

Book Reviews

Lara Kriegel, *Grand Designs: Labor, Empire, and Museum in Victorian Culture*
Duke University Press 2007, ISBN: 978-0-8223-4051-5, paperback £13.99, 306pp

The title *Grand Designs* echoes *A Grand Design* (Baker and Richardson 1997; 1999), the self-published history of the Victoria & Albert Museum (V&A). Whether this is a deliberate reference, or not, in this volume, Lara Kriegel – Associate Professor of History at Florida International University – offers new perspectives on the role of design, designers and the labouring classes in the early development of the predecessors of that august institution. In charting the transition from the School of Design to the South Kensington Museum, Kriegel places an emphasis on the South Kensington Museum's invention as a receptacle of superior craftsmanship, conceived to elevate British manufacturing from the (perceived) doldrums; so far, so familiar. But what makes Kriegel's approach here distinct from other narratives of the V&A's historical development, is her argument that 'Rather than sprouting from barren soil, [...] the museum evolved out of a culture concerned with market reform and artisanal education' (pp 196-7). A quick survey of the literature available, suggests that this is a story largely absent from the scholarly record. Righting this omission in what Kriegel calls the 'prehistory of the Victoria and Albert Museum' (p. 2) thus provides a compelling justification for the book.

Kriegel deals with a broad subject area, and the over-arching narrative is somewhat elusive in the first couple of contextualising chapters. In chapter 1, 'Configuring Design', Kriegel provides a historiography of the early design schools, and the scandals and intrigues that beset them. Concentrating on the Government School of Design (1837) at Somers House, and its branch institution in Manchester, she delineates the struggle to define a national design training curriculum in the mid-nineteenth century. Through an analysis of archival material – minutes, the transcripts of speeches, reports, personal diaries, memoirs and letters, as well as items from the popular print media of the day – Kriegel offers a critique of the School and the pedagogical divisions at its heart against the contemporaneous expansion of cultural and visual literacy among Victorian society.

The 1840s saw a plague of piracy in the decorative arts. In order to explicate the market dynamics of the mid-nineteenth century and a growing 'valorization of originality' (p. 54), in chapter 2, 'Originality and Sin', Kriegel takes, as an example, printed calico – integral to the domestic and export economy and tied to the industrial revolution and imperial project. While copying was integral to the industry, not least the emulation of Indian cottons (the so-called paisley motif being the most prominent), Kriegel charts the campaign for extended copyright legislation, which championed the incomparable quality and taste of small-scale, artisanal manufacturers' products, in contrast with mass market imitations.

From chapter 3, 'Commodification and Its Discontents', Kriegel's 'voice' comes to the fore and the strength of her thesis emerges. She examines the role of the Great Exhibition in nineteenth century design reform, a new perspective aside from the commonly trod narrative of the Great Exhibition's role in the assertion of British national identity, or as progenitor of the phenomenon of international expositions. She takes a different tack, focusing instead on its romanticised representations of skilled artisanship. To Kriegel, the Great Exhibition 'became the stuff of enchantment, edification, and entertainment' (p. 89) for a new lay audience. This is evidenced, she claims, by the volume of column inches and weighty tomes, ephemera and souvenirs it provoked, much of which idealised human labour, and celebrated the fusion of mechanical innovation and artisanal skill. But it was noted at the time, that the Great Exhibition

had shown exemplars, not the design of everyday life, which was still regarded, by many as 'dross'.

Attempts at raising the quality and tastefulness of domestic decoration, are dealt with in the penultimate chapter, 'Principled Disagreements', in which Kriegel introduces Henry Cole's Museum of Ornamental Art, which opened at Marlborough House in 1852. Cole's pedagogical mission for the museum, 'altered the lens' through which Victorian Londoners viewed domestic aesthetics (p. 127). Through a series of 'self-evident' (p. 128) design principles, the museum actively sought to improve bourgeois consumers' taste in design (Cole believed that it had been an error to train producers without educating their patrons), with a strong moral imperative: to transgress these rules was to break the social contract. The 'Gallery of False Principles', colloquially the 'Chamber of Horrors' (p. 145), was a popular, albeit brief attraction, with visitors and satirists alike (p. 150). Travelling exhibitions visited Britain's industrial cities, an affordable catalogue was produced, and photographs and lithographs of the collections were widely circulated for the purpose of study.

