Evolution and the Anthropocene – presentation by Dr. David Sloan Wilson, Ph.D. SUNY Distinguished professor of biology and anthropology, Binghamton University, New York

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David Sloan Wilson: 00:00 Okay. Thank you so much for coming out. So happy to speak here at this great institution, one of the greatest institutions around. Well, what is the Anthropocene? It’s a proposed epoch that began when human activity started to have a significant impact on the Earth’s geology, atmosphere, and ecosystems, much in the news. (00:52) And it’s being debated among the experts, I think. I’m not sure the geologists have quite decided whether it counts as a geological effort, but we don’t need to wait for their decision to accept the fact that human activities are influencing global processes, and also that these impacts are primarily negative. That’s why we talk so much about global warming and all that. The Anthropocene is not good for the Earth. (01:21)

Now, there’s another concept that was proposed, over a half-century ago, by this man, Pierre Teilhard de Chardin, who was a scientist-priest. He was a Jesuit priest and paleontologist at a time when science was deemed to be a suitable path to God. And so he coined the term the noosphere as the third in a succession of phases of development of the Earth, after the geosphere, that's inanimate matter, and the biosphere, biological life. (01:55) So, by this count, it seems that the noosphere is similar to the Anthropocene. But in Teilhard’s telling, this led to a more benign outcome that he called the omega point. And the omega point was a spiritual belief that the universe was evolving towards a higher level of material complexity and consciousness so that we might evolve to be wise stewards of the Earth, rather than destroyers of the Earth. (02:27) And so here we have two visions of human global impact. One is dystopic, the other is utopic. We want to know, can we get from one to the other? Can the omega point be achieved? Is this a statement that we could make scientifically? And I’m here to say that I think the answer is yes, but only if we steer towards it. If we think that it’s inevitable that we’re trending towards the omega point, then that’s not the case. But it is something that can exist if we know how to steer towards it. (02:57) And so, with that in mind, here is your menu for today. I’m going to talk a little bit about some evolutionary concepts, namely multilevel selection and major evolutionary transitions. And then I’m going to tell the human evolutionary story twice. Once for our genetic evolution, and then again for
our cultural evolution. And then, finally, based on all of this, how could we steer towards the omega point? (03:23) Well, in the beginning, I like to begin with the Christian worldview, which is that if there is an all-powerful and beneficent God, that it must be the case that his creation is harmonious from top to bottom, from the smallest insect to the entire cosmos. And although the first Enlightenment thinkers were placing their reliance on reason and science rather than scripture, I think, for the most part, they assumed that reason and science would affirm this particular part of the Christian worldview. In other words, they would also show with their science and their reason that the world is, in some sense, harmonious from top to bottom. (04:09) Not so, evolutionary theory. Darwin’s theory implied otherwise. And this is undoubtedly what is so threatening, basically, about evolution, is that it implies that functional order, the kind of functional order that we associate with a human implement such as a watch, or an organism such as an insect, might exist at small scales, and then cease to exist at larger scales of the biological hierarchy, that order might yield to disorder. (04:40) And Darwin was led to this realization by considering traits that we associate with human morality, the wise person, the grave person, the truthful person, the good Samaritan, the person who does unto others, basically. Could such a person or such a being evolve by a Darwinian process? And it’s not so easy to explain why that is. Here’s the fundamental problem in modern terms. (05:11) Number one, natural selection is based on relative fitness. This is something you’ve got to know about natural selection. It doesn’t matter how well you survive and reproduce in absolute terms, only that you do so better than other