

The Human Journey and The Evolving Museum

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ACKNOWLEDGMENTS

At the outset I wish to express my gratitude to the Geological Association of Canada for the special honor of being its 50th anniversary president. It is also a great pleasure to come to Ottawa for this occasion because I came from England to the University of Ottawa in 1971 for graduate studies with Brian Rust. In 1990, as many of you will recall, Brian suddenly fell victim to malaria. For all of his kind support of my immigration, research program, and career path, I am deeply indebted. I therefore would like to dedicate this address to his memory. Today, I also wish to thank the many other colleagues who helped me at each later step in my career.

INTRODUCTION

I have three reasons for choosing to reflect upon the world of museums in this address.

Firstly, the roots of professional geology in Canada have strong museum connections. In the Geological Survey of Canada's (GSC) 150th anniversary booklet (Vodden, 1992), we are reminded that Sir William Logan amassed the first major collection of Canadian mineral samples for display at the 1851 World Fair in London and 1855 Universal Exposition in Paris. He was then authorized to establish a geological museum, records show, "at some convenient place which shall be open at all seasonable hours to the public." He did so in Montreal. The GSC moved to Ottawa in 1881 and became located in what is now the Canadian Museum of Nature from 1911 until the early 1950s. Together with GAC, 1997 also marks the 50th anniversary of the Canadian Museums Association. Their annual conference takes place here in Ottawa next month with a theme of "The Next Fifty Years: Innovation, Collaboration, Inclusion."

My second reason relates to the public awareness of science and, specifically, of geology. As a profession, we are concerned about the lack of external understanding and attention to our field. We worry about the measure of support for our case and the shortage of long-term thinking in the political debates about relevance and priorities among a high number of tax-supported public institutions and programs. Increasingly, we strive directly to increase teacher and student awareness of geology by promoting public interest in significant field localities and by lectures on topical subjects. The words *environment*, *ecology*, and *ecosystem* started to enter popular vocabulary soon after the first Earth Day in 1971. We have since added terms like *sustainable development*, *global change*, and *biodiversity*. From where should the public obtain a core understanding of these concepts?

My third reason centres around this related question. In the quest for greater public awareness of geology, and of other sci-

ences and technology, what is the impact and potential of natural history museums and science centres? Overall, the scale of attendance to these institutions points to impressive levels of popularity. However, I think that the learning that stays in the visitor's mind and fuels an informed perspective later on related issues is likely a more important parameter of significance. Meaningful techniques to measure outcomes of a museum experience are an active area of research.

In this country, the annual total of individual visits to 2100 museums exceeds 25 million. A third are community museums. Only 38 focus on natural history and 41 on science and technology: just 4% of the total. Using the latest Statistics Canada figures, their combined annual attendance is 6.45 million, 200,000 more than the combined attendance at zoos and aquaria. Worldwide each year, there are 134 million visits to some 520 science and technology centres. The annual sub-total in the United States of almost exactly 100 million exceeds live spectatorship at professional sports in that country. The number of visitors who pay to enter a museum is only a first-order indication of society's assessment of the museum's relevance to their interests and of the museum's overall value to society. Today, I want to look behind these attendance numbers for the changing purpose and potential of museums and science centres.

THE HUMAN JOURNEY

I am going to refer to humanity's rapid and complex development from its natural origins to today's world of relentless technological change as the *human journey*. The term transcends human and natural history in a way that I think is useful. All journeys have a starting point, a distance travelled with many alternatives, and a point now reached. The human label to this journey reminds us of our controlling influence on the future quality of global societies and environments. So far, on a global scale, the human journey seems to have encountered three main chapters, each exponentially shorter than the one before.

First, there is the Earth's natural history over the past 4.5 billion years. This background should ideally inform all of society of the recent origin of the human species and of the natural forces that continue to shape our environment. As geologists, we would also like the public to understand that the Earth's finite mineral and energy resources are part of the legacy of these forces. I include early human history in this chapter because of its relatively negligible impact on the prevailing natural environment.

Secondly, there is the dimension of modern industrialized society with its compounding rates of human population growth, migration and travel, technology revolutions, instant worldwide communications, and environmental degradation.

