

SCIENCE MUSEUMS FOR ADULTS: TO MAKE PCST MORE SERIOUS

So Yeon Leem

Seoul National University, Korea

Abstract

Science museums are unique compared to any others such as art and history museums in that they are considered places mainly for children. However, although the visit to museums is often thought as leisure activity, science/natural history museums are also expected to have a serious responsibility to enhance the public communication of science and technology and promote environmental awareness. This paper argues that science/natural history museums have not made a substantial contribution on PCST because they are hardly taken serious in the society. Science/natural history museums have had an inner-tension due to the historical reason among museums, science and technology and nature. That is, in the West, modernity, while sacrificing nature, gave birth to both science and technology and public museums. Science/natural history museums as institutions for children have not had to deal with this dilemmatic reality. As an example, the analysis on Biodiversity Hall in the American Museum of Natural History demonstrates that museums fail to present science and technology in context related to environmental issues. This paper also proposes that science-related museums should function as social spaces for those who can actually make a decision in real world. To do so, along with institutional changes, science/natural history museums need to appeal mature audiences in two ways: they have to challenge modern ideologies such as globalization through deconstructive exhibits and create multifold stories based upon locality through reconstructive exhibits. The more serious science museums are, the more relevant PCST is to the society.

Keywords: science museum, natural history museum, public communication of science and technology, environmental issues, modernity

1. Introduction

Although museums are thought to be one of the most powerful media to fertilize the public communication of science and technology through their multi-dimensioned exhibits and programs, in reality, science/natural history museums are often considered places that are somewhere between theme parks and schools, mainly for kids and families. The followings are the mission of the National Science Museum and the Seodaemun Museum of Natural History in Korea, respectively: "With advanced display techniques, NSM[National Science Museum] provides the scientific and technological knowledge to incubate a science learning attitude and dreams of the future to the general public(especially to the youth). With the philosophy to exhibit in the past, the present, and the future of science and technology, NSM illustrates the principles and phenomena of natural science. With advanced display techniques, NSM provides the scientific and technological knowledge to incubate a science learning attitude and dreams of the future to the general public (especially to the youth). With the philosophy to exhibit in the past, the present, and the future of

science and technology, NSM illustrates the principles and phenomena of natural science.”; “Located in the metropolitan area, our museum [Seodaemun Museum of Natural History] is an educational space for the young people, a cultural space for the local residents and a recreational space for the families. We offer an opportunity to the people living in the city to encounter animals and plants easily which will encourage them to love and care for all living creatures.”

That is, science/natural history museums have not done a very good job concerning with science and technology communication by giving too much focus on teaching either scientific principles or a love for nature, neither of which seems intriguing to most of mature audiences. Therefore, the aim of this paper is to argue that science/natural history museums should be recognized as ‘serious’ civic places to establish scientific culture that is relevant to complicated features of modern science and technology. Specifically, environmental issues are the main concern of this paper as one of critical matters of debate on science and technology in modern society.

2. Intellectual Framework: Museums in Dilemma

The history of museums and environmental destruction is interwoven with the concept of modernity. The development of the public museum is viewed as the consequence of modern idea of progress and the subsequent emerging historical disciplines [1]. Since the nineteenth century, public museums in Western society have been governed by the view that it should be possible to achieve “a total representation of human reality and history by the ordered display of selected artifacts” [2]. In the meantime, the development in Enlightenment thinking went coupled with the process of Scientific Revolution and Industrial Revolution that made it possible to exploit nature by means of science and technology. In other words, both public museums and western science have been developed along with the emergence of modernity; however, modern science and technology has created various kinds of social problems including environmental destruction.

Due to historical reasons that have been mentioned above, science/natural history museums cannot but help having an inner-tension when they deal with negative aspects of modern science and technology, especially here, environmental problems. This explains why science/natural history museums have to be ignorant of certain parts of the relationship between scientific and technological progress and society. For museums in order to present every aspect of modern society related to science and technology, they first need to question their belief in modernity. However, science/natural history museums have avoided confronting the dilemmatic situation while fancying themselves as science teachers or nature lovers, whose vision is usually not relevant to the real problems of society. At the end, museums fail to attract adults who know complexity and variety of environmental issues from their experience. Without this intellectual as well as historical notion, any approach to change museums cannot make any foundational and long-term effects.

3. Case Study: Biodiversity Hall in the American Museum of Natural History, the United States of America

The Hall of Biodiversity consists of four main sections; Resource Center: Transformation of the Biosphere and Biodiversity Crisis Solutions, African Rainforest Diorama, Habitats of the World, and Spectrum of Life Wall and Overhead Parade. The followings are the critical analysis per each section.

Resource Center: This section emphasizes scientific optimism and emotional motivation, but not much on

socio-economic aspects, related to environmental issues. The exhibit covers topics such as restoration and protection of prairies, marine parks and management of land and forest, laws and regulations locally and internationally, scientific research and outdoor activities, and planned resource consumption. Although it claims that the ultimate cause of environmental destruction is human activities based on technological development, by blaming the poor management over nature for limited scientific knowledge, this exhibit shows a deep faith in science and technology as means of solving environmental problems.

African Rainforest Diorama: The exhibit features a life-size rainforest diorama that includes more than 160 species of flora and fauna and more than 500,000 leaves, each of which have been made by hand and measures 90 feet long, 26 feet wide and 18 feet high with sound and smell. Despite all the effort to bring African nature into American city, this exhibit fails to construct the reality of African rainforest. In this section, rainforest conservation is justified due to its values inherent in Western science and culture. The idea of wilderness, which is mostly exported from the West, is forced upon cultures and peoples whose perceptions of the human-nature relationship are dramatically different from that of those in other parts of the globe, especially those which are governed by a capitalist order [3]. The reality is not in how true to life the diorama looks but rather how inclusive its viewpoint is.

