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The Routledge Handbook of Museums, Media and Communication

Edited by Kirsten Drotner, Vince Dziekan, Ross Parry
and Kim Christian Schrøder

The Routledge Handbook of Museums, Media and Communication

Museums today find themselves within a mediatised society, where everyday life is conducted in a data-full and technology-rich context. In fact, museums are themselves mediatised: they present a uniquely media-centred environment, in which communicative media is a constitutive property of their organisation and of the visitor experience. *The Routledge Handbook of Museums, Media and Communication* explores what it means to take mediated communication as a key concept for museum studies and as a sensitising lens for media-related museum practice on the ground.

Including contributions from experts around the world, this original and innovative Handbook shares a nuanced and precise understanding of media, media concepts and media terminology, rehearsing new locations for writing on museum media and giving voice to new subject alignments. As a whole, the volume breaks new ground by reframing mediated museum communication as a resource for an inclusive understanding of current museum developments.

The Routledge Handbook of Museums, Media and Communication will appeal to students and scholars, as well as to practitioners involved in the visioning, design and delivery of mediated communication in the museum. It teaches us not just how to study museums, but how to go about being a museum in today's world.

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Ross Parry and Kim Christian Schrøder*

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This Handbook is the result of an interdisciplinary journey and interlaced dialogues developed since 2014, when we first realised the scholarly need and the social enjoyment of cross-fertilising media studies and museum studies in the hope of advancing both. Museums and universities in Denmark and the United Kingdom have generously hosted editorial meetings where ideas were explored, and where key issues were discussed, developed and sometimes disbanded.

The result could not have materialised without the enthusiasm, commitment and hard work of the 25 authors whose chapters make up the Handbook. Their range of scholarly expertise, geographical reach and generational outlook mark the importance of intersecting academic collaboration when identifying the entangled relations between museums and mediated modes of communication. We are also most grateful to constructive input and ideas exchanged with colleagues and research networks at home and abroad, all helping to refine our framework for the Handbook, including DREAM (Danish Research Centre on Education and Advanced Media Materials), Our Museum, The Australia Council for the Arts, the V&A Research Institute (VARI) and Museums and the Web. We thank the Routledge editorial and production teams for their professionalism and dedication; and we are indebted to Anne Høgedal, who played a key role in ensuring the smooth progression of the project, and to Maria Davidsen, who was invaluable in preparing the manuscript for print. Last, but not least, we thank our partners for their support and generosity throughout the preparation and writing of this volume.

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Media, mediatisation and museums

A new ensemble

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Kim Christian Schrøder*

Museums have always communicated with the world around them through various means, such as signage, leaflets, photos and materials for learning. Over the years, museum communication has been marked by the uptake of media technologies that were new at the time, such as film and audio guides. In recent years, the options of mediated communication have been catalysed by a range of media technologies that are born digital (computers, mobiles) or can be turned into digital formats (e.g. print, film, photos). The Internet has widened these options through rapid and nearly global reach, thus turning museums' mediated communication into both a physical and a virtual affair. Museums are in many ways unique spaces because they can bring the whole media ensemble into a particular place and space that exists within a set of complex mediated communication environments.

A prime motivation for this Handbook is to explore what it means to take the concept of mediated communication as a key concept for museum studies and as a sensitising lens for media-related museum practice on the ground. The title of the Handbook is indicative of its scale and scope. Its ambition is to break new ground by reframing mediated museum communication as a resource for an inclusive understanding of current museum developments. The volume takes as its starting point that museums around the world are in a process of deep transformation because they are permeated by technologically mediated forms of communication. So, rather than asking disconnected questions about museums' digital infrastructure or technology uses, or about visitor engagements through the application of apps or online marketing strategies, we instead address the complex mediated communication environments within which museums are embedded, contextualising specific research questions within a broad account of museums' changing interactions with their surroundings. To take a simple example: rather than asking about the impact of gaming on museum visitor engagements, we ask when and why gaming makes connections between museums and gamers, and amongst gamers themselves, and how these communication processes are shaped by institutional and everyday contexts of use.

What is a medium?

This focus on museums' technologically mediated communication environments is at once more modest and grander than what is often found in museum studies. It is more modest because we define *media* as particular communication technologies whose properties enable the production, storage, reproduction and sharing of signs – text, images and sound – across space and time. Signs are meaning-making tools, as is evident if we think about language; and so, mediated communication technologies allow the expression and exchange of meaning beyond the here-and-now, and beyond the co-presence of actors. Perhaps the most obvious example is print media such as the book, which allows meaning in the form of text and images to be produced and reproduced in large numbers, to be stored for posterity and exchanged across large distances. This definition of media follows media scholar James Carey's assertion that media at one and the same time hold both material and symbolic properties (Carey, 1989/1992). Media, in other words, are material artefacts, often of a commercial nature, circulating in society, but they are also symbolic tools generating meaning, representation and rituals.

Our definition of media differs from more encompassing understandings of media often found in museum studies. These are understandings that have tended to conflate media and communication in museums. For instance, in her pioneering overview of museums and communication, Eilean Hooper-Greenhill critically describes how a transmission communication model permeates museums' interactions: "It is possible to describe the exhibition team as the source, the exhibition as the transmitter, with objects, texts and events as the channel of communication, the visitors' heads as the receivers, with the visitors' understanding as the final destination" (Hooper-Greenhill, 1999, p. 31). No distinction is made here between media ("texts") and other modes of communication that are transient and interpersonal ("events") or localised ("objects"). Our definition of media also differs from conceptions that collapse the concept of media and the concept of museum. For example, Angelina Russo asserts that "the contemporary museum is a media space" (Russo, 2012, p. 145). Such a definition makes it difficult to analyse, understand and design for communicative distinctions between, for example, display techniques, guided tours and social network sites. Finally, our definition of media differs from, especially more recent, approaches to museum communication that focus on aspects of technology rather than on aspects of communication (L. MacDonald, 2006; Tallon & Walker, 2008; Ch'ng, Gaffney, & Chapman, 2013). Such approaches often critically examine information systems and infrastructures and their importance for framing discourses on "newness" with implications for museums' internal processes of communication, including data management and modes of curation. Less attention is paid to external modes of communication, including mediated modes of communication, or these modes are only inferred from the technological properties.

The modest definition of media, on which this Handbook is based, allows us to separate out developments and discourses of museums that are, indeed, related to wider developments in communication and to developments in communication technologies, but may not have these developments as their cause. Discourses on participation, for example, in many parts of the world predate the pervasive uptake of digital media. These discourses may be accelerated by digital media but have wider resonance in contestations over welfarist vs. neo-liberal social models. Likewise, the current datafication of many museum practices – from archival interoperability to online audience traces – prompts important reflections on shifting relations between proprietary platforms, museums' institutional and legal authority and the limits of engagement. Such reflections imply nuanced analyses of the nested nature of communication, mediation and technological digitisation that, in their turn, must start from precise definitions of these terms.

We hope that our more modest definition of media may allow an accurate mapping of the relations between museums and media developments, thus avoiding a partial focus that stresses only aspects of these relations – for example, technology aspects such as digital information infrastructures, institutional aspects such as marketing or user aspects such as learning. Also, our approach to media invites a more historicised understanding of these relations and so escapes an unhappy focus only on “new media” or digital media.

At the same time, our focus on museums’ technologically mediated communication environments also invites grander claims than are often found in museum studies. This is because the Handbook has an inclusive understanding of media and offers examples of museums’ appropriations and interlacings of all known media technologies – print, radio, film, mobiles and computers – in addition to their key communication infrastructure, the Internet. This inclusive understanding helps us avoid binaries between digital and analogue media, between mass communication and personalised communication, since museums’ mediated communication often operates across such binaries. Also, our inclusive understanding of media involves specifying gaps between strands in other museum studies, but also illuminating overlaps and productive interconnections, such as dialogue and “voice.” We hope that the approach adopted in this volume will inspire museum specialists to contribute to this growing field, locating mediated practices of communication in relation to research such as archeological preservation or accounts of zoological taxonomies, thus contributing to the advancement of interdisciplinarity and depth of understanding.

This inclusive approach to media raises a further feature of the volume. For while museum research has seen an increasing professional and policy interest in museum engagements with their surroundings, most museum research and much museum practice take for granted, or even seem to neglect, the profound and constitutive importance of mediated communication for the very notion of museums. Museums are not media, but without media there would be little left of museums as we have come to know them. Unpacking the very concept of media is important for museum studies in order to overcome a deployment of the concept as a simple descriptor of trends or challenges towards, for example, social inclusion, outreach and participatory practices. Approaching media as an ensemble of communication technologies and modes of meaning-making enmeshed with the dynamics of museum practices allows us to understand wider transformations of museum organisation, visions and priorities of substance – from acquisition and conservation on to exhibition and community engagements.

The Handbook’s grand claims in terms of mediated communication are echoed by media historian John B. Thompson. He argues that media is deeply implicated in the development of modern society, in the ways in which people can act in the world and how institutions constitute and conduct themselves: “Mediated communication is an integral part of – and cannot be understood apart from – the broader contexts of social life” (Thompson, 1995, p. 11). Still, in an age of globalised, technologically mediated, and networked communication, Thompson’s “environmental” view of media needs to be taken one step further, a step that is also indicative of the Handbook’s claims of the constitutive role played by mediated communication for museum environments.

Mediatisation

The emergence of mediatisation theory in media studies coincides closely with the period during which museums have faced the challenges of digital transformation. While providing a conceptual lens for gaining understanding of the media/culture nexus in general, we believe that the mediatisation perspective holds great promise for the understanding and analysis of

the evolving status of museum media and communication; and that by approaching this still-formative subject from an interdisciplinary approach, insights that demonstrate the benefits of cross-fertilising media studies and museum studies can be produced.

In media studies, mediatisation theory seeks to reconceptualise the notion of media influence in a way that moves beyond measuring and interpreting their effects. The effects of media have traditionally been conceptualised on the one hand by “effects research” (by seeking insights about the influence of *media content* on individuals in areas like politics or advertising) and on the other by “medium theory” (which considers the ways that various cultures, as well as human perception itself, are shaped by *media technologies* such as print media and television). In contrast, mediatisation theory considers the entire cross-media ensemble as a moulding force on culture and society. By serving as a holistic theory about how media play formative roles in social and cultural transformations at different levels, mediatisation can be shown to function as a meta-process, on a par with processes such as individualisation, globalisation, and commercialisation. Mediatisation research, thus, explores how media change the ways in which we communicate and thereby partake in the social construction of reality (Couldry & Hepp, 2017). This approach lends itself to application as a set of methodologies for analysing different communicative domains; the contemporary museum being one such sphere.

While sharing many points in common (Lundby, 2014; Hepp, Hjarvard, & Lundby 2015), the mediatisation perspective comes in two distinct varieties: the constructivist approach (Hepp, 2013; Couldry & Hepp, 2017; Hasebrink & Hepp, 2017) and the institutional approach (Hjarvard, 2013; Strömbäck, 2008). One point on which these two strands agree is that “mediatisation” must be distinguished from “mediation.” While mediation “refers to the process of communication in general – that is, the way that technology-based communication involves the ongoing *mediation* of meaning production” (Couldry & Hepp, 2017, p. 35), mediatisation studies instead shift attention “from the particular instances of mediated communication to the structural transformations of the media in contemporary culture and society” (Hjarvard, 2013, p. 2). As a leading proponent of mediatisation theory, Danish media scholar Stig Hjarvard asserts that “the influences of the media are not only to be found within the communicative sequence of senders, messages, and receivers, but also in the changing relationship between the media and other cultural and social spheres” (Hjarvard, 2013, p. 2).

The constructionist approach diagnoses mediatisation in terms of five interwoven trends that characterise contemporary media culture; namely: differentiation, connectivity, omnipresence, the accelerated pace of information and datafication. Each of these identified traits, in turn, offers a useful scaffolding by which discernible developments occurring in, for example, museum media and communication, can be correlated with their associated mediatised factors. The influence of differentiation, for instance, can be recognised in the significant expansion of media options available to museums today. The museum’s evolution into a distinctively multi-platform entity has been exacerbated in large part because of the extended functionality afforded by a wide spectrum of new media technologies. Media are interconnected, both organisationally and in the ways we use them. The development of the connected museum as a distributed network of content and creators is reflective of developments in networked society more generally (Drotner & Schrøder, 2013). Under these socio-cultural conditions, many of the dichotomous relationships that museological operations are predicated upon (i.e. reinforcing institutional authority by establishing a clear separation of inside from outside) can no longer be perpetuated since media have become omnipresent and pervasive. Consequently, cultural experiences normally associated with museums – as a sanctioned and demarcated space for rarified, aesthetic encounters that take place at a remove from the real world – collide with

everyday social practices. In the process, museal effects can happen “anytime” and “anywhere”; in fact, “everywhere.” In the face of accelerated development, technology is experienced as transformative and disruptive. And while the pressure to innovate exerts itself in different ways upon established museological practices – arguably in many cases simply for change’s sake – the “postdigital museum” would seem to present a number of significant new opportunities. One such opportunity responds to datafication. All media exposure is controlled, at least to some extent, by algorithms, while processes of digitisation create digital traces. At the same time, when many aspects of our social life are becoming the subject of digital capture and codification, one of the challenges facing “data-rich” cultural institutions is how the information and knowledge residing in their collections can be turned into new forms of cultural value for all. Rather than assuming a reactive stance towards media, could the renewed mission of a more fully “mediatised museum” be turned proactively towards sparking new paradigms into action; and in so doing, reconceive the role of the cultural institution by fostering a new appreciation of the value of content (digital and otherwise); how it is exchanged and transacted with.

Each of the above-mentioned trends carries potential promise as well as cautionary risk. Depending on circumstance, they may lead to either greater empowerment or domination, to increased participation and co-creation or surveillance and control. And when it comes to finding ways to research them, they should be treated as part of a domain, a *media environment* formed by the entire body of media that make up its media ecology. Importantly, this *media ensemble* encompasses not only the particular domain’s subset of media forms, but also its *media repertoires*, whose routines of production and consumption draw upon both physical and virtual, onsite as well as online, authored and user-generated modes. These modes of practice relate to the individual’s selection and use of media taken from the ensemble and application of it in everyday, social domains as practice-based *communicative figurations*.

Inspired by the German sociologist Norbert Elias, these arrangements can be characterised in accordance with constructivist mediatisation theory as being non-media-centric (Morley, 2009; Krajina, Moores, & Morley, 2014). Communicative figurations are characterised by their scalability, that is, in sizes that can range from small groups (a family, a group of friends, a community of practice) to organisations (an NGO, a museum) or a whole social field (a national public sphere, the global financial system, the machinations of an internationalised, elite cultural sector). Communicative figurations can be translated to the museum domain, as their following three features attest: a *constellation of actors* (i.e. a network of individuals who act and communicate, such as directors, curators, conservators, exhibition designers, educators, media producers, publicists and crucially, audiences); their *frames of relevance* (i.e. the “topic” or “project” which unites the figuration and reflects their typology, as art, natural history or science museums, for example) and, lastly, their *communicative practices* (i.e. what actors “do” and “say” with media as they produce or transform the domain through their curatorial programmes, exhibition-making practices, marketing and promotional strategies, learning activities, etc.). Most practicably, this theoretical framework lends itself to analytical operationalisation: “Communicative figurations offer us a cross-media and processual meso-level approach to the construction of social domains,” because we may come to understand social domains “by researching their actor constellations, frames of relevance, and communicative practices” (Hasebrink & Hepp, 2017). Methodologically, the framework calls for a mixed-method approach that is representative of the different but nonetheless contributory kinds of knowledge that scholars as well as practitioners distinctively create in order to grasp the inherent complexity, dynamics and consequences of communicative figurations. As a reflection of the more constructivist tendencies of mediatisation, this framework offers the widest array of museum researchers with a systematic recipe for mapping communicative processes that influence internal, organisational change as well as generating external impact

between the museum and an array of different stakeholders, or between the museum domain and other domains (i.e. education, politics).

Mediatisation, though, can also be conceptualised in systematic neo-institutional terms. A central precept to the institutional approach is that the media operate in terms of “logics” that function as ways of understanding how events and ideas are interpreted and acted upon in the media production process as well as *processed* by their audience (Altheide & Snow, 1979, p. 28). Media are constituted by their technologies (hardware, software, infrastructure) and aesthetics (genres, modes of narration, presentation or display), as well as the institutional properties reflected in their regulatory procedures and organisational frameworks. These media logics take effect through the ways that media institutions increasingly impose themselves on the logics of other social institutions, such as politics (Strömbäck, 2008), education or religion. “Mediatisation implies that other institutions to an increasing degree become dependent on resources that the media control, so that they will have to submit to some of the rules the media operate by in order to gain access to those resources” (Hjarvard, 2013, p. 23). To that end, it is by paying particular attention to the perspective of mediatisation theory – wherein mediatisation is regarded as the adaption of the logic of media rather than their technical application – that “the tension or interaction between the expanding media and other institutions with their [own] different logics that drive social and cultural change” is most clearly revealed (Lundby, 2014, p. 27). Our approach to museum media and communications responds to this distinctive “synthetic situation” (Knorr-Cetina, 2014) by attempting to better establish what an interdisciplinary approach can bring to identifying, versing, responding to and meeting the challenges – and implications – of museum transformation.

The mediatised museum

“The Media” has acquired the elevated status of an independent, or semi-independent, societal institution. Having effectively saturated the entire cultural environment, media themselves are no longer as dependent as before on other regulatory institutions. Just as virtually all aspects of contemporary life have become dependent on media to define personal as well as social reality, media exert an influence on how we understand the museum as a cultural institution – its claim to authority, the values it extolls and its relationship to other spheres of public life (including the social, political, economic and techno spheres). As was the case with the constructionist approach to mediatisation, the institutional approach equally lends itself to empirical analysis, especially in the form of exploring the extent to which the traditional, indigenous logics of an institution (such as a museum) or an entire societal sector (such as the Galleries, Libraries, Archives and Museum sector) adapt in order to respond to the mediatised conditions of institutional success or survival. Implicit here is the challenge for the museum of the 21st century to reappraise the currency of certain of its beholden institutional values today. What might this self-reflection reveal? Will the museum even still recognise itself?

The director of the Museum of Modern Art (MoMA), Glenn D. Lowry, has described the interface that exists between the goals and mission of the museum and the public it serves as a constantly shifting boundary that requires continual renegotiation. While specifically referring to how the mission that originally inspired the founding of MoMA itself endures to this day and is continually regenerated in the face of ongoing social, cultural and technological transformation, he asserts that the idea of the museum as a “disruptive institution” is embedded in the museum’s original conception (Lowry, 2009, p. 9). While reputedly the American author and art collector Gertrude Stein pronounced that it cannot be possible to be both a museum and modern at the same time, disruptive institutions or enterprises “alter established paradigm[s] by

pioneering new processes or reaching new audiences that are otherwise ignored” (Christensen, Baumann, Ruggles, & Sadler, 2006). To illustrate his point, Lowry draws particular attention to how successive building projects undertaken by MoMA since 1939 have each in their own distinctive ways responded to “the changing position of the institution, expanding and altering its galleries and public spaces to meet the needs of an increasingly complex understanding of the period, as well as a dramatically enlarged collection and constantly growing public” (Lowry, 2009, p. 21). Noting the ambitious redesigns of the MoMA campus that continue the museum’s project of ongoing adaptation at the turn of the millennium, he singles out the influence that both performance art and social media have had on transforming the nature of the experiential encounter with works of art and how these considerations challenge “the Museum to evolve beyond the physical and into the realm of the psychological and metaphysical” (Lowry, 2009, p. 29–30).

The insights gleaned from MoMA’s experience can be extrapolated to facilitate a broader discussion of museum transformation at large. After all, the museum at heart is primarily a site of discursive practice. In MoMA’s case, the museum’s project has been reflected in an evolving architectural “programme” whose adherence to time-honoured historical references was disrupted progressively by the introduction of exhibition practices that “treat[ed] the galleries not as a venue for display of the past but as a laboratory where new ideas could be explored and where the public was invited to participate” (Lowry, 2009, p. 16). In architectural terms, a building’s brief or “programme” is synonymous with the interpretation of its functional and structural, as well as aesthetic, requirements. By contrast, the transformative promise of the 21st-century museum may well be achieved through what might be construed as its “programme architecture”; that being the programming of its various museological functions across multiple media and communications platforms.

The movement of the cultural industry towards the informational economy – as reflected in the experience, attention and sharing economies – raises not insignificant challenges to the well-established paradigms that have come to be applied in very direct and immediate ways to how hegemonic institutions such as museums control meaning-making processes in Western society (Louv, 2001, p. 134). For their part, media-based art forms challenge the underlying basis of the traditional art world and its established, institutionalised practices, as these are represented by customary methods normally applied to collecting, conserving and exhibiting (Paul, 2008, p. 1). As influential new media historian and curator Christiane Paul points out, digital media exert broader cultural implications for the production, dissemination and reception of art by altering its basis from a predominantly spatial to a digitally-informed orientation. In recent years, these possibilities have developed beyond what might be thought of as the initial stage of “digitalisation” (with its emphasis on the technical and administrative processes involved with the digitising of museum assets and remediating this content through digital formats and ICT channels) towards what is posited today as a “postdigital” phase characterised by a more thorough and mature integration of digital content in museum practices (Parry, 2013). These practices are revealed through exhibition designs that realise the convergence of digital mediation and spatial practice, and various forms of museum communications and publication that facilitate new kinds of exchanges between the museum and its audiences. The deepening interdependency between formally regulated and informal economies is reconfiguring the basis of how cultural authority can still be exercised by museums. Even as the Internet has made activities such as file sharing, unauthorised distribution and copying more visible, it is important to recognise that technical, cultural and commercial disruptions associated with such informal, non-sanctioned practices are not only or merely related to the digital realm (Lobato & Thomas, 2015, p. 4). The museum’s “Collect-and-Share Economy” – with its generalisable reorientation towards

contemporaneity and away from the privileging of substance, solidity and the enduring qualities associated with “permanent” collections towards activity, performance and the event-based characteristics exhibited by temporary exhibitions – illustrates the evolutionary pressures that are being exerted upon it in the mediatised age.

The shifting *disposition* of the cultural role and social function of museums from “custodial” responsibility to facilitating more “convivial” interactions is being revealed in the adaptation of museological modes of operation, their organisational structures and strategies, as well as curatorial and pedagogical practices. Disposition describes “something of what the organisation is doing” as an unfolding relationship between states of actuality and potentiality; as “a tendency, activity, faculty or property in either beings or objects – a propensity within a context” (Easterling, 2014, p. 72). Recognised through agency, activities and actors, not static arrangements or collection of objects, disposition is “immanent, not in the moving parts, but in the relationship between components” (Easterling, 2014, p. 72). Different forms of cultural communication are precipitating the need for rethinking the ways and means, as well as the whys and wherefores, of collecting, conserving, exhibiting and disseminating cultural heritage (tangible and intangible). How might these mediatised interactions catalyse the museum’s potential to serve as a “contemporary utopian laboratory” (Kirshenblatt-Gimblett, 2004) of and for the future? How can a radical museum that is “more experimental, less architecturally determined, and offering a more politicised engagement with our historical moment” (Bishop, 2013, p. 6) be realised?

A mediatised turn in museum studies

Mediatisation research charts the “changes in practices, cultures and institutions in media-saturated societies, thus denoting transformations of these societies themselves occurring at all scales, including what might otherwise be described as ‘everyday’ interactions” (Lundby, 2014). Stated simply, the core of mediatisation is found in its social and cultural transformations, not in technology itself. Mediatisation is a long-term, longitudinal process that implies transformations of practice and institutions taking place as an interplay between changes in communication and media and the personal, societal, political and cultural contexts in which they operate. Museum mediatisation configures the ongoing encounter between processes and structures, forms and content operating across domains and at different scales. It challenges us to think how this meaning-making process might be seen as the chief challenge that a “mediatised turn” presents for museums today. Arguably, turning focus towards a thoroughly mediatised museum lends itself to a wider socio-cultural analysis of how its attendant museological and communication processes actively exercise and perform agency in conjunction with the cultural and material structures wherein they take place (Hepp & Krotz, 2014, p. 9). Most challengingly of all, it leaves us to contemplate the “future of” (or conversely and more provocatively, to consider the real possibility of the “end of”) the museum as we have come to know and understand it.

This more precise definition of “media,” and this more pervasive concept of “mediatisation,” both have deep consequences not only for museum practice, but also for museum studies scholarship. As much as we might acknowledge and trace the mediatisation of the museum, so we might also experience, concurrently, a mediatisation of the subject of museum studies itself. Just as the museum becomes ever more immersed within a media-rich and media-driven society (with its proliferating platforms, increased connectivity, omnipresent media technology and datafication of culture), so both the focus and the reasoning of museum studies is changed. Not only does the subject see connections and contexts in new ways (recognising the wider and more holistic ecologies of industries and sectors, and of communicative practices, into which

museum media needs to be understood), but museum studies as a subject area has the opportunity (we might dare to say, the obligation) to understand the museum within the logic of media. In short, this is about museum studies predicating itself upon an extended set of (media-based) principles, equipping itself with a more precise (media-informed) nomenclature and allowing itself to realign and discover a new set of (media-driven) lines of investigation.

As a relatively young academic subject used to defending its place in the academy, ecumenical in its disciplinary outlook and highly responsive and sensitive to sectoral change, museum studies is, by design, adept to adapting; it is “a discipline which inherently invites, if not requires, practices and ideas gleaned from a wide variety of fields” (Walklate & Richards, 2012, p. 461). Whether in its movement from “minority subject into the mainstream” (S. Macdonald, 2006, p. 1), or its constant movement between informed practice, praxis and practice-led scholarship, or in its (constructively) willful denial on any single discipline as its centre, or in its “repeated attempts to reinvent and redefine” (Kneall, MacLeod, & Watson, 2007, p. xix), and its openness to reconfiguration and re-assembly (be it by the documentational turn of the 1970s, the educational turn of the 1980s and 1990s, the social turn at the start of the new century), museum studies has been – and will continue to be – intellectually and methodologically agile.

And yet, the concepts of “media” and “media technology” have been somewhat compartmentalised, with particular scholarly communities taking ownership over certain themes. The field of museum education, for instance, made an early claim for the subject of “media,” and owing to the early reasoning of the first proponents of the area, an enduring bond was quickly set up between the study of media and communication (Hooper-Greenhill, 1998). And it is an alignment that has been sustained for over a generation of museological writing. A similar ownership has tended to surround media technologies. In this regard, it has been the areas of what was once called “museum computing” and today is more familiarly termed “digital heritage” that have monopolised discourse in this area. Energised by rapid progresses in technology, empowered by the significance these new platforms and channels would appear to have on the museum and society at large and with an acute sense of obligation to establish new standards, protocols and policy to facilitate and justify their use, digital heritage scholars have been the responsible guardians of understanding museum communication technology (Parry, 2010). However, the opportunity for museum studies now – following its mediated turn – is to liberate these topics from their intellectual habitus, to recognise a wider relevance to a more extended community of interest, and to allow them to become more openly referenced, understood and activated in the subject at large. Just as media is not about solely the properties of communication technologies, and just as digital research does need to dominate research on communication technology, so, mediated communication (digital and non-digital, technology-orientated as well as process and practice-orientated) can now catalyse discussion and research across the varied topography of museum studies. The opportunity is for new writing on mediated communication in the museum to ignite new conversations in areas such as visitor studies and socially engaged practice (Wong, 2012), as well as inform and sustain the recent rise and intellectualisation of museum design literature (Macdonald & Basu, 2007; Parry, Page, & Moseley, 2018).

The structure of the volume

The internal structure of this volume has been organised to rehearse some of these new locations for writing on museum media, and in some cases to initiate and give voice to some of these new subject alignments. To highlight these features of criticality, and to remind the reader of the agenda and claim sustained through the volume, each of the five parts is prefaced with a prolegomenon, differentiating between: deeper historical foundations in Part I; wider systemic

contexts in Part II; varied modes of practice in Part III; visual rhetoric of key themes in Part IV; and future trajectories and directions of scholarship in Part V.

The authors in Part I (Foundations) share an assumption that mediated communication has always been fundamental to the museum. Common across their work is also an objective that this constitutive role of media in the museum can best be demonstrated through a historical approach. Back through the modern digital revolution, past the advent of broadcast media, back into the 19th century and the origins of display technology, theirs is an exercise in the “long view” on museums and media. And, crucially, rather than a clean timeline of media development, this is rather a time-based approach that exposes the entanglement of interpersonal and mediated modes of communication that have characterised the formative role played by media in museums through history. The volume’s narrative then pivots in Part II (Environments) to demonstrate that media cannot only be studied as material technologies across time, but also as symbolic meaning-making processes across space. Slicing its subject in this alternate direction, the chapters in this part work together to show the significance of understanding media within the wider contexts of companies and political regulators (the administrative terrain), but also within the context of criticality, creativity, democracy and learning (the socio-cultural terrain). Part III (Practices) re-orientates the discussion yet again, but this time to hone in on the part played by media in the practices of museums, particularly in terms of their relations to audiences, to their modes of organisation and to their strategies of development. Grounded in the everyday work of the museum, the chapters aim to show new and emerging modes of working (particularly with respect to co-design and co-curation), as well as some ways of adopting more systematic studies of mediated modes of communication. Part IV (Incident(al) readings) offers an evocative, visual expression of the relationships formed between the museum as cultural construct, media that give it shape, and communication which inflects meaning and value. With these new critical lenses verified, these new critical practices initiated and (throughout) these new assumptions on the mediatised museum enacted, the final part of the volume (Part V: Directions) then provides a clearing for a group of authors to share their own personal, intellectual and professional trajectories with media and museums. This final set of chapters revisits, in turn, the different facets of the mediatised society (connected and data-full, technology-rich and informational), and, as they do, they perform for us versions of future mediatised museum studies scholarship.

Taken as a whole, these five sets of original chapters work self-consciously as an ensemble to share a more nuanced and precise understanding of media, media concepts and media terminology. They recognise the museum as an organisation and a space in which media has a constitutive role. They acknowledge museums within a mediatised society. And they accept mediatisation not just as a context for the museum, but as a framework for how everyday life is conducted. Consequently, the subject and contents of this volume go beyond simply delineating another sub-subject or micro-discipline. The intention here is not to ring-fence yet another topic for review, or to petition for another agenda item for museological debate. There is a grander claim here – about how to do museums studies, and how to be a museum.

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Part I

Foundations

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Today, any potential visitor to a museum soon realises that engaging with museums means interacting with a wide range of communication media: from online information about visiting hours, special exhibitions and transport facilities, on to invitations to follow the museum on social network sites (“social media”). Actual museum visitors also meet a variety of media in the form of printed leaflets and catalogues, information screens and possibly mobile options for online interaction along the way. Many museums are also keenly aware of the importance to communicate a clear public profile in a competitive cultural environment where many vie for the attention of visitors, politicians and funders. Behind the scenes, mediated modes of communication equally orchestrate museum professionals’ daily work, be it content management systems for collections, archival infrastructures or printed newsletters to the staff.

