



## Reading the Book of Nature

By JOHN BICKART, Ph.D. | **Science Education and Spiritual Transformation** / Chapter 5: Interrogation versus Observation

### Reading the Book of Nature ... *“Follow Her Lead”*

Did you go outside today ... to play? When you do go outside, do you see with the eyes of your childhood? Do you have fun? Do you read what mother nature is telling you? Do you take her lead?

We live in a time that is calling out for a revitalization of the human connection to our world. I was better at that when I was very young, so I translate this need to a reintegration of my juvenile abilities to pay attention. Science can help here. The social messages we send in how we perform scientific operations can alienate us from nature and childhood or it can help us reconnect.

Science has a social impact! If we project an expectation that people are machines - and not very good ones at that, we do a great disservice to our character. While we should use technological devices and machines for measurements, our overly mechanical projections that we are not more than our machines cause us to give up power. We hand our power over to technology. Many of us already do this for entertainment and recreation. But this leaves out the human in 'human nature'. And it leaves out nature, herself. No one is going outside to play!

**And further, we interrogate nature to learn about her by first projecting that she is a series of machines and physical substances,**

**then by learning how she works by ripping her apart to see how the parts work.**

Instead of this type of *interrogation*, we need to use more *observation*. We need to learn how things work by watching nature and following her lead to see what she is saying. In other words, we need to *read the book of nature* instead of narrowly asking specific questions that reduce the chance of her giving a full answer.

## **Experiments**

The other day, my wife tried some *Herbes de Provence* in the scrambled eggs instead of just salt and pepper. It was delicious! She watched me to see my reaction. I noticed the new taste right away. She didn't have to tell me. Then, I gushed over the enchanting difference.

My wife was running an experiment. When we try a different herb to spice up a meal, we are experimenting. "All life is an experiment. The more experiments you make the better" (Emerson). Since we do not know everything, we are always changing conditions - trying out new ideas - or our routine is changing under our feet, whether we like it or not. Therefore, we are all scientists, constantly running experiments.

Especially when we experiment on nature to understand her, we have a social responsibility to ask without tormenting. We affect the world by the very way we run the research. One way we hurt nature is by asking questions that do not allow her to give a full answer. If our questions are not open ended enough, we do not leave room for larger context. Our expectations form limiting receptacles for the experimental results. It is like going to the market to buy a bushel full of corn, but bringing a

basket that is too small. But it's worse than that when we limit our investigation with a socially constraining receptacle. For example, when we eliminate diverse insects and weeds in order to experiment with better crop yields, we upset balances in nature which limit her from keeping the whole forest in good health. This always comes back to bite the hand that started the trial. Our original mistake in weeding out certain species came from the projecting thought that all of nature is in conflict - that there is a fight going on - and the way to win this fight is to eliminate the competition. This limits our perspective from seeing where there is help from diversity. So, our original expectation taints the experimental results. We end up with species that are in fact fighting with each other, but our own method of experimenting caused the fight. We created our own self-fulfilling prophecy.

Galileo is considered by many to be the father of Physics. His methods of experimentation gave birth to great strides in our scientific understanding of natural phenomena. But he brought in such a strong use of the left brain - or left hemisphere - approach that he also ushered in what would become a dominant view over the next 500 years - that nature works *mainly* by mechanical, physical means. Lain McGilchrist states this quite definitely in his book *The Master and His Emissary: The Divided Brain and the Making of the Western World* where he advocates that we have let the left hemisphere, rather than the right hemisphere, become the master and would be better off the other way round.

"The Conclusion, therefore, is devoted to the world we now inhabit. Here I suggest that it is as if the left hemisphere, which creates a sort of self-reflexive virtual world, has blocked off the available exits, the ways out of the hall of mirrors, into a reality which the right hemisphere could enable us to understand. In the past, this tendency was

counterbalanced by forces from outside the enclosed system of the self-conscious mind; apart from the history incarnated in our culture, and the natural world itself, from both of which we are increasingly alienated, these were principally the embodied nature of our existence, the arts and religion. In our time each of these has been subverted and the routes of escape from the virtual world have been closed off. An increasingly mechanistic, fragmented, decontextualised world, marked by unwarranted optimism mixed with paranoia and a feeling of emptiness, has come about, reflecting, I believe, the unopposed action of a dysfunctional left hemisphere." (McGilchrist, 2009).

According to Bortoft (1996), Galileo's *The Assayer* was using intellectual, analytical thinking when he declared secondary qualities of phenomena (the five human senses) as subjective. On the other hand, Bortoft asserts that Goethe was using intuitive thinking in *The Experiment as Mediator between Subject and Object*, where he stated that many experiments are needed to relate two phenomena. The 'many' allowed for the human senses, and the intuitive mind to access the experiences.

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## **The Historical Model of Experimentation**

In ancient times, *seeing* went out and almost *touched* that which you looked at. If you carefully observed a rose, you didn't just passively receive information from it, it was as if you held it in your hand. Humankind was more in touch with each other and with nature.