This is enlightening, because the Museum of Ornamental Art is largely overlooked in the Great Exhibition-V&A narrative. Kriegel's research rectifies this omission and highlights the museum as playing a key, developmental role in the trajectory of the public museum. Indeed, this is the argument that Kriegel furthers in the following chapter, in which she describes how the South Kensington Museum built upon and extended the principles expounded by Cole at the Museum of Ornamental Art.

Chapter 5, 'South Kensington, Bethnal Green and the Working Man', discusses the first fifteen years of the South Kensington Museum. Kriegel delineates, in fascinating detail, the debate that surrounded the development of out-of-the-way Brompton, renamed 'South Kensington' by Henry Cole, as a locus for museums and collections in London, and the active agency of its target audience in the foundation of its Bethnal Green outpost. This latter point challenges, claims Kriegel, Tony Bennett's contention that museums were institutions of discipline, imposed 'top-down' on the working classes. While Kriegel agrees that workers were, indeed, a target audience – Cole famously declared the museum 'a wholesome recreational alternative to procreation and the pub' (cited by McClellan 2003) – these are not, she argues, simply the passive citizenry of Bennett's 'exhibitionary complex' (1998), but empowered labourers seeking education and engaged in design reform, who themselves linked museums with public health initiatives and the liberal reform movement.

In *Grand Designs: Labor, Empire, and Museum in Victorian Culture* Kriegel places the role of design reform, its geography and chronology, firmly centre stage. The Great Exhibition was not, she asserts, a turning point, as it is often depicted; it was a continuity, that 'sustained the interest in artisanal skill' (p. 197) and signalled a re-emphasis on the education of consumers and collectors in conjunction with artisans and manufacturers. Finally, in her critique of Tony Bennett's 'exhibitionary complex', perhaps the most impactful aspect of *Grand Designs*, Kriegel emphasises the cultural capital of London's workforce, and the legacy of the political reform movement on the museological map of London.

While in places the clarity of her argument is obscured by the richness of the detail, by emphasising the South Kensington Museum and its antecedents' interconnectedness with artisanal practice and social change, Kriegel makes a stand-out contribution to an already extensive body of literature dealing with the history of the V&A

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Viv Golding, *Learning at the Museum Frontiers: Identity, Race and Power*
Ashgate 2009, ISBN: 978-0-7546-4691-4, hardback £55.00, 246pp.

Golding draws on two decades of experience in arts education in London, focusing particularly on her work addressing the legacies of racism at the Horniman Museum, to explore strategies to reshape institutional practices as well as programs for visitors. She argues that the museum can challenge negative stereotypes and social prejudices and help visitors to construct new attitudes and empowered self-identities. The author's everyday encounters with the successes and limitations of various approaches reveal her great depth of practical knowledge, and her incorporation of Black feminist hermeneutics and postmodern cultural theory illustrate wide-ranging contextual research.

The book is divided into three parts, beginning with theoretical underpinnings of the 'spatial politics of the museum frontiers,' which summarizes some well-known examples of community conflicts over controversial exhibitions, from the Smithsonian's *Enola Gay* to the Royal Ontario Museum's *Into the Heart of Africa*. As a comparison, Golding then highlights a collaboration she undertook with the Caribbean Women Writers' Workshop, which drew attention to problems both behind the scenes and in the exhibition and outreach activities of the Horniman Museum.

In the second section, 'Including New Voices and Forms of Practice', the author looks at some innovative examples from around the world, highlighting some less well-known projects addressing topics as varied as HIV/AIDS and the African Diaspora in Sweden. Golding relates these case studies to trends in postmodern thinking, drawing connections between theory and practice and promoting the transformative potential of exhibitions.

