

Traditional Ecological Knowledge and the Ranking of Knowledge

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Traditional Ecological Knowledge, or TEK, is known by other terms. In an effort to more accurately describe the kind of knowledge that is at hand, the terms *Indigenous knowledge*, *native science*, and *traditional knowledge* are also used. The issue of accurately naming what it is that we are trying to talk about immediately points to the different attitudes about knowledge in general, and the knowledge of the world specifically, that the different parties involved are committed to holding. I shall use the term TEK for the sake of simplicity and clarity, but it will become apparent that the term functions more as an identification tag for Western scientists than an accurate description of the subject matter under discussion. It will become evident that this is one of the results that we get when one type of knowledge is ranked higher than others, and that all other forms of knowledge – if recognized as “real” knowledge at all – are necessarily subservient to the dominant form.

TEK is a “Western scientific” term¹ that has been used widely for the past twenty to thirty years, although initially it was sometimes referred to more simply as *traditional knowledge*, a term that is more accurate in my opinion.² The people who actually have or possess and use TEK would think it redundant, and quite frankly silly (if not outright inaccurate) to include the word “ecological” to define the kind of knowledge that they have. However, Western scientific thought and the knowledge that it produces are based largely on distinctions and separations between various things in the world. So, for people who are schooled in that manner of thinking, it is necessary to identify knowledge that appears to them to be closely connected to the earth as ecological, in essence. I think a closer look at what TEK actually is will reveal that, while this distinction might be necessary for the scientific community and others, it is somewhat misleading with respect to understanding the kind of knowledge that is in question when discussing TEK.

¹ Here I am referring to the history of Western thought and the scientific method as its end product, so far anyway. I shall do this throughout this paper as a means of distinguishing western scientific thought from other modes of thinking.

² To be fair, I think that one of the reasons, beyond mere identification, that TEK includes the word ecological is because scientists want to use the ecological aspects of TEK for their own agendas. As a result, they are labeling only the portion of traditional knowledge that they have a vested interest in understanding.

Fellow philosopher Kyle Powys Whyte argues that there are at least two definitions of TEK that compete against one another to a certain extent due to the ramifications that each holds for the understanding and use of TEK. First, he identifies the idea that TEK is a “basic body of knowledge” (Whyte 3). This is knowledge that has been gathered and assimilated throughout many generations through trial and error. It is holistic in the sense that the worldviews, the spiritual beliefs, and the attitudes towards life and death are all part and parcel of the knowledge itself. They are there, but not always visibly so. From an observational perspective, looking at it from the outside (as scientists typically do), this knowledge would *appear* to be largely practical and pragmatic in nature because the activities themselves – fishing, hunting, gathering, farming, etc. – are essential to survival. Nothing is more practical than survival. However, the ways of best accomplishing the tasks and the understanding of those ways cannot be removed from the overall manner in which the people relate to the world and each other. In other words, survival and living the “right” way are more complicated acts than just staying alive.

A critical aspect of this notion of TEK being a body of knowledge is the idea that, as Whyte puts it, this is a “situated” (Whyte 3) body of knowledge. The knowledge that a group of people has is specific with respect to its place and is often time sensitive, but it can be fairly easily used by others, specifically scientists because, as a body of accessible knowledge, it has enough “objective value” that it can be easily transferred to questions outside the locale of the indigenous people who developed it.

This notion is very evident, as one of the first things that one finds when TEK is Googled is a fact sheet from the US Fish and Wildlife Service that identifies TEK as “the evolving knowledge acquired by indigenous and local peoples over hundreds or thousands of years through direct contact with the environment.” This fact sheet goes on to explain how useful TEK can be in various issues related to the environment, particularly, but not limited to, sustainable fishing and hunting practices, and climate change.

