

INFORMAL LEARNING

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INTRIGUING MUSEUM INITIATIVES

Robert Mac West

The museum industry is engaged in a series of very serious discussions and reflections on its future.

What will the museum of the 21st Century be (we ask this question almost a decade into that century – a strong indication of collective uncertainty)? What will be the impact of Web 2.0 initiatives? How do museums respond to the enormous societal changes, ranging from considerations of authority figures to the rapidly-increasing personalization of desirable experiences? What economic and operational model(s) will museums have to adopt in order to be sustainable in the new environment? And the questions and challenges go on and on.

As part of this ongoing, and increasingly intensive and vital conversation, we monitor new initiatives at many levels, from public programs to strategic plans to business models. Here we look at two fascinating new developments on the visitor experi-

ence side of things – a major new set of visitor experiences at the Ontario Science Centre in Toronto and the initial presentation of a most non-conventional traveling exhibition at the Science Museum of Minnesota in St. Paul.

Ontario Science Centre

Despite its record of success (it is by far the best-attended science museum in Canada and among the most popular Canadian cultural attractions), the Ontario Science Centre saw that the external world was changing and that many of the experiences which had been unique to it were increasingly available elsewhere. Thus, in 1999 the OSC began planning proactive changes that are now coming on line and creating a set of new visitor experiences. Working under the broad umbrella of *Agents of Change*, the OSC has invested some \$47 million (Canadian) into transforming over 30% of its public spaces plus an outdoor science park at its front entrance.

Among the challenges the center addressed were

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becoming relevant to teens and young adults, focusing on innovation and creativity as central to future science, and developing deeper relations with its visitors and extending those relationships beyond the OSC visit into other aspects of individuals' lives. This "engagement model," thus, changes from the OSC being a place with exhibits to which visits are made to being an array of experiences which encourage participants to establish a new relationship with science and the OSC. Further, the OSC is making these changes in conjunction with outside partners from both the business and education worlds. The desired outcome is people more prepared to embrace science and engaged visitors with an understanding of 21st-century scientific problem-solving based on creativity and innovation.

There are multiple elements to *Agents of Change* which opened sequentially from 2003 to 2006 – KidSpark for children, the Hot Zone for breaking science, the Weston Family Innovation Centre, the outdoor Teluscape Exploration Plaza, and several art installations. I had the opportunity to visit Toronto twice recently (August 3 and November 17, 2006) to observe the Hot Zone at the entrance to the Weston Family Innovation Centre and the Centre itself, and to confer with OSC staff responsible for conceiving, developing and operating this very interesting experience area.

It is of more than passing interest to note that the Ontario Science Centre is not yet 40 years old – it opened to the public in 1969. Nonetheless, the OSC has determined that the model which has carried it so far, so fast, and so well is in need of major modification – hence, *Agents of Change*.

The mission of the Ontario Science Centre is "to delight, inform and challenge visitors through engaging and thought-provoking experiences in science and technology." As *Agents of Change* was in development, a Purpose Statement was created. It reads: "To spark creativity, inspiration, innovation and change..."

- By joining participants and partners to create unexpected experiences...
- So that people generate new ways of seeing and thinking about themselves

and the world.

- New questions. New solutions. New possibilities."

As mentioned above, an important element in creation of the Weston Family Innovation Centre is to develop creative and engaging experiences for an audience that science centers conventionally have great difficulty reaching – teens and (largely) childless young adults. Several months after the Innovation Centre opened fully, OSC staff report that they are gradually understanding this new and challenging audience. Hence, there is a gradual evolution in the kinds of activities and programs being offered; this undoubtedly will continue.

Hot Zone

This cavernous gallery is the entrance to the main Weston Family Innovation Centre, but really is a set of stand-alone experiences. The intention is for the Hot Zone to inform visitors of current events in science and technology and prepare them for the varied experience they will have in the main gallery that is beyond. It is a cacophony of visual and aural stimulation, from which visitors can enter the Innovation Centre as well as other experiences. Large screens provide information on the day's activities in science, and side stations encourage visitors to pose questions of researchers, to read blogs from scientists in the field, and to encounter updates on topical issues prepared by OSC staff. It is a media-heavy immersion in the world of "real science," which differs in many ways from that of the "known science" presented in most science centers and museums, as well as from the self-directed experiences with creativity and innovation that are available in the next gallery. In addition, there are creative light and color interactives oriented to younger children.