The final section explains how some of the issues raised in the book might be addressed in educational programs, through a case study of *Inspiration Africa!*, designed to challenge racism and promote intercultural understanding among London schoolchildren. Golding's discussion of projects she has participated in are the most instructive, and this close accounting of the realities of such work is interesting. The possible chasm between expectations in the planning of a project and the lived experiences of its execution are thoughtfully explored, with the author providing a refreshingly open discussion of unanticipated problems and the realities of addressing them in the moment.

Golding's critique of the representation of race in museum exhibitions, and the problematic power relations between museum visitors and the cultural institutions that claim to represent them, are familiar territory now that such a wealth of scholarship exists on the politics of collecting and exhibiting cultures. Taking these considerations beyond the curatorial realm, to consider their implications for museum education programs, may prove to be the more novel contribution of this study. Aside from constructing an intellectual rationale for explicitly anti-racist projects, which may be helpful in justifying new approaches to resistant decision-makers, the author also pays attention to the practical issues, such as inequities within an institution and the lack of a racially diverse staff.

The book is based on Golding's dissertation research, and this earlier manifestation of the project lingers on in, sometimes excessive, references to the works of others. While they reflect the author's wide reading in museum theory, they also distract from her key arguments. Theoretical concepts often seem disconnected from the practical activities under discussion, the language can be unnecessarily complex, and transitions from one area of thought to another can be abrupt. Sentences are frequently overly-long or poorly punctuated, making the narrative hard to follow – more attention to copyediting would have helped make this an easier read.

Moreover, a larger question remains regarding the significance of the museum in shifting reality, not just representation. The use of educational activities as a 'frontier', for countering 'the influence of the media that perpetuates negative ideas of Black people,' for example, is a

tangible goal (p. 19). Yet, while Golding persuasively argues a role for museums in such work, it is not clear how effective they can be in reshaping media representations in the first place, or in tackling the physical manifestations of racism that go beyond issues of negative stereotypes or low self-esteem.

The tone of the book is lively and Golding is not afraid to foreground her own perspective and personal judgments. Despite the terrible histories of racial injustice and global inequality which have shaped the case studies she presents, she seems optimistic that museums can contribute to social justice. As such, her approach is very much in keeping with the recent emphasis in museum work on social inclusion and civic engagement. It will be interesting to see how effectively exhibitions and educational programs meet these expectations, as more critical scholarship on these strategies is undertaken.

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Selma Holo and Mari-Tere Alvarez (eds), *Beyond the Turnstile: Making the Case for Museums and Sustainable Values*

Altamira Press 2009, ISBN: 0759119155, cloth £24.95, 216pp

This 'handbook' proposes a set of 'sustainable values that any museum could adopt (or adapt)', something that should be of great interest to anyone interested in museums, or indeed sustainable values. It arose out of a series of seminars organised by the International Museum Institute (IMI), a think tank set up by the University of Southern California and the National Autonomous University of Mexico. The IMI organised the seminars with 'small influential groups' to address issues museums face 'head-on' – a process akin to that used by universities to accelerate progress on a research topic. They came up with ten sustainable values, viz; Public Trust, The Primacy of Our Collections, Relevance, Inclusion, Globalization, Creativity, New Alliances, Authentic Experience, Generating and Disseminating Knowledge and Communication. These values are presented as an alternative to the drive for quantitative targets – membership, ticket sales, shop income, economic regeneration etc. Each has four or five essays devoted to it in sections introduced by the editors. The majority of the authors are American (28) and Mexican (8), with four from Spain and one each from Abu Dhabi, Australia, Canada, England, France, New Zealand, Nicaragua, Turkey and Venezuela. This international range is one of the most interesting features of the book, presenting a global snapshot of what museum leaders are thinking, and many of the individual essays are insightful and stimulating.