*An example of an HISTORICAL experiment might be to plant a tree with tender loving care, knowing that the tree sensed the way we look at it and feel toward it.*

## **The Present Model of Experimentation**

Our present version of scientific investigation has reached our greatest height of left brain analysis as our preferred modus operandi. We take everything apart as if all of the answers we need can be found in the parts.

**an·a·lyze** (n-lz) (*Psychology, Medicine*)

*tr.v.* **an·a·lyzed, an·a·lyz·ing, an·a·lyz·es**

To examine in detail; the process of breaking up a whole into its parts to determine their nature.

- **National Center for Education Statistics**

*An example of a PRESENT experiment might be to plant a tree with measurement devices attached to it, then measure vital signs according to conditions that we control and impose upon the tree.*

To experiment in modern times, from 1600 to just recently, science has sometimes perpetrated acts of unpleasant interrogation. An opposite trend, however, seems to be arising quite recently. Scientists are awakening to the realization that we play a larger role in creating and re-creating our environment. You may have heard the expression, "Watch out what you ask for, for you'll get it!" In other words, during our investigations, we alter the subject of the experiment. The very content of our consciousness plays a role in the experiment. It has an effect. What we are thinking and feeling, our wishes and expectations, our intentions - are increasingly being found to affect that which we observe.

Humankind is developing. We are becoming sensitive to *the other*, whether the other is a plant, a person, or the earth itself. If we did not know that we ourselves are entering the experiment, then we might continue interrogating without being conscious of the other. But the realization that we are participants, not just onlookers, is

dawning. And this brings an awareness of our neighbor, the environment, and the rest of society. Increasing numbers of us are reaching a stage where we do not wish to do scientific experimentation that hurts the subject of the experiment.

For example, what if you are in love and are loved in return. Now you want to know if it angers your lover to be ridiculed. You wait for the right time, when friends are all together, then you make fun of your lover. Your lover does get angry. So, is the experiment a success? It did successfully show what you set out to research - your lover becoming angry. But it also hurt the one you love.

If we affect the subject of experimentation according to which questions we ask, and how we ask them, shouldn't we grow to learn a better way of experimenting?

### **A Possible Future Model of Experimentation**

According to Goethe, a look into our future might be as follows.

- Step 1. **Observation:** To be aware of a phenomenon *without thinking about it*.
- Step 2. **Imagination:** Repeat, in your imagination, exactly what you observed. Replay it like a movie. Goethe called it, "Recreating in the wake of ever-creating nature." Repeat this step several times if you wish - not adding or leaving anything out. Watch only the replay of the observation, itself - do not think about it.

How can our future be different? How is this an EXPERIMENT? Goethe's active **Observation** step, then the repeating **Imagination** step gives *thinking the*

*quality of perception - and sensory observation more the quality of thinking.* Goethe is suggesting that the **observer** affects the **observed**! So, future experimentation would become much more conscious of what and how we observe and experiment and ask questions. For example, future marketing and advertising of products would become conscious that they are changing what people are like. Does this sound a little like *The Observer Effect* in Quantum Physics?

*An example of a FUTURE experiment might be to plant a tree after asking the other trees permission, then watch the tree as it grows. By Goethean observations and repeated imaginations we would hope to be guided by the tree as much as by our own desires. Goethe called this, 'reading from the book of nature.'*

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## **Our Return to Childhood**

In some ways, our future may include, if we are fortunate, a return to the incredible powers of observation that we had as children. Simply said, one can never lose out by paying more attention. Before cognitive thinking, before language, before the complexities of growing up, we had the power of a knowing that exceeds our abilities as adults. This brilliance sleeps within each one of us as a latent power. It is waiting to be awakened.

" ...children are born fully fluent in this primal, nonverbal dimension of knowing. They need time to develop the wraparound of cognitive, linguistic, and abstract thinking, but young children don't have to learn the 'how' or the 'what' of spiritual engagement. Bird and flower, puddle and breeze, snowflake or garden slug: all of nature speaks to them and they respond. A smile, a loving touch, the indescribable bond

between child and parent ... all of these speak deeply to them, too. Spirituality is the language of these moments, the transcendent experience of nourishing connection. Spirituality is our child's birthright." (Miller, 2015, p. 26)

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#### #4 *The Bear and the Tree*



*A very hungry bear wanted to know where to find honey. All day, he went to different trees in the forest and asked if they had honeycombs in them. His method of asking was to scratch the trees open and look inside. Finally, with weary arms and sore paws, but without honey; he went to sleep famished. The next day he decided to try a different tact. He went up to the wise, old oak tree. "Father Oak, you know the comings and goings of the woods. Can you tell me where to find honey in this forest?" The oak looked down with compassion on the bear and answered, "I and my fellow trees have been watching you ask for your honey by ripping many trees apart; and we were wondering when you would realize that you have only to ask us. For we know where the honey is and we are happy to tell you."*

**ASK IN THE RIGHT WAY,  
AND YOU MAY GET YOUR ANSWER**



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