organisms in your vicinity. Life is graded on a curve, and so it’s like the game of Monopoly. If you’re playing Monopoly, and I offer you 1,000 Monopoly dollars subject to the constraint that I’ll give 2,000 Monopoly dollars to every one of your opponents, then you are wise to refuse my offer, because you want to increase your relative standing, not your absolute standing. (05:49) And so, once we take this on, then if we think of the traits that are for the good of the group, these "Do unto others" traits, then we can see that typically, as a basic matter of trade-offs, they do not maximize your relative fitness within a group. They might increase the size of the pie, but they don’t increase your size of the slice of the pie. And so how can these traits evolve? How can altruism evolve? (06:15) And this problem extends not only to the traits that we associate with altruism, which are sacrificial to the individual. So the problem goes deeper than that. So let me ask you to think about what I call a no-cost public good. Imagine that we’re a group, and I’m a type of
person that can provide benefits to all of us, including myself, at no cost to myself. Now, this might seem unrealistic, but it’s useful for illustrative purposes. (06:41) So let's say that there’s 20% of my kind in this group, and so we all do our thing, and we're all better. What’s the percentage of my kind in our expanded group? And the answer is 20%. There's no differences in my example. By benefiting everyone, I have not changed my proportion, and evolution is all about changes in proportion. You might think that some system of rewards and punishments might evolve in order to reinforce our good behavior. But if you think about it carefully, if I reward you for being good, then I'm providing a public good at my private expense. Or if I punish you for being bad, once again, I'm providing a public good at my expense. (07:23) And so this leads to a dismal conclusion that natural selection within a group is insensitive to the welfare of the group. A trait that floats all boats or sinks all boats is invisible to the process of natural selection within the group. So there’s the fundamental problem. And there is a solution, and Darwin arrived at the solution. It's true that altruism is selectively disadvantageous within groups. But if we imagine the multi-group population, a population consisting of many groups, it's also the case that groups with more solid citizens would robustly survive and reproduce better than groups that are handicapped by selfish individuals. (08:03) And so there's a process of between-group selection in a multi-group population which favors the good Samaritan traits, even though those very same traits can be disfavored within groups. And so, as the other Wilson, Edward O. Wilson and I put it in a 2007 article, "Selfishness beats altruism within groups. Altruistic groups beat selfish groups. Everything else is commentary." There is social evolution in a nutshell. (08:33) Now, we can expand beyond individuals in groups. We can stretch it out to a multi-tier hierarchy. We can go down and we can think of a multicellular organism as a group of cells and genes. And we can go up to groups within groups, within groups. And so, in this multi-tier hierarchy, there's a general rule, which is adaptation at any given level requires a process of selection at that level and tends to be undermined by selection at lower levels. (09:05) In more familiar terms, what's good for me can be bad for my family. What's good for my family can be bad for my clan. What's good for my clan can be bad for my nation. What's good for my nation can be bad for the planet. What's good for my corporation can be bad for the global economy. So this is multilevel selection. So this is foundational, and there's good news and bad news. (09:30) The good news is that the kind of functional organization that we associate with a human implement such as a watch, or an organism such as an insect,
actually can extend up to cover such things as a social group or the multilevel ecosystem. This is possible. And it is true that altruism now can be explained at face value. So if you’ve been taught that evolution explains selfishness well and cannot explain altruism, actually, that’s wrong. Define for me what counts as altruistic, and I will show you how that can evolve, at least in principle, by a Darwinian process. So altruism does exist, and it can be explained from an evolutionary perspective.