This part offers an introduction to understanding how mediated communication has always been fundamental to the ways in which museums organise their internal as well as external relations. Perhaps because the emergence of media technologies and media applications have proliferated with accelerating speed in the last three decades, museums’ professional engagement with media is often considered to be a fairly recent phenomenon. This assumption is indicative of the dilemmas and challenges that are taken up and analysed in this first part of the Handbook.

The contributors set museums’ mediated communication within a historical perspective in order to trace the continuities and the possible changes in museums’ interactions with their surroundings. In so doing, they stress the importance of avoiding two pitfalls in studying museums’ relations with media. One is what some historians term “presentism” (Fischer, 1970), that is, a tendency to use the present as an analytical prism through which the past is simply refracted. Such a view on the past tends to minimise historical difference and distance. It obscures media technologies and appropriations that differ from what we know in today’s deeply mediatised environment; or it minimises museums’ organisational or legal arrangements that do not resonate with contemporary priorities or values. The other pitfall is to underestimate the fact that historical “distance is not simply given, but is also constructed” (Phillips, 2004, p. 89). Viewing the past as simply reflecting the passage of time tends to disregard that the viewer holds particular forms of engagements with past themes and issues. The past is about something for someone also when it comes to museums’ mediated modes of

communication. So, historians invariably make choices and position themselves when studying media in past museum environments.

Balancing these two pitfalls, the contributors endorse and document the formative role played by media in museums through history. Their detailed and often case-based chapters serve to nuance binary and normative narratives of media as levers of either innovation, immersion and visitor agency and engagement; or, conversely, as levers of Disneyfication, marketisation of public communication and a diminishing of the auratic qualities of museum objects.

The five chapters were selected in order to display some of the key approaches to studying museums' media environments in a historical context. In their accounts, the authors range widely across theoretical conceptions and temporal perspectives, from a mainly deconstructionist view on museums as media environments in a long historical view (Anders Ekström, Peter Samis) to a mainly personal focus on practices of digital appropriation since the 1990s (Samis). They also vary in their professional background (ICT studies, media studies, history of science, museum history), thus testifying to the often interdisciplinary range necessary to study museums' mediated communication.

Taken together, the chapters in this first part take up a number of key questions and debates of relevance for anyone wishing to understand museums' mediated communication from a time-based perspective. The first question concerns the very notion of media. Should media be defined and studied as particular material technologies conveying various forms of information across time? Or, are media rather to be understood as symbolic meaning-making processes circulating across various spaces, including the museum? Historians of technology tend to favour the former definition and focus on the formative roles played by the introduction of new technologies for institutions, infrastructures and legal arrangements (Winston, 1998). Media and communication historians are often more attuned to the latter definition and focus on the changing substance of communication and its societal and personal impact (Thompson, 1995). The authors in this part offer differing answers, ranging from Samis' technological stand in unpacking the organisational implications of museum digitisation since the 1990s to Susan Anderson's mapping of audiences' changing meaning-making practices. Both Anderson and Bodil Axelsson push familiar definitions of media. Reflexively, they insist that digital data and algorithms now produced by museum professionals and visitors alike serve as hidden infrastructures of power held by actors in the commercial domain well beyond the familiar binary understandings of media as material technologies or as symbolic meaning-making processes.

The second question concerns which aspects in the communicative flow are central in order to understand museums' mediated communication across time. Should studies be concerned with the professional design, production and organisation of mediated communication? Or should we ask questions about the ways in which mediated modes of communication are taken up, represented and understood by people interacting with the museum? While most scholars in principle favour an inclusive approach that encompasses both a museum professional (or "sender") perspective and a people (or "receiver") perspective, most historical studies in practice focus on one of these perspectives. These choices have implications for how continuity and change are accounted for.

As noted, choices are key to any historical study. But more important in the present context, the choices made materialise as different temporal arrangements when studying mediated museum communication across time from either a professional or a people perspective. At least since the advent of modern museums in the 18th century, a professional perspective on mediated museum communication in a time-based perspective will often involve institutional, legal and political contexts where change takes a good deal of time to take effect. For while political decisions to cut museum funding or major private donations are examples of

sudden changes, the implications of these events on how museums may change their professional perspective on mediated communication are rarely as immediate. So, continuities will tend to figure more clearly than change when adopting a professional perspective on historical trajectories in mediated museum communication. As Axelsson (this part) notes: “The agency of display has not necessarily been reformed in its entirety” with museums’ introduction of online databases that are seemingly more user-led. A people (or “receiver”) perspective on mediated museum communication will often be concerned with individual or social contexts of appropriation, be it shifts in mediated communication as part of exhibition spaces or media ensembles beyond the museum walls. Such contexts more easily lend themselves to studying change, since shifts in individual or social behaviour, perception or practice are more perceptible than are shifts in, for example, organisational procedures. So, Ekström (this part), in his incisive chapter on late 19th- and early 20th-century world fairs and exhibitions as precursors of the modern museum, notes how these public spaces engendered a novel “embodied politics of participation, shaped in the interaction between the audiences and the displays as well as particular media.”

A third key question illuminated by the chapters in this part is how to understand the entanglements of interpersonal and mediated modes of communication, and how museums have practiced and developed these entanglements. While media have always been central to museum communication, as noted above, many museums harbour an understanding that the “mother” and model of communication in museums is interpersonal communication in the physical museum where visitors meet professional guides and curators or where they take part in events or learning processes involving speakers, performers or interaction with teachers. Such an understanding easily leads to a definition of mediated communication as processes taking place beyond the museum walls – an add-on to, or even an aberration from, the “real thing” of immediate, interpersonal communication and interaction. Thus, museums may downplay a development of mediated communication and favour direct interaction with visitors; or, they may attempt to use media as tools to innovate modes of communication in the physical museum that are perceived to be outmoded.

Chapters in this part document how actual museum developments have repeatedly disproved this binary understanding of mediated and interpersonal communication. Mediated communication is very much part of innovation in the material museum space (Samis, Peter Pavement); interpersonal modes of communication are involved when museums have entered public spaces such as fairgrounds and markets (Ekström). The large-scale uptake around the world of social network sites serves to further the nesting of interpersonal and mediated communication. In empirical terms, this development has radical implications for professional curating practices (Axelsson). In theoretical terms, scholars and practitioners need to rethink prevalent definitions of visitors and audiences (Anderson), and they need to develop more encompassing and dynamic means of capturing people’s meaning-making practices at museums.

Taken together, the chapters in this part point to the continued relevance of analysing and understanding museums’ mediated communication from a time-based perspective. Such a perspective illuminates the fallacy of current trends to equate mediated communication with digital technologies, with institutional branding efforts or with people’s participatory practices. The empirical cases analysed in this part serve as robust reminders that media have always been integral to the ways in which museums are developed, understood and practiced. Indeed, the authors’ inclusive understanding of mediated museum communication invites us to reflect on the very definition of museums as more than simply material settings defined through their handling of objects. Museums are also institutionalised catalysts of societal interaction; they are meeting-grounds of understanding and misunderstanding with media as midwives.

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I.1

Walk-in media

International exhibitions as media space

Anders Ekström

In opening his seminal essay on “the exhibitionary complex” – which was first published in the journal *New Formations* in 1988 and later reprinted in *The Birth of the Museum* (1995) – Tony Bennett emphasises that the modern museum was shaped in the context of a diversity of 19th-century exhibitionary practices, including dioramas and panoramas, national and international exhibitions, arcades and department stores (Bennett, 1988; Bennett, 1995, p. 59). Starting from such a broad historical contextualisation of the culture of display, and in close relation to the emergent field of visual culture studies (Crary, 1990; Schwartz, 1998), two major and interconnected strands of research were developed in the 1980s and 1990s. One was the Foucauldian investigation, as exemplified by Bennett’s work, into the visual and architectural organisation of 19th-century exhibitions and museum spaces, and, above all, the knowledge regimes and “technologies of the self” by which the visitors became engaged in the displays. In later research, this approach has proved especially productive in empirically rich case studies of the ensemble of visual and participatory techniques that were developed to make various social categories materially present in the displays and possible to work on in conjunction with the audiences (see, for example, Lundgren, 2013). The other strand was the analysis of 19th- and early 20th-century museums, world’s fairs and international exhibitions as a space of social and cultural representation. Focusing on the exhibitionary complex as a powerful tool for the communication of exhibition ideologies, fuelled by Western visions of modernity, this research into the politics of display has been of great importance to the understanding of a wide range of interconnected cultural processes related to nation-building, colonialism and heritage formation (see, for example, Ekström, 1994; Greenhalgh, 1988; Karp & Lavine, 1991; Macdonald, 1998; Mitchell, 1989; Rydell, 1984).

This chapter takes a different approach, however. Rather than being concerned with the messages and meanings of exhibitions at a representational level, it seeks to outline the nature of 19th- and early 20th-century temporary exhibitions as a media space, that is, a space defined by and practiced through the pervasive presence of media. In particular, I focus on the material encounter between the visitors and various media and communication technologies. Historical research has pointed to the formative role of museums and temporary exhibitions in the making of modern public space. Indeed, several case studies illuminate how 19th- and

early 20th-century exhibitions functioned as public laboratories, engaging a range of new and old media to negotiate the meaning of civic concepts and identities, including the delineation between audiences and publics (Ekström, 2008; Ekström, Jülich, Lundgren, & Wisselgren, 2011). Here, I take this argument further, suggesting that the genre of international exhibitions, as it developed in Europe and North America from the mid-19th century onwards, prefigured the intensely media-focussed sociality of modern public spaces. Key to this historical form of sociality was an embodied politics of participation, shaped in the interaction between the audiences and the displays as well as particular media, but also in the conversations, physical movements and performative interaction that the exhibitions invited the visitors to develop between themselves (Ekström, 2010).

The chapter points to four aspects in particular that constituted the early exhibitions as media space and their relevance to a wider history of media sociality. The first aspect is the new modes of media visibility that were promoted at international exhibitions. From the inception of this genre of exhibition in the mid-19th century, the deliberate and spectacular display of various media and communication technologies was frequent. This was manifested in a profusion of “media firsts” and shaped emerging patterns of media interdependency. Second, the chapter points to the practices of onsite media production at the exhibitions and exemplifies how they involved the visitors in acts of media creation. This aspect underscores the participatory nature of the interaction that developed between the visitors and exhibitionary media. The third aspect concerns the thoroughly mediated character of the visitors’ experience of the exhibitions. Here, this issue is approached not on a content level – that is, as an analysis of the representational power of the displays or through the overall scripting of exhibitionary spaces (cf. Duncan, 1995) – but by focusing on how the audience literally walked into the medium of exhibition itself and became part of its performance. Finally, the fourth aspect regards the contribution of the exhibitions to the formation of a kind of media sociality that was not defined by social interaction being increasingly mediated, but rather by media culture becoming a centre of public interaction. In sum, the focus of this chapter is thus on the novel ways that the exhibitions enabled of literally seeing, knowing, talking about and “being with” media in public spaces.

To establish this perspective, it is necessary to draw from literature on media history and theory. Critical museology in the 1980s and 1990s (Vergo, 1989) did not approach the exhibitionary complex as a media complex. Its focus was on the politics of collecting and categorising, on issues of memory and identity, and the semiotics of the objects on display. In short, it forcefully theorised the exhibitionary complex as a space of representation (cf. Bennett, 1995, pp. 7, 75–76, *passim*). While having the advantage of foregrounding the agency of display, this approach did not however translate into more detailed studies of the materiality of mediation in exhibitionary practices. Neither did the new museology to any significant extent approach museum visitors from the perspective of a history of audiences (Butsch, 2000, 2008) and public sphere theory (Livingstone, 2005). For this, it was necessary to turn to other fields of inquiry and combine exhibition studies with historical research in areas such as visual culture and early film (Gunning, 1994). In the 1990s and 2000s, with an increasing interest in issues of intermediality and the broadening of the concept of media that was formulated in the context of the digital turn (Thorburn & Jenkins, 2003), historical studies on media practices before the broadcasting era proliferated (Gitelman & Pingree, 2003). This new focus on old media connected with earlier work on the public spaces and modes of social interaction enabled by 19th-century media and communication technologies (Hansen, 1991; Marvin, 1988). When seen from the perspective of this media historical turn, the study of international exhibitions became less oriented towards the history of the museum institution and inserted instead into a broader context of emerging media cultures (Ekström, Jülich, & Snickars, 2006).

Media visibility

From the mid-19th century and onwards, international exhibitions and world's fairs, different in scale and geographical reach and yet sharing the traits of an emerging genre, were organised in major cities across Europe and North America. One common trait that developed across local events was the manners in which these exhibitions promoted a new and intensified visibility of media in public spaces. The display of media technologies and modes of media production were from the outset among the core attractions in the exhibition grounds. Exhibitors showcased and explored their technologies in close interaction with the audiences. The focus of attention was primarily on the technologies and the media-specific effects they enabled, and the onlookers were inventively engaged in the performances. There were thus many announcements of local (and mostly apocryphal) “media firsts” in the history of 19th-century exhibitions, framing, for example, the phonograph, cinematography and X-ray imaging as new and spectacular technologies (Figure I.1.1) (see, for example, Jülich, 2008; Natale, 2011).

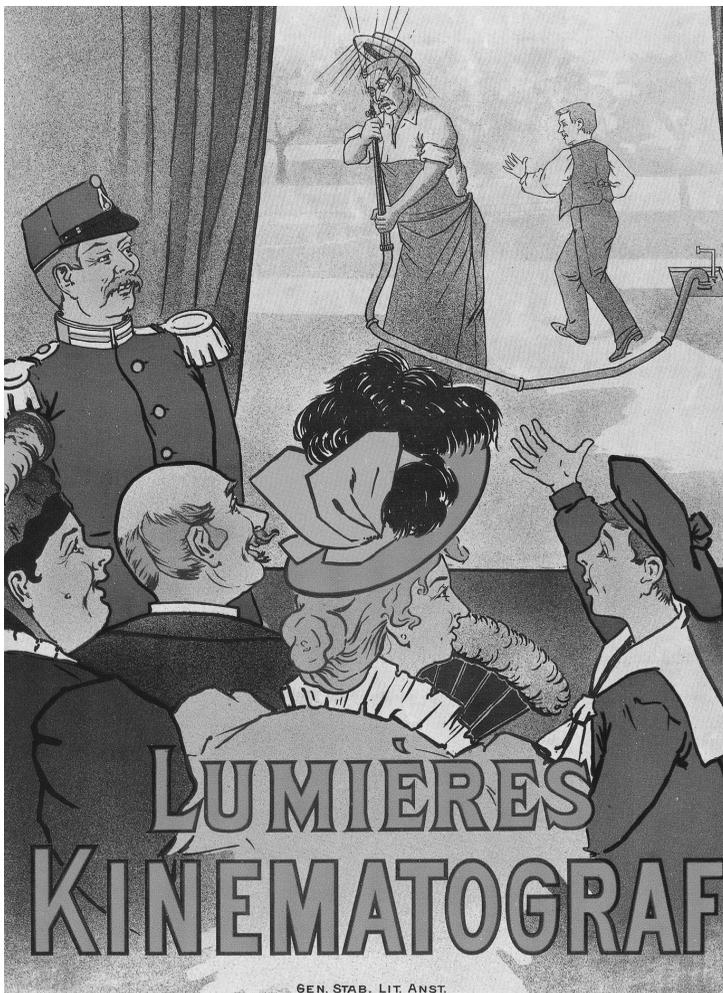


Figure I.1.1 Film poster for the Stockholm Exhibition of 1897. Courtesy the archive of the Nordic Museum, Stockholm/Wikimedia Commons.

The presentational framework for such displays was characterised by what film historian Tom Gunning describes as an “aesthetic of attraction” (Gunning, 1990). This was a style of media exhibition(ism) that focussed attention on the technologies themselves as much as their representational powers. At early exhibitions and 19th-century amusement grounds, this aesthetic was developed in the context of a long-standing tradition of technological spectacle (Young, 2003, p. 232) and travelling showmanship (Musser, 1991). However, this tendency of putting media technologies on self-referential display continued to be developed in new directions in exhibitions well into the 20th century. The continuity of these practices encouraged an inter-medial understanding of technologies that were connected by the context of their display. It also engaged the audiences in informal ways of knowing media through comparison and conversation, making the topic of media innovation and display a centre of interaction among exhibition visitors (Ekström, 2010, pp. 221–235; Ekström, 2011).

Indeed, an emphasis on media innovation was also characteristic of the overall narrative of modernity that the international exhibitions fostered. From the great London exhibition of 1851 to the Paris world’s fair of 1900, this rhetoric attached an emblematic status to developments in media and communication technologies. One of its most frequent manifestations were elaborate displays celebrating the machinery of modern society’s increasing speed and connectedness, for example railway carriages, telegraph boards, bicycles and telephones (Figure I.1.2). Another instance of this fascination with technological communication was the fashion of inserting mechanical movement in the open spaces of the fairs. Innovations such as moving sidewalks, Ferris wheels, and rotating coffee shops all conveyed a sense that the experience of the modern world was bound up in a fleeting and mediated perception. As the amusement areas at the major exhibitions grew larger, attractions that offered various forms of movement and virtual travel, such as moving panoramas and mechanical joyrides, proliferated.

Another instance of the visibility of media at the exhibitions was individual displays and buildings that were organised by media companies. In a series of four exhibitions in Stockholm



Figure I.1.2 Interior from the Machine Hall at the Stockholm Exhibition of 1897. Photograph Stockholm City Museum/Wikimedia Commons.

between 1866 and 1930 there were several examples of this. In an exhibition in 1897, a major Swedish daily invited the visitors to their own pavilion. In addition to a small display, it contained resting and reading rooms where the visitors could get an update of the day-to-day press coverage of the exhibition. Another popular item in this media exhibit was a public phonograph. It was placed on the porch of the pavilion, offering the visitors to get connected to one of the ear tubes while watching and being watched by the passers-by. It was a typical example of the media-oriented sociality that developed among the visitors. Neither was it a coincidence that one medium (the press) introduced another (the phonograph). A number of cross-media practices developed at these exhibitions, and the newspaper press played a significant role in this exchange. Its visibility at the 1897 Stockholm exhibition was further enhanced by an international conference for journalists, which used the occasion of the exhibition for public manifestations of the press as an institution with its own history and rituals (Lundell, 2006). Individual newspapers and their reporters also acted as participants in one of the most spectacular acts of media experimentation that took place at the 1897 exhibition. It consisted of the shooting of a series of advanced aerial photographs from the gondola of a balloon, which ascended from the open space in front of the main exhibition building. It was followed by thousands of spectators in the exhibition grounds as well as in other parts of the city (Ekström, 2009). For these and other reasons, and in relation to the overall history of 19th-century temporary exhibitions and world's fairs, it makes more sense to describe the medium of the press as an extension of the medium of exhibition rather than an external source documenting its history.

Thus, in suggesting that the exhibitionary complex was a media complex, I am not simply referring to the use of various media in the displays, which is how “exhibition media” is sometimes defined (see, for example, Macdonald, 2007, p. 153), but rather to the extent to which the experience of 19th- and early 20th-century exhibitions was organised around media encounters. The medium of exhibition helped to make other media visible not only by the elaborate display of old and new technologies, but by connecting various technologies and media practices into a media culture. The advantage of thinking through a concept of media culture in this context – as compared to neighbouring concepts such as media ecologies, networks or systems (see, for example, Harvard & Lundell, 2010) – is precisely that it is not too systemic, and that it locates the emergence of transmedial connections to the activities of exhibitors and audiences rather than the networked character of a fixed set of technologies. As Hay and Couldry (2011) note, there is sometimes a tendency in contemporary media studies to use “culture” to denote that which is supposedly new – as if culture was a cumulative element in media history – for example in the notion of a new “convergence culture” (Jenkins, 2006).¹ But in the context of this chapter, the concept of culture works in the opposite direction as a way of investigating links and transformations both in and over time. It is, in other words, a concept for thinking about the activities and agencies by which history moves. The encounter with many different and yet connected technologies and media practices at 19th- and early 20th-century international exhibitions did not only enable the audiences to develop tastes and skills in media consumption. As will be exemplified in the next section, the visitors to these sites were also engaged in media production.

Moving through, doing media

Besides connecting and displaying existing media and technologies of display, the exhibitions also installed new media genres. One example was the exhibition journal. It was used to advertise and document the exhibition and was distributed on site as well as to prospective visitors and more far-off readers. In the series of Scandinavian and international exhibitions that were

organised in Stockholm, an “Exposition Journal” [*Expositions-Tidningen*] was produced already in connection with the first exhibition in 1866. It took off in a media-oriented fashion by announcing in the editorial of its first issue that “publicity” [*publiciteten*] was of major importance to the success of the exhibition, and especially the publication of images. According to the editors, the journal was going to use novel technologies for the reproduction of images as well as for making the distribution of the journal both faster and cheaper than ever. Indeed, these new technologies for the publicity of the exhibition in themselves deserved attention as “objects of display” [*expositionsartikel*]. This was more than a gesture. The venture of producing the journal, it was explained in another article, coincided with an attempt to improve the methods of photolithography, associated with Rose-Joseph Lemerrier and further improved by Alphonse Poitevin in the 1850s. Through an initiative from the editors, a Swedish photographer, C. J. Malmberg, had been able to develop a similar method, and the journal was going to showcase the progress of this method throughout the exhibition season. However, several months into the exhibition, illustrations in the journal were scarce, and the editors had to admit that their expectations of this media technological experiment had failed. This was also one of the reasons why they had to stop publishing the journal before the exhibition was closed.²

This episode exemplifies that not only did early exhibitions entail various forms of media visibility and new media genres, there was also an emergent tendency of turning processes of media (and news) production into objects of display. In other words, this meant that the exhibition medium was used for circulating media technologies and practices as media content. This particular form of media exhibitionism – media on media – was also increasingly taking on the characteristics of a genre, as practices were copied and refined from one exhibition to another.

The continuity and development of such modes of display can be studied both between exhibitions in different countries and in local series of exhibitions over longer time spans. For example, the Stockholm exhibition of 1930, which has been primarily remembered for its functionalist architectural program, contained several displays on modern media and communication technologies that followed in the patterns of and in some instances made explicit references to exhibitions around the turn of the 20th century. One display related the production of news in a series of wall-sized images, from the collection of news material, through the writing and printing processes to the distribution of the newspaper to the readers (Habel, 2002, p. 32).

In an exhibition in Stockholm more than 20 years earlier, the full production process, including the printing of the exhibition journal, was located on site. The idea of displaying a working printing press was discussed by several competing dailies already in connection with the 1897 Stockholm exhibition, but it was only realised in 1909. Besides publishing daily news and announcements from the exhibition, the exhibition journal was meant to work as a public demonstration of the production of a modern newspaper. It also engaged the audience in various activities, for example, contests that were related to the exhibition and published in the journal. It was also possible for the visitors to announce their presence at the exhibition by having their name, title and hometown published in the journal. As the exhibition season progressed, the lists of visitor names in the journal grew longer. In earlier exhibition journals, for example in 1866, this form of visibility was reserved for the celebrities among the visitors, but in 1909 it was offered to everyone (Ekström, 2010, pp. 212–214). It exemplified emergent forms of public sociality that not only enhanced the visibility of the medium but also of the visitors in their role of media audiences.

The ways of consuming media production that developed at these exhibitions also involved the visitors in shaping the content of individual displays. Immersive techniques proliferated at late 19th- and early 20th-century world's fairs and international exhibitions, especially in the amusement areas (see, for example, Gunning, 1994). Panoramic forms of virtual travel, historical

re-enactments and technological performances coincided with and reinforced the overall theatricality of the medium of display (Ekström, 2012; Sandberg, 2003, 2011). The popularity of and growing familiarity with such attractions meant that the more experienced audiences entered exhibitionary spaces with participatory expectations.

At the 1909 Stockholm exhibition, the exchange between modes of display in the main buildings and the amusement area was apparent in several individual pavilions. One example was the statistical displays developed by Ferdinand Boberg, a most prolific Swedish exhibition architect who created buildings for a series of world's fairs and Scandinavian exhibitions around the turn of the century (Ekström, 2008). The pavilion that Boberg referred to as a "machinery of statistics" contained a series of moving miniature scenes, driven by electricity and figuratively representing extracts from the official statistics of Sweden. To the more experienced audience, this style of display ingeniously combined intermedial references to a series of well-known techniques in 19th-century popular visual culture such as dioramas, moving images, miniature theatres, tableaux vivants and picture statistics. In addition, several of the scenes related developments in media and communication technologies, such as the contemporary frequency of railway travel, telephone calls and telegraph messages in the early 20th century. Two months into the exhibition, a contest was announced that invited the visitors to suggest new installations in the display. Many of the proposals from the audiences also concerned the speed and motion of modern communications. One of the participants proposed "a world map with ships and trains in constant motion." Another envisioned a series of "living images of different speeds, from the speed of the messenger boy to the speed of the swallow." A third proposal suggested to "visualize the number of words in the Atlantic cable."³ Indeed, the majority of these participatory activities mirrored the ideas of the organisers and thus testified to a general tendency of such activities of being faithful to the format. Eventually, a number of the proposals were used for renewing the display, and the names and titles of the contributors were advertised by the press and in the exhibition journal. Individual visitors thus became visible both as audiences and amateur celebrities in their encounters with the displays (Ekström, 2008, pp. 43–45; Ekström, 2010, p. 216).

Performing audiences

However, the most decisive aspect of the thoroughly mediated experience of the visitors to 19th- and early 20th-century international exhibitions was connected to the characteristics of the medium of exhibition itself. In various discussions of the position of exhibition audiences, much critical focus has been placed on the overall scripting of exhibitionary spaces, the intended routes through the displays inscribed in architectural plans and guidebooks and the representational initiative of the organisers. But the exhibitions combined elements of a mass medium, and its few-to-many modes of communication, with that of a collective performance in which the relations that developed between the visitors were as crucial for the experience of the event as watching the displays in a prescribed manner. The exhibition was a medium for the audiences to literally walk into. As for politics, this calls for an attention to the politics of participation; that is, to mechanisms of inclusion as much as exclusion, to the routines and improvisations by which the visitors were drawn into the media sociality of the exhibition and to their transformations into audiences and publics that this entailed (Ekström, 2010, pp. 22–23; Ekström et al., 2011).

I have already exemplified how exhibition visitors became performers in the demonstration of new and old media. The theatricality of display was also emphasised in the tendency towards historical and geographical reconstruction that proliferated in local as well as international exhibitions. For example, at the 1897 Stockholm exhibition, grand scale reconstructions included historic sea battles and the rebuilding of parts of the medieval city. In the historic city,

street theatres conveyed a sense of playfulness to the open space between the main buildings. Throughout the exhibition season there were reports of spectators intervening in the plays. Added to this was a popular culture of re-enactments and scenic entertainments that entered the major exhibitions through the amusement areas but eventually affected other parts of the exhibitions as well. As Mark Sandberg (2003) has shown, a parallel culture of display in wax museums and open-door museums systematically diffused the distinction between the displays and the onlookers. For example, this was achieved with simple techniques, such as placing a mirror in a wax group that made the spectator appear in a historic scene or in the company of a group of celebrated actors. But it was also the rationale behind a major change in display aesthetics at the international exhibitions around the turn of the 20th century. Increasingly, the exhibitions were more tightly themed, with the exhibits organised in milieus and complete interiors for the visitors to walk through and inhabit. Together, these developments created a particular kind of “participatory immersion” (Sandberg, 2011, p. 65) characteristic of the visitor’s physical encounter with exhibitionary spaces (Figure I.1.3).

A sense of performance among the audiences can also be traced to descriptions of the ways in which they interacted with each other. Each exhibition had its gathering places. For example, there are vivid descriptions of the crowds gathering in the amusement areas to watch other visitors’ bodily performance in their interaction with the various attractions. In the 1909 Stockholm exhibition, the interest in the movement of bodies in joyrides and a nearby open-air dance hall motivated descriptions of the area as an open stage where everyone’s eyes were in constant motion. According to unanimous reports in contemporary newspapers and the official description of the exhibition, the area attracted large audiences that watched the dance “with a controlling gaze” and enjoyed having their eyes “rushing down” the water slide or “gliding down the spiral tower.”⁴ A whole language developed around the intensified visual exchange

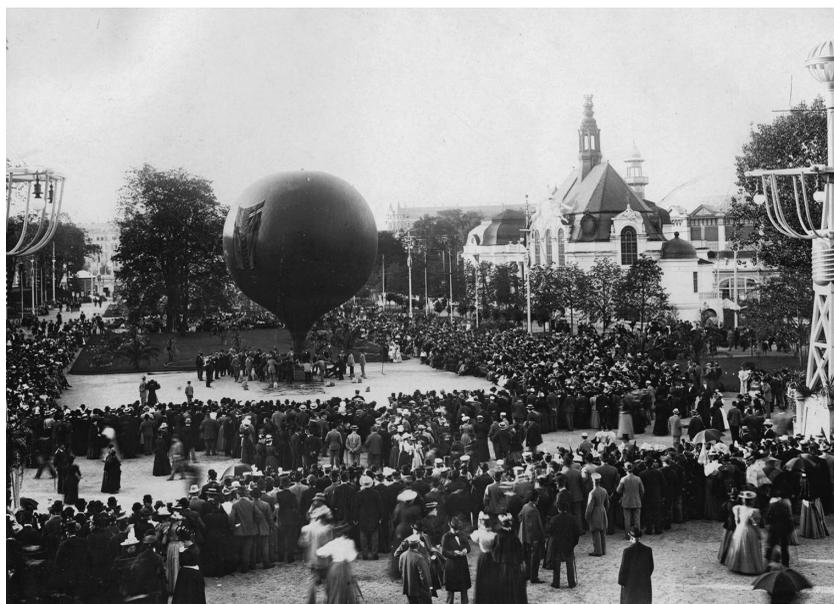


Figure I.1.3 Balloon ascent with photographer Oscar Halldin from the open ground in front of the Industrial Hall at the Stockholm Exhibition of 1897. Photograph the National Museum of Science and Technology, Stockholm/Wikimedia Commons.

and modes of seeing that these gathering places, and the exhibition in general, enabled. Old and new media played a creative role in the affluence of visual metaphors. A *camera obscura*, an item of media nostalgia for the experienced visitors, was marketed as an observatory, a tool for watching without being watched: “In Camera Obscura you will see the whole ‘white city’ and its moving crowds in natural colours and all its details. You can recognise your friends, walking around and looking at the exhibition, you can watch all their movements without them having any sense of being observed.”⁵

And yet, it must be emphasised that the sensorial registers that these exhibitions entailed were far from limited to visual interactions and distanced spectatorship. Numerous displays, amusements and architectural structures engaged the visitors in embodied and self-reflexive comparisons and shifts of perspective. Scaling techniques were key to exhibitionary media. The mixed nature of the exhibition as a mass medium and a collective performance alternately positioned the visitors in front of and inside the displays. Thus, these places were constituted by mobile audiences rather than static and spectating crowds. At the 1909 Stockholm exhibition, the attractions in the amusement area curiously reflected this liminal state of the exhibition visitor as both onlooker and performer. Memorable sites such as the rotating coffee shop; the open-air dancing floor; and the funhouse, with a fully furnished room turned upside down and a mirror hall; shared the tendency of having the visitors experience fleeting views, shifts of bodily proportions and dizziness in front of each other (Ekström, 2010, pp. 192–207). It was all in tune with the overall theatricality and performative address that characterised these exhibitions.

