

Collective Consciousness Supported by the Web: Part Two

David Sloan Wilson: I'd like to talk a little bit as a biologist because I think that often, my main contribution to these kinds of conversations is as an evolutionary biologist. And what I find is that there's a lot of complex systems thinking as there should be. But the complex systems thinking is often general complex systems thinking. And the study of complex systems is more general than the study of living complex system, because there's non-living systems and living systems. But living complex systems are such a special subset that there are some of the insights that we need are very specifically evolutionary.

And that's what I think is my contribution, is to kind of highlight some of those things. And so if you look at actual brains, individual brains, of course, they're enormously complex and they're adaptive, but they're also units of selection. I mean, they have been selected. Individuals with brains that work better were the ones that evolved. So the unit that's functionally organized is also a unit of selection. There's a clear process of selection that resulted in brains. Now let's take another example. Let's take two species or two individuals that are mortal enemies and they're trying to exterminate each other. And each of those individuals has a brain, but you would not call the pair of individuals, what they do, a brain. That would be just a category error. They're two intentional agents trying to exterminate each other.

And so another point to make about evolution is it's all about relative fitness. It's about who is more fit than who. And so if you have some kind of negative co-evolutionary spiral, that results in something that's highly dysfunctional. Well, that happens. And we know that happens in human life. And the word regime, you use a number of words and let me just bring them out. You use attractors, reaction networks, of course we have basins of attraction, the evolutionary metaphor is adaptive peaks. All of these things basically refer to configurations that are stable. Their main property is that they're stable. They hang together. If you perturb them, they come back to their state. That's what all of those things have in common. But how well they function as units, whether they function for the common good, for example, is not part of the concept.

In human life, we have regimes that can be enlightened regimes, or corrupt regimes. And some of the corrupt regimes are among the most stable. And if you take a corrupt regime, in which basically the only beneficiaries are the elites, let us say, are very small. And not even for them, because they're so anxious to cling to power, that actually they're soon to be deposed and then replaced by someone just like them. Nobody's benefiting from this. And yet it's stable. And our challenge of course, is to replace it with something better. There's some things that you don't want to call a brain. It's what I want to say. And in biology, this was kind of a hard won insight. In the early days, for example, people thought of ecosystems, multi-species ecosystems as like a big organism, or maybe like a social insect colony.

And then finally they decided, no, actually not. The idea that nature left to itself strikes some kind of harmonious balance, not true. And now the term ecological regime is the current term among ecosystem and community ecologists. Nature left to itself, falls into some basin of attraction, some reactive network as you would put. And there's many of them. They just hop from one to another. And as to how well it works for the common good, for the good of the whole assemblage, well, no, stability is the only thing. And if you want to see an ecosystem that's adaptive, you need to have a process of selection. So our microbiomes are actually pretty adaptive in addition to our genes, because when individuals survive and reproduce differentially, not only are their genes being selected, but their microbiomes are being selected.

So there is such a thing as a microbiome, or an ecosystem that's adaptive at this ecosystem level, but only by a process of selection. And that's the point. If we want to employ the metaphor of a brain, or a Noosphere, or something that's a thinking entity, we have to identify a process of selection whereby that came to be. And if that process of selection didn't occur, then we have something like a mere attractor, a

mere regime which is stable. We know that. But as to whether it works like an organism in any way at all, including mentally, well, no, we shouldn't expect it to. Well, there's my diatribe. And so I'm eager to know what you think of that.

Francis Heylighen: Well, I mean, this is of course, one of the biggest problems. But Shima and I have started addressing that. And it's part of a bigger project that is funded by the Templeton Foundation on The Origins of Goal-Directedness on which we are also working. The idea is that things self-organize by getting into attractors, but that there are attractors that are resilient and attractors that are not resilient. And by resilient, we mean not just stable, we mean able to adapt to a very wide range of circumstances. So the idea is that once the system gets in this kind of regime, you can perturb it in lots of different ways, and it will each time survive in some way. And our assumption is that what we would call the healthy regimes are the ones that have this very wide range of adaptability, while the more rigid closed regimes are the ones that do not have this range of adaptability.

