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Beyond boundaries: Mixing art and science in University Museums

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Keywords Art; Science; University museums; Curiosity; Critical Museology

Abstract By mixing art and science, beauty and truth, we are allowed to transform museums into facilities for curiosity, where collections and exhibitions could motivate creative and significant learning among visitors. This article discusses the possibilities of closing the gap between art and science as a disciplinary and epistemological dichotomy that has shaped Western knowledge since antiquity, but even more since the 19th century. This discussion, linked to some of the main arguments of critical museology, aims to arrive to a more fluid and dynamic way to think about museums with exhibitions that leave room for the imagination, and dare to go beyond every known boundary. These arguments are especially appealing for university museums because they have a social mission that can increase their efficiency and turn them into agents of change for their communities. Finally, this article briefly reviews a workshop for museum professionals carried out in Mexico in April 2018. The discussion, however, about the confluence of art and science in university museums and the possible outcomes of a disciplinary mélange that highlights curiosity as a basic human behavior, is to be continued.

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A Little History

Art and science are part of our daily lives. Even if we don't notice it, we live in a mixed world where different aspects of art and science come together all the time; in a single object, we can find the beauty of art representation and the truth and rationality of science. Why do we keep broadening the gap between art and science? Why do contemporary museums, including university and academic museums, maintain an old dichotomy and distinguish science from art as two different, and sometimes opposite, ways of knowing and understanding the world?

In order to discuss the possibilities of breaking these epistemological boundaries and stop referring to museums by their kind of collection (art museum, science museum, ethnographic museum, and so on), it is necessary to start by presenting a historical background. Each moment in humanity's past has defended a specific perspective or image of the world; the way we approach nature and society highly depends on the vision established in our time.

That is why, when reading old texts, it is difficult for us to understand all the references and descriptions that do not match with our current concepts and experiences. A good example of the latter is 18th century navigation maps: Australia and Canada were uncharted territories and most Europeans were afraid of the many dangers hidden in those lands and seaways. While very little was known about foreign zoological species, these maps were a graphic representation of the monsters, spirits, giant octopi, and spectral lights described by travelers and poets. The main questions, however, are how do we get to know things and how do our previous epistemological structures shape our daily experiences and knowledge? These are deep philosophical questions, but history is a loyal companion that may help.

During the 17th and 18th centuries, art and science were linked and colonial expeditions always included in their crew a group of naturalists and artists working harmoniously together. Among the most famous maritime expeditions of the British Empire, we can find the three worldwide voyages commanded by Captain James Cook (1728-1779). This article does not aim to delve into details of each one of the three voyages, but there are some outstanding characters among their crews. In 1768, Captain Cook reported in his travel diary that the HMS Endeavour set sail from Plymouth, England, with an approximate number of 97 souls, including 73 members of the crew, the Captain, 12 Royal Marines, 7 gentlemen, and 4 servants. Amongst these gentlemen, as Cook describes them, were Daniel Solander (naturalist and physician), Charles Green (astronomer), Joseph Banks (naturalist), as well as Sydney Parkinson (artist), John Reynolds (artist), Herman Sporing (artist), and Alexander Buchan (artist). This expedition was a success and the HMS Endeavour brought back home new knowledge about geography, cartography, botanical diversity, and astronomy – the transit of Venus and the solar parallax – while the drawings and large paintings from the four artists on board quickly became trustworthy representations of an exotic and distant world.¹ Parkinson's drafts, drawings, and watercolors remain in the archives of the Royal Society as legitimate testimonies of those explorations.²

Years later, in 1772, Captain Cook departed again; this time, the HMS Resolution and the HMS Adventure left England with a large crew and a new guest aboard: English artist William Hodges. After the positive results with his first voyage, Cook did not hesitate to include in this new expedition a talented artist who could paint landscapes of Tahiti and New Zealand. Moreover, the British Empire needed proof of the new territories and colonies, and the artworks of Hodges became the best and still decorate aristocratic halls, corridors and galleries with idyllic images.