Media sociality

Publics and public spaces are mediated in myriads of ways. In approaching 19th- and early 20th-century exhibitions as media space, it is therefore necessary to make some distinctions. What is at stake in this chapter is not how exhibition visitors were interpellated as audiences and publics on a representational level. The “content” of world’s fairs and exhibitions has often been identified with the collective identities and imagined communities (Anderson, 1983/2006) that were envisioned in the official rhetorics of the events. But here the focus is on the visitors’ material encounter with exhibitionary spaces, their ways of moving in and out of the displays, and the interactions that developed in this particular context. This rather calls for what might be referred to as a media-historical microsociology of exhibitionary spaces and the participatory practices that they entailed, an approach that is essentially different from but not necessarily incompatible with the tradition of representational critique that developed in museum and cultural studies in the late 20th century.

When seen from this perspective, the genre of international exhibitions from the mid-19th century onwards fostered forms of public sociality that were embedded in a historically specific media culture. As exemplified, this media sociality was characterised by and became visible in exhibitionary spaces through the commodification of media production, the proliferation of intermedial practices, and the emergence of informal and conversational modes of knowledge of old and new media technologies. It also surfaced in the visitors’ participatory immersion into the exhibitions and their emerging roles as audience performers in the display of media production. Physically engaging with, talking about and watching others explore various media and communication technologies defined the inside of the medium of exhibitions itself (Figure I.1.4).

The exhibitions were thus living spaces that changed from day to day, constituted and reshaped by the movements and interactions of the visitors in their encounter with a multitude of individual displays. As such, they prefigured the formation of a particular kind of media sociality. This form of sociality was not defined by social interaction itself becoming increasingly



Figure 1.1.4 The moving walkway with platforms moving at different speeds at the Paris Exhibition of 1900. Photograph Wikimedia Commons.

mediated, which is an interpretation of the cumulative role of media in modern societies that is sometimes referred to as “mediatisation theory” and that resonates with the discourse of the “fall of publics” that social theorists such as Jürgen Habermas (1991) and Richard Sennett (1977) developed in the 1960s and 1970s. Neither did it comply with the classical idea of the increasing passivity of audience positions in modernity. To the contrary, what characterised the exhibitions as public spaces in their relation to various media was an increasing orientation towards activities that turned media culture and media production itself into a centre of public interaction. Key to this form of sociality was the conversational ways of knowing media that the exhibitions and their gathering places encouraged.

Several scholars have contributed to an enriched understanding of the skills and literacies that 19th- and early 20th-century audiences developed between them in relation to a broad range of popular visual and media culture. For example, the work by Vanessa Schwartz (1998), Mark Sandberg (2003), Peter Bailey (1998), Ben Singer (2001) and Gerry Beegan (2008) on French, Scandinavian and Anglo-American sources respectively, shows how stories and events circulated between news, panoramas, wax museums, theatres and film screens and were told in ways that presupposed that the audiences held certain knowledge about their appearance in other contexts. This was a culture of intermediality and deliberate remediation that crossed high and low genres as much as visual, text-based and theatrical media, and that drew together and built on media practices from different times and places (Ekström, 2016). Beegan (2008, p. 22) and others argue that this knowledge was shaped to a large extent through the conversations of the audiences, and that this informal form of talk constituted and held together in other respects heterogeneous audiences. It was a mode of conversational knowledge that might be thought of in terms of “media talk” (Ekström, 2010, pp. 233–235).

This analysis feeds into broader discussions of the different public spheres that new and emerging spaces for media consumption enabled around the turn of the 20th century (see, for example, Hansen, 1991). It also provides an opening for thinking historically about how the use of and physical interaction with different media choreographs contemporary public spaces.

The point that has been stressed in this chapter, and that goes beyond much previous work on 19th- and 20th-century exhibitions and media culture, is that the form of media sociality that the exhibitions highlighted was not limited to the conversation and comparison of media messages and content. The experience of moving through exhibitionary spaces comprised a much broader spectrum of engagement with technologies, modes of production and intermedial practices, fostering an understanding of how different media literally grew out of each other. This was, in other words, a form of media sociality that was heavily shaped by the materiality of media in exhibitionary spaces and, most importantly, the immersive and participatory nature of the medium of exhibition itself.

Exhibitionary media and museums

Exhibition studies are only beginning to explore the history of international exhibitions from a media-historical perspective. But how does such an approach contribute to the understanding of the historical relation between exhibitionary media and the modern museum? By way of conclusion, I would like to point to four aspects of this relationship as particularly noteworthy and providing possible guidelines for future research.

First, it should be emphasised that modern techniques of display developed in relation to a broad spectrum of public exhibition and largely independently of the institutional history of museums. It is only in the late 19th-century that the development of the medium of exhibition, on the one hand, and the institutional history of the modern museum, on the other, become substantially intertwined (cf. Heesen, 2012). What Bennett's work on "the birth of the museum" (1995) refers to as the exhibitionary complex – and what this chapter has been expanding into a media complex – is therefore not only a matter of context but of genealogy.

Second, there are too many historical interdependencies and cross-fertilisations to take for granted the demarcation between popular visual and media culture, on the one hand, and educative and scientific values in museums, on the other. Indeed, the relation between spectacular attraction and serious instruction in exhibitions was a theme of intense debate around the turn of the 20th century. It was part of the boundary work characteristic to emerging knowledge institutions (Gieryn, 1983) and reflected the pursuit of professional status in museums as well as in emerging entertainment industries. However, exhibitionary practices in museums continued to be developed in relation to other contexts for public exhibition throughout the 20th-century. Among other things, this included the aesthetics of display and various participatory practices, especially in institutions that combined characteristics of temporary exhibitions, fairs and conventional museum space, for example the early open-air museums (Sandberg, 2003).

Third, the exchange between museum practices and media culture in the 19th and 20th centuries was not limited to the culture of display. It also involved the extended use of what might be described as backstage media in the museum context. In the early 20th-century, a number of technologies that once appeared as objects of display at the great exhibitions – photographic techniques, film, X-ray imaging and phonographic sound recording – entered museums not as props or exhibitionary media but as tools for documenting, collecting, sorting and archiving objects and ethnographic data (Boström, 2006). These and many other related apparatuses came to define the institutional knowledge production in the modern museum as much as they influenced practices of display. This is an aspect of the history of the museum as media space that remains fairly unexplored.

Fourth, as with many responses to the digital turn, there is in contemporary museum policies a tendency to overstate the gap between old and new media in the museum context. As this chapter has demonstrated, exhibitionary media developed in close relation to a wide array of

cross-media practices in the 19th- and early 20th-century. This involved, among other aspects, different modes of audience participation, the commodification of media production, and the emergence of forms of public sociality that were shaped by the material interaction with various media. In this final respect, the history of exhibitions thus provides material for a historical approach to a series of theoretical and political issues that are often obscured as being media-specific and new.

Notes

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- 1 In media studies more generally there have been many calls in the last decade for “a much longer historical time frame” (Hay & Couldry, 2011, p. 482) in discussions of analytical themes such as media convergence and audience participation (see also Couldry, 2011, pp. 518, 522). As much as I agree with this, it is important that such a historical critique looks further away than TV studies.
- 2 “Anmälan,” *Expositions-Tidningen* 1866, March 17, No. 0; “Tekniskt,” *Expositions-Tidningen* 1866, March 17, No. 0; “Till Expositionstidningens prenumeranter,” *Expositions-Tidningen* 1866, July 7, No. 30.
- 3 Quotes in the author’s translation. For references to the quotes in original, see Ekström, 2010, pp. 198–200. I deal with these statistical displays at length in Ekström, 2008.
- 4 Quotes in the author’s translation. For references to the quotes in original, see Ekström, 2010, pp. 194–196.
- 5 Quote in the author’s translation from an advertisement in the 1909 exhibition journal [*Nyheterna från Konst-industriutställningen*]. For a reference to the quote in original, see Ekström, 2010, p. 196. Similar to the Chicago World’s Fair in 1893, the main exhibition area in Stockholm in 1909 was known as The White City.

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I.2

The museum as media producer

Innovation before the digital age

Peter Pavement

In the museum sector, it is not uncommon to hear a lament on how far “behind” institutions are with their use of media technologies. This refrain among museum professionals (Steele, 2013; Ansty, 2016) is reinforced by sector reports that have focussed on a “gap” in provision (Council of Canadian Academies, 2015; NESTA, 2013). Other discourses exhort museum professionals to grasp the “new” and the “future” (London School of Economics, 2009; American Alliance of Museums, 2013–2016). However, these statements belie the long history of museum media production that began nearly as long ago as museums did themselves. It is a rich history of collaboration with industry and media organisations, paving the way for numerous innovations and reinterpretations of museum “content.” This chapter explores early museum media through a survey of notable museum media experiments and productions drawn from institutions such as the American Museum for Natural History in New York, Stedelijk Museum in Amsterdam, Deutsches Museum in Munich and the University of Cambridge’s Museum of Archaeology and Anthropology. These examples, albeit sited at large, research-intensive institutions, demonstrate that (perhaps in contrast to commonplace misapprehensions that still echo in the sector) museum professionals in actuality have often been very keen to adopt new media technologies as soon as they become available, and even have helped to develop entirely new technologies in order to serve particular communication objectives of their museum. The chapter concludes with a discussion of the bi-directional impact of collaboration with commercial partners and the manner in which museums fulfil or extend their missions through the adoption of novel media forms and formats.

The adoption and development of media technologies

Although not a new media technology by the time museums were publishing, the 18th and 19th centuries saw the costs of book production continue to fall, alongside technological developments that made it easier and faster to produce books. Paper production and typesetting became mechanised, and cloth binding replaced leather (Hughes, 2010; Stevenson, 2010). Museums took advantage of these developments and began to establish publishing operations, some even commencing publication as soon as they opened, such as the Natural History Museum’s (NHM, n.d.) publishing house in 1881.

Early museum publications centred on the collection catalogue, producing books that perhaps served as the only way interested persons could find out what a museum actually held. In-gallery labels could be hard to read, cryptic and sometimes absent altogether (Haskell, 2000), so catalogues acted as gallery guides for museum visitors. As the collections expanded, so the publications became more varied and specialised, even if they were still essentially catalogues. For example, the British Museum published *Catalogue of hispidae in the collection of the British Museum* by Joseph S. Baly in 1858 to document this one particular form of insect (British Library Catalogue). Writing about these catalogues in the context of art museums, Giles Waterfield classified the publications into “inventory catalogue” – giving the location, artist, title and other simple data about a work, “expository guide” – an enhanced version of the inventory catalogue that also included commentary and was produced in a format portable enough for use in-gallery, and “presentation volume” – a prestigious illustrated edition to act as a “museum on paper” – often used as gifts to visiting dignitaries (Waterfield, 1995) (Figure I.2.1).

Patents for motion-picture cameras began to be granted in the late 1880s and early 1890s, and by the end of the century, cameras were being put to work in the field by anthropologists. Most famously, the availability of cameras (both motion and still), along with wax-cylinder recorders, meant that Alfred Cort Haddon and his colleagues were able to capture images and recordings of music, dance and life in general during the Torres Strait Expedition of 1898. Haddon brought back the expedition’s artefacts and recordings to what is now the University of Cambridge’s Museum of Archaeology and Anthropology (see, for example, Herle & Rouse, 1998). The approximately 300 photographs, phonographic cylinders and

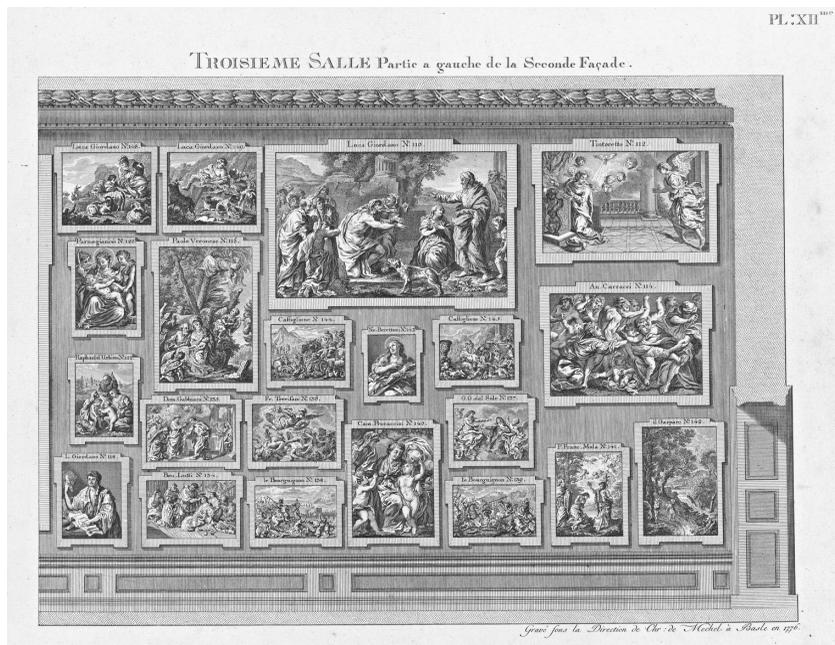


Figure I.2.1 From a “presentation volume” – third room, second facade of the Düsseldorf Gallery. Printer’s proof of Nicolas de Pigage and Christian von Mechel, *La galerie électorale de Dusseldorff*, 1788. Getty Research Institute, image 870670, 2010.

four minutes of film (Edwards, 1997) were captured by Haddon as a means to *record* a disappearing way of life:

It is our bounden duty to record the physical characteristics, the handicrafts, the psychology, ceremonial observances and religious beliefs of vanishing peoples; this also is a work which in many cases can alone be accomplished by the present generation. ... The history of these things once gone can never be recovered. (Haddon, 1897, p. 306)

The media produced is a good example of photography, phonography and film being used as a recording tool in the field by academic researchers, but its significance to museology is the manner in which the media products became as much part of a museum collection as the ethnographic artefacts that had been brought back from the expedition. Following his return, Haddon himself assisted the presentation of exhibits about the Torres Straits Islanders at a multitude of venues, including the British Museum, Glasgow City Museum and Gallery and the Horniman Museum in London, but a century later an exhibition could be presented from the University of Cambridge's Museum of Archaeology and Anthropology collection, which made use of Haddon's media as being representative of the Torres Straits cultures on equal terms as the islanders' artefacts that had been brought back to the United Kingdom (Herle, 2001).

By the turn of the twentieth century, audio recording and playback technology, often going by brand names such as Gramophone, Phonograph or Victrola, was becoming more widespread, attracting the attention (and enthusiasm) of museum practitioners:

Prof. Anton Fritsch, of Prague, has playfully suggested that the day may come when a visitor, standing in front of some interesting specimen, will have simply to drop a coin into a slot connected with a phonograph, and forthwith he will hear a short discourse on the specimen in the very words, nay, even the very voice, of some distinguished professor. ... We already have in the Essex Museum, for the use of the public, a microscope and a spintharoscope. Why not a phonograph? F.W. Rudler, Essex Field Club in 1905. (Fritsch, 1904)

Fritsch's exhortation to embrace technology in order to bring the curatorial voice into the gallery came soon after European museum curators convened for the Mannheim Conference on "Museums as places for popular culture," that was held in 1903 and had been reported on in that year's *Museums Journal* (1903). The very title of the conference indicates that museums were significantly shifting positions, reorienting themselves around the needs of the visitor and seeking to enhance exhibits with the tools available.

In 1908 the American Museum of Natural History (AMNH) put Fritsch's proposal into practice, making use of gramophones to provide commentary as part of its international exhibition about tuberculosis. The exhibition was very successful; an example of the museum as a place of popular culture as per the Mannheim Conference. The show attracted more than 750,000 visitors over the course of a seven-week run, the highest attendance any exhibition at the AMNH had ever attracted (Brown, 2014). A contemporary review stated: "at every stopping-place a talking machine delivered short lectures of warning and advice" (AMNH, 1908; Griffiths, 2008). Meanwhile, audio and visual material became further embedded as part of collecting practice, as recording of music became easier and as cinema and film-making began to be recognised as an art form in itself. For example, in 1907 the Paris Opera House founded what they termed a "Museum

of Phonograph Records” to preserve a collection of recordings of singers of the day. This was, in fact, more of a “time capsule” with storage facilities designed to preserve the records for as long as possible, rather than any attempt to engage with the public or academia (Walsh, 2008).

Museums were also commissioning their own films as the twentieth century gathered pace; the American Museum of Natural History produced its first film in 1912 – a recording of an expedition, by assistant curator Roy Chapman Andrews on a Korean whaling vessel, to collect specimens of whales. Building on the practice established by the Torres Straits expedition, the museum was funding the use of media as a recording function for expeditions that were part of its research activities. Concurrently, film had come to the attention of the education department of the institution. The museum established a film library of its own in 1914 and donated reels, and from 1922 the library was permitted to lend out films off-site to schools. Having developed the production capabilities to document its research work in the field via film, the museum also began to produce movies for entertainment purposes, including *Simba*, the 1928 film by husband-and-wife team Martin and Osa Johnson, which was able to go beyond the walls of the institution as it enjoyed a theatrical release. Another New York institution, the Museum of Modern Art, also established a film library in 1935, which eventually became MoMA’s Department of Film. Within four years of its establishment, the library was admitting audiences of 500 people to its screenings (MOMA, n.d.).

Through these developments, curators progressed from using film as a recording device on expeditions, or as a resource for exhibition in a theatre setting, to using film as a method of enhancing interpretation in the gallery. However, this raised a technical issue – the physical demands of running the same film on a constant loop for many hours a day meant that gallery designers had to develop techniques to make the film itself more robust and reliable.

The AMNH’s response was to install “The Dramagraph,” consisting of a metal box with a screen aperture at the top of one side (Figure I.2.2). Within the box, a projector ran film

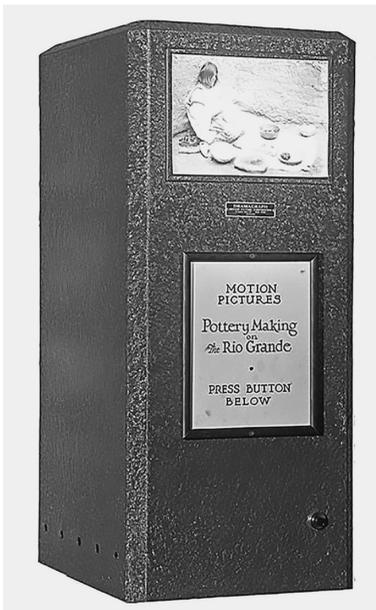


Figure I.2.2 1930s “Dramagraph” film display unit from the American Museum of Natural History. Photograph American Museum of Natural History Library, image 313366, n.d.

that had been mounted onto steel tape to prevent the projector's cogs wearing through the sprockets in the celluloid filmstrip. In the AMNH's photograph archive is an image showing the Dramagraph that was used in the North American Indian Hall to show field footage of "Pottery making on the Rio Grande." We know from an article in the *Museums Journal* in 1931 that the Dramagraph was also used in the Science Museum in London in the 1930s (Griffiths, 2008).

These examples help to illustrate how museums have been keen adopters of novel media technologies, finding ways to make use of new apparatus and media formats in the pursuit of their activities – be that the recording of research material (Haddon's use of film, photography and phonography at Cambridge), the preservation of media as a cultural artefact (Paris Opera House) or the presentation of interpretation to their visitors and other audiences (AMNH). However, as well as being *consumers* of media technologies, museums have also been active participants in the development of innovations in media technology. For example, the planetarium at the Deutsches Museum was one such museum-based research and development success. In 1913, astronomer Max Wolf persuaded Deutsches Museum Director General Oskar von Miller to commission the optical-equipment manufacturer Carl Zeiss to create the technical apparatus for a planetarium. Prior to the commission, the plan was for a "walk-in perforated plate sphere with holes representing the stars and illuminated from the outside," (Deutsches Museum, n.d.a) but a shift in ideas led the originators to consider the use of projection from the inside (Figure I.2.3). Projection was a media technology familiar through a rich tradition from magic lantern slides through to early cinema, but the planetarium would require a new mechanism, featuring multiple lenses, capable of projecting astronomical features individually, timed to a presentation programme. Interrupted by the First World War, the planetarium was not completed until 1923 (Deutsches Museum, n.d.a).

A key element of the planetarium concept was the requirement for a particular kind of venue, a dome, that when its interior was darkened and projected upon, would create a simulation of the night sky. Incidentally, the Munich development also demonstrated innovation through structure of the dome itself – a geodesic frame was constructed, preceding R. Buckminster Fuller's popularisation of the form by several decades (Buckminster Fuller Institute, n.d.). Part theatre, part cinema and always educational, the planetarium created a

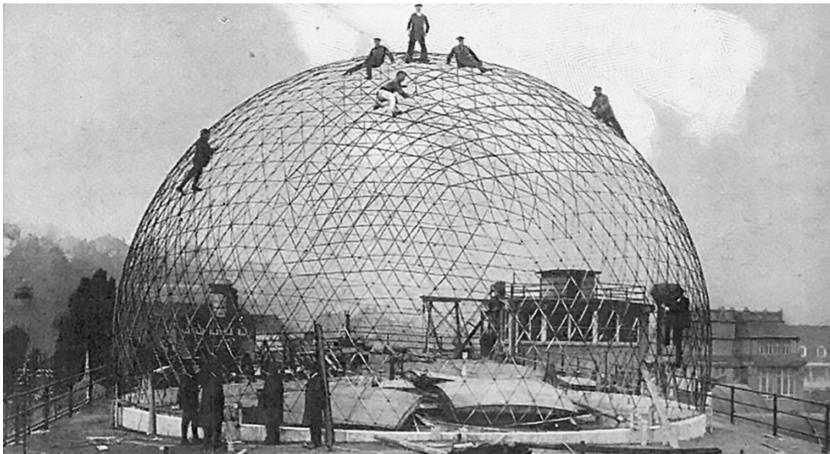


Figure I.2.3 Building an experimental dome at the Carl Zeiss factory. Photograph *Popular Mechanics*, 1929.

space within a space. It was a short step to realise that a planetarium could operate independently of its museum parent, and by 1930 installations had opened in Rome, Moscow, Stockholm, Milan, Hamburg, Vienna and Chicago (Engber, 2014). Technology partner Carl Zeiss also went on to market their projectors to these and other emerging venues with great success and, since then, “Zeiss Projector” (Figure I.2.4) has become a generic term for the machine at the core of a planetarium, even when not manufactured by Carl Zeiss itself (Chartrand, 1973).

Today one of the most pervasive forms of media used for interpretation within museum galleries is the audio guide. This has its roots in an early 1950s experiment by the Stedelijk Museum in the Netherlands. The Dutch electronics giant Philips helped to develop the technology, which in this case used a technique much like an induction loop to broadcast the output of a centralised tape recorder to listening devices carried by museum visitors. The devices essentially functioned as radio receivers, with a single programme broadcast (in Dutch, French, English and German) to all listening visitors at the same time, no doubt causing bottlenecks in the galleries as people tried to view the described item simultaneously (Tallon, 2009) (Figure I.2.5).

In 1954, the ever-pioneering American Museum of Natural History introduced its “Guide-a-Phone” (Figure I.2.6). From that point on, the audio guide increasingly became an established part of (at least major) museum exhibition practice. In 1957, the medium became a service offered by the private sector, with the founding of Acoustiguide, which was launched with a tour of Hyde Park, the home of President Franklin D. Roosevelt (Acoustiguide, n.d.).

In the 1920s and 1930s, museums had been invited to present lectures on broadcast radio stations, one example being the Brooklyn Museum’s Curator in Chief, Daniel M. Fox, who was being heard on WNYC public radio from 1922 (Brooklyn Museum Archives, n.d.). The focal point for both the broadcaster and the museum in this programming seems to have been education. Broadcaster CBS (Columbia Broadcasting System) became an outlet for lectures by the American Museum of Natural History, under the programming strand “the American



Figure I.2.4 Zeiss Mark 1 Projector the Zeiss planetarium installed at the Deutsches Museum. Photograph Deutsches Museum, 1925.

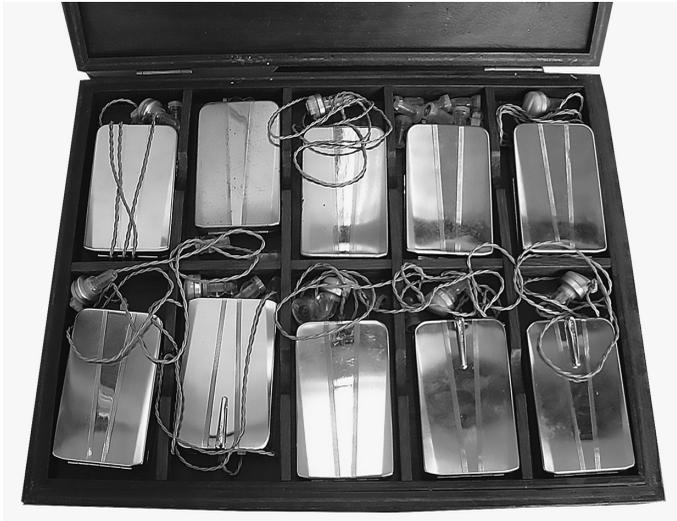


Figure 1.2.5 A case of audio receivers used at the Stedelijk Museum, Amsterdam. Photograph Tallon, 2009.



Figure 1.2.6 The 1954 Guide-a-Phone from the American Museum of Natural History. Photograph American Museum of Natural History Library, image 323699, n.d.

school of the air.” In the *Movie and Radio Guide* listings magazine from the 1940s, a listener breathlessly recounts:

One day young Ken stayed home from school with a bad cold. That bad cold turned out to be the luckiest bit of misfortune that ever happened to me. I bundled him up on the living-room couch, turned on the radio and went out to market. When I came back, I found young Ken listening, fascinated. I sat down and listened, too. What I heard was a vivid and dramatic description of exploration in the Gobi Desert. The speaker, Dr. Roy Chapman

Andrews of the American Museum of Natural History of New York, was recounting one of his fossil-hunting expeditions. I found myself hanging on his words, holding my breath as he described the dangers and thrills of the trip, sighing with relief as the caravan arrived at its destination. When he stopped speaking it was announced that this was part of the American School of the Air course, heard daily except Saturdays and Sundays over the Columbia Broadcasting System. (Badger, 1941)

The big mass-media development in the United States during the two decades following the Second World War was television, and by 1955, 64.5% of United States households had a television, up from just 9% only five years before (Television Bureau of Advertising, 2012). Even in this mass-broadcasting context, where the financial barriers to entry were high, museums were also present and helping to drive innovation – as well as providing content and expertise in partnership with industry players. Most notably, the University of Pennsylvania Museum of Archaeology and Anthropology teamed up with CBS to produce the panel show *What in the World?*, which ran from 1951 to 1965. The museum's own account of the series reads:

By the early 1960s it was one of the oldest programs on television, bringing positive reviews and a steady stream of fan mail to the Museum that continues to this day. On each *What in the World?* program, four or five unidentified objects were presented to a panel of experts who were asked to guess what each piece was, where it came from, how old it was, and how it was used. Objects were selected from storerooms and had never before been seen by the panel. Before the experts guessed, the audience was told what the object was, and, during the course of the program, could watch the thought processes of real – and often fallible! – anthropologists and archaeologists. After they had completed their identification, the moderator, Froelich Rainey, Director of the Museum, told them whether they were right and if not, gave the correct identification. Only four episodes of the show survive. The special guest on one of these was the famous actor (and collector) Vincent Price. (Penn Museum, n.d.a)



Figure 1.2.7 Jacque Lipschitz, Carleton Coon and Vincent Price on *What in the World?* Photograph Penn Museum/CBS, 1955.

Despite the rarefied nature of the programme's subject matter when compared to other TV quiz shows aired in the United States at the time, *What in the World?* was popular enough to be shown at prime time. In his obituary for the show's moderator, Froelich Rainey, John Bockstoce expressed amazement that "a small group of experts could have been even remotely interesting as they sat stiffly under severe studio lights discussing the provenance of obscure artefacts, yet for a vast amount of people they *were* fascinating" (see Bockstoce, 1993, p. 89). *What in the World?* was one of the first media productions to provide viewers with access to people "backstage" at the museum; something that later expanded into a distinct television format (see, for example, the BBC's [British Broadcasting Corporation] 2010 productions *Museum of Life* and *Behind the Scenes at the Museum*) that tapped into audiences' curiosity for how cultural productions are made.

The United Kingdom television audience was also growing in the same decade; in March 1953, slightly over 2 million television licenses were issued; by 1959 the figure had risen to 10 million, 59% of all households (British Film Institute [BFI], n.d.; British Audience Research Board [BARB], n.d.). The television "format" of the *What in the World?* was borrowed by the BBC in 1952, becoming the series *Animal, Vegetable or Mineral?* (Attenborough, 2009), with Mortimer Wheeler at the helm. Wheeler was an archaeologist of some repute and founder of Institute of Archaeology in London. He had been director of the National Museum of Wales, the London Museum (later to become the Museum of London) and Director-General of the Archaeological Survey of India (Piggott, 1977).

A staff member of the production team was David Attenborough, later to become the United Kingdom's most recognised naturalist and broadcaster. As part of his role, his job was to travel to British museums to fetch objects to be featured on *Animal, Vegetable or Mineral?*, finding "it would turn out, of course, that he himself had actually excavated it and that he knew it backwards" (Attenborough, 2009). Attenborough was able to witness first-hand the surprising impact of television exposure of an "educational" topic, when packaged in the right format:

Animal, Vegetable or Mineral? went from success to success. It may come as a surprise to many here that in 1956 Sir Mortimer – an archaeologist not a pop singer – became Television Personality of the Year. And he deserved it. Librarians around the country told us that shelves on which archaeological books had sat untouched for decades were suddenly emptied. Archaeology had become a huge popular success. It was of interest to anyone with any degree of intellectual curiosity. It was a sensation. (Attenborough, 2009, p. 7)

The United States and United Kingdom programmes even came together to host a joint show in 1955, with panellists from both shows examining the same objects, on both sides of the Atlantic. Much more recently, in 2015, the format has revived and updated into the BBC Four series *Quizium* (BBC, n.d.).

In the second half of the 20th century, developments in digital computer technology increased in momentum. There are examples that demonstrate how many museums were keen to experiment with these technologies to help mediate their own messages and content. One such example is a computer-based exhibit at the Evoluon, Eindhoven, that was installed in 1970. Named the *Senster*, this was a four metres tall robotic sculpture that was displayed in a prominent position in the flying saucer-shaped museum. The Evoluon itself was a science museum that opened in 1966, conceived of by Frits Philips as a permanent celebration of the 75th anniversary of the electronics company Philips (evoluon.org, n.d.). The exhibition design for the entire museum was contracted to British designer James Gardner. For the entrance area

of the museum, Gardner commissioned a cybernetic sculpture from artist Edward Ihnatowicz, after Gardner had seen an earlier piece, SAM – Sound Activated Mobile – at the ICA (Institute of Contemporary Art) in London. Resembling a flower set upon a metal spine, SAM used microphones and electronic circuits to react to visitors to the exhibition and follow their movements as they proceeded through the gallery space. Made of steel and aluminium, the Senster expanded the SAM concept to a much larger scale and looked somewhat like a cross between an electricity pylon and a giraffe. It was fitted with microphones and a Doppler movement radar and would swing its “head” and “neck” around to the source of noise or movement in the room. A Philips P9201 (a rebranded Honeywell) computer was employed to interpret the input signals coming from the sensors and modify the movement of the sculpture accordingly. This digitally mediated feedback loop made the Senster appear to behave like a living creature, reacting to its environment and museum visitors, thus demonstrating the connection between sense and response found in the natural world (Gardner, 1993) (Figure I.2.8).

