

Over the course of the start of this class, I have come to realize that my previous notion of what defines knowledge being “scientific” is extremely flawed. I used to follow the line of thinking that since scientists use the scientific process, their conclusions and explanations were definite true reflections of the natural world, at least in the scope of how far measuring technology has progressed at the moment. Even though we are taught the scientific process of “PHEOC” (problem, hypothesis, experiment, observation, conclusion), all of these steps have a crucial hidden factor of boundary selection.

I’ve started to think about the concept of mapping information between different modes. For example, a diagram maps the natural world into 2d or 3d space, resulting in an obvious reduction of information. A textual description behaves similarly by mapping the natural world to a space of different dimensionality that reflects the number of elements in the model being considered. Often when looking at a system, the boundaries which determine this dimensionality are assumed to be infinite, leading the consumer of the scientific report to treat it as fact.

This comes to play in the example of the crane and the potato farm. When we initially modeled the system, we didn’t even think to consider extending the conceptual boundary to the relationship with cranes. Thus, we mapped information from the real world into a dimensional space which did not include the dimension of wildlife conservation.

Actually, I think the cranes might have been excluded for a reason broader than treating wildlife as an externality. Do thinkers tend to let temporal factors drive their boundary choice? After trying to diagram the system, I found myself reflecting that I was in the mental framing of a farm owner who was probably my parents’ age and who was most concerned about the state of things during their own generation rather than many generations in the future. Someone who isn’t going to exist on the earth for as many decades might be biased against considering what will happen to the earth after they are gone. This especially creates a bias to establish things with time delays as externalities. In this example, putting dangerous chemicals might not instantly poison and kill cranes, but might cause reproductive failures or mutations which could affect future generations of cranes. I don’t know a lot about the details about triggers in ecosystem relations, but I would hypothesize that a change in the crane population would mess with ecosystem equilibrium even farther down the road, which could harm ecosystem services or suppliers to the human food supply.

I think the reason that older generations might temporally establish boundaries with less regard to large time delays has a lot to do with Intergenerational Equity, a concept I learned in another environmental sciences class, which proclaims that each generation is indebted to future generations for any damage to the environment. This helped me to frame the double bind of the crane situation in the potato farm scenario. A potato farmer in an older generation could be temporally motivated to mainly set boundaries of environmental impact to those which will affect the farm during his/her career. They might not extend the conceptual boundary to Intergenerational Equity. The double bind appears short-term farm success violates intergenerational equity. This double bind could begin to be mended if capitalist institutions extended the boundaries of their system to intergenerational equity. I wonder how many specific

physical boundaries this could apply to. Would considering IGE motivate farmers to increase crop rotations to avoid multiple repeated crop cycles which drain soil nutrients? Do farmers neglect these outcomes because they are not fully aware of them, or because they do not place a high value on their personal obligation to contribute to their generation's conservation of the environment?