Ancient logics, media and technologies

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Introduction

Our media and current technologies are the result of a global form established by Western thought. This thought, as in many parts of the world was imposed particularly in The New Spain in the discovery by Christoph Columbus in the late 16th century. Before the European contact, pre-America had a different way of thinking to the West and therefore a different development and understanding of concepts such as media, technology, time, body and space. On one hand the official history shows a pre-Columbian poor picture in technological developments, but on the other hand archaeological discoveries demonstrate an illuminated past with a more sustainable and different form of “hight technology.” To get closer to this form, we have to consider the worldview of pre-Columbian cultures as the central matrix for their technological developments. The aim of this research is to extend the pre-Columbian understanding so that we could approach archaeological discoveries and access to alternative forms of knowledge to expand Western boundaries.

Approach

Upon reaching the Americas, Christopher Columbus initially believed that he had arrived at the Asian Islands imagined by Europeans as beyond the Ganges River. This scenario was legalized by the Spanish Crown and Church, who declared themselves landowners of these (imaginary) territories eventually conceived of as New Spain, and, later, America in the name of Americo Vespucio. The Mexican historian Edmundo O’Gorman has argued that America was not discovered, but rather created, molded by Europeans. In this sense, Columbus, in his desire to find new lands, did not arrive in America because America did not yet exist. What Europeans conceived as the New World was thoroughly reshaped by the project called La Nueva España, the New Spain; languages, religion, science, technologies, political concepts like freedom and modernity—all were imported with the intention of wiping out the preexisting civilization. America was newly created as the holy version of Europe and Christianity.

The vast majority of indigenous cultural artifacts found until now, contain some degree of post-Colonialist intervention and much of our comprehensive knowledge comes out of the combination of both purely indigenous and Europeanized artifacts; indeed, it is almost impossible to get closer to their original concepts.

For pre-Columbian Mesoamerican records including the Codex Dresden, indigenous documented their history for over ten centuries before the Spanish colonization by using a more robust paper than the Egyptian papyrus called Huun[1]. Almost ten centuries of knowledge are lost between the Spanish burning and trades, leaving only few invaluable codices.

Mayan media also included stones, buildings, clothing, jewelry, and painted ceramics (the ceramic codex). This multiplicity of media raises the question of whether the Maya dealt with concepts such as media, multimedia, mass media, and information overload. In the Andes, the Inca Empire used a tactile writing system called Quipu. The Inca Quipu of Quechua language Knot, also burned in the conquest of the area, used this complex three-dimensional medium together with a mathematical device called Yupana Inca, a three-dimensional abacus, to form a complete and precise record of events. In theory, the Quipu stores the mathematical data derived from the Yupana. This unusual form of documentation complicates a broader understanding of Inca Empire; therefore, most historical knowledge is based on post-colonialist codices such as the Murua Codex, dating from 1590 and reedited in the 17th century.

