SCIENCE OF THE NOOSPHERE

David Bollier and John Arquilla

with

David Sloan Wilson

David Sloan Wilson: Okay. Well, welcome John Arquilla and David Bollier. So happy for you to be joining me for this conversation. And I'm so much looking forward to this. Because of our different backgrounds, I think what we're going to be comparing are three major concepts. One of course is the concept of the Noosphere of Teilhard de Chardin. Another is the world of state craft and realpolitik, which I think John you represent. You're on the faculty of a naval graduate school so you have a public policy and strategic planning and even military background. And then the concept of the commons, which David you represent. And of course has a very different feel and background to it, including Elinor Ostrom and her work on common-pool resource groups. And yet here we are in the same place, in some sense, working towards global governance, the global good, a global Noosphere, a global commons, Noopolitik as John, you put it.

And so let's just explore how we have all found our way to the same place. Also in terms of your personal background, so if I could have you just talk about yourself as people and how you adopted these ideas and came to this place. David, why don't you begin and then John, you can take your turn.

David Bollier: Sure. I had a political education in Washington in the seventies and eighties, working in the public interest community for Ralph Nader, for a Congressman, for a regulatory agency person. And over time I came to realize that a lot of the vehicles for governance and change were getting dysfunctional or clogged, you might say. And by the late nineties, I had discovered a number of converging threads that fed into what I call the commons or what others have seen as the commons. Of course, Elinor Ostrom's work on describing common-pool resources and their governance, the rise of open source software as a new paradigm outside of the market and state and the increasing evidence that the paradigm of market-state governance and liberal politics was not going to deliver the kind of transformation we needed.

And so I hooked up with a lot of transnational self-identified commoners who were academics and project leaders and activists who constitute a shadow network of self-identified commoners, who are involved in a lot of different projects that I regard as islands of possibility. So I've been an ambassador among a lot of these different projects, trying to make sense of it, writing both academically and in an activist strategic way and a journalistic way. So I do books, I do a podcast, I intervene where I think I might be able to make a difference.

John Arquilla: Well, for most of my life, I've been a refugee from realpolitik. And I realized that early on as a young man in uniform and for the last four decades as someone working in the defense community. One can only look at hard power politics with dismay, not only in terms of the terrible disarray in which it's put the world's situation in terms of conflicts, most of which are ongoing in places where civilians make the largest proportion of casualties and of refugees, where the suffering can be ill afforded by these societies. The whole model of a Clausewitz of war is the continuation of policy seemed to be nonsense to me and pretty much always has been.

By the early eighties, I was very involved with something called the Nuclear Freeze Movement, which said, let's just stop the arms race. These weapons don't make any sense at all. Their only value is in their non-use so let's stop making them. And of course have been very involved in arms reductions. I think these are elements of what David Ronfeldt and I like to call Noopolitik; an ideas and values and ethics based form of state craft. This is something that doesn't have much utility, so let's not rely upon it. David Ronfeldt helped to broaden my thinking, as have the other Davids on this conversation, by the way, with

Evolution for Everybody, and with David B's wonderful works on the commons. But it occurred to me that beyond my principal area of military and security affairs, markets were never going to solve the problems of the world, either environmental or commercial for that matter. And markets unbound are destined to fail at a ruinous cost. Classic republican forms of government, small r republican, that is representative democracy, almost always falls victim to factionalism.

And so the whole idea of spreading democracy, including by force of arms, as in Iraq in 2003, seemed to be efforts to reroute the currents of culture and history in ways that would be highly inimical to global interests. So nothing seems to be working very well. And that calls for this radical redesign of the world along Noospheric and Noopolitical lines. And that's where David Ronfeldt and I have been really in our common research agenda for the last quarter century just trying to push this idea that realpolitik has not worked well and is going to get even worse for the world, that market systems as we know them are poorly aligned with the interests of people, and political processes in representative democracy are not getting things done as they should.

DSW: So John, one of the things I learned through your work when I first encountered it, I thought the military? And then shortly afterwards, I had a personal epiphany obvious in retrospect as for many people, the impulse to join the military is to serve one's country and with your life if necessary. And then another thing I learned is that you and David are not the only people who think this way and who think in terms of what you call soft power and who basically have the global good in mind and see the national interest as something which is to be a solid citizen within a global community. Could you talk a little bit more about just this section of the military and strategic community that talks about soft power and the need to work through soft power? It's a whole segment. You're not totally alone as I understand it. Is that right?

JA: Yeah. We're a small stream, a trickle. I think we're trying to trickle up as opposed to the economics of trickle down. It really begins with the American strategic thinker, Alfred Thayer Mahan whose books on sea power were very much driven by the idea of the seas as a global commons, that prosperity and security depended upon. And in his case, not only in the historical books about The Influence of Sea Power, but in other works, particularly Armament and Arbitration, there was the sense that a kind of diplomacy was very much involved here as well, not simply power politics. And so really in the century since Mahan was writing, small members of the security community have tried to build upon this. I think the idea became hijacked a bit in the past few decades, by those who say, well, we can protect the commons by having a overweening power of our own.

