

# A Dialogue: Brian Swimme, Marsha Snow Morgan and Philip Snow Gang<sup>1</sup>

August 2003

**Marsha:**

This conversation, Brian, is taking place while you are in California and we are in Christchurch, New Zealand. It will be shared as a context-setting dialogue for students in our graduate program leading to the Masters of Education in Montessori Integrative Learning

**Phil:**

As you know, we have a deep interest in Thomas Berry's work. Having been involved in Montessori education for more than thirty years, what particularly strikes our imagination is Berry's call for a new education. We have always believed in the transformative dimension of education, but reading Berry's work and studying the cosmological interface of that work with you, Brian, reaffirms our belief that some aspects of the Montessori approach need reorganizing.

**Brian:**

Yes.

**Phil:**

The core understanding is there – but it requires further articulation. That reorganizing is the essence of the drawings that we sent to you and will be addressed later in this interview.

We begin with the two quotes – one from Maria Montessori and one from Thomas Berry.

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<sup>1</sup> Transcript of video: <https://vimeo.com/296105427>

**Marsha:**

We feel like you are second generation expressing Berry's work and we are second generation expressing Montessori's work. You have really deepened our whole view of Montessori's Cosmic Education. The miracle is that she birthed her thoughts prior to modern science discovering so much about the Universe Story.

Montessori said:

*"Each expression of everything that exists has a cosmic sense and the union of these cosmic finalities not only maintains the level of life but increases it. Each being answers a special call, which is beyond comprehension, but which renders everything a participant in creation."*

**Phil:**

In juxtaposition, Thomas Berry says:

*"The nobility of our lives, however, depends upon the manner in which we come to understand and fulfill our assigned role. Yet we must believe that those powers that assign our role, must in the same act bestow upon us the ability to fulfill this role. We must believe that we are cared for and guided by these same powers that bring us into being."*

**Brian:**

Two great quotations

**Marsha:**

To help get us started and think deeply about this, Thomas Berry calls us to the Great Work while Maria Montessori asks us to understand our Cosmic Task. We envision the Great Work of education is to tell The Universe Story and that is what you do so beautifully. This provides the context for learning. We see Montessori's radical education as one process through which these ideas may be grokked.

*In what ways might you describe the Cosmic Task of humans?*

**Brian:**

One way to think about this is that there is a new role for humans at the species level. Terrence Deacon, an evolutionary biologist at the University of California at Berkeley, has an interesting point of view that may help us consider Montessori's idea of a Cosmic Task. He says that the development of language, especially written language, architecture and the ability to code ideas

into stone, might allow us to consider the human species as a new phylum. Now phylum is not a word that is in common use in our societies, but it is one of the major divisions of life. Biologists point to perhaps twenty-four to thirty-six phyla in all of life that came into form around five hundred million years ago. It was one of those really interesting mysteries that all the phyla we know about came into existence all at once. It is the way the Universe seems to operate when it goes about developing a new level of emergence or a new level of complexity - it just does it all at once. A primary example of this is the emergence of galaxies. You have these little particles and then suddenly you have stars and galaxies that came in all at once twelve billion years ago and no new galaxies ever formed again.

It is the same with the phyla. There's the phylum of the vertebrates or the sponges or the arthropods. These are major divisions of life. Now Terence Deacon's point is that with language we have to think of humans as a new phylum. It's a very radical idea, but it is one that was already formulated by the palaeontologist and Jesuit, Pierre Teilhard de Chardin. I like the idea because if we are a new phylum then our impact on the world is going to be so different because we have moved beyond these former divisions. The difficulty is that we have the power of a new phylum and yet we are proceeding as if we are just another species.

This refers to another one of Maria Montessori's ideas when she charges that one of our challenges is to realize that the acquisition of material possessions is not the goal of human life. Life is not just an adventure concerned with making things and getting things. There is something vaster taking place. But as long as we are merely using the tendencies or aims that were common among all of the primate species and among all of the thousands of mammalian species, we will continue carrying out the destruction of the planet. Then we shift to this idea of new tendencies for our phylum, or in Montessori's language, the idea of our Cosmic Task.

One suggestion is that we have layered within us these tendencies, which come out of the primate and the mammalian world. But there are deeper tendencies that are planetary in scope and nature and our Cosmic Task is to find a way to activate these—to bring them forward and to bring them to fruition. In terms of evolutionary biology, I would say that our Cosmic Task is to develop those tendencies that are planetary in scope and that have really not ever been present in a single species. It is a new challenge within the entire biological world.

