INTELLIGENT DEFAULT 2.0

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The abstract for this lecture says, "Intelligent Default 2.0." In 2019 I wrote a book by that name about theistic evolution. Using the latest science and Swedenborg's writings—from one end to the other—I attempted to explain how spiritual forms might enter into Nature and come into correspondence with natural forms. Here is some of what I had to say:

There are two (and only two) possibilities for doing science. They are axioms from which our science starts.

Axioms are self-evident premises—statements of apparent fact—that cannot be reduced—or even proven!—on which we build our universe.

> Axiom one: In the beginning there was nothing . . . and then it exploded. The post-Enlightenment universe has been built on this anti-rational soap bubble. This is not just a bumper sticker; supposedly intelligent people are selling this magical idea all over academia.
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> Axiom two: In the beginning God caused the universe to flow into being from the spiritual sun, and then it proceeded to unfold into the natural world in an orderly manner forever.

I choose the theistic axiom. Swedenborg chose the theistic axiom, so I think I'm in good company. What is this theistic axiom?

> We believe that nature isn't from nature.
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> We believe that there is a spiritual origin for natural things.
>
> We think that science is a good and powerful thing.

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> We believe that Swedenborg's Writings—scientific and theological—can shed light on how spiritual-natural interaction works.

Intelligent Design. Here is where I have been misunderstood. Intelligent Design Science is good, really good. But assuming that nature is "designed" these really good scientists can't tell us how it is designed. Not even a little bit." Evolution science is wrong," they say (and they are correct), "but we really don't know how it works either." So that's a big let-down. They're looking at a bush, but not the burning bush. ID does what it does really well; it has dismantled the Neo-Darwinian fortress, leaving an opening for fresh, new ideas. Like ours . . . .

Other scientists hedge. They may talk a good line, but they are like fish, swimming up close to that spiritual edge, but then turning away at the last minute, to avoid being labeled "religious." Being religious can kill a career in science. I've studied evolution and the problem of organic form for many years. I taught it for 10 years, right here at the Bryn Athyn College of the New Church! I love the concept. And I always knew that it was at least half right. But I knew that there must be more—something deeper, at its core, to guide this striving towards complexity and form. That was before I talked to Professor Charlie Cole, right across the way, in the Swedenborg Library, on my first visit to Bryn Athyn, in 1989. He told me that Swedenborg's scientific works were the key to the perennial problem of form. He was right, and he showed me where to look! Now, 36 years later I am telling you the same thing. Science alone won't do it. And spirituality alone can't do it either. What I've learned over these years is that good, honest science and good, rational spiritual principles TOGETHER will get the job done. Swedenborg knew this all those years ago.

That was the moment when the things that I already knew (we call those things "memory knowledges") took on a radical new aspect . . . the moment I saw that the bush was burning, "but was not consumed." Thank you, Charlie. I've been a theistic scientist ever since.

And this was the beginning of what would eventually become "Intelligent Default." Think Intelligent Design, but with the HOW built right in. (If natural selection isn't the mechanism for the emergence of forms, then what is?)

The concept of "Intelligent Default," defines organic forms as "default settings" for matter in its various configurations, under various physical conditions. Human Form (*formative substance*) flows into this world from

the spiritual world as uses, and matter behaves according to set laws and physical restraints, producing natural forms of these uses. Sounds kind of Platonic, doesn't it?

Laws like gravity, bond angles, and the speed of light. These natural laws and physical restraints are the Creator in essence, who is Order Itself, accommodated to nature as pre-installed conditions of this world. How? See your handout:

> The omnipotence, omniscience, and omnipresence of God cannot be understood unless it is known what Order is; and unless it is known that God is Order, and that at creation he introduced order into the universe, and into all its parts. Order is the quality of disposition, determination, and activity of the parts, substances, or entities which constitute form, giving rise to state, whose perfection is produced by wisdom from its own love. (*True Christian Religion* 52)

Uses: Here is a slippery concept, but an essential one. It's not what a spiritual thing is, but what it does; what it is for. Spiritual uses become natural forms:

> The form of love is a form of uses, the subject of love being uses: for love wishes to do goods, and goods are nothing else than uses. Uses, regarded in themselves are spiritual, while their forms . . . are natural. (*The Divine Wisdom* 9–10)

What is critical to know is how this influx of spiritual uses actually comes into nature from the other side. This is the problem of the *nexus*, or doorway between the two worlds. This is the "hard problem" that stumps everyone: the interaction of spirit and nature, mind and brain.

