

Anatomy of the Noosphere: Segment 5

David Sloan Wilson: Let's bring this to the Noosphere, the concept of the Noosphere. Maybe you could just define the Noosphere for us and also update Teilhard. There was his vision, and then there's where we are today. It doesn't have to be exactly the same. Nobody is clairvoyant. So what was Teilhard's vision of the Noosphere, and then how would you describe it in modern terms, noting both the similarities and the differences?

Francis Heylighen: Maybe I can give a little bit more comment about my own history in how I got to these concepts. In Belgium, let's say the ideas of Teilhard have never been far apart. It's not that it was a mainstream philosophy but I heard about him. I never studied him really but it was in the background. By the way, the books of Teilhard were published by a Belgian, Max Wildiers, 12 years after his death. So, there was a certain tradition of maybe taking Teilhard seriously.

Then, I said that I came into contact with this cybernetician, Valentin Turchin, who was a Russian that emigrated to the US. He had written a book that was called the Phenomenon of Science, obviously inspired by Teilhard's the Phenomenon of Man, which is not the best translation since the original French, *Le Phénomène Humain* would rather be *The Human Phenomena*.

Turchin was inspired by this and he was inspired particularly by this idea of the superorganism which he called the super-being. The idea was that you have these different cybernetic levels of higher level control, higher level intelligence. As you go through the different transitions, you come to the human level. The human level he described as the ability to think, meaning that you can reflect about things that you are not immediately confronted with it. You have not immediate experiences with. Animals can only react to the things they experience.

Then he felt a need to say yes, but that thinking is there are some kind of a control level beyond, another control level. Well, it had to be something like a Noosphere. He didn't call it like it. We had different names for it. We called it the super-being or the superorganism, and that was about the time the World Wide Web was appearing. In our little group, Principia Cybernetica, me, Cliff Joslyn, Valentin Turchin, we were already anticipating that we would use the internet to communicate. We were looking in particular at some kind of a network-like hypertext-like system which didn't exist at the time in 1991.

Then I discovered almost by chance that Tim Berners-Lee had this great idea that just implemented what we wanted. Of course, we were even planning to maybe make some prototypes ourselves. So suddenly there is this World Wide Web and very nice, this World Wide Web. It has a structure that is kind of brain-like because what do you have in the brain, you have neurons connected by synapses. If you look at it at a higher level, you have concepts that are collected by associations. That was also part of the inspiration of Tim Berners-Lee, hyperlinks are associations between texts. So, the web is a little bit kind of like a nervous system.

So what I did was, I immediately connected to the idea of Valentin Turchin of the super-being or the superorganism and came to the idea, well, actually, this World Wide Web may turn into what's eventually called the global brain. So there, you get this very nice idea of some kind of a super human structure that interconnects all the people that has a brain-like structure, but it actually also is not just the brain, there's also an anatomy, a physiology in there.

So the superorganism idea then became more concrete and like several people have done, one of the obvious inspirations was the Living Systems Theory of James Grier Miller, who had this notion of all living systems by which he meant not only biological systems but also social systems have these different kinds of sub-systems or critical functions. Critical functions like digestion, storage, memory, transport, distribution, et cetera, and these have obvious analogs in society.

The superorganism idea became pretty clear to me. The global brain idea was then the information processing part of the superorganism. At that moment, I wasn't using the concept of Noosphere because the global brain seemed to be enough, and it seemed to be actually a more powerful metaphor maybe than the Noosphere because the Noosphere is a sphere of thought but it doesn't say how it functions.

Then later, there was the work I had been doing with Shima. I came to the conclusion that within this global brain, there are kind of two levels. There is you might say the anatomical level that all the different computers that are connected via links and information is sent from the one to the other, very brain-like. Then, there are also ideas that circulate.

The way I interpreted the Noosphere, but I know that's only part of what is meant, it's more this space in which ideas circulate. That gets me more to the stigmergic paradigm than to the neural network paradigm. So the neural network paradigm is one thing is sent from A to B, and from B to C, and it's the right thing that needs to be sent from the right agent to the right agent. It's like I send an email to David to forward it's maybe to Terry. I don't want that mail to be read by anybody. It's targeted.