And the Colin Powell doctrine of overwhelming force would be another example of this, enforcing the security of the commons. And I think that's a failed enterprise from the start. So there's been a debate for a long time in the military, certainly General Maxwell Taylor when he wrote his wonderful book in 1960, The Uncertain Trumpet, and had great deal of influence with president John F. Kennedy, suggested a very different model of the whole paradigm for military and security affairs. One that was much less imbued with the sense of threat and power, and much more directed to the idea as you pointed out David, of service. And that service is not only to our own country, but to the world.

I taught officers over the last four decades at the Naval Postgraduate School, officers from all the services and from over 60 different foreign countries. And it's that service ethos that I've always tried to instill in others. And remind that the military domain is there both to preserve and protect as is the policing function putatively in most societies. And so to recapture that, I think we need this other paradigm that moves away from straight hard power politics. And indeed internationally in the Canadian and British and other militaries, General Rupert Smith with a book called The Utility of Force suggests similar ideas to those that David Ronfeldt and I have advanced about the very limited value of coercive diplomacy or forceful regime change, or these other sorts of interventions. These invasive procedures often do more harm to the patient than they do to heal the problems of the world.

DSW: I know that the direct connection with Ostrom here and the core design principles of graduated sanctions, basically. There must be social control of misbehavior at any scale, from the smallest to the largest. So David, why don't you take your turn at all of this, just reflecting upon what we have said so far.

DB: I come to the commons with a fundamental skepticism about state power and its role with respect to the commons. And within the standard economic paradigm, the state is seen as the steward or custodian of commons, and they're regarded as unowned or shared assets or assets owned by the general public for which the state is the protector. But basically I jumped the tracks from that dialogue, because I think that a lot of that narrative is simply not sustainable in light of the state's deep alliance with capital and markets, and their keen interest in exploiting say public lands or minerals or deep sea minerals, or the airwaves or many other resources—exploiting them for capitalist purposes. And therefore there's a lot of extraction and marketization of things that perhaps should not be marketized. So in other words, there's a structural limitation or sometimes incapacity of the state to truly be a steward of shared wealth.

So I come at the commons from a more insurgent perspective in the sense that I see it as a bottom up social system primarily, of which resources are of course a part, but they're not defined in an economistic way. In other words, the resources are part of the culture and identity of the social community. The way for example, indigenous cultures don't regard the water as a resource, they regard it as part of their identity as a community and a culture. And I think that a lot of commoners in modern day senses feel the same way, whether it's the way open and free software communities feel about the code they've created, or the Wikipedia people in the sense of commitment and the cherished feelings of affection they have for what they produce, or a lot of this in traditional commons of say forest or fisheries, what's often called the affective relationships that people have with the quote, "resources."

So I've come to learn that a lot of our language is embedded with certain premises that are unexamined, that don't do us any good in terms of protecting the commons as a social system. So you might say my approach to the commons immediately sets up to problematize state power, and think about new configurations of state power that might be more constructive or benign than the ones we have right now. And this naturally feeds into some political discussions about, well, how should state power be exercised and structured? And what does that mean for people on the ground within a nation to think about their role with respect to state power? So those are a larger array of issues that I engage with in my thinking about the commons.

DSW: Right. John, a response to that and then I'm going to introduce Teilhard explicitly. But do you have anything to say in response to David?

JA: Well, the program I've taught in for decades has to do with irregular warfare. And so we study insurgency a lot and why insurgency works so much of the time, why it's so difficult for traditional nation-states, from Vietnam to Afghanistan, to many insurgencies. And I love the concept of an insurgent movement that will help to bring about a broader practice of commoning in the world. I think it is probably the most likely way to succeed. Insurgency put an end to colonialism after World War II, mostly an end to it. And I think insurgency is probably the best paradigm for thinking about how to rein in state power. We are up against the realpolitik of individual state interests. We see this, of course, with all the folly around trying to reduce carbon emissions into the atmosphere. A state wants to be able to quote, "develop", even if their development means that the planet itself is put in peril. So I think David Bollier's other point about the need to think about a different paradigm for international relations is also quite important.

The only other thing I would mention is that this insurgent movement can draw some inspiration from works like Robert Axelrod's Evolution of Cooperation. There's an evolutionary part of his study in which he points out that even small areas of this kind of cooperation can eventually over time crowd out the more hostile. In Evolution of Cooperation, he posits both friendly type strategies versus very hostile,

non-friendly, very classic realpolitik kind of strategies and finds that even small areas of cooperation have a way of expanding and crowding out the others. So I hope the world has enough time for this commoning insurgency to gain traction. When one looks at how much of the world was under colonial control at the end of 1945 and how little can be considered a colony; Gibraltar, the Falklands, etc., 75 years later, we see that that happened pretty quickly. So if we were able with this common insurgency to prevail over the next 75 years, I think our chances of saving the world might be pretty good.