However, according to Whyte, some thinkers (McGregor, Pierotti and Wildcat) take issue with defining TEK as merely a body of knowledge and argue that in order to truly understand TEK, emphasis has to be placed on the activities themselves and the manner in which they are performed, rather than the resultant knowledge that is amassed after these activities have been successfully implemented (Whyte 4). They insist that the ethical dimensions of all activities while ongoing are more germane to TEK than knowledge as some sort of stabilized set of facts. In this view,

TEK systems, then, are systems of responsibilities that arise from particular cosmological beliefs about the relationships between living beings and non-living things or humans and the natural world. (Whyte 5)

If this understanding of TEK is accepted, then it becomes very difficult (if not impossible), to accurately transfer this kind of knowledge from one area to another, both literally and figuratively. This is obviously problematic for those who see TEK as potentially beneficial for solving various problems that we have in the world today.

There is one other issue that Whyte raises that is extremely important to any discussion of TEK and that is the relationship between TEK and western science. In many respects this is at the heart of the issue of this paper. Whyte identifies three distinct positions that have arisen:

- (1) TEK and science should be seen as separate knowledge production systems. This distinction should never be collapsed.
- (2) TEK and science should be seen as twins, or two knowledge-bearing perspectives on the world that complement each other.
- (3) There is no basis for distinguishing TEK, or Indigenous knowledge, from science, and the term TEK or its synonyms should not be used. (Whyte 5)

These three positions are loaded with issues that need to be examined. However, all the major issues revolve around epistemological concerns. That is to say, how it is that we understand what knowledge is, and therefore what it can be compatible with.

Even though the supporters of position one are claiming a kind of separate but equal status,³ it seems to me that one could argue that all three of these positions have essentially ceded, in one way or another, the highest ranking of knowledge to the scientific method because they are all measured against it. If I am right, this shows just how pervasive and powerful the idea of science as truth has become in the world today.⁴

I am not here to argue that science is not a source of knowledge and truth any more than I am arguing that TEK is not a source of knowledge and truth. For me, the vital question hinges on *why* we lay people would value one over the other. Of course, a scientist is wedded to her scientific methodology and would therefore naturally see TEK as a tool for her to use to further her scientific research. That is understandable and to be expected.

What I am here to argue is that I don't understand how it is that we non-scientists can take a position that elevates scientific knowledge above TEK (and other kinds of knowledge) without a full and complete understanding of what it is that we think knowledge actually is. So, in order to do that, we need to look at what TEK is beyond the somewhat technical definitions that have been offered above.

Because TEK is absolutely rooted in the specific area that the indigenous people who hold it live, or *place*, the best way to understand it is to consider what we know about that kind of knowledge and how it functions. Obviously, there are significant limitations to what we can know because it is impossible to get inside another person's brain and

³ I have chosen this historically provocative term purposely. I think there is a parallel here in claiming that Indigenous knowledge is supposed to be on equal footing with western science in a world where western science is given preferential treatment as the gold standard for truth.

⁴ I am not arguing that there is not good reason for this being the case. Science has produced the greatest standard of living for the most people in the history of humanity. The question is, however, at what cost?

understand what that person is thinking. It's hard enough to fathom our own thoughts oftentimes.

So, anthropologists have spent incredible amounts of time (whole lifetimes in some instances) studying and interacting with various indigenous or aboriginal groups of people. They have learned that indigenous people who live in rain forests tend to have remarkable knowledge of (sometimes tens of thousands) individual plant species, their benefits and dangers to humans, as well as the animal species that live among them. With respect to plants specifically, indigenous people have knowledge of numerous medical uses for many different plant species and understand the amount, and route, etc., that needs to be taken for specific usages. They know which plants are poisonous and which can be used for abortions, which can be used to heal wounds, and those that are edible, and so on.

If we are discussing people who live in Northern Canada or parts of Alaska, their knowledge of various species of salmon and other fish is as extensive and detailed as their counterparts in the rain forests are of plants. Hunter-gatherers in Africa have remarkably intimate knowledge of their prey and its prey.⁵ Australian aborigines understood how to use fire to control their environment, some researchers are claiming that they shaped the entire continent with their use of what we now call prescribed burning. The same kind of fire use occurred in North America as well.