**Phil:**

That is beautiful Brian. It actually stimulates one of the other questions because when we study the Montessori approach, and particularly her son Mario's contribution, we find a further development of this notion of human tendencies that he identifies as potentialities or ways in which humans come to "know." Observing, exploring and imagining are some of these tendencies through which humans satisfy their needs. Since humans are a derivative and not primary, are there needs and tendencies in life or in the cosmos? I recall in several of your symposia you addressed certain tendencies that existed from the beginning, and I wonder, just playing with it, if we could see how those relate to humans.

**Brian:**

Concerning tendencies in the Universe, Thomas Berry and I identify the Cosmogenetic Principal. In that principal we are attempting to say what humans have discovered concerning the tendencies of the Universe. I know you have explored these a lot yourselves, but just to frame it, I would say that differentiation, autopoiesis and communion are the three fundamental tendencies we observe in the Universe.

It was a really powerful insight in the late nineteenth century and early twentieth century when biologists came upon the idea that a fundamental tendency among all of life is differentiation. Over and over again they would see life branching out. I say this is fundamental because evolution is only a middle of the nineteenth century discovery. By the end of the nineteenth century humans are playing with the idea of life evolving and they arrive at this fundamental law of differentiation. When we look at other places in the Universe we see that the Universe is always differentiating. That would be the first law that scientists could regard as universal among life and the Universe as a whole.

It is amazing. At one time we were all hydrogen and helium gas. The whole Universe was hydrogen and helium gas. And then right away it starts differentiating into stars, each one is different from the other, and then planetary systems come into being. So, this movement to differentiation is very deep in the Universe.

Recently another tendency has been observed and has been identified as autopoiesis or self-organization. That was the result of the work of scientific inquiry in the middle of the twentieth century. You can always find precursors, but I would turn to a massive thinker, Ilya Prigogine, from Belgium, who worked in Russia and elsewhere, and then came to the United States. Prigogine's work in chemistry showed that when you bring together atoms of calcium and potassium in very specific amounts, they just start organizing themselves. They start creating really complex systems that don't rely upon any outside engineer, clockmaker or thinker. They organize themselves from within. That insight ramified through the sciences so we can now say that the complexity sciences, in all these different fields, are exploring the ways in which this Universe, among other things, organizes itself from the beginning. No one tells a cloud of hydrogen gas how to construct a galaxy; it is just in the nature of the Universe.

For the third tendency, we say "communion", but interconnectivity would be another descriptor. It is the way in which the Universe becomes more progressively related. You start off with hydrogen gas, then after a while you have a planet, where there is an atmosphere moving into the hydrosphere. It is all interpenetrating. Then you have the development of life itself and eco-systems. That is fabulous interconnectivity.

In terms of Mario Montessori's idea of tendencies, I would begin by saying that the Universe is always pressing for a further differentiation and a further self-organization and further interconnectivity. Then you have the question, "What would this mean for the human—and in particular for the tendencies that Mario identified, such as observing, exploring and imagining?" I would say that those would be the ways in which the tendencies of differentiation, autopoiesis

and communion are proceeding in consciousness. In the task of observing we are discovering the differentiation and autopoiesis that has already taken place. So, the more carefully we observe something the more we begin to discover how it is different to anything else in the Universe. This requires very careful observational skills. I think this too provides a clue concerning Montessori's notion of the Cosmic Task that we were just talking about.

One way that a biologist might see that is that animals will observe and will develop capacities for observation up to the point that it enables them to survive and to pass on their offspring. That certainly would be true of humans because, to a certain extent, we need to observe enough to find our way in the world. But what is amazing is that the observation that a human can be attracted to can be observation just for the sake of observing. It really is something to behold. We will not merely spend our time observing something that doesn't relate to say food or offspring. We will devote an hour, we will devote a month, we will devote decades to observing. In the great film "Winged Migration" humans, for instance, observed the way in which birds migrate around the planet. This took decades of just astonished observing.

One could say then that a great insight into our Cosmic Task is to learn to observe so deeply that we can bring into consciousness the splendor of differentiation. The splendor itself can become aware of itself. We have this long, long process of differentiating – 13.7 billion years of differentiating has taken place. Now with the human developing this power of observing deeply, we bring differentiation to a fulfillment of sorts. Not that it is over, but it comes into a kind of fulfillment when the magnificence itself becomes suddenly aware of its magnificence.