An interesting modest side gallery to the Hot Zone presents contextualized interpretations of various science themes. During my early August visit it featured an exhibition on the development of 3-D video games, with input from local Toronto educational and production organizations. In November, the exhibition was about the science and technology of fashion.

Innovation Centre

The 25,000 square foot main gallery of the Innovation Centre is an initially-perplexing array of experiences with sound, light, technology, gadgets, simple and not-so-simple machines, and various connections of the constructed and the natural worlds. There are no obvious boundaries or demarcations which suggest "zones" or thematic areas. While conceptually the gallery is (more or less) divided into the Challenge Zone, Media Studios and Material World, with Citizen Science activities also available, the conceptual framework of the Innovation Centre requires fuzzy boundaries between all of these. The whole point of creativity and innovation is that activities are by and large non-directed, non-linear, and self-determined by visitors to the Centre.

Thus, it is basically inappropriate to describe the Weston Family Innovation Centre in the context of a science center exhibition gallery. It is, as the OSC literature makes abundantly clear, a zone of exploration, innovation and creativity, where the visitor is in charge and the science center has made available a host of materials, control systems, environments, and relationships. Use, modification, exploration, and manipulation of these is the visitor's responsibility.

There is no overriding theme or body of content. Rather, the gallery is a series of loosely organized stations with everyday materials available to be shaped, made into something, or tested for various properties. For example, guests make shoes out of miscellaneous pieces of fabric, leather, twine, etc.; they test the varying frictions of different surfaces by sliding irons down inclined slopes; they disassemble electronic devices and turn the components into works of art; they create their own stop-action videos; they move through illuminated environments, turning light into sound; they solve engineering problems by making robots; and much more. All of these activities depend on peoples' ability to be creative and innovative.

As I watched the space being used at two different times, with two different audiences, it became clear to me that – despite the absence of a linear sequence and with the large number of casual experiences – this is not a place that is readily accessible

to young children (yet another way in which it is distinguished from many science center exhibitions). The experiences and manipulations (to be done effectively) require considerable thought and analysis.

This was brought home by comparing the audience of the Centre on August 3 (largely elementary-school-aged day camps and families with [mostly] elementary-aged children) and November 17 (middle- and high-school students and adults without children). Use of the activities was decidedly different, the nature of the experimentation and use of materials was much more sophisticated with the older audiences, and there was much less (though not completely absent) flat-out "play" activity (even though many of the experiences fully allowed this).

The family experience in the Weston Centre is decidedly intergenerational, with parents and caregivers working with their children to carry out the activities. This differs from family behavior in many science centers, where parents and caregivers stand back and watch their children manipulate and play with the exhibits.

OSC floor staff are essential to the success of the Weston Centre. I watched a group of Grade 8 Gifted and Talented students use pre-programmed "crickets" to assemble and test light, heat, and motion sensors. The students (who did not know each other

before the program) figured out how the crickets were programmed, how to assemble them to perform the desired task and then use them to solve a complex problem. The first solutions failed. The students did self-assessments of why that happened and then developed refined second-stage solutions by reconfiguring their original devices. Staff facilitated this activity and the students were thoroughly engaged in creating their solutions.

Staff also help guests understand the operating model of the Weston Centre and respond to spontaneous opportunities. They suggest things that guests might do, make materials available to them, and facilitate guests' experiments. They also retrieve materials which often range far from their original locations – an interesting attribute of numerous activity stations with loose and portable objects.

The Weston Family Innovation Centre for Innovation empowers guests to do things, be curious, try things out, and take an everyday object and make it into something very different or do something it was not intended to do – and often to document their activity. It is a decided departure from the usual science center exhibition or activity area in that it does not lead the guests to a desired conclusion but rather empowers them to do what comes naturally – be curious and try things out their own way.

Science Museum of Minnesota

The Science Museum of Minnesota is the opening venue from a major project of the American Anthropological Association. "Race: Are We So Different" is a 5,000 square foot traveling exhibition funded by the Ford Foundation and the National Science Foundation. It was developed in conjunction with the SMM with the services of an AAA national advisory board of 22 PhD scientists and educators plus a host of project contributors, collaborating organizations, consultants, contractors, and AAA project staff. It concludes its run at the Science Museum in May of 2007 and then will travel, on a tour organized by the SMM, to twelve additional venues through spring of 2011. Venues include science, history, general, and natural history museums.