DSW: Well, let's also make a distinction between violent versus nonviolent insurgencies. And what little I've read on the topic indicates that nonviolent movements can be very effective. In fact, usually are more effective than violent insurgencies. So that this can take place in a nonviolent fashion. Anything you want to comment on that John, because you know much more about it than I do.

JA: Well, of all the insurgencies that have taken place, the majority have used some form of violence. And again, mostly by those who are trying to reassert control over the insurgents, and most of the time they have won. The nonviolent movements, yeah, they work. And of course that's a self-selected group of cases more likely to work, because the controlling party, I think of Britain after World War II with India. Britain made a choice not to try to assert control or to retain control by violence over its various colonies. So we have to be a little careful about looking statistically at this. And I'm not suggesting that the commoning movement should be a violent one at all, but the concept is insurgent from the bottom up, from the people. Like the civil rights movement in the United States, which was largely for the most part nonviolent, except to the extent in which authority was trying to tamp it down.

And that's the kind of insurgency I'm talking about. But I think just a practical example, I have a fair amount of investment in the cyber area and the whole business of social media. It seems to me David B used the term, or maybe I'm using the term commoditization of people. That's really what drives, I think the biggest problems in social media today. Billions of people have been commoditized by a handful of social media barons. And one of the ways this insurgency could get a really good move in that domain, a good start in that domain, would be to end this commoditization or to make sure that all people are properly compensated for the information that they are giving or having taken from them and used commercially by others. I think that would be a really interesting low hanging fruit opportunity.

And it's a time when the big social media barons are under a certain amount of pressure for allowing all the untruths and political warfare going on. But we have to look behind the curtain there and see the billions and billions they're making off the backs of people whose information they're taking and using and selling and reselling in ways that I think go really against the principles of, if we want to think of cyberspace as another of the commons, which I tend to do. I think there's a tremendous problem of equity. It's one of the themes in Paul Hawken's work and I know in David B's and Silke Helfrich and others. There's a real big equity issue here that should, and could be addressed, and I think would have a great deal of popular support for it. It would be very difficult, particularly for democratic governments to stand in the way of a commoning movement in the social media realm.

DB: I just have a few things to elaborate from John's comments. I agree, incidentally, John, with a lot of what you just said. But I would just add that I think the issues cut very deeply into some of our premises about economics, markets and the state in the sense that the paradigm of homo economicus, the fact that we're supposedly rational, utility maximizing, materialistic, selfish individuals, that's how we're defined in analytic purposes for public policy and economics. And the fact that citizenship is seen as the chief vehicle for social or political transformation, yet the systems for realizing citizenship for having that capacity for power and change are really stymied right and left. And we see that in the dysfunction of the US political system today.

So I see the commons and commoning as operating in a premarket state way or outside of that system, primarily, although of course it quickly has to engage with the guardians of those systems of power. But it's about at a very elemental level, having ideas of transpersonal rationality and coordination, and to put

it in concrete terms, the way open source people do it, the way Wikipedia people do it, the way community land trusts do it, and many other examples like that.

And this lays the groundwork for a more transnational identity and collaboration the way we see already that has already emerged in many digital spaces, such as open access publishing or open source or the Wikipedia world, which is in dozens of countries. And thereby opens up a different framework for meeting needs without having to become dependent or subordinate to the market and state the way they traditionally function. And moreover, this is not simply a rhetorical or cultural posture or assertion, these are functioning alternative systems which precisely because they're functional and working, act as a counterpoint and you might even say moral indictment of the existing system, which doesn't want to try to operationalize or support these alternatives.

In my book, Free, Fair, and Alive with Silke Helfrich, we talk about the need for an ontological shift or an onto-shift, which sees a lot of what needs to be done as primarily relational among groups of people, rather than transactional among individuals. And once you get into that mindset and framework in which the individual good is aligned with, or you strive to align with the collective good, it opens up a different framework for thinking about solutions as opposed to those that happen within the citizenship mode, the nation-state mode, or market action homo economicus mode.

JA: I agree fully with that idea. And David B's point about engaging with the system is I think important. And that's where this insurgency I think will play a powerful role. And that's why I suggest something like it's an easy do to attack the commoditization of individuals by a handful of digerati tech barons. That's one of the ways to engage, I think, with some hope of success. And there are so many weak points in the armor of the markets and of the nation-state governance system, particularly republican or representative governance systems, that things like moving toward direct democracy would be another way to engage with that system that fosters the kind of relational commoning that David is describing.

