Mechanization

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

THE MECHANISTIC WORLD PICTURE

"The role of experiment for Descartes was either one of filling in the details of the mechanistic world picture or of deciding between possible alternative mechanical explanations."
(Bortoft, 1996)

Connections

Have you ever drifted apart from a good friend? You didn't mean to - it just happened over time. Then one day, you unexpectedly bump into each other. Suddenly, the two of you realize why your friendship was so good in the first place. This very thing happened to me. When I was 24 years old (nearly a half century ago - it's a wonder I remember), I met the principal of a Waldorf School I would work in. He and I hit it off immediately as if we had known each other before. Eventually, I moved away, entered the business world, and lost touch with my education friends. Years later, I found myself teaching again, craving advice from my first principal. Conversations with him were like gold. He knew and understood me, and I him. And we truly cared about each other and have not lost touch since.

Humankind's scientific relationship with the world is like that. In some ways, early humankind was quite warmly connected to the world in a manner that some of us are

not now. Have we lost touch to some degree? Is our relationship a cool one? We need nature - we use nature - we control nature; but we do not always treat her with the respect that you give to a warmhearted association. Could we have fostered a tenuous partnership, as opposed to a mutual admiration?

If you are a science teacher or a scientist who wishes to revitalize yourself or your profession, then perhaps you need to re-connect with nature through more passionate observation, and less cold analysis. Connections are necessary to revitalize relationship. But stop and think about this for a minute. Our need at this time is like two people attempting to regain a friendship, where perhaps we are the friend who had left for a while. Maybe we are the ones who need to initiate a restart to the alliance. Although our old friend may be glad to have us back, if we do not foster a warm association, it may appear to us that they are not. If we are uncertain, we may project that. Have you ever been in this position? You are not sure how the other person feels, so you watch with slight trepidation, almost expecting to see a rejection.

It's that way with the study of science. Is it possible that the world looks more and more like a machine - not because the world around us has changed - but because we have? Is it conceivable that we have become more aggressive, competitive, and mechanistic compared to when humankind was young? As we do experiments, might we be projecting ourselves onto nature, expecting results that show our own tendencies? If so, then to compensate for this, we need to learn to observe without projection. We need to listen without judgement. Instead

of interrogating nature with a mechanistic bias embedded in narrowly pointed questions, we need to let her speak. And the heart of this new rapport is connection.

According to Bortoft (1996), Hume said that there must be *no connections* among phenomena. This is precisely the mechanistic expectation. A view of non-connection among the parts of the world projects and assumes nature is a system of separate machines. Bortoft believes that Hume supposed this because he was using a predominantly analytical mind. Goethe claimed that there are *necessary connections* among phenomena; but they can only be seen intuitively. The analytic mind is left brain dominant, whereas the intuitive mind is right brain dominant (Bickart, 2013; McGilchrist, 2009). If we continue to use our left brain, we bias our findings with analytical expectations. We are not objective when we do this. We are in the way of finding the truth. We need to make the switch to a balanced left with right brain - a balanced head with heart.

Knowing in the Last Century versus This Century

When I was in school in the mid-1900s, I was taught that the scientist's role in the study of science is a passive one. I was told that the scientist must never expect to affect the experiment - just the opposite - the investigator must get out of the way so that the truth can emerge from objective, factual knowledge. But there is more than one way to bias an experiment. What my teacher meant, when he told me to get out of the way, was to honor the truth - to not fudge the measurements - not to change the actual data - to report the accurate observations. But what he did not see - that the scientists of today is realizing - is that

there is another way to block the truth. A bias we are now learning to overcome is the projection of a left brain bias. It would be equally inaccurate reporting of an observation to have personal projections and interpretations of natural events. It would be wrong to assume everything in nature behaves - and has the same motives - as we do. An example of this would be to assign a scientific focus on *competition* in nature, versus *cooperation* and synergy. It would be biased to go into a scientific observation assuming mechanistic view and the competition view are biases that science are shedding at this time. You are always subjective to some degree.

So now, I think differently. Although I was taught that knowledge can be ascertained objectively, by purely scientific scientists - who are not biased in any way - I have gone another way. I think that knowing is *not* a passive act. I now believe that I may be biased - but I also believe that I affect the world. In fact, I take the stance that it is my social responsibility as a scientist to conduct myself as if every experiment not only gives me knowledge, but I also give it something. I give the experiment my attention - my observation. And I believe that the world is listening.

If you think about this, it is radical!! I give the world something ... just by observing??

Goethe states that the act of knowing *actually affects the phenomenon*. He describes the knower as a person who is not merely an onlooker, but a producer of change in the world through **conscious** activity. The knower is an observer who has removed the ego, opinions, and

analytical mind. The observer is one who has gotten one's self out of the way enough to get to know the other. In fact, in an even more provocative thought, Goethe declares that the phenomenon itself is *not complete* until it has been known. This radical statement implies that we are surrounded by consciousness in the flowers and trees, the animals and environment. And our consciousness is constantly connected to all of the other types of consciousness.

The only way I can handle this is to think in simple terms. Take a flower. By Goethe's assertion, the flower apparently has a mission in life, and we are part of it. And our observation of the flower may complete its mission. Goethe claims that the way to participate in nature actively takes two steps.

The process goes like this.

- Observe something in a deep way where the observer *enters into* that which is observed.
- Reflect on the observation by replaying it in the mind, thus coming to *know* it.

Since this process changes (actually completes) that which was just observed, there is an unbroken cycle in which the knower and the known are one. Thus, the knower and the known are an indivisible whole. Do you realize what this means - you got it - we are always *in touch* with everything!

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#60 The First Mechanization

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There once was a village of racoons who grew corn in the field and caught crayfish in the lake. The corn growers traded corn with the fishers for crayfish. They had lived this way for as long as their stories remembered. One day, one very clever racoon invented a way to mechanize the process of handling the corn. The inventor boasted that his way would increase profit and reduce loss of corn. His workers were instructed to sort the corn into bins, handling them with wooden boards. They were told to focus on the work of sorting, and not to waste time talking to the fishers. Soon, the corn racoons lost touch with their friends the fisher racoons. Using boards and bins also reduced the amount they handled the corn itself. This continued for some time. Finally, the workers spoke up and confronted the inventor, "We won't work like this any further. Your methods of mechanization may eliminate some work, but they make our labor seem like drudgery. We have lost touch with our friends and our corn. It is we who have become mechanized."

MECHANIZATION CAN PREVENT US FROM STAYING IN TOUCH

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