

***Trópico lunar. A renovation program for the Mexico City
Museum of Natural History.***

Cesar Carrillo Trueba

Learn to speak a little bit of English...

learn to walk in the dream of the foreigners,

I am the third World child

Johnny Clegg

As if synchronized with the turn of the millennium, natural history museums are experiencing intense and exciting times around the world. In Paris, London, New York, Luxembourg, Dublin, La Plata, and Mexico City among others, these museums are announcing plans for renovation, have started them, already started part or have fully remodeled their old installations. The way in which they do this or have done so varies and is never free of conflicts. Should research be reduced for a greater educational effort? Should a highly technological area be added to previous installations, or should both be combined in the same place? Should collections be organized around the discourse of biodiversity since this topic attracts the indispensable funds for renovation. Should the term National History be removed from the names of museums? These and other questions which inevitably arise in the elaboration of projects make natural history museums spaces open to debate and to change.

The conditions in which these transformations take place are not insignificant: an acute planetary environmental crisis which has generated great interest in the ecosystems of other latitudes, species only seen in the zoo's or on television,

genes from useful plants and cultures which were previously considered “primitive” and which now are candidates for funds from International Institutions for their work in favor of the preservation of the planet. A strong interest of the mass communications media in these topics and the development of scientific disciplines devoted to the study of jungles, deserts, rivers, forests, seas, soil, and atmosphere, from micro to macro of their history and future.

At the same time, the way scientific activity is perceived has changed radically in recent years. It is no longer possible to continue to sustain the lineal conception of history, in which the dominant conception is the positivist one, according to which all societies must go through the stages of animism, metaphysics and all types of knowledge considered “pre-scientific” to inevitably reach the “objective science”, for which all other cultures must leave behind their superstitions and embrace the knowledge of contemporary science which is, by its own definition “superior”. From this perspective the development of science and technology is endowed with internal logic, and it is not considered that all types of knowledge are generated in a specific natural historical and social context, respond to various specific needs and interests, and have a rhythm and a dynamic of change of their own. Scientific activity as well as theories and the facts which support them cannot be considered without recurring to philosophy, history, sociology and the psychology of science.

The idea of nature itself has undergone substantial modifications, in great degree due to the planetary environmental crisis. It is no longer possible to discuss nature without including human activity. Man can no longer be seen as a being outside nature, and much less as nature’s master, capable of dominating and controlling it. The search for a new relationship between societies and their immediate and planetary environments is imperative.

It is clear that for any renovation project, a natural history museum must consider these general circumstances, as well as its immediate context, and in function of these factors, propose the type of museum to be built, the communities with which it will be linked, the weight it will give to research, orientation of collections, etc. The work presented here is part of a broad project which covers museographical, architectural, and other elements, and is mainly focused on the conceptual framework which determines the goals of the project, the theme and its development, and the relationship to be established with visitors.

Metropolis, colonies and new nations

“The degree of civilization which any nation, city, or province has attained is best shown by the character of its public museums and the liberality with which they are maintained” wrote George Brown Goode, director of the National Museum of the Smithsonian Institute in 1895, and with the stimulus of this idea powerfully rooted in the mentality of the second half of the 19th century, there was intense development in most of the natural history museums of the world. With the British Museum as their paradigm, other countries undertook the renovation or creation of their own institutions -many of them were colonies at the time- and some raised immense buildings which came to house collections of great importance, going beyond the role of local collectors which the metropolis tried to impose upon them, museums in countries such as Canada, Argentina, and Australia created collections of internationally recognized value, while in others like Brazil, South Africa, and Mexico an effort was made to create global collections without much success.

Nevertheless, in all of them, directors trained in Europe wanted to create institutions similar to those of Europe, from architecture to publications. As Susan sheets-Pyenson states in her book *Cathedrals of Science*: “Using

European practices and methods as their standards, these men believed that a proper museum had to include objects of universal value, as well as materials of local interest alone. The diversity of the natural world was to be shown at least through representative types, if not by a wide variety of individual forms. Their museums' reputations, they felt, depended on the number of specimens amassed, with considerable cachet attached to the acquisitions of exotic foreign materials”.