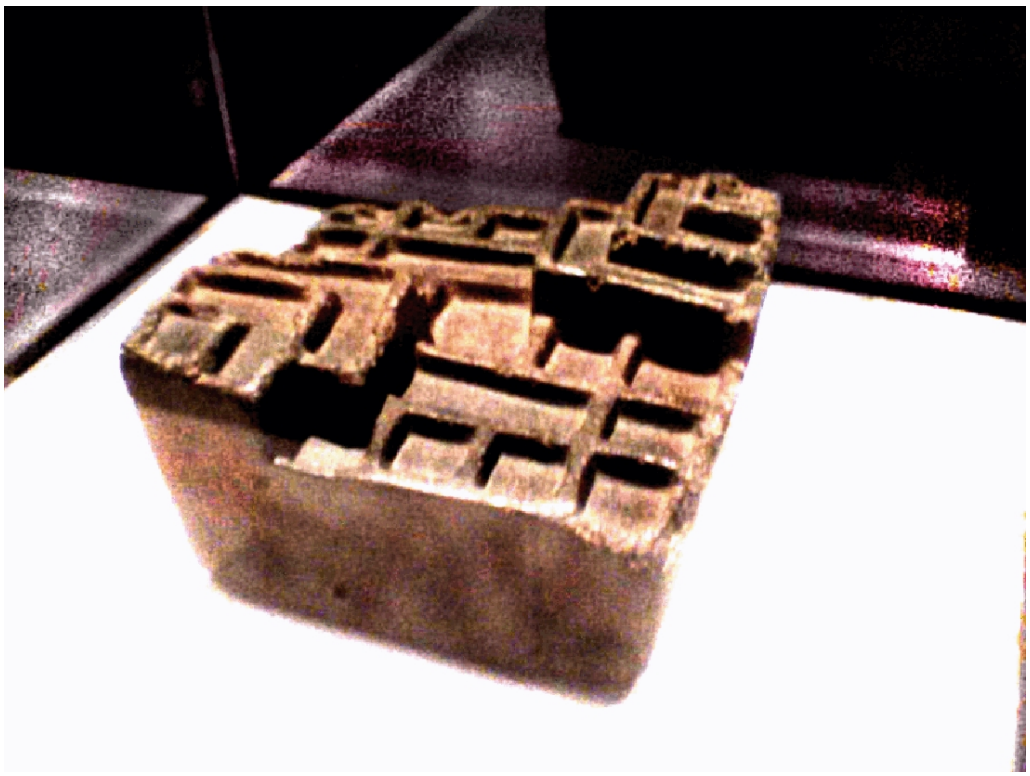
There are many theories for how to understand the Quipu and Yupana, but most fall within mathematical decimal reality, simple mnemonic techniques, or binary theories that are ground on Western reality and production. In 2002, the Italians researchers Nicolino de Pascuale and Mauricio Orlando tested the abilities of the Yupana Inca, performing astronomical calculations, complex mathematical operations, and even applying the Yupana to a modern microprocessor architecture that would result in a much more powerful design than the current binary architecture of the computer. Pascuale and Orlando provided a very interesting approach since they distrust text created by Spanish-colonizers by trying best to find clues hidden in the texts made by natives, patterns in the fabrics, ceramics, planets, constellations and stars.

Archeological evidence, such as the already mentioned Quipu and Yupana, reveals a technological heritage that required much longer than just 400 years of the Inca Empire to develop this technology. Rather, the Tiwanaco civilization, Andean

precursors of the Incas, originally developed these highly sophisticated mathematical and astronomical technologies. Their civilization is potentially the oldest on earth; using archaeo-astronomical techniques and investigations of the ruins, the Inca expert Arthur Posnansky hypothesized in 1945 that the Tiwanacotas culture was almost 13,000 years old (Hays 1125).
The technology used to build some of the Tiwanaco ruins is comparable to that used to make the Pyramids of Egypt. Similar to the Pyramids, the Kalassaya temple in Tiwanaco is a megalithic construction, created from stones weighing over 400 tonnes which are stacked against one another in a way that even a paper cannot fit between the fissures, and theoretically is positioned astronomically with the movements of the sun annually. The Tiwanaco ruins, together with similarly sophisticated constructions including the Nazca lines, may have been erected by earlier civilizations, with the Incas inheriting, restoring, interpreting, and adopting them to their contemporary culture. Indeed, when the Spaniards came to the ruins of Tiwanaco in Bolivia for the first time, they asked the indigenous people how they had built the structures; “[t]hey laughed at the question, affirming that they were made long before the Inca reign… .” (Cieza de Leon) Likewise, “Garcilaso de la Vega… gave an account of how, in historical times, an Inca king had tried to emulate the achievements of his predecessors who had built Sacsayhuaman… this boulder was hauled across the mountain by more than 20,000 Indians, going up and down very steep hills… At a certain spot, it fell from their hands over a precipice crushing more than 3000 men.” (233). Based on the study of the forms of the ruins of this lost civilization, the Bolivian theoretical Jorge Emilio Molina proposed a logic called Tetralectics (Tetraléctica) that seeks a new way of understanding indigenous worldview separated from the Old World perspectives. This theory explored a new paradigm, a new logic that points to deal better to the context of pre-colonial times to reinterpret the vestiges and concepts. The Tetralectic theory also suggests that the peoples of the Andean and Amazonian, and possibly Central and North America as well, worked with a logic of four dimensions. In the Tetralectica, ideas are expressed through a union of geometry and reality. Furthermore, rather than the two -dimensional dialectic, four conditions rule their reality: the certain thing, the false thing, the possibly certain thing, and the possibly false thing. It is also related to Tiwanaco because Tawa means in Quechua language “Four” as well as Tiwana in Aymara language, both languages of the region.