The exhibition is accompanied by a very substantial array of collateral materials. Primary among them is an excellent web site with teacher, educator, and family guides to the exhibition, announcements of local events, a monthly newsletter, and links to local programs and organizations. In Minnesota, as likely will be the case throughout the tour, local organizations are engaged as a support system and local racial and ethnic equity groups and experts provide supplementary program-

See *Intriguing*, " continued on following page

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ming, both in the exhibition itself and as related activities.

The exhibition takes a very broad view of race as a concept and a socio-political phenomenon. Three approaches are considered equally – The Science of Human Variation, The History of Race, and Race in Our Culture.

The Science of Human Variation examines the genetic variation within and among human populations, drawing the conclusion that the degree of similarity is so high that there is no genetic basis for distinct races. Several interactives trace the movement of human populations out of Africa and show the modest changes in genetic variation as other continents were occupied. Commentaries from several geneticists reinforce the idea of "a" human race which has some regional variation, based largely on environmental pressures such as temperature and the impact of sunlight.

The History of Race makes the fascinating observation that racial differences could not be seen until humans were able (via sailing ships) to jump from one location to another without observing the intermediate places. Thus, if one were to walk from Tanzania to Finland, it would not be possible to draw a line between "black" and "white" populations. However, if one were to sail from London to Capetown, the populations at each end of the journey would look very different, thus justifying the idea of "difference." The exhibition also documents efforts to scientifically validate racial differences, always with the objective of placing white Europeans at the top of any scale. These included 19th and 20th century initiatives to measure skull shape, brain size, IQ, etc., all of which have been subsequently shown to be morphologically and statistically insignificant.

Race in Our Culture is a remarkable unit to be presented in a science museum. It graphically portrays the multitude of ways in which racial classifications have systematically disadvantaged certain ethnic populations socially and economically. The use of racial classifications in censuses, school assignments, external definitions

(which themselves change over time), access to services, etc. is documented and the societal impacts pointed out. The exhibit is very much "in your face" with its presentation of "white privilege" and the consequent societal implications.

While there are these three broad underlying concepts, many ideas cut across them. For example, the discussion of the use of race in medicine involves the realization that the occurrence of sickle-cell disease is more related to the natural occurrence of malaria than to any racial distinctions. An exhibit on race-specific tendencies for certain diseases (e.g., hypertension among African Americans) suggests that, in the absence of a genetic basis for race, there is no logical reason for race-specific medical treatments.

Throughout the exhibition first-person descriptions of individual experiences are presented in several theaters. These are extraordinarily compelling vignettes, superbly edited, which point out the many overt and subtle elements of racial understandings. Likewise, the numerous first-person commentaries from scholars of several persuasions moves the authority of the exhibition from the museum to the broader world. I found this to be an important aspect of the exhibition – I didn't have to believe the authority of the Science Museum of Minnesota – rather, I got the real story from numerous authorities in many fields of expertise.

Similarly, the numerous examples of personal experiences with racially-based decisions, policies, and practices hit home with all visitors, regardless of background or experience.

Race is a dense exhibition, yet people took their time, read numerous lengthy labels and watched many video segments. The amount of conversation among visitors was remarkable, at least on the March Monday I was there, and the attentiveness of the middle- and high school groups was remarkable.

In conversation with SMM staff, several observations were of great interest. It is apparent that this exhibition is a "safe" place to have some pretty candid conversations – mostly with friends and companions, and not necessarily in hushed tones. The audience has a higher proportion of

minorities than the SMM typically draws. There are some similarities with the Body Worlds human plastinates exhibition in that race, just as the human body, is something that every human being has – even though the majority population has substantially different experiences with race than does any given minority population. Many people are surprised that a science museum will present information that "exposes" bad science of the past (e.g., attempts to measure physical racial differences).

Visitors did not expect such frank commentaries on "white privilege" and the political and social pressures to maintain it, even in recent times. People find that their own attitudes and perceptions are validated, even if they cannot say them out loud, and that their understandings of the multiple aspects of racism are reinforced.

