

EXPERIENCING AND UNDERSTANDING GOETHEAN SCIENCE

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We are always looking for something to gain, but maybe the easiest way to gain what we are looking for is located in all the things that we don't understand. Knowledge is rich with all the answers to the world. When confronted with something we do not understand we must battle to gain the most knowledge about that subject as we can in order to fully understand it. You must see it from many angles and many perspectives to really truly gain full understanding. In gaining these understandings you will gain the understanding of the world.

BREAKING BARRIERS

Algebra: The part of mathematics in which letters and other symbols are used to represent numbers and quantities in formulae and equations. This is the first math class assigned as a required credit in public high school. Myself, never having been great at math was dreading the everyday task of working and reworking my brain around something I didn't understand. At this point in my life I was so ridiculously easily defeated in the face of even a simple math equation I only slightly didn't understand. As my instructor jotted down the problems and walked the class through them, step by step and finally arrived at the correct answer, they became schemes with letter and number on the blackboard. We now were supposed to know what had really been going on. And I was lost. I didn't get it. I could not decipher for the life of me why I never ended up making it from point A to point

B. It was like the whole class was speaking this intricate language called math and I was lost in translation.

I can still vividly see the equation written on the board. It reads $4x + 5 = 3$. I am instantly intimidated. I had no clue where to even start. I already knew (or thought I knew) that I was going to get this problem wrong before getting half way through it. What the hell do letters mean in an equation?! I didn't understand.

My constant dislike of math all throughout my attendance of public high school, I realized, after passing all of my high school math classes and critical exams with much determination, that my misunderstanding and lack of tutorial help was what ultimately led to the demise of all persisting feelings to better myself in a certain subject by the time I got to high school. I got left behind in the depth of a subject I was supposed to be understanding and was just passed through. This subject tormented my brain for all of my public schooling and finally after my time spent there I decided to pick up my feet and break old habits and stomach a new way of thinking when examining subjects you do not fully understand.

As humans, when proposed with the idea of something we do not understand we typically shy away from it. In fact, I think that in today's society we are somewhat taught to think this way. Introvert behaviors are a prime

example. I believe that people with these traits have been taught by experience that if they do not understand or someone does not understand them that in result they are subjected to conflicted situations. These are the kinds of behaviors and barriers that keep people from reaching full and complete knowledge. These are the kinds of things that make people feel like they couldn't possibly understand in the first place. These are the kinds of things that create close minded people. Think of the brain as a sponge, and water is the world. The more you soak up, the better you'll float.

"This was an unsettling experience that had significant consequences." –Craig Holdrege, Doing Goethean Science

This quote is relevant to what I went through throughout public high school. What the experience of complete misunderstanding of a core subject did is make school into something I felt like I didn't understand and it had significant consequences for me. I completely blocked out school and education, it made me not value the gift of free education from an early age because I didn't understand it and I didn't want to figure out why I didn't understand it.

It was a negative thing for me until I truly understood everything it entailed.



Delicate Empiricism: Science as a Conversation

"Once people have a name for something, their tendency is to think they understand it."

Stephen Harrod Buhner, The Secret Teachings of Plants (31)

**WHEN PROPOSED WITH THE IDEA OF COMPLETELY AND FULLY UNDERSTANDING
SOMETHING IT ONLY MAKES SENSE THAT PEOPLE WOULD INSTANTLY BE DRAWN TO SCIENTIFIC**

STUDY AS THE “TRUTH SERUM” TO COMPLETELY UNDERSTAND WHATEVER IT IS YOU ARE TRYING TO UNDERSTAND. I PROPOSE THE QUESTION OF WHETHER OR NOT SCIENCE IS *THE DEFINITE AND ABSOLUTE* IN COMPLETELY UNDERSTANDING SOMETHING. YES, POTENTIAL FOR PERCEIVING FULL UNDERSTANDING USING THE SCIENTIFIC APPROACH IS PROBABLE, AND YOU CAN TRULY GAIN A LOT OF KNOWLEDGE USING THE SCIENCES, GAIN ANSWERS TO A LOT OF QUESTIONS YOU HAVE, BUT IN ORDER TO GAIN COMPLETE AND FULL UNDERSTANDING ALL ASPECTS OF THE UNKNOWN MUST BE LOOKED AT AND ANALYZED, THROUGH MANY DIFFERENT FILTERS.

“At the heart of the Goethean approach is the realization that as a scientist I must develop new capacities in order to do nature justice in my work.” (47)

“How can I make myself into a better, more transparent instrument of knowing?” Craig Holdrege (31)