Here is what I found:

Simply put, *formative substance* flows across this nexus at the lowest (innermost) level of nature. Using Swedenborg's *Principia* as a guide, I envision a stepwise building up, or compounding, of pre-geometric particles into stable, three-dimensional matter. This is facilitated by the orderly behavior imposed on these entities by these "laws" of nature. As virtual particles, subatomic particles, atoms, molecules, and macromolecules, then cells, tissues, organs, etc.—interact, they do so according to these same laws. Always . . . these simple starting conditions, compounding over time into emergent complexity and an infinite variety of forms.

> And always the result, not of just random interactions, but a series of default outcomes, determined by these same rules of Order in Nature.

And the nexus itself?

It is in Swedenborg's "Doctrine of Forms," (found in *The Fibre* (1742), nn. 261–273 that we find such a cascade of forms— receptacles—for divine consciousness as it descends from its source, all the way down to non-living matter. These are not the particulate "finites" found in the *Principia*. These are ethereal on one end and material on the other, with intermediates along the way, each answering the requirements of intervening levels of reality. It is in this series that spirit finally steps off, matter is born, and there is that very necessary separation of the two. Here is a structural model for spirit into nature as never before described, and I believe that it also describes what is happening in the quantum world.

As I said, my book was about evolution, so here's how I saw things:

Natural selection doesn't work. Charles Darwin's vision of the slow, steady accumulation of tiny mutations bringing about the complexity and diversity of living Nature just doesn't work. The Intelligent Design scientists know this. Natural selection can fine-tune, and sculpt, and adapt an organism to slowly changing conditions (which is marvelous in itself), but whole new forms? No way.

There is "randomness" in nature, so that there can be genetic mutations that refine existing forms, so that they can adapt to slowly changing conditions over time. This is natural selection, or microevolution, and it is a big deal. It helps existing forms adapt. But it doesn't make new forms. Big mistakes make new forms, by different processes: that's called macroevolution, and the best non-theistic scientists still cannot figure this one out. Why? Because their bush is not a burning bush.

In my final analysis, I saw Nature as a "random" popcorn popper of new forms, with each new form looking for a use to link up with. No use, no link; no link, no correspondence; no correspondence, no lasting form. Most forms end up this way.

Finally, Swedenborg's Doctrine of Correspondence is the key to the whole thing. It is the most important of all, because his whole paradigm rests on this essential concept. Here he gives us a mechanism for spiritual-

natural interaction, strong enough to allow the divine to bring providence into nature, but forgiving enough to let nature take its course. We have seen a structural link in his Doctrine of Forms; Correspondence is the dynamic link of natural forms with their spiritual counterparts.

OK, but still, that irritating "hard problem": The HOW of the emergence of forms into Nature . . . the HOW of Spirit shaking hands with Nature.

So there I was, at the end of my book. I liked it well enough, but I knew that there was still something missing in the process. It was that Hard Problem again, still rearing its ugly head. How are these natural forms generated? How can they so readily come into correspondence with spiritual uses descending into the world?

After a lot of thinking, I recalled some beautiful memory-knowledges: Things I had learned fifty years ago, studying undergraduate Zoology, and discarded as did everyone else in the frenzy of the Neo-Darwinian Synthesis . . . a concept that, all of a sudden is beginning to look very promising in the light of the new science and the heavenly doctrines for the New Jerusalem.

What is this discarded theory that I dug out of the dustbin of the history of science? I couldn't believe it. It was there all the time, just waiting for me.

First some context: In *Genesis*, Adam was given the task of naming all the animals. From this the idea of "kinds" entered human consciousness. Lots of kinds. From this idea there slowly emerged the image of a "Great Chain of Being"—an ancient notion of the relatedness of the "kinds," in an ascending series of greater and greater complexity.

This, of course, led to speculation on how these organisms might be related: to some it seemed like "higher" forms may have descended from preexisting "lower" forms, in an evolutionary way. For others, the Bible seemed to imply what they called the "fixity of species," established once and for all, at Creation. For at least a century this fueled a great controversy.

Finally, a theory for the nineteenth century offered both, in a way, proposed by Richard Owen (1804–1892), the leading anatomist in England at the time. In his studies of comparative anatomy, he saw that general morphological features come in groups, with different organisms showing these features in their own way, to suit their particular needs. For example, compare a human arm, a horse's foreleg, a frog's front leg, even a fish's pectoral fin: all are essentially the same structures, with adaptations for specific use.