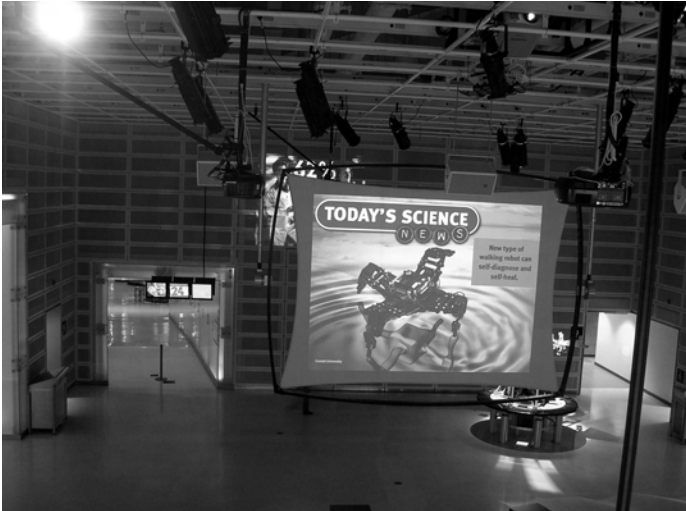
If the Science Museum of Minnesota had gone to its conventional audiences and asked about doing an exhibition on race, it is highly unlikely that the topic would have ranked in the top 20 of any list. Yet, with the encouragement and support of the AAA, this exhibition was created. So, rather flying in the face of current practice which involves all sorts of front-end testing and content assessment, Race is an example of where the museum decided to lead its visitors rather than follow their direction. The result is excellent, an exhibition which challenges as it reinforces, which refutes bad science as it produces current science with surprising (to many) conclusions, and which has social messages that far exceed the vast majority of exhibitions shown in U.S. museums.

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WESTON FAMILY INNOVATION CENTRE



Hot Zone



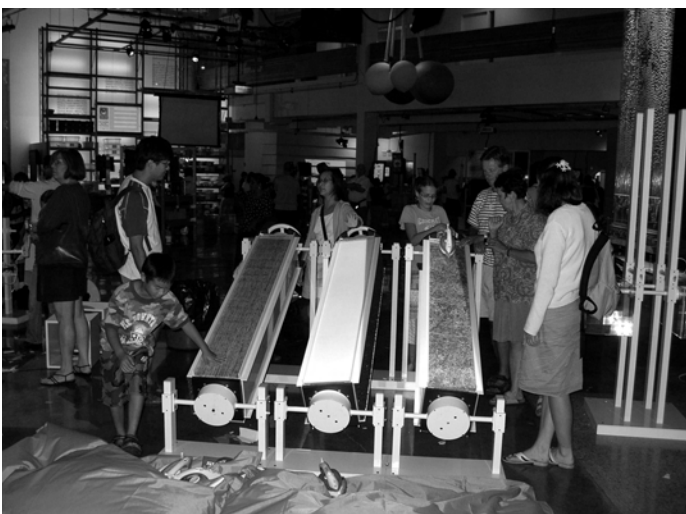
Main gallery, Weston Family Innovation Centre



Weston Family Innovation Centre from balcony



Visitor make shoes of miscellaneous materials



Racing irons slide down chutes of different textures



Family enjoys engineering challenge

RACE: ARE WE SO DIFFERENT?



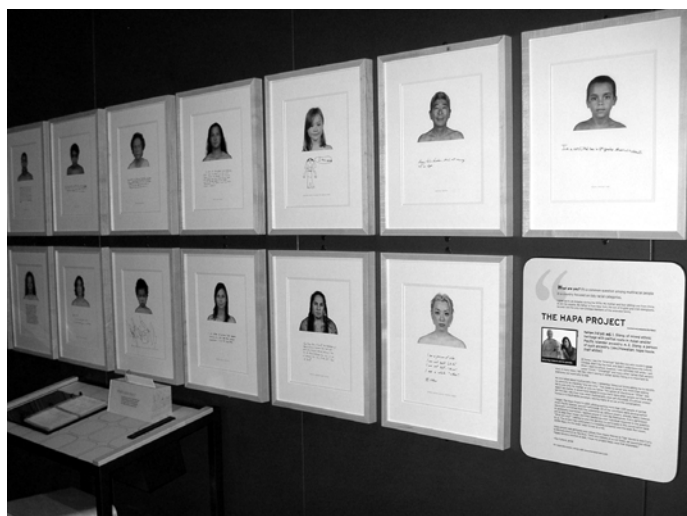
Introductory panel



Movement out of Africa



Overview of exhibition



Personal Commentaries



Signs and directions



Attempts to scientifically validate race



Piles of money indicate racial economics