The Ethics of Evolution, and the Evolution of Ethics

Talk by Walter Anderson, Ph.D., President of World Academy of Art and Science at 1st Annual Workshop on Geoethical Nanotechnology, July 20, 2005

Martine Rothblatt: I'm very honored to welcome you to the workshop. Walt has been publishing on the subject of evolution and technology for many, many years. He's really, I think, one of the first writers of book-length treatments on the subject of how the very nature of evolution has been altered by technological change. Walt's President of the World Academy of Art and Sciences, which is very good, because the two have always gone glove-in-hand. So I'm very happy to welcome you, Walt, and to have your discussion on our next track.

Walter Anderson: Thanks much. What I also want to talk about is how we frame the things we know. And framing is something that we don't pay attention to much. And behind every conversation, behind every thought, are usually largely unexamined frameworks of assumption and perspective that have a great deal to do with how we think and what we choose to think about. And so I want to start out by one example of the framing question, which is: what are we? And the ordinary answer would be, well, we're a bunch of human beings. And I'm Frank and Bill, Ray and so forth.

Another way to frame it very much consistent with all the evidence we have, is that we are a planet. We are a planet that happens to evolve, having evolved individual psychologies. But we are as much it as we are on it, or of it, or doing things to it. And I'm going to try to return to that a little bit in the few minutes that I'm talking here, to see how it might illuminate or perhaps complicate, and perhaps confuse some of the questions that we address.

It's a fairly simple thought. It's been around a long time. Alan Watts used to say the world peoples itself. In any case, what do we know
about this thing that we are or aren't on? One of the things, of course, that we obviously know and talk about that people would not have known and talked about the few centuries ago, is that it evolves. It goes through continual change processes. These are customarily described as gradual processes that could just as accurately be described in terms of series of stages, leaps, jumps.

One of the great evolutionary biologists, John Maynard Smith, whose work and [inaudible] probably knows personally as well, Barry [Blumberg] is familiar with, talks about the stages in the evolution of life on earth. And what it does in each of those stages, as we begin to get replicating molecules, for example, or sexual reproduction, or any of the things that we think of -- punctuated equilibrium, sort of fits within the stage of [inaudible] a notion. But what we seem to get is new principles of organization in which things that are once separate begin to interact in new ways.

And one of the most significant leaps in the evolution of the planet is one that we're still trying to figure out and cope with is, of course, us and not only simply us, but the emergence of human consciousness. And the emergence of human consciousness I submit, was a full system transition in the way that evolutionary stages generally are. That is, when human consciousness emerged, well, let's say, when the capability of complex symbolic interaction emerged, which is essentially what human consciousness is, the conditions of life changed for the entire planet. The planet became something else, and is in the process of becoming something else.

Why? Because one of the things that human consciousness confers on human beings as our capability to manipulate symbols gets more sophisticated, as we learn how to talk in real sentences, as we learn how to write, as we learn how to do all the things we're doing here with information, we gain an enormous increase in our capability to impact ecosystems and the lives in the evolutionary development of all other species.
So when we look, for example, at the problem of anthropogenic climate change, we're looking at something that I don't think is too much of a leap to say it affects all life on the planet and the entire planet itself. Which is a consequence of our ability to know, our ability to do things that alter the geosphere and also our ability to find out and develop feedback systems and modeling systems that enable us to know about and think about the alterations themselves. So the whole picture gets more complex. Back up a little bit. Just thinking in terms of the emergence of human consciousness, the whole system transition. It involves symbolic communication. It involves what I think it was Theodosius Dobzhansky, the evolutionary scientist, described as the emergence of what he called cultural DNA, but what we now call memes.

Furthermore, the emergence of symbolic systems generally had to do also, and increasingly had to do with the development of complex artifacts that supplemented our own biological capabilities for thinking and communicating. Even a clay tablet is in essence an external memory system. And so we have seen and are seeing, and are trying to make sense of the accelerating development of our external memory systems, our information processing technologies, which are inseparable from us, as many people have pointed out. Certainly we live in a sort of symbiosis with our technologies.

I said I would talk a little bit about ethics. Ethics really only exist in the presence of symbolic systems. We have some evidence of what we might call altruistic behavior in animals. But to get to the point where you have rules and all of that, you need symbolic systems. And you need, at the very least, verbal communication to carry on the ideas of traditional societies about what’s wrong and right. And then later on, you know, you begin to get written systems.

Behind those are always frames of reference having to do with what are we? What are we a part of? So when you get the emergence of a
complex ethical system like Aristotle, he is not only talking about what's the good life? What are the principles for revealing a good human being? He's also talking about what a human being is a part of. And he talked very much about the idea that we are only human in the context of society, in the context of the fullest. That's what makes us human and that's the context within which we think about our responsibilities as human beings. We are, as he put it, fully from animals. And when he used that term, he wasn't talking about Karl Rove, you know. He was talking about all of us as members of a larger system that's in a sense, inseparable from in what we are and what we do.

And so, emphasizing what went on for thousands of years. And the one that did not immediately respond to changes in context, but changes in context happen very dramatically. It wouldn't say we can date some several hundred years ago. It's very much a part of our contemporary context, was the emergence of the idea of the planet itself. The fact that there is a globe and we are on it. The blue dot that Barry talked about. We simply didn't have that until 200 years ago.