"Homology" he called this, and he called these anatomical groups "archetypes." And he implied that these patterns somehow pre-existed the emergence of animals in the world. This had obvious metaphysical implications, but he didn't make much of that. So here was a kind of "fixity" to make the fixity guys happy; but he also thought that there must be an evolutionary process producing all this adaptation from a single archetype. He didn't elaborate on this, but this made the evolution guys happy.

Great. An engaging theory based on observation, open to the theistic necessities of fixity, but also open to the possibility of dynamic process—evolution by any other name. Then along came an evolutionary guy named Darwin. He ignored Owens's archetype theory and proposed his own theory of a blind, completely random process for the emergence of forms by what he called "natural selection." His reasoning was really kind of weak, and in the absence of any notion of genetics, he was guessing at how inheritance really worked. His theory was not well received . . . serious zoologists rejected his sweeping generalizations, and it was crickets for the first few years.

But then along came another zoologist named Thomas Huxley. (Here comes the human part of the story: some things never change). Huxley was an eminent professional rival to Owen. Now Owen was a mean and nasty kind of guy . . . but so was Huxley! So a great battle of ill-will, character assassination and propaganda ensued between two mean and nasty guys. Spoiler alert: Huxley won. He managed to sell Darwin's theory to the world, and discredit Owen in the bargain. Darwin's theory prevailed, and the promising theory of archetypes was buried in the history of science forevermore. But not for me . . . . I have always liked this theory of archetypes.

OK, a little more context.

Multicellular organisms made their appearance during what has been called the "Cambrian Explosion": the rapid diversification of life forms during the Cambrian geological period—500 million years ago—that saw the first appearance of most major animal groups in the fossil record. Boom! All this diversity kind of came out of nowhere.

Here's the good part: Six general body plans have been in place since that Cambrian Explosion, with no new ones since. Just variations on these themes.

What are these? Not what you might expect.

tissues—groups of similar cells dedicated to a specific function
symmetry—bilateral and radial
a body cavity—in which all the processes of life can happen
segmentation—a repeated series of similar divisions
oral and aboral orientation—front end, back end
arborization—branching to increase surface area and distribution of materials

These are "archetypes"! Owen didn't know about this Cambrian Explosion. But we do. And just as Owen said, homologous anatomical structures follow archetypes too. He was kind of vague about their origin, but to me his ill-defined notion of their preexistence points directly at Swedenborg's description of formative substance, flowing into natural forms as manifestations of Divine Human Form.

Think about it. In my book I left off with natural forms being generated by random physical forces. OK, but how do these so neatly line up with spiritual uses flowing in? It seems too loosey-goosey. But what if some of these natural forms were already primed to harmonize with these spiritual archetypes? Now we're getting somewhere.

Divinum humanum: Divine Human Form, flowing in not as shapes, or structures, but as uses—ideas—for how every part and organ of this human form lives and moves and has its being, in both worlds. Think "Image of God" here: Remember,

> Whatever proceeds from God partakes of the human form, because God is Himself the [Universal Human]. (*Invitation to the New Church,* n. 48)

All forms in Nature were produced by Nature, yes, but according to the several archetypes that guide their production. And these archetypes are constantly flowing in from the spiritual world.

Where and how are these natural forms forged? I constantly return to Swedenborg's *Principia* and his *Doctrine of Forms* for an image of these continuous processes of the building up of matter, and the descent of form.

And in this metaphysical process I see correspondence to what is constantly going on in that lowest level of reality we call the quantum world:

> Virtual particles, coming in from "somewhere else", combining and recombining to form subatomic particles, then atoms, then molecules, then macromolecules,

> then cells, then tissues, then organs, and then . . . all the forms in the world, "proceeding from God, because God is Himself the [Universal Human]." (*Invitation to the New Church,* n. 48)

So that's where I am. There is more. There is much more for me to learn before I put this all together for a second try. But I think I'm getting closer. The infusion of this once-discredited idea of archetypes sends my research in a new and hopeful direction, as it harmonizes very nicely with the spiritual reality found in the scientific and theological Writings, and with what Owen saw and we see in the natural world all around us. As I said above, "Good, honest science and good, rational spiritual principles TOGETHER can get this job done." What a wonderful time to be a theistic scientist . . . Wish me luck!❑