

Water As A Spiritual Resource

by Arthur Zajonc

Arthur Zajonc, whose presentation brought the first day of the conference to a close, is Associate Professor of Physics at Amherst College. He is also the editor of the Journal for Anthroposophy and a student of the writings of Goethe and Rudolph Steiner. His lucid and poetic style make him an excellent interpreter of scientific concepts to those outside the field. His contribution to the conference brought yet another dimension to our collective understanding of water and its inherent patterns. He is a scientist with a grace that gives his work a luminous quality making scientific throught not only accessible but compelling to outsiders.



I would like to ask you to listen to a story. It is a story of loss. A story also of the possibilities for renewal, for a reawakening, a reenvisioning. It is a story which involves our history; our history as a species, a cultural history. It is a history of our imagination and of our loss of imagination and the need to regain it.

In the southwestern desert water is life. It was for the Native American Indians and still is so today. Yet when it takes up the effluents we now put into it, no longer is water life.

Potentially, water can also be death. It can destroy croplands, can poison us, become carcinogenic and threaten us and our children with a future ridden with hazards. How is it we could do that to ourselves. Are we that stupid? That blind? Is it that we were ignorant? Why didn't people do this to themselves long ago? What is it that is unique about our time that has found extraordinary scientific knowledge but also somehow gotten us into this predicament with water.

We have lost contact with the meaning of water. There has been a loss of intimacy with that natural resource which once was seen not only as something physical, something natural, but also as part of our cultural and spiritual heritage. The traditional way of

thinking about water somehow just doesn't fit our cultural period. The time in which we live, the imagination we possess of water, is one which has allowed water to fall into its present dangerous state.

A Brief History of Water

If you speak with aboriginal Australians about the nature of water, about the ponds and the water holes that they gather around, you find they have an extraordinary mythology and reverence associated with water. They believe that each one of their deep water holes possesses a serpent, called a rainbow serpent. If you venture there unawares and get too close and put your foot in, you suffer the possibility of being dragged down into the bottom. Many of them will tell you how it has happened to them and to people they know.

But the same rainbow erpent can also are over the sky following a rainstorm to give us a rainbow above as well as a threat below us. The Shoshoni Indians used to gather around the geisers in Yellowstone National Park before a hunt. During their ceremonies the geisers would erupt and the braves who were preparing for the hunt would go and stand under the shower because they were convinced that its water made them invisible. And, of

course, they would perform better in the hunt if the animals they stalked did not see them.

Every ancient culture saw water as not only a natural but as a spiritual resource. It was part of their past and their spiritual heritage, something they identified with in the deepest and most extraordinary of ways. A question for us now is—how can one attend to water, in the twentieth century, as fully conscious modern people without becoming aboriginals or Native American Indians? How can we rekindle the imagination of water, rediscover the meaning of water?

One image of water is to see it as a means by which we purify ourselves. We purify ourselves spiritually, inwardly, as well as cleanse ourselves of the things which soil us outwardly in our daily life. The symbol of purification combines also with the image of birth. The breaking of the water and spiritual rebirth. I am thinking, of course, of the baptism of Jesus by John in the river Jordan, a baptism which, on the one hand, is a cleansing and, on the other, a renewal. In early Christian depictions of this event, for example, in the baptistry of the Arians in Ravenna (sixth century), Jesus and John are always shown with another figure—the river god. The early



Greek imagination, likewise, saw water as the vestment or expression of Poseidon, god of water. We possess only a few fragments by the wise Greek philosopher Thales. The first is that "The basic nature of all things is water," and the next: "All things are full of gods." Taken together: water is full of gods.

Some time in the archaic ancient Greek imagination, a change took place in the mythic consciousness which saw water as something in which being lives. A shift took place with the philosophers, Plato and Aristotle.

Before coming up here I made some "Platonic water." It is a twenty-sided regular platonic solid, called an icosahedron. Each side is an equilateral triangle. This is the Platonic image of water. To each of the four elements there is a corresponding platonic solid. The cube is the earth, for example, water is the icosahedron, the roundest form. It is the most, as it were, multifaceted, the most mobile in its figure.

You have then the octohedron (air) and then the pyramid, the regular pyramid which is called the tetrahedron (fire), which are the other pair. The fifth substance, the fifth platonic solid, corresponds to the substances of which the stars are made, the quintessence, and is represented by the pentagon dodecahedron.

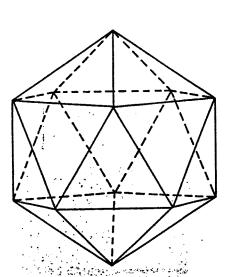
Imagination, then, moves from ritual bathing and gods, to a geometrical solid. In the middle ages such perceptions and imagination slowly changed until the time of the Renaissance when the scientific community took them up and transformed them. The image of water as hygenic becomes more and more powerful. The idea becomes less and less vivid, less filled with life and increasingly abstract.