We can say more about exploring and imagining—but I would see in those tendencies (that Mario addressed) what I was referring to as the planetary capacities that are layered into the human. They are not ad-hoc; they rather derive from a larger enveloping cosmic capacity but are a new and unique form of these capacities.

**Marsha:**

I am thinking of how you are enlarging our question about the species becoming a particular phylum and I am wondering if these two processes of differentiation and complexification are very much related to that process of being a special part of a larger species. And then I was thinking of Thomas Berry's term, anthropocosmic. You previously mentioned the Cosmogenetic Principal and he says that if there are cosmogenetic principals there are also anthropocosmic principals—and that each is totally referent to the another.

**Brian:**

Yes, right exactly. Thomas is always thinking in terms of the whole. He thinks that the whole is present at all times but in different modes. He would even say that the human is present at the birth of the Universe —present in an implicit way. And furthermore, our moment now is when that implicit form has become explicit so that we are, in that sense, a form of the entire Universe. The Universe is profoundly human, and the human is profoundly cosmic. But in his thinking, this would be true of salamanders and sea gulls as well as every part of the Universe. Everything

carries the imprint of the whole. This is so close to what Maria Montessori would be talking about—the co-ordination of subjects and the alignment with the cosmic sense.

**Marsha:**

That really highlights this word autopoiesis and the self-creation in relationship to all these things that have their life—the salamanders and the birds and the human babies as well. Autopoiesis very much speaks to what Montessori always talked about—the child and its environment. The environment and its interaction with the child are one whole thing.

**Brian:**

Yes exactly. I would like to say something about imagining because I know that the development of the imagination is a fundamental quality of Montessori education. I see Mario's designation of imagining as a fundamental human tendency that is central to this Cosmic Task. This is the development of the imagination at the level of the phylum. We tell the story of the birth of the Universe billions of years ago, and then the birth of the Earth, again billions of years ago. Or we tell the story of how the atmosphere has changed over eons. All of this requires the imagination and so, in a real sense, we need to develop the imagination so that we have the capacity for organizing the powers that are flowing through us. It is this imaginative capacity that enables us to become the whole in the form of the human. To me there is an overwhelming and thrilling challenge. Simultaneously we have this challenge and opportunity of making a space within us, within the depths of the human, for all of the species of our world. We have the capacity to become so huge in soul or interiority that their concerns are felt by us as well.

I see this as the work of the imagination, so that all species can suddenly find voice through this new human phylum that enables all species' concerns to be felt around the planet—because the nature of the environment, which is now the whole planet, is also part of every child's development. I think this is crucial to the Cosmic Task of humans, as we emerge into the new phylum that we are destined to become.

And this isn't even exploring the use of the imagination for the future. The welfare of all future beings on Earth depends upon the development of our imagination.

To summarize, I see that the Cosmogenetic Principal, the human tendencies, the Cosmic Task and the Great Work, are all profoundly related.

**Phil:**

One of the things you mentioned in that response is the co-ordination of subjects. Marsha and I have spent a long time exploring this possibility. That is why we include these two illustrations<sup>2</sup> that attempt to express something that is very difficult to express. Perhaps you might be able to see the masculine in the "tree" and the feminine in the "enfolded view."

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<sup>2</sup> See last two pages.

**Brian:**

I did not note the male/female slant but now that it is pointed out it is kind of hard to miss. Obviously, we need both, don't we?

**Phil:**

Marsha developed this enfolded view and I said, "Yes, but how are we going to organize it?" And she said, "You have to keep it because it is interpenetrating." And I said, "Yes, but how will we organize it?" So, I took her enfolded view as a point of departure and I created the tree metaphor naming it a "nested view." The Montessori approach for children ages six to twelve follows the child's interest by encompassing a discreet set of "subject" areas that are interdependent. After Maria Montessori's death in 1952, this was the focus of a special 1956 conference organized by her son, Mario. Experienced Montessori teachers attended the conference and Mario's instructions were for them to work in specialty groups pertaining to their expertise in different curriculum areas. At the end of the event each group addressed its specific area and how one might teach mathematics, geometry, language, chemistry, geology and so on to children. Then he asked them to join together using different colored ribbons to demonstrate how each area was integrated with the others. A beautiful webbing was revealed. Still the actual teacher training has never accommodated this interpenetration. So, Marsha and I, as well as a host of others I am sure, have been working on this for decades.