(10:15) The bad news is that special conditions are required. Altruism does not axiomatically evolve. Only under certain conditions, and these conditions can be quite stringent. And so, in many cases, that force of between-group selection favoring adaptive groups is not strong enough to counter the force of within-group selection favoring selfishness. And so these societies are "Life’s a bitch, and then you die" societies. They exist in nature. That’s one of the most troubling things about nature, is that it evolves things that we wish we didn’t ... We would not want to live in them, as humans. And, of course, many human societies are like that, too. (10:57) So there’s still no justification for the Christian worldview of harmony and order at all scales from the smallest to the largest. If we want to create harmony and order at the larger scales, we have to work for it. That is steering towards the omega point. The omega point does not come for free. It is not an inevitable consequence of evolution. It is not self-organized. It must evolve, and only under special circumstances. We have to create those circumstances. (11:27) So let me drive home this distinction between order and disorder at different levels of the multi-tier hierarchy. On our left, we have a marsupial predator called the Tasmanian devil, found only on the island of Tasmania. It works very well as a multicellular organism. On the right, we have a Tasmanian devil sadly afflicted with a facial cancer. What a horrible thing to happen. And this cancer is really frightening, because it’s one of the few cancers that actually is transmitted between individuals when they bite each other. So it’s a facial cancer that does not die with the individual. (12:05) So what you see here is the cancer is well organized. The cancer is functionally organized. It’s perversely adaptive. It’s out-competing the other cells in a multicellular organism. Cancer is natural selection taking place within a multicellular organism, but it’s creating disorder at the level of the organism. (12:26) On our left, we have the icon of a well-functioning society, the beehive. On our right, we have a male baboon who is eating an infant baboon. It’s committed infanticide. And it has two advantages from this. It’s getting a meal, and it’s also likely to mate with the mother earlier than he would have otherwise. So this is not good for the infant. It’s not
good for the female. It's not good for the troop. It's not good for the ecosystem. Only good for the male compared to other males. So this is order yielding to disorder. (13:01) This is an actual experiment performed on chickens. And in both experiments, the chickens were housed in cages with nine hens to a cage. On the right hand, we have selection and artificial breeding favored the most productive hen within each cage was used to breed the next generation of hens, generation after generation. And what happened here was that, actually, you've ended up with a strain of hens that's so aggressive that, in this picture, six hens have been murdered. That's why you only see three. And the three survivors plucked each other in their incessant attacks. (13:37) So what happened? The most productive hen in each cage was the biggest bully in each cage who achieved her productivity by suppressing the productivity of the other hens. And then, in five generations, you would have bred a nation of psychopaths. So this is within-group selection in graphic terms. (13:54) On the left, the experiment involved choosing the most productive cages and using all the hens within those cages to breed the next generation of hens. And so you were choosing the most cooperative hens. And then, five generations later, they're all surviving, fully-feathered, and I think they look like they're having a good time, as well. (14:15) On our left, we have a lichen, which is a two-species symbiosis, a fungus and algae cooperating to be a single organism. On our right, we have a Crown-of-Thorns starfish who's sucking the life out of a coral head here. Not good for the coral, not good for the ecosystem. Only good for itself. Order yields to disorder. (14:38) And here's our final slide. On our right, we have an average day in a chimpanzee troop. A little bit of cooperation, and a lot of competition within the troop. Then on our left, we have a human society. This is a group of children, pygmy children who are playing a game. And I just love the image of that circle of feet. And so there's something about the difference between us humans and other primates, including our closest relatives, that passed some kind of a watershed between order and disorder. Our groups, they are more ordered, at least our small groups, are much, much more ordered than our closest relatives. (15:22) And so that brings us to the concept of major evolutionary transitions, which is all about multilevel selections. And what it notes is that this balance between levels of selection, within and between-group selection, is not static, but can itself evolve. And when mechanisms evolve that suppress the potential for disruptive selection among individuals within groups, then between-group selection becomes the most important evolutionary force. And the group becomes so cooperative that it becomes a higher-