Unfortunately the book's overall ambition is not realised. The main reason is that not all the ten topics are values by any conventional definition. Some are goals for museums (Generation of New Knowledge); others are issues which museums need to address but to which they respond according to a wide range of values (Globalization, Relevance) and some refer to museum qualities (Primacy of Our Collections). The key test of a manual of sustainable museum values would be not necessarily that it provided answers but at least offered a set of criteria by which an institution's basic commitments could be assessed. Under rubric like 'variety' or 'lively' debate, positions which represent diametrically opposed value systems are presented or referred to, without any suggestion of how readers within or beyond museums might adjudicate between them. The absence of references or reading lists further reduces its utility as a manual for formulating values.

The weaknesses of the book are not an accident but reflect something deep in museum culture – a confusion between function and purpose, between process and outcome. This is most clearly reflected in Maxwell Anderson's statement that 'the core mandate as understood by museum professionals [is] the acquisition, preservation, and research of the collection.' There are good reasons why society should (and does) care about historic collections, but the process of preserving and studying them does not articulate those reasons. Simply asserting 'The Primacy of Our [sic] Collections' will not convince anyone outside museums of their value (especially when exploring the unique role of real objects is confused with the tactical/financial

issue of temporary versus 'permanent' displays). It is hard to see how Anderson's view (which excludes exhibition and education from the 'core mandate') can be reconciled with the values of 'Relevance' and 'Inclusion' or the view of contributors like Ted Freudenheim and Elliot Bostwick Davis that displays should be shaped by a dialogue between visitors and experts.

The editors get caught up in the confusion. Sometimes they present issues evenhandedly: 'Justice can mean apparently incompatible things for a country reclaiming a work of art and for one refusing to relinquish what it considers to be a crucial bit of its own history and patrimony' (p. xvii). At others, they weigh in on one side of a debate, as when they berate art museums and especially contemporary art museums for being, 'quite snooty' about helping visitors 'get close to a difficult work of art' (p.136). Presumably, this is based on the principle of Inclusion, but they make no attempt to reconcile their explicit judgments with Anderson's somewhat literal position or with their approval of the policy of the National Gallery in London to mount exhibitions, not for audiences, but to meet the 'needs of the permanent collection'.

This suggests that the book is faced an insurmountable task – of creating a framework of values around which some consensus could be built. The editors refer to a 'nagging sense that [*the global financial crisis*] is an opportunity to rethink what museums are about' and refer to the fact that 'after 11 September 2001 in New York, the city's great museums became sites of solace' (p173). Many museum directors at the time, like Philippe de Montebello, described this as an opportunity to rethink the focus of museums, to reconnect with local audiences, to explore collections in deeper, more humane ways. This turned out to be largely an opportunistic response to the decline in revenue from tourists, and was followed by a reversion to business as usual as soon as they returned. The book, like the sector, is pervaded by a tension between people who think museums exist to meet the needs – cultural, educational, intellectual, economic – of society, and those who think that it is possible to have institutions that serve some sort of purpose, which does not meet a societal need. The latter, as they did after 9/11, are waiting for business as usual to return and continue to ignore issues of inclusion, relevance, sustainability, and communication. They do this because they can. And they can, not because of their 'core mandate' of preservation or of an 'art for art's sake' philosophy but precisely due to their proximity to money and the age old relationship between art, power, wealth and prestige. Other museums aspire to this status and way of working. The remainder continue, as they have been doing for decades, to try to figure out how they can use their collections and expertise to contribute most to civil society – serving society's needs and interests, on the basis of justice, human rights, transparency and solidarity with the excluded.

Given that the book is an accurate mirror to the museum sector's current state, it is, in Levy Strauss's phrase 'good to think with'. The list of key issues museums need to address can form the basis for the next step – working out the principles on the basis of which museums as expert institutions contribute to the democratic societies that mandate their existence. But progress to this stage will involve an approach that is more critical of and more challenging to those who think sustainability is defined as how museums get money and legitimacy without having to account for more than their technical functions.