In the third chapter, there is the outlook of the individual, of communities and of public organizations. The length and importance of this potentially influential chapter is highly variable around the world. Attention is focussed here on one's roots, sense of place and opportunity to seek public office, regional standards of education, health and safety, and on other prevailing socio-economic values. These shape a distinctive community, although nowadays the picture is often modified by the decline of indigenous traditions and the arrival of immigrant ones. Behind each country, then, is a different human journey, a unique identity.

On a global scale, the human journey has reached a point where many of the decisions in the past have caused the problems we now face. Countless researchers have issued an urgent call for the tread of the human journey in the western world to lighten (e.g., Waggoner *et al.*, 1996). More than ever before it seems, we ought to fashion one collective view about how to chart the next, fourth chapter of this human journey. United Nations-sponsored conferences over the last decade — for example on biodiversity and human population — seem to represent our best efforts at setting the parameters.

I wonder a lot about the part that museums ought to, and can, play. Surely we are part of the accountability framework to future generations?

EVOLUTION OF MUSEUMS

The word *museum* stems from *Muse*, the Greek mythological figure concerned with human inspiration. Via the French *muser*, the English language derives *muse*, which means to think reflectively. Fundamentally, museums ought to be public places that foster our collective understanding and progress.

The world's major museums typically were established in grand buildings within the older central parts of capital cities. In natural and/or human history museums, the mission was to collect, preserve, research and display the collection. Typically, most people can readily recall their first visit as a child to a museum of this kind. Such places gave priority to collection-based research and had large acquisition programs and static displays with little live interpretation. There was virtually no marketing. In what we can refer to as *first-generation museums*, the visitor experience is principally one of quietly viewing cabinets of natural history specimens and human artifacts. The perspective is typically historical and a great number of this type continue to exist.

Starting in the late 1960s, the museum scene underwent profound changes and the number of museums increased dramatically. New types of museums emerged, the museum definition broadened, and the balance of museum activities shifted. The reason for all of this change lay both in the greater recognition of the museum's intrinsic value in a cultural context and a growing range of external factors.

A *second-generation museum*, which may lack a collection per se, features visitor participation in dynamic exhibits and working demonstrations, as well as the latest audio-visual media. Science and technology developments are subject matter well suited to this style of museum experience (Danilov, 1982). The hands-on exhibit became the hallmark of this type of museum, one that heralded a breakthrough to more effective learning at museums. The late Tuzo Wilson did a great deal to popularize the role and significance of science centres to our profession while he was Director General of the Ontario Science Centre from 1974 to 1985.

Attributes of the emerging *third-generation museum* concept

can be added to either the previous two types or their hybrid. In my view, they include a preoccupation with the nature and quality of the visitor experience, a recognition that museums must add value to society on its terms, partnerships with community stakeholders, application of diverse communication media, and innovative marketing and communications that help to create a new image of the museum.

The International Council of Museums (ICOM, 1989) at its 1972 meeting in Santiago declared:

... the emergence of the central role of museums as both an expression of cultural identity and as a powerful force for human development and education at both the individual and community level.

Further, in 1989 at The Hague, ICOM (1989) perceived museums as:

... generators of culture, and as places where we can look for meaning of the world around us.

Do these strong statements mirror the missions and perceptions of today's museums? I stated in an address to the 1995 Annual Conference of the Canadian Museums Association in Montreal (Koster, 1995) that I thought this is infrequently the case, and that the current evolutionary stage of most museums had not generally absorbed these roles and opportunities.

Late last year in The Ottawa Citizen, a columnist (Riley, 1996) posed the question "Why are our museums so bland?". Whether this sample editorial opinion about new exhibits at various local museums is fair is not really the salient point. Rather it suggests that museums are seen as significant community institutions where the public expects a meaningful experience. The call for action is not new, yet it has been easier to stay the way we are until major pressure forces a change which is, by then, much more difficult.

It is interesting to consider the many departments of government under which museums across Canada are administered. Ministry names vary: community development; culture, citizenship and recreation; small business and tourism; education; heritage. Museums certainly operate in all these arenas, and others as well, notably natural resources, the environment, and science and technology.

Last year was the 150th anniversary of the venerable Smithsonian Institution in Washington, DC. It consists of 16 museums and galleries with 140 million objects in the total collections. Of the total 29 million visits annually, most go to the National Air and Space Museum which is the world's most popular museum. Quoting from a special commemorative symposium (The Smithsonian Institution, 1997):

.. The mission statement of most museums that goes 'our mission is to collect, preserve and interpret fill in the blank' will no longer do. Such mission statements do not answer the vital question of 'so what?'