And the classical example in a society is a totalitarian system versus a democracy. The totalitarian system can seem to be very stable, but if something happens like what happened with the collapse of the Soviet union, it's really gone. It can collapse completely. Well, democracies don't always function very well, but a mature democracy, generally it adapts because it's open. The openness is the ability to adapt while a totalitarian system, there is a strict number of rules and a limited number of people. And if those people are on there, or these rules are no longer there, and then the system collapses. So that was also our idea in trying to distinguish between healthy and unhealthy form of consciousness in the Noosphere. The healthy ones are the ones that have this adaptability. And for that, we used a very inspiring theory of consciousness, which is the Theory of Adaptive Resonance.

So I spoke about culture as this kind of a regime of circulating activation. The circulation is an attractor, but you want this attractor to be adaptive. That means if new information comes in, then your idea should change and adapt. If your ideas constantly repeat themselves as you would get in a totalitarian regime or in a fundamentalist system, then they may seem to be very rigid and stable at the moment. But sooner or later, something will come that they simply can't deal with. And then the system kind of breaks down. So that is something we definitely need to develop further, but that is our general take on distinguishing between good attractors and bad attractors. The good attractors are the ones that have this evolvability, this flexibility, this adaptivity, while the bad ones are the ones that are very stable within a limited range. But if something happens outside of that range, they just fall apart.

DSW: Yeah, Great. Shima.

Shima Beigi: First of all, thank you so much, David, for bringing this conversation in this the direction. Because indeed, it was also one of the steps of our thinking to come to the conclusion of there are different types of Noosphere, like a healthy Noosphere, or toxic one. The idea of units of thoughts connecting to one another and giving rise to a super kind of a system or organism that's called a Noosphere is not a linear process, is quite nonlinear. Therefore, it has a lot of properties of nonlinear systems, such as attractors, basin of attraction, attractors, and different types of attractors, also different regimes. You research ecological systems, and how there are critical transitions change within those regimes, and also opportunities for change. So this was clear to us, that when dealing with a complex systems, we should be aware of this inner working, or I call it the inner game of the Noosphere, to become conscious of those.

And Francis mentioned it. I also wanted to mention the Adaptive Resonance Theory. And particular part of that theory that discusses about the dilemma that a conscious organism always faces is the trade-off that the brain makes between stability and plasticity. That is stability-plasticity dilemma, that is to what extent the organism is capable of monitoring the flow of information, and also selecting openness for a new form of information to be integrated with the old layers of information. So systems that are basically closed or have a lower coefficients of observing this flow of information are basically incapable of

adapting to the new information. So their learning capability is really hindered because of that lower adaptability. So I agree with what you mentioned about this becoming aware of that... Well, some regimes are resilient, but not in a positive way. They're extremely resilient, but they're also extremely unhealthy for the global unit, or for the whole humanity, or the whole system.

What we decided to do is to basically ask this question that, can we start to look at the unit of thought the way we think as a basically microcosm for change. So can we change the initial condition? Can we bring more awareness to this inner working of Noosphere? And then from there, then we can work our way up and then design maybe more, I would say like conscious self-organization. I don't want to say guided self-organization because I don't think that it fits in this thinking. So become more of conscious of this complex adaptive systems are complex. Yes, they are unpredictable. Yes, but also there are windows of opportunity. If we become more tuned into them, we can influence them. And if we become more conscious of, for example, regime shifts now in ecosystems those regime shifts, or the changes, or the critical transition or critically slowing down become really the early warning systems, or very early warning signs that we can do changes. I think we can do a lot still even if the system is very complex and challenging.

DSW: I'd like to distinguish between we say healthy versus unhealthy. I'd like to introduce the concept of levels of health. Because what we find is that a lot of what we see as pathological, is actually adaptive, healthy at a lower scale. And so basically self-preservation is a good thing until it becomes self-dealing. Helping family is a good thing until it becomes nepotism. Helping friends is a good thing until it becomes cronyism. And just about everything that we see as unhealthy at a large scale...no, I'm going to back that up. Much that seems unhealthy at a large scale is actually perfectly healthy at a lower scale. And so now, in addition to that, there are some things that are just plain unhealthy for everyone. And this introduces the concept of mismatch that whenever you get any system that's well adapted to its environment, and then the environment changes in some way, all bets are off. What used to work no longer works. And that's unhealthy in every way.