These are all generalized and very superficial accounts of TEK and this is precisely the problem that arises in trying to fully understand what kind of knowledge it is that we are discussing. It is truly difficult to grasp the depth and intricacy of the knowledge that is TEK and it is not just because I don't have it. Even if I did, it would be really hard to express it to someone else who didn't have it. However, I think there is enough here to ask and answer the epistemological questions that need to be answered.

The questions that concern the ranking of knowledge should begin very simply. First, what is the purpose of any knowledge? Socrates said that knowledge was one of the only things that was good in and of itself, but he spent much of his later life trying to explain why and what he meant by that and while there may be some consensus on what his position was, it is certainly not accepted by all as the truth. Philosophers have been struggling with this question for millennia.⁶

I think that the simplest answer is survival. I need to know facts to survive. "If I eat this plant it will make me very sick and I might die." A hungry person needs to know this fact. How do I get this fact? Well, if I live in a group that has been in the area for a long time, presumably at some point someone ate that plant and everyone else remembered the

⁵ Though in this instance there have been some amusing exchanges between hunters and anthropologists when the latter have asked specific questions about lion cubs for example – are their eyes open or closed at birth. The hunters laughed and responded that if they had sought out the answers to those sorts of questions, they would probably not be here to answer the questions. After all, in their world they are the prey of the lions.

⁶ I am not claiming that I have a solution to epistemological questions that remain open, but I do think that there are available answers in this sphere of knowledge, at least.

outcome and it becomes a widely known and accepted fact that that particular plant is deadly. I trust the people I live with to know these things because of their experiences and our communal experiences spanning a long period of time.

That example is as simple as it gets, but addressing it further gets a whole lot more complicated very quickly. Like most empirically based human knowledge, TEK requires the ability to recognize and identify objects in the world. That part is the simplest part in terms of theory, but it is not easy in terms of practice. Then the issue of relations enters the picture. Assuming that a person has the ability to identify an object, how does one go about finding it? That requires a much more complex understanding of the relationships among things in the world. Suddenly⁷ an object is not an individual entity but has to be understood through its connection to other things in the world. Relations of that sort are in a kind of nether region of existence for western philosophical thought. They belong neither exclusively in the empirical realm, nor do they belong in the rational realm.⁸ These very relations among things are arguably the most important aspect of TEK, without them all we are left with is the assumption that there might be identification of discreet objects. However, we don't really know how this knowledge is handed down.

Here is where I think we find the reason for the different positions with respect to TEK and its relationship to science. In many respects, from afar, it appears that science and TEK share a great deal in terms of methodology. This notion accounts for positions two and three above. If we view the scientific method primarily as a means to get to the right answer, then it seems that there is a lot in common with TEK. Science can and ought to be largely pragmatic in this sense, and it is.

Yet there is position one, which on the surface at least, seems to deny that there are meaningful similarities between TEK and science. I think that this is a misunderstanding of the idea that these are separate and distinct "knowledge production systems." The emphasis in this position seems to be that the methodology utilized in science and TEK are different enough that they ought to be considered completely different even though they may, on occasion, or even regularly, arrive at the same conclusions or end results. The notion that TEK should retain its own autonomy with respect to science is appealing. It makes sense to me that the way that something is achieved is just as important as that end which is achieved.⁹

⁷ I say "suddenly" here because my empirical knowledge base is more scientific in nature than anything else. That is to say that I do not know how identification and location of things in the world is taught and learned with respect to TEK. Therein lies much of the disagreement about the similarity or lack thereof between science and TEK, I believe.

⁸ I cannot help but to think of the issue of consciousness in the philosophy of mind here. The notion of *qualia* was introduced to account for something that we believe exists, but is not physically demonstrable, but seems to be the product of something that is physically existent.

