



# Invention and Re-invention of Knowledge

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## Editorial

A few years ago I was approached by a fellow researcher who had read one of my manuscripts. She was a bit upset with me, pointing out that she had published a paper on the same topic a few years before and I had not referenced her work in my article, therefore not recognizing that she was the source of the key concept expressed in the paper. I explained that I had never read her article, so must have come up with the same idea on my own. I then read and referenced her work in my paper. We remain friends. This event led me to consider: How often is knowledge "re-invented"?

The experience with my friend is one indication that science has a reasonably good record of events because of the role of publication. Publication serves to set the record on who thought of an idea first (or at least published it first). However, there are many cases where the publication record makes it clear that an idea has been developed independently by more than one individual at about the same time (see Ogburn 1966 for one of many lists). For instance, there is an equilibrium theory about genetic diversity that was clearly identified by four different researchers (Castle 1903, Hardy 1908, Pearson 1904, Weinberg 1908) working at about the same time. All four developed the same understanding independent from each other. Who is the inventor of the knowledge? It is only reasonable to assume that they each are. Another example that is well recorded is that of the discovery of biological evolution by natural selection. Charles Darwin spent long years developing his thoughts, sharing them with friends, and writing. In 1858 he received a letter from a young field researcher, Alfred Russel Wallace, who had independently discovered the same idea. Darwin recognized this and gave Wallace equal credit even though Darwin knew that he really had discovered the idea first (Porter & Graham 1993).

As scientists we don't seem to have a problem with this kind of phenomenon and to some extent even celebrate this as confirmation that science is moving forward. I am left wondering if we are willing to give the same kind of credit to our scientific counterparts in other cultures who have also likely invented and re-invented knowledge.

## Re-invention of Knowledge

If all that we have to consider is formal academic discoveries then there be little point in this discussion since publication has been well established as a means for determining priority of discovery and assigning credit. However, as ethnobotanists we must consider the kinds of discoveries made by individuals who are not publishing scientists. For instance, in 1999 a healer in the Solomon Islands showed me his premiere remedy for treating digestive disorders and burns. The basis of the remedy was the leaf gel of *Aloe vera*. He was quite proud of his remedy. I didn't have the heart to show him a manufactured tube of the same species that was in my medical kit. I also could

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not mention that the plant probably arrived in the Solomon Islands less than a few hundred years ago. Did he invent the remedy? After some questioning I learned that no one had taught him about any uses for the plant and as far as I could determine, he was the only person in his community who had the plant. He had originally discovered it growing as an ornamental near a missionary station and taken a sample home. He experimented with the plant and apparently discovered the same kinds of uses that are reported from around the world. I believe that he really did re-invent this knowledge that we all know about.

Prehistoric independent discovery of knowledge by multiple individuals (or groups) appears to have been common. Consider the independent development of agriculture in different regions of the earth (Harris & Hillman 1989). (Sorry, but I do not accept the contorted and often racist arguments for "diffusion" of knowledge from one or a few centers of origin.) This complex process (Rindos 1984) evolved in each region and probably included many co-discoveries of ideas as well as re-discoveries of technologies developed earlier, elsewhere. Formal academic science itself is a continuation of this kind of cultural process and cannot be distinguished from it (White 1949).

Independent development of traditional knowledge has been traced in a number of areas including:

- Biological classification systems (Atran 1990, Berlin 1992).
- Identification and usage of *Nicotiana* and *Datura* species as psychoactive plants in a wide range of cultures around the earth (Schultes & Hofmann 1992).
- Usage of palm leaves as house thatch as well as other convergent uses of palms for construction in most tropical regions of the earth (Bates 1988).
- Development of food taboos in many cultures (Begossi 1998, Colding & Folke 1997)

It is reasonable to assume that the same kinds of events have happened with knowledge about health care, construction materials, transportation, and other aspects of material culture. Convergent evolution of ideas is expected to be the norm rather than the exception. This is not to say that all cultural practices are the same, just that people asking similar questions with similar potential answers will hone in on similar solutions. Maybe this is too much of an environmental determinist position, but so be it.

How often do we learn about something in a culture and think we have uncovered something really new and exciting? I seem to have this experience fairly often. It is in fact one of the pleasures that drives many of us to conduct research in the first place. However, inevitably after I am able to do more reading and searching in the literature, I find that not only has someone already reported the same or similar idea from somewhere else but that sometimes it has even been reported from the same location and just did not stand out when I first read the literature.

As a natural optimist, the joy of discovery is still sweet. As an ethnobotanist, my responsibility is not to seek out new knowledge and take credit for it, but rather to be sure that the record shows clearly the kinds of knowledge known by members of a community. Whether they invented it or re-invented it does not matter.

Invention and re-invention of knowledge are part of the process of being human. We cannot avoid it. We take great pleasure in the thought that we have made a discovery or learned of someone else's discovery. However, I am increasingly convinced that there is little that is truly new under the sun. As soon as we come to grips with this point, we can get over many of the unrealistic concerns that we have brought upon ourselves.

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