Working with collaborators

To realise the projects described in these examples, museums had to engage with companies involved in media production. Some of this engagement was purely by purchasing equipment and material that was already available, but many of these examples required a far greater degree of collaboration. The Deutsches Museum Planetarium involved Carl Zeiss in such a degree of research and development that the company actually built a mock-up dome on the roof of its factory between 1919 and 1923 in order to test their projector designs (Deutsches Museum, n.d.a). Exhibition designer James Gardner commissioned artist Edward Ihnatowicz to create the Senster for electronics giant Philip’s new Evoluon museum. Ihnatowicz taught himself how to programme the wardrobe-sized computer provided by Philips, but in the end their engineers had to help him in order to master the complex relationships between the Senster’s sensors and

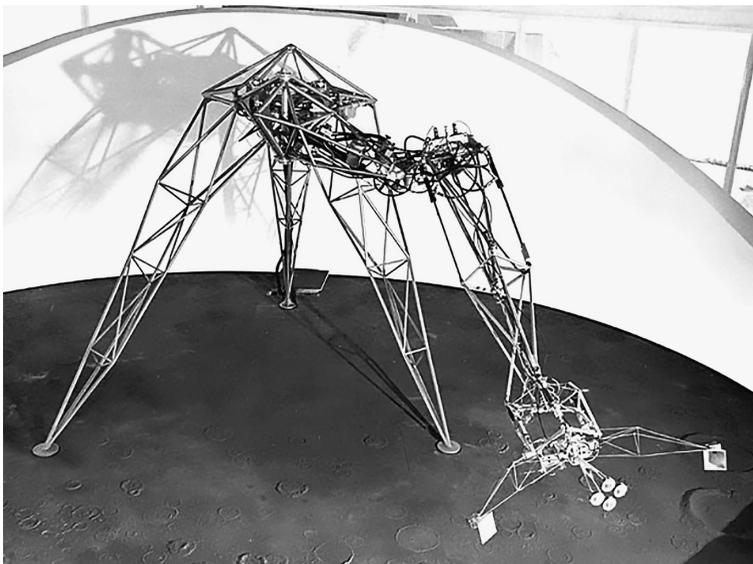


Figure I.2.8 The Senster on its base at the Evoluon Museum. Photograph Philips Archive, 1970.

its movements (Gardner, 1993). The Penn museum became an integral part of a CBS studio production, as *What in the World?* was broadcast over 14 years.

Innovations such as the planetarium or the audio guide became something that could be further exploited outside of the direct relationship between client museum and supplier company. The Carl Zeiss projector became the foundation of hundreds of planetaria worldwide. The 1950s development of the tape-based audio guide at AMNH was followed swiftly by the founding of Acoustiguide in 1957 – a company that has sustained until the present day, providing audio guides for a huge range of museums and other venues around the world (Acoustiguide, n.d.).

Just as companies see products, techniques and methods that can “spin out” from museum-based media activities, they also can begin to see the museum as a market in itself. Ideas, information, proposals and pitches travel back and forth between museum and potential suppliers as relationships become established and formalised. This interplay can be charted through the evolution of the gallery space itself. In the photographs of gallery spaces below (Figure 1.2.9), starting with the “classic” arrangement of cases and objects at the Ashmolean Museum in Oxford, United Kingdom, in 1910 (top left), we can see the colonisation of the space by design and media technologies. The 1950 AMNH gallery (top right) is presented as an interior architectural composition, while the Brooklyn Museum in 1971 (centre left) shows how reproduction technology (typesetting and large format printing) are used to communicate



Figure 1.2.9 A series of images showing the incorporation of design and media technology into museum galleries over time. Photographs (clockwise from top left): Ashmolean Museum, 1910; American Museum of Natural History Library, image 00325921, 1950; National Maritime Museum, 2000; Trustees of the British Museum, 2014; Australian Natural History Museum, 2010; Brooklyn Museum, 1971.

interpretation without reference to objects at all. Large formatting printing is perhaps a little-recognised media technology, but its use in gallery spaces has become widespread and often a bold part of the overall presentation, as demonstrated by this example from the United Kingdom's National Maritime Museum in 2000 (centre right). Finally, the museum gallery has become a locus for more and more screen-based and projection-based presentations, here illustrated by "touch tables" being used at the National Museum of Australia in Canberra (bottom left) and the seascape projected into "Vikings: life and legend" exhibition held at the British Museum in 2014 (bottom right).

In summary, by choosing to utilise media, museums have had an influence on the shape of several media technologies and the activities of many of its commercial providers. However, this is a two-way process, and media technology has shaped the museum in a multitude of ways in return. The innovation process of media experimentation and development is a process of knowledge exchange between museum and supplier, but as technologies and practices become embedded and novel media forms and formats normalised, the museum sector has emerged as a distinct "market" for commercial firms, including formal processes for marketing and sales such as suppliers guides, trade shows and tendering of contracts (Museums Association, n.d.; American Alliance of Museums, n.d.).

Motivations for media innovation by museums

Why do museums go to the trouble of producing these media outputs? To do so involves considerable effort on the part of museum staff – agreements with colleagues, managers and stakeholders must be secured, outside collaborators or suppliers recruited and briefed and above all, a new media technology mastered and its limitations and/or failures managed. To get to grips with a medium involves the learning of both the format and the form – these terms are often used interchangeably in common parlance, but here we mean "form" to be the style and approach to content that will be delivered through a medium, and "format" to be the container that is used for that delivery. The form of the American Museum of Natural History's Dramagraph film was a documentary field recording of pottery making by Native American peoples; the format was a 16mm celluloid film, mounted onto steel tape for longevity (Griffiths, 2008). The form of the *What in the World?* series drew cues from quiz shows but found ways to introduce both scholarship and celebrity into the presentation; its format was a half hour television broadcast on the CBS network (Penn Museum, n.d.a). Sometimes the form and format had to be developed from scratch – the planetarium form was developed into a series of scenes of the night sky, narrated by an expert in astronomy and delivered to a static, seated audience; its format was projection of images into a custom-made dome construction.

Museums do not come to questions of form and format without experience, for almost all museums are highly focussed on their own intrinsic form, the exhibition, and format, the gallery space. A gallery exhibition is presented to the public having been through a process of conceptualisation, design, selection, construction and content creation, all with an audience in mind – it can be argued that in essence it is a form of medium itself (e.g. Kaplan, 2005). It is by creating exhibitions that much of the museum's experience of media production is acquired and developed. However, like all media, there are limitations to the gallery exhibition that constrain presentation, so museums have been motivated to adopt other types of media as they have arisen, to try to ameliorate those limitations. Although they have to learn, or even develop, the form and formats of each new medium that they try, their experience in producing interpretation in a form that suits their primary format is transferrable and reduces barriers to entry. Reviewing the historical examples in this chapter, we can see that the projects fall into the following groupings.

1 *Extending gallery interpretation*

Early museum galleries contained a lot less visible interpretation than those contemporary to us. Labelling was minimal, sometimes non-existent, and was often restricted to hand-written labels attached to objects. In time, written curatorial interpretation found its way into the gallery space in the form of extended captions, wall panels and large format graphics, but again, the finite space of the gallery means that these must be limited in quantity. Additionally, a gallery full of information becomes overwhelming for the visitor. Incorporating different media extends the ability of the gallery to deliver interpretation without using every available space for text.

Several of the examples explored above attempt to provide more interpretation in a finite space. For example, the gramophones used in the American Museum of Natural History (AMNH) International Tuberculosis Exhibition in 1908 and 1909 gave visitors access to hundreds of words by curators and experts, but only gave up the gallery space equivalent to a record player. The development of the audio guide, starting with the Stedelijk Museum's 1952 experiments with radio transmission and the AMNH's Guide-a-Phone audio tape player, greatly expanded the amount of interpretation that could be presented to the visitor, without any spatial cost at all. Since then, audio guides have become a fixture in many museums and visitor attractions, supporting an industry of suppliers and generating income for many venues.

Some media types allowed interpretation to be extended in both depth and time – for example, the Dramagraph-based film at the AMNH connected the artefacts on display with footage of Native Americans making similar objects to those in the gallery. By observing the actions rendered in the Dramagraph's moving pictures, visitors could see how people moved and manipulated tools or materials in the production of pottery – and their understanding of the artefacts enhanced.

2 *Preserving content beyond the life of an exhibition*

Many exhibitions are temporary but impart to the museum great prestige and many opportunities to engage with their audiences, sponsors and other stakeholders. Capturing an exhibit into a media format preserves the content, even if the form must mutate somewhat during “capture.” More significantly, turning an exhibit into a media product also helps to extend the benefits to the museum for a longer time span. Publishing, from princely volume to the coffee table book, has been a key point of alternative dissemination of exhibit content, coupled with the accrual of status and (sometimes) income from sales. More recent methods of lifespan extension include DVDs, “online exhibitions” and dedicated apps.

3 *Developing tools for education*

A highly creative motivation for media production by museums is to be able to explore a topic in much greater depth. In particular, science museums are particularly drawn to this mode of interpretation, where the construction of an item to communicate knowledge is positioned on almost equal terms with the objects from the collection. The Evoluon's Senster, installed in 1970, was commissioned by the museum's exhibition designer in order to demonstrate the feedback loops between senses and behaviour that can be found in the natural world (Gardner, 1993). The robotic sculpture moved according to the digital interpretation of stimuli to its sensors, but it required interpretation in the traditional exhibition forms of text panels and diagrams that were adjacent to the Senster's setting. The Planetarium, however, was a larger-scale project, requiring the construction of a dedicated space, the development of a means to project astronomical

features into that space and the creation of a theatrical programme to interpret what was being shown with a live narrative. In this case, the museum separated itself entirely from collected objects or gallery exhibition forms of communication (labels, panels) and created something that was capable of standing alone. The motivation was to educate the public exclusively by using the knowledge embodied in the museum rather than any of its artefacts.

4 *Going beyond the walls of the museum*

This motivation to communicate and educate, even without reference to collections, springs from the mission espoused by so many museums. The American Museum of Natural History was incorporated with the purpose of “encouraging and developing the study of Natural Science; of advancing the general knowledge of kindred subjects, and to that end of furnishing popular instruction and recreation” (AMNH, 1908). The Deutsches Museum’s present mission is to be “an outstanding place for communicating scientific and technical knowledge and for a constructive dialogue between science and society” (Deutsches Museum, n.d.b). The University of Pennsylvania Museum of Archaeology and Anthropology states that it was founded in 1887 to “bring together under one roof artefacts that evidenced the development and history of humanity from antiquity to the present” and then goes on to declare that it exists to “transform understanding of the human experience” (Penn Museum, n.d.b).

With these lofty goals, it is no great surprise that the museums saw no barrier to their activities at the extent of their physical domain – namely their own buildings. The AMNH was happy to contribute programmes to the *American School of the Air* and the Penn Museum to make such a large commitment of their time and resources to the CBS panel show *What in The World?* over its 14-year run. The Senster and the Planetarium were developed purely to impart knowledge without reference to objects, and the radio and television shows were developed to disseminate knowledge without the need for a physical museum. Both approaches continued to fulfil the mission of their institutions, even though form and format were a world away from the gallery exhibition.

Conclusion

When examining the relationship between museums and media, there is a danger that we only see the latest technologies, practices and ideas, constraining our focus to just the dominant media forms of the present day. However, museums have been engaged with media production from their beginning and have continually demonstrated a willingness to engage with new technologies and new forms and formats of media. This kind of innovation was often expensive, demanding of resources, and required the forging of partnerships with commercial and other providers. Creative strategies included using media to deepen access to collections, to extend the life of exhibition content and to impart the embodied knowledge of the museum. They also used media technologies to reach new and more distant audiences by going “beyond the walls” of the museum. These activities were almost always risky for the institution, yet museums were prepared to shoulder that risk in order to further their fundamental reason for existence – their mission.

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I.3

Revisiting the utopian promise of interpretive media

An autoethnographic analysis drawn from art museums, 1991–2017

Peter Samis

In his 2013 essay “The end of the beginning: Normativity in the postdigital museum,” Ross Parry (2013) posits that digital technologies have moved from the periphery to the centre of museums’ institutional awareness and identity, and from siloed departments to pervasive presence, becoming, as museum digital strategist John Stack (2013) has put it, a “dimension of everything” that happens. What has been gained and lost in this transition? The journey from periphery to centre has arguably brought with it a transition from a space of freedom, experimentation and utopian futures to confinement within present-day museum structures and strictures. This chapter proposes that the transition reveals the fundamentally conservative nature of most – though by no means all – art museums as they balk at the opportunities for greater interpretive inclusion offered by new technologies.

The chapter is also, admittedly, a personal and collective memoir – an “autoethnographic survey” written by a United States-based, if internationally involved, museum practitioner. I will draw from my own experiences and those of my peers in charting an account of the evolution of digital media over the years 1991–2017, often using notes and papers from key conferences to reconstitute a core sample of opportunities and constraints that have characterised this period. Many of those conferences took place in the United States or the United Kingdom and were conducted in English; my subjective selection by no means represents an exhaustive audit of those meetings, much less of global activity during this period. That said, colleagues from many countries participated and shared their experiences, year by year; I hope their examples remain instructive today and will continue to provide insights in the future.

This chapter focuses specifically on audience, museum interpretation and visitor meaning-making in art museums/galleries and provides historical context for the rise of digital interpretive media. It will reveal and problematise the tension between art museums’ desire to reach new publics unschooled in their collections and their imposition of restrictions on how such meaningful connections may be achieved. The account represents my own personal journey in museum work, culminating in the research that led to a recent book on

visitor-centred museums, which treats both analogue and digital interpretive strategies (Samis & Michaelson, 2017).

In describing what he dubs the “analytic autoethnographic method,” Anderson states:

the researcher is (1) a full member in the research group or setting, (2) visible as such a member in published texts, and (3) committed to developing theoretical understandings of broader social phenomena. (Anderson, 2006, p. 373)

In my case, all three attributes apply. I started out as a docent at the San Francisco Museum of Modern Art (SFMOMA) in the early 1980s and quickly saw how little background many visitors to modern art galleries brought to their encounters with the objects. Although through graduate and professional study my own knowledge grew apace, I noted that our visitors’ did not; after all, they were engaged in other pursuits. My immersion in museum processes and the deep context behind the artworks grew exponentially when I was hired onto SFMOMA’s curatorial team in 1988, but it made the chasm between what we knew and what we shared with the public all the more flagrant. I came to see what O’Doherty (1986) dubbed the “white cube” of the modern art gallery as a withholding space, one that deprived uninitiated viewers of the context that could help them build meaningful connections among the works on view and between those works and their own lives.

At the same time, in parallel, the potential of digital technologies was growing. In 1986 I had won an Apple award for the first desktop-published museum labels and catalogue – an achievement that seems ridiculously rudimentary in hindsight, but that nonetheless represented an application of cutting-edge digital technologies of the time in service to visitor experience. It took another five years before desktop computers were even capable of displaying colour images, animations and postage stamp-sized digital videos. In an analogue world dominated by television in its proliferating cable variants, newspapers, magazines, films and books, computers were still hamstrung in their ability to breathe with the pulse of life. But in the decades to come, successive generations of desktop machines would make an unprecedented array of visitor-focussed interpretive solutions available in art museums.

In 1990, Apple and IBM had begun producing the first multimedia-capable desktop computers. The Voyager Company, a Santa Monica, California-based publisher of videodiscs, came out with a potent paperback: *Technologies for the 21st century: On multimedia* (Greenberger, 1990). The book distilled the dialogues from a conference of computer industry leaders and academics that had taken place at UCLA. It promised great things ahead: the confluence of “multimedia,” uniting the various disparate analogue media forms through their translation into a common computer language of ones and zeros. All media forms would be equally accessible for research and use, navigable through exciting exploratory interfaces conceived by ingenious designers, creating new modes of access. In the words of then-Apple CEO John Sculley, who was one of the conference participants:

This new medium will not just be text or graphics, but a combination of text, graphics, sound, and motion – with the realism of television as part of it. ... Personal computing has to do with building models. Television has to do with passive watching. With interactive media, the basic purpose is going to be understanding. (As cited in Greenberger, 1990, p. 44)

Not to be outdone, IBM’s vice president and general manager of multimedia, Lucie J. Fjelstad, suggested that “people from the world of art, books, magazines, and public welfare must change

their attitude about computer applications” (as cited in Greenberger, 1990, p. 39) and get onboard; with Sculley concluding:

The biggest challenge we have is to move the technology out of the hands of technologists. They will make a mess of it. We’ve got to put it into the hands of the artists. If the group here can do something to bring this about, then we will indeed have a chance to change the world a little. (As cited in Greenberger, 1990, p. 49)

My own experience on reading the book was to imagine myriad ways in which these new tools could enable museums to restore the context that the white cube of the gallery stripped away. I quickly learned I was not alone in being inspired by the potential of these new technologies and the immersive, experiential learning they promised.

ICHIM 1991: The *Micro Gallery* and other early prototypes

The first convening of a museum-based multimedia community of practice had a cumbersome title and an unlikely location: the International Conference on Hypermedia and Interactivity in Museums (ICHIM) in Pittsburgh, Pennsylvania. That’s where an eclectic international group of polymaths came together from museums, research labs, multimedia start-ups and academe in October 1991. None of us had been trained for this new technology, but we all shared an enthusiasm for what we intuited would be a fundamentally new way of unifying media and communicating knowledge.

The star of that conference was unquestionably the National Gallery of London’s brand new *Micro Gallery* – one of the first educational interactive multimedia installations in an art museum of lasting impact. It was a cross between a library and a “learning laboratory”: a softly lit, carpeted room in the brand-new Sainsbury Wing containing 12 ultra-high resolution (for the time) 20-inch touchscreens (Figure I.3.1). These were powered by standalone Macintosh



Figure I.3.1 The Sainsbury Wing Micro Gallery, opened 1991, at the National Gallery, London. Courtesy the National Gallery, London.

IIfx workstations, which were hidden from view, running a codebase written in C++. Visitors, of course, didn't need to know any of that.

They could simply sit down before a touchscreen and access any of the paintings in the Gallery's collection via an appealingly designed interface displaying images and texts in a painstakingly anti-aliased type free of "jaggies" (the inelegant pixelated letter forms typical of the time). Developed on what at the time seemed an unlimited budget (a £1 million sponsorship from American Express), the Micro Gallery was described as the equivalent of a 4,500-page book: it contained no less than 12,000 colour illustrations, reproduced in a 256-colour palette painstakingly optimised for the hues of European oil pigments. For ordinary users it wasn't so much the scope of the undertaking or the 20 person-years of effort that had been compressed into its two-and-a-half years of development that were so impressive, but rather the elegant clarity of its design and the full-screen picture-book-like focus that explored one artwork at a time. A few paintings were treated in great depth, meriting a sequence of eight or 12 screens: this was clearly an era where a deep dive was still prized over skimming. Holbein's *Ambassadors* famously featured an animation in which the mysterious anamorphic form stretching across the base of the painting (Figure I.3.2) was seen to resolve as a perfect skull when approached from the side, as early viewers would have experienced it when walking up the stairway along which the painting originally hung. The simple act of joining motion animation to text and image demonstrated the potential of this new mode of publishing.

The virtues of newfound hypermedia navigation were also in evidence, both through clickable links to short pop-up glossary definitions and theme screens that assembled artworks related by place, time or picture-type. These features, along with access to laser printers on which, with purchase of an inexpensive debit card, visitors could print their favourite pages and a map of the Gallery featuring their personal itinerary of chosen destination works, made the Micro Gallery

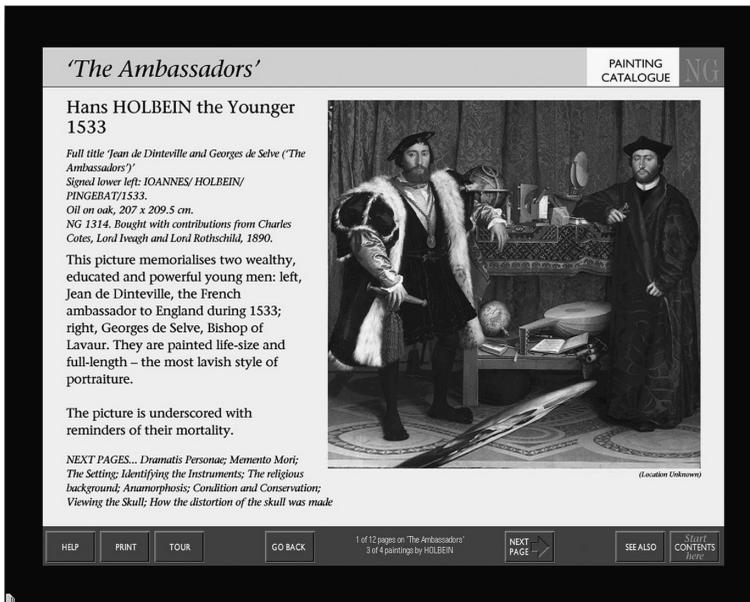


Figure I.3.2 The first in a series of 12 screens devoted to Hans Holbein's painting, *The ambassadors*, the Micro Gallery, the National Gallery, London.

a worthy precursor to such later avatars as the Cleveland Museum of Art's 2013 Collection Wall and accompanying ArtLens app (Collection Wall, 2014).

Other early visionary interpretive projects designed to engage visitors and enhance their museum experience included the *European Museum Network* (EMN), presented at the conference by Achim Lipp of Germany, and the Museum Education Consortium's *Museum visitor's prototype*, presented by Susan Stedman and Kathleen Wilson. The EMN, a project sponsored by the European Union, linked users at computer stations in eight museums in six countries through an early broadband cable network, years before World Wide Web browsers or the advent of social media (Lipp, 1994). Each museum hosted a station that combined its own collection objects with objects from the other participating museums. Multimedia assets were included, and a set of keywords operated as go-betweens to enable easy and serendipitous discovery across the 800 objects in the federated collection. Visitors were asked to make their own collections based on the objects they found; the sole pre-condition for inclusion was to write a few lines about your submission. "Ask the public to tell us what it's about," said Lipp; "not just the curators" (Lipp as cited in Samis, 1991). The populist force of crowdsourcing had already emerged as an idea.

The Museum Education Consortium (MEC) was a collaborative effort of education directors from seven leading encyclopaedic and modern art museums in the United States (Stedman, 1991). Working together with educational multimedia designers, they produced a design prototype based on Monet's *Water lilies* painting in the Museum of Modern Art's collection to test a variety of ideas and approaches to discovery-based, interactive learning. Visitor responses clearly conveyed both the engagement potential and the novelty of this experience, which departed from standard expectations of a museum activity (K. Wilson, 1991).

From the beginning, there was an acute awareness of the issues raised by the presence of electronic screens in proximity to museum collections – and the question of whether the former might pose an "existential threat" to the latter. American media producer and scholar Selma Thomas (1991) emphasised:

The monitor exists in a real room, surrounded by real objects. ... It has to hold its own, not compete; it has to acknowledge the links between what is happening off-screen and what is happening on-screen ... the visual grammar that we share with the exhibition. (Thomas, 1991, pp. 164, 166)

Already in this first conference on public-facing use of digital technologies in museums, we see vectors that carry through to today: the interpretive mandate to restore context and help model viewing approaches through the use of discovery-based learning; two-way communication between museums and their audiences about objects on view; and an acknowledgment of the need for gallery designs that account for the seamless integration of interpretive technologies with museum objects and analogue resources – a blended approach.

We shall see that while all three of these practices have become widely accepted in history and science museums, they continue to pose challenges for art museums.

Excellence and equity and its applications

Many of these issues were also present in the American Association of Museum's contemporaneous policy statement, *Excellence and equity: Education and the public dimension of museums* (American Association of Museums [AAM], 1992/2008). That report posited that "museums must combine a tradition of intellectual rigor with the inclusion of a broader spectrum of our diverse society" (AAM, 1992/2008, p. 7). Echoing the philosophy that drove Lipp's European

Museum Network, it also recommended the exploration of new communication technologies and specifically called for developing tools that reflect “the different learning styles visitors bring to museums” (AAM, 1992/2008, p. 19), in recognition of psychologist Howard Gardner’s seminal work on multiple intelligence theory (Gardner, 1983). Years before the emergence of the World Wide Web as a platform, the report promoted the use of emerging electronic media to extend museums’ educational missions beyond their walls and the development of in-house “learning laboratories” to research, evaluate and communicate insights gleaned about museum objects. Finally, the authors suggested that museums dare to present “a variety of cultural perspectives” and not shy away from “informed but differing viewpoints” (p. 20). The newly emergent forms of interactive multimedia appeared ideally suited to delivering on all of these mandates.

A less well known but equally prescient document from this period was Kent Lydecker’s keynote address, titled “Impact and implications of multimedia,” at the MDA/ICHIM Conference in Cambridge, the following year (Lydecker, 1993). Lydecker, Associate Director for Education at The Metropolitan Museum of Art at the time, had early on produced slide-and-sound presentations at Washington’s National Gallery of Art; he had moved on to lead the Education Department at the Art Institute of Chicago, in which capacity he had participated in the first art museum visitor focus groups (Getty, 1991), the MEC *Museum visitor’s prototype* and a laserdisc project with The Voyager Company. Before an international audience of museum documentation professionals, scholars, educators, and multimedia innovators assembled at Cambridge University in the United Kingdom, he attempted to summarise the trends he saw emerging in the museum media landscape.

“The advent of interactive multimedia is changing the nature of the physical and conceptual environment encountered by visitors who come to museums,” Lydecker said (Lydecker, 1993, p. 290). He went on to enumerate points of impact. Regarding exhibition scenography, he echoed Selma Thomas’s comments two years earlier: “Placing interactive multimedia in museums requires the attentions of architects or space planners” (Lydecker, 1993, p. 291). In other words, you don’t just place a computer station in a gallery and hope for the best. Successful design integration within the exhibition space is key. As for museum voice, without naming it, he signalled the rise of the controversial term Edutainment: “We want our educational work to delight as well as instruct” (Lydecker, 1993, p. 291). Cognizant of the fact that museum visitors are informal learners coming to museums as a leisure activity, he wrote off a more strictly pedagogical approach.

Lydecker also anticipated digital impacts on cross-departmental dynamics within the museum. He described the following roles in the development of a complex interactive multimedia project: researchers and writers; project management staff; software staff; graphic designers; human factors specialists; curators and educators; photographers; creative directors; marketing people; and development/fundraising staff. Acknowledging that such an interdisciplinary collaboration represented an extraordinary commitment that far exceeded most museums’ budgets or priorities, he observed that inspiring vision – and corresponding funding – were required to initiate projects on this scale.

Finally, Lydecker commented on different types of museums’ varying levels of willingness to incorporate digital technologies: “These phenomena are even more pronounced in science, history, or natural history museums that are making a major investment in enlivening their displays” (Lydecker, 1993, p. 291). At the time, there was reason to believe that art museums would soon follow suit; we shall see that most did not. Finally, he suggested that generational succession would eventually ensure that the opportunities presented by these new digital tools would be realised.

Barriers to entry: Technological and editorial

There were major technological hurdles facing early multimedia programs, including operating system limitations and hardware that we would certainly deem primitive today. Even so, project leaders often stated that an equal or greater challenge lay on the editorial side: research, development and crafting of meaningful content for non-specialist viewers.

At the same 1993 MDA/ICHIM conference, after offering a detailed summary of the Minneapolis Institute of Art's own ambitious new in-gallery multimedia programs, Scott Sayre, head of their Interactive Media Group, pointed out that:

The ever expanding capabilities of interactive media make it easy to become overly concerned with its technical aspects. However, the MIA's experiences demonstrate that the development of appropriate, effective content is still the most difficult part of the process. (Sayre, 1993, p. 51)

Two years later, Alex Morrison of Cognitive Applications (now CogApp), pioneer developers of three successive Micro Galleries in London, San Diego and Washington, DC, expressed a similar sentiment:

There has consistently been more work, and more different work on this front than was expected. Effective text for a general audience, reading from a screen, has to be short, accurate, visually oriented, and make good use of cross-references and glossary pop-ups. Scholars who can master art history and also turn out this kind of writing are a rare and valuable breed. (Morrison, 1995, p. 15)

Prior to this time, gallery interpretation partook more of the oral tradition than the written: it was typically assigned to docent volunteers or staff gallery educators. Published collection catalogues, meanwhile, remained the province of scholars and often limited their data to medium, dimensions, provenance, exhibition history and bibliography on the one hand, and scholarly academic essays on the other – even if museums counted on visitors to buy them for their illustrations. More akin to brochures for special exhibitions, digital media arose in the gap between those two voices, forging a popularising polysemic language born of the interdependence of word, image and video – one that could be presented in discovery-based, interactive formats.

Database versus narrative

The lineage of the two conferences that came together at ICHIM/MCN '95 was telling in this regard: Museum Computer Network (MCN) had traditionally focused on automation of back-of-house operations, including administration and fundraising, registration and accounting, while ICHIM was devoted to the emerging field of interactive multimedia tools applied to exhibits, research and education (Cox, 1991).

In the mid-1990s, for many this gap did not present a problem. Just as art was presented in galleries with little commentary, hewing to the widespread belief that mere exposure to august works would benefit the public, many museum and computer professionals felt that the mere act of digitising collections and making them available to the public would be a boon to outsiders. Not surprisingly, work on collection databases was one of the dominant topics at both conferences. At the 1994 MCN/CIDOC conference, a census of collection inventory projects on five continents – Africa, Latin America, North America, Europe and Southeast Asia/the Pacific – was

presented, each with its own set of working groups, along with five cataloguing standards. That list would grow dramatically with the advent of the World Wide Web.

But at the same conference, voices were raised to complicate this picture of museum data as a good in and of itself. In a seminal presentation attuned to the nuances and idiosyncrasies of contemporary art, Harald Kraemer, a German art historian and collections specialist, said:

When we look at artworks through electronic media ... who is responsible for the weighting of information? What can be asked, what is actually asked? (Kraemer, 1994, p. 1)

Interactive multimedia technology would enable a visitor to obtain comprehensive information on the creation, occasion, materialization, function and original presentation of an individual work, as well as reactions and documentations, the work set against the artist's background, his/her bio[graphical] data, artistic environment, market, society, cultural life in general and scientific [i.e., art historical] discourse. (Kraemer, 1994, p. 5)

Similarly, Bernadette Goldstein, then director of new technologies at the French National Museums, confessed: "Starting with a database, I can't interest the public" (Goldstein, 1994). Like Alex Morrison, she anticipated the creation of a new role, cultural interpreter (*médiateur culturel*), what we might now call an interpretive media specialist: someone with a leg in both worlds, at home with both the broad public and the art world and versed in the capabilities of new media technologies. Later, working with Canadian researchers, she elaborated:

The public, whether museum educators, curators, computer technicians or young people, wants the emotion and subjectivity of the writer to be combined with a scholarly grasp of the field. This observation takes us some distance from documentary and scientific databases. (Boily, de Guise, & Goldstein, 1996, p. 60)

Writing from India coincident with the widespread emergence of the World Wide Web, science technologist G. S. Rautela flagged the pitfalls of assuming that museums were meeting visitor needs merely by compiling database catalogues without making their information "useful and meaningful" to their audiences: "We must also not forget that the information age is really about people communicating with people" (Rautela, 1996, p. 32).