.. In the world of the future, every institution, including a museum, must be judged on its distinctive ability to provide value to society in a way that builds on unique institutional strengths and serves unique community needs. The only rule that will apply to all museums ..for any organization, profit or non-profit, to continue to exist, it must solve some problem in people's lives.

SCIENCE CULTURE

The word *culture* deals with a society's common experiences and identity. That human history museums, art galleries, and the performing arts are part of the culture definition is readily accepted. Indeed in many quarters, the arts encompass the public's sense of culture. I think it would be socially useful to entrench a view that our scientific research and technological her-

itage as well as the philosophy with which we approach new science and technology developments are equally integral dimensions to our culture.

As science and technology shape our lives more and more, both in terms of challenges and opportunities, a *science culture* becomes of vital importance. Nowadays, pertinent social questions include how each country's standards of health care, nutrition, lifelong education, environmental care, safety, and energy consumption compare to worldwide standards? Because of different human journeys, nations differ markedly in their science cultures.

Twenty-first century society must aim for a merger between our scientific and cultural mindsets. Emeritus Professor Ursula Franklin of the University of Toronto has issued this related, and now well-known, view (Franklin, 1990):

The task of the future is to build knowledge and understanding among and between citizens and scientists, so that the distinction between the two groups vanishes - so that both become citizen scientists, potentially able to solve our problems together.

MUSEUMS AND TOURISM

Museum visitors are either local residents, often with local school classes as a large percentage, or visitors to the area. Since the 1980s, tourism has been widely regarded to be the world's largest and fastest growing industry.

Cultural tourism, the fastest growing industry segment, is travel with a cultural motivation. It can be on the scale of an entire vacation, such as a study tour, or an activity during a trip taken for other primary reasons. Culturally motivated travel fosters a favorable situation for museums, one not fully recognized for its potential in my opinion. For the tourism industry, the challenge has been to recognize museums as an opportunity for expanded product, clientele, and sales. For museums, the agenda is to see themselves anew as a significant player in the tourism industry. This has entailed a promotional philosophy: group discount arrangements and rethinking admission hours, to name a few.

In the same way that museums and tourism are finding a mutually productive relationship, so must tourism and the environment. *Ecotourism* is travel to enjoy the world's amazing diversity of natural life and human culture without causing damage to either.

Both cultural tourism and ecotourism are promising manifestations of a growing science culture around the world. There is clearly a major opportunity for museums here.

BARRIERS TO A SCIENCE CULTURE

Recognizing the barriers to greater public awareness of science is an important first step in formulating strategies that make headway on the merger of science and popular culture. Globally, barriers are mostly of a socio-economic nature and exceedingly difficult to overcome. When television cameras brought us the proceedings of the UN Summit on biodiversity from Rio de Janeiro in the late 1980s, we were also presented with the images of people living in terrible slums and collecting items from city garbage dumps. Without social equity and financial self-sufficiency, there can be no expectation that people are in a position to care about science and society matters, such as environmental degradation.

Geologists like to explain Earth history by collapsing 4.5 billion years into one calendar year. If we collapse the world's six billion human inhabitants into one thousand people, some equally startling facts emerge (Abely, 1994). In this global village of one thousand, there are only 52 North Americans. In the whole vil-

lage, 330 are children, half of whom have not been immunized against preventable diseases. Only 60 people are over the age of 65. Of the 670 adults, half are illiterate. Only 70 have a car. In this community, 200 people receive 75% of the income and another 200 receive only 2% of the income. The village has 6 acres of land per person. Of the 6000 acres in all, 2000 are desert, tundra, pavement, or other wasteland. Only 2100 acres are cropland or pasture.

Former Ontario Premier Bob Rae (The Premier's Council, 1994) pointed out:

We're beginning to understand that there's a very complex relationship between the environment, the economy and our social structures. We can't afford to continue the institutionalization of these separate compartments. If you look around the world, those societies which have done well and are doing better, are societies which have come to terms with that simple fact.