Engaging the Conversation

On the organic farm I picked my plant. For about a half an hour I wandered around just trying to feel the energy of everything around me. The plants were still that day. The wind brought a chill over everything it touched. Despite how the cold feels to us, these plants seemed to be doing just fine. As I walked I kept being drawn back to the fruit trees in the far left area of the farm. I have walked back and forth, checking out the berries, but what really felt like needed examining was the trees. After a good long look around I saw one to the edge of the orchard supporting a kind of makeshift fence made out of a long black hose. The branches of the tree seemed to curl about the hose like the two had grown intertwined together, although it's only possible the hose came long after the tree, placed perfectly for a purpose. This tree seemed to not mind being a support system, like taking on the weight of the hose made the tree itself stronger. The braches start thick at first, then abruptly grow thinner. The leaves are coated in different shades of color this time of year. The bark is more gray than brown, hosting home to a variety

of mosses. This tree isn't very big yet, only about 10 feet tall and standing proud it gives fruit to two visible pears right now, both towards the top. As I step in close to the tree I notice the smell. I can smell the sweetness of the pears at the top and I also have the strong odor of leaves reach my nose. I like the smell of these leaves and only up until this moment have I thought of the word green as an unusable scent description. All the branches eventually point to the sky at the tips and leaves are sparse. I like that way the stalk of the tree is even in circumference for most of the way up and divides itself before it can have one true top.

The Things Plants Hold

Inspired by, The metamorphosis of plants, Goethe

You are my plant teacher. I am figuring out more and more about how you work with the weather. You stand tall and strong through rain and sunshine, you will grow and your life span will far exceed mine. I have been noticing more and more why I picked you in the first place. It wasn't the ripe fruit strung sporadically about you, it wasn't those long necked pears although I admit, I did want a taste. It was the fact that you hold qualities that stand tall and true among the greatest of human beings, they seem like they're a lot like you. They work hard, play hard, and are good to their kin, they act as a support system that keeps the process of day to day life fair and lets everybody win. I want to be like you, Bosc pear standing strong, limbs outstretched long, far and wide. Next time the waves of life get heavy I'll think of you and what you would do, and I'll have reached my goal then: to live life at an easy going slack tide.

We finally meet

I walk and examine each plant carefully. Kneeling to get to the level of the lowest plants, and standing on the tippiest of my toes to try and level with the tallest of trees when I found you. You stood, supporting a hose that supports the system of water that nurtures all of your brothers and sisters standing around you. A colorful sign strung around your neck to explain

what you are, and where you come from. "Bosc Pear" it reads. "The winter pear."

I notice the way all of your arms stand tall, weaving out and up, reaching for the sun. you stand tall, but a little crooked, much like myself. I am hypnotized by the smell of your leaves, thy smell like the skin of a pear. The colors are changing with the seasons already drooping into the reddish, yellow, purple and brown colors. As I step into your embrace I feel the dew droplets still attached to your bark and leaves drip down onto my clothes and hair, like an offering of the essential substance we both need to survive. My eyes lock to a relatively green leaf, with yellow red tinged edges and took a bite. I chewed slowly, letting the texture seep into my gums and my saliva wash over the leaf. The taste; similar to the skin of a pear. Surprising. I sit next to you, huddled beneath your branches and examine how your roots connect into the earth, spreading like connections in the human brain, burrowing under the surface. As I am examining you I am also examining myself. I ponder on what made me choose you as the plant I would like to try and communicate with. Maybe you chose me? You pollinate best with my friend's plant. This is a curious coincidence. Maybe there is a reason why we were called to these plants at this farm in this class at this school? These feelings and emotions, the connections I have with this plant are deeper than us. The subconscious decision of trying to speak with this plant, I chose the one that I find most resembles myself and the world I perceive around me. I perceive the language of the plant to be in relation with things that are in my own life, because the human mind is a curious thing. It like to be familiarized with things as to not feel "out of the loop" while processing everyday information. This Bosc Pear, this plant, this brother of mine, we are connected by physical feeling and an emotional connection. I feel like your student, and you feel like my teacher.

I think what attracted me to this pear tree in the end is that it stood tall while being the support for the hose that delivers water all throughout the orchard. In my life I think that I have always subconsciously been drawn to the idea of a strong being. Having been raised by a single Mother I was always around and raised by a strong figure who still to this day I have no idea how she accomplished all she has. My tree, the Bosc pear tree, to me, on

that day on the farm symbolized a sense of familiarity and comfort. It was standing strong and tall while supporting the lifeline for its comrades. I think I was drawn to it because I would someday like to see these strong qualities in myself.



Exact Sensorial Imagination and Living Understanding

What is exact sensorial imagination? Exact sensorial imagination is when your senses react in your imagination to a scene description being portrayed. The sensation of being able to feel, smell, hear and/or taste what something is described to feel, smell like etc.

creating sensorial images

So how do you recreate a memory or scene so well that you can feel it? This process is a series of steps I have tried to accumulate through experience and study. I have found you need to try and create this place with all of your senses. The first step to triggering and succeeding in creating a sensorial memory is smell. Smell always seems to be the best trigger for memories, so when trying to create a sensorial image, you need to recreate it starting, and always starting with smell. The reason for this is because the olfactory bulb in your brain, which is part of the limbic system closely associated with memory and feeling (it is often referred to as the “emotional brain”) is most easily accessed with smell. Activating this part of your brain will make it easier to recall and create your image. So, if smell triggers memories, then you have already reached the point of visualizing the image you are trying to conjure. Once having found the image and the smell, it only makes sense to connect the smell to taste. The reason ones smell seems so connected to taste is because when in front of a certain scent, due to the taste buds that sit in the back of your throat when you breathe in, the scented air wafts past these taste buds allowing you to somewhat taste what is wafting by. That leaves sound and touch as the last two senses to cover to create your image.