You can't get away from engaging with the market or the state and so we have to pick those places where we will have a chance to get enormous public support as we would with the anti-commoditization of the individual. And increasingly I'm drawn to the idea of direct democracy, which is a highly relational approach to governance. And Rousseau was writing about this centuries ago and John Stuart Mill and others, they always thought it would have trouble scaling up. But I think just as Teilhard noted a century ago, technologies will come along that are going to make possible the scaling up of this global consciousness and the kind of society that will emerge from it, based on a fundamentally different set of values than those that have governed over past millennia. Anyway, David, sorry for talking over you.

DSW: Well, let's bring in Teilhard because I know John that you rely on him, draw upon him quite a lot, including your phrase, Noopolitik. David, did Teilhard play any role in your own thinking at all?

DB: Well, obviously I think it's this visionary idea that has a whole lot of value in crystallizing perhaps where we might be headed. But in other ways within my commons work, I see it more as an inductive process by looking at what's working and what can be built upon as opposed to having grand scenarios that one has to inevitably build towards. So in other words, it's more of an emergent process rather than this is the way. Having said that, the global relationality that he sketches is precisely where I think we need to be going. What maybe is less developed in his analysis is what are the structures for enabling that? How do we assure that to happen? And I don't think it's necessarily going to be one big single global hive. I think like any ecosystem, there are all sorts of pockets and differential relationships and there's different species that have their own identities yet they have nested relationships, symbiotic relationships with others.

I think what we're on the threshold of is exploring theoretically and practically what this global ecosystem of social relationality could look like and how some of our legacy systems, the corporation, the nation-state, even one might say liberal democracy as constituted in the US constitution need to be

rethought and reinvented in light of the enormous social changes and technological changes. So what does that mean? Well, it certainly means that some of the oligopolies of the Silicon Valley tech world are an impediment that need to be rethought. And we need more open spaces for this bottom up emergence to manifest itself, to negotiate among itself to figure out what works, as opposed to thinking what's the top down blueprint that some uber-power can impose from Washington or some other national capital or international system.

DSW: Yeah. Well, let me make a few points myself from this great conversation, which gives me an optimism. And my optimism is based on the following tenets. First of all, so much depends on how we think about things. And when we have the homo economicus mindset, then that drives us in certain directions. But if we abandon that and we develop another mindset, then we can begin to see things the right way, do things the right way. No matter where we stand from local to global, we might be a multinational corporation, we might be a tech giant, or we might be an individual person, but if we're actually seeing the world a certain way, and then we know how we relate to that world, then at any level you could become part of the solution not part of the problem.

Now what justifies one worldview over another, it's here where I think there's an intellectual high ground that can be captured. Because as it turns out, the evidential basis for individualism, homo economicus, markets, all of this, laissez-faire, the invisible hand actually cannot be justified scientifically and something else can, then basically we've captured the intellectual high ground. There's really just cause for adopting one set of ideas compared to another.

And I think that time is at hand. And that time actually was not at hand until very recently because it required a confluence of complex systems thinking, which couldn't take place before the advent of widespread computing, and then the maturing of multilevel evolutionary theory. John mentioned this a little bit in Robert Axelrod's experiment. But if you really take evolution seriously and cultural evolution seriously, it leads to a whole earth ethic. It just does. You know that if there's any agents that are trying to maximize their fitness at some lesser scale, then that's going to become part of the problem. And so science now leads to a global perspective and now prescribes against widespread practices. The more you can establish that and capture the intellectual high ground, then the more you have succeeded.

And the next point I want to make is that drawing upon some of what you said, David, is that there's positive examples at intermediate scales. So this is not hypothetical, this is actually working in many contexts once you know what to look for. And there's many examples of meso level organizations. By meso that's middle, that means not bottom up, bottom up at the level of real small, that's bottom up. But at meso level, organizations of various sorts that actually get it, and then they become enlightened top down rather than non-enlightened top down.

And so top down isn't bad. Ostrom's concept of polycentric governments says basically life consists of many spheres of activity. Each sphere has an optimal scale. And sometimes that optimal scale is quite large. Top down is needed, but it better be enlightened top down, basically something which is not forcing itself on the lower down, it's basically stewarding cultural, evolutionary process below it and taking part of a cultural evolutionary process above it. And there's positive examples of that too. So we have positive examples of bottom up and enlightened top down. And so really against that background there's the question, how do we scale up? How do we scale up these examples that actually do exist at the micro and meso level, with a theory that is worthy of the name, a theory that actually can be capable of guiding us in the right direction as opposed to blinding us and causing us to go in the wrong direction. So there's my piece of the conversation.