So while the imperatives of computers and their adoption by museums drove toward databases, the imperatives of audiences drove toward storytelling and immersive experience.

Early examples of museum multimedia storytelling

Some art museums, too, were at the forefront of multimedia storytelling. In the mid-1980s, educator Douglas Worts had already begun developing activities that meshed analogue and digital interpretation in the galleries of Toronto's Art Gallery of Ontario, with the aim of enriching personal meaning-making by visitors. Over time, these resources came to include: physical photo albums reproducing historic pictures and ephemera; Macintosh computers with games, reference information and space for visitor comments; integrated visible storage for sketches by the artists on view; audio "digital illuminators"; and an immersive sound experiment in guided viewing. Extensive visitor observation and evaluations were conducted at each step of the way, proving that length of engagement with the actual artworks was extended when supplementary resources provided context for viewing. The changing activities eventually grew to include "Share Your Reaction" cards – an opportunity for visitors to participate by writing or drawing

their personal responses to the artworks with pencil and paper supplied, and a desk-like writing ledge right in front of the art (Worts, 1989, 1990, 1996).

One of the benefits of air travel is high-altitude perspective. In 1990 the Minneapolis Institute of Art's director Evan Maurer was prompted by a "vision on a plane" to imagine the transformative potential of interactive multimedia on visitor experience throughout the galleries of his museum. His vision was contagious: he succeeded in securing an extraordinary multi-year grant from General Mills of over a million dollars and the Minneapolis Institute of Arts founded the first department of New Media in an American art museum. The MIA Interactive Media Group, under the leadership of Scott Sayre, began producing a series of 17 gallery-based digital interactives – typically called "kiosks" at the time – that were placed in or adjacent to the galleries, treating every collection area and offering visitors just-in-time contextual information about the objects on display nearby (Figure I.3.3).

The question of how new technologies could encourage meaning-making across a wide range of visitors surfaced again and again in these conferences. At ICHIM '97 in Paris, Stanford professor Larry Friedlander (1997) cautioned that for this transition to take place, museums would need to build an adequate tech support infrastructure, and that among the risks would be a potential loss of museum authority. Friedlander suggested a range of scenographies, no doubt inspired by his own training in theatre and dance:

- Environmental
- Kinaesthetic – whole body
- Different presentation styles: playful, informal
- Small and large scale

Then he raised a series of non-trivial questions: "How to introduce technology into traditional spaces?" "How to make room for technology in already crowded galleries?" This line of inquiry has turned out to be a wicked problem for art museums – one for which there is no ready



Figure I.3.3 Minneapolis Institute of Arts: Gallery view ca. 1995 with artworks and interactive "kiosk." Photograph Minneapolis Institute of Art.

solution that satisfies the requirements of curators, audiences and the museum staff charged with meeting visitors “where they are.”

The role of museum visitors as active agents was emphasised by others as well. Xavier Perrot (1995), whose doctoral dissertation on the application of new technologies to museums was the first in France on the subject, enumerated three intellectual modes of multimedia, of which only one was strictly didactic:

- Access to documentation
- Immersive narrativity
- Simulation

And at the first Museums and the Web (MW) conference, held in Los Angeles in 1997 (Samis, 1997), cognitive psychologist and media maker Slavko Milekic (1997) emphasised the potential of computers as a creative space, departing from the standard information interface aesthetic of either databases or narratives by giving children a touchscreen and tools for direct manipulation – even alteration – of images.

The idea of using interactive technologies to open up what was seen as an austere, even disciplinary, model of visitor engagement in museums’ physical spaces found academic support at MW as well. Informed by Tony Bennett’s New Museology movement, social scientist Terry Hemmings and members of his team from Manchester Metropolitan University collaborated with museum practitioners in a return to first premises, asking “what a museum institution is” and “what a museum visit is” for (Hemmings et al., 1997). “What are we identifying when we talk of the visitor?” Hemmings asked, pointing out that visitors, too, were sites of contested meaning. Andrea Witcomb (1997) asked if museums were simply intent on “constructing narratives of legitimacy ... using objects to support an evolutionary narrative” and cited George Brown Goode’s characterisation of traditional museology as “a bunch of labels illustrated by specimens.” Finally, Peter Walsh (1997) from the Davis Art Museum at Wellesley College suggested that the emergent World Wide Web might offer “a space where we can contest museums’ institutional hegemony of privilege, entitlement, and inevitability.”

This emphasis on visitors’ own agency and parallel questioning of museums’ traditional pose of authority led to new freedoms and a certain irreverence of tone in the next wave of innovations, implicitly anticipating the arrival of “Web 2.0” and today’s social Web.

Intelligent spaces: *Points of departure* at SFMOMA

In art museums, as the capacities and freedoms afforded by technology expanded, the impulse to open up and experiment with the scenography of museum space followed – to a point. In 2001, at the penultimate moment of the Dot-Com Boom, with the encouragement of its techno-ophile director, David Ross, the San Francisco Museum of Modern Art opened two companion exhibitions, *010101: Art in technological times* and *Points of departure: Connecting with contemporary art*. The first presented an array of artists whose work utilised digital processes; the second was a show thematically organised around common visitor questions, conceived as a “prototype of the museum of the future” in which technological affordances (in this case, partially developed in collaboration with the MIT Media Lab) helped people connect with unfamiliar artworks. Innovations included the first use of brand new multimedia Personal Digital Assistants (PDAs), precursors to today’s smartphones. These allowed visitors to hold videos of artists in the palms of their hands as they stood before those artists’ works. The exhibition also included

“smart tables” – actually simply large upturned touchscreens, one per gallery – in furniture that blended with the gallery finishes (Figure I.3.4).

The smart tables were themed to the artworks in each gallery and comprised two or three levels of content:

- 1 A short looping video montage of curators informally discussing the works surrounding the viewer – a sort of “Curator-in-a-Box” with personality.
- 2 The second level featured short videos of artists whose works were on view in that particular gallery – often seen at work, revealing their creative process.
- 3 Some galleries featured as a third level an interactive touchscreen activity inviting visitors to experiment with the processes at play in one or more of the works around them.

All three “levels” were immediately available on the interface; each was timed to last two minutes or less. Deeper-dive, seated story stations were available at the periphery of the galleries; they displayed relevant segments from the multimedia program *Making sense of modern art*. Finally, in the rear of the exhibition, a *Make your own gallery* simulation game invited visitors to re-arrange the artworks in the show according to their own personal interests. A set of in-depth evaluations revealed that the thematic organisation of the artworks, the informality of the voices – both curatorial and artistic – and ubiquitous availability of technological mediation, if desired, helped make the show a success with visitors. It confirmed the Art Gallery of Ontario’s finding that availability of relevant context leads to a net increase in visitor dwell time with the art itself. That said, by the time the exhibition ended, the Dot-Com Bubble had burst, the director had moved on and the curtain abruptly fell on further experimentation of this kind (Samis, 2001; San Francisco Museum of Modern Art, 2001).

Points of departure was presented at the ICHIM 2001 Conference in Milan. A confluence of theoretical models seemed to be converging to establish a foundation for visitor-centred practice: these included psychologist Howard Gardner’s multiple intelligence theory, which called



Figure I.3.4 Visitor accesses a “smart table” in *Points of departure* exhibition at SFMOMA.

for a variety of “entry points” gauged to different cognitive sensibilities (Gardner, 1983); Mihalyi Csikszentmihalyi’s research on “flow” experiences, which enable people to scaffold gracefully to greater degrees of knowledge and appreciation (Csikszentmihalyi, 1990); and the Nielsen-Norman Group’s interaction design guidelines (Norman, 1994, 1999; Nielsen, 2000) which called for computer interfaces that suited human habits rather than requiring humans to adapt to computers.

Taken together, these frameworks led to an optimism that we were re-inventing museum exhibitions in ways conducive to optimal visitor meaning-making in the gallery. For example, Luigina Ciolfi from the Interactive Design Centre at the University of Limerick, consulting on a project for the National Museum of Ireland, emphasised the potential of moving beyond interface design to integrate the whole museum as an interactive space, with digital and analogue affordances built in in unobtrusive but responsive ways. While emphasising the importance of environmental factors in supporting visitors, she was in some ways anticipating The Internet of Things (Ciolfi, Bannon, & Fernström, 2001).

The grail of location-sensing: “Meeting people where they are” shifts to the mobile space

At the turn of the millennium, the idea of meeting people where they are – geo-localisation of “just-in-time learning” – was really taking hold. In history and science museums, the integration of new media among the exhibitry with an eye to maximising visitor meaning-making was becoming commonplace, reinforced by an increasingly robust visitor studies literature. But in most art gallery spaces, interest in visitor studies and just-in-time media resources to contextualise the collections remained the exception rather than the rule. A kind of aesthetic apartheid reigned, continuing to interdict anything more exotic than a wall label.

In this atmosphere, the one permitted exception was audio tours: since the widespread adoption of cassette recorders for the first blockbusters of the 1970s (Tallon, 2008), they had become museums’ interpretive technology of choice – theoretically the ideal solution, as they left no blemish on the otherwise pristine galleries but passed through with the visitors who carried them, like those invisible spectres in long exposure 19th-century photographs. Indeed, many conference contributions from the past 20 years speak to the constantly changing form factors, distribution models and hardware and software challenges that accompanied the shift from the Walkman (analogue and linear) to CD-players (digital and randomly accessed) to MP3 players, and thence to iPods and mobile phones (Schwarzer, 2001; Proctor & Tellis, 2003; Tellis, 2004; Petrie & Tallon, 2010; Proctor, 2011). Others also delve into the editorial side: creative storytelling techniques and experiments with voice and tone (G. Wilson, 2004; Samis & Pau, 2006; Van Loon et al., 2007; Walker, 2007; Pau, 2017).

In the first decade of the 2000s, literally millions of dollars were spent on the elusive grail of mobile geo-localisation, a goal that proved to be ripe in theory but not in practice. First the Smithsonian Institution, and then the Getty Museum, committed to ambitious indoor geo-locative projects that proved beyond the capacity of the technologies of the time. In 2004, the Smithsonian put out to bid a unified contract that would cover six different museums on Washington’s National Mall: the *SIGuide*. The promised functionality was ambitious: visitors would be able to take pre-set tours or customised tours that matched their interests; view multimedia content, such as documents, photos and audio and video clips; locate and be directed to exhibits, landmarks or other members of their group; communicate with someone or everyone in their group; create a schedule of activities and receive reminders when events are due to begin; save content, messages, sketches and notes to a scrapbook they could subsequently access

via the Web; and much more (Edson, 2008). In this case, the financial onus was on the “winning” vendor – if they succeeded, the logic went, the ample reward would also be theirs in the form of a revenue-share in proceeds from device rentals, as well as the opportunity to extend the system further to other Smithsonian museums. Unfortunately, the mismatch between technology, budget and the times was fatal: the vendor went bankrupt, and the project could not be completed.

In the case of The Getty, the museum was willing to invest from its own coffers, so the pockets were commensurately deeper. Work on the project began in earnest in 2002, and the mobile platform kept shifting as new generations of handheld hardware were introduced, each with greater speed and capacity, but also freighted with a changing operating system and feature set. The goal was for gallery visitors to be able to hold a PDA provided by the museum on which they would receive push notifications of content regarding the artworks immediately in their view. The application interface visitors saw would be overlaid onto data drawn directly from the museum’s collections management system, with location calculated by Wi-Fi triangulation. Audio and video would be provided by two more servers, all piped through the same network. No less than five internal departments and as many separate vendors were involved in realising this vision, which proved complex and unwieldy. On launch in 2005, Wi-Fi lag times and performance anomalies taxed visitors’ patience, and the entire project, which had dragged on for four years and cost untold millions of dollars, was quietly scrapped before year’s end (Honeysett, 2008).

The Gartner Hype Curve

Museums were not alone in being seduced by the siren song of cutting-edge technologies. The phenomenon has been succinctly summarised by the technology consulting firm, Gartner, in its famous “Hype Curve” (Figure I.3.5).

In the immortal words of futurist Paul Saffo (1997), “Never mistake a clear view for a short distance.” The time elapsed between a “Technology trigger” – a vivid description of how a new digital innovation will work and change our lives – and its “Plateau of productivity” – when the technology actually becomes standardised, bug-free and functional – can be 15 years or longer. The makers of *SIGuide* and *GettyGuide* had opted in prematurely, at the “Peak of inflated expectations” for Wi-Fi location-sensing, and both taken a bath in the “Trough of disillusionment.” Audio tour companies, in the meantime, had a business model that compelled them to assess the

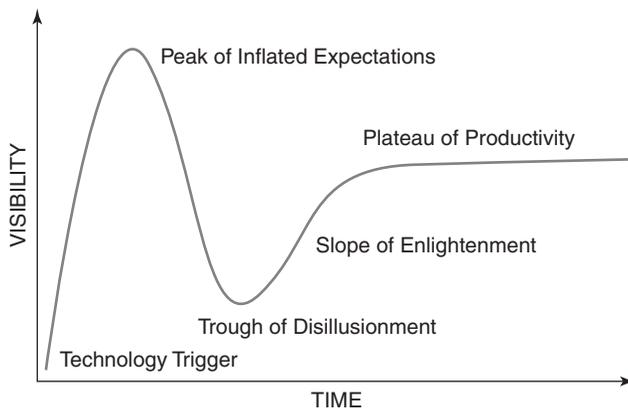


Figure I.3.5 Gartner’s Hype Curve. Reproduced from Wikimedia Commons.

risk between technologies that could be imagined and those that had been proven; they continued to rely on a simple numerical keypad for stop selection for many years to come. Meanwhile, they struggled to keep up with the constantly evolving form factors of mobile hardware.

Even as of this writing in 2017, ten years after the demise of The Getty's visionary *Guide*, indoor geo-positioning is just beginning to become reliable enough to meet the needs of museums and their visitors (Pau, 2017). It may – or may not – finally be reaching the fabled “Plateau of productivity.”

When digital alone is not enough: Blended solutions

While the mobile space has been the locus of enormous experimentation and expense, to the surprise of many and the chagrin of their creators, mobile apps and handheld guides about museum collections still typically reach only a small fraction of visitors – less than one in 20. Mannion, Sabiescu and Robinson (2015) report that “across the sector, a take-up rate of around 3 percent for permanent-collection audio guides is standard.” This point has been driven home again and again – even as visitors increasingly use smartphones to photograph and share their own social media moments during museum visits.

Indeed, a study conducted at SFMOMA in the context of a multi-track, analogue and digital interpretive strategy for an exhibition by contemporary artist Matthew Barney (Samis, 2007) revealed that:

- 1 In terms of sheer numbers, traditional interpretive media such as wall texts and object labels are the foundation on which visitor learning is built. Digital or electronic media act as a supplement, used by a minority of the visitors.
- 2 The most effective interpretative strategy is born of a mix of the analogue and the digital, providing visitors with a menu of diverse yet complementary offerings.
- 3 For those unfamiliar with a contemporary artist's work, presence of interpretive resources may make the difference between alienation and engagement.
- 4 Use of a greater number of interpretive resources correlates directly with enhanced meaning-making, greater appreciation of the artist, the exhibition and the museum experience.

In museums that do not outlaw fixed digital interactives from their galleries, the potential for designing interpretive strategies that blend digital and analogue components in service of a richer visitor experience is limited only by the imaginations of museum staff and their consultants. A perfect example of this blended approach to gallery design and interpretation is *Splendor by the hour*, an exhibition of objects from the European Decorative Arts collection at the Detroit Institute of Arts (DIA). The exhibit starts simply, with an introductory sign that situates visitors in the late 18th century, on the cusp of the French Revolution. Room by room, moment by moment, visitors move through an aristocrat's day, until we are invited to take a seat as a banquet is laid out before us, a video projected onto the table surface using ... the very same silver and porcelain that surround us in the display cases. The patter of French voices – first the servants, then the gentry arriving and taking their seats – invite us on a virtual gastronomic and cultural adventure, embedding us in the lives of these objects and inserting these objects into our imagination (Figure I.3.6).

Alongside, the wall panel announces:

Dinner culminates with dessert – the most sumptuous part of the meal. Pyramids of candied fruits and sweets and coolers of ice cream transform the table into a sugarcoated tablescape, reviving the appetites of the guests.



Figure 1.3.6 Take a seat at the table for this courtly video banquet. *Splendor by the hour* at the Detroit Institute of Arts.

“Transforming the table into a sugarcoated tablescape.” The richness of metaphor is so far removed from the standard museum label that it bears quoting. These novelistic wall texts and the immersive, inviting video installation where we imagine that each course of dinner is being served to us are a model for bringing distant times – and the objects that survive from them – back to life.

In another example, as part of an effort to welcome visitors as vital participants in the history and multiplicity of their state, staff at the Oakland Museum of California (OMCA) developed *You are here*, a digital drawing activity that was integrated into their painting and sculpture galleries. The galleries present at first glance as a salon-style array of portraits – many sizes, shapes and periods, returning our gaze. Some sitters are known and some not; some are painted by famous artists and others not. They all come from the museum’s collection – except two (Figure 1.3.7).

Those two frames on the wall house luminous screens. They don’t stand out much at first, but you see them because they’re a bit brighter – and they *change*. To the left are two stools and up-turned touchscreens sticking out from the adjacent wall. On the first screen, an array of portrait thumbnails drawn by other visitors who have passed through. As visitors click on them, they re-constitute before our eyes, from the first stroke to the last. The second station offers visitors their own opportunity to draw a self-portrait. Such exercises, simple as they are, raise questions that encourage a second look and consideration of the portraits on the wall. What is it to make a self-portrait? Which lines do you make as you go? Which opportunities do you take; which leave behind? What is the right tone to strike – or, having struck one, to change?

When visitors are done, they may look back at the screen to their left, or to the portraits on the wall to their right, gazing with newfound curiosity and respect. And of course, their freshly created self-portraits can be accessed online, posted and shared – which has become an essential part of how we ally and align ourselves with experiences that affect our lives today.



Figure 1.3.7 *You are here*. California Portrait Gallery at the Oakland Museum, California. Photograph Dino Morrow.

Conclusion

In many museums, a fundamental and unresolved ambivalence remains over whether the presence of electronic screens larger than those that pass in the palms of visitors' hands has any place in the galleries. In the words of Scott Sayre (2013):

Art starts in a messy, physical, emotional environment and ends up in a sterile, clean room environment with little or no evidence of the human aspect of its creation. Science museums, on the other hand, often deal with complex, highly controlled work, developed in a clean room environment, which ends up being exhibited in a highly interactive, physically engaging, social environment. (Sayre, 2013)

But the fact remains that only 1 in 20 visitors, roughly, takes a mobile tour, whatever its form. This author would argue that if museums want to reach their visitors just in time in the galleries when they need it most, they have to go further. Mobile alone will not do it. A number of museums have taken this bold step and understand that technology alone is not always the most appealing solution to their audiences. They have blended a variety of interpretive affordances in their galleries, in hopes of connecting novice and non-expert audiences with the art (Samis & Michaelson, 2017). Some have even gone a step further by replacing Artificial Intelligence with *real* intelligence, augmenting or replacing their security guards with staff gallery hosts trained to engage visitors in dialogue about the works on display.

Without necessarily regarding technology as a panacea, history and science museums have displayed little of art museums' approach/avoidance attitude, and have adopted a more pragmatic approach, embracing digital media as a natural component in their toolbox of gallery-based strategies: yet another way to engage visitors with the objects that have been stripped out of the world and displayed in their galleries. The story of how art museums will also rise to this challenge has yet to be written.

One might say that it is not just museum objects that are sites of contested meaning, but museum visitors as well, as different members of museum staff vie for the rights and privileges of their preferred constituents. These constituents include: professional peers and sophisticated collector-trustees, who get white glove treatment; members of the fabled multi-profiled beast known as the “general public,” who fend as best they can; and the legions of non-visitors, often of diverse education levels, ethnicities and classes, many of whom assume that art museums are not for them. In museums that prize the first group above all, capturing the digital in the language and logic of the museum’s organisation and mission means subjecting it to the constraints and etiquette of an aesthetic elite. It is made to *behave*. In museums and galleries that have a more broadly community-focussed vocation, blended solutions such as the DIA’s and OMCA’s become possible.

Looking back at Kent Lydecker’s predictions for the digital future articulated back in 1993, Paul Saffo’s epigram once again comes to mind: “Never mistake a clear view for a short distance.” For now, almost a quarter-century after Lydecker’s predictions, most have come true in one form or another, and the Millennial generation, born shortly before his talk, has begun to enter the professional ranks of museum middle managers and exert a real impact, fusing curatorial practice with the potential unleashed by what was way back then called “New media.” Indeed, it is with their coming of age and into professional status that the digital is being “normalised” and we are entering the seamless environment of the “postdigital.” That said, this author would argue that some of the bright disruptive potential of early digital media has been tamed in art museums by the perpetuation of entrenched conventions of the pristine “white cube” gallery environment, which Millennial generation artists continue to expect as the necessary backdrop for their experimental interventions.

Between the reluctance of many museums to avail themselves of interpretive media in the galleries, and the reticence of many visitors to “opt in” to mobile audio, a gap persists between supply and demand. We might call it an “interpretive deficit.” That said, the public isn’t demanding tech per se. What they’re asking for is *meaning*: a memorable, emotionally compelling experience, no matter how it’s delivered. Technology, for all its changing form factors and expanding capabilities, is optional; relevance, however, simply is not.

Acknowledgement

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Online collections, curatorial agency and machine-assisted curating

Bodil Axelsson

Together with buildings, collections and exhibitions, digital media are intrinsic to museums today. Most museums use websites as shop windows to present current exhibitions and events to attract people to visit the museum. The websites often provide entrance points to public collection databases, and the ubiquitous social media buttons show that museums deploy contemporary networking technologies as complementary platforms through which to engage visitors. The websites highlight the present-day museums as media spaces (Russo, 2012) and as part of a “post-scarcity culture” with images, texts and data available on a massive scale (Cairns & Birchall, 2013; Hoskins & Holdsworth, 2015).

When online activities are an integral part of many people’s everyday lives and there is an overwhelming abundance of information, curating has become a buzzword (Cairns & Birchall, 2013). It is used as shorthand for bringing together and presenting content to guide people through popular culture, art and crafts. Like museum curators, online curators filter for quality and relevance. They organise cultural bits to collections and exhibits with audiences in mind.

In these new spaces for curatorship, digital technologies are decisive, not only in their capacities for providing infrastructure for circulating collection items, but also for how their accompanying values tie into changes of the social role of museums. New technologies promise to make heritage more “participatory,” “user-centered” and “collaborative” (Giaccardi, 2012; Hartley, Lucy, & Briggs, 2013), but at the same time this development makes curating dependent on invisible technological infrastructures (Cairns & Birchall, 2013).

The aim of this chapter is to highlight the transformation of curatorial agency of display, that is, the capacity to employ techniques and genres for showing, performing and influencing the ways in which museum objects are interpreted, framed and contextualised (cf. Kirshenblatt-Gimblett, 1998). The chapter evolves through critical reviews of two strategic examples of museums that have reformed their collection databases with the aim of providing new modes of audience engagement. The Swedish museum agency LSH (Livrustkammaren, Skoklosters slott, and Stiftelsen Hallwylska museet) and the Dutch institution Rijksmuseum represent two main takes on how to navigate in online databases: text-based search and discovery-based navigation. This chapter will point out some implications that the two cases have for critical studies of online databases.

Curatorial agency within the museum

What it entails to be a museum curator is contingent on the changing patterns of museum organisation. When curating evolved as a profession in the late 19th century, curators acted as guardians of private and public collections, often exhibited in their entirety. Curators preserved, protected and displayed artefacts, and curatorial agency and authority were based on knowledge of collections. Up until the post-war period, curatorial work for the most part was concerned with structures within museums. Then curators were also expected to work with audience-related activities (Norton-Westbrook, 2015).

Museum work is now divided between a range of professions (Norton-Westbrook, 2015). Curators are often specialised in choosing and arranging artefacts to create experiences, evoke a response or facilitate discussions. Curators may take on roles such as political activist, artistic director or public investigator in order to produce new critical knowledge, not only on collections, but also on contemporary issues (Arnold, 2015). They may also be expected to secure funding for exhibitions, acquisitions and research (Norton-Westbrook, 2015). They collaborate with other museum professions such as educators, marketers and recently also IT-managers and technology specialists, as well as with communities and groups outside museums. Thus, museum curators often orchestrate a wide range of collaborations with colleagues, communities and experts (Arnold, 2015; Gurian, 2010). Nevertheless, the agency of display is deeply embedded in institutional structures, and curatorial agency is dependent on museum-specific organisation, as well as internal and external dynamics and policy developments (Norton-Westbrook, 2015).

Today, curatorial practices at museums cannot be separated from the ways in which the advent of digital media has promised to solve a whole range of challenges facing museums. Kirsten Drotner and Kim Christian Schröder suggest that museums navigate between two main discourses: to engage audiences as subjects for learning or to serve them in terms of customers and stakeholders (Drotner & Schröder, 2013, p. 6). The ways in which many websites focus on activities at the museum, ongoing exhibitions and events, as well as learning resources, provide evidence of both discourses. However, it might be fairer to split the second discourse into two intertwined challenges (cf. Barry, 2001; Ross, 2004). Changes in cultural policies and funding opportunities have opened up museums to the pressures and effects of consumer markets. To gain legitimacy, museums have to prove themselves in terms of numbers of visitors. Digital technology fits this logic well, as it is a relatively straightforward procedure to prove engagement by displaying numbers of website visitors, digitised items and downloads from collection databases as well as social media likes, friending, sharing and hashtagging.

As a parallel to increased marketing, the new museology from the 1980s urged museums to open up to local knowledge, popular memory and cultural diversity (Mason, 2005; Russo, 2012). These changes were fuelled by cultural theory, making museums sensitive to identity politics and the social and ethical judgements involved in curating. It was widely acknowledged that curators actively shape knowledge and thus are engaged in a politics of representation (Hooper-Greenhill, 1994; Lidchi, 1997). Museum curators were motivated to think through how they exercised power and how their actions were involved in the business of classification and differentiation, not only of objects, but also of people (Mason, 2005).

For the reformers, digital media have become agents of change (Cameron, 2008; Cameron & Mengler, 2009; Cameron & Mengler, 2015). Public online databases and social media platforms like Facebook promise to respond to calls for a more democratic and participatory museum culture (Giaccardi, 2012; Kelly & Russo, 2010; Russo, 2012). In order to reform museum practice from within, professionals operate within global values and networks. There is now a well-established international community of digital scholars and practitioners that

converge at conferences such as Museum and the Web, MuseumNext and NODEM (Drotner & Schröder, 2013).

In many discussions, the rationality for adopting digital media rests on a notion that audiences outside the museum a priori have agency in terms of being active and creative producers of knowledge:

The authority of cultural institutions by virtue of their control of interpretation to their collections is challenged when collections are digitized: once cultural content is converted to digital media and distributed on multiple platforms, it is part of the public domain and accessible through several channels. This shift is coupled with the individual ability to collect, archive, control and share across peer-to-peer distributed networks. (Russo, 2012, p. 152)

Contrary to the high hopes ascribed to digital media in museums and digital media studies, recent work on museums and social media based on media and communication studies highlights the fact that digital media do not necessarily relinquish agency to audiences. Museums still control visitors' voices (Noy, 2016). Critical approaches from media studies point to the need for an increased reflexivity concerning the heterogeneous institutional voices that frame, manage and discipline the social media flows of museums (Gronemann, Kristiansen, & Drotner, 2015; Kidd, 2014; Runnel, Pruulmann-Vengerfeldt, Viires, & Laak, 2013).

Critical media studies may also provide insights into how sociotechnical arrangements shape interpretations of collections. In her study of social media, professor of comparative media studies José van Dijck points to how interaction on social media platforms is shaped on macro as well as micro levels. On a macro level, social media platforms constitute "an ecosystem of connective media" (van Dijck, 2013, *passim*), in which data about users constitute valuable assets. In this ecosystem, platforms integrate due to partnerships and competition between owners. On a micro level, social activity is steered not only by norms for social interaction, but also by software that direct user behaviour through computational processes. Software processes data, that is, information and metadata that describes this information, in order to make it searchable and findable. Software consists of several components. Protocols, that is, programmed rules, govern how users interact and what they are able to do with data. Then there are algorithms instructing machines to produce a certain output from a given input, for example to weight and select data. Finally, there are visible interfaces instructing people how to use platforms, as well as invisible interfaces such as application program interfaces (APIs) connecting data, software and hardware (van Dijck, 2013).

Van Dijck's framework is intended for the study of social media, but it may be used as a tool for unpacking the interplay between human curatorial agency and computational processes when museums reinvent their databases for public use. Like social media, online databases consists of data and metadata. Databases' entry points and the outcomes of searches rely on interfaces, algorithms and protocols designed by museum professionals in collaboration with technicians. Just like in social media, selection is automatised. Therefore, the agency of display is machine-assisted. Moreover, van Dijck's framework reminds us of the fact that the ecosystem of connective media leaves no separate space for public or nonprofit platforms as interoperability between systems is part of the business model (van Dijck, 2013, p. 166).

Connecting to a global search engine

The Swedish museum agency LSH, which in 2017 merged with SHMM, another museum agency, holds three collections of 90,000 cultural historical objects and art works. It has in recent years turned to digital media to reform its audience engagements. The change at LSH was led by

a digital unit comprised of six persons with expertise in curating, coordinating and photography. In 2012, the digital unit initiated the “Open Image Archive project,” which later on formed the basis for the playful use of images at a Facebook account run by a group of pedagogues. Funding opportunities and national cultural policies provided strong incentives for starting the project, and the head of the agency gave the then recently formed digital unit a mandate to make as many items as possible free to circulate and download (Axelsson & Wittgren, 2017).

LSH opted for maximum use of their collections and tapped into the open content movement to grant audiences permission to share and download items. LSH collaborated with the Swedish branch of the nonprofit foundation Wikimedia and licensed their data for the Creative Commons. The licenses they used allowed the agency to regain rights to their images and yet give the public permission to share and use them under conditions provided by the museum as a copyright holder. Details regarding technology are also available online for fellow professionals and the public (Andersson, 2015).