Sound and touch are really important for creating a sensorial image. Sound is almost always associated with touch and movement, even if most people do not notice it. Think of the example of setting a cup on a table then picking it back up. The presence or lack thereof of sound can determine whether or not you were setting it down (making a noise) versus picking it up (making a very, very less prominent noise if one

at all). So, when trying to create a sensorial image recalling the sounds or thinking of the sounds touching textures might make will help to create and make you feel like you are inside your memory.



BOSC PEAR a portrayal

When I stand next to you I feel like whispering something to you nobody else knows about me.

I feel like I want to sit with you and ask of you

All the stories of all the seasons you've sat through,

The harvests and re-blooming of the flowers in the spring.

I want to know what defines time for a being like you.

I know that the teachings you hold are

True.

And I know the experiences that I have with you are

Real.

At this point in time, I know that

You hear me

And

I hear you.

but sometimes, honestly,

It feels like I know what you're trying to communicate, but were still just speaking gibberish.



The Whole as a Part

The Beurré Bosc or Bosc (pronounced Bahsk) pear is nicknamed the “winter pear” because it does not reach the point of ripeness until winter. It also has the name of, “the aristocrat of pears,” probably because of its characteristically dense and smooth flesh along with its long tapering like neck and lengthy stem. Typically, this pear is grown on the northwestern side of the U.S. but is also grown in Australia, British Columbia, Ontario and Europe where it is sometimes recognized by the name of Kaiser. Bosc pears develop their sweet flavor before other pears usually do in their growth cycle. Boscs can be eaten before their flesh has fully ripened to its soft texture, because of their extra firm texture. Shaped like no other pear its colors range from deep yellow brown to dark tan. It has tender skin that seems brushed with bronze-russet markings. The dense crunchy flesh of this pear is sweetly spicy. It was introduced to the eastern United States in the early 1830s, but the Bosc pears grown in the U.S. today are thought to have first originated in France.

LIFE CYCLE – FALL TO WINTER

The life cycle of the bosc pear tree from fall to winter is a short and easily explained one. During the fall the leaves on this tree stay green a little longer than the rest of the trees around. The reason the bosc pear is called the winter pear is because it outlasts all other types of pears in the winter and isn't harvested until later than other pears. Through the change from fall to winter not much changes besides the color of the leaves and how rapidly they drop. As the cold sets in the pears start to fall, not even ripe yet, as they ripen off the tree, more and more leaves begin to fall and decompose around the tree. They change from green and range from colors yellow, brown, red and some tannish colors until reaching a fully decomposable state which at this time the leaves are fully brown. By this time all the pears have fallen off the tree

and it is left without any leaves and fruit. This continues until the rebirth stage starts in the spring and the leaves start to grow back.



The Unity of the Organism

My pregnant point can be described as the point of understanding the whole. Examining things in an outer body sort of way, and examining things in a scientific way also. Understanding why something lives instead of just exists. Understanding its role in this environment we live in as well as its functions in life. Understanding how it benefits me and how I benefit it.

The **Bosc pear** is known as the winter pear, when all fruit has disappeared from the trees and the bosc still remains, it brings the sign of winter. You can tell why this happens using the scientific method, but can you tell why the **bosc pear itself** does this?



Doing Goethean Science

When trying to preform Goethean science, all I can end up thinking is that “you need to understand something in all aspects before

you can truly understand it.” Goethean science allows us to see past just the conventional ways of looking at things through the lens we call scientific thought. It allows us to fully and completely reach understanding through multiple ways of analysis and contemplation. When using Goethean science we understand that we do not always understand.



PRACTICING GOETHEAN SCIENCE

A CONCLUSION

IN THE END, MY EXPERIENCES AS A CHILD, AND MY EXPERIENCES WITH THE BOSC PEAR HAVE MADE ME REALIZE HOW I NEED TO APPROACH THINGS IN LIFE AND HOW I NEED TO GO ABOUT UNDERSTANDING THINGS. WHAT DOING GOETHEAN SCIENCE MEANT TO ME WASN'T SO MUCH THE PRACTICE OF IT, BUT THE EXPERIENCE. I TOOK HIS APPROACH AS MORE OF GUIDELINES TO WORK THROUGH MY OWN EXPERIENCE WITH THIS CLASS AND THIS PLANT THAT HAS CHANGED THE WAY I WILL THINK ABOUT PLANT LIFE AND LIFE IN GENERAL FOREVER. BY THE EXPERIENCES I HAVE GONE THROUGH I HAVE LEARNED TO APPLY VARYING FORMS OF SCIENCE RATHER THAN JUST ONE MODE OF THINKING, I HAVE LEARNED TO APPLY DIVERSITY TO MY MIND AND MY LIFE THROUGH EXPERIENCING THE GOETHEAN APPROACH.

I HAVE LEARNED TO THINK OF THE BRAIN AS A SPONGE, AND WATER AS THE WORLD. THE MORE I ABSORB ABOUT IT, THE BETTER I'LL FLOAT.

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