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There are many philosophical concepts and frameworks that align with my personal ecology philosophy. Going through the class has really given me insight into what I personally believe and what I hold to a higher standard when it comes to scientific thinking.

Russell (1931) notes that many scientists confuse theories and facts, and I do agree with this concept. I believe that a lot of scientists have their own biases and sometimes they think that their own research is “factual” even if it isn’t. I don’t agree with Russell (1931) in saying that science is straightforward, because I personally believe that science is a journey and that there is no way in ecology for it to be so straightforward.

Hume argues that the only reliable human knowledge is based on past impressions and ideas and memory-images of perception and their validity is traced back to the data from which they arose. I don’t necessarily believe this because I do think sometimes people can think of a new idea, but nowadays it’s almost impossible to have a completely originally ideas since a lot of ideas have already been addressed in science, even if it’s just in a hypothesis. However, I do agree with Hume in that if a person has an idea, they will try to make it precise. I do think people are naturally curious and would try to narrow down their idea. Kant had a new approach, for the time, that there should be no conflict between science and religion when it comes to science. I really don’t agree with this approach at all. I honestly believe there should be no religion in science whatsoever, and personally, in my opinion, really don’t understand how a scientist could be very religious and call themselves a scientist. I suppose that is a controversially topic, but I think that there should no science guided by religion.

Karl Popper harps on falsifying every possible and impossible hypothesis to prove a theory. Popper claims that scientists are also only interested in falsification. This also implies that falsification only needs deductive reasoning. This can mean that science can be purely driven by observations without any prior theoretical observations. I don’t agree that science can only be driven by observations, and in ecology it is important to know the history, of lets say an ecological system, so that you don’t have to waste time falsifying a lot of hypothesis that might have already been tested. However, with ecology sometimes already “falsified” hypothesis might come back and be true, but at least the current research will be able to look back on previous work to help inform their science methods. I also don’t agree with Popper when he says that methods lead to a lot of theories in ecology, because measuring any biological system or species is difficult so the methods and measurements won’t be able to tell you more than what you are collecting, normally. I do think that methods are very important in science, and methods should be solidified before science starts, and that normally begins with a well thought out question.

Platt’s main argument was that science needs strong inference for a hypothesis and emphasizes the need for alternative hypothesis, rather than one single hypothesis to avoid confirmation bias. He also argues that with multiple working hypothesis should all be working with a strong inference so that science can move in the direction of the strong inference. I agree that it’s better to be testing hypothesis that are in the paradigm that you are working in instead of trying to falsify everything like Popper, but at the same time some conclusions can be missed, which can move the current paradigm into a new one. Overall, I would say I agree with Platt’s framework, but it doesn’t apply to every experimental design.

I agree with Chamberlin when he criticizes that scientists have a bias towards a specific hypothesis when they are working with multiple hypothesis. I also agree when Chamberlin says that most people will usually have their first hypothesis to be the one they think is correct and also the first one they test. I agree that there is a lot of bias, especially with ecology, because no system or species is perfectly understood, so people like to project their own bias to their research or to other people’s research.

One of the main concepts that I agree with, with Kuhn is that even though science can be critical, some other things are not criticized like the machines that are being used in the study. I think that the machines and equipment should also be criticized in science. Especially lately, there are a lot of new kinds of technology that have more precise and accurate measurements. I also agree that a lot of ecological science is in a paradigm, or can be in multiple paradigms, but that there is an existence of paradigms. I do also overall agree with the framework that if there is an anomaly, there should be an investigation on why it is happening, but not to get stuck in the “crisis” stage, because that could be a huge waste of time. I also don’t agree when Kuhn argues that there shouldn’t be a scientific method, I believe in ecology there should definitely be a method, even if it has to be modified for the system/species.

Lakatos has some good points in the reading. I agree that even though we should trust science, there shouldn’t be a “mob psychology” and there should be a scientific method. I do agree when Lakatos says that not all of the data will fit a theory, and that some data might fail in the theory, but that if a lot of data fails the theory it’s better to scrutinize that paradigm. Lakatos talks about “research programs” and how there can be many research programs in a given field, and I personally think that that type of thinking is applicable to ecology because a lot of observations and variables are uncertain and unknown. I can appreciate Feyerabend’s anarchist views, because if we have passion and confidence about a theory, we should pursue it. I think a lot of the time, people have their ideas crushed by other scientists that are stuck in their own paradigm, so this can stifle creativity. Feyerbender is a little chaotic but I think he was “trolling” the other philosophers at the time that were too rigid with their views.

Thinking about philosophy in ecological experiments is definitely interesting and I think I lie more in the flexible side of philosophy.