By the eighteenth century, the early chemists, such as Cavandish and Priestley, began the kinds of analyses that modern chemistry would perform on this substance, then still considered a primary element in nature. From their research, for the first time, water was discovered to be a mixture of gases, hydrogen and oxygen. These two substances could be exploded together. They discovered that the vessel in which they exploded contained afterwards a small mist, and dew was deposited inside the vessel.

Using a gun barrel under tremendous heat, water was separated into oxygen and hydrogen. In 1783 Lavoisier declared that water was no longer to be conceived of as an elementary entity, as something fundamental, but rather as something derived, something composite, a chemical compound of these two gases, oxygen and hydrogen.

Go into a scientific laboratory or library now and look up what water is. What is water? You will not find Poscidon, you will not find a Platonic solid. You will find the quantum object known to us through covalent bonding, the London-Heitler theory of covalent bonding, as H₂O; that is, molecules of two part hydrogen, to one part oxygen.

This image is one aspect of the nature of water. And yet it is only one aspect. It is one in which intimacy has been lost. We have analyzed it to its pieces and we have lost the knowledge of its meaning. Think of whether



Icosahedron: Plato's 20-sided image of water.

in analyzing your child down to similar constituent parts, would you know the being before you.

By reduction of water to little parts, we have lost something very valuable in the process. Not that those parts aren't there, but perhaps there is something else there also. After all, in a corpse essentially all the bits of the human being are there, yet something vital has been lost. How is it then that one can reimagine water? How can we stand before, or look into water, and find the meaning and being of water.

Goethe asked the same question about color and light. How is it that one can come to know the being of light? How through photons or electromagnetic theory, can one come to know it? Goethe concluded that it is useless to try to express the nature of the thing abstractly.

Talk about a friend in terms of some psychological network of theories and so forth and you would have no true image of that individual. To feel the character of that person's life, simply describe how they walk, what they have done, and very quickly you begin to form a picture of the character of the being that stands before you. But to do so you must use your imagination.

Can we do the same thing with water? Can we describe its history, its actions? Or, shall we say, it's biography? Can we identify aspects of it which will allow us to see into it so as to regain that lost intimacy? If we are able to do so, then when we stand before water, we wouldn't simply be thinking of it as a chemical compound of two parts hydrogen to one part oxygen. Nor would we malign that being. We would experience it as being and try to avoid polluting it. It is easier to malign something essentially anonymous, unknown to you, a distant thing. How can we renew our imagination of life in a contemporary way?

The Phenomena of Imagination

What shape does water take when given over to itself. It takes on, in the end, the shape of the sphere, the water drop. The shape of the earth itself is a sphere surrounded and embraced by water.

By contrast, how does water express itself as it moves through a landscape? Water, as it flows through a river vailey, might choose to flow straight, just as we would plow straight from hedge row to hedge row. A river, however, doesn't choose a straight path. It chooses to meander. Rivers have their own language, their own movements, their own gestures which we can learn to know affectionately and come to understand as an expression of the being of their life.

Not only is there a meandering motion associated with a river as it goes through the landscape, but the water in the river actually undergoes a vortex of motion. Combine that motion with the actual meandering motion and the motion of the river there is this wonderful pattern—language of the helix as it moves and spirals, meandering from one bank to the next, from one side to the other. It is doing something very creative and important in the process.

A river is not idle, nor lazy during all its meandering. Although it certainly isn't the quickest way to the sea, it is accomplishing another task. If you tried to run a canal through a meandering river, breaking through the meanders, the water will resist you tenaciously. Any concrete walls will be battered as the river struggles to meander still, back and forth, day and night, month after month, until the walls are broken down. The waters insists on its motion. It will do anything it can to achieve that motion. Make a straight path and the ground waters will recede because it will dig its way deeper down into the soil. It will also disturb all manner of ecological balances created by the slow meander.

A river, as it meanders, does far more than simply wander. In the process the river, over time, moves back and forth across the valley. In fact, it creates the fertile river valley by moving back and forth over the course of centuries. Imagine the meandering river moving through the middle of the landscape, back and forth over the course of centuries, depositing soil, lifting the soil, turning the soil like a farmer might plow his fields and turn the soil. As it meanders it moves from one edge of the valley to the other creating extraordinary, rich soils that sometimes go down hundreds of feet.