In our view the "nesting" of subject areas is not solely the realm of Montessori education. It has generic applications to all of education. But the Montessori process and philosophy has a unique opportunity of demonstrating how this can be accomplished in a comprehensive manner.

As you can see in the illustration, the roots of the tree are symbolized by cosmology – the Universe Story.

**Brian:**

Yes, starting at the roots, I like that.

**Phil:**

And we have developed story lines (spiral ropes with pictures) that –moving up the trunk— describe the cosmology of the Milky Way and the Solar System; and then the Story of Earth's Dynamics (Geology and Physical Geography) followed by the Story of Life or Autopoiesis. All of this occurs prior to the appearance of humans. And finally, we have the Human Story. There are nomenclatures and science experiences that underscore each story. Now we see in the illustration how Earth Literacy and Communication emerge from the Human Story and give birth to the interdependent disciplines.

These new stories are based on Montessori's ideas expressed in *To Educate the Human Potential* and have been updated to explain the newest scientific understanding.

**Brian:**

When I was looking at the two images - and in particular the enfolded view - the metaphor that came to me was of endosymbiosis, Lynne Margulis' theory.

**Marsha:**

(Laughter) Well, well funny you noted that—inside back cover

**Brian:**

I think it is very important because it is the most powerful image we have of synergy. Synergy is the power of communion—and the tree is so ancient. To use the tree as a way of representing the Universe or curriculum is a fantastic symbol. I actually like both images together.

**Marsha:**

During her last years Montessori contrasted the nature of traditional education with her own approach. She claimed that ordinary education emphasizes the causalistic principal—the teacher is the cause of learning. She did not believe that at all. Instead she believed that there was a finalistic phenomenon at work within the child. She likened that process to an acorn's development. The acorn has everything that it needs to be what it would be, but the environment influences that process. So when Phil drew the tree I thought, "Well for an organizational tool, the tree is as good as it gets."

**Brian:**

The acorn image is poignant. It fits so well with Thomas' idea of role, doesn't it?

**Marsha:**

I doubt that Montessori and Berry knew each other personally but they both had that same thread of Pierre Tielhard de Chardin in their mutual lives.

**Brian:**

Was Chardin very strong for Montessori?

**Marsha:**

Absolutely, as far as we know his ideas may have been the basis for much of her thinking later in her life.<sup>3</sup>

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<sup>3</sup> The "Absolute" comes from what we were told at Bergamo in 1973. However, there is no evidence that Montessori read Chardin since his writings were only allowed to be published after his death.

**Brian:**

I did not know that, but it makes a lot of sense.

**Marsha:**

We are very interested in how other thinkers influenced Thomas Berry and Maria Montessori, and how we, in the next generation, are moved by those same thinkers. We believe Montessori may have been attracted to Chardin's notion of the noosphere.<sup>4</sup> Then we note that Vladimir Vernadsky in Russia also conceived of the noosphere but took it to a more biological expression. Some people now are researching if there was a connection between Montessori and Russian Cosmism, which includes the work of Vernadsky, Tsiolkovsky, and Fodorov.

**Brian:**

Yes, I saw that on your CD Rom. Before we leave this issue, I would like to relate what Thomas told me a long time ago. Somebody sent him Maria Montessori's 1948 book, *To Educate the Human Potential* and after he read it, he called said, "Brian, we have been scooped by fifty years!"

**Marsha:**

Wouldn't they have had fun together!

**Phil:**

However, Maria Montessori believed that the human being was the apex of evolution. She absolutely had the seeds to all of what we are addressing here, but was trapped in the worldview of her time. Marsha and I are working with those same seeds to help children and our adult students see that humans are co-evolving with everything else in the cosmos. In fact, through Thomas Berry and your work we are propagating the notion that humans are a derivative as well as a contributing conscious entity.

**Brian:**

Exactly

**Marsha:**

— part of the communion, but a differentiated part. We are going back to some of her original ideas and resetting the context. For example, there is a biology chart that depicts species and

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<sup>4</sup> The noosphere may be seen as the "sphere of human thought." The word is derived from the Greek "nous" meaning, "mind" in the same context as "atmosphere" and "biosphere." Just as the biosphere is composed of all the organisms on Earth and their interactions, the noosphere is composed of all the interacting minds and memes on Earth. The word is sometimes used to refer to a transhuman consciousness arising from all these interactions.

phyla. After this conversation we will take another look at how we could talk to children about this. The chart is there, the process is good, but the new content is really essential.