Just like the Europeans, the naturalists of other latitudes based their work for most of the 19th Century on the idea of the *Scala naturae* and the “principle of plenitude”, trying to recreate in their collections - which went from the most simple to the most complex organisms, as Lamarck describes - the chain of being in which human beings occupied the highest step, not far from angels and cherubim. With the acceptance of the theory of evolution, natural history museums organized their displays in accordance with the new order, working with concepts like those proposed for the National Museum of Mexico by Alfonso L. Herrera, following the ideas of George Brown Goode and Geroge Pouchet - elder son of Felix A. Pouchet, founder of one of the most important natural history museums of France, in Rouen - in a text published in 1896: unity (in chemical composition, organized matter, vital functions, etc.); reproduction, distribution (series, law of geographical distribution, species from the ocean floor, from the islands, from the poles, etc.); evolution (law of inheritance, struggle for life, natural selection, etc.).

These concepts defined exhibit areas which should be visited in a perfectly established order, as suggested by Alfonso L. Herrera. “These halls are arranged in a progressive series, in accordance with the principles of natural philosophy ...they are and should be visited by the public in a philosophical order: first hall 1, then hall 2, then hall 3; also, the public shall be obliged to

pass through each of them also following a philosophical order, and appropriately arranged barriers will be installed for the purpose.”

As can be seen, for the scientists of the day, there was no doubt that science represented absolute truth and that if a certain logic, or sequence in this case, was followed, one would inevitably arrive at its truths, since one truth leads to another and so on - a scheme embedded in the purest mechanistic spirit of the age. Also, science was seen as the source of progress, and natural history museums were attributed an intrinsically “civilizing” role as Susan Sheets-Pyenson mentions: “Advocates repeatedly explain that visiting a properly organized natural history museum instilled, in addition to a modicum of scientific information, a sense of order, method, and law”, and that these scientific disciplines were “the best antidote to habits of dissipation or immorality.” - an idea which recalls the episodes which took place in the British Museum at the beginning of the 1980’s during the exhibit *Dinosaurs and their living relations*, when one of the museum’s curators opposed the exhibit, arguing that the teaching of cladistics to children encouraged acceptance of Marxism and the inevitable revolutions related with it, since, according to him, it showed evolution as a process of abrupt, not slow and gradual changes as orthodox Darwinism contended.

Finally, in the 19th Century, Darwin’s theory did little to change the idea of human beings as “the master and owner of nature” in the words of Descartes. Some natural history museums had an ethnographical area in which racial and cultural variations were presented in “natural settings” as yet another series in the sea of species, but with the particularity that in them the tendency to “progress” which western civilization, the peak of evolution, embodied. The idea of a “tendency toward increasing complexity” toward “superior life forms” was never

abandoned in the discourse of these museums and currently is the concern of some - very few - institutions immersed in renovation processes.

A tropical project

The present Mexico City Museum of National History was founded in 1964, but it inherited part of the collections of former National Museum of Natural History, founded in 1909. It has a surface area of 7,500 m², visited by an estimated 400 thousand persons annually, making it one of the most visited museums in Mexico. The exhibition area is divided in nine halls: The Universe, the Earth, the Origin of Life, Taxonomy, Adaptation of living beings, Evolution, General Biology, Man, and Distribution of living beings. Since it opened, its exhibits have not been modified and it has deteriorated over time.

A space for synthesis

The first definition of the renovation project called Tropico Lunar is the character of the museum. According to the classification established by Roland Arpin, director of the Museum of Civilization of Quebec, the museum we want to build is a museum for synthesis, that is, a space in which the image of the world, generated by science in an extremely fragmented manner due to hyperspecialization, can be reconstructed. Our idea is to create a space in which the natural and social sciences, the arts, the knowledge referred to as traditional which is preserved and renewed in many different ways by the various cultures inhabiting the planet can converge; a place which provokes reflection on the social aspects of scientific and technological development where ethical aspects of the generation and application of knowledge are treated, and the implicit philosophy and ideological aspects of theories are discussed.

As a center for diffusion of science, the museum must bring to a broad public a series of topics which allow it to understand the world we live in, the relationship which human beings have established with the world, the vast possibilities of the new conceptual tools which scientific activity has created, etc., and the acquisition of this knowledge should encourage the public to take an active part in the various social issues, which concern, or should concern, society as a whole.

