



## The Knowledges and their contexts

The narratives on the ash soap and the orange wine associate two ways of knowing: the knowledges from the community and from science. To go beyond their reciprocal translation, another possibility is to understand their natures, their characteristics and modes of development. For a long time anthropologists have tried to explain how people build their knowledge, both ordinary subjects as scientists, and the field of nature of science and scientific inquiry in science education is an area dedicated to science understanding. The philosophy and sociology of science are also areas facing science and its activities.

The human beings are different from animals especially for their abilities to develop culture and their cultural skills is that have allowed to survive in a wide range of habitats, to develop languages, transform materials, produce technology and knowledges. The cultural variation of the human species is a social phenomenon that influences and is shaped by cognition and behavior. However, it seems that there are some common features to all human beings regardless the social background. The anthropologist Franz Boas, for instance, mentioned that the ability to draw conclusions from premises and the search for causal relationships is a universal phenomenon of the intelligence (Pelissier, 1991, p. 77).

In the same direction, the anthropologist Lévi-Strauss said that both "primitive" as the "civilized" thinking seek a rational sense for nature and the difference are the "tools" that people use to classify and order their worlds. He coined the terms "science of the concrete" and "science of the abstract" to refer to two ways of knowing and established a relationship between cognitive skills and the activities that evoke them. In the view of these and other anthropologists the so-called "primitive people" also have science because they observe the natural world and apply logic and reason to understand it (Pelissier, 1991, p. 77, 78).

According to Pelissier (1991, p. 81) much research on human cognition is based on the work of Soviet psychology, which had Vygotsky as its greatest exponent. In an interesting comparative analysis between indigenous and scientific knowledge, VanEijck & Roth (2007) highlighted questions about human knowledge that are useful to understand its nature. In the perspective known as theory of cultural-historical activity, the knowledge is not seen as something purely mental but linked to a system of relations in which human needs are central and is not independent of a *praxis* or activity; furthermore, all

human action produces "traits" that shape other actions. These traits were called "artifacts" by these authors and include any tool, sign or means used to mediate the relationship between the subject and the object in actions.

In his first elaboration of the concept of sign, Vygotsky was concerned "to show the continuity/discontinuity between the *natural* and the *cultural* stimulus created by man" (Pino, 2000, p. 57). In this situation, culture transforms the natural relationship with the environment into an indirect and mediated relation, that is both technical as semiotics because it allows man to give a "new way" to nature and to the signification of things. This means that the mind uses and produces tools (technical and psychological) in its actions on the objects and the knowledge derives therefrom in a dialectical process with culture and the social environment. In other words, it is also mediated by rules, norms and conventions, the division of labor and by relations with community.

In the theory of activity the knowledge is always *knowledge in context*, that is, it exists always in relation to the context in which the action was carried out. Therefore, there is a relationship between context and artifacts, which can only be known by considering where they are employed. However, the artifacts not only shape how humans interact with reality but shape internal processes as well, which, in turn, recur on artifacts and modify them to more efficiency in both structural properties as in the form of their use. Therefore, the use of tools is a form of accumulation and transmission of the history and culture and as the contexts are plural, the knowledge takes plural, dynamic and heterogeneous forms too.

The knowledge of the women who make the ash soap and of Mr. Zé and Mrs. Ná on the orange wine brewing are, therefore, knowledges related to the activities involved and the artifacts (materials, equipment, techniques, languages, etc.) were activated or produced in accordance with the cultural and social environment where they were developed. The same is valid for the scientific knowledge about the saponification and alcoholic fermentation, but these were generated by scientists in their laboratories, universities and research centers and not by ordinary and little schooling people in the backyards or kitchens of their homes. The ways of knowing in question originated from different activities and thus produced distinct artifacts, pathways and histories. Another aspect is that they were carried out with different purposes: the knowledge on the soap or the wine are related to the production of these materials, whereas scientific knowledge seek to explain phenomena. So one wonders: does it make sense to compare them? If this task takes into account their contexts of production and development and is

done with respect the answer is: yes, it makes sense. Not least because the aim now is to understand the nature of the knowledges and to accomplish this we will adopt a relational perspective.

## **References**

Pelissier, C. (1991). The anthropology of teaching and learning. *Annual Review of Anthropology*, 20, 75-95.

Pino, A. (2000). The social and the cultural in Vigotski's work. *Educação & Sociedade*, 21(71), 45-78.

VanEijck, M.; Roth, W-M. (2007). Keeping the local local: recalibrating the status of science and traditional ecological knowledge (TEK) in education. *Science Education*, 91(6), 926-947.