LSH’s “Open Image Archive project” relies on a text-based collection interface making searches dependent on the design of data and metadata. Online databases originated as tools to administer collections, to assist preservationists, curators and researchers on keeping track of objects. As such, they complement and replace analogue catalogue cards. These analogue media for recording collections were reflections of scholarship and expertise that assisted curators in their capacities to interpret objects. Far from being objective records, both their structure and the different ways in which they were employed revealed curatorial and disciplinary passions, values and biases (cf. Knell, 2007). When museums like LSH now publish their databases online in order to invite audiences to also explore their collections, one of the major obstacles to audiences’ curatorial agency is the disciplinary and idiosyncratic information database posts have inherited from their forerunners (Wittgren, 2013). Information such as dates, author, descriptions, keywords or classification is often inherited from analogue registers and is reused as metadata. However, producing metadata is also a chance for museums to make data more accessible and reconfigure power relations with audiences (Figure I.4.1).



Figure I.4.1 Screenshot from the Swedish museum agency (LSH) collection database interface with Kristina of Sweden’s coronation mantel. Outside the picture frame there are links to related contexts, such as information, description, provenance, literature and related objects in the database. Courtesy The Swedish museum agency LSH.

As programming have become increasingly sophisticated, computers may automatically link individual collections into external datasets. LSH benefitted from these possibilities and collaborated with developers at Wikimedia to produce metadata that matched Wikimedia's categories and scripts to upload images to Wikimedia Commons. In addition, LSH used APIs developed by K-samsök, a national aggregator for cultural institutions' data that serves Kringla (national) and Europeana (European), interfaces for digital heritage resources (Andersson, 2015).

LSH thus created a range of entry points to their collection. Even so, the overarching impression is that the audience is approached either as a museum professional with expertise with disciplinary museum vocabularies, a developer of museum databases or as a member of the Wikimedia community. Firstly, their collection items are available via a text-based search a few clicks away from the museum agency's main webpage. Visitors approaching the online collection find guides on how to do searches either in the collection's database interface, by names or among images. Newcomers are encouraged to start with recommended highlights, and a menu invites visitors to make a personal collection ("Livrustkammaren, Skokloster slott och Hallwylska museet. Sök i bildarkivet," n.d.).

When opening a post, there is generally a visual depiction of an item accompanied by a description, and social media buttons invite the visitor to share in personal networks. On Wikimedia Commons the image is fitted into this site's particular white and blue interface with information on the organisation and its buttons for downloading and sharing. The design of this interface seems to build on the premise that the visitor is as interested in the organisation and its way to present data as she is in the collection item.

The way in which LSH links into Wikipedia by the use of Linked Open Data suggests that the agency also takes on an educational mode of address to audiences. Automated linking of data, when combined with Wikipedia, offers a means to produce context and narrative interpretative frames. Linked Open Data connects information from different sources through "triples," that is, two digital entities joined by a third digital object (called a predicate) that expresses a connection between them (Bradley & Pasim, 2017). As explained by the head of the digital unit in a blog:

To take a familiar example. Gustav II Adolf [a Swedish king, 1594–1632] rode on the horse Streiff at the Battle of Lützen. Previously, K-samsök only contained information about Streiff. That information certainly said a lot about how the horse looked, but not so much about why it is preserved or why it's interesting. In order to give an entrance point to Streiff's history, at least two components are necessary: Gustav II Adolf (an agent, a person who does something in a common language, a subject) and the Battle of Lützen (an event, a historical event that gives the subject its context). The chain becomes much more understandable, Gustav II Adolf rode on Horse Streiff at the Battle of Lützen. But if you do not know who Gustav II Adolf was or that the king died on the horse at the battle of 1632, you still need more information. Therefore, all historical events that LSH has delivered to K-samsök link to articles in Wikipedia. (Nilsson, 2013)

In terms of technology, this "human-assisted automated storytelling" might appear as contemporary, but in terms of historiography it stands out as rather conventional. It harks back to the ideological and historical underpinnings for the Royal Armory. The museum is said to have been founded by the same king that figures in the story above. He wanted his belongings to be kept for eternity, and later monarchs followed his example. When royal, aristocratic and private collections during the 19th century were mobilised as cultural underpinnings for the emerging modern nation-state, the Royal Armory was turned into a public museum (Widén, 2011).

The story also ties into a 19th-century model for the national history of kings and battles, a genre that in recent years has gained a new readership through popular history magazines and best-selling books (Axelsson, 2012). During the national romantic era, in Sweden, Gustav II Adolf was celebrated as a war hero and still is in some circles. Today, critically-minded historians point to the king's role in Sweden's imperial ambitions in the Baltic region during the 17th century. There is thus a possible critical interpretation of the agent Gustav II Adolf and the event of the Battle of Lützen. However, when LSH data is linked into Wikipedia, the interpretation has to comply with Wikipedia's basic rules. There are two such rules in particular that set the limit for the interpretative frame. Wikipedia articles have to be written from a "Neutral Point of View" and "No Original Research" is allowed among the mandate sources (van Dijck, 2013, p. 140). The result is that Wikipedia reflects a "popular history poetics," rather than critical professional scholarship (Rosenzweig, 2006). This leaves very little space for a reflective understanding of the LSH collection.

However, when LSH data is unleashed, opportunities for multiple interpretations increase. For instance, data from the LSH collection is included in the online collection of the Unstraight Museum. The overarching context here is identity politics and critique of heteronormativity. Unstraight Museum is a nonprofit organisation initiated and run by activists at Swedish museums. The aim is to run Unstraight Museum as a website with a constantly evolving bank of memories created by members of the LGBTIQ communities (Axelsson & Åkerö, 2016).

At first sight, LSH partnership with Wikimedia places its collection within the realm of public education and outside the realm of the commercial. Following van Dijck, Wikimedia may be perceived as an umbrella for the biggest non-market, peer-produced, public-value-led platforms on the net. But, this is not the whole story: the popularity of Wikipedia relies on its compatibility with big commercial players such as Google. The two systems are mutually dependent: "Google's reliability as a search engine indisputably benefits from being associated with Wikipedia's neutral and impartial content, boosting the search engine's image. *Mutatis mutandis*, Wikipedia profits from increased traffic volumes" (van Dijck, 2013, p. 151). This alliance is crucial for understanding the lure of Wikimedia for museum agencies like LSH. When metadata links LSH data to Wikipedia, its collection gets a free ticket into one of the most powerful search engines on the Internet.

Entering a culture of consumption

In contrast to LSH's text-based interface, Rijksmuseum's Rijksstudio offers a discovery-based interface influenced by the contemporary visual culture of mobile phones and social media. Rijksmuseum's initiative has been criticised for merely offering "fancy choosing," but even so, it has set an example for museums seeking to open up their collections for all sorts of uses (Cairns & Birchall, 2013). It is a particularly interesting case due to the fact that it has consciously taken the step into a consumer- and market-driven approach to heritage (Cairns & Birchall, 2013).

The Australian scholar and museum practitioner Mitchell Whitelaw suggests that interfaces are critical for opening up collection databases, especially for audiences approaching a collection without a specific query. For him, Rijksstudio is an example of a generous interface that grants the visitor the possibility of oscillating between overview and immersion in details. However, Whitelaw states that, no matter how designers and programmers opt for generosity in terms of making as many items as possible visible, interfaces both include and exclude. Therefore, generous interfaces rely on curation. As pointed out by van Dijck, interfaces are areas of control. They are operated by protocols that steer connections between user and content (van Dijck, 2013, p. 31).

When Rijksmuseum in Amsterdam developed the interface for Rijksstudio, the audience's visual experience was paramount. The Bank Giro Lottery, a national cultural lottery, sponsored the project. Pinterest was pinpointed as a model, and the interface was designed and programmed for the potentials of touchscreen control offered by apps and Apple. At its launch in 2013, one of Rijksstudio's developers introduced it as the younger brother of the main museum, presenting 125,000 high resolution images (Gorgels, 2013). New items are constantly being added from the collection, so that in 2017 the open collection contained more than 600,000 items ("Rijksstudio," n.d.).

Rijksstudio has at least three entry points, each addressing a particular type of audience. One entrance is text-based and invites the visitor to query the full database, encompassing the entirety of Rijksmuseum's collection of art and cultural historical objects. This alternative addresses the visitor as an expert or connoisseur. The second entry worth highlighting is the "Mastermatcher." Here the visitor is addressed in terms of lifestyle and taste. He or she is invited to respond to a set of default options, and computational processes select a group of works or items ("Mastermatcher," n.d.). The third option is the most elaborate and the one the visitor first meets when entering Rijksstudio. The designated audience type for this feature, as well as for the "Mastermatcher," is what the developers of Rijksstudio labelled the "culture snacker." Martijn Pronk, head of publishing at the Rijksmuseum, stated in an interview:

The "culture snacker" we focus on is the typical Internet user of today, pinning on Pinterest, watching videos, sharing photos. Interested in art, design, travel, but not an art lover per se. Rijksstudio is the "translation" of a museum website for this group. (Gullström, n.d.)

It might be worthwhile to consider the implicit meanings in the expression "culture snacker." A snack, a quick meal in between main meals, is seldom something that one makes an effort with. Since it has to do with food, it might also be associated to the etymological roots of the word consumption, to consume, to eat or use up. This choice of metaphor for Rijksstudio's preferred audience thus suggests that art and cultural history today feed into a culture of consumption and that items in the collection have potential as consumer goods.

This interpretation is supported by the instructions Rijksstudio provides for its users. As in the case with LSH's "Open Archive Project," Rijksstudio contributes to the open content movement which confers ownership to humanity rather than to an individual proprietor, an institution or a state. However, Rijksstudio only publishes images of objects older than 70 years whose copyright has expired or when permission has been secured from the copyright holder(s) ("Copyright FAQ," n.d.).

In terms of access, Rijksmuseum goes further than most institutions. It not only allows visitors to download and share their favourite artworks; it also permits cropping and saving just a piece of it. You can have a snack. Rijksstudio also provides instructions for visitors on how to design one's own "masterpiece" out of an assemblage of several artworks or photos. This creative practice is promoted by an annual competition organised by Rijksstudio. Furthermore, Rijksstudio offers individual users the possibility of ordering a canvas of an art piece and invites laypersons as well as professional designers to produce new consumer goods:

From T-shirts to tableware, and from wallpaper to scooters, anything is possible using Rijksstudio. Take inspiration from other people's creations, roll up your sleeves and create a masterpiece of your very own! ("From shirts to scooters ... tips and examples," n.d.)

In this case, the Rijksstudio taps into the values of the creative industries, as it clearly connects to the realm of the production and distribution of cultural commodities. This might appear

as a new position for a museum, but, as emphasised by the Australian museum scholar Andrea Witcomb, the international world fairs in the 19th century and the creation of public museums were both parts of a popular culture of visual pleasure and consumption (Witcomb, 2003). For example, one of the purposes of the Victoria and Albert Museum was to support the taste and knowledge of the manufacture of commercial products. This particular museum was also funded by some of the profits from the Great Exhibition in London in 1851 (Watson & Sawyer, 2011, p. 109). When museums today engage with everyday objects, they rely on this inheritance as well as on a ubiquitous intertwining of consumption and identity creation (Kneall, 2007).

Machine-assisted curation

A comparison with Pinterest may lead the way into a more elaborate discussion on how Rijksstudio addresses its audience and its ideal modes of engagement. Pinterest is an image-based social networking site where users “pin” content on themed personal “boards.” One can pin images of one’s own as well as images found on other websites. The way the site is used emphasises individuality and customisation (Lui, 2015). The owners market Pinterest as a “catalogue of ideas,” that is, a site on which one can look for information and inspiration in areas such as home decoration, cooking and travel (“About,” n.d.). Both private persons and companies are allowed to create boards, and a great deal of the content on Pinterest is retail products, blurring the boundaries between individual creativity and consumption (Lui, 2015). Launched in 2010, in 2017 the company webpage states that the amount of users is still growing (“175 million people,” n.d.).

Communication scholar Debora Lui suggests that Pinterest involves its user in a particular mix of public and private collecting. Pinterest displays strong impetus for users to customise the site to express personal taste and identity. However, the platform’s constantly changing grid of images is shaped in an interplay between categories suggested by the technological structures of the site and the activities of the individual user. Pinterest is programmed to direct the user to themes and styles similar to those one has previously clicked on or pinned; these in turn are dependent on already existing categories. According to Lui, the founders of Pinterest closely monitored the initial collection of images brought into the database, and these still form the basis of the platform’s content. The result is, writes Lui, that “it is easy to create and populate boards that already follow to existing categories (‘Home Décor,’ ‘Art’), but more difficult to maintain navigational searches that conform to alternate categorizations” (Lui, 2015, p. 136).

One crucial difference between Pinterest and Rijksstudio is that Pinterest is part of the ecosystem of social media, in which metadata about user’s behaviour are exploited by the owners of the platforms (cf. Lui, 2015; van Dijck, 2013). Rijksstudio is not part of that system but encourages its visitors to share via social media. Buttons for Facebook, Twitter and Pinterest appear on the site, but it seems, as in the case of Pinterest, that social sharing comes second to the creation of personal collections (cf. Lui, 2015).

Like Pinterest, Rijksstudio encourages the creation of personal collections and presents its visitor with a flow of images curated into themes. At first, the visitor meets a row of preset categories, such as “Highlights from the collection,” “Artists,” “Styles,” “Dutch history” or “Subjects” (e.g. birds). Scrolling further down, the visitor is presented to both individual works and “sets” of three items, grouped under a common theme. “Sets” are curated by Rijksstudio as well as by individual visitors.

At the top of the page “Explore Rijksstudio,” the visitor is invited to sign in, either via Facebook or email, and create one’s own collection of masterpieces. The hidden layers of technology behind the interface then include these sets in the flow of images on the entry page. The default preference

is that individual sets become public by means of protocols that include them in the flow. In order to keep a set private, one has to edit one's collection.

Rijksstudio still complies with an educational and authoritative voice. In line with a logic of collection and display, a selected number of items represents a wider category (cf. Knell, 2007, p. 12). Clicking on one of these "sets" takes the visitor to additional works included in the same set, and computational processes sometimes recommend the visitor associated "sets." When the user clicks on an image to include it in a "set," the interface displays catalogue information and associated images. This information varies among objects, but generally, it is based on curatorial expertise, for example, information on works by the same artist or school. But the interface also addresses aesthetics, as it offers the user the possibility to search for works in similar colour tones. As pointed out by Simon Knell with regard to photos and drawings in collection registers, focusing colours or elements of style seems to adhere to subjective sensitivities. Therefore, aesthetic qualities and personal taste are means of complementing the classificatory grids derived from museum disciplines (Knell, 2007).

The way in which computational processes mix "sets" created by Rijksstudio with "sets" created by individuals in the audience gives the impression of shared curatorial agency. However, as Debora Lui's analysis of Pinterest suggests, the entrance page and presentation of existing "sets" highly encourage users of Rijksstudio to mimic other pre-existing "sets" when customising their own collections. Other "sets" thus work as conceptual affordances for users to define their own taste and interests. In terms of subjects and themes, some "sets" resemble Pinterest's bias towards aesthetics and decoration, as described by Lui (2015); others seem to mirror the value and the identity of the museum itself, such as the Dutch golden age, its painters, masterpieces and cultural history.

This is not the place to delve into the long and complicated history of Rijksmuseum. Suffice it to say, when Rijksmuseum reopened in a new building in 1885 it brought together several collections that were considered to be of importance for the history of the Netherlands. Among them was King Louis Napoleon's collection from the beginning of the 19th century that included one of the most famous items in Rijksmuseum's collection, "The nightwatch" by Rembrandt. In her history of the national museums in the Netherlands, Felicity Bodenstein points to the fact that, even though Rijksmuseum is renowned for its masterpieces, it was initially considered to be a history museum rather than an art museum. She suggests that this is partly due to the fact that the painters from the Dutch Golden Age were admired for their depictions of everyday life (Bodenstein, 2011).

In combination with computational processes, what the curatorial selection of items and themes seems to be able to do is to reinvent this heritage for a digital culture of creative consumption. Still life paintings, landscapes and portraits from the Golden Age are considered home décor as well as popular history. Furthermore, the visitor can mimic the art collector and connoisseur or turn into an artist and produce masterpieces.

Curatorial agency in future

The examples of LSH and Rijksstudio highlight some of the values, technologies and collaborations involved in creating new modes of audience engagement. Although open collections, metadata and protocols facilitate new modes of audience engagement, the agency of display has not necessarily been reformed in its entirety. Museum curators still shape knowledge in new machine-assisted modes of curating. While the reinvention of online collection databases that depend on text-based search relies on the interpretative frameworks provided by data and metadata, discovery-based search models are dependent on themes and categories suggested by museum staff involved in designing interfaces.

The way in which LSH presents the reinvention of their online collection allows for looking into how the museums' internal values interact with cultural policies and how they play out when a museum buys into the alliance between Wikimedia and Google, that is, between nonprofit driven peer-production and corporate values. LSH collaborated with multiple agents external to the museum, and the collection items are available in several interfaces, such as Kringla and Europeana, run by public agencies, as well as Wikipedia and Wikimedia Commons, run by a foundation. The reinvention of the online collection database was thus dependent on knowledge-power configurations external to the museum. The agency of display here seems distributed between the different competencies in the museum's digital unit; external collaborator's standards for metadata and connections between metadata and APIs; and the audience knowledge of the vocabularies in the data and metadata. The asymmetry between laypersons and museum professionals in knowledge of the collection is balanced by the ways in which metadata is adapted to several protocols. Some of these protocols are exposed to scrutiny when the public agency LSH shares them online.

When reinventing their online databases, both LSH and Rijksmuseum tapped into the open content movement. When turning collection items into data, LSH produced high-resolution images of objects and artworks and licensed them for the Creative Commons. This was possible due to the fact that copyrights have expired for most of their collection items. Rijksmuseum, which possesses a much larger collection, with newer works as well, had to select which items to include in Rijksstudio; hence they had to curate this collection. The selection of works and the themes framing them seem to rely on copyright restrictions. The choices are also firmly based in the identity of the museum as a keeper of masterpieces of fine art and especially national schools of painting. This conclusion points to the need to locate curatorial agency in copyright issues as well as institutional histories in order to look into how museum-specific values are reinvented for new modes of audience engagement.

Rijksstudio's interface gives the impression of sharing curatorial agency between the museum and the audience. Nonetheless, the themes and categories the site presents for its visitors inevitably frame how audiences select art works and objects when they set out to curate their collections. This asymmetry in curatorial agency seems even more poignant if the analysis takes into account the impact of computational processes and how they steer the flow of collections displayed by the interface and suggest associated works. A key question for scholars interested in studying this machine-assisted curating is how algorithms and protocols interact with human curatorial agency. For the general visitor, not savvy in codes and calculations, the machine's intervention remains hidden. However, as in the case of LSH, Rijksstudio's API is available online for reuse under specified conditions ("Rijksmuseum API," n.d.). The ways in which these conditions are framed suggest that openness is part of the current rebranding of the museum as described above. This, in turn, connects to how museums today respond to the pressure and effects of consumer markets. Rijksstudio was created for a culture of individual consumption and creativity, and the implications of this for the way in which audiences engage with the collection demands further investigation in terms of how the cultural values of the collections are transformed and negotiated in online spaces outside of museum control.

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Visitor and audience research in museums

Susan Anderson

On January 21, 2013, the Dallas Museum of Art (DMA), United States, launched DMA Friends (a free membership programme) to coincide with the Museum's return to free entry. The programme bore similarity to loyalty and affiliate programmes used in other sectors to reward patrons for their engagement with the museum (Stein & Wyman, 2014). Visitors to the museum were invited to join the programme and to log their activities within the museum via codes typed into iPads or sent by text message. Activities logged include participation in educational programmes and visitation to galleries and other museum spaces. In doing so, the visitor accrued points, which were redeemable for rewards such as free parking and discounts in the shop, and badges. In its first two years, DMA Friends enrolled more than 100,000 members, with 97.1% of DMA Friends "self-identifying as new members at the Museum" (Dallas Museum of Art, 2015).

Although the programme was sunsetted in December, 2017, DMA Friends was designed to enable transparent and ongoing monitoring of visitors' long-term engagement with the museum (Stein & Wyman, 2014). The technologically-enabled, data-driven approach to visitor engagement sought to facilitate increased understanding of the museum's visitors at a scale far greater than possible in surveys and other common forms of visitor research. This aspiration responds to one of the most persistent challenges facing museums today – how to understand, measure and respond to visitor behaviour and expectations. The quantitative data collected about individual visitors included basic demographic data such as zip code, as well as information about visitation frequency and the educational programming and gallery and non-gallery spaces that the visitor utilised. By collecting and aggregating data on the activities of thousands of individual members, DMA Friends allowed the museum to better track how its visitors interacted with the institution. Additionally, by assigning individual members with a personalised account, it also offered insight into the individual preferences of visitors (Stein & Wyman, 2014). This data could be used in museum planning and visitor development, shaping how the museum conceived of and categorised its visitors, and therefore, it could programme, plan for and relate to them.

Digital technologies in museums are increasingly seen as "vital in the race to 'prove' public worth, impact, accountability and relevance" (Kidd, 2014, p. 2). Platforms such as DMA Friends, and technologies including location-aware proximity sensors and personalised mobile devices, have facilitated the gathering of new types of data about visitor behaviour at scale, including their consumption of museum content onsite and their movements throughout the

museum. At the same time, online audiences have become more measurable and quantifiable, prompting museums to consider what these digital audiences mean to them and how they are included within the business and economic strategies of the institution. This does not undermine traditional quantitative or qualitative approaches for researching the audience so much as open new avenues for conceptualising audiences. Lynda Kelly has argued that although traditional methods for evaluating museum programmes remain useful and necessary, the sector needs to utilise new methods and strategies (Kelly, 2004). The use of new technologies within these processes is increasingly important for reconceptualising museum visitors and audiences, particularly as media becomes more firmly woven into people's lives and museum experiences.

The turn towards visitors and audiences

The impulse to understand, and react to, visitor behaviour has been one of the great driving forces within museums since the mid-20th century. In that time, the museum has become progressively visitor-centric (Hooper-Greenhill, 2006; Rodney, 2015), responding to a decline of public funding for museums (Hooper-Greenhill, 2005), increased competition for funding and visitor time (Ballantyne & Uzzell, 2011) and pressure to mount a compelling case that tangible and meaningful benefit results from investing in the arts and culture. The abundance of goods and services, to the point that supply exceeds demand, have further driven museums towards increased customisation of experiences for the needs and interests of individuals (Falk, Dierking, & Adams, 2006). As such, museums have become increasingly focussed on researching visitor needs, motivations and behaviours.

For a long time, visitor research in museums was focussed primarily on those who attended in the museum in person. In the 1980s and 1990s, however, visitor research expanded to include all those who *might* come to the museum (Hooper-Greenhill, 2005, p. 2). Researchers such as Marilyn G. Hood began to examine why people choose not to visit museums (Hood, 1983). She utilised psychographic profiling to show that people make choices about how to use their leisure time based on their values and the perceived benefits of attending museums. At around the same time, new methods for visitor research, such as systematic observation of visitor behaviour in the museum environment, began to reach broad acceptance within the sector (Tröndle, Greenwood, Kirchberg, & Tschacher, 2012, p. 103). In response, visitor research began to focus on audience needs and individualised experiences.

Frequently, the study and analysis of museum visitors has fallen under the purview of market research, which seeks to provide quantitative information about the demographics, psychographics, interests, socioeconomics and geography of current and potential audiences. This research is utilised by museums for both interpretative and business plan development, informing choices related to issues including staffing, marketing expenditure and the timing and funding of events (Black, 2005, p. 12–13). The term “visitor studies” is also used, encompassing research into visitor motivations, needs, behaviours and expectations, their social composition and exhibition-going habits and judgements and the takeaways or benefits gained from attending the museum.

In recent years, the conceptualisation of museum visitation has evolved to reflect the growth of website users and social media followers. The museum's “audiences” now include all those who interact with the institution online, onsite and remotely – including those who may not explicitly seek out the museum's content but interact with it regardless. Museum audiences are now imagined and understood through a broad matrix of perspectives that includes multiple avenues for interacting with the museum. Lynda Kelly recently analysed nearly 20 years' worth

of work addressing museum audience studies with a focus on online behaviours, user-testing and trend analysis to reimagine the (post) digital museum visitor. She determined that:

the focus now needs to shift to creating strong synergies between the physical, online, and mobile experiences, while understanding how audiences are interacting, behaving, and learning across these three spheres. (2016, n.p.)

Museum audience studies incorporate both quantitative and qualitative methods and are frequently utilised for audience development. Not merely about increasing the size of a museum's visitorship, "audience development" is a deliberate strategy aimed at cultivating new audiences, usually with a focus on those previously under-represented at the museum (Black, 2005, p. 47). Gloria Romanello (2013) notes that the term has a broad range of meanings, often speaking to "a certain democratizing intent and a strong participatory spirit" (Romanello, 2013, p. 62).

Audience development, with its focus on participatory experiences, has become a growing concern within the sector. The term "participatory culture" first entered the lexicon in 1992, when Henry Jenkins described fandom as a form of social exchange (Jenkins, Ito, & boyd, 2016). Participatory cultures were understood to embrace the values of diversity and democracy and assumed that all members of a group could, together and individually, make decisions and express themselves through a range of different forms and practices. A contemporary definition proposes that:

A participatory culture is a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices. A participatory culture is also one in which members believe their contributions matter, and feel some degree of social connection with one another (at the least they care about what other people think about what they have created). (Jenkins et al., 2016, p. 4)

This notion of participatory culture was initially vaunted as a means for reallocating power away from organisations and institutions that previously controlled distribution of information towards those who had been marginalised. These ideas first entered the museum in the 1990s, under the influence of younger staff who valued the museum as an open and democratic institution, who began to focus more specifically on the needs of audiences (Hooper-Greenhill, 2005, p. 5). The introduction of Web 2.0 or the "Social Web," typified by social media platforms such as Facebook, Twitter and blogs, in the mid-2000s led to a further embrace of the concept in response to an influx of potential and actual new participants in the consumption and creation of content. By lowering the technical barriers to entry, the Social Web made it easier for people outside formal institutions to create and publish their own work. Many people who had never had the public capacity to share their thoughts with large-scale media companies, governments or media organisations gained a public voice. Doing so reframed concepts of participation and publicness, bringing with it new opportunities for people who had previously been without the capacity to create public identities for themselves, generating unprecedented "moderate, widespread publicness" (Baym & boyd, 2012, p. 321). People became audiences to one another in new ways, and institutions became audiences to "the people formerly known as the audience" (Rosen, 2006). Together, these changes have prompted broad changes in the ways that people communicate and interact with one another, and with organisations and institutions.

While the ideals of participatory culture have been enthusiastically embraced by many in the museum sector (see Simon, 2010), they have also prompted significant questions about the

relationship between the museum and its audiences (Stein, 2012). Perhaps at the heart of this critical questioning are concerns about the museum's authority, in a context where its voice, value and meaning could be openly and publicly questioned. As Robert Stein (2012, p. 219) asked, in a callback to earlier work by Stephen Weil, "why is your community better off because it has a museum?" Questions such as this, which seek to ensure that museum work is focussed on the people it serves, rather than merely on its role as custodian on objects and history, have further contributed to both a turn towards the visitor, and a mounting urge to measure and account for the museum's impact, prompting new kinds of audience measurement and visitor research.

To understand the affordances and challenges of digitally-enabled audience research, it is important to understand the broader context of visitor research within museums and its connections to audience research beyond the sector.

Early evolutions of visitor research in museums

Although the earliest research into museum visitors was undertaken in the late 19th century (Hooper-Greenhill, 2005; Kelly, 2016), visitor studies within the sector became more commonplace from the 1960s onwards (Hooper-Greenhill, 2005, p. 3). In early studies, museum staff conducted small surveys of visitor demographic data, measuring a limited range of visitor characteristics and rarely comparing the demographics of museum attendees with the demographics of the local population. It was not long before the sector began drawing upon models and methodologies from the fields of market research, evaluation and ethnography, including visitor observation, interviews and surveys (Pekarik, 2011). Literature informing the field included sociology, psychology, leisure science, education, communications, consumer behaviour and marketing (Hood, 1993). In 1987, Abigail Housen laid out three methods for studying museum audiences, based on an in-house study at the ICA Boston, being demographic studies, attitudinal studies and developmental studies, which focussed on visitor logic, comprehension and motivation. In sharing her results, Housen identified a problem that has been well recognised since – that museum visitors do not share common needs, interests, or understandings – and called for researchers to devise new measurement tools that can elicit difference (Housen, 1987).

Two fields that were influential upon those seeking new approaches to visitor studies in museums were those of leisure and communications (Hood, 1993). As Hood notes, leisure studies became prominent as shorter work weeks, longer vacations and the eight-hour day came to dominate labour markets, prompting examination of what people chose to do outside of work. A core idea to emerge from this area of research was the notion that people could choose to come to museums or not, and that if the visit was of little value, they could seek to do other things with their time. Since then, processes related to consumer choice have often been studied in the context of visitor motivation, lifestyle segmentation, and the visitor lifecycle. For instance, Christine Burton, Jordan Louviere and Louise Young studied the value of choice modelling, which seeks to model decision processes of individuals or market segments within specific contexts or to identify specific features and incentives, such as bundled visitor packages, that matter to cultural consumers (Burton, Louviere, & Young, 2008). They propose that, in seeking to develop their visitor appeal, museums must consider specific incentives, such as discounts for repeat visits, as essential elements in leisure marketing strategies.

Hood proposes that museums also benefitted from communications research, which provided them with information about how people receive and act on different kinds of messaging (Hood, 1993). Of significance to the museum sector was research into diffusion and personal influence, or the study of primary and secondary reference groups or influencers and their role in persuading non-museum-going publics to attend. The study of persuasion has been

significant to the history of media and communication studies (Ross & Nightingale, 2003), and it is perhaps unsurprising that this area of research has had an influence on the museum sector. Eilean Hooper-Greenhill has characterised museums as a form of “mass communication media” (Hooper-Greenhill, 2005, p. 6), whose communication takes place via exhibitions, publications, advertisements and methods such as videos. Today, in the digital age, media convergence has ensured that much museum communication also now takes place online, via websites and social media platforms, immediately placing the museum in the same communication space as other forms of media. Indeed, museums are increasingly acting as media organisations, creating content for digital and online channels, publishing books and magazines, making games, radio series and podcasts, in addition to in-gallery interactive media (Kidd, 2014). At the same time, techniques for measuring museum audiences – particularly those that draw influence from the affordances of digital technologies – have become informed by approaches to the measurement of media and online audiences.

Audiences in media and communication research

In media and communications studies, the term “audience” can indicate an individual or group of people with or without prior connection beyond a shared interest in media (channels and content), or it can refer to groups with stronger socio-cultural ties, such as those shared by sub-cultures, fan cultures or ethnic diasporas (Ross & Nightingale, 2003). These latter groups may share common interpretive perspectives not found in other audiences, and may exist beyond their interaction with a media event or project. Small, place-based groups such as attendees at a play or poetry reading can also be considered audiences. Karen Ross and Virginia Nightingale propose that:

being an audience has to involve more than just being in a group of people ... being part of an audience means being part of a media event, where people engage with mediated information. People *are* audiences when they are *in an audience* and *in audience*. (2003, pp. 5–6)

Media audiences are often understood in juxtaposition against the broader concept of “publics,” wherein publics are understood as active, critically engaged and politically significant, and audiences as trivial, passive and individualised (Livingstone, 2005). Sonia Livingstone challenges this view, arguing that in an increasingly mediated society, there is a complex and ambiguous relationship between audiences and publics. Similarly, Richard Butsch and Livingstone describe the importance of understanding how audiences are discussed and characterised as integrally linked to “politics and citizenship, economics and prosperity, education and cultural improvement, morality and family life” (Butsch & Livingstone, 2014, p. 1). In other words, the examination of, and naming of, audiences is always a political act. This is similarly true within the museum.

