Agron 592 – Spring 2006 B. Wink

A paradigm, as taken from the Merriam-Webster Dictionary, is ”a philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated.” In more simple words, paradigms are patterns of thinking that determine how we look at life, while also defining, limiting and influencing our behavior. Or, as Willis Harmon wrote in *An Incomplete Guide to the Future*, a paradigm is “the basic way of perceiving, thinking, valuing, and doing.” Thomas Kuhn popularized the term in the realm of science, defining paradigms as, “a set of accepted beliefs or agreements shared by scientists about how problems are to be understood.” Further, Kuhn believed that scientific research would proceed at random in the absence of these shared, guiding beliefs.

Having moved around the country, for one reason or another, throughout my teens and 20’s, I find major changes in my surroundings and trying new things to be quite interesting and something to look forward to. In fact, I can’t imagine having stayed in one town throughout my entire childhood. Each move brought a whole new set of friends and experiences that helped shape who I am today. My wife, on the other hand, spent her entire adolescent life in a town of about 1500 people in the Central Valley of California before making her first move to Santa Barbara for college. I met her after she had transferred back to a university just 30 minutes from the town she grew up in, and have since learned that we view moving to a new region in completely different ways. We have moved twice together now, due to my career changes. The first was to a town in Northern California, located only a few minutes from where I attended Jr. High and a year and a half of High School. I viewed this as a very exciting prospect, not only was my new job a big step up from what I was doing at the time, but I knew I still had a number of old friends in the area. For my wife, it meant moving 2 hours away from her family and an area that was very familiar to her. Where I looked at the move without an ounce of fear or trepidation, my wife viewed it with uneasiness and a bit of sadness.

Since that first move together proved to be so successful, my wife accepted the news that I had been offered a new position in Idaho a great deal differently. Sure, there was still a bit of fear of the unknown, but we had then been away from her hometown for six years and she was looking forward to changes that the move would bring. I suppose she had undergone a paradigm shift.

Growing up on beef ranches in one part of the country in another, I think tend to see the farmers’ and ranchers’ side of things when working in my current position as a seed production agronomist. From contracting acres, to watching the crops throughout the season, to ensuring that we harvest the seed crop as efficiently as possible, I always seem to as much as, if no more so, concerned with how the grower will be affected as I am about looking out for my company’s best interests. Having grown up hoping beef prices will be good enough to pay off one operating note, to then open up another one, I feel that I know how these crops affect the growers life and that of their family. While I think I can safely say that, unless you’ve counted on the land or animals for your livelihood, you can never really appreciate how much is at stake during harvest or while sitting at a livestock auction in the fall.

I think that paradigms can be beneficial, or detrimental, depending on the situation. If the operating paradigm of an individual causes them to lead a moral, healthy, successful lifestyle by making sound decisions, then it may be said that paradigms are beneficial. If, however, and individual grew up in a situation where the paradigms he/she was operating under forced that individual to make decisions without regard to morals, ethics, or the law of the land, then I would say that paradigms may be detrimental. Also, perhaps if and individual has lived a sheltered, narrow existence, they may not have a large enough data set with which to build their own paradigm, thereby limiting them from reaching out or trying something new.

When what we observe falls outside of our paradigm, we suffer from the paradigm effect. Further, when the paradigm effect is so strong that it prevents us from fully understanding what we are looking at, or how it could be used, we are now suffering from paradigm paralysis.

I suppose one instance that I can recall of experiencing the paradigm effect occurred shortly before I graduated from college. Another student who had been my lab partner in many entomology and botany courses told me that he had been employed by a plant disease clinic, and that they were looking for another research assistant. I has been planning to become a teacher, but decided to give it a try to get through the summer. My first duties were to process soil samples for nematode population assays and I remember very clearly being stunned by the fact that someone was going to pay me to perform the same scientific practices that I enjoyed doing so much in my college lab courses. It may seem simple, but I was young and it just never occurred to me that I could make a living just "doing" science.

I detect my own personal paradigm paralysis when I'm confronted with a new situation with which I have no idea how to handle, or am uncertain of deciding on an immediate course of action. One experience of paradigm paralysis that comes to mind occurred shortly after moving into a new rental house after taking a new job in Woodland, CA. It was 1998 and the housing market was just taking off in that area. The rental property we moved into was a nice place, and plenty large enough for a family. The owners offered us a rent-to-own deal, but we decided just to rent for a year, add to our nest egg, and then begin a determined search for our first home. Needless to say, we blew it. When we contacted the owner about 10 months later to ask if they would still be interested in selling, the price of the home had increased nearly $40,000, and was still very fairly priced for the market. In this sense, I think would just liken paradigm paralysis to simple inexperience. We just didn't have a grasp on how the market was climbing and, thus, weren't aware of how much it was going to cost us by waiting.

One of the largest paradigm shifts that I can think of within the fields of science and agriculture is the acceptance of transgenic technologies. While much of the world still holds an uneasiness or distrust of the science, it seems to me that most of us within the industry view transgenics as a safe and economical means of solving some of our current pest and disease problems. I'm a big fan of conventional breeding myself, and am not 100% sold on the fact that transgenic technologies should be the answer to all of our issues, but looking back 20 years ago, who would've forecast the current success these products have had in the world market place?

There are several other paradigm shifts within the agricultural community that could be discussed; the use of Global Positioning technology for every aspect of field preparation and management, the increased use of drip-tape and low-pressure/high-volume overhead irrigation systems, even the application of seed treatments to combat soil disease and insect problems. As influential to the industry as these advancements may be, I feel that the adoption of transgenic technologies best illustrates a paradigm shift in agriculture.

References

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