Why would a military and scientific expedition – intended for the discovery and colonization of new territories – include artists among the ship's company? Why would they give anthropological, astronomical, botanical, cartographic, and zoological knowledge the same importance as the task of representing graphically and under the aesthetic criteria of the time, natural landscapes and cultural diversity? Then, European society didn't seem to follow today's rule that art and science are two different worlds.

In addition, almost a century later, German naturalist and artist, Ernst Haeckel, published a catalog of more than 400 illustrations of species on the ocean floor; his purpose was to show “artistic forms in nature” and to relate the symmetries and mathematical proportions of biodiversity with artistic creation.³ Haeckel's work is known by his contributions to the

representation of microscopic specimens, but he has also proved how Art Nouveau, as an artistic movement, could be successfully applied to the most rigorous scientific research.

These examples indicate that the study of nature has changed over the centuries. A long time ago, science and art had a harmonious relationship that merged in perspectives, objects, and creators. Whilst Leonardo DaVinci was an inventor, anatomist, and artist during the 16th century, Victorian society brought a new perspective where thinkers and creators became separated: science/art; truth/beauty; knowing/representing; objective/subjective; neutral/emotional. The impact of the Industrial Revolution, the enlightened thought, mechanicism, the development of capitalism, the monopolies, and the unprecedented economic growth, was significant, and new dichotomies fashioned Western mentality and gradually diminished our comprehension of Parkinson's presence in the HMS Endeavour or the scientific value of Haeckel's graphics.

The communication vessels between science and art are wide and fluid, but many of them have been abandoned since the 19th century European culture refused the possibility of mixing beauty and truth so as to understand reality. During the 20th century, scholars and intellectuals broke away from any form of artistic expression opting instead for direct observation, while artists stopped following any kind of scientific standard opting for more personal and intuitive methods evident in avant-gardes such as Expressionism and French Fauvism.⁴ Museums, similarly, received the influence of these sets of mind; the 19th century created the foundation for the emergence of museums as public institutions that quickly adopted the dichotomies mentioned above and thematic criteria for the classification of their collections. Art and science had two different niches materialized in museums: galleries – rooms that housed mostly pictorial and plastic expressions - and cabinets – rooms filled with specimens, artifacts, curiosities, and botanical rarities - gave rise to art and science museums with specific exhibitions and display policies.⁵

Beyond Boundaries

Has time changed our perspective? Has the 21st century brought a different approach to reality? Philosophy and social sciences, with an attitude of deconstruction and incredulity, have recently questioned most of our old dichotomies and ideological heritage, and museum studies have also highlighted a necessary transformation of museums to a new kind of social institution as “contact zones”⁶ and places for dialogue and intercultural relations. Critical museology, as an intellectual tool for better understanding museums and their communities, suggests the importance of questioning history and its hegemonic accounts, and to imagine the unthinkable. As a result, Kathleen McLean⁷ has presented a “Manifesto for the (r)Evolution of Museum Exhibitions” with suggestions for a new type of museums; for instance: 1) “Leave room for the imagination” and “embrace the incomplete,” and 2) “Mix things up,” cross boundaries and loosen up.

The recent intervention of contemporary artists in the Museum of Archaeology and Anthropology at Cambridge University is an outstanding example⁸ that has settled McLean's ideas as more than just nice suggestions. Everything fits in a museum and there are opportunities for all kind of experiences that we need to explore. Crossing the confines of our epistemological dichotomies and the socially established order is important and necessary.

How can we intertwine science with art again? In fact, these two worlds arise from the same kind of attitude: curiosity in the face of the unknown. Curiosity is the common point between science and art as two sides of the coin that converge in their methods of knowledge construction and their practices for creation. Artists and scientists tend to approach problems with a similar open-mindedness and inquisitiveness that do not fear the unknown.