Much more recently, of course, is the emergence of the concept of evolution itself. So we begin to think within the context of evolutionary change. Coming along with the emergence of the concept of evolution and actually emerging at about the same time, was the recognition that not only do we live on the planet and is the planet's life emerging, but that we do have this enormous capability, whether we know it or not, to impact nature everywhere in America. And maybe some of you are familiar with this work by George Perkins Marsh wrote a book in the mid-19th century, talking about humanity in nature. And for the first time, gathering together information about all the kinds of impacts, deliberate and accidental, that human beings have on large systems.

So we begin to put these things together. And we're really just in the process of doing it now, where we say, hey, we're on the planet. We're on this big blue thing and we're inseparable from it in the way where we can maybe extend beyond it. It's changing. It's changing all the time.
We're a part of the evolutionary process. And we have a big part to play in it. Our consciousness has a big part to play in it. The decisions we make, the words we think, have a great part to play in it.

I've used the word "emergence" quite a number of times, things emerging. And that's another big and very useful conceptual framework for talking about these stages. I was reading recently about a conference where a bunch of interdisciplinary intellectuals came together in Stanford and just basically brainstormed about different definitions of what they meant by "emergent." Because we all know that that is a part of what evolving systems do. That they don't simply gradually evolve. They keep making these jumps. And I suspect that everybody in this room has a pretty strong hunch that we may be somewhere in the process of one of those jumps, and maybe has even fairly strong ideas of what that's about.

But emergent to me, has to do with the emergence of new principles of organization within a large system, and with smaller parts of the system becoming parts of a larger system in ways that then make that larger system do things that it hadn't done until those parts aggregated. Laughlin, in terms of physics points out something that I really hadn't thought about it this way. The classical, what we call classical physics, the properties of Newtonian physics, in a sense don't exist except as an emergent, at a level at which [inaudible] began to organize in a new way. And then new physical laws of behavior exist which make possible things like things that you don't have until you have the emergence of what we call classical or Newtonian physics.

So of course, something that I think will be on all of our minds as we talk today will be on what, if anything, is emerging, and how do we relate to it, and what are the questions about how we relate to it as individual human beings? Over the past few decades, there's been a lot of thinking about moral development in psychological terms as human beings grow up. Lawrence Kohlberg, Carol Gilligan. People like that.
Robert Kegan wrote a very interesting book about human and moral development called *In Over Our Heads*. Saying that the moral development of human beings has to do with our ability to comprehend and to function responsibly within ever more increasing contexts. So that a lot of people in the world right now, he says, are still living in pre-modern contexts and trying to find themselves into modernity in some sense. And a lot of people are living in more or less modern contexts and trying to find their way into post-modernity in a world of globalization, of multiculturalism, of questions about the nature of reality. Things that we bump into today and in a sense can't help bumping into and he's asking, do we have those kinds of skills to function in this kind of emerging context, and what are those skills? How can we think about them? How can we even rationally and usefully ask questions about them?

So it seems to me that one way we could talk about the place we're in, if we want to think about it in that context of a planet growing up so to speak, is that we're in the midst of a … we are not all the way through some kind of an emergence. We know that there have been a lot of them. And perhaps for the first time, the sentient creatures who are in a part of it, are able to try to make sense of it or at least to say, we don't know what the hell's going on here, or to ask useful questions about it. One piece of where we're kind of stuck and this has to do with what Max said, is that we have a hard time reasoning with one another about what you might call environmental or ecological responsibility. And the arguments, I'd say, on both sides, tend to be hampered by a lot of dualistic thinking.

And you summarized it way back there. Tennyson, "Nature red in tooth and claw." That idea that nature is barbaric and destructive. It's kind of like Freud's "id." You know, it's down there thinking of bad things to do, and needs the civilizing hand of man to create order and so forth. And then more recently, as we get more and more feedback from all the things that have gone wrong, some of which I've touched on, we begin
to get the flipside of that, which is equally dualistic, which is instead of nature bad, humanity good, we’ve now got humanity bad, nature good.

But you're still stuck with the same damn dualization. You're still stuck with the assumption that we are not "it." And I think part of the evolution of thought that we need to begin to make sense of, and I don't think it's going to be easy, but I think a part of it might be very interesting would be to have some dialogues from people on both sides of that dualization. I mean, some real high-techy people and some real down-home environmentalists. And see if you could get anywhere within the context of facilitated dialogue. Not debate. I've been to debates and that's a waste of time in my opinion. But there is a methodology of dialogue going back to David Bohm practiced by people like the Dialogue Center at MIT and so forth.

So I think there might be interesting possibilities to extend that, to push our thinking, and to push our thinking beyond that dualization which I find -- I've got a long history as an environmentalist. I've been on both sides. I kind of get tired of both of them. I think we have to learn how to move beyond that.

But it seems to me that what we're talking about, and it’s worthwhile keeping it in our context, is that as we think, we are not only thinking about as we might have in Aristotle's time, about how we become responsible to society, or are we thinking about as we do in the light of say the work that Jay [who?] and Ray [Kurzweil] do about the evolution of the human species? Thinking about all life. All life. And it's nothing less than that, I think, is the context within which we're talking today. And that's it for me. Thank you.

[End of Recording]