Harold Lasswell’s “chain of communication” theory (“who says what in which channel to whom with what effect?”, Lasswell, 1948) is among the most influential early theories of media audiences in the 1940s and 1950s and posited that the audience was a receiver of media in a kind of transmission mode, with information that flowed in a singular direction from sender to receiver, with effects that could be identified and replicated as they were passed on from person to person (Laughey, 2007).

For a long time, museum audiences, too, were understood as recipients of the museum’s messages in a kind of transmission mode. In *The educational role of the museum*, Hooper-Greenhill explored the evolution of communication theory for its parallels to the museum exhibition as a communicative device. She drew attention to the Shannon and Weaver Model of

communication, developed in 1948, in which communication is described as a process that includes a source, a transmitter, a channel, a receiver, a destination and noise, which is anything that might interrupt the transfer of information. She writes:

It is possible to describe the exhibition team as the source, the exhibition as the transmitter, with objects, texts and events as the channel of communication, the visitors' heads as the receivers, with the visitors' understanding as the final destination. In this instance the "noise" which interferes with the message might include anything from crowds to visitor fatigue, or workmen in the gallery next door. (1999, p. 32)

It is interesting to observe that Hooper-Greenhill was here applying an already dated paradigm from communication research to museum studies. The problems of such simplistic models of communication were already beginning to unravel by the 1950s. At that time, Elihu Katz and Paul Lazarsfeld began to study how people could shape the flow of mass media messages. They conducted small group survey research into interpersonal communications in rural America around media communications, examining variables such as exposure, medium, content and the attitudes and predispositions of the audience that intervened between the masses and the mass media (Ross & Nightingale, 2003, p. 27). They found that rather than merely repeating messages heard or read in mass media, per Lasswell's chain of communication theory, participants began to shape the messages they heard as they passed them along. This led to a model known as the "two-step flow," in which ideas were understood to flow from media such as radio and print to opinion leaders in a society, who dispersed them to other members of the community.

The first approach to audience studies that championed the notion of the "active audience" emerged in the form of "uses and gratifications theory" (Katz, Blumer, & Gurevitch, 1973–1974). Here, audiences were seen as actively selecting the media which they deemed most likely to gratify their needs. Uses and gratifications research assumed that "audiences use media – not vice versa" (Laughey, 2007, p. 26). In other words, someone might consume the news to stay informed, or watch a comedy to wind down, meeting needs that they already have, rather than having those needs created and imposed by the media itself. Although it has been criticised for subscribing to a "rational choice" theory of media behaviour according to which people deliberately and consciously choose the best media for fulfilling their needs, and ignoring both the interpretive work of audiences "reading" media texts (Fiske & Hartley, 1978) and the larger social structures and divisions that shape individuals' routinised media consumption (Hooper-Greenhill, 1994), uses and gratifications theory was a turning point away from theories of media effects. It turned away from the idea that media does something to people and considered instead what people do with media (Ross & Nightingale, 2003, p. 31). As such ideas developed, the next paradigm of audience research – reception research – began to further incorporate qualitative interview-based or ethnographic methods alongside quantitative methods, as it was increasingly recognised that audiences pick up a plurality of meanings from texts and media, and that cultural context informs their experiences and interpretations (Livingstone, 1998).

Media reception analysis emerged in the years around 1980 as a critical reaction against both the "effects" tradition and uses and gratifications research. Being interested in what people do with the media, it shared the knowledge interest of uses and gratifications research, but it distanced itself from its psychological functionalism and instead adopted a combined phenomenological and hermeneutic perspective on audience activity: audiences were here seen in their capacity of sense-making humans who negotiate mediated meanings according to the communicative repertoires they have acquired over the life course through situationally and

contextually anchored encounters and negotiations with other people in the networks of everyday life. Founded by the Jamaican-British cultural theorist Stuart Hall (1973), reception research was developed as an integral part of the critical cultural studies paradigm. The practical operationalisation of the theory was especially indebted to cultural sociologist David Morley, who applied the theory in an analysis of British citizens' readings and understandings of the BBC current affairs programme "Nationwide."

Early reception research was mainly interested in understanding the political and ideological dimensions of media experiences (Schröder, 2013). Media institutions – irrespective of their status as private or public service media – were seen to offer audiences/viewers meanings that were loaded ideologically in favour of ruling elites: it was then the task of reception analysis to examine whether the audience accepted this "preferred meaning" (a dominant reading), or whether they to a greater or lesser extent resisted this meaning, either through a "negotiated meaning" that shared the essence of the preferred meaning, or through an "oppositional reading" that rejected the preferred meaning entirely. Succeeding generations of reception research, however, relieved their analytical practice of the ideological component, and the three-readings typology became a plausible general categorisation of media readings. For several decades, reception research explored the encounter between media as texts and audiences situated in daily life, following different cultural agendas: One important strand sought to understand media reception as a gendered practice, analysing audience readings of romance novels (Radway, 1984), emotional engagement with primetime soap opera (Ang, 1985), or the pleasures women derived from glossy magazines (Hermes, 1995). Other researchers put the spotlight on audience sense-making around ethnic media content (Jhally & Lewis, 1992; Dhoest, 2009). As the media ecology grew increasingly complex with the advent of digital and social media, the analytical glance was extended from studying the media text/audience nexus towards understanding how audiences navigated in and made sense of the media landscape as a whole, as reflected in this recent redefinition of reception research in the age of convergence and cross-media:

The scope of reception research encompasses all forms of research which, irrespective of methodological approach, seek to understand all audience sense-making processes around media, without privileging people's receptive interpretation of concrete media products. (Schröder, 2016, n.p.)

As mixed methods have also become the new normal in reception research (Greene, 2007; Schröder, 2012), this wider knowledge interest has manifested itself, for instance, in studies of how audiences-as-participants make sense of fictional story worlds across media (Jenkins, 2006), how news audiences build cross-media news repertoires from the media manifold they inhabit (Swart, Pieters, & Brorsma, 2016), or how the use of one's Facebook newsfeed can be seen as inherently a cross-media experience (Mathieu & Pavlíčková, 2017). As the tracking of audiences' and users' digital footprints is added to the analytical toolbox, reception researchers are insisting that such "big data" does not speak for itself, but needs to be contextualised in comprehensive mixed-method designs, where verbalised accounts illuminate the overall sense-making process (Thorhauge & Lomborg, 2016; Breiter & Hepp, 2018).

Museum visitors and audiences in the digital age

Similar ideas rose to prominence within the museum in the 1980s and 1990s. As in the area of media reception research, the influence of critical theory and postmodernism, structuralism, anthropology and intertextual cross-fertilisations saw the role of the producers and receivers of

knowledge decentralised (Mayer, 2005). Visitors and audiences were now to be understood as more than passive receivers of texts and information provided by the museum, but rather as active participants in the construction of knowledge. Around the same time, museum education departments increased their emphasis on incorporating “free-choice learning” opportunities within leisure activities (Falk et al., 2006), particularly influenced by the work of John Falk and Lynn Dierking, who systematically examined the museum visit to learn the circumstances that lead to learning. These authors examined the visitor experience before, during and following the visit to explore the range of situational and contextual influences on a visitor’s experience with the institution. They proposed that visitor experiences can only be understood by studying the connection between three contexts – being the personal, social and physical (Falk & Dierking, 1992).

More recently, Falk has described five categories of visitors based on their identity needs and motivations when attending museums: Explorers, who are motivated by curiosity; Facilitators, who seek to enable learning and enjoyment in others; Experience Seekers, who want to see and experience a place, often looking for the known and iconic; Professionals and Hobbyists, in which the visit helps meet a professional goal or purpose; and Rechargers, for whom the museum is a place of respite. These identities are not fixed. They can change between visits and even during a visit (Falk et al., 2006). Similarly, James B. Schreiber and colleagues from the Smithsonian Institution’s Office of Policy and Analysis described a model of experience preference with the intent of reframing audience diversity. The IPOP model describes four key dimensions of experience: Ideas (conceptual, abstract thinking); People (emotional connections); Objects (visual language and aesthetics); and Physical Experiences (somatic sensations) that inform museum preferences (Schreiber, Pekarik, Hanemann, & Doering, 2013). It is intended for use by exhibition designers and content creators, such as those in education or marketing, to create experiences that appeal to and meet the needs of the different preferences of visitors.

Models of visitor engagement, such as that created by Falk and Dierking, are useful for museums seeking to understand and categorise their visitors, to create more focussed and personalised approaches to the museum experience. However, it is important to realise that the ways that museums conceptualise their audiences do not necessarily reflect reality. Much like media audiences, museum audiences exist, as Ang (1991) describes, as both a discursive construct and as an “actual audience,” composed of individuals, each of whom has their own motivations and needs, desires and interests, backgrounds and identities. This creates a “theoretical distinction between two realities” (p. 13), in which the audience, conceived within and by the institution, measured and named, is assigned characteristics and values that may or may not reflect the reality of those individuals that compose it. In other words, as Raymond Williams put it, “there are in fact no masses, but only ways of seeing people as masses” (Williams, 2013, p. 10). The creation of target markets or research groups creates frameworks through which the museum can visualise or imagine its audiences, but those frameworks are necessarily artificial and imposed. In work on the evolution of media audiences, Philip M. Napoli proposed that:

the *institutionalized audience* is a very malleable construct; something that evolves in response to environmental conditions in order to facilitate the continued functioning of the audience marketplace. (Napoli, 2008, p. 50)

Therefore, in the 1980s and 1990s, media and museum scholars alike began to argue against the concept of a unified audience. Industry conceptions of the audience turned towards the difficulty in knowing the audience, as it was acknowledged that professional mass communicators knew their audiences only in abstract, with fleeting insight beyond. Data collected through

technological mechanisms such as audiometers and people meters were thought to be more accurate, reliable, representative and timely than samples that relied on diaries and coincidental surveys. However, even as these technologies promised greater insight into individual media preferences, the media landscape was developing and diverging, prompting “an ever-growing tension between the elusiveness of the audiences and the eagerness of audience producers to measure it” (Bermejo, 2009, p. 141).

The rise of networked and digital technologies as the “communication fabric” (Castells, 2009) of society intensified shifts towards a “network society” (van Dijk, 2005), and exacerbated concerns about audience fragmentation. The emergent media environment that accompanied the rise of digital technologies has resulted in media being woven into people’s lives in increasingly complex ways. Technologies such as mobile devices have given people increased choice over how and when they access and consume information and media. Fernando Bermejo documents the challenge that online audiences created both for advertisers and for others wishing to understand, monitor and influence audience behaviour. He describes how, in 1995, the development of a generally accepted ratings system for online advertising became a priority for the advertising industry, leading to the search for a standard source of measurement (Bermejo, 2009). Bermejo also notes that this process was not successful, likely because of the variation amongst the methodological approaches that have been taken in response to the technological and usage affordances of the Internet (Bermejo, 2009, p. 143).

One of the most important aspects of the Internet and digital technologies is their ability to record the traces of actions. It is this feature of online activity that has proved so revolutionary for the study of both media and museum audiences and led to what has become known as the “era of big data” (boyd & Crawford, 2011) – explored more fully later in this volume in the chapter by Lauren Vargas. This has dramatically increased the scale at which data can be collected, curated and examined – often algorithmically. Big data is particularly notable for the ease with which it can be correlated with other data (boyd & Crawford, 2011). Because it is fundamentally networked, such data offers researchers huge capacity to mine it for patterns and insights about people and their relationships, how different data relate to one another, and the structure of information itself. This means that aspects of audience behaviour and interaction can be measured, aggregated and analysed at a scale and in ways not previously possible. This has made possible new kinds of personalised, targeted research into human behaviour.

It was only relatively recently that the traces of human actions have become personalised and linked to individual accounts, however. Companies such as Facebook track the actions and behaviours of individual users to package them back to advertisers for targeted and personalised marketing. The collection and aggregation of personalised data about buying and interaction behaviours, linked to an individual’s account, gives companies huge opportunities for insight into their behaviours, to better target them and provide enriched and personalised experiences. Such practices also bring concerns about privacy and user data that are beyond the scope of this paper to address in detail. However, companies and organisations are now better able to understand the needs and desires of their digitally-connected users, visitors or participants, to better deliver them experiences and products that will suit their needs.

This can present a challenge for audience researchers outside those organisations. As Jonathan Gray (2016) notes:

the walling of the numeric audience by companies with large datasets, and the relative quieting of the qualitative audience in critical cultural scholarship, leave us knowing embarrassingly little about contemporary audiences. (2016, p. 81)

Additionally, there are several significant challenges associated with the turn towards big data in research. danah boyd and Kate Crawford have laid out six provocations for big data, which interrogate many of the assumptions and biases that accompany its computational culture. These include that: automating research changes the definition of knowledge; claims to objectivity and accuracy related to big data are misleading; bigger data are not always better data; not all data are equivalent; accessible data is not necessarily always ethical; and that limited access to big data creates new digital divides (boyd & Crawford, 2011), in part because much of this data is collected and controlled by private companies. These concerns hark back to early challenges associated with establishing standardised methodologies for measuring online audiences. As Bermejo notes, analysis of data about online activities is rather complex, requiring significant cleaning and refinement before analysis can take place (Bermejo, 2009).

Seeking the forest and the trees

Despite this, it is impossible to deny that the affordances of online and digital audience measurement have had a significant impact upon contemporary research about both online and onsite audiences. Museums now seek to understand the impact of mediation devices such as mobile phones on their visitors (Jarrier & Bourgeon-Renault, 2012); how best to record, track and analyse visitor movements through the museum (Yalowitz & Bronnenkant, 2009); and how best to understand and measure the impact of all online endeavours (Finnis, Chan, & Clements, 2011).

Some of the most innovative approaches to contemporary museum practice have begun to explicitly link digitally-based research into audiences and their interactions with the museum directly to the visitor experience. Perhaps the most significant data-driven museum experience to date is that found at the Cooper Hewitt, Smithsonian Design Museum. In 2015, a newly-renovated Cooper Hewitt reopened after being closed for three years with a wholly reimaged visitor experience. At the heart of this new experience was the pen – an innovative tool that supports the visit by allowing people to collect and document their visit – including objects, exhibition text and labels (Chan & Cope, 2015). Visitors to the museum can use the pen to interact with large-scale interactive tables, explore the online collection and even create their own digital designs in response to objects and exhibitions. Following their visit, museum-goers can log onto the Cooper Hewitt’s website and retrieve the data they collected whilst on site – something of which around 30% of visitors took advantage (Walter, 2016). Universally distributed to museum visitors, the pen was initially envisioned to be:

[part of a] system-wide platform, [be] your ticket, your identity throughout the museum, how you make purchases [in the shop], making you an active visitor, getting you away from your phone and closer to design. (cited in Walter, 2016)

Significantly, by allowing the visitor to “collect” their visit, the assumption that museum visitors find their own meanings in their interactions with the museum extends to cover “the days, months and years that follow their visit” (Walter, 2016, n.p.). This gives the museum opportunities to link the pre-, during, and post-visit phases of the museum visit.

Seph Rodney has argued that there are three key means of accomplishing personalised experiences within museums:

First, recognizing visitors’ capacity to make meaning for themselves; two, partnering with them to discover what they personally want from the museum; and lastly, mobilizing the museum’s resources to meet these needs. (2016, n.p.)

The Cooper Hewitt's revolutionary approach was built to enable precisely these kinds of interactions with the museum. As measurement moves into the purview of digital departments in museums, the influence of digital and online culture becomes more explicitly felt in the onsite visit. This does not necessarily take the form of more screens and visible technologies onsite (although it can), but rather, on exploration of the unique experiential aspects of the visit. In practice, the pen collects data about how visitors to the museum move around the museum and interact with the objects onsite. The actions can be understood through the lens of social media, whereby visitors "like" objects, declaring to the museum their preferences and signalling inclinations for interaction. More dimensions of visitor behaviour are made visible for investigation by the institution, creating new opportunities to understand and meet visitor needs and expectations.

What are the implications of the move to digital audience measurement?

Increasingly, museum digital and IT departments are implicated in capturing, analysing and publishing museum data about their audiences. This has several consequences. Firstly, it shifts key aspects of responsibility for the visitor experience to those departments, more firmly linking the institution's core responsibilities to its publics with digital and IT departments. Additionally, as museums measure their online and onsite audiences via digital means, they will increasingly rely on the kinds of metrics of success that such technologies make possible (Finnis et al., 2011). This will create new frameworks for measurement and understanding of the audience, which will in turn create new factors in their evaluation. By increasing the representation of, and information about, digital audiences within the overall audience profile, online and digital audiences will continue to grow in importance for institutional reporting and in concepts of the audience (Villaespesa, 2015; Stack & Villaespesa, 2015). This can change who is recognised and counted within the museum's conceptions of the audience and how the museum responds to and thinks about those audiences. It will also create or exacerbate the divides between those institutions that can capture and access this kind of information about their audiences and those who cannot.

Lynda Kelly has argued that although traditional methods for evaluating museum programmes remain useful and necessary, the sector needs to utilise new methods and strategies. She describes a critical "shift in museums from mission-led programme development to balancing content and audience needs through a transaction approach [which] requires a broader research-focused agenda" (Kelly, 2004, 45). However, moving more of the burden of measurement of audiences onto technological solutions does little to resolve the fundamental challenges of all forms of audience research: the questions of analysis and action. Who is doing what with the data? How is it being used and translated into knowledge and action? Romanello (2013) flagged this concern when considering the place and use of more traditional visitor studies in two Spanish and two French art museums, noting that data analysis rarely takes priority. Instead, collected data is often used for marketing and economics and to demonstrate a public focus that may not carry through to action (p. 71). As noted above in connection with the adoption by reception research of digital data, collecting data on visitors and their interactions with the museum is arguably meaningless without significant contextual analysis to discover what that data means (Thorhaug & Lomborg, 2016). The scale of data available for collection about visitors through automated and digital means adds a layer of complexity to this. Robert Stein recently argued:

Now that museums are beginning to have the tools and expertise at their disposal to monitor, track, record, and analyze all the various ways that the public benefits from their work,

the real task begins to redesign the process and program of museums and to embed impact-driven data collection into every aspect of our efforts. (2014, n.p.)

Doing so will necessarily require the museum to create new programmes, new language and communications capabilities and new responses to meet the needs of the newly conceptualised audience. Whether museums can do this, or even want to, is where some of the most significant challenges still lie.

One of the ongoing challenges for those pursuing visitor research has been ensuring that the results of such research are fully built into and reflected within the museum's undertakings. This is something that Marilyn G. Hood documented in 1991, yet there is evidence that these concerns persist today. For instance, Romanello (2013) conducted 20 interviews with museum staff who work directly with community members and visitors from four art museums in Spain and France to explore how visitor research is applied within the museum context. She discovered that the awareness of the potential for visitor studies to inform organisational approaches was not diffused across the institution but was concentrated in those who felt they had expertise in audience development strategies. Margee Hume (2011), too, noted of research into museum visitation, including motivations for visiting and visitor expectations and satisfaction, that "there is little evidence that findings are incorporated into museum practice" (Hume, 2011, p. 75).

It is important to consider that although digital technologies can provide insight into the actions people take whilst visiting the museum or using its online resources, they cannot necessarily provide insight into motivation, feelings or learning whilst there. Traditional mechanisms for audience research such as interviews and surveys remain important, even as new technologies offer opportunities for new insights (Jensen & Sørensen, 2013). Additionally, while visitors to the physical space of the museum will continue to carry the burden of being the audience most associated with quantifiable success for funders and other stakeholders – at least until the museum is better able to monetise and quantify the value of its online audiences – all aspects of audience behaviour will inform the concepts that museums have of their audiences.

A further paradox emerges in this increasingly mediated context, with low barriers to entry, wherein it becomes easy to imagine that all audiences and publics are represented and made visible. However, as Sonia Livingstone pointed out, "not all audiences participate, and not all participation is mediated" (Livingstone, 2013, p. 25). Although the turn towards digital participation and quantification of audiences has greatly increased the visibility of many of those previously without representation, there is a significant danger in imagining that *more* means *all*. Even as certain participants in digital or networked activities become discernible, others are rendered increasingly invisible. Frequently, it is those audiences that are most vulnerable who lose out in such a dichotomy; those without digital tools or skills, those who cannot advocate for themselves due to language or economic barriers, those who are young or old. As identity practice becomes explicit, measurable and analysable, in the context of public or semi-public online activities, those who cannot or choose not to participate are increasingly powerless to shape their own experiences or to influence the organisations that serve them. This is significant for institutions such as museums whose audiences are increasingly found online in addition to their traditional place-based locations.

Where next for audience research in museums?

Hooper-Greenhill (1994) pointed out that museums have long been caught behind audience studies in mass communication and cultural studies, both in terms of concept development and methods. However, the convergence of media and digital technologies has prompted the sector

to embrace the tools and methods of online audience measurement and consider how such approaches may be utilised in the measurement of onsite visitors as well as online audiences. Doing so is important because, as institutions with public-facing missions, museums are increasingly expected to mount a compelling case that tangible and meaningful benefit results from investing in the arts and culture. Trustees, funders and the public increasingly expect that museums will not only deliver upon their missions but also that they will provide evidence of that accomplishment. Mere numbers through the door, or clicks on a social media post, can fail to paint a full or accurate picture of an institution's impact, so research that can speak to the institution's influence has become increasingly sought after. As such, the museum's audience and its conceptualization have irrevocably become linked to questions of impact and success. Mapping and measuring the audience – with traditional as well as innovative qualitative and quantitative methods – matters, because it acts to justify the museum's ongoing existence and why it needs support and funding. It has also become seen as a crucial factor in reconceptualising the institution as a participatory and democratic institution that positively impacts its community.

Like media organisations, museums are highly invested in their conceptualisations of their visitors and audiences because they are, as Ien Ang (1991) notes, dependent “on the actual existence of the audience in very material terms” (p. 3). However, while museums depend on their audiences, they cannot be certain of their interest and involvement in its products. In the United States, a recent National Endowment for the Arts (NEA) Survey of Public Participation in the Arts (SPPA) survey noted that arts attendance amongst United States adults has generally been in decline, and that attendance at art museums, craft fairs and visual arts festivals, specifically, decreased in both 2008 and 2012 (Blume-Kohout, Leonard, & Novak-Leonard, 2015, p. 6), and visits to art galleries and museums in the United States declined by 31% between 2002 and 2012 (Silber & Triplett, 2015). Such numbers can be worrisome for institutions whose livelihood depends on their capacity to meet their audience's needs and to demonstrate value and impact whilst doing so (see Karen Knutson's chapter in this volume). This is one reason that audience research has often focussed on non-visitors, or those who don't attend museums, to learn more about the factors that impact such decisions. Recent ethnographic research by Emily Dawson showed that low-income minority groups attending natural history museums and science centres tend to express the feeling that museums are not “designed for us” (Dawson, 2014). The groups perceived museums as expensive, even when entry was free, and thought they would feel unwelcome and unwanted. Dishearteningly, these negative expectations were frequently met. Audiences remarked that they didn't know how to behave within the museum, which meant that they felt uncomfortable or excluded. This is a significant concern for institutions whose reproduction relies on their capacity to create experiences that keep visitors returning.

For reasons both political and practical, it therefore becomes important to ask, who is and is not participating in a museum's mediated spaces and activities? How is that participation valued over other kinds of experiences? Who is advantaged and disadvantaged by the increasing capacity to measure, quantify, name and analyse via digital means? And how do these practices shape our institutions and the assumptions we make about those who do or might use them? If, for instance, we know that the institution can be costly and unwelcoming to people from minority and low socio-economic backgrounds, how do we account for those audiences if they are already unable or unwilling to participate? Can the museum's resources be mobilised to meet the needs of those often-vulnerable visitors and audiences whose actions and requirements are rendered invisible? As museums refine the tools and technologies for capturing and analysing visitor data, they must be careful to interrogate their own assumptions about the audience, what success looks like, and who is and isn't being served by the institution.

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Part II

Environments

*Kirsten Drotner, Vince Dziekan, Ross Parry and
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Museums and media companies share an interest in understanding their cultural and social environments, not least their visitors and audiences. As institutions serving their communities at various levels – be they local, regional, national or international – they need to closely monitor whether their cultural goods and services are appreciated by or serve the purpose of their respective constituencies and stakeholders. To provide such knowledge-to-act-on for businesses and organisations has been the task of different forms of applied, often commercial, research.

In the area of academic media research, scholars have sometimes taken on the task of providing such practical, strategically useful knowledge to media companies, advertisers, and political regulators in order to help them better understand how media can optimise their appeal to actual and prospective audiences in commercially viable ways. Other media researchers have been more concerned with examining the socio-cultural role of the media, considering to what extent the media succeed in serving as vehicles of democratic citizenship and cultural identity-building, and catering to a diversity of tastes; thereby providing an important critique of the machinations of media communication at discrete institutional, systemic and more diffuse socio-political levels.

In a seminal article, media scholar Paul F. Lazarsfeld labelled the knowledge interests driving these two kinds of research “administrative” and “critical” communication research (Lazarsfeld, 1941). Administrative research is oriented towards “goal-oriented and instrumental studies that resolve specific issues for the purpose of developing, planning, or maintaining some communication activity” (Jensen, 2012, p. 359). In Lazarsfeld’s words, such studies “solve little problems, generally of a business character” (Lazarsfeld, 1941, p. 8). Conversely, critical research “addresses the wider social, cultural, and historical issues that technologically mediated communication raises, often in a user perspective and with reference to the public interest” (Jensen, 2012, p. 359). As Lazarsfeld put it, such research engages in “forward-looking projects related to the pressing economic and social problems of our time,” taking up “the general role of our media of communication in the present social system” (Lazarsfeld, 1941, p. 8–9), and it is sometimes conducted “purely for the purposes of intellectual understanding” (Barker, Mathijs, & Turnbull, 2015, p. 4).

In making this distinction, Lazarsfeld suggested, first, that often a specific research activity can be categorised as one or the other; second, that both kinds of research serve legitimate institutional or social interests; and third, that in many cases it is not possible to draw a

clear-cut distinction between communication research that is “administrative” and research that is “critical” because these approaches “exhibit a number of similarities and are often combined in practice” (Jensen, 2012, p. 360).

The chapters in this part can be seen as research-based interventions which analyse different relationships between museums and their environments in ways that, to a greater or lesser extent, transcend and cross-fertilise administrative and critical lenses for observing museum communication. The research-based findings and arguments in the five chapters may serve, on the one hand, as insights which can be operationalised into practical initiatives by museum professionals in order to improve their community, audience or visitor relations; on the other hand, they throw critical light on the roles that museums play in their wider societal environments, as resources for democratic participation, complicit collaborators with global IT-corporations, catalysts of creative expression, or as learning environments for cultural citizenship.

Taking the issue of natural history museums and climate change as her case, Karen Knutson focusses upon the increasing tensions that natural history museums face when creating exhibitions about controversial issues. In order to do so, Knutson describes the difficult balancing acts of four different natural history museums and their efforts to put the sustainable future of the planet on the agenda, while simultaneously serving the (often competing) interests of their local and global communities, corporate sponsors and political communities. She identifies how attempts to move beyond collections and exhibitions as an authoritative, unidirectional and non-partisan communicative form (such as the Climate and Urban Partnership initiative in the United States) offer a broad range of learning experiences to their local communities, including dialogical and activist forms of community outreach.

Knutson’s chapter thus exemplifies the combined “administrative” and “critical” ambition being developed among some museum communication researchers: on the one hand, her analysis and the recommendations emerging from it offer very tangible and practical advice about communication and learning strategies that museums can adopt to be “part of the neighbourhood” (such as to convene community networks, organise climate festivals, etc.). On the other hand, the analysis presents the embryonic contours of a radical theoretical rethinking of the public agenda of natural history museums in the age of planetary climate threats.

In her chapter, Rikke Haller Baggesen discusses how the entry of mobile media into the museum, with their technical affordances for new modes of visitor and public engagement, has also led to the emergence of new ways of thinking about how museums perform their role. “Mobile museology,” she argues, creates new forms of organisational agility (both inward- and outward-facing). Blending theoretical insights and illustrative examples, Baggesen reveals that while mobile technologies offer museums opportunities to design new experiences that enrich visitation as well as other situated encounters that transcend the physical boundaries of the museum, a mobile mindset might support critical thinking about how they can pursue participatory and dialogical involvement of the public that destabilises established cultural hierarchies.

Palmyre Pierroux illuminates “meaning making,” “relevance” and “engagement” as pivotal concepts for designing and analysing the roles of digital, mobile and social media for learning in gallery settings, on interactive websites and through online archives. By applying Lawson & Lawson’s (2013) conceptual inventory of cultural congruence, cultural correspondence and cultural relevance, Pierroux’s chapter demonstrates how museum mediascapes structure visitor engagement and learning. By taking a hybrid visitor and reception analysis to the subject, she focuses on how opportunities for visitor engagement are constructed in concrete museum mediascapes; exemplifying this via an observational study of how a multi-professional research-practice partnership of learning researchers, museum curators and interaction designers analysed student usage of mobile and social media in the National Museum of Art, Architecture

and Design in Oslo, Norway. In doing so, this research contributes critical understanding to how museums can approach their educational objectives by becoming a testbed for innovative media design in the wider societal context of building the learning literacies required for the 21st century.

According to Pille Pruulmann-Vengerfeldt and Pille Runnel, by inviting audiences to engage in creative and co-curatorial roles in exhibition-making and, by extension, museum-making, the historical cultural authority of museums as heritage institutions is challenged. The rich empirical cases drawn upon in their chapter (mostly taken from the Estonian National Museum's diverse participatory initiatives) adopt a dialogical stance to groups and individuals in their surrounding communities. On the one hand, these examples offer concrete "communicative and participatory choices" for museum practitioners to consider; while on the other, the chapter also raises these "hands-on" initiatives to the level of civic agency and democratic reflection, where they can be seen as vital contributions to the museum "as a pillar of democratic society."

Finally, Bjarki Valtýsson and Nanna Holdgaard analyse museums' use of empowering digital technologies that enable the creative participation of audiences as they intersect with the political objectives and commercial interests in the experience economy. The authors present a strong case for understanding how the digital promise of creative empowerment is always embedded in the "new public management" reality of considering visitors as "prosumers" in wider processes of commodification. This embedding is explored through two analytical cases, The Amsterdam Rijksmuseum's "Rijksstudio" and Europeana's "VanGoYourself," where people are invited to play digitally with artworks "charged" with the historical authority of art museums in ways that end up being monetised either by the museum itself or by IT giants like Facebook and Google. The chapter invites reflection by museum managers and curators about the potentially exploitative implications of invitations to audiences to creatively re-mix, design and reproduce artworks for mundane everyday objects like T-shirts and mugs, or to share them on social media platforms; at the same time, it presents a compelling and incisive critique of the widespread hype about creative empowerment often offered by cultural opinion leaders.