What happens, however, if you have a landscape of stone as opposed to soil. The river still flows in a meander and yet is not free to migrate as it does in The Connecticut River Valley. It is held far more firmly in place. Then you get the enormous canyons, of the desert southwest, for example. The Grand Canyon is one mile deep and ten miles wide. This kind of process created it. In a few million years, it will be a Grand Valley. The

canyon will continue to widen and the meandering waters of the Colorado River will turn it into a fertile valley. The transformation effected by water continues. There are other parts to the story of water in the landscape.

Consider a mountain stream. It's pattern of branching develops in time. The drainage pattern seems aimost like a root system that grows from the top on down to the bottom. The meandering river, and the root-like drainage pattern are two aspects of the water system. There is also a third, the drainage basin leads down into the meandering larger rivers, the larger rivers then begin. Where do they end? The Mississippi Delta is at the far end of the Mississippi River. That which rivers carry is deposited in the Delta regions. Here the river comes into interplay with another body of water, in this case the Gulf of Mexico, and depending upon whether gulf or river dominates, different formations will occur. They each have their own physiognomy, their own expressive forms, their own architecture. When one comes to know those architectures intimately, one then begins to know the being that is our flowing water.

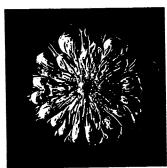
Water as Sensitive Chaos

Theodore Schwenk, the German hydrologist, became a student of water in an extraordinary way. Many people probably know his book, Sensitive Chaos, the name of which comes from a saying by the German poet, Novalis, "water is a sensitive chaos."

Water's sensitive chaos can, according to Schwenk, reflect the most delicate and significant influences, especially in its surfaces, for example, in a babbling brook that delicately plays with every little branch, every little twig. All reflect themselves in the motion of the water. One can study and come to know such intimate, delicate features of water.

A beautiful pattern of vortices, a vortex train, can be created simply by drawing a rod through a water basin. One vortex streams after another, almost like the meandering of the river. The vortex, which rotates in its own magical way, creates a space of air that reaches down deep into the water. It is a surface of interplay between air and water, all in motion, which combines and mixes one stream of water into the next.

Nature herself performs vortices, vortex motions, and not only in water. These can be, in some way, almost frozen into solid stone, into shells which have magnificant vortex patterns, for example. Or, in the forms that one sees also in the bark of a tree. It is as if the bark were water that could hold still, chaos petrified for us. If vortices take on a three-dimensional character, e.g. the vortex ring, such as a smoke ring, one can watch the ring slowly unfold like a plant, or as a fern might unfold in its developmental morphology.



"Water-drop" images made by Theodore Schwenk.

a. Living water, naturally-flowing, spring from
the Black Forest.

The state of the state of

The state of the s

granded to the land the former of the bear

Charles on the same the property of the

Comments in the State States and the

Little Barre of the sand Chies

State State Co.

Such extraordinary shapes are part of the language of water, a language to which we can become attentive; one to which we no longer listen, but which is always present. Likewise, if we would become sensitive to impurities in water, we require a technology or language that somehow expresses that too. The language of water would then speak to us about is own struggle with external substances. Schwenk's water-drop method is possibly such a method or language.

One picture of water from a mountain brook in the Black Forest has the beauty of the rosette, flower-like shapes, the language that it speaks, its harmony, beauty and purity are apparent. Another picture shows the same water after human effluence and municipal sewage has entered the stream. The difference in quality is clearly visible in the forms of the drop picture. Rather dead circles, which have their own geometric artistic character, so to speak, their own expression, depict in a visual way, the image of the nature of polluted water. In analytic tests the various metals and what have you can be measured. But it is helpful simply to see in a single image the character of water, and the quality of that which we would like to drink.

The language of water communicates, whether in the landscape or in its sensitive "chaotic" motions. Once we learn the language we can read the script. Images can be used to give us an image of the quality of the water that you could come to know and use. It is possible, then, to learn from such images and develop means by which we can bring water back into life. That is the project of Ocean Arks, bringing life to water through the plant world, the animal world and through motion. It is reinhabiting, if you will, the water, having the gods reanimate the water.

Studying the phenomena of water, becoming sensitive to it once again, to its own language, we will no longer treat water as an anonymous, unknown being that we are free to malign or dump into. We will come to know it again as a living thing, as something in which we can bathe, become pure, be reborn.

We stand on a crossroad, at a crossing point as to which way our culture turns. We may continue on our way, deaf to the voice, meaning and being of water, or we may attend to its gestures, motions and life. Like a beauty enchanted into sleep, it is awakened by our loving intentions. Knowing its godly nature, we will honor its lovely form and be thankful for the services it renders to us all. What is needed for this is our act of reimagination that would see in water once again the true life body of the earth.



b. Contaminated water.