level organism in its own right, a veritable super-organism. (15:59) And, in fact, every biological entity that we currently call an organism, such as a single bacterium, a single nucleated cell, a multicellular organism, are in fact the highly-regulated groups of past ages, that in past ages led a more fractious existence. So everything we call a single organism today is actually a group of past ages that has evolved to be so functionally organized that we call it a organism. And this even includes the origin of life, which was much discussed during our committee meeting today, as groups of cooperative molecular reactions. What is life, basically? A group of molecular reactions that are reinforcing each other. (16:53) And then we could extend that upwards to social insect colonies, those iconic bees, as super-organisms that evolve by colony-level selection, and then our own species. I've put an arrow next to the date there of this book, 1995. This was the first book to develop this thesis of major evolutionary transitions. That's how new it is. Basically, a little more than 20 years old. That's how new all of this is. (17:25) And so that enables me now to tell the human genetic evolutionary story. As I've said, in most primate species, members of the same group cooperate, to a degree, but are also each other's chief rivals. You know, I was just at another conference in Germany, last week, in which one of the presenters showed a graph. And on the x-axis, it showed cooperative breeding, because there's many, many primate species, and they differ to the degree to which they help each other raise offspring. Humans are way on this scale, chimpanzees are way on this scale, and then there's a bunch of other primate species that you've probably never heard of, because they're not closely related to us, that fill in the two extremes. And some of them are very much cooperative breeders. (18:14) And on the y-axis was various other degrees of cooperation and awareness of other individuals. And what it shows was that the chimpanzees are much more different than humans because they differ so much in the degree of cooperative breeding. And then other species of primates that are not historically phylogenetically closely related to us, in fact, are much like us by virtue of their ecology, not by virtue of their phylogenetic distance. The fact is that chimps never help each other raise offspring, and so this is a really interesting distinction between how closely related we are phylogenetically and how closely related we are ecologically, basically, which is responsible for the selection of our traits. (19:05) And so what's really special about human evolution is that our ancestors evolved the ability to suppress disruptive, self-serving behaviors within groups. That's what a major evolutionary transition is all about. And so we crossed some kind of watershed in which now
we were selected primarily for teamwork. Teamwork is the signature adaptation of our species, and teamwork takes physical forms that we're familiar with. Child care, hunting, gathering, offense and defense. (19:34) Teamwork also has mental forms, and the idea of mental teamwork is really interesting to think about. Just about everything that's mentally distinctive about our species, such as our ability to think in terms of symbols, symbolic thought, and our ability to transmit large amounts of learned information across generations is a form of mental teamwork or profoundly communal. (20:01) And here's a book which I think needs to be on everybody's list. This is part of a canon of books that everyone needs to read in order to learn about this paradigm. Moral Origins by Christopher Boehm. Christopher Boehm is a cultural anthropologist by training. He was studying the feuding societies of Montenegro. He wrote a great book called Blood Revenge, which is really worth reading in its own right. But then that got shut down during the Cold War, and so he wrote Jane Goodall and he said, "Can I come study chimps with you?" (20:33) And, in addition, he became a real scholar of all of the different hunter-gatherer societies that had been described by anthropologists. And this is a wonderful synthesis, which shows how our very moral sense, the fact that we have a concept of morality, that's something that evolved by this process. If you think of what morality is, it's basically a way of holding each other in check so that we cannot exploit each other within groups. (21:01) And now, when we tell the human evolutionary story a second time, this time cultural evolution, we can rely on this person, Peter Turchin, who is a population biologist by training. And then when he got to be mid-career, he said, "I want to do something different. I know, human history," and he started to study human history from a mathematical, and an empirical and evolutionary perspective. And so what humans now have in culture, and now being able to adapt very quickly to their environments, and then eventually inventing agriculture, and now becoming larger, the group size began to outstrip our genetically evolved ability to regulate each other in small groups. (21:46) And so human society went through a phase in human history where they became despotic. Ironically, more like chimp societies than like small-scale human societies. And then subsequent cultural group selection then caused even larger-scaled human societies to become more egalitarian, leading to the remarkably, when you think of it, cooperative mega-societies of today. We live in societies of hundreds of millions of individuals. And when you think of it, we're pretty darn cooperative at these mega scales. Who could have imagined 10,000 years ago that we could live in such large societies and so peacefully, for the most part. (22:26) Although,
