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NOURISHING A SCIENCE FOR THE 21ST CENTURY: AN INTERVIEW WITH ROSE VON THATER-BRAAN

BY VICKY SCHUBERT

Rose von Thater-Braan (Tuscarora/Cherokee) is cofounder of the Native American Academy, a network of Native and non-Native people engaged in the study of Native science. She served as the director of education at UC Berkeley's Center for Particle Astrophysics for 11 years.

Rose, along with Leroy Little Bear and Amethyst First Rider of the Native Science Academy, illuminated the value of relationship at the heart of the Native worldview in a keynote presentation at the 2005 Pegasus Conference. In the following interview with Vicky Schubert, editor of the *Leverage Points* e-newsletter, Rose shares her perspective on the possibilities for a way of knowing that embraces both Native and Western principles.

VS: Your work and training have given you an understanding of both Western and Native science paradigms. Is there an easy way to describe the fundamental differences between these two ways of knowing?

RvT-B: My work in Western science has focused on the culture of the scientific community and the profound influence of western science in the world. Western and Native science have two distinctly different ways of seeing and of being in the world—both are valid and important. In the Western scientific method—which is only a few centuries old—scientists use mathematics to describe subjects as large and complex as the essence of the dark matter in the universe. By fragmenting the subject into pieces, which they study with depth and passion, they discover principles that they extrapolate to the whole.

Native science is the knowledge held by Indigenous people around the world that has been gathered, adapted, refined, and transmitted following precise protocols, traditions, and values maintained since pre-history. It is a dynamic, inclusive knowledge that, like Western science, gives rise to new technologies. The core of Native science is relationship, which reflects itself in our way of being in the world; we concern ourselves with the interdependencies and relationships that make up the whole. We are not looking for a single solution or a comprehensive answer or application. We observe, experiment, study, and enact how the knowledge that emerges from relationship and the actions we take influence and impact the harmony and balance of the creation of which we are a part and to which we belong.

If you bring those divergent worldviews into relationship, the discourse between the two holds the potential for a paradigmatic shift and the emergence of a new kind of science: a science of the 21st century.

VS: Can you talk about the role that language plays in providing a key to the way people trained in more Western thought can access these Native principles?

RvT-B: It's challenging to talk and write about Indigenous thought and concepts in English. This has been a problem since first contact with the Europeans, because Indigenous languages are process-based, not noun/subject-based. English is a language that holds things in form. If I say, "Vicky, here is a cup," you expect that cup to be a cup every time you see it, whenever you come to my house, forever. A cup is a noun, and it holds something in form.

Native people know the world through a view in which time is nonlinear. Time is movement, a complex multiplicity of rhythms and patterns taking place in a constantly transforming flux. Things emerge from and disappear into the flux. Indigenous languages emerge from a relationship to place; they describe experience, process, movement, feeling, and relationship. In talking about a horse and rider, for example, you might describe the interrelationship between the two through their movement. You might include the feeling and the sounds they made as they moved through the light and shadow of falling leaves.

A language without nouns might be a difficult concept to grasp. But if you were to go into the physics department at Berkeley and start having a conversation, you'd find that difficult, too, because you would need some training to understand the mathematics and the technical language that they use. To expect that Native science would be any easier is not realistic. It was the study of the quantum world that provided a language bridge to the Indigenous scientific view.

VS: Is anyone making an effort to cross that bridge? Is there a growing desire among Western scientists to know more or better understand the Native paradigm?

RvT-B: Yes, there's a growing confluence between the two epistemologies. It's being fueled by the desperately challenging situations facing our Mother Earth, which is why environmental science is one of the areas where it's easiest for them to meet. Also, an affinity exists in healthcare, where many western-trained medical people come into contact with Native people. Over time, the reality that there's another way of viewing medicine becomes very clear to these practitioners, who are usually more focused on how they can serve their

patients than on commitment to a rigid point of view.

Another sign of the increasing level of interest is the National Science Foundation's decision to fund two of our current projects. One supports research that will explore the possibility of developing information technology that reflects Indigenous consciousness. The other enables partnership building and research activities centered on Native ways of learning. This is encouraging because it indicates that the NSF, which is a primary funder of scientific research and education in the United States, has begun to recognize that the cultural disconnect between the worldviews has effectively blocked participation by Native people in science in any great numbers. It has been said that the experience of Native peoples studying in the Western educational system is like looking into the mirror and having the mirror look away. There hasn't been a learning space that allows us to share our knowledge or our ways of knowing and learning. That's changing.