⁹ I cannot help but to think of food production here (which is part of the attraction to TEK, how to make it more sustainable). If I have a steak on my plate, it seems to me that I should care how that animal died in order for me to eat that steak. Did it spend days on a truck to wait in a long kill line in a high production

Still, in all three cases, we end up in a place where we are measuring one system of knowledge that is quite unified and systematized – science - with something that is a plethora of unique mini-systems all lumped together - TEK. That ought to be problematic. The only reason that it is not a big problem is because we are all children of science to a certain extent, but moreover, because we all value results, and both TEK and science offer results. Therefore, since results are good, it seems reasonable to judge them as similarly good.

However, we find ourselves in a rather peculiar situation with respect to the world right now. We are destroying it rather quickly. Science made it possible for us to do this. In fact, I grew up during a time when we were afraid that we might literally destroy the entire world by pushing a couple of buttons, that situation would never have been possible without science. Without science, we don't have plastic bags clogging up our waterways and oceans. Without science, we don't have vehicles and various industrial apparatuses that contaminate and pollute the air that we breath, while simultaneously causing the planet to warm at what should be considered by each and every one of us, a frightening rate. I could go on here, but it ought to be obvious that without science, this world that we find ourselves in does not exist in its present condition. As crazy as it may sound, none of this makes science in and of itself, bad.

Interestingly, (or should I say paradoxically?) it is science that sounded the alarm for us. For decades now, scientists have been warning us of the dangers of global warming. Science is viewed (and has been historically viewed – minus some early religious attacks), generally speaking, as morally or ethically neutral. Clearly, people who advocate that TEK should not be equated with science understand this supposed neutrality as a serious deficiency with respect to a knowledge system. Given the state of affairs it's hard to argue with that assessment. My immediate response to the notion that science is ethically neutral is twofold: first, that is a cop-out; and second, science and the technology it produces seem to often get ahead of morality and ethics.

The assertion that science is morally or ethically neutral simply vindicates the people engaged in scientific work from moral responsibility for their decisions and discoveries. Sure, the process of science may well be neutral, but it is people who do science. People make decisions. At this point, at least until AI takes over completely, (another paradox; a product of science doing science) people are still responsible for the discoveries and implementation of those discoveries. It is really a cheap move to claim that the process is ethically neutral and then use it to produce a weapon of mass destruction that is designed to kill people, for example. Those scientists, individuals like Robert Oppenheimer, knew exactly what they were doing at that time, understood at least some of the ramifications of their work, and yet they justified their actions in some way or another, and now the world is left to deal with the results of their rationalizations. So, maybe science should have an ethical component, or maybe the ethical component is supposed to be the scientist himself.

slaughterhouse, or did it leave the ranch and travel down the road a few miles to a small facility where it was the only animal butchered that day?

On the second point, that scientific discovery has a tendency to get ahead of our ethical and moral concerns; cloning or genetically modifying plants and animals in other ways is a good example. Scientists have a tendency to charge ahead, often because of the competition to be first, with the notion that we can figure out the legal and ethical issues after the fact. What is that saying about putting the genie back in the bottle? I guess it's not supposed to be easy. One could argue that this concern should be addressed in the first point, that is to say that if science were practiced ethically, then this problem would be solved as well. I do not disagree with that argument, but the reality is that we are faced with these issues.

So, while I think that it is the case that people in general hold that science is the gold standard when it comes to knowledge, that position should be reevaluated. I fear that most people are simply acting as utilitarians when it comes to science. They see so much good come from it, that they are willing to take the bad as well. Then there are those who believe that science is some kind of wonderful magic that will produce the solutions to climate change and all the other problems that it has either directly, or indirectly, caused.

However, as ironic as this fact may be, it is the scientists themselves who are looking for solutions outside of their own field, hence the burgeoning interest in TEK. Unfortunately, scientists (at least some of those in the employ of the USDA and USFW) seem to want to pick and choose from TEK those specific bits of knowledge that they believe can augment and enhance their own scientific solutions rather than to consider the moral and ethical requirements that are inherent in TEK, that should be attached to any aspect of it, that would never have allowed us to get into this mess. So to sum, there seems little doubt that scientific knowledge holds the highest rank with respect to the value of different kinds of knowledge generally speaking throughout the world, but the question remains; should that be the case?

Works Cited

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