So distinguishing between levels of health, there's a very important category there. And then various forms of mismatch, which is just things are misfiring for everyone. I feel that those are two forms of dysfunction that need to be made very clear because they require different solutions. They have different causes and they require different solutions. Something like polarization, for example, is a case of basically two social entities are set against each other. They're mortal enemies. And if you look at each faction, you'll see a lot of adaptation and what they do, including fake news. The point I want to make when we talk about these crazy memes, QAnon, and crazy ideas about the coronavirus. This might be just something that's misfiring. Or in fact, it could well be part of something that becomes a very strong social identifier and so on and so forth.

There might be something much more adaptive about crazy ideas. And we know that with all our religions, right? I mean Christianity is a collection of crazy ideas, but they have a purpose. And so, I mean, the whole concept of adaptive falsehoods and meaning systems is a deep, deep epistemological subject. Just because something's crazy in terms of just not corresponding to factual reality, it doesn't mean there's a lack of function as part of the anatomy and physiology of a group. So again, I've thrown a lot of stuff at you and you're welcome to comment on whatever has stuck.

FH: Well, I think one of the problems that David is mentioning is that when you speak about being adaptive, it's a question of adapting to what. That means a system has an environment. A system is supposed to adapt to whatever happens in its environment, but you can make an environment wider or narrower. If you are an in-group whose environment is some out-group that can either be fought or exploited, then maybe it's very adaptive to find a strategy to eliminate that out-group. If the system on the other hand is the whole world, that to say the global superorganism, the Noosphere, then any in-group that fights another out-group is non-adaptive because it creates friction within this Noosphere. So

I think that the biggest, the most important dynamic of the last hundred years, let's say, is globalization. The fact that we are more and more interdependent between people across the whole world.

Not only people, we are also becoming much more interdependent with the ecosystem, with the climate, with technology. So the network of things that we need to adapt to has become much bigger. So adaptivity in a sense of openness to new things, I think, has become much more of a value now. That it's sort of adapting to one particular circumstance that maybe you might deal with by let's say, by just killing whatever it is that's bothering you. It no longer works because that one thing that's bothering you is connected to other things and other things and other things. And in the end, by killing the one thing that bothered you, you're creating a whole cascade of negative effects on yourself. If you are the Taliban and you want to kill all non-believers, you can't really afford that anymore in the present world. Maybe in Afghanistan of a hundred years ago, you would kill all those that don't believe in the strict interpretation of the Islam according to Taliban, you would be very adaptive.

Nowadays, you will basically kill off all your intelligence and nobody will want to work there any more. Your airports will not function anymore. You will be boycotted from all sides, so you no longer can afford this kind of adaptive strategies. So that's why polarization at this moment, I think is quite unadaptive. And that's one of the reasons why we are thinking in terms of this openness as being the most, the best thing of health. And I just wanted to add something to what Shima said about the plasticity-stability dilemma and something I forgot to say. The plasticity is indeed this ability to not just be stable with whatever you have, but to take into account any new inputs that may be there and try to use them in a positive way. So means not just a priori present as perturbations, but think about this new input. Can that be used in some kind of a synergetic way to develop a better strategy, a better insight, a better functioning than we had before?

DSW: Yeah. Shima, please add and then I'm eager to take my turn.

SB: Yes. I think something that I would like to say is that, well, to some degree I agree with what you mentioned David, about adaptation. But also, I think I look at adaptation a little bit differently, mainly because my background is about making systems more resilient. And one of the questions that is been always asked in making a system, and by system here I mean a complex adaptive system is actually designing adaptive pathways. So depending on the ways that you define the adaptive pathways, you can get a different resilient outcome, or you can say, for example, you can lead your system to basically move toward a different type of attractor. That attractor can be a good attractor, but can also be a bad attractor, but you can also destroy that attractor and create a new one by designing transitional strategies. So for example, I give an example to not be very abstract here is that for example, with climate change and the shift from fossil fuel to sustainable sources of fuel, it's very difficult to immediately switch to a new source of fuel, but it's easier to create adaptive trajectories or pathways so that you gradually lead your system toward that new attractor or new outcome. That is the more desirable. This is something I wanted to add.