**Brian:**

It is taking that next step isn't it?

**Marsha:**

It is.

**Brian:**

We are all just a part of this. Sometimes people ask me, "In a hundred years from now what are people going to say is outdated about you?" It is the human condition. We just do the best that we can and hope we can move things forward.

**Marsha:**

That is right, and somehow it still excites us as much as we were excited back at the beginning of our Montessori studies early in our lives.

Here is a question that many people pose as they think about this whole new approach: "How are you going to interest people in learning about the Universe when there are all these problems on Earth?" I have come to think the Universe has this tremendous built-in wisdom. I love this idea of the strange attractor. How can the human resist being drawn into that mystery? That goes along with what kind of education —what kind of introduction— we can give to people in general, and children in particular, so that we trust that strange attractor.

**Brian:**

I have a couple of comments on that. Should I go into them?

**Phil & Marsha:**

Please do

**Brian:**

I think that what you are saying is not only right but also really important. Let's start with the question, "How is it that people aren't interested in the Universe?" I don't think I am saying anything you don't already know. How I respond to that question is that industrial societies have been very carefully trained to care about things that are secondary. It has been a really deep process. I was just reading this fascinating book written by a retired public-school teacher in New York City who was twice voted Teacher of the Year.

**Phil:**

John Gatto.

**Brian:**

Yes. There is an early twentieth century quote in his book from the Dean of Education at Stanford University. Now the Dean of Education at Stanford is pretty impressive. He was laying out the whole idea that education was to proceed with raw material —the children— and one would use specifications that would manufacture something like nails. He even used the word nails. I think this is exactly descriptive of what we have today. Gatto points to a long-time process for dumbing down students and eliminating our natural interests in life.

To me any responsible education has to include a certain amount of unlearning. We have to really free ourselves from much of the ideology of consumerism and materialism and then people may actually become fascinated with nature, with the Universe, with life and with all experience. My feeling is that the natural tendency of the human is to fall in love with the Universe, with existence and that is when the Story of the Universe becomes a strange attractor. My own thinking on this is that we always fall in love first at the level of being and then we wake up to it at the level of consciousness after it has already happened. So we become fascinated with birds or turtles or life or whatever it might be and then, when the explanations or the story of how this all took place is presented to us, we are attracted to it because it brings us more deeply into our fascination. This has been my experience.

That is why I think the epic of evolution or the Universe story or the new cosmic epic —however you want to refer to it— is a powerful attractor as it enables us to actually experience even more deeply our erotic fascination with being—just being itself. By erotic I mean the sense of connection, communion, just wow! Look at this!

**Marsha:**

The academic work I want to pursue in my next degree I have named “Cosmos and Gaia Dancing in Eros.” I don’t know where they would let me study that, but...

**Brian:**

— Find the place. You have the symbol right there. Beautiful. That is great.

**Marsha:**

And Montessori says “The Great energy that constantly keeps increasing during evolution has been the energy of intelligence and the energy of love.” I think we might help her by adding that humans have moved to a complexity, and that complexity brings about a consciousness of the intelligence of love.

**Brian:**

Yes, yes.

**Phil:**

As a way of summarizing or coming towards an end of our dialogue what would you like to tell our students? What would you like to say that has not already been addressed?

**Brian:**

The one thing I would add is that the complexity of any cell in our body is immensely beyond our present capacity to describe. And then the complexity of the organs and of the community of cells is experientially beyond that. So there is a way in which the basic intelligence of our bodies is vastly beyond the reach of our consciousness. I think it is worth dwelling on this regularly because all of us in the industrial world have been raised, to a certain degree, in an ideology that thinks of the body itself as more mechanical and filled with “mechanisms.” All of medical science uses that phrase, so we tend to look at our bodies as being beneath our consciousness.

The perspective that we are exploring here is the idea that we live in immense intelligence at the body level and it occasionally bursts into conscious self-awareness. However, that is a derivative of the body’s intelligence. As an image for exploring Montessori education and the story of the Universe, you might think of part of your journey as releasing your bodies into responding directly to the intelligence that pervades the Earth, Gaia and the Universe.

As an example we need to enable the body to respond directly to the sunlight and directly to the stream and to the river. Why? Because my sense is that this connection that has existed for millions and millions of years is the connection that we need to pay attention to in order to find our processes and our modes for educating in a new era—the Ecozoic Era. This allows conscious self-awareness to witness and observe, enabling our bodily intelligence to respond directly to all of the voices that are pervading our world.