Thematic organization

In the thematic design it was necessary to consider factors such as the existence of museums and centers which treat similar areas. When the Museum of Natural History was founded there were few museums in Mexico City dedicated to scientific themes. At present there are several, and a huge science center is planned for the north of the city.

Thus, for example, the hall of The Universe was conceived from a particular perspective of what has been called natural history, “all there is in the universe...” states a contemporary pamphlet. With the renovation this will disappear, and astronomy will be treated in function of its relationship with living beings on Earth and not as a topic in itself.

Another aspect which obliges us to reconsider the current theme of the museum are recent studies focused on the biological diversity of the plant which have highlighted its importance. It has been determined that the greatest biological diversity on the planet is found in the zone between the tropics, and that Mexico, located in part of this zone, is one of the countries with the greatest biological diversity in the world. The relationship between this biological diversity and Mexico’s cultural diversity, which is equally great, has produced a great variety of cultivated and semi-cultivated plants, which have increased the

genetic diversity of the territory. This is a fundamental point, which should be incorporated throughout the thematic organization of the museum.

All these factors lead us to reconsider the current theme of the museum, identical to that of most of the other museums of this type in the world, and to propose a discourse focused on living beings in their most significant aspects and their relationship with the human species in time and in space. These themes will be developed with a focus on the Mexican territory, with special emphasis on the relationship that the human beings which populate it have maintained with its ecosystems, and on the history and current situation of the latter, principally in the Valley of Mexico, site of Mexico City.

The new theme seeks to foster planetary consciousness in the visitor, that is, encourage visitors to understand that whatever happens at any point in the world has global effects, and to provoke reflection on the possible solutions to environmental problems, and the role which society should play, creating and supporting new ways of relating to nature, indispensable for confronting the environmental crisis in Mexico and in the rest of the world.

The collections

The present theme is reflected in the collections of mounted specimens: 43% are exotic species, 57% are native, and there is only one endemic species. Although the percentage of native species is not low, the most remarkable animals in the exhibits for their size and presentation, are the large African vertebrates, which does not allow visitors to appreciate the biological diversity in Mexico.

The growth and care of the collections is an essential part of the renovation project. The direction that this group will take will be basically for purposes of

exhibition, i.e., will be based on thematic guide and mostly will be materials and species from Mexico (rocks, fossils, skeletons, animals prepared with various techniques for exhibition, antique and contemporary scientific plates, etc.). Once the renovation is completed, it will proceed in accordance with the program for temporary exhibits established (for example, an exhibit on fossil plants in Mexico will allow us to increase the museum's fossil collection). The research collection, the ethnological collection would continue to contribute to knowledge of biological diversity in Mexico, with emphasis on the Valley of Mexico.

Research

The research area shall be dedicated essentially to dissemination, that is, the elaboration of synthesis of knowledge, which will allow us to present topics in an integral manner and generate original knowledge to facilitate diffusion (for example, a broad division of the geological history of Mexico would at present be a very valuable contribution, since nothing similar exists. To realize this, a thorough analysis of a great number of sources, works on specific aspects and various very general topics are required, as well as a rigorous work of synthesis).

Underlying Philosophy

In the thematic organization of the Museum, the mechanistic and reductionist view which permeates most of the results of contemporary science will be avoided. It will reflect the various levels of organization of living beings and articulate one with another, showing the complexity of the relationships and the errors incurred in by reducing everything to the molecular level; lineal causality will be avoided when discussing processes and new focuses provided by chaos theory will be treated in an accessible manner, as well complex systems and other conceptual tools of great value.

The difference between patterns and processes will be highlighted, showing how the establishment of the former commonly gives rise to debate, and even when a consensus exists, how the processes which explain patterns are also the subject of great debate. All this with the purpose of showing that science is not homogenous nor free of debate, that it is plural, for which reason the Museum will avoid favoring any given theory, but will strive to express this diversity of perspectives.