Glasgow Life

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Anthony Jackson & Jenny Kidd (eds) *Performing heritage: research, practice and innovation in museum theatre and live interpretation*
 Manchester University Press 2011, ISBN-13: 978-0719081590, hardback, £55, 282pp

This edited volume grew out of the Performance, Learning and Heritage (PLH) research project funded by the Arts and Humanities Research Council (UK) from July 2005 to December 2008. The purpose of the project 'was to undertake research into the increasing and varied use being made of performance (theatre and other drama-based activity) as an interpretive tool and a medium of learning for visitors to museums and heritage sites...' (p. 249). The full results of the project are published separate to this volume.¹ As the editors themselves state, however, this book is not intended as an 'uncritical defence of such performance' (p. 1), but rather as a 'more

nuanced debate [...] which locates heritage performance firmly within the spectrum of activities that can be usefully (but not uncritically or without reflexivity) employed in interpretation; and indeed in the interrogation of “heritage” (p. 1). They have used the term ‘performance’ rather than ‘museum theatre’ as more all-embracing, including theatre, first person interpretation, the site or building itself as performance, and the performative nature of the museum/heritage visit.

This book emerged from the final project event, an international conference (Manchester, April 2008). Here, the exchange of ideas between contributors with varied backgrounds in theatre, museums, education and academic research, and from across the world, was an essential element – and, indeed, the papers were re-thought and re-worked for the book to incorporate the ideas/commentary that emerged during the conference. Only three of the contributors could be described as museum or heritage specialists, and it is refreshing to explore views expressed from outside the profession. Together the contributors include a strong cross-section of those working particularly in museum theatre. A majority of contributors are from the UK, but international representation includes South Africa, Australia, New Zealand and the USA.

Unlike many edited volumes based on conference papers, the assembled essays are held together by more than the accident of presentation at the same event. Rather, the volume is permeated by its central theme of heritage as a process, with a multiplicity of narratives and silences, rather than static – and the potential of performance to draw out such perspectives. The focus of the book is on the theme, not on the evaluation of museum performance. Only chapter 10 refers to evaluation, although the PLH project itself includes extensive evaluative work.

The volume consists of an introduction and sixteen essays. The editors have continued the conversation of the conference by not dividing the papers according to discipline but electing instead to structure the contents under four themes:

1. Visitors, audiences and events;
2. Re-visioning heritage: recovery and interpretation;
3. Re-creating heritage(s);
4. Impact, participation and dialogue.

The reviewer confesses to playing the regular ‘editor’s game’ of re-thinking themes and the order in which the chapters are presented. In fact, the themes hold together reasonably well. However, it is the diversity of the chapters overall that matters most, reflecting the multiplicity of ways in which performance can draw out potential meanings.

Neither heritage as a process nor the concepts of multiple perspectives and enforced silences could be considered new ideas in the museum field, and the editors and authors fully acknowledge this. The issue is, therefore, what performance can bring to the table that is different from the other available means of engaging visitors. Here, the book has much to offer in how performance can reveal the ‘discontinuities, gaps, lacunae, ambiguities and uncertainties’ (p. 151) so prevalent in heritage sites and in their presentation. To a degree, the book is a performance in its own right – some of it, such as Baz Kershaw’s chapter, is downright barnstorming. Overall, it richly rewards sustained engagement, revealing new insights and unexpected links and connections. However, it took until the final chapter to find a thoughtful justification of the ephemerality of performance in a heritage context. Here, Mark Fleishman quotes Keith Jenkins, that the past ‘is never over and done with but must be made tomorrow and the day after’ (Jenkins 2003: 30), as must all performance (p. 243). Fleishman goes on to argue strongly that heritage ‘is not about keeping things safe for all time, it is about letting things loose so that they might be used and useful right now’ (p. 243) – very different from his description of new museums and monuments in South Africa as ‘sites of petrified signification [...] domesticated and purged of all ambiguity’ (p. 243).

But before this chapter, there are numerous points where the reader is grabbed by the unexpected or by a new angle on something taken for granted. Anna Farthing’s chapter on ‘displaying intangible human remains in museum theatre’ was outstanding in its argument for performance as a core means of communicating human behaviour, attitudes, beliefs and

prejudices generated in a previous era but still impacting today. Helen Rees Leahy highlights the capacity of performance to 'disrupt people's habitual practices of museum visiting' and that it 'permits a different performance from the museum visitor' (p. 29). This emphasis on the participation of the visitor is present throughout the volume. Catherine Hughes' chapter on the role of the spectator was particularly insightful in applying transactional theory to museum theatre – in this case the transaction between performance and spectator. This is immediately applicable to all forms of museum display: 'The implication from transactional theory is that we must stop focusing on the end product and instead look to what the spectator is doing' (p. 196). Kidd's exploration of levels of participation was also highly relevant.

