

## Collective Consciousness Supported by the Web: Part One

**David Sloan Wilson:** I'm so happy to be talking with you, Francis and Shima. This conversation is going to be centered on your article together, "Collective Consciousness Supported by the Web: healthy or toxic?" More generally, it's about the concept of the Noosphere, which was a term coined by Teilhard de Chardin and others in the early 20th century, and now represented by what we call the Internet Age, global consciousness, collective consciousness. And of course we'll be making that connection. But perhaps I could ask you to begin by setting the stage. What caused you to write this paper and to work together to write this paper that we'll be discussing?

**Francis Heylighen:** Well, I actually had been working with Shima already for a while on consciousness in the sense that there is recently a lot of things going on in the neurophysiology of consciousness. That means kind of dynamical models of how neurons in the brain form something that is like consciousness, and what that also means for consciousness in the more practical sense of how conscious people are of what's going on in the world.

Now, I was already interested in the Noosphere for a very long time via also the concept of the global brain. The idea that a World Wide Web forms kind of like a brain for humanity. And then it seemed logical to connect these two, if we were looking at consciousness in the human brain, and if we were looking at the Noosphere as the equivalent of a global brain, then we would come to one of the frequently asked questions about the global brain, will the global brain become conscious? In Teilhardian terminology, will the Noosphere become conscious? It's one of those questions that people always ask, but you don't really know what they expect as an answer, because what consciousness is is very ill-defined.

So that's why we decided to connect these theories of consciousness with theories of the Noosphere, and we found that there are actually some quite convenient analogies between the dynamics in the Noosphere and the dynamics of the brain. And the most obvious one is that, what is consciousness in the brain? It's those parts of mental activity that you monitor, that you examine, that you critically consider, so that you can, if necessary, change them, redirect them.

What are subconscious mental processes? These are processes that happen automatically in the background. It just goes, you put your hand on a hot plate, you pull it away before you have had the time to think, "This is bad, I'm going to burn my hand." So most processes in the brain are subconscious. They just go, input, output, and whatever happens in between, you can't intervene, you can't monitor, you don't know how you're doing it.

Consciousness means you are aware of something. And then you think about what does it mean? What can I do with it? Is it really what I think it is? Am I not mistaken? Am I not seeing something different from what I think I'm seeing? That's what consciousness is. And then, if we apply that to the Noosphere, we get this nice idea that if the Noosphere, as defined by Teilhard, is the sphere of thinking, of thought.

Thinking by definition is conscious. It means questioning things, looking at different angles, combining information from many different places. So actually the Noosphere is in a sense the conscious part of the global brain, and then the subconscious part of the global brain is just the infrastructure of the web. The infrastructure of the web makes sure that all these thoughts are being forwarded from the one to the other, recorded on servers, distributed among different computers, that happens in the background, or as you might say, the subconscious idea.

**DSW:** Shima...let's get your perspective coming into this article. Tell us a little about yourself and then how you came to write this article with Francis?

**Shima Beigi:** Thank you very much. First of all, I'm very happy to be with you and also collaborating on this very interesting project of the Noosphere. Well, my background, I am a resilience scientist, resilience of complex systems in particular, also smart cities and the application of artificial intelligence in urban systems. This is my background. I did my studies mainly in the UK.

Actually, my collaboration with Francis started, I think, about seven years ago when I found his articles on complexity, science, and enough that I could basically secure myself a funding fellowship program in Brussels. Then I came working with him directly. Well, this is very briefly about my background. We can speak about it also further later. But then the question of how we came to write this article.

I mean, given the complexity, like complex science, that was our backgrounds, cybernetics, complex adaptive systems, there was always this question of how we can make people as agents in the complex system more aware of the impact that they have on their surrounding environments. The actions that they have, also the impact on others, and kind of connecting that to sustainability, urban dynamics, making systems more resilient.

So this was always at the background of our research. And then connecting that with the Noosphere was... Well, the idea of the is kind of connected to also sustainable development, Gaia theory, systems thinking. So it was obvious for us that the next step for the Noosphere, as it's set out by Teilhard de Chardin, is to connect it with what's the state of research right now. For example, the curiosity about consciousness. Also, bringing the qualitative nature of consciousness into research. And then also the digitalization and decentralization that is happening around us.

So the age that we're living right now, 21st century. The age of technology and computers and algorithms, are heavily impacting the way we think. And if you look at the Noosphere, what is a Noosphere? A Noosphere or a mental sphere is created by the unity of thoughts that is being shared by collectives. And this thinking, this unity of thought right now in 21st century, is subject to many different forces that inspired us to hone the conversation or steer the conversation toward how we can actually look at the qualitative dimension of the Noosphere, and how we can go deeper into the Noosphere, how we can change it? Is there any way to really, not engineer it so to speak, but really affect it consciously, mindfully?