DB: John, if I could... unless you have something urgent to say. I agree with you, David. But I think that the challenge is having that culturally and politically manifest, and that's really a difficult implementation challenge, and especially when there's such a hammer lock on the existing paradigm of understanding and perception. I will give a small plug here for a project I've been working on. In two months in January

I'll be releasing what I call the Commoners Catalog for Change-making, which is inspired by the Whole Earth catalog. And it's a collection of dozens of examples that show here's how they're doing it in land. Here's how they're doing it for water, urban spaces, arts and culture, and many others. And the point is somehow this bottom up self-awareness and commitment and sensibility needs to propagate. And that's a big challenge, especially when the guardians of the existing order have little interest in propagating these alternative perspectives. So I'm just saying that's really for me the crunch point in trying to develop an alternative perspective that can have this networked evolution in the future.

DSW: And another conversation in this series is with Kevin Kelly who is one of the editors of the Whole Earth catalog, so there's nice continuity there. John.

JA: The point about being networked, I think is extremely important. When I think about the world and the way it has evolved with us in it, for most of what we know about our history, at least until about 500 years ago, governance was basically by empires, a few large things that controlled most everything out there, at least in the areas of the world that were as developed as they were. Of course, indigenous peoples in many unexplored places, but they quickly got scarfed up by colonization in the age of long-range ocean sailing vessels. Jared Diamond's work of course speaks to that. But the Carlo Cipolla's Guns, Sails, and Empires is one of the best books I've ever read.

Anyway, empires were pretty much the only game in town for most of history until 1500. The nation-state starts to emerge around that time. And it spends about 500 years in conflict with empires. And during this time nations become more powerful, empires grow more vulnerable, weaker, and now they're mostly gone. You can consider the United States a kind of empire. But anyway, the progression in the world has been from the empire to the nation-state as the dominant actor. I think we're at the dawn of an era in which now the nation-state is in competition and often conflict with networks, and that this is the next organizing principle, and the one that I think has the best chance of saving the world from environmental catastrophe, for sure, but also to create a more equitable, fairer world in economic terms, in human rights terms, et cetera. And so we're at the beginning of what I believe will be one of these tectonic shifts in human social evolution.

And naturally it's a time of...and again, I keep coming back to David B's point about insurgency. It's trying to carve out more and more space. And as wonderful examples of this as does Elinor Ostrom, I think Paul Hawken's work also speaks to a lot of these themes. Vernadsky and others that David Ronfeldt and I were inspired by in writing our own study on this subject felt that this move toward the new paradigm was going to be one with a lot of tension in it. And I think that's what we're going to see for quite some time. But I have a great faith, as you do, David Sloan Wilson, that we should have some sense of optimism here.

I think we are ineluctably moving, because this is clearly the way to go. You have to look at the two centuries of industrialization we've gone through and see that neither the market nor the nation-state has done anything to avert a looming climate catastrophe, has done very little to promote equity in the world, has been subject to continual upheavals, both political, military, as well as socioeconomic, and shows very little ability to cope with any of those in effective ways. And so I vote with my feet for the rise of this networked social evolution.

DSW: Well, you sounded so Teilhardian there, John. Maybe it's your long view of history. But Teilhard was a stretcher bear in World War I, and then he experienced World War II and the communist revolution in China. And he very much had a view, and I think it was accounted for his optimism, that were these tectonic forces that were colliding with each other and that something good was going to come of it. In the midst of mayhem, he thought that. So I hope that there's a softer landing than that. But you sounded so much like Teilhard. I just wanted to make that note. David.

DB: Well, I agree with John's analysis. For me, that the thing that I keep searching for that is a missing piece is what is the credible transition strategy by which those who are benefiting from the existing system will surrender that power or agree to a transition? There's much bandied about quote that it's easier to imagine the end of the world than the end of capitalism. And so what is that path?

I think the tensions between the networked world and the nation-state can be encapsulated between legality with the ability to use force to enforce, and legitimacy and trust. And the network world engenders legitimacy and trust because it is more popularly created and is more practically grounded. Whereas the legality that this nation-state asserts is grounded in its accrued power institutions and worldview. And that's precisely the collision that we're having to deal with right now and try to find a way beyond. And I think that it's inspiring to have the idea of the Noosphere or many other globally networked solutions as an idea for moving towards, just as the idea of the nation-state has been such an incredibly powerful unifying force in its time. So how do we develop this larger sense of global citizenship and human interconnection, trust and legitimacy, which frankly the nation-state or global markets cannot provide right now.

DSW: I want to again infuse a little more optimism into this. And for example, we have the case of FDR, as I understand it, who basically was seeing the nation on the brink and became a traitor to his class as he was called. And he had to actually make decisions on behalf of the whole nation. And then so-called New Deal borrowed a lot from Sweden. In fact, the New Deal was quite a lot like the Nordic countries.

DB: Well, it's not widely appreciated that there was an entire political faction during Roosevelt's era arguing for decentralist solutions, but they lost out to the centralizing corporatist solutions. And I think that we need to pay attention to this bottom up ability. It's not going to be some newly elected hero. It will be whether the political...