as you'll see here, the subtitle, How 10,000 Years of War Made Humans the Greatest Cooperators on Earth. It was warfare. Not entirely, but largely, warfare that drove that process of between-group competition which selected for the cooperation within groups. And so Peter says, "The central theoretical breakthrough in this new field is the theory of cultural multilevel selection." (22:56) Let me get you two episodes here during human history. So let's go back to the ruler of the Assyrian Empire in 1114 BCE, Tiglath Pileser I. This was during the despotic phase of human history. "I plundered their movables, their wealth, their valuables. Their cities I burnt with fire. I destroyed and ruined. Their fighting men in the middle of the forests, like wild beasts I smote. Their carcasses filled the Tigris and the tops of mountains. The heavy yoke of my empire I imposed upon them." We would not want to live in a society like that. (23:37) Fast forward about a millennium, and we have Ashoka the Great, the ruler of the Mauryan Empire, which was current-day India. "I will change. I will no longer be known as the evil Ashoka, but as Ashoka the angel. My magistrates are working among the people, among the many hundreds and thousands of people. The hearing of petitions and the administration of justice has been left to them so that they can do their duties confidently and fearlessly, so that they can work for the welfare, happiness, and benefit of the people in the country." (24:10) What happened during this period of time to result in a switch from those despotic societies to these societies in which even the ruler is held accountable? And the answer is the great world religions, the so-called Axial Age religions not only in India, but throughout Eurasia, basically. You had the cultural evolution of religions that caused societies to hang together at a much, much larger scale. You cannot create a huge society by intimidating everyone. That only works at a relatively small scale. If you want to have a larger society than that, then you need to offer a more fair deal, basically, to the citizens of that society. (24:58) But this, according to Peter, and I think he's right, was not based on a cessation of warfare, but because of the need to practice warfare at a larger scale. Warfare was still the driving process, in especially the Asian steppes. Basically, a new form of warfare based on horseback, which was like the most recent military technology at that time, and required societies to become much larger to defend themselves against this kind of warfare. So this is a very interesting view of the emergence of the great religions. (25:34) Well, here's a little progress report. Here's our menu. I hope you're not too stuffed. We're all the way down to the final point here on how to steer towards the omega point. I want to make three final points. One is, we need to learn to speak a
single spiritual language. Basically, there's a Tower of Babel out there, as you might imagine, with cultural evolution taking place all over the world, partially in isolation to each other. Often the cultures that are interacting, are interacting in a hostile fashion. How could we speak a single spiritual language? (26:12) My second point is, starting small. The fundamental message about all of this is that the small group is the fundamental unit of human social organization. For the last century, we had been living in an age of individualism in which we think of the individual as the fundamental unit, as if it could explain everything as a form of self-interest or self-some individual psychological process. (26:39) What this is telling us is that the small group has been a very strong unit of selection. And so we need to understand our species in terms of how we work in small groups. And those small groups are needed just as much now as they’ve always been needed, so we start small with the construction of strong small groups. And then, of course, we have to scale up, ultimately to the global village. (27:04) Now, it's a very interesting observation that religious, spiritual, and scientific worldviews, especially the contemplative wings of all the major religions, have converged upon a common conclusion, which is that everything is interconnected. In my images here, I have a religious expression of that, a Buddhist expression. And on the bottom, I have a scientific expression of that from complex systems thinking. (27:35) And as soon as we take this onboard, take it very seriously, no matter how you arrived at that conclusion, certain ethical conclusions follow, which is that it becomes difficult to use one part of the system to attack another part of the system. When you're thinking systemically, it's very, very hard to attack one part of the system from another part of the system. And so this provides a common ground, and so it's sometimes called interspirituality. (28:03) It's also called second-tier consciousness, which means, basically, that we haven't left our traditions, but we’re in a space where we can join with other traditions, and then we can speak in common with them. And here’s a leader of the interspiritual movement, Kurt Johnson. More people need to know about Kurt Johnson. He’s a fascinating man, like me, and he has a Ph.D. in ... Oh yeah, sorry about that.

Audience member: 28:30 [inaudible 00:28:30].