Habitats of the World: With the aid of a strong visual effect, such as beautiful scenery on large-scale video screens, this section shows the most traditional view of nature, “nature – out there.” Although each part of nature is depicted with the explanation about the degrees and the kinds of environmental degradations, it does not help audiences make decision related to environmental issues.

Spectrum of Life Wall and Overhead Parade: This section explicates the concept of biodiversity in a highly directed way. The entire wall is full of specimens from algae to fish and from fungi to mammals. The concept of biodiversity, which the exhibit is supposed to convey, seems more scientific than the mere image of nature; however, the former invokes the same values as the latter. On the one hand, the danger of the idea of wilderness lays its dualistic vision in which the human separates from the natural [4]. However, the concept of biodiversity, on the other hand, based on the systematic view of nature as the biological object, is not less dangerous than the idea of wilderness.

In sum, Biodiversity Hall in AMNH does not succeed to present science and technology in society in terms of problems caused by them. Hyperreality of distant nature diorama disguises the reality of nature where humans live, work and play. Few people are inspired by the commonplace remark that we humans have destroyed nature by our science and technology and need to protect nature by better use of science and technology. In addition, emotional appealing is not helpful for those who make a decision to solve the actual problems.

4. Conceptual Suggestions for New Science Museums

In the museum field, there has been a new phenomenon since the 1970s and 1980s that is called “New Museology.” New Museologists have explored the idea of the ‘new’ museums as a democratic institution in the service of social development at the local level [5]. Table 1 shows how a new model of science/natural history museums is different from a traditional one of them, focusing on the public communication of science and technology.

Table 1. The New Model of Science/Natural History Museums Compared to the Traditional One.

New Science/Natural History Museums		Traditional Science/Natural History Museums
<ul style="list-style-type: none"> - To connect science and technology to everyday life - To promote Social and economic development - Communication 	Objectives	<ul style="list-style-type: none"> - To educate scientific knowledge or technological skills - Preservation and protection of natural heritages - Education
<ul style="list-style-type: none"> - Extensive people oriented - Localism 	Basic Principles	<ul style="list-style-type: none"> - Science/technological knowledge - Natural specimens/artifacts - Globalism
<ul style="list-style-type: none"> - Inclusive institutionalization - Decentralization - Curators as interdisciplinary professionals 	Structure and Organization	<ul style="list-style-type: none"> - Exclusive institutionalization - Centralization - Curators as scientists or engineers
<ul style="list-style-type: none"> - adult-oriented programs - interdisciplinary exhibits 	Approaches	<ul style="list-style-type: none"> - students-oriented or family-friendly programs - strictly scientific exhibits

In this way, museums can function as civic spaces where both the public and experts present and exchange their ideas, and, furthermore, shape and coordinate policies together.

Along with an institutional approach, two types of exhibits are suggested here to appeal mature audiences. Conceptual guidelines are described in Table 2.

Table 2. The New Concept of Science and Technology Exhibits.

	Deconstructive Exhibits	Reconstructive Exhibits
Goals	<ul style="list-style-type: none"> - To demystify meta-narratives 	<ul style="list-style-type: none"> - To construct multifold stories - To solve actual problems
Objectives	<ul style="list-style-type: none"> - To question the current social systems or established concepts - To emphasize the subjectivity and uncertainty of science - To criticize other representation in other media - To merge other fields such as art with science and technology 	<ul style="list-style-type: none"> - To form alternative views of science and technology - To describe the actual and potential problems based on regions - To cooperate with local people - To change in accordance with problem-solving or decision-making process

Deconstructive exhibits aim at demystifying meta-narratives such as the objectivity or neutrality of scientific knowledge and creating a playful environment through interdisciplinary interpretations of science and technology. Reconstructive exhibits intend to write multi-narratives based on locality, actual problems, and everyday lives. However, these two categories of exhibits are not necessarily distinct from each other.

5. Conclusion

The public communication of science and technology should not mean only to make the public understand the history of discoveries and inventions. In the same way, science/natural history museums should not be only concerned about attracting more family visitors by designing sugarcoated exhibits. By casting off modernity that has fettered both museums and modern sciences, science/natural history museums reach out various society members with their subversive and diverse narratives. The establishment of new science/natural history museums as institutions for mature citizens will lay the cornerstone of PCST that is relevant to the twenty-first century's society.

6. References

- [1] E. P. Alexander, *Museums in Motion: An Introduction to the History and Functions of Museums*. American Association for State and Local History Press, Nashville, p. 8, 1979; G. Edson & D. Dean, *The Handbook for Museums*, Routledge, London & New York, p. 3, 1994; K. Walsh, *The Representation of the Past: Museums and Heritages in the Post-modern World*, Routledge, London & New York, p. 22, 1992.
- [2] Donato 1979 p. 221 cited in T. Bennet, *The Birth of the Museum: History, Theory, Politics*, Routledge, London & New York, p. 126, 1995.
- [3] R. B. Peterson, *Conservations in the Rainforest: Culture, Values, and the Environment in Central Africa*, Westview Press, Colorado & Oxford, p. 263, 2000.
- [4] W. Cronon, "The Trouble with Wilderness; or, Getting Back to the Wrong Nature", In Cronon (ed.), *Uncommon Nature: Toward Reinventing Nature* (pp. 69-90), W. W. Norton & Company, New York & London, 1995.
- [5] A. Hauenschild, *Claims and Reality of New Museology: Case Studies in Canada, the United States and Mexico*", Smithsonian Center for Education and Museum Studies, 1988. Retrieved September 25, 2004, from <http://museumstudies.si.edu/claims2000.htm>