We will avoid showing the evolution of living beings as a process tending toward more complex organisms, that is, the human being. In one of his most recent books, Stephen Jay Gould presents an interesting demonstration of the lack of tendencies in evolution, and of how in vertebrates it is impossible to speak of a tendency towards the primates, and even less toward humans. Furthermore, the idea of organisms denominated simple, such as bacteria, shall be severely criticized with the purpose of breaking with a long tradition of Western thought: the idea of progress.

The inversion of perspectives which have become clichés is another task. For example, the tropics have almost always been studied and perceived from the perspective of the temperate countries (Europe and the United States principally). These latitudes are used as the frame of reference for all the other regions of the planet (one more example of eurocentrism), delimiting zones as “very hot” and “very cold”, animals either as “too big” or “too small.” Rather, if as Francis Hallé proposes, the standards are established from the tropics, we would consider the temperate zones “too poor in species”. And if we use local terms to comprehend global issues, we would invert the famous slogan, which would result in: think locally, (i.e., based on your own cultural context) and act globally, (i.e., effective local action may have global repercussions).

Relationship between exhibits and visitors

The thematic organization of the Museum is thought out so that visitors question their knowledge about the various topics, and through the excitement achieved with museography, formulate their own questions, which in function of the duration and attention they pay to exhibits, they can answer or refer to a triptych, catalog, book, teacher, or other source. The important part of this is the personal process of obtaining and constructing knowledge, more or less in accordance with the following scheme:

deconstruction of knowledge --> knowledge, emotion --> formulation of questions, personal process of construction of knowledge.

Each thematic section should be self-sufficient, since it is not obligatory to visit them all, nor in any given sequence, at the same time ensuring that it is possible to relate one with the other and to accumulate notions and ideas to ultimately formulate concepts. The idea is that visitors always take away certain doubts, questions, notions, or ideas, and that if they follow any sequence, a few concepts.

An integral museum

The renovation project seeks to go beyond updating exhibits and installations. This project also seeks to create a model which will permit integral functioning of the museum, with the purpose of relating to its public as a whole. The exhibits are always the visitor's first contact with the museum, but the relationship that the public may have with the museum does not end there. workshops, recreational activities, the library, the cafeteria, the projection hall, and publications, to mention only few, are others of the countless facets that the museum should offer in this relationship. The interaction of the different areas

of the museum (community outreach, research, education, museography, etc.) should be managed in such a way that visitors' perception does not distinguish them, but that in each activity visitors participate in, including the visit, they feel that everything is part of a single action. For this purpose, the participation of all the areas of the Museum in the design, evaluation, and mounting of new exhibits, and in the planning of all the other activities, is necessary.

Why Trópico lunar?

The strip of the planet over which the moon reaches its zenith is called the lunar Tropic. This zone almost coincides with the solar tropic, which is delimited by the Tropic of Cancer to the North and the Tropic of Capricorn to the South, but which oscillates due to the fact that the cycle of the moon is longer and more complex. Mexico lies partially within the solar tropic, called intertropical zone, and is completely or almost completely covered by the lunar tropic, when the moon reaches its northern zenith, once every 18.5 years.

The effects of the moon on living organisms has been studied very little. It is known that the moon's zenith effects the behavior of nocturnal animals, and it is speculated that it also affects others, such as the cycles of aquatic larva and the physiology of large trees. It is an open field and full of questions, which arise frequently due to the knowledge that the indigenous cultures of Mexico have preserved regarding this phenomena, as well as the knowledge of the moon accumulated by ancient Mesoamerican cultures.

Ours is a theme with deep cultural roots in Mexico, which surprises, stimulates curiosity, creates more questions than answers, and promises to be a line of research in which many different sources of knowledge, perspectives, focuses and approaches can converge, in which space will be provided for the arts as well as for scientific knowledge. This is how we want this museum to be: a

space to integrate without reducing, creative, open, multi-cultural, where local issues are related to global issues without losing their significance, where we learn to walk in our own dreams.

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César Carrillo Trueba*
Facultad de Ciencias,
Universidad Nacional Autónoma de México
México, D.F. 04510
Tel. 525 622 49 35
e-mail: cct@hp.fciencias.unam.mx

*Biologist. Presently coordinator of the research area of the Mexico City Museum of Natural History.