David Sloan Willson: 28:33 Like me ... I'm continuing now. He has his Ph.D. in evolutionary biology and systematics. He would have fit right in at the Smithsonian. He was at the American Museum of Natural History. At the same time, between getting his Master's and Ph.D., unlike me ... This is what makes him more interesting, is
that he became an ordained Christian monk. And the group of butterflies that he studied was the same group studied by the Russian novelist Vladimir Nabokov. And so Kurt has also become an authority on Nabokov's scientific career and has written two excellent books on Nabokov's scientific career. And so this makes him a very interesting person, indeed. (29:13) I didn't know about or meet Kurt until only about a year ago, and we bonded like epoxy. We really just have become so attached to each other. Here's my book, Does Altruism Exist?, which is basically the parts on what I'm telling you now. And, for him, what this meant was that the spiritual imagination often gravitates towards ecology and evolution. (29:42) And if you look at the titles of spiritually-oriented books, ecology and evolution is all over the titles. But the view of ecology is a very holistic view, such as Gaia. And the view of evolution is a very progressive view, such as Chardin's omega point. And none of that matches very well with academic ecology and evolution, which is of the selfish-gene variety and of a very reductionistic variety. And so what Kurt learned through my book is that these new developments, and mostly they're newer than the last two or three decades, are much more favorable to the spiritual imagination. And in a sense, the science has caught up to the spiritual imagination. He said that it's like swimming downstream instead of upstream. (30:29) And so the science is now so much more favorable, and yet, of course, there's a lot of integration that needs to be done. And so, over the past year, Kurt and I have worked together, and we're assembling a large group of people in order to put this concept of interspirituality on a strong scientific foundation. And if you wish to join us, then please just contact me, email me, and we will add you to our growing consortium. (30:58) Okay. So with respect to starting small, I've already said that small groups are a fundamental unit of human social organization. And what this means is that it's required for individual wellbeing. I'm going to make the claim that, really, we cannot thrive as individuals unless we're within some kind of, one or more, nurturing groups in which we're known as individuals, and we are known and judged by our actions. I think it's also the case that it's hard to be efficacious at a larger scale unless we're in a large group that's committed to walking the walk and is holding its members accountable. (31:36) And so, now, this is something that religions do well. Not all the religions. I've spent a lot of time studying religions. There's a lot of religious congregations that don't work that well. But often what religions provide is this sense of community, and especially at the small group level. My lower image there, there's a relatively new social form called a cell ministry, in which a large congregation is broken up into cells
that meet in each other’s home. (32:03) And here's another image I just grabbed from the web, under cell ministry. "What the cell is to the body, the small group is to the church." Let's just think about this for a moment. The person who wrote this knew nothing about evolution. I bet you money that he was a creationist. He would agree with a creation. But look what they are saying. They're saying that our groups are like two biological entities, a multicellular organism and a beehive. And I am here to say, "You're right. That's more true than you might have thought." And evolution can actually put that on a scientific foundation in a way as never before. (32:44) So I could have given you many examples of religious groups that function well as small groups, but instead, I'm going to talk about intentional communities, which includes ... Actually, some of them are religious. Others are secular. Based on a study we've done, which includes a survey of over 100 intentional communities, and then some detailed studies of a few, including an eco-village named Dancing Rabbit in rural Missouri. (33:13) And so I'm going to drill down now and provide a little data. I've been giving you a 30,000-foot view up to now, but I'm going to drill down and provide a little bit of information about this particular kind of community. Well, what are modern intentional communities like? They might be like the hippy communes of the 1960s, which were fun while they lasted, but they didn't last very long. (33:37) They might be like the communal societies of the 19th century, which actually also didn't last very long. They tended to be very encapsulated and never lasted more than ... Very, very few are still around today. And they've been well studied. It turns out that the 19th century communes, the religious communes, lasted about three times longer than the secular communes. So religion was definitely adding something. But even the average religious commune, back then, lasted only 18 years. (34:12) On the other hand, we have the New England village, which we all would like to live within, or at least we think we would, we've romanticized. A very durable social unit. Or, of course, those hunter-gatherer groups that have gone back through time immemorial. (34:29) So what are modern intentional communities like? I can tell you, because we did the survey. And what our survey shows is that they function remarkably well as small groups. And to illustrate this point I'm trying to make that when we think of welfare at three scales, individuals, small groups, and at larger scales, there's something special about the group. And that when the group is functioning well, then the individuals thrive, and the group becomes very efficacious for getting things done at a larger scale. (35:02)

So here's the reasons. We asked, "Why did you join the intentional community?" And this was the top 10 reasons. And
you can see the top reasons are all about living in community. That’s what these people are hungering for. "Now that you’re living in community, what’s most valuable?" Once again, all about community and the personal growth that can take place within such a community. "What would you like to change?" The second top-ranked nomination was, "Nothing. I like my community so much that I would change nothing." (35:33)