DSW: No, I get that.

DB:That's the only point I wanted to make.

DSW: I think one of the things that I want to get across, because this is scale independent. And so much of what we're talking about is scale independent. That's what's so brilliant about the core design principles is that they're needed to govern between group relations just as much as within group relations. And if we think of it at the small scale, which is the most intuitive way to think of it, then a social system that's built on reputation as opposed to power is easy for anyone to wrap their mind around. And if you're in a small group where there's sufficient social control, then it goes without saying, if you want status in that group, you have to be a solid citizen for heaven's sake.

You can go to different times in American history, or right now in other cultures. And the most important entities, the corporations, let us say, they just get that. And they know that if they're going to succeed, then they need to get a good reputation. And if they're going to do that, they have to, what's so hard to understand? And so I think that that mindset is available for anyone. And that includes the current Leviathan organizations, all they have to do is get it for heaven's sakes, and then the existing organizations, the states, the corporations and so on could actually begin to function as solid citizens.

Obviously you need the transparency, you need the core design principles. But it's possible. And so I think that so much depends on this mind shift that that's what we all we all strive for. So let's have a round of reflection on that and then focus a little bit more on technology because none of this is going to happen without technology. And I think that needs to be an important part of our conversation. But first, just please respond to where we stand now in our conversation. John.

JA: Yeah, I'm with David B. I think it's going to be difficult to get capitalists and those who control republican representative government to cede power and control willingly or easily. And there are some models David, as you suggested the Nordic countries. I think Switzerland is a very interesting case where

they have scaled up direct democracy in a very, very interesting way there. And really the people in office wield far less power than in most representative governments. So again, it's a point about this notion of being insurgents, confronting where you can and getting at, and I won't go back to my earlier model about how to fight against the commoditization of individuals by social media barons. But it seems to me that the concentration of both economic and political power is going to be a very big challenge for the networks that are arising in the world.

I see it as a period just like in that time in which nation-states were carving out space that they were taking from empires, networks are going to have to carve this out as well. And hopefully as David Sloan Wilson says, there'll be some leaders who kind of get it. And we know that there are people like Óscar Arias in Costa Rica and our Nordic country friends and a few others around the world who get it. And these small areas of cooperation hopefully will spread to others.

If I may just anticipate a little bit about technology here. Teilhard's great insight, the technology for global interconnectivity didn't exist when he was writing, not the kind of interconnectivity that we have with the web and the net. But he said one day there will be such technology. Well, we're at that day. And he felt that this would be a tremendous boon to the social evolution of mankind. I think what we're seeing, this point about my idea of competition and the reluctance of others to cede power is already evident in the struggle over the use of technology, where we have some people who want the freedom of information, freedom of speech, thought, gathering, et cetera. And we see the nation-states in many places trying to exert a territoriality over cyberspace or over freedom of speech.

If you look at the Freedom House statistics, you'll see that authoritarianism has actually been on the rise with the rise of connectivity. And it represents, I think, a powerful effort to try to control this rise of networks. And in the end, I don't think that will prevail, but I do see a period as... and again, Teilhard's not my only inspiration, Vernadsky is very important as well. The idea that this change cannot come without significant competition and conflict. And I think that's going to be the case as the implications of the technologies of the information age are played out.

DB: Well, I agree with that. I think I take as a cautionary history the past 20, 25 years at the dawn of open source and the dawn of the popularization of the Internet when there were such grandiose hopes for its emancipatory possibilities. You recall perhaps John Perry Barlow's famous manifesto. And a lot of those we have now seen in the hindsight of 20 years were basically killed in the cradle because the corporatization and marketization of those systems, which originated within academia, basically neutered them and them vehicles for capitalist extraction, to put it bluntly. And I think that therefore finding the infrastructures, that's why I think for me that commoning is such an important answer because the commons have their own self-protective capacities built in legally, technologically, socially, to protect the wealth that they generate.

And to the extent that commons can become, you might say, social organisms of generativity that can self protect, they become new vehicles for change, islands of possibility is the term I often use. And I could look to things like Linux, which in its early days had only a fraction of the potential software market. Microsoft was very scared, calling it communism. Because they realized there was a powerful new capacity here that was challenging their franchise, that was acting as a moral indictment against their proprietary behaviors.

So for me, these alternatives are going to have homegrown bottom up impetus to develop their own infrastructures on a larger scale that are not simply, infrastructures aren't just neutral. They have their own built-in design biases. We need infrastructures that affirmatively support commoning in terms of finance, in terms of legal recognition and support, in terms of technical support and in terms of cultural validation. So I think this is going to come as the horizontal world of commoners start to see themselves, start to see that open source seeds, which are fighting big ag, have a lot in common with open source

software. And when this horizontal self-awareness starts to develop, that becomes a cultural phenomena that perhaps can extract the political concessions we need.

