

The Prenatal Exhibit at the Museum of Science and Industry

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The *Prenatal Development* display at the Museum of Science and Industry is one of the oldest science exhibits in the United States. Most of its specimens were collected in the early 1930s by a medical student, Helen Button, while she worked as an obstetric resident at Cook County Hospital. This institution primarily served the poor residents of Chicago during the depression. (In the 1990s, it continues to serve the needy.) Dr. Button discovered that many pregnant women were suffering from malnutrition and poor health. These conditions, along with other kinds of poverty-related problems, unfortunately resulted in the rare loss of embryos and fetuses. Some of these specimens were preserved by Dr. Button after she received permission to display them for educational purposes.

At the Century of Progress Exposition (1933-1934), the prenatal exhibit (*Life Before Birth*) became available for public viewing for the first time. The specimens were preserved in sealed glass containers in a mixture of water, glycerine, formaldehyde, and oil of wintergreen. Their ages and developmental landmarks were indicated on nearby labels. The presentations were designed and produced by the Stritch School of Medicine, and they were located in the exposition's Hall of Science, in a booth belonging to the Loyola University School of Medicine. (Dr. Button graduated from Loyola.) The specimens were lent to the museum in 1939.

For over sixty years the design and content of the display has evolved. In the 1940s the mother's role in birth and child care became a very important part of the presentation. Surrounding a pregnant female mannequin were wax models of fetuses in utero. Later, the science content was transformed into an exhibit about human growth, called *Miracle of Growth*. Finally, in the early 1980s it became the *Prenatal Development* exhibit, a presentation about human developmental biology. It contained only Dr. Button's real specimens, not wax substitutes or plastic models.

Prenatal Development has a linear array of forty embryos and fetuses arranged in developmental order, each with its own brief label copy. Around the corner from the display, is more information to read. The entire exhibit presents the world of human biology in a unique way. Biology is often invisible to us because what is important is too small to be viewed with our naked eyes; cellular or molecular mechanisms can be detected only in laboratories. *Prenatal Development* presents information at a rich intersection of object, word, and design. Its "cognitive art" is intuitive and rich. It provides a broad spectrum of different levels of understanding for sensitive and patient viewers.

The exhibit's big message is that we all grow and

develop into complete human beings by a series of stages or steps that blend together in time and space. We originate from fertilized eggs and then grow into complex organisms, composed of billions of cells. The presentation provides an environment where visitors can walk quietly and view the individual units closely, occasionally talking to companions about what they see. The experience is interactive without interactive technology. There are no computers or mechanical devices. The experience is real and immediate.

Visitor behavior speaks strongly for this exhibition's effectiveness. In the extremely rare case of a building power outage most visitors quickly leave the museum. The rooms become dark, except for emergency lighting. Those at the *Prenatal* exhibit, however, linger and reluctantly leave only after seeing all the specimens. This is amazing behavior and has been repeated during an evacuation of the building because of a false fire alarm. What can account for this strong attraction and holding power, sometimes even under the most unusual conditions?

Visitor studies have shown that young adults, especially pregnant women and their husbands, find the prenatal exhibit reassuring and informative. In addition, students use the display to learn about anatomical and morphological changes that occur during human development. They want to learn more about the complex patterns of temporal growth and how they are regulated. Visitors constantly ask the museum guards "where the babies are?," if the specimens are real, how old they are, and where they came from. It is one of the most sought after and thoroughly used exhibitions in the museum. People spend significant amounts of time there, usually with friends and relatives.

How much time and what other kinds of parameters exist concerning visitor behavior are interesting questions to answer for this display because exhibit designers are planning to move *Prenatal* into a new genetics exhibit in 1999. The icon must remain an attraction even though it will be redesigned and updated. Critical questions about new visitor flow relative to a new organizational design is an interesting problem. Therefore, careful tracking and timing studies of the existing exhibit will provide important information to help developers understand the success of the display. Besides maintaining the icon status of the exhibit, the designers also want to improve its signage, introductory labels, and text to answer the daily questions that people have. Serrell and Associates were asked to focus on tracking and timing studies first.

In the summer of 1996 research was done to determine how much time people actually spent in the gallery and where they spent it. Using a floor plan, data collectors noted individual visitors pathways and stops at exhibit elements. Visitors were selected randomly and observed on different days of the week, usually in the afternoons. Only people who stopped at one or more elements, and spent at least one minute in the exhibition, were included in the study. The sample size was forty-nine visitors.