Specific barriers of a socio-economic nature, collectively affecting large regions and large sections of the global population, include famine, war, being in the aftermath of a natural disaster, a lack of cultural identity, and consuming racial tensions. Thomas Homer-Dixon of the University of Toronto predicts that the world's have-nots will react strongly on the inequity in the next century (Laver, 1994).

What can museums and science centres do? One idea is that rather than present different topics randomly in the various gallery spaces as typifies a natural history museum or science centre, perhaps these institutions would increase their relevance to society by trying to interpret the more complex, interdependent issues that surround us (Trefil and Hazen, 1995). One recent Canadian example was the suspension of the Grand Banks cod fishery: a seemingly unknown mixture of factors related to geology, international quotas and fishing methods, natural ecosystem and food chain influences, economics and local heritage. A museum exhibit and program does not need to have all the answers in order to present an illuminating experience to the public.

PRIORITY ASPECTS OF SCIENCE AND TECHNOLOGY

The case for greater awareness of science is commonly argued on grounds that the general public, for example, cannot name a scientist or give correct answers to basic science and technology questions. Yet pass-or-fail science literacy surveys do not seem to provide the depth of insight we need to have of society. Sometimes we find that "public awareness of science" is invisible until the moment when people are required to cope with a serious life experience. Dr. Brian Wynne of the University of Lancaster (pers. comm., Drew-Ann Wake and James Bradbourne) in England studied sheep farmers in the Lake District after the Chernobyl nuclear catastrophe. Chernobyl led to closure of these sheep farms. Dr. Wynne discovered that the farmers were rather well informed about the science of raising sheep and nuclear physics.

I believe that there are four pressing items in the agenda for greater public awareness of science and technology. Here, I briefly touch on each one.

Life's Basic Necessities

I refer to water, food, medicine, shelter, energy resources, other materials, and waste management, all of which are science and technology topics. While we all readily understand their fundamental nature to everyday life, none has guaranteed availability. All around the globe, fresh water, arable soil, forests, and fisheries, as well as other areas of biodiversity, are being lost at alarming rates.

Natural Hazards

As the human population grows, our encounter with the Earth's natural hazards will increase correspondingly. Most strike with little or no warning causing death, destruction, and survivor displacement. Even if reconstruction of communities is inevitable near a river bank after flooding, on the barrier island after a hurricane, or along a fault line after a major earthquake, the aftermath of natural disasters is an opportune time for public education.

Public Policy

Most of society's science and technology issues are matters of public policy arising from decisions by government. At the large end of the scale are internationally negotiated conventions, such as those on endangered species, offshore fishing limits, and ozone regeneration. Within the purview of national or lower governments are policy matters such as waste management, zoning, park management, logging and mining, sewerage treatment, and harbour dredging. The fact that governments commonly plan their policies and actions in timeframes of five years or so has spurred formation of a large variety of public lobby groups, mostly about long-term environmental matters.

Global Change

Pondering the legacy of the past and present generations for future generations obliges another vital agenda of priorities. We know that each of the Earth's concentric shells enclosing the biosphere — the layers of rock, soil, water and air — have deteriorated due to anthropogenic effects. News reports of toxic effluent from old landfills, raw sewage dumped into rivers, holes in the ozone layer, the extinction of other life-forms, and disruption of natural food chains are common. In the next few decades, the growth in human population, particularly in those regions heavily reliant on the burning of fossil fuels, will intensify the greenhouse effect in the global atmosphere. If society does not understand and raise these longer term issues, then politicians are unlikely to reduce or prevent their occurrence.

IMPLICATIONS FOR THE MUSEUM

The challenge and opportunity for museums in our field seems rather clear. Capitalizing on the favorable trends of lifelong learning, youth interest in environmental matters, and educational trends in tourism, I think museums need to find new ways of connecting society to the issues of importance. The traditional reflection with history needs balance with a look ahead to the 21st century (Kennedy, 1993). The museum must evolve to help the next chapter in the human journey. Museums must, I be-

lieve, roll up their proverbial sleeves to meet society's reasonable expectations of a demonstrated relevance and outcome from public institutions. On the eve of a new millennium, this is a good time to start.

On the weekend prior to this Annual Meeting, *The Globe and Mail* ran a special supplement in celebration of International Museums Day. To conclude his lead article, Mays (1997) commented:

The museums of the world ... are not only archives of what past civilisations have accomplished, but the foundations from which the future of humankind's cultural accomplishments will rise.

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