**DSW:** So much to dive into here. One thing I'd like to distinguish with consciousness is to make it two dimensional. On the one hand, we have what we're clearly aware of and can talk about. And then all that stuff that goes on that we're not aware of, that's subconscious. So let's think of that as one axis. And then another axis is whether it's a deliberative process or not, or a mechanical process or something that would be more intentional and deliberative. The reason I think that is interesting to think about as a two dimensional space is that, as you know, there's a lot that goes on beneath our awareness, in other words, we cannot report on it at all, which is very, very sophisticated. And actually, it's hypothesis testing, it's creative. I mean, we'd call it conscious, except we're unaware of it. We can't report on it.

And so I'd like to know what you think of this as a two dimensional space, and some of the things that we can't report upon at all, including very creative processes. We know this happens. Something goes on inside our head. We call it, you know, we're incubating it, and then all of a sudden, ding, we're suddenly made aware of it as a new idea. We might call it an "aha" experience or something like that.

So whatever went on in that subconscious space often is very conscious I want to say. So it's almost as if we have to be distinguishing two different meanings of consciousness. What do you think about that? Either one. Shima, why don't you begin?

**SB:** What you described, I think, is really beautifully explained by Dehaene in his book of on brain and consciousness. He really explains that actually what we might call consciousness is not really flat. So we cannot really say that what's happening in the brain, and the sensory mechanism or sensory input that is

being received by the brain, is fully conscious. Actually, there are examples that you can prime individuals and effect how they are thinking without them being fully aware of that.

So the question of making this consciousness as a two dimensional proposition, I think it's very difficult, it's very complex, to really cut consciousness into layers that can be then defined as whether we are fully aware of those layers or not. So I think actually thought for it to be generated necessarily, it doesn't need a hundred percent consciousness. Sometimes the thought is really generated by virtue of a process of emergence, or being really influenced by the social input or the algorithmic input. Even being surrounded with digital, for example, systems, or being exposed to the web.

So, for me, also writing this article and calling it "How the Web Can Support Thinking" is that to what extent we become conscious of mechanisms that influence the cognitive side of thinking. I don't know, Francis, if you agree with that, or what you think? Or maybe you have a different point of view.

**FH:** Well, I don't agree with the two dimensions, because I think that if I understand David well, one dimension he speaks about is what you might call the intelligence or the creativity of the mind, which we find both in the subconscious and in the conscious. But the reflection about it is typically conscious, and what these different theories that we reviewed of which Shima mentioned, the theory of the global workspace, which was developed especially by Dehaene with lots of experiments.

What it says is that for something to become conscious, it needs to circulate to what is called the global workspace in the brain. The brain consists of lots of modules that each are specialized in particular things, and normally information comes in. For example, you see something, it enters your visual cortex. It goes through several layers. It is interpreted. You recognize the thing that you saw, and you say, "Well, okay. That's a cat," and you know it's a cat. But all the intermediate stuff, so the pixels that enter your eye up to the conclusion, "This is a cat," it's a subconscious process. You cannot stop it. You cannot intervene with it.

But if now you want to start to think, "What should I do with that cat? Is that a wild cat? Should I approach it? Should I maybe check whether it's a cat of one of the neighbors?" Now you need to keep this concept of cats awhile in your working memory. That means you need to continue circulating in your brain while different other parts of your brain start examining it. So, that is the idea. That is, you need to keep something in working memory, and working memory in the brain is not at all trivial because the brain functions through neurons that get activated, and activation cannot stay in place. A neuron that gets activated passes on its activation to a next neuron to a next neuron to a next neuron. It doesn't remain activated.

If you want to keep something in your working memory, the activation needs to circulate. That means it needs to come back to the same place by going around and around in the brain. And while it's going around, it is what is called being broadcast. It means all these other parts of the brain can now examine it, can now add something, can take something away. It can say, "No, it's not going the right way. It should go this way." That is this phase of reflection or examination. And that is a phase I think which is especially relevant to the Noosphere.

That is, somebody has an idea, let's say a new theory about the origin of COVID, and then the idea starts circulating. That means it's passed on from person to person. It goes in different media, and then people can start examining it critically. And that is this phase of circulation and examination, which I think is essential for consciousness. If it's not being examined, it's not conscious.

It may be very creative, it may be very smart, but you just take the result as it comes. And you can't say, "Why did I come to this result?" Intuitively you have understood something. You've had a great idea, but why that intuition? What were the elements you used to come to that idea? You don't know. Consciousness is, one, you start examining it, and that requires that it creates some kind of a stability circulation that allows other parts of the brain to examine it.

**DSW:** Well, I mean, in a sense, I agree. I agree. In fact, if we want to cut to the bottom line and ask, "How do we solve the problems of our age such as COVID or any massive problem?" It has to be a very deliberative process of, in my terms, variation and selection. We have some target, which is stopping the COVID virus. We have to examine, "How are we going to do this?" That's variation that's in around the target. And then we have to replicate best practices and do that again and again and again.

So, that's a conscious process of evolution. As I would put it, and we need more of it. Much, much more of it. So actually, that's kind of the bottom line, as far as I'm concerned. I'm guessing we all agree about that? Was my little description something that you would also agree with as a conscious process of solving a problem such as COVID?

