intelligent Default!

Finally, here is a "catechism" as a template for our Theistic Science project. Each of these premises serves as a subject for on-going research. There is a category here to attract scientists and philosophers of all stripes. As each category is perfected, the overall model is strengthened. As the model is strengthened, the actual mechanism of spiritual-natural interaction will finally come into view, and the problem of organic form will yield to the light of truth. What results is a hybrid ontology of secular science and theistic natural philosophy. Contemporary science is not overthrown, and neither can a metaphysical basis for natural reality be dismissed out of hand. If you are scientifically inclined, we invite you to choose an area, and join us in our project!

A Theistic Science Catechism

1. Spiritual influx of human form flows into nature as *formative substance*.
2. Formative substance interacts at levels of matter capable of receiving this influx and responding to it.
3. Inherent in formative substance is the set of constraining parameters for matter: These set the rules of behavior for the interaction of matter and energy in the quantum world.
4. Behavior in the world of forms determines behavior in the quantum world, which determines subsequent degrees of behavior, by force carriers, leptons, neutrons and protons, which in turn determine the behavior of atoms, molecules, macromolecules and larger aggregates.
5. Add energy, and matter will compound or "build up" into more and more complex forms according to these inherent rules of interaction. This compounding and combination is "random" to a degree that it accords with inherent rules of order.
6. Wolfram's scientific paradigm allows for this building up without the traditional regard for the Second Law of Thermodynamics. There are programs in nature that spontaneously move towards complexity, and these are likely living systems.
7. These "rules of interaction" constitute the "human form" in the natural world. They are the Creator, which is Order itself, manifested in the natural world, accommodated to and constrained by conditions there.
8. Matter responds to spiritual influx as it is able, coming into the human form as completely as it can, according to the resources available to it. The more complex the thing, the more "human" it will be. (Think "phylogenetic tree," or "Great Chain of Being" here.)
9. Allow this system to run long enough, and any terrestrial planet with the right starting conditions will eventually produce living organisms, and will ultimately produce human beings, with brains capable of supporting minds of three degrees, making them eternal beings in "the image of God," – the purpose of Creation fulfilled.

Concerning Evolution

Natural selection, the primary driver of evolution as set forth in the Neo-Darwinian synthesis, is likely not central, but peripheral to the process, and the mechanism most likely at work is macroevolution by means of discrete chromosomal rearrangements.

Evolution is organic, so operations at this level take place in an environment of incredible complexity.

These organic forms adapt to slow environmental change over time, by means of the reproductive genetic apparatus. Changes in non-reproductive cells will die with the organism, to no net effect.

The randomness of nature allows a small number of DNA copying “accidents” to accumulate over time. These produce a change in the gene frequency in a population, allowing the individuals within it to change. Some of these individuals will have beneficial, adaptive changes that, when they spread through the population, bring about morphological change lending survival advantage. This is *natural selection*, an evolutionary process of refinement, that produces change by continuous degrees. Because of the continuous nature of the changes, however, natural selection cannot produce discretely new forms.

Other genetic “mistakes” are on a much larger scale, and involve major rearrangement of chromatin, of the DNA strand itself. Chromosomes can break, fragments can rearrange themselves in novel permutations, creating or even losing long sequences of DNA. What results is a new genome, new forms, and potentially new organisms. This process, called *macroevolution*, can produce discrete branch-point, or axial evolution of new species and even radically new forms.

Despite the macromolecular dimension and the purely mechanical nature of these chromosomal “mistakes,” the active site of the breaks and rearrangements occur nonetheless at the atomic and subatomic levels of chemical interaction, where quantum operations occur. It is here that natural “randomness” is at work in generating new forms, in the domain of the “phase transition” described by Kaufman, where complexity “emerges” into the system.

This emergent domain is a level of matter in the making, where the “forms” cascade (of Swedenborg’s Doctrine of Forms) merges with operations in the quantum world, into a single system, bringing spirit into nature, and then building it up into greater and greater complexity.

Once a new combination of DNA appears, the new form it produces is presented to the engine of evolution, where it is subject to the same principles as any other form. Does it have a use? Does it correspond with some spiritual use that can, by means of this functional harmony, provide a cause to sustain this new effect?

Summary

Human Form flows in from somewhere else, driving the origin and behavior of matter, driving embryological development, and driving evolution – but from the inside, and from a distance. There is no active designer, moving levers and pulling strings. There is no magic. What flows in is *formative substance*, and it is alive.

Why Swedenborg? Because he has answers – scientific, philosophical and theological – because he asked the right question: “How does spirit come into nature, soul into body?” Then he devoted the efforts of his life to finding an intellectually defensible answer to this question in an age of rising materialism.

If Swedenborg has answers about life, form, order, and the nature of the nexus, then we should be able to apply these to contemporary problems in science. His doctrines and his methods mesh nicely with twenty-first century science.

When charity is present, matters of doctrine do not divide.

AC 3451:2. As regards the Lord’s kingdom on earth, that is, His Church, because its matters of doctrine are drawn from the literal sense of the Word it is inevitably varying so far as these are concerned. That is to say, one group declares that this idea is the truth of faith because it is so stated in the Word, while another declares that that idea is the truth because that likewise is stated there, and so on. Consequently because its matters of doctrine are drawn from the literal sense of the Word the Lord’s Church differs from one group to the next, and not only from group to group but sometimes from individual to individual within a group. But dissent in matters of doctrine concerning faith does not mean that the Church cannot be one Church, provided all are of one mind in willing what is good and doing it.

¹ Gould, Stephen Jay, *The Structure of Evolutionary Theory*, Harvard University Press, 2002

² Kauffman, Stuart A., *The Origins of Order*, Oxford University Press, 1993

³ Wolfram, Stephen, *A New Kind of Science*, Wolfram Media, Inc., 2002.

THEISTIC SCIENCE SYMPOSIUM

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BREAKING THE SHELL

**Connecting the Spiritual Cascade to the Physical
with New Church Science**

*Swedenborg Scientific Association
and the Theistic Science Group*

Reuben P. Bell, D.O., M.Div., Ph.D.

Presentation:

Where do we go from here?

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