“Curiosity [...] is marked by an eagerness to encounter what is new or unfamiliar, openness to difference and perhaps a willingness to suspend judgment. People often go to museums to see works and objects that are already canonized, such as the paintings that we are all supposed to see before we die; in practice, what’s often more rewarding about visits to exhibitions and collections are unexpected discoveries of pieces that may be minor in art-historical terms or otherwise supposedly of secondary interest but that appeal to you nevertheless, that enable you to know something new that take you somewhere you have not previously been. Being curious enables us to travel in this fashion, but it surely also equips us better to acquire an awareness of the societies we all now inhabit, and to act and live within them.”⁹

University Museums and Curiosity

The previous discussion can easily insert into the scope of university museums, where collections and exhibitions have an enormous potential as agents of social change and as promoters of creative learning around their own communities. A university museum is a repository of collections coordinated or ascribed to a university or academic institution, and whose main objectives are education, research, and public communication.¹⁰

Tightening the gap between art and science could be applied as a proposal for university museums that are usually divided and classified by their types of collections and archives. In this sense, curiosity is an impulse and a motivation for action that - beyond the scientific or artistic value of an artifact, collection, or museum - must be seized among visitors in their approach to museums and among university scholars and students. Curiosity is fertile and necessary in the fragile world we inhabit. Museums that stimulate curiosity and creative thinking can make the world a better place.



Figure 1: Workshop participants discuss different meanings for the same art piece. Mexico, April 2018. Photo by Seminario Universitario de Museos y Espacios Museográficos.

By mixing art and science, we can create dynamic and fluid contexts that promote a new epistemological base and lead us to new forms of learning. Convergent thinking is a traditional method that all students and professors have followed in the classroom scope. How can museums contribute to a new model of learning? Curiosity and mixing things up allows for the development of divergent thinking and the expansion of the mind that encompass many possible solutions to a wide range of possible questions or problems. Curiosity enlightens a new way of thinking; something we definitely need in our contemporary society.

To achieve this, first, it is relevant to consider that the *mélange* of art and science, and the exaltation of curiosity in university settings can be done by working with collections and “object-based learning.”¹¹ Each artifact, specimen or masterpiece, is a window to other worlds full of suggestive ideas and meanings. University museums, therefore, need curious visitors able to find endless angles and perspectives in every exhibited piece. Objects and material culture stimulate the imagination and boost creativity, as long as the museum is not prescriptive in urging the visitor to adopt a pre-established criterion or an official story that may discourage or weaken curiosity. “Museum collections contain authentic and fascinating objects, providing excellent tools to engage the mind and set it into motion.”¹²

University museums have a privileged position that enables them to be at the forefront of museological innovations. What would happen if we transform the museum and free the curiosity of students, researchers and all kind of visitors? It would become a place to explore and go beyond all boundaries.¹³ The use of university museums and their collections in this regard can positively affect their visitors, their community, and extensively society. Public engagement is possible by introducing new ideas, mixing collections and exhibitions, and crossing the usual distinctions of genre and discipline.¹⁴

Art and Science: Workshop in Mexico

Mexico has a long tradition in museum studies and innovations, where university museums and collections have played a very important role. In this regard, the Seminario Universitario de Museos y Espacios Museográficos (SUMyEM)¹⁵ of the Universidad Nacional Autónoma de México (UNAM) in Mexico City is currently working to design new strategies for improving university museum management and creating new kinds of visitor-oriented activities.