The three-dimensional abacus called Yupana Inca, might had worked under this theory, being his three-dimensionality and different levels the factor of

unsertanty, resulting in more complex operations. This could be also related to the fact that pre-Columbian way of writing was metaphoric, open by using images, or three-dimensional forms. This openness in their way of writing, including the possibility or uncertainty factor intuit in the Tetralectics, could give us more ideas on how did the indigenous peoples understood and conceptualized their technologies.



Yupana, Abacus Inca. Image. Wikipedia.

We see the idea of uncertainty of equal form in their way of thinking. For the Aymaras, the cultural group descendant of Tiwanakotas his thought is seminal, as the biological processes where the things are given in events. “Sprout by the life force of the universe and generating divine : Pachamama.”(van Kessel 37). There is not a priori or a control of the results, and everything spins or depends on the relation body and environment.

In the Andean region, scientific methodologies externalizing the body as the object of study cast out psychoactive medicinal practices emphasizing the deep relation between the body and environment, such as Ayahuasca, Peyote, San Pedro, between others. Animism, a source of knowledge was almost exterminated, giving the task of understanding to a technological media, external to the body,

minimizing the possibilities of uncertainty.

Scientific drawings, microscopes, telescopes, cameras, and other media are external technologies reaching for an ideal objective entity supposedly providing pure truth and pure control. Nature as a machine was broken in to parts. God, external to nature was his new designer and later human kind, but for indigenous we are not external to nature (Pachamama), we are born of her and we are part of her, everything is interconnected. Knowledge is considered a living organism as the indigenous thinker Fausto Reinaga argued.

Folk taxonomies (folkxonomies) used by the natives lost importance and were replaced by names settle by the conquerors to be considered as illegitimate. Antonio de Ulloa, scientific, military and Spanish writer says, “the Quechua language of the Incas is closer to the language of children.” (van Kessel 37)

Similarly, the way of documentation was standardized, in order to eliminate subjective interpretations on each species found.

“The scope of study should be limited to copy nature with accuracy, especially in plants, without adding adjectives and attributes with their imagination” (Ortega).

In pre-Columbian times the body was understood as a medium that connects or relates us to knowledge; “So here are people without electron microscopes who choose, among some 80,000 Amazonian plant species, the leaves of a bush containing substances that inactivate an enzyme of the digestive tract, which would otherwise block the hallucinogenic effect. And they do this to modify their consciousness… when one asks them how they know these things, they say their knowledge come directly from hallucinogenic plants.” (Narby 14).

For the church and scientists of that time, this medium of connection called body brings with it uncertainty–an uncertainty principle initially unacceptable and bizarre to the Western objective reality, but nowadays intuited with tweezers by quantum mechanic physicists. So how is it possible that on having the presens of the body (uncertainty), many technological advances have been developed in pre-Columbian times?

Works cited

Cieza de Leon, Pedro. Chronicle of Peru, Hakluyt Society, London, 1864 and 1883, Part I, Chapter 87. Book.

De Pasquale, Nicolino. “Le yupane: gli strumenti di calcolo del mondo andino” in: Perù: tremila anni di capolavori, Electa, Milano, 2003. Book.

De La Vega, Garcilaso. Royal Commentaries of the Incas and General History of Peru, 1572: Pg. 233. Comment in the book Referenced in Fingerprints of the Gods by Graham Hancock, 1995: p. 58. Book.

Hays, J. D., John Imbrie and N. J. Shackleton.”Variations in the Earth’s Orbit: Pacemaker of the Ice Ages” Science. Vol.194, No. 4270, 10. Dec, 1976: p. 1125. Print

Narby, Jeremy. The Cosmic Serpent. Georg, 1998. Book.

O’ Gorman, Edmundo. La invención de América. Mexiko D.F.: Fondo de Cultura Económica, 1995.Book.

Ortega, Casimiro Gómez. “Instruction the safest and most economical way to transport live plants”. Madrid, 1779.

van Kessel, Juan. Manos sabias para criar la Vida. p. 37. La tecnología simbólica en la producción agropecuaria andina, 2000. Book.

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[1] Huun (Maya: “handmade”) paper is made from the cortex of the plants sanseviera and typhus latifolia.