**SB:** Yes. I think the bottom line, basically the moral of the story here, is that the world we live in right now is becoming more and more complex. And for it to be functioning at a level that we can call it sustainable will require a global kind of agreement on having critical thinking on the kinds of means or thought processes or ideas or ideologies that are being spread around. Especially right now that we live in the age of Internet and the web, being supported by the web.

So bringing more awareness and I think consciousness, not necessarily in the consciousness research meaning, that is becoming conscious of what we're putting out there or becoming more aware of the processes that are contributing to emergence of a phenomenon such as COVID-19, should become a general practice. That we should become more conscious of the need to have conscious thinking processes and conscious conversations. So this is something that I would like to add to how you summarized this conversation so far.

**FH:** I know this concept of conscious evolution, which is that instead of waiting until natural selection and variation for us decides what the next step of evolution is, that we start thinking about different possibilities and selecting for ourselves. So what we are proposing in our paper is kind of a subset of that. That is that we are looking at cultural evolution or mimetic evolution in the Noosphere, because ideas evolve in the Noosphere, and that we want to intervene in that evolution by finding some way to promote what we call the healthy ideas, the healthy thoughts, and to suppress, or at least make it less likely, that the unhealthy thoughts would spread.

So the typical example we gave of the unhealthy thoughts are all these kinds of conspiracy theories that tell you that you should not under any circumstance be vaccinated because the vaccines contain chips or are dangerous or whatever. Or the healthy form of thinking is a kind of scientific thinking where you have certain hypotheses of what will cause the virus. You test the hypotheses. And if it turns out that the hypothesis is correct, then you implement the policy.

So it is conscious evolution, but conscious evolution at the level of the meme. So at the level of the ideas that circulate in the Noosphere. To do that, we need to become more conscious of how these ideas are being propagated. What makes it that an idea will become popular, will spread in the Noosphere, and why an idea may not spread even though it would be a good idea.

**DSW:** I'm going to butt in in a nice conversational way, Francis, about this kind of unit of selection. On the one hand, we're selecting memes. Okay, I got that. But on the other hand, we have a criterion of selection which are healthy memes compared to unhealthy memes. We want the scientific memes. We don't want the fake news memes. And the criterion for that is whether it's going to benefit the whole system. And so on the one hand, we're selecting some lower level things like these ideas, but on the other hand, our criterion of selection is the whole system.

So I think we agree on that, but it's very important I think, because there's lots of confusion on that point. And when people talk about selecting memes, they act as though the system has nothing to do with it, but it's the system that's the entire criterion of selection. And if you didn't have that criterion of

selection, who knows what you'd get, but it would not be good for the whole system. So there, again, I throw that out there. Suspecting you'll agree, but you'll need to confirm that.

**FH:** Well, it's part of the research that Shima and I haven't yet done sufficiently to be satisfied with. It's a broader research in sustainability, in resilience, in what is it that makes that this whole system will be the kind of system we want. That means a system that synergetic with a minimum of conflict, that is sustainable, that is going towards the long-term.

There are quite a number of principles in complexity science, in self-organization, in evolutionary theory, in cybernetics, that can help us to understand these things, but it is, of course, a huge problem of defining those. And we are just now developing a new paradigm that we call relational agency, which is actually, you have a lot of different agents or agencies that are not always aligned in their goals, that sometimes are in conflict, but that by interacting create relations with each other, and you would like these relations to be as synergetic as possible.

That means that the interaction between these agents create something that is more than the sum of the parts, it means they create extra resources, which is the opposite of conflict, where the friction between the agents will mean that they will both have less resources than they had before. For example, when you have a war, even if one party wins, as a sum, both parties lose because a lot of things are destroyed in a war. On the other hand, if you have a solid collaboration, then both parties gain because you produce more resources through the collaboration. So this is a concept of this relational agency, which we hope will develop into some kind of a general philosophy of this mutual adaptation, co-evolution of lots of different agents.

**DSW:** Well, I'm so glad that you are taking the conversation in this direction, Francis. I'll take my turn in a minute, but Shima, do you want to chip in here on this before I take my turn?

**SB:** I think what's very important is to bring awareness to the interconnectivity of current systems. And I think, for us, also with the example of relational agency that we're developing right now, the whole focus is to bring more... For example, when we speak of the Noosphere, it's very macro level. So it's not really a microscopic Noosphere, kind of like everybody, or people start to think as a microcosm or a connection, or a part to a whole. And then also consider themselves as active agents in a complex system that their actions and behavior impacts others.

So for us, this relational agency, I mean, if I can add a little bit to what Francis mentioned, is this awareness of relationships and how different relationships lead to different directions. And as evolutionary beings, I think we are capable of creating adaptive, selective pressures that would help us to evolve in certain direction that is desirable, that is much more adaptive to the spirit of the time that we're living in. And also bringing, I think, global conversation about memes, or memeplexes, or ideologies that are not serving us at this particular times. And I think this needs a lot of, I mean, of course scientific discussion. But also I would like to add that I think it needs a lot of empathy. It needs a lot of emotional intelligence. It needs a lot of cultural awareness for this to happen.

So these are the... I want to say like a part of scientific writings and research that we're doing. I think it also needs global leadership. It needs a global empathy. It needs a lot of mindfulness and awareness.