And second thing that I wanted to say is that I would like to take this kind of question of adaptation to a more, let's say a metaphysical and epistemological level by saying that the way I look at what's happening right now in the world as more of... right now actually finishing a new paper, but I call it mereological crisis. And mereology basically is a part-whole relationship in mathematic and logic that when a conversation or a level of dialogue between parts in a complex system start to basically be under certain kinds of stress or pressure, or being caught or changed, what happens is that parts start to lose their frame of reference, and what they do after that is that they become discrete parts and they no longer create a whole. And that would create a crisis within the whole that the whole loses it's integrity.

So from my point of view I would like to say well, adaptation is not a problem, because we are adaptive systems, we're adaptive learning systems, but for example what Francis said, adaptation to what? But

also what is available in the environment for the agent to be able to adapt? So the fuel, kind of the food if you like, for adaptation is being provided. And I think we can design that. We can make changes.

DSW: Oh yeah I agree. I agree. And I think in some ways we're kind of playing in this big complex multi-dimensional space on our way to our destination in terms of what we need to do in real-world settings, such as smart cities, that ends up being kind of commonsensical, at least in retrospect. And actionable. But I wanted to bring in something which I regard as very Teilhardian, which is that this expansion of the Noosphere is gradual. And if we want to find good examples of a Noosphere, in other words a human population that functions like a single brain, we should be looking at intermediate scales. The global scale that's something that has to be brought into being, it doesn't exist yet, but at intermediate scale, various polities, various cultures, various social groupings that because there is a history of cultural evolution at the group level, when you examine them as meaning systems, and I've done this quite extensively for religion in my book, Darwin's Cathedral. Starting then, and continuing. We actually can see cultures that are very, very well adapted to their environments, and there is a thinking element to it that has been expanding through human history as Teilhard said. And as Peter, people like Peter Turchin document, there's a whole breed of historians that are doing that.

And so here we are now with kind of intermediate scale human societies complete with our thinking dimension. And we need to expand that to the global scale. Francis is right that globalization has only dawned upon the world within the last few centuries, the idea of we're all citizens of the earth. I believe that the Baha'i Faith is arguably the first faith that really envisioned itself as all embracing, all creeds, all races, all everything. That was 19th century. You go back further than that and it was beyond the imagination that there might be some.

But now of course the fact that we're globally interconnected has just become a fact of life. I mean, so that's, and will always remain so. But as to whether we actually become functionally organized at the global scale, that's the final step for Teilhard, and it's in the future, we shouldn't call the global interactions, global interconnectedness a brain at this point, that's something we need to create. But if we go down to some lower scales and intermediate scales, we could actually find some pretty good examples of cultures that are highly adapted to their environments. And yes, there's a thinking dimension to that, and part of that's unconscious. I mean in many cultures the members of the culture behave adaptively without even knowing that they are, they take part in something and they don't even know. Friedrich Hayek made that point for economic systems. And what he called the extended order, economic systems work without anyone having invented them or knowing why they work.

So that conscious-unconscious distinction can be made for cultures, but we should be looking at an intermediate scale. And then of course our objective is to build up to the global scale. That's how I see it. So I'm really eager to know how you see it. Shima why don't you go first this time?

SB: I think something that I would like to add to what you said David. I think globalization, yes I think it's a force that is influencing how different layers of the Noosphere kind of connecting to each other, and creating something that maybe we call it a meta Noosphere or something like that. At the same time I think the thinking that we are having right now also is different. So for example, the amount and intensity of information that individuals are being exposed to is I think very different from 10 years ago. I mean I can say 20 years ago, I'm not that old to say like maybe 50 years ago, but I think comparing that to 20 years ago the way we are using information, the way we are handling information is really affecting the individual's way of thinking.