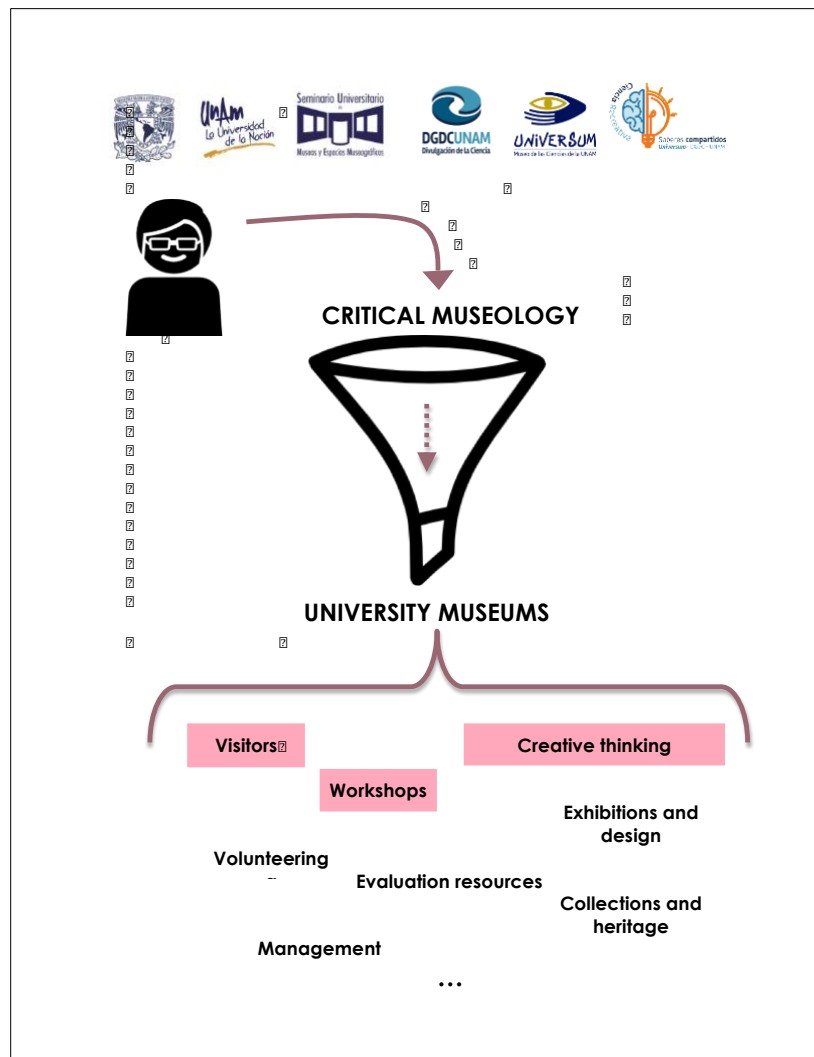


Table 1: This workshop was designed based on the postulates of critical museology, without distinguishing a museum's pre-established topics.

All novelties require teamwork and the exchange of ideas and experiences between museum professionals and scholars; working alone does not give creative and inclusive results. As a consequence, the SUMyEM recently started a project that promotes interdisciplinary and inter-institutional exchange where museum professionals can learn from one another. In April 2018, the SUMyEM carried out a two days long workshop, entitled “Art and Science. School and Pre-University Visitors in Museums. Workshops design.” The Museo Universitario Leopoldo Flores¹⁶ was the host and 74 museum professionals united to talk about different

tools for the design of new workshops and activities for visitors in museums, considering creative thinking and curiosity as the main elements for attracting young visitor's attention.



Figure 2: Workshop participants: artists or scientists? Mexico, April 2018.
Photo by Seminario Universitario de Museos y Espacios Museográficos.

The workshop lasted 16 hours and was divided into three sections: 1) professionals in charge of the workshop's management at the *Universum*, Museo de las Ciencias (Mexico City) presented short conferences about the characteristics of creative thinking, specific ideas of critical museology that were related to the workshop's main topic, different ways to categorize museum visitors, methods for designing workshops, and strategies to approach art with a scientific background and to exhibit science with artistic ideas. 2) A creative game where participants had to imagine themselves as artists or scientists and visit an art exhibition adopting a specific perspective associated with their character. Developing curiosity and the exploration of multiple perspectives toward the same objects, exhibitions or collections can be activated through different activities that, beyond the already known mechanisms in the museum, promote and stimulate a wide view among researchers, professionals, and visitors. This section intended to show the possibilities of exploring multiple approaches. 3) Finally, museum professionals had to design activities or workshops for their own visitors, adapting the theoretical tools and methods given by moderators during the first part. Science communication and artistic interpretation are compatible ways for learning; more effort should be made to develop museum activities amidst creative and dynamic contexts that teach visitors to "listen to the objects speaking."¹⁷



Figure 3: New designs. Mexico, April 2018. Photo by Seminario Universitario de Museos y Espacios Museográficos.