The average time in the exhibit was six minutes, ranging from one minute to a high of eighteen minutes. The frequency distribution of time showed a skewed-left pattern, which is typical of these kinds of studies. The "sweep rate index" (SRI) was 167 square feet per minute, among the lowest SRIs ever measured by the NSF-supported Serrell study, "Meta-Analysis of Visitor Time in Exhibitions." (SRI is defined as the square footage of the exhibition divided by the average time visitors spend in the space. The lower the SRI, the more time people spend in the exhibition.)

The exhibit has an introductory panel with label text around the corner at one end and a video at the other end. These items were counted as two elements. The total number of stops visitor could have made was forty-two. The average number was twenty-two; and 59% of the visitors stopped at more than half of the exhibit elements. The distribution bar graph of the number of visitors' stops is bimodal, which indicates that visitors either decided to stop at a few elements (less than ten) or a lot of them (more than thirty). Because of this, few people actually made the average number of stops.

Prenatal Development clearly meets two criteria for thorough use suggested by Serrell for measuring and comparing the success of different exhibits; it is among the eleven exhibitions in her sample of 108 that does so. The majority of visitors moved slowly and closely viewed as many specimens as possible. These kinds of behaviors will be sought for the new genetics exhibit. More studies will be done to help guide its development as it provides a new home for the cherished *Prenatal* display.

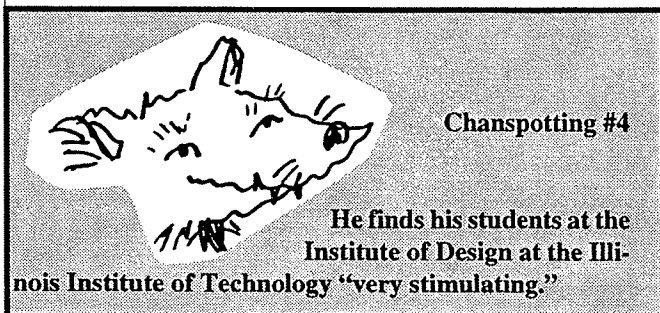
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Visitor Studies: Theory, Research, & Practice, Volume 8, Number 2

A second issue from the 1995 Visitor Studies Conference is soon to be published. This issue will contain papers from a number of leading professionals including:

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Chanspotting #4

He finds his students at the Institute of Design at the Illinois Institute of Technology "very stimulating."

Two Models of Museum Collaboration: Potential Impacts on Visitor Behaviors

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Introduction

Museums collaborate with one another in many ways in efforts to improve their visitors' experiences. The two collaborations described below clearly differ from each other in terms of people involved (including museum staff, target audiences, and outside agents) and their interactions (as colleagues, instructors, clients, and vendors). The two groups differ also in both form and function (including organizational framework, formality, services, activities, and outcomes). These two systems may serve other metropolitan museum communities as models for cooperation to enhance visitors' experiences. The point of considering these disparate partnerships together is not to directly mimic either of them, but rather to recognize the wide possible range of options for consortia that may improve the visitor experience.

Chicago Museum Exhibitors Group (CMEG)

CMEG works to improve the quality of museum exhibits through fostering enhanced professional interaction among all those involved with museum exhibits. The group was founded in 1991 by a loose coalition of museum-based exhibit developers. Its membership list now includes exhibit designers, evaluators, educators, and administrators from museums, zoos, aquaria, etc., as well as other professionals (both independents and those employed by commercial firms) involved with exhibits. CMEG's current membership list stands at around 150 individuals.

CMEG is a classic "grassroots" organization. There are no dues and a minimum of hierarchy. It is run very loosely by a steering committee of ten to fifteen volunteers that meets every few months to suggest possible topics for future meetings, determine interest in special events (e.g., overnight trips to museums outside of Chicago), and discuss matters that impact the group's functioning. One steering committee member, the program coordinator, contacts museum colleagues around the city and arranges the sites and program logistics for upcoming meetings.

CMEG meets more or less monthly at museum venues around the Chicago area, with the host museum usually presenting a brief (15-30 minute) program, often related to one of its own exhibits or particular concerns.

Over the past several years, CMEG meeting topics have included such issues as reviewing signage at a historic house, updating older exhibits in a natural history museum, discussing aspects of museum-contractor relations, using animals in exhibits, and fundraising. A number of meetings have centered on critiquing exhibits at various stages of development. Often, in such cases, the attendees systematically tour through and actively use an exhibit, meeting together after-