And I think this is something that I feel, especially with COVID I would like to bring this example back that also we give in the case of our article, is that I think the example of COVID was very interesting just to me, that I think for the first time a new crisis or a stressor was being experienced at a mass level, at the same time adaptation was happening at the mass level. So scientific adaptation, news adaptation, or people adapting to the same thing. So that is really a kind of, I think a network effect of adaptation that

was very present with COVID pandemic. That I think opens this possibility, or maybe way of improving the Noosphere, for what we call as maybe we should think of sets of etiquette's as, for example netiquettes or etiquettes that are being moral, that are globally accepted for everyone to think about them, to adopt them and to basically take into account those kind of etiquettes. This is I think something that I can say right now.

FH: I would like to elaborate on what Shima said. I guess what David was saying is there are a number of existing communities, let's say religions, cultures, that function quite well according to norms that they are not consciously using, those norms are the result of a process of evolution that probably has taken centuries. These norms have undergone selection to be pretty effective within that particular community, dealing with the particular type of problems that that community faces. But now suddenly we are turned into a global society, which has these problems like COVID, but which also has this means of interaction like the Internet. And suddenly we don't have these rules anymore. We don't have any clear norms that tell us how we should behave in these circumstances.

And what Shima was saying about netiquette or what I might also call Internet ethics, is we need to learn a number of norms of how to interact at this global level of the Noosphere, dealing with the Noosphere the way it's shaped now. It has a completely different dynamic, which is novel for everybody. We may have some rules in our local community for example, do not gossip or do not tell untruths, but at the level of social media those rules are not obviously applicable. And then you see all kinds of pathological things appear, and you can't even blame the people who are doing it, because yeah, their norms do not obviously apply to this new medium in this new global situation, and things that were pretty innocent before suddenly can balloon into some world problem. I'm pretty sure that in previous pandemics lots of conspiracy theories were being propounded in cafes and in families, but those never reached the global level, and therefore they didn't have the kind of impact that conspiracy theories nowadays have.

So as Shima said, we need to develop this kind of netiquette rules or norms for the global Internet based society, and looking at how traditional societies have done it within their local thing is definitely useful, but it probably won't be enough, because there are new dynamics playing.

SB: I wanted to just add something here. Like societies that have been very successful in adapting themselves to the situation that we're facing, I think maybe they had these moments of realization or aha moments, or something happened that really changed their paradigm. So I think if something like that happened to them, if you take that as a kind of maybe a general process of how we change our minds, or how we change our world views, then we can maybe think of mechanisms that would help us to ... Like yesterday, we were discussing with Francis that are there kind of gestalt change cycles at the level of the Noosphere? And if so for example, if you think about the Arab spring or COVID-19, or the collapse of economy, economic crisis in 2008, or September 11, these are events that really are affecting the collective consciousness. So maybe we can use them also in positive ways to create change, and to create moments of adaptation, or to create really necessary conditions for creating shift of paradigms. This is something I think maybe related to this conversation.

DSW: A point that I want to make is that it doesn't require a crisis or an environmental change in order for pathologies to take place. And I think that in many ways what's pathological is the entire concept of laissez-faire that everyone can pursue their separate interests and that, that'll somehow work out for the common good. And if you look at for example, all the tech giants, Facebook, Amazon, Google, all of them, but let's take Facebook. The fact that they're basically based to maximize advertising revenue means that their whole strategy for uprating or downrating content is based on clicks. And so it's at that point that you have this huge, huge bias imposed by basically a shareholder value revenue model. And you didn't need the COVID pandemic for that to be pathological. That was pathological all by itself.

So we have that kind of thing to contend with, but I've been meaning in this conversation to, and we will get to Wikipedia, but I've been meaning in this conversation to bring up the work of a Michelle Gelfand. I

hope you know about her. And if not, I'm happy to introduce her to you. She is a cross-cultural psychologist and she's made a career out of the distinction between tight and loose cultures. It's a continuum of cultural variation from tight cultures, which means strong norms, strongly enforced and loose cultures, which are much more open in terms of what members of that culture are enabled to do. And what she shows is that these, and this is very ecological, when we talk about cultures adapting to their environment, there's different environments, it's a multiple niche environment out there. And some environments call for much more collective action than others. It's really, really important for those cultures to behave in a coordinated fashion.

