

**Parallel session 1: The role of science communication in dissemination of local knowledge**

**INDIGENOUS KNOWLEDGE IN SCIENCE COMMUNICATION:  
DILEMMA AND PERSPECTIVES**

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**Abstract**

Relations between science and the knowledge developed by indigenous peoples all over the world have oscillated from disdain to idealization, and more recently to its validation (i.e. the methodological study of isolated knowledge considered useful and fit for integration in science). Science communication has adopted a similar position towards indigenous knowledge, disdaining, idealizing, and facilitating diffusion of some fields of research that validate it. This paper offers a brief overview of this topic and the possibilities created by social studies of science to enhance an equality relation between science and indigenous knowledge, in which science communication can play an important role.

**Key Words:** indigenous knowledge, science communication, equality, pluriculturalism.

**Text**

We live in a pluricultural world, where between four and five thousand indigenous peoples subsist, each with its own world view, language, territory, history, and knowledge.<sup>1</sup> And notwithstanding, although on paper they have been declared equal, the reality is that the relations that define their coexistence are far from equitable. Instead, they are characterized by a profound asymmetry, which in turn has permeated the different images of indigenous peoples that have been developed in western culture. Science's view of its homologue, indigenous knowledge, has not escaped this context, oscillating between disdain, idealization, and validation. And echoing this vision, science communication has reflected these three currents over time.

**Disdain**

This attitude has been the most common, and although it has its origins in ideas regarding pagan idolatry, it took shape in the 18th Century with the enlightenment vision in which the civilized nations, possessors of the only true knowledge, had an obligation to shed their light on the world's savage peoples, who lived immersed in superstition and ignorance. The idea of progress rendered such peoples' knowledge anachronistic, seeing it as cumbersome cultural baggage that needed to be eliminated through science, as part of the broader notion that the world's inferior peoples needed to be civilized by their

superiors. The idea of revolution 2 (Neolithic, industrial, etc.), dominated by the cult of the tool<sup>3</sup>, with technology as the embodiment of knowledge, became the cornerstone of this vision, which in turn took it upon itself to judge the knowledge of other peoples, both ancient and contemporary. This scheme can be observed in the unwaveringly linear historical perspective of numerous texts of science communication, and constitutes the core concept of the most widely held theories of biological evolution<sup>4</sup>.

While it is true that this vision lost considerable ground in the second half of the 20th Century, this decline was far less pronounced with regard to its assessment of knowledge, as confirmed by the terms that we continue to use when referring to indigenous knowledge (empirical, traditional, local, etc.), and the wholesale imposition of technological and educational models that ignore the knowledge of the people involved. One of the clearest examples of this attitude can be found in policies regarding nature conservation, in which science reduces the role of the peoples that have inhabited the regions that concentrate the Earth's greatest biodiversity, imposing a logic foreign to their culture and laying the blame for environmental deterioration on their ways of using and managing ecosystems. The way these and other related issues are communicated to the general public is a reflection of this vision<sup>5</sup>.

#### Idealization

This vision grew out of the idea of the noble savage, pure and wise, whose main exponent was Rousseau, but which New Ageism and other post-modern currents have exalted to counter the scientism predominant in western society. It is based on a vision critical of science, mainly for its lack of spiritualism, and therefore often reopens fields of enquiry hitherto unexplained by science in its efforts to reaffirm their metaphysical dimension<sup>6</sup> and the profound wisdom they encompass. Its diffusion is common in the more sensationalistic publications.

#### Validation

Validation is the process of investigation whereby science examines isolated aspects of indigenous knowledge, passing them through the sieve of method and experimentation and integrating them in its own vision. Non-western medicine is one of the best known examples, and has served as a guide for extensive research in many areas, such as that related to medicinal plants. The problem is that this often leads to a pillaging of indigenous knowledge<sup>7</sup>, which today goes by the name of biopiracy. Also, what science can explain is limited by its approaches and instruments, as a result of which it ignores many knowledges that could prove extremely valuable, and maintains a focus that proves unfavorable to intercultural dialog due to its inherent contempt for cultural context.<sup>7,9</sup> It represents, notwithstanding, the most rigorous means of communicating indigenous knowledge, and by confirming its validity, has contributed to its reassessment, even if on a limited scale.

#### Equality

As countless studies have shown, science is not neutral, and represents a confluence of social, philosophical, and ideological factors, among many others.<sup>8</sup> The separation between nature and culture established in the western world view is totally artificial, and consequently there are only natures-

cultures<sup>2</sup>, and relations between the knowledges of different cultures – including western culture – must be on an equal footing. Thus, it seems valid to me to use as metaphor the Banach-Tarski paradox regarding the comparison of non-measurable systems, in which if we take two different systems, regardless of their size – the moon and a ping-pong ball, for example – for each element we define in one (1,2,3,...n) we will find an equivalent in the other (1',2',3',...n'), by virtue of which they will both be equal. This would be the beginning of a genuine intercultural dialog, between two types of equally dynamic knowledge, which, while they are equally conservative, are open to exchange, and to the construction of a pluriverse.<sup>2</sup>

Diffusion of indigenous knowledge ought to be based on this vision of equality -without idealization or disdain, without the constant need for validation-, requiring a strict correlation of categories, classifications, causal schemes, between indigenous knowledge and science. Finally, as Darrel Posey writes, indigenous knowledge is not local knowledge, “but knowledge of the universal as expressed in the local”<sup>9</sup>.

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