Final notes

What motivates us to build new knowledge? How could we cross the epistemic boundaries that have modeled our knowledge since the beginning of times? How could we encourage our visitors in museums to explore new ways of knowing and approaching exhibitions and collections? Could we transcend borders and work towards the convergence of artistic creation and the construction of scientific knowledge?

University museums have a social responsibility; and conveying the importance of crossing borders is a big challenge, but also a great opportunity to go beyond tradition and empower our visitors. The experience with professionals in Mexico was just an example of the many things to be done, because the confluence of science and art seems a possible way to promote curiosity, so, let's explore it!

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Table 1: This workshop was designed based on the postulates of critical museology, without distinguishing a museum's pre-established topics. Created by Seminario Universitario de Museos y Espacios Museográficos and "Ciencia recreativa, saberes compartidos" (Universum, Museo de las Ciencias), 2018.

Notes

- ¹ Richard Holmes, *La edad de los prodigios. Terror y belleza en la ciencia del romanticismo* (Madrid: Turner, 2012), 34-61.
- ² "The Head of a Chief of New Zealand" (1773) is an illustration created by Thomas Chambers after Sydney Parkinson's drafts. "The Royal Society," last modified 2018, <https://pictures.royalsociety.org/image-rs-9210>.
- ³ Olaf Breidbach, "Brief instructions to viewing Haeckel's Pictures," in *Ernst Haeckel, Art forms in nature* (Munich: Prestel, 2004), 14.
- ⁴ Arturo Chavolla, "La estética: ¿creación o conocimiento?" in *Arte y ciencia. XXIV Coloquio Internacional de Historia del Arte* (Mexico: Universidad Nacional Autónoma de México, 2002).
- ⁵ Edward P. Alexander, *Museums in motion: An introduction to the History and Functions of Museums* (United States of America: AltaMira Press, 1996), 8.
- ⁶ James Clifford, *Itinerarios transculturales* (Spain: Gedisa, 1999), 270.
- ⁷ Kathleen McLean, "Manifesto for the (r)Evolution of Museum Exhibitions," *Exhibitionist* (2010).
- ⁸ "Museum of Archaeology and Anthropology," last modified 2018, <http://maa.cam.ac.uk/>.
- ⁹ Nicholas Thomas, *The return of curiosity. What museums are good for in the 21st Century* (London: Reaktion Books, 2016), 15.
- ¹⁰ "International Council of Museums, Committee for University Museums and Collections," last modified September 19, 2018, <http://umac.icom.museum/>.
- ¹¹ Helen Chatterjee, "Staying Essentials: Articulating the value of object based learning," *University Museums and Collections Journal* 1 (2008).
- ¹² Allan Garthenthaus, *Minds in motion: Using museums to expand creative thinking* (United States of America: Caddo Gap Press, 1997), 10.
- ¹³ Science communication recent models promote dialogue and agree with a community interest in scientific practice and its historical and social components. Concepts like "public understanding of research," instead of the well-known "public understanding of science," have become relevant.
- ¹⁴ Thomas, *The return of curiosity*, 113.
- ¹⁵ "Seminario Universitario de Museos y Espacios Museográficos," last modified August 2018, www.sumyem.unam.mx.
- ¹⁶ "Museo Universitario Leopoldo Flores" last modified 2018, <http://web.uaemex.mx/muslf/presentacion.html>.
- ¹⁷ Sonia Geladaki and Giota Papadimitriou, "University Museums as Spaces of Education; The Case of the History of Education Museum at the University of Athens," *Procedia. Social and Behavioral Sciences* 147 (2014): 305.

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