If we now look at things like Wikipedia or social media things, they are no longer targeted. You post something publicly and people can see it, and they can react on it, or they can ignore it, or they can publish it further. There you have much more of this kind of stigmergic type of organization where the particular linking structure doesn't matter that much. In that case, it's a very different dynamic. The dynamic that is better in some respects, worse in others.

DSW: Let me try to play that back and expand upon it, Francis. What you said I think is that if we look at for example non-human organisms and superorganisms, you see two different kinds of organization at play, stigmergy and neural network. So, they both contribute to the organism functioning as a whole. Now, if you look at the human case, we should see the same thing.

We should see something as brain-like and we should see something that's stigmergic-like. They both have the effect of causing the whole system to function as a whole. Did I understand that correctly?

FH: Yeah. The both help the system to coordinate activities. They're both the kind of a communication medium through which activities can become more synergistic.

DSW: So, now I would like to make a new point, which is that although the internet and the internet age you might say is the current chapter of this, these ideas remain just as important as we go back in history. We look at such things as all the major events in history, roads, technology, institutions, bureaucracies. If you look at the cultural evolution of societies at progressively larger scales, then you'll find the equivalence. You'll find of both stigmergy and nervous system processes, systems of regulation, and so on. So, the concept of a superorganism or a Noosphere exists at intermediate scales.

Actually, we might say, I do certainly. It does not yet exist at the global scale. We want it to. It might be on its way, but I would think in most respects, except in some very special cases such as the international space station or global efforts at solving the pandemic problem which are very feeble. That cooperation and coordination does not exist at the global scale, but it does exist at various intermediate scales.

If you look at the social systems that work the best, the best functioning nations, the best functioning corporations, the best functioning religions, there you will see some good examples of brain-like processes and stigmergic-like kinds of processes, at intermediate scales for the most part not yet at the global scale. That's what we need to create. What are your thoughts on that?

FH: I agree. What the internet has done is made these things in a sense much more visible because they happen so fast and because we have some ideas of the algorithms and the linking structures. It's easier to see. Actually as you set any well-organized social system whether it's a government, or an army, or a firm, has this internal channels of communications that are brain-like and there are quite a number of others who have been making that analogy.

For example, Stafford Beer, one of the founders of management cybernetics speaks about the brain of the firm or the firm as a brain. Herbert Spencer who was an evolutionary thinker and a father of sociology was looking at society as a superorganism, though he noted at that moment that there wasn't yet the equivalent of a brain there because he couldn't quite imagine something more World Wide Web like. So, lots of people had been making that analogy and that analogy is indeed correct.

At the global level on the other hand, I think maybe you are too pessimistic in the sense that when we hear about the things that go on, on the global level, there is what I call bad news bias. That is, what is reported in the media, all the things that go on, the wars, the terrorist attacks, the hurricanes, the pandemics. Then each time there is a tendency to blame like this hurricane wasn't dealt well with because they had saved some money on maybe on dikes and protections. What people don't see is all the problems that do get solved locally or internationally.

In terms of global coordination, I think the best example is science. It's not just the pandemic at this moment but the whole of science already since at least half a century is fully global, fully international. There isn't something like a Chinese science, and a Russian science, and an American science. It's just science. So I think there is a lot of coordination happening, but when the coordination functions the way you want it to, nobody notices it. I would be inclined to say we tend to focus on all the things that don't go well like attempts to detect our global warming, or the problem of the Taliban in Afghanistan, but all the other things.

The United Nations have this human development reports. Each type has some objective measures of how things progress. In each year, practically each thing has progressed. People have lived longer. People have become richer. People have gotten better educated. A lot of that is because of international aid in the poorest countries or simply because of the economic system which is also a coordination mechanism.

We all know the shortcomings of the market mechanism, but the market mechanism, the invisible hand is one of these self-organizing coordination mechanisms that is highly distributed and is highly globalized and can do quite a number of impressive things.