

Knowledge Construction Across Cultures

In her 2001 book *Science and an African Logic* Helen Verran attempts to illuminate not only African knowledge and logic, but also her own westernized views toward it. Throughout her fieldwork in Nigeria Verran recorded the numerical logic of the Yoruba people. That logic consisted of a base twenty numbering system, no need for zero as numbers were simply instruments for counting and a plurality of numbers that could be viewed as “bundled units” or as many parts to a whole.

Verran began to reorganize her studies from her original attempts to learn exactly how these people think to a more holistic view of how thinking was constructed in their minds, in their classrooms, in their marketplaces, and in her presence. She discusses the generalization of numbers as well as the universal questions by what is implied through ideas such as the part and the whole as well as the one or the many.

The author’s shift from an outside “observer” to a member “working” with objects that represent numerical ideas is the heart of this work. Through this refocus Verran believes that the Yoruba do not relate to the world or to reality in the same abstract manner as western philosophies do. Instead of seeing the world as something that is outside of their existence the Yoruba engage within a variety of activities within that world, thereby working as a part in the whole, or “clots.” This understanding allows Verran to show the actions, language, possibly including “numbers” are formative or performative aspects of the Yoruba understanding.

These assumptions may seem like an exception to the general enlightenment rule when viewed alone. However when studied with Ward H. Goodenough's "Navigation in the Western Carolines: A Traditional Science" and Colin Scott's "Science for the West, Myth for the Rest? The Case of James Bay Cree Knowledge Construction" collected in Sandra Harding's edited volume *The Postcolonial Science and Technology Studies Reader* the argument for constructed knowledge across cultures is strengthened.

Goodenough's work reveals that means of local navigation among the West Carolines is constantly improved as it is passed down through generational teachers. Their ability to judge distance with two "points" that may or may not physically exist can be used as a comparison with the Yoruba's idea of numerical representation. These navigational points may be islands, or simply an area where a certain fish is seen swimming along the service. Their representative "maps" are stylistic and can be seen on the bodies of the fish they catch. Is this science? Is there such a thing as traditional science? That, as many other arguments depends on what set of definitions of "science" are applied to the situation.

Colin Scott formulates the question between myth and science better in his chapter on Cree goose hunting techniques. The techniques are definitely traditional in Goodenough's sense, and they show a methodological approach to killing fowl. Changing hunting areas, and knowing which decoys work the best show a level of adapting to changing situations where they is no stable control in the western sense of experimental method. So the argument remains, what is science? Is tradition hunting methods scientific? The difficulty in explaining away such ideas as Carolinean navigation or Cree hunting as non-science is that they are evidenced based systems with improvements based on past successes and/or failures.

The western arrangement of what counts as scientific revolves around the use of the scientific method. If that method is easily applied to instances in question then it is obviously science. The trouble with that interpretation is that many of the western “sciences” do not fit into this saintly model. Verran claims to have understood the Yoruba number logic, and Scott could probably end a day of hunting geese with an acceptable haul. The amount of time and dedication it would take Goodenough to learn to navigate with the Carolinean method is much greater. With those condition in view, perhaps a new way to understand science or indigenous/vernacular knowledge is whether or not it takes a lifetime of study to perfect?

Regardless of any new interpretation of what science is, the take-home argument for all these pieces is that there are innumerable more similarities between what western societal constructions have decided to call science and what nonwestern cultures consider traditional knowledge, or in some cases, just common sense. These arrangements are facing the same obstacles that general history faced when the shift from the history is written by the victors mentality. As more scholars work on what science and knowledge means across cultures, the fluidity of words like “science” and “knowledge” will increase. These works by Verran, Goodenough, and Scott will certainly help to direct that study.