DSW: David, can you point to some examples? I bet you can. So what are some positive examples of this at an intermediate scale?

DB: Well, one example that I love is the region wide infrastructure in Catalonia for wifi called guifi.net. And it's basically a regionally wide run commons wifi system that has high quality service and it's governed as a commons. And it's the kind of thing that's entirely possible, but let's just say politically orthogonal.

DSW: Is that part of Mondragon?

DB: No, it's a totally separate. I suppose it's inspired politically by the Spanish experiences, but it has nothing to do with Mondragon. Then there are other systems which we can see it's not necessarily a single infrastructure but something that either is federate. A term we often use is emulate and federate where you can keep the appropriate scale, but federate and support and share despite being at smaller scales. But another theater of action for this are municipalities, especially in Europe, like Amsterdam and Barcelona and certain Italian cities and others, which municipalities have practical problems, are less ideologically driven, and they're trying to develop the ideas of common/public partnerships in which they can get the trust and legitimacy of bottom up movements that are grounded in responsibility and authority and yet get things done without having to rely upon the expensive bureaucratic system, which often doesn't meet needs in a very humane way or effective way. So there's experiments going on to develop these higher level infrastructures, which I think are the next stage of a lot of the commons world, as opposed to just a mosaic of small scale projects.

DSW: Yeah. I'm glad you mentioned cities because that's just the perfect scale of something which is pretty darn large, but many of them. And so you've got your variation and selection process that can take place, selection of best practices and scaling up because a city is big enough that you could really well imagine scaling it up to the nation and then ultimately to the world.

So let's talk a little bit about what this means for what we call democracy. I think one thing you can say about commoning at a small scale is that it's inherently democratic. If you'll look at the Ostrom core design principles, they're all about equity and fairness and each individual being a moral equal and so on. Does that get preserved as we go up the scale or is there some sense in which that becomes different? And let's talk about individual rights while we're at it. David, do you want to begin and then John?

DB: Sure. Well, I think you're absolutely right that democracy is at the heart of commoning, but democracy has so many valances of meaning that's hard to know. It's a slippery word. Because does voting once every four years count as democracy or does it have to have a more personally engaged participatory dimension to be seen as "democracy"? I think the ultimate is simply for people to have the opportunity to have engagement and consent in things that matter to them. And I think commons because of their scale are an important vehicle for that. How those become structurally integrated with liberal democracy at the state level, I think is really a great unanswered question because I think the rule of law and due process and many of the other great virtues of liberal democracies are sometimes so allied with the market system and financial capital that they've been corrupted or perverted.

And how can therefore liberal democracy be made to serve these larger trust building, legitimacy building roles? I think that's unanswered question that I think can only be answered in the fullness of time as a cultural array of commoners engaged with the state and explore what might be developed. So I'm not even so bold as to suggest what that rapprochement is, except that one is needed. And maybe John has more insightful hypotheses about that.

JA: Well, for me, one of the most interesting paradoxes in Teilhard is the idea of this global Noosphere that's going to emerge on the basis of a technology which doesn't yet exist, but at the same time that he has this global system in mind as our colleague Alan noted, the individual is held up to the highest level of importance in Teilhard's work. And it is to me an interesting tension that exists. Now, the question is whether democracy is able to square that circle and empower the individual, even as it builds and helps in this Noosphere building enterprise. And I go back to David B's point that there are a number of flavors of democracy and they don't all taste as good as each other. And in terms of the bottom up version of commoning and democracy, that comes closest to pure democracy, what I like to call direct democracy where people do have the opportunity to weigh in on the things that matter to them regularly.

And there are places like Switzerland where they'll have four or five elections a year. Anything that they think affects the society, people vote on. And they have an electorate of somewhere around 6 million eligible voters and they virtually all vote every time on these things and including just the other day. I'm in California here and we have a progressive system of initiatives and propositions that allow the people to, it doesn't take a large number of people to put something in front of everybody. And I think the technology of our time allows for the scaling up of direct democracy. I'm very skeptical about representative democracy. I think it is too easily captured by powerful interests. We see this in the United States and of course we see it in the younger democracies that emerged in the wake of the end of the Cold War where this capture has been so apparent.

And it's one of the reasons that I think we've seen a rise of authoritarianism. And it is particularly troubling to me to see in public polling of Americans that over one third of Americans are now comfortable with the idea of authoritarianism in our own country. What I think this speaks to again, is a dissatisfaction with the flaws of representative democracy. And one of the great technological implications of our time is that direct democracy can be scaled up. There's 40 million Californians here and we do pretty well with a lot of direct democracy and we're not going to snap our fingers and get it tomorrow, but there's a lot of things that can be done fairly quickly. And I think particularly from that bottom up level, those are mostly—as I look at these cases—they're mostly instances of direct democracy at work in terms of governance. So that's the way I would split the concept of democracy; direct versus representative. And along with the rise of networks, I think we should see a rise in direct democracy.