And then the other top-ranked nominations have to do with the difficulty of making decisions in groups. And indeed, consensus decision making is hard to do, although it’s also very important to do. Basically, they want more community, not less. "How good has your life been since joining the community?" Look at this, how it’s stacked in the direction of, "My life has been much better since joining this intentional community." (36:00) So there’s group care. Now let’s go down to self care. There’s a famous scale called the Diener satisfaction with life scale. And it’s a very small scale. It’s been given to many, many populations, and so we can compare and rank members of intentional communities in our survey with other populations. And what you see is they’re stacked up at the top end. And the satisfaction with life for women in intentional communities is exceeded only by Norwegian pregnant mothers and mothers of small children. I didn’t think you could be happier than a Norwegian woman with a small child. (36:41) Here’s another instrument on self care. And what we see is for the presence of meaning of life are right up at the top, basically. So this is providing a rich, rich life. This is a personality variable of emotional stability, which is the opposite of neuroticism. And what this shows is that, in intentional communities, the average degree of emotional stability is much higher than in the American population. (37:06) Now, we don’t know from this data whether this reflects who came into the community or what happened to them after they got there, and subsequent research will enable us to disentangle them. But, of course, personality traits are genetically inheritable, to a degree, but there’s also a huge environmental component. And it wouldn’t surprise me, at all ... You can just imagine if somebody comes into a nurturing community like this, a much more stable and nurturing social environment, that they themselves become more emotionally stable. So I’m expecting to see that. (37:38)

Okay. So now let’s get up to Earth care. And here is the mission statement of this eco-village, Dancing Rabbit. Let’s take a minute. It’s very informative. "To create a society the size of a small town or village made up of individuals and communities of various sizes and social structures which allows and encourages its members to live sustainably." Now, that will be defined below. "To encourage the sustainable society to grow and have
the size and recognition necessary to have an influence on the global community by example, education, and research."
(38:13) So they want to be a template, a model for other communities. They define sustainability in such a manner that, "Within the defined area, no resources are consumed faster than their natural replenishment. And the enclosed system can continue indefinitely without degradation of its internal resource base or the standard of living of the people and the rest of the ecosystem within it, and without contributing to the non-sustainability of the ecosystem outside." I find this, all of this, admirable from an ecological perspective. (38:42) So do they succeed? As individuals, we might aspire to the same goals. And do they succeed, and if so, how? Well, to join Dancing Rabbit, you need to sign a covenant. And this covenant binds you to certain ecological practices concerning all of these things. You've committed to it. Also, nonviolent conflict resolution. You have to give some money and time to the community. And so this covenant, I think, is as strong as the strongest religions I know. As strong as the strictest religions. So when it comes time to their ecological mission, you've got to walk the walk, or else you cannot live in this community. (39:28) When it comes to anything else about your lifestyle, then anything goes. There's a tremendous tolerance. And so this actually becomes a model of interspirituality. They tolerate any religious or spiritual belief, including atheism, any sexual orientation, any living arrangement. And so what this village is, it's a combination of very strict norms, that's called tightness, and a great deal of looseness with respect to everything else. And so that combination of tight and loose makes for a very high quality of life and a very efficacious action in terms of their ecological objectives. (40:09) So they do a thorough audit of their practices. It has been said that the average American should be using a tenth of its resources of the average American to be sustainable. And darned if they don't do it, basically. Without going through in detail, you can see that, in most of these cases, they're coming in at about 10% of the average American. And their own assessment of their quality of life, independent of ours, also is extremely favorable. (40:40) Finally, the stewardship of natural areas. So they're a great steward of their property of over 200 acres. So I invite you ... You might have the same values as the members of Dancing Rabbit, but as an individual on your own, in modern American society, how well are you able to actually accomplish those, either in terms of your resolve and your means to do so. (41:16) And so, to summarize this section on small groups, a larger-scale society needs to be multicellular. Just as we consist of trillions of cells that need to be healthy and interact with each other for us to
function as a multicellular organism, the large-scale society needs to be multicellular. The cells are small groups whose numbers are known to each other by their actions. All groups whose members are working towards common goals require the same core design principles. This is a matter of what it takes to be cooperative. (41:50) These can be taught. And one of the things we're doing at the Evolution Institute is we've created a framework for teaching these design principles to just about any group. This is called Prosocial. And we just launched a magazine called Prosocial Magazine. So I invite you to just type Prosocial Magazine into Google, check us out. This explains the program. And actually, one of our first users was a community radio station in the Washington, D.C. area, Takoma Park.