VS: A fine illustration of that is the recent initiative that you and your colleague, Isabel Hawkins of the Center for Science Education at the University of California Berkeley Space Sciences Laboratory, have undertaken to cultivate a transcultural learning community with NASA and Native scientists.

RvT-B: Yes. It is still at a very early stage, but showing promise. We have held workshops called "One Earth-One Universe," focused on building capacity to hold divergent views as equal. That is different from the Western method of developing a particular theory and defending it. The premise is that, in order to approach an equal, authentic, collaborative relationship, Western scientists must be interested in broadening their concept of science—which is no small matter! The root meaning of the word "science" is "to know." Obviously there are many different ways of knowing.

We all have deeply held convictions that define us and our ways of understanding what we believe to be honorable and true. So it's quite a challenge to ask someone to hold another view that may have no rational value to him or her. We've approached this opportunity for transcultural learning with great respect for everyone involved. The group has been enthusiastic about continuing the learning after the first sessions. We had agreed at the outset that this would not simply be a workshop, but that what we were doing was seeding a learning community that we hoped would have a lifetime of 100 or more years. We intend for this work to result in collaborative projects between Native and Western scientists that will nourish a science that reveres all life; a superb science in which moral imagination is inseparable from scientific imagination.

VS: These kinds of conversations don't have to be limited to a science-related organizational context, do they? It's clear that they would have tremendous relevance in all kinds of businesses and organizations, particularly as our global awareness widens.

RvT-B: I think the frame for this is actually education. It isn't limited to science. We're not teaching science initially. We're animating a relational education process, a process in which you hold a learning space that values diverse perspectives, that includes the voices of nature, that respects cognitive pluralism—different ways of knowing and different ways of learning. In doing that, you come into harmony with the natural order and can access the knowledge and wisdom of the natural world.

The word "diversity," when used in the context of education, has been co-opted. It calls up images of numbers and colors, of political stances and competing interests. But if you set those issues to the side for a moment, what you see is that diversity is the capacity to live in productive interdependent relationship. Everything else in the natural order does that as part of its nature, yet human beings struggle with the idea of living in harmony with one another. We're supposed to be able to do this. It is at the core of our nature; life emerges from harmony, we are a part of life. We need to understand what suppresses our natural ability to create the conditions that are suitable for our existence.

VS: Will the Native Science Academy have a role in elevating that question?

RvT-B: I hope so. The Native Science Academy was founded by a small group of Indigenous scholars who are both university- and traditionally-educated. It has grown over the last 15 years into a voluntary network of Native and non-Native people who are committed to making the native paradigm and Native science visible in the world. The Academy is dedicated to preserving and protecting Indigenous knowledge and fostering partnerships between Native and Western scientific worldviews. It is a web of relationships with a small coordinating office. Our projects and activities are planned to follow the direction of the Medicine Wheel with gatherings, workshops, dialogues, and summer learning encampments in locations convenient to Native communities. We envision holding them in places such as Glacier National Park in Montana or Chaco Canyon in New Mexico, in Hawaii and Alaska. These gatherings and activities will allow Native and non-Native people to sit in dialogue; to come together to share knowledge and study Native science and Indigenous philosophies of leadership.

We now have a real possibility to reconcile these worldviews and foster greater understanding of what it is to live in balance. Let's look at the complementarities; let's see what the proper times and uses are for these different ways of knowing. What would come from living in the question: What is the ethical space that will support these worldviews coming into an equal, mutually respectful relationship that maintains the integrity of each paradigm's way of knowing? What new knowledge could emerge from this discourse? This is a viable possibility, but to live

it we will need to shift from binary or oppositional thinking to an active embrace of diversity, consensus, and complementarity.

When I was introduced to the community of systems thinking, I found an honoring of life. I found that your work seeks clarity and brings principled action into the world. This way of thinking stimulates the development of character and good heart. There is the resonance of kindred spirits here in the work to which Peter Senge and all of you have committed yourselves. You are working to build a bridge to a way of living that nourishes life, one that we can travel together as relatives.

Vicky Schubert is Marketing Director at Pegasus Communications. This interview originally appeared in *Leverage Points for a New Workplace, New World,* Number 67 (October 28, 2005).