DSW: Well, I think that one fundamental thing that can be said, which is again, represented in the Ostrom design principles, plus multilevel selection theory, is that unless you have some kind of balance of power and social control system that ensures the balance of power, then you will get lower level selection pressures taking place, you will get the disruption of higher level cooperation. And so therefore governance in that sense has to be some kind of democratic governance. And otherwise it will go in the direction of authoritarianism. And a conversation I had with Geoff Hodgson, who's a great scholar of the social sciences is every socialist nation fails for two reasons. One is centralized planning doesn't work. Number two is concentration of power into the hands of a few elites, just inevitably, even when they start off well meaning, it goes in that direction.

The one thing I would add to the idea of direct democracy is that it need not be necessarily the individual person that engages in that democratic process. But if individuals form into groups, and if those groups are internally democratic, then it's the group that can vote in a higher level democratic process. So what you need to do is you need to incorporate the same principles higher up the scale. So I think there's a hidden individualism in direct democracy. Isn't that interesting? And it must all boil down to the individual person, when in fact the well-organized group that's egalitarian might be the voter. So I think that there's so interesting things to be said there.

DB: You may have heard of the experiments with software platforms like liquid democracy which the Pirate Party in Germany used to try to do that which was an attempt to have the integrity of the group's

feelings represented, and they were able to hold their leaders to account through the system. So they simply didn't sell them out once they got to the parliament or legislature. So, some interesting experiments for structuring parties through software systems like that.

But I would just add to this whole discussion, I think governance should not be easily separated from culture and social, what shall I say? The drive for social coherence and harmony. And I think otherwise we're going to get gaming of the system through factionalism, and I think there has to be some means or crucible for trying to align ourselves more closely as opposed to being polarized. And the social practices, the social deliberation, the shared cultural experiences, these are things that I think are going to have to be part of it as opposed to looking at governance in isolation from them.

DSW: Yeah. Great point.

DB: I think that it's going to be the vagaries of history that decide how this is going to work. There's only so much that can be predicted in advance, just as one could not have predicted certain tech innovations to have occurred or to propagate so quickly. And so people will see opportunities and try to exploit them, and perhaps somebody will have a pot of money to push in that direction. So it's hard I think to have a predictive blueprint for how it's going to unfold. I think we know the general dynamics and forces at work. But John, you've studied networks more than I, why don't you check in?

JA: Well, I think the historical record suggests that bottom up is the fundamental dynamic in system change. The empires went away because of a bottom-up movement, the creation of nation-states. They were not the authority system and yet they became the dominant system. And today I think the networks are beginning to assert themselves in a variety of ways, and they will necessarily draw power away from nation-states. And again, that empire/nation-state conflict took about 500 years to resolve, and so we're talking about the kind of a Teilhardian view of centuries here. Remember his geosphere and biosphere took eons each to develop.

DSW: Here I feel like I need... Go ahead John, and then I'll... Go ahead, I'm sorry.

JA: Go ahead David, jump in.

DSW: Well, we have to be very careful in our thinking about rates of cultural evolution to know how variable those can be. The fact that something took centuries in the past, does not mean that centuries are required in the present. Because cultural evolution is so accelerated with all of the factors of the Internet age, and we know that's happened already. Every decade is different than the last. That was not the case in previous millennia, where culture is a process of transmission from individual to individual and so on. And when that takes place at lightning speed, then so we truly can expect cultural evolution to take place very fast. Years, not decades, not centuries, years. That's already happened, so we need to direct it. The problem now is not the speed, but the direction.

DB: Well, I was just going to say, how plastic can we be? How quickly can we metabolize these changes? Those are really open questions, because we've seen the reactionary backlash to the speed of a lot of change. So those are other cautionary note.

JA: Exactly, I think what we've seen for example is that the use of advanced technology to reassert central and often authoritarian control suggests that there's certainly going to be competition and probably outright social conflict over this evolutionary path, as there was between empires and nations. And to David Sloan Wilson, I just say we probably would agree to disagree. I'm a little less optimistic about the pace of change. I see this competition and conflict as unfolding over time. It's hard for me to think of nation-states going away in the next 100 years or in the next 200 years. But 500 years from now, I think it's going to be a world of networks. Just as from 1500 to 2000, we saw the nation-state take up the social space of the world, and the empires wither away.

But my main point is that the rise of nation-states was a bottom up movement, the rise of networks is a bottom up movement. And so I think these larger patterns which really fit certainly with Teilhard's kind of thinking about the world are important. And look, I hope you're right that social change can happen a lot faster. I just can't have that faith myself, at least not yet.

DSW: You're both brilliant writers and I think your work does have influence, and catalyzing that I think is one of the things that I try to do and what the series will do.