Audience member: 42:20 [inaudible 00:42:20].

David Sloan Willson: 42:21 All right. Okay.

Audience member: 42:24 [inaudible 00:42:24].

David Sloan Willson: 42:24 So check them out. They underwent our process, and you can see they're pumped. I think we can claim a little bit of credit for that, but of course, they get most of the credit. And so, finally, scaling up. Basically, how do we scale this up? And here's an essay that I wrote with a Norwegian biologist named Dag Hessen, called Blueprint for the Global Village. We're studying Norway in considerable detail. (42:50) Back to that boundary between order and disorder. Here's two nations, Norway on the left. Very well-ordered society. It comes out number one in the quality of life year, after year, after year. On the right is Syria. Not functioning very well as a nation. Now, factions are functioning well. ISIS is functioning well. Not so, the nation. And so how do we extend this boundary between order and disorder? First, to the national level for a nation such as Syria, and then above the national level to the global villages. (43:28)

And what we can say is that these core design principles, what it takes for any social unit to function well in terms of the suppression of disruptive, self-serving behaviors from below, is scale independence. It's needed by nations in the global village just as much as individuals interacting within real villages. So the blueprint for the global village is a real village. Also, global governance requires formulating policies with the entire planet in mind. (43:59) I ask you, if you were to meet somebody in your village, that individual just was transparently self-serving, she told you to your face that she cares only about herself and is using you as tools to her end, how would you respond to such a person? You would avoid her.
You might punish her. You'd certainly tell everyone else about her. And she would therefore not be able to do much, because there would be this entire vigilant response to such naked self-serving behavior. We still see self-serving behavior, but usually it's better disguised than that. (44:34) And yet, when a politician tells you that they're only going to do things that are in the national interest, and that's the only thing that they care about, that's public, and we vote for them. Some of us vote for them. And what multilevel selection tells us is that that kind of selfishness, national selfishness, is not good enough. That's what's going to create the problems, higher up the scale. (44:56) And in the article with Dag Hessen, we say, "Even Norway turns selfish, higher up the scale, in how it invests its pension fund." So it's taken its oil revenues, unlike most nations, and it's invested them in the nation of Norway. It's an 800 billion dollar fund, the largest in the world. So a tiny nation of six million people has the largest pension fund in the world because of what they've done with their revenues. But how do they invest their pension fund? How do they invest it? It's for the good of Norway. They made shrewd financial decisions for the good of Norway, and not necessarily good for the Earth. (45:34) And so we have to ... One more step, one more step is needed in order to expand that moral circle up to the level of the Earth. At that point, we'll get to the omega point. Now, Norway actually often does act as a global moral agent at the global level. So, okay, we're at the end. There is the menu, and I hope that you're not over stuffed, that you ate it all up, and enjoyed yourself in the process. Thank you very much.

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