Another repeating issue was the need to explore the relationship between the contemporary and the past. We see this in the chapter by Nicky du Plessis and Emma Durden on training young, unemployed tour guides in South Africa to interpret local traditions and practices. But, for this reader, the issue really hit home in Royona Mitra's chapter on the performance of dance from North India at Bantock House, near Wolverhampton. Here, the central issue is the contrast between the conservative retention of tradition – in this case in the dance forms – versus contemporary influence. Mitra strongly criticises the criteria for museum education programming that buy into historic stereotypes rather than being willing to explore contemporary alternatives. This has resonance, also, for example in the emphasis in museums such as the National Museum of the American Indian on tradition, religion, etc., whilst ignoring contemporary life.

Of course, as in all books of this type, some of the essays are not as good as the vast majority. However, overall it is a pleasure to read. It ignores the somewhat stale discussions on living history and the commodification and consumption of the past. It takes different approaches to the definition of authenticity. It highlights the importance of risk: 'It is by playing dialogically with speculation, and the unknown, that new knowledge unfolds' (p. 178). With museums and heritage sites already representing one of the six key generic locations for site-specific performance (p. 164), the book is one to be read and its contents digested slowly for maximum impact.

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Notes

- ¹ Jackson, A. & Kidd, J. (2008) *Performance, Learning & Heritage Research Project: Full Report*, University of Manchester: Centre for Applied Theatre Research, accessed on 31/05/2011 at www.plh.manchester.ac.uk.

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Beyond Planet Earth: The Future of Space Exploration, American Museum of Natural History, New York, NY, 19 Nov 2011-12 Aug 2012.

2012 may prove to be a turning point in space exploration. While historic spacefaring nations such as the United States and Russia have canceled some projects and reduced the scale of others, new players, particularly India and China, have joined the space community. At the same time, private interest in exploration and commercial development of space-based resources has never been greater: Virgin Galactic will offer its first flights for tourists this year, Moon Express hopes to open the Moon for mining, and the Google Lunar X Prize competition offers prizes for private groups to place a rover on the Moon by 2015. Collections of historic space objects are popular: the Smithsonian Institution's National Air and Space Museum (NASM), to name one, welcomes more visitors (9.4 million in 2010) than any other museum of any kind in the world.¹

The exhibition at the American Museum of Natural History (AMNH) fits squarely in that context, harnessing the popularity of space and describing possibilities for humanity's future there – but from a distinctly commercial perspective. In the eyes of the curators, it seems, the exploitation of new resources are far more significant than scientific investigation. The show was developed by AMNH together with MadaTech, The Israel National Museum of Science, Technology, and Space (Haifa) and – perhaps relevantly – it is sponsored by the defense and space contractor, Lockheed Martin.

As they enter the exhibition, visitors follow a darkened, winding path past re-creations of historic spacecraft. Transmissions from historic missions can be heard along the corridor, placing the audience in an immersive environment. The use of multiple senses is emphasized by an installation inviting visitors to 'smell the Moon,' referring to the odor, similar to gunpowder, noticed by astronauts as they returned to Earth with lunar samples. However, since lunar dust is potentially harmful if inhaled (Cain 2010), I assume that this experience is a simulation, but the display was unclear on that detail. Furthermore, few objects on display are genuine, apart from a few items from the Apollo missions and a cosmonaut's helmet, which may lessen the impact for visitors.