What's the threat? The threat might be warfare, but it might also be disease. Some cultures have pandemics much more in their histories than other cultures. And so whenever cultures have a history of collective threat those cultures tend to become tight cultures and then they're really good at collective action. Maybe not so good at innovation, but good at collective action. If it's a safe, secure environment then it's not so important for everyone to march in lock step. And so then those cultures become loose, which have their own advantages. And now if you look at that, and she's written extensively on the pandemic. The pandemic was a natural experiment. We have 195 nations or whatever, all responding to the pandemic in different ways, which ones did well? Which ones did poorly? There's a whole burst of research on that topic.

And the tight-loose continuum has much to do with it, although it is complex. Because on the one hand you need coordinated action, and there you see the failure of the loose cultures, Brazil, America, Italy at first, the UK, these are all loose cultures and they just didn't know, you know the problem there. And it was the tighter cultures that were able to respond collectively. But on the other hand, because this was a new challenge there had to be innovation. And so what Michelle says is there has to be some kind of ambidexterity, there has to be, we have to be tight in some respects and loose in others. That's what we need, which is not so easy. And of course in many ways we need to evolve that. That's something we need to bring into being, it doesn't automatically exist.

But the idea that it's a multiple niche environment out there and that cultures are adapted to different niches. And that part of that is, has to be the need for collective action. I think just makes what we do richer, because it's not just a matter of just one niche. It's a matter of many different niches. So that's a complication, but I think it's a very important complication.

FH: Well maybe I want to make one connection with one of the theories of consciousness, the adaptive resonance theory, which is a little bit of our favorite, even though it's a less well known one. There is this famous stability-plasticity dilemma, which is actually something that comes from neural networks. The neural network needs to learn from what it experiences, learning means storing things in memory, meaning that they reliably stay in memory. So when you need to know it you can fetch it and you can be sure that the knowledge is still there. But learning also means adapting to new information, and so the stability-plasticity dilemma is if you're too stable then you keep all the old knowledge, but you're not quick to assimilate new knowledge. If you're too plastic you will constantly pick up the latest things, but you will forget the long term things. So what you're discovering about these different kind of societies is a little bit like you have the societies more on the plastic side that are quick to adopt new things, and you have societies that are more on the stable side, that keep to the things that have proven their worth.

But ideally of course, what consciousness should do is solve the trade off and be able to distinguish those things that are likely to recur, that means that should be safely stored, and those things that are likely to be flukes of the moment, and that means you don't store them stably. But that's of course not easy to say when something happens for the first time, if it happens for the first time it may be the beginning of a long recurrent process, or maybe just be a fluke. So there is no absolute solution to the problem, but there are some heuristics which the brain has learned to distinguish between things that are likely to recur and therefore need to be stably stored, and things that are just incidental, and that

you don't need to pay attention to. And the stability-plasticity dilemma is to make the right choice in that respect.

DSW: I want to bring in the continuum from conservatism to liberalism, or progressivism as a great example of this. And the idea I think to have that balance that you're talking about you actually need to have a conservative element to society and a liberal element to society. They have a positive relationship with each other, even though they might seem oppositional in the minds of the people. So I think it's a good example of something which is adaptive at the level of the whole culture, a mix of conservatives and progressives. Nobody might see it that way in their own minds, but it is a cultural level adaptation I think is an interesting way to think about that.

And also just to add, there's a fascinating business literature on this, as it turns out most businesses are not very adaptable. And if you look at the most profitable businesses, like the Fortune 500 businesses of 20 years ago, almost none of them remain in the Fortune 500. They go under and they're replaced by new businesses. The innovation is of the creative destruction variety, businesses failing and being replaced by new businesses. And the number of businesses that are actually capable of innovating and remaining alive as businesses are adaptable within their organizations, is very few. There are some that you can find, but for the most part businesses are pretty static. And the cultural evolution that takes place is through the turnover of businesses. I think that's pretty interesting.