**Marsha:**

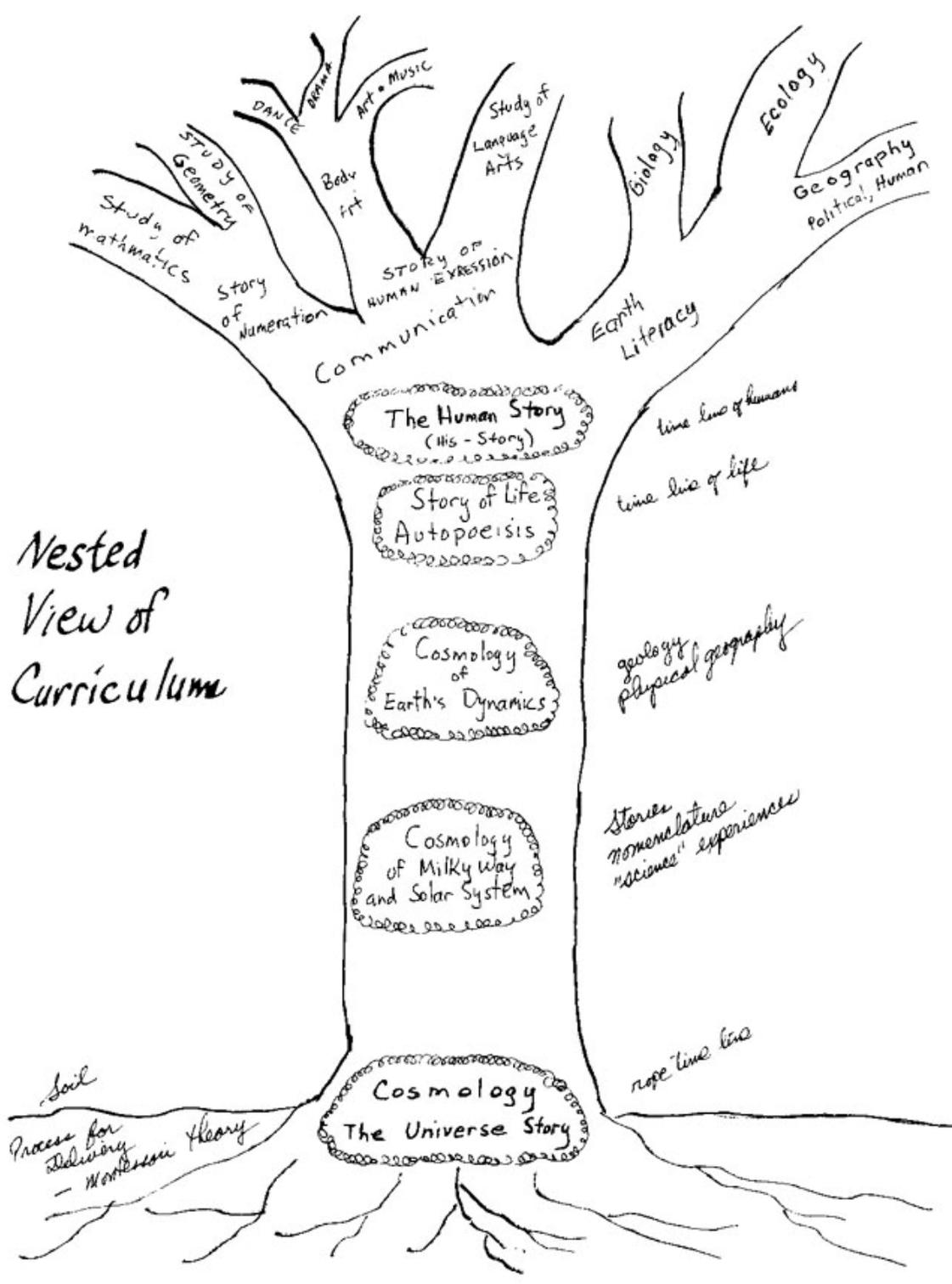
I am at a total loss of words. I am nearer to tears than to comments, but tears of gratitude intense excitement about the possibilities for all of our work coming together in creating that new phylum.

**Brian:**

Marsha, I felt exactly the same way going through the CD Rom. It felt so exciting. And the materials that you have put together are just so thrilling. It is such a big privilege to be involved in all this.

**Phil:**

Well thanks again Brian and deep appreciation.



# An Enfolded View of Curriculum