The exhibition quickly shifts from space exploration's past to its future, while the present seems almost ignored. Just one current scientific mission, NASA's Mars Science Laboratory Rover, is featured. Instead, there are displays dedicated to space tourism and the Google Lunar X Prize. Visitors then move into the more hypothetical part of the show, where lunar bases, a new kind of 'liquid' telescope, and a 50,000-km 'elevator' for transporting minerals mined on the Moon are shown as scale models. The Moon is depicted as a source for many elements not available on Earth, especially helium-3, a clean fuel for fusion energy, which is present in potentially significant concentrations in the lunar surface. The displays neglect to mention that the helium-3 fusion process is still undeveloped, or that helium-3 is by no means a 'renewable' energy source. The possible consequences of its exploitation remain unexamined.

A similar exhibit is the 'Mars terraforming table,' a remarkable interactive display allowing visitors to alter that planet's environment so humans could live there comfortably – to create, as the show calls it, 'Earth 2.0.' For the exhibition designers there seems to be little dilemma associated with such transformation, apart from economic cost. Wall text accompanying the display says, 'the ingredients for a warm, wet, fertile environment are all there... Could we release them, and bring Mars to life? Should we?' A related 'pro' and 'con' are mentioned in another small panel below: 'transforming the climate of Mars could teach us a great deal about how climates and biological ecosystems work,' but the high cost of terraforming might mean that our 'limited resources... [should be applied to] studying and protecting our endangered ecosystems here on Earth.' Mars is potentially a planet-sized laboratory for humans to use in experiments – the planet almost seems not to qualify as an environment until humans make it one.

More provocative are the methods suggested by the terraforming table for changing Mars. The table leads visitors through two phases of transformation, one raising the planet's temperature some 60 degrees C, the other adding breathable oxygen to the atmosphere. Without apparent irony, the program offers users in the first phase the ability to bomb Mars, hurl asteroids at it, or even build factories to burn Martian resources and send greenhouse gases into the atmosphere. In this way, Mars can be a place where humanity's worst behaviours and poor ecological stewardship miraculously become virtuous – a kind of Garden of Eden in reverse. In the second phase, the choices available for creating oxygen appear to be happier, or at least more 'natural': users import microbes, moss, lichens, flowers, and trees from Earth to Mars. But the dangers associated with the introduction of non-native species to unprepared environments are well documented on Earth, even when intentions are good.

Despite the terraforming table's description of Mars as "a cold, dead planet," it is unknown whether Mars (or the Moon) sustains life. Neither are the climatic or geologic processes that occur there well understood. For the present, however, these environments are largely free from human impact (notwithstanding the roughly 100 tonnes of human-made material – spacecraft and debris – already on the Moon, for example; Viikari 2008, 53 n. 122). What is clear is that humans can have a profound and even deleterious effect on a planetary environment, and that short-term economic gain is often pursued at the cost of long-term

environmental consequences that are then left for future generations to address.

The terraforming table, and much of the rest of *Beyond Planet Earth*, seems driven by anthropocentrism, a view that has fallen under much criticism from ethicists and environmentalists. In the anthropocentric model human activity is, at most, scrutinized for its possibly negative impact on humanity. In the unusual nature of the space environment however, biocentric and even cosmocentric perspectives have won increasing praise (Viikari 2008, 16-17). These focus on the impact of human activity on all other forms of life (biocentric) and its impact on abiotic features and processes as well as living creatures (cosmocentric). In practice, the space industry, like others, has often failed to meet even the standards of anthropocentrism.

In short, *Beyond Planet Earth* seems content merely to describe some possibilities for the development of space, especially those suggested by commercial entities. The museum displays elsewhere a one-meter glass sphere, sealed since 1999, which demonstrates a closed ecological system in perfect equilibrium – but here it fails to move towards a discussion of the larger meanings and potential outcomes associated with human activity in new environments. Neither is consideration given to the interests or desires of people from non-spacefaring nations regarding space exploration, even though long-standing international treaties acknowledge that if space is developed, it must also be to their benefit. Given the public's appetite for space-themed exhibitions, this show represents a golden opportunity missed.

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Notes

¹ Attendance taken from the NASM's internal Visit Count Management System, C. Brown, personal communication; for other museums, Pes and Sharpe 2011

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