Together, these chapters exemplify the combined "administrative" and "critical" application of museum communication research. The ways in which museum communication can attain a higher degree of relevance for and empowerment of their audiences and visitors is to some extent a shared goal and ideal of the analyses offered by the authors of these five chapters. The challenges facing these endeavours to make a real difference in a museum's environment are many, just as empowerment comes in many varieties of dialogue, engagement and collaboration, and operates on different scales of socio-cultural embedding – from adaptation to the drivers of the experience economy to creative in-gallery self-expression and identity-building. The chapters in this part show how most of these endeavours rely on the museums' imaginative use of digital, mobile and social media, framed by an over-arching regime of mediatisation.

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II.1

Rethinking museum/ community partnerships

Science and natural history museums and the challenges of communicating climate change

Karen Knutson

This chapter explores changing relations between communities and science and natural history museums in the United States. Using the case of climate change, I highlight some of the communication challenges faced as museums negotiate new roles in light of the needs of funders and public audiences. Museums have long traded on their role as a non-biased source for authoritative information, but recent efforts at climate change education in museums can be used to pinpoint some of the complex factors surrounding communication and messaging in museum work. This chapter explores the institutional frameworks that shape how climate change education has been communicated in museum settings and suggests a rethinking of museum work as networked and community-focussed.

In 2012, 150 natural history museum professionals, curators, educators and researchers gathered in Washington, DC, to plan and develop a research agenda for natural history museums in the 21st century (Watson & Werb, 2013). Over the two-day meeting, many subgroups and breakout discussions developed different aspects of the agenda. One self-organised group decided that before a research agenda could be created, they would first need to establish some common ground for thinking about the values and beliefs that ought to characterise the natural history museum of the future. At the end of the meeting, this group presented the following manifesto:

February 15, 2012 DRAFT

Statement on the assets, public value, and potential of Natural History Institutions
“*The Declaration of Interdependence*”

The natural history institutions of the world affirm that:

Humanity is embedded within nature and we are at a critical moment in the continuity of time.

Our collections are the direct scientific evidence for evolution and the ecological interdependence of all living things.

The human species is actively altering the Earth's natural processes and reducing its biodiversity. As the sentient cause of these impacts, we have the urgent responsibility to give voice to the Earth's immense story and to secure a sustainable future.

WHAT WE ARE

We are places, people, collections and facilities that connect the natural world and humanity in the past, present and future. We are trusted and we are in the public trust.

DISCOVERY – We make discoveries and create knowledge

We create new knowledge, collect, study

We are a collection of experts

Our collections continue to be global resources of knowledge.

PRESERVATION – We are the keepers of the record

We are the places where our culture houses its treasures

We are a bank for information for the future

We are the archives of a changing world

AUDIENCE – We are learning institutions

We disseminate, inspire and inform

We tell the whole story

We connect art, science, nature, place and culture

We are a resource for people to take action

We are a meeting ground for science and culture

We are where children learn about the diversity of the natural world

We are places for public deliberation.

CREDIBILITY AND PUBLIC TRUST

We are owned by our public

We are trusted

WHAT WE NEED TO BE

We recognize these tenets and our assets as the basis for a framework of collaboration and action:

We will be places where the complex challenges of the future are met in an open, honest, inclusive and rational way.

We will be welcoming to all people, not just our traditional constituents.

We will actively engage our assets, science and stakeholders with local and global nature.

We will be the storytellers of humanity's origins; the interface between humans and nature.

We will reinvent ourselves to become trailheads for lifelong journeys of nature and science exploration.

We will be agents of social change and embed people in nature by giving them new eyes with which to see the world and to understand their responsibility.

We will work together.

We will catalyze a sustainable future for the planet.

We will do this before the end of the century. (The Declaration of Interdependence, 2012)

The statement, which resonated a sense of urgency through the intertextual reference of the title to the American Declaration of Independence (1776), later used to craft ecological variants that focussed on the interdependence of both nations and nature, was bold, and it created a buzz at

the meeting, issuing a challenge for museums to work harder and aim higher – moving beyond focussing on preserving collections to playing a more central role in social change and creating a sustainable future for the planet. The statement underscored the critical moment in history in which we are now situated, and the vital need for extreme change should humanity wish to thrive (or even just survive) in the future.

Still, long after the meeting, I have found myself returning to the declaration and thinking about those who created it. It was a manifesto of sorts, but do they, or how do they, enact its principles? What are the challenges they face as they work for relevance and change in institutions that tend to be organisationally siloed and somewhat resistant to change? How *can* these types of museums address society's issues? I've been drawn to consider how science and natural history museum staff envision their work and how it translates to audiences through exhibitions, programming and the public face of museums; wondering about the visible disconnects between positive apolitical science and technology messaging, and the deep environmental concerns of staff scientists and educators. This chapter explores the nature of this disconnect. After first examining museum communication issues in relation to climate change exhibitions in the United States, United Kingdom and Sweden, I then discuss a recent project on climate change education in museums that I've been working on for the last four years. The Climate and Urban Systems Partnership project proposes a network-based model for museum communication where, working with neighbourhood organisations, museums serve as a resource hub and catalyst to bring climate change educational materials to new audiences outside of the museum. The project offers insight into how museums might work with communities in a way that helps to transcend the limitations of the institutional constraints posed by traditional museum media formats.

Museums and communities

In an article that documented changing beliefs about the roles and purposes of museum work over 70-plus years of museum practice in the United States, Stephen Weil compellingly made a case for museums to change how they think about communication and their audiences, to move from being storehouses, or places for simple amusement, to become places that are relevant to the improvement of society; from being about something to being for somebody (Weil, 1999). This was no small task, and counter to a mode of communication and display that puts the emphasis on an objective and inherent value in objects, as specimens held in a collection. And this knowledge was never a neutral proposition – many have argued that the proliferation of museums in the 19th century, in some ways, served the desire of elites for the social education of the masses (e.g., Duncan, 1995). Tours and lectures and later outreach programmes, featuring artistic copies or trunks with physical specimens, helped new immigrants to learn about Western culture and social norms. The focus was on transmission – helping visitors to see the value of the museum and its objects and collections, without much consideration of the needs, interests and contributions of audiences and communities with whom they might wish to communicate. In the 1990s, cultural museums began a period of deep introspection about how they were representing, or not representing, different communities, their voices and histories in collections and exhibitions (Karp, Kremer, & Lavine, 1992). Museums began to question their relevance for different sectors of the public, and challenged themselves to become more inclusive (Hirzy, 2002), to be a more relevant resource for communities (Weil, 1999) and to address critical social issues such as sustainability in the Anthropocene (Janes, 2009).

There are, of course, many mechanisms that can be used in exhibitions to create a sense of two-way communication between museum and visitor. Voting activities, feedback boards and comment books can be operationalised in myriad ways, all helping to humanise and collectivise

the experience. Museums have also experimented extensively with the voice used in labels, as the traditional third-person creates a sense of disembodied objectivity and a lack of someone with whom to argue (Ravelli, 2007).

Soliciting advice about exhibition content is a common tool used by museums to value visitor input and expertise. But in addition to consultative roles, museums have developed different ways of working with communities. Museums have experimented with co-developing exhibitions and even providing a venue for projects that showcase community members' interests, such as youth skateboarding, that clearly fall outside of a museum's expertise or collections (Dake, 2016). Community dialogue groups for exhibitions with potentially difficult content have been one tool recently employed, as museums have struggled to find ways to embrace and value a more dialogic communication style. And in some cases, museums have partnered with community groups to help change government policies, as in a case of a museum that worked with allotment gardeners to protest the takeover of their plots by development (Zych, 2016).

Climate change in museums: Lessons from exhibitions

Examining four examples of climate change exhibitions provides a useful means to illustrate some of the tensions that have faced museums as they attempt to tackle controversial and complex social issues. The museum sector has a strong belief in its role as a place for open community dialogue and discourse, and as a trusted source for credible scientific information. In a study that suggests that museums have the potential to be key players in climate change action, Cameron and Neilson (2014) note that the public believes that museums are in a unique position in the media and political landscape; as impartial and safe places that are trusted sources of information that is somewhat less political than other media and governmental agencies. However, as Robert Janes (2009) points out, museums are rarely acknowledged in global discussions of climate change, environmental degradation, the inevitability of depleted fossil fuels and the myriad local issues concerning the well-being of particular communities.

Certainly, the museum workers who created the Declaration of Interdependence illustrated a high degree of investment and desire for their museums to become sites for public action and engagement around important social and environmental issues. But how might this concern be enacted within their institutions? While museums now have many avenues for communication, including websites, public programmes, and printed materials, exhibitions continue to be the focal point for museum work. Exhibitions are the primary way that museums communicate to their public. They are expensive, public-facing and define the identity of a museum. Temporary exhibitions, a major attendance driver in many museums, also serve as a mechanism for marketing to new audiences and bringing in special funding to the institution. Finally, in some cases, exhibitions also serve as primary scholarship for curatorial staff. These characteristics make exhibitions particularly important and challenging media for museum communication.

A fine line between urgent and scary: The American Museum of Natural History

In 2008, the American Museum of Natural History (AMNH) presented "Climate change: The threat to life and a new energy future." The exhibition suggested a problem and a solution, but it was criticised for its ominous tone. The grim message behind a graphic illustrating a sudden strong increase of carbon emissions (the so-called hockey stick graph)¹ was amplified with the inclusion of a timeline showing when different industrial technologies emerged: climate changes are caused by human factors. But it was a model of Manhattan of the future under three

feet of water that would provide one of the arresting and memorable visual examples from the show (Mathez, 2016). The scary and strident tone caused a reviewer from the *New York Times* to call it “Apocalypse now, via diorama” (Rothstein, 2008). The exhibition focussed on explaining the science of global warming, as well as insuring that visitors understood that the threat to humans, cities and nature was indeed something to be concerned about. There were a few solutions-oriented elements, such as an action wall highlighting changes individuals could make. But the main focus of the exhibition was on explanatory scientific examples around geology, fuel and nature, and the causes and impacts of climate change. A summative evaluation for the exhibition showed that while a section on alternative energy provided a sense of hopefulness, visitors found the exhibition to be informative but worrying and sensationalised (People, places, & design research, 2009).

California Academy of Sciences: Keep it positive and focus on mitigation

Taking a different approach, “Altered state: Climate change in California,” a 2009 exhibition at the California Academy of Sciences (CAS), presented the issue of climate change in a more upbeat manner. The exhibition provided a good overview of carbon, climate change and local impact, including segments about new technologies, changing oceans, seasonal weather changes, damage to glaciers and mass extinctions. The exhibition included an incredibly large scale physical version of the “hockey stick” graph (showing the rapid rise of carbon in relatively recent past and near future), but the tone here was more awe-inspiring than scary, as the red bar of the large graph extended right up through the ceiling height of the exhibit area. A positive tone was established with the text: “Climate change may be the biggest challenge of our lifetime but Californians are working together to cut back on CO₂. We’re taking action in our communities, religious organizations, schools and businesses.” Focussed on mitigation strategies, the designers felt that visitors needed “a pat on the back” – “they need to feel they have a real impact, and efforts should seem easy and manageable” (Pope, 2014).

Compared to the AMNH example, this exhibition struck a more positive, forward-looking tone. Broad themes and new inventions were showcased alongside individual agency and personal choices related to mitigation. The focus on individual actions and positive technological development was not coupled with a strong section on the political work that would be required to influence policy change. A kiosk provided access to Web-based information about the ideas mentioned in the exhibition. To help visitors think about how their personal decisions impact climate change, a computer station provided a mechanism for visitors to email legislators for emissions reductions measures.

This exhibition included hands-on activities geared to a family audience, including a carbon footprint calculator (a large pendulum-like scale that could be set to reflect different individual choices in transportation, house size, etc.) and a carbon café (a table with plastic food choices where flip-up labels showed facts about the carbon impacts of these foods). Visitors could move a slider bar to choose whether energy use in their home rates from 0–12 tons of carbon per year (the bar notes that the average American home uses ten). While most visitors would be hard-pressed to understand their energy use in tons, the activity provided a basic view of a carbon footprint and its relation to individual choices.

Both of these activities, I think, reflect the difficulties of designing for a general audience. The takeaway messages are both abstract and general: Eating meat has a high impact; driving a car is worse for the environment than riding a bicycle. But the calculations behind both of these activities are actually incredibly complex. What happens to the result when you’re eating locally

produced meat, or salad shipped by air? What about the water and energy inputs required to grow, pack and ship food? While visitors understand at one level that their choices have consequences, there isn't much in the exhibition to help take this understanding to the next level. No supplementary information was provided about how the calculations were determined. How does one consider the cumulative impact and trade-offs from favouring one solution vs. another?

Tekniska Museet: Showing the system

“Spelet om energin” (The energy game) is an exhibition that opened in 2010 at Tekniska Museet Stockholm (TM). It is focussed around a quest for players to reduce a person's amount of carbon dioxide emissions from 10 to 2 tons by 2050, by making a series of choices across a series of interactive games that involve food choices, shopping, travel, etc. Interspersed among the game elements are exhibits that discuss the history of energy sources and Swedish life. The exhibition builds on a historical collection of energy-related exhibits at the museum. There are models of energy sources, historical innovations, advertisements, pictures of residential and industrial energy use and displays that highlight the changing requirements, sources and regulations around energy in Sweden and beyond. The exhibition is child-friendly, and the game is hosted by animated cartoon characters conversing with visitors through signage found throughout the exhibition. Charts and graphs allow for deeper consideration of data and historical trends. Carbon calculators provided in the exhibition offer more complex explanations of assumptions and factors than were seen in the CAS example, but the serious scientific facts are livened with cartoon-like animated sketches to show, for example, changing consumption patterns of gasoline and meat consumption.

The exhibition concludes with a large and positive display featuring designers who are using recycled or energy-friendly materials in their creations. This is a nice example of an exhibition where climate change information is layered into a broader story of the history of energy. While individual agency is important to the narrative, the exhibition goes beyond individual actions to show how systems thinking, future scenarios and the complex history of energy/environment trade-offs are woven into the story of industrialisation.

Science Museum, London: Science and uncertainty

“Atmosphere: exploring climate science” opened in 2011 at the Science Museum, London (SM). It is a high-tech exhibit space with a futuristic aesthetic; slick curves, spotlights and digital lights. Exhibits focus on the science behind climate, what might happen next and options for our future. Information about the sun's energy and the causes of climate change feature in this exhibition, as does a sediment core, notes about the scientists who discovered the greenhouse effect and other key climate science-related discoveries. A positive future note is presented with potential developments that could help mitigate climate change, such as a low-carbon hydrogen cell car. In addition to include strong scientific content, it followed suggestions from science education (e.g., National Research Council, 2009), by focusing on scientists and scientific discovery. Five interactive games are a focal point of the exhibition. One of these high-tech games about mitigation asks users to alter features in a neighbourhood and then test how floods will impact it. An engineering task, the game is fun but a distant abstraction from the very real consequences of climate change impacts.

Comparing the abstract and animated experience of the flood game to the flooded Manhattan exhibit in the AMNH example illustrates a marked difference in communication strategy. Unlike the strong messaging about what can be done, and the positive technological

developments we saw in the CAS and TM examples, here, as in the earlier AMNH example, the Atmosphere exhibit centres primarily on scientific processes and highlights both what is known and what is uncertain about climate change. By focusing on the scientific process here the exhibition meets its goals of showcasing the work of scientists but it is also a distancing move that allows museums to step back from taking a strong stance about the urgency of the problem.

Many have pointed out danger of this approach and how the role of funders, with a stake in continuing carbon extraction, may be influencing the message (Nesbitt, 2015). Shell was the major corporate funder of the exhibition, and the insertion of a level of uncertainty is a common tactic used in messaging campaigns to diffuse the potential impact of a negative message. In recent years, the museum sector has also begun to come under fire for accepting oil and gas funding, as cultural funding has long been a strategy for tobacco and oil companies to gain some public credit (Evans, 2015). The Science Museum is not alone in being called out for its connections to big oil and its potential impact on exhibitions (Strauss, 2014). A growing call for fossil fuel divestment is currently beginning to impact museums, with several large institutions announcing divestment plans (Bagley, 2015).

These climate change exhibitions illustrate some of the complexities that face the Declaration of Interdependence. Politics and the inevitable influence of funding intersect with the desire to provide positive messages and a fun experience for users who have come to expect that these experiences will be fun, with hands-on activities geared towards a younger audience. Also, in the process of trying to present the most agreed upon version of science, museums may be risk-averse in their interpretation of science. This point was nicely pointed out in Macdonald and Silverstone's careful analysis of the development of an exhibition about food. They argue that the demands for clear narrative structure with repeated key messages create a challenge for creating space for potentially controversial points of view to appear. A desire to provide a balanced tone and a desire to call upon a broad cadre of expert scientists for content means that opinions can become watered down into a generalised and not particularly enlightening message (Macdonald & Silverstone, 1992).

The museum audience

Designing content for exhibit experiences that might be seen as controversial is impacted by the context of funders and a desire of museums to present an accepted and balanced point of view. But the audience for these experiences is also a moving target, and audience beliefs about climate change were a contentious issue during the time that these exhibitions were created (Abbasi, 2006). In 2008, a study that measured the American public's beliefs and attitudes around climate change was first run (Leiserowitz, Maibach, & Roser-Renouf, 2008). The "Six Americans" study suggested six categories of American adults, distinguished by their beliefs: the alarmed, the concerned, the cautious, the disengaged, the doubtful and the dismissive. About 51% of those surveyed fell into the alarmed and concerned buckets. During the years in which our example exhibitions were developed and installed, conversations among museum professionals focussed a great deal on how to deal with climate change deniers and convince the doubtfuls and dismissives. Yet with more media exposure as well as several large-scale weather events (i.e., superstorm Sandy impacting the United States East Coast in 2012), the public conversation has shifted rapidly, and the reality is that science museumgoers are probably already among those who were more likely to know about and believe in climate change. In 2011, one study suggested that:

- 90% of frequent museum visitors say that global warming is happening, compared to 67% of occasional visitors and 60% of non-visitors

- 66% of frequent visitors understand that global warming is caused mostly by human activities compared to 48% of occasional visitors and 50% of non-visitors
- 65% of frequent visitors understand that most scientists think that global warming is happening, compared to 47% of occasional visitors and 36% of non-visitors
- 58% of frequent visitors understand that a transition to renewable energy source is an important solution compared to 46% of occasional visitors and 42% of non-visitors (Leiserowitz & Smith, 2011)

There is still much work to be done to achieve the kind of outcomes envisioned by the Declaration of Interdependence. Part of the issue is that science and natural history museums are not as comfortable with controversy as history and culture museums, which have been active sites for discussions about difficult issues such as inclusion, racism and diversity (Sandell, 2002).² But part of the issue might also be that exhibitions continue to be the dominant way that museums engage the public.

Some museums have had a more difficult time than others in addressing their critics, but exhibitions at this time reflect an awareness of potential conflict or controversy surrounding their discussion of climate change. For example, the CAS exhibition prioritises a positive active stance but uses political cartoons to suggest the urgency and potentially controversial nature of the subject. The cartoons were posted beneath signage that said: “Climate is an angry beast and we are poking at it with sticks.” One cartoon of a city street scene showed a man encountering a big cactus growing in the sidewalk. The caption read, “I’m starting to get concerned about global warming.” Another, captioned, “global warming,” showed a scientist walking on a desert saying, “one more study.” In the bottom right corner, it said, “Hint on findings: too late.” The cartoons could be seen as humorous, spot on, or not to be believed, but their use allowed the museum to make a stronger curatorial statement about the human causes of climate change, which was, at the time of widespread climate denying in the United States, seen as a politically difficult statement to make in a museum context.

The challenge seems to be, then, how best to engage and activate current and new audiences who were already pre-disposed to conversations about climate change and sustainability, and how to position the museum and its resources in these conversations, especially if the goal is to foster a continuing dialogue within a particular community (Cameron, 2005, 2013). Research suggests that it is not knowledge but rather identity, social norms and community influence that are consistently predictive variables when examining environmentally-friendly behaviours (Abbasi, 2006; Shandas & Messer, 2008; Allen & Crowley, 2017). Focussing on presenting climate change messaging derived from mass-media-centric perspectives to a general and generic museum audience missed the great possibilities of museums as potential mediators of social change (Salazar, 2011).

Museums communicating climate change: Beyond the exhibition

Climate and Urban Systems Partnership (CUSP) is an example of a museum-based project that explores a changing relationship between museum and community. Devoted to increasing the adoption of effective, high quality educational programmes and resources related to the science and impacts of climate change, the project includes museums in four Northeast American cities (New York, Philadelphia, Pittsburgh and Washington, DC). Museums serve as network hubs to support community outreach and test whether and how museums can be used as catalysts in their communities, to help energise climate change education in informal learning organisations. Programming is designed around three concepts: framing for relevance, participation and systems thinking (Allen & Crowley, 2017). Importantly, programme work asks museums

to design educational information to be relevant to issues of interest and concern to specific community organisations and neighbourhood-level groups. What do city residents care about? What are the issues, topics and activities with which residents personally and socially identify? And then, how will climate change impact these interests? It is a targeted, coordinated approach that relies on connecting personal passions and interests to urban systems and how cities will be impacted by a changing climate (Schneider et al., 2014).

Urban learning networks as community partners

By using this approach, information about climate change becomes available through a broad range of learning experiences in different city settings. The goal is to create a relevant, city-wide approach to improving the state of climate literacy in the urban environment. The CUSP approach involves the creation of networks that are convened by the museums and include community-based groups with varying relations to climate change or environmental interests. These so-called “urban learning networks” work on different kinds of climate change education projects that relate to their constituents and that include museum-based resources. Partners vary in each city but include advocacy groups, city utility or government agencies, informal educators at other museums, zoos, botanic gardens or afterschool or in-school educational providers. Most of the organisations involved are cultural institutions, nonprofits or environmental organisations. Local network participants do not necessarily have climate change education as an outcome of their work. In early planning of the CUSP model, one example that was utilised was a hypothetical kayaking group. Kayakers are not an environmentally focussed group by design, but the group might be concerned about climate change impacts on kayaking. For example, climate change increases the number of extreme rain events, which, given the out-of-date and under-sized sewage infrastructure in some cities, would cause more days of unsafe paddling water due to combined sewage overflow. In this way, activities proposed by museum developers could connect with a pre-existing interest in a range of affinity, geographic or cultural groups in the city.

Rethinking outreach: Testing different communication strategies

The key to this approach is that the CUSP project does not target a typical museum-going audience. Climate education resources from the museum filter through the network and their constituents. The museum works to find ways to help other organisations tap into museum resources and in the process is able to reach potentially non-museum-going audiences. This requires a rethinking of the ways that museums design activities and communication strategies. The traditional mechanisms of museum outreach, either access to specimens or artefacts, or teacher/docent-led presentation of materials, would not necessarily be accessible to, or valued by these audiences.

Each of the four cities in the project has taken on the development of a different communication strategy within its network. In subsequent years, these strategies (which included digital tools, festival kits, neighbourhood strategies and professional development) were tested in the other CUSP cities with changes to suit the particular local needs of each city’s network. For example, as a digital tool project, the New York Hall of Science created a user-generated map of the city that incorporates layers about city infrastructure, flood plains and green roofs and garden projects. Network members also integrate the map into their programming, from uploading citizen science data to sharing stories and pictures via the map. Signage projects and mass media campaigns were tested by the Philadelphia museum the Franklin Institute, with community members asked to participate in a social media photo contest that highlighted the fact that the city will be hotter and wetter due to climate change.

As another example, responding to the needs of network organisations, many community-based organisations attend festivals around the city. In addition to providing information about their organisation, simple hands-on activities are often available. A festival kit project created approachable and hands-on activities used to facilitate conversations about locally relevant issues that have a relation to climate change that could be used by network organisations at temporary festival events. The Pittsburgh museum partner, the Carnegie Museum of Natural History, developed kits related to topics such as the temperature effects of alternative roofing materials, the carbon footprint of mass-transit versus car-centred transit systems, and urban stormwater management. With kits distributed among the booths of several community organisations active in local environmental issues, visitors have multiple opportunities for interactive learning and conversation about climate change and their city within a short time frame.

Participatory, relevant, connected

These projects relate in some ways to some programmatic activities that museums might engage in, but they fall outside the scope of traditional museum media in some important ways. The goal for the project is to grow the network of concerned and informed organisations that can then influence their constituents. Network development and support was a key part of the project, and each of the four cities experimented with different ways to grow and support their networks (Steiner, 2016).

The development of these kits provided the CUSP team a way to better engage network members in thinking about climate change issues that are relevant to their constituents, as well as thinking about the delivery of informal education activities themselves, and while the museum had long created such activities and had exhibit departments who could easily produce high-quality kits, the CUSP team wanted to use the kit development process as a way to engage network members in thinking about the issues around climate change, the educational needs of their audiences, and their own roles as content deliverers. Network members were stationed alongside other members at festivals, and this process of seeing colleagues work with audiences using the kits created a learning opportunity and a common experience upon which they could draw in designing new kits, thereby further strengthening the network and helping network members feel more confident about their ability to share the CUSP message about climate change in relation to the issues of their own organisation. Through this process, we heard network members moving from statements like: “I don’t know what climate change is” to “I don’t see how this activity is related to climate change” to being able to thoughtfully discuss impacts, causes and solutions (Steiner, 2016).

Exhibit designers or other museum staff help with specific aspects of these projects, but education-oriented staff are in charge as network developers and managers. They are partners in the network, and in this work, focussing on participation, relevance and connectedness, they are museum professionals that model a new kind of relationship-centred, socially-focussed museum (Silverman, 2010; Salazar, 2011). The emphasis in the project is on creating a place for conversation and dialogue, not prioritising the unidirectional sharing of information (Sandell, 2002). Local community-based organisations and stakeholders (a heterogeneous and multidisciplinary group) engage in many learning opportunities, such as: workshops, quarterly “Ask a climate scientist” webinars, Climate News alerts, a monthly seminar series, kit design challenges and networking. Through project activities, a network strengthens, and diverse groups or organisations benefit from collaboration beyond the initial scope of the project.

As CUSP requires a reorientation of how museums typically envision their work with audiences, some unusual programmatic choices have resulted. The Philadelphia museum team asked their marketing department for money to build a special bike for a neighbourhood bike rally.

It was a multi-person powered contraption with umbrellas that opened and shut as the wheels turned. It was not a familiar activity for the education department, and marketing and finance department staff asked questions like, how on earth is this part of a climate change education project? Where's the science? Where's the education? The bike was a silly thing really, but the team sensed that it was an essential part of the project for climate change education the museum was working on. The bike promoted the CUSP project and ostensibly highlighted the fact that the city would be much wetter in the future due to climate change, but the bike's real purpose was to build credibility in the community network. The neighbourhood had an annual bike parade, and to participate in this activity was about belonging and being a part of the neighbourhood: to participate was to build community. Once guided by their own educational motives and perspectives, here the team has had to step back from being the primary driver of programming. Museums have had to find ways to connect with network partners and to really see themselves not as a provider of services to, or for, a community, but to see themselves as one of many within the community who are working for change.

By working with a network of other organisations, the museum was forced to think more broadly about its impacts and outcomes. Unlike traditional forms of museum outreach, providing educational programmes that highlight the museums' resources, the CUSP model puts the focus more squarely on the museum being a side-by-side part of the learning community. This means that the museum is asked to cede some communicative authority, and to engage, as Brenda Dervin suggests, in true dialogue with their network partners and their constituents, looking to understand and address differences in priorities, beliefs and understandings, instead of pushing out messages designed solely with the museum's own mandate in mind (Agarwal, 2012). This has been a challenging project for the museums. Museums struggled with their roles as conveners of CUSP networks, wondering how they could engage network members in feeling empowered and validated in the network to take ownership of joint activities. Migrant funding was used to provide network members with additional opportunities to pursue new ideas that emerged through CUSP work. In one city, over the course of several years of instability in the host museum, the network was able to sustain itself in spite of many leadership changes within the museum partner. Across all of the museum partners, we have seen that the CUSP network process has been able to inform future projects, both in the development of new educational work with existing network partners and also in the use of the CUSP framework for determining strategic areas of work in museum-wide activities.

Extending the work

By reviewing climate change exhibition examples and seeing how the message has been softened, generalised and otherwise limited due to the influence of politics helps us to reflect on the best ways to make use of limited museum communication resources in order to make more significant impacts on community change.

Exploring the issue of climate change in museums illustrates a real challenge for those who work in museums and feel strongly committed to the social charge suggested in the Declaration of Interdependence – for museums to be a stronger voice in the global scientific community that is fighting for change to protect the future of the planet. Museums have long traded on their role as a non-biased source for authoritative information, but these examples highlight the complex negotiations that are at work behind the design of exhibition experiences. Creating a message that balances the needs for content and curiosity, funders' requirements and fun, within a context of a market-driven edutainment enterprise, is difficult. Figuring out which audience, and how to successfully target the appropriate audiences, makes the process even more complex.

In this chapter I wanted to bring together extended exhibition examples and examples of educational practices for several reasons. Critical museology has been used to expose the complex political workings of exhibitions, and having detailed examples of our work is important for the field. Too often museums think of their impact in terms of the visitor who walks through the door, and success on the admissions income generated. In the past, exhibitions were the only place where a museum connected with their audience. In this time of our rapidly changing media landscape, an onsite exhibition experience is but one of many potential locations for a connection. It may be that museum dynamics have not yet begun to align financial models with these new realities. As our exhibition examples suggest, providing a content-rich exploration of controversial or difficult content is not necessarily in line with the desires of a day visitor. And with a topic like climate change, where the science, the impacts and public attitudes change so quickly, exhibitions can be out of date the day they open. For museums to remain relevant as an educational or civic partner in a community, they must find a balance between serving the needs of a casual family or social audience and the demands of providing trustworthy and timely scientific information.

The CUSP project extends how we think about our work in museums in a couple of important ways. Rather than our traditional view of learning taking place at the individual or family level, as we do in a museum experience, the project looks at learning at a community level. Project activities may involve the museum being one step removed from the actual learning situation, and work with network members on how to facilitate these learning activities has important ramifications for learning at the network level. The project asks museums to take on a leadership role in the creation and support of networks, fostering new connections, sharing and hopefully, new communities of practice in the process.

In this process, it is hoped that museums might begin to see themselves not as competitors in a field of limited audiences but as part of an ecosystem of organisations all working to improve the lives of everyone in the community. In this, the museums are redefining their value to the community, not merely providing interpretive content to new audiences, but by working through other organisations to provide resources that tap into authentic needs of their constituents.

Finally, and most importantly perhaps, the new approach enacted by the CUSP project worked to leverage the resources of museums and informal learning organisations to catalyse new discussions about climate change. By focussing on sending resources out of the museum, the project asks museums to think differently about their potential role in the communities in which they live. As the project team grapples with new modes of communication, they encounter issues that raise issues about some of our foundational beliefs about museum communication strategies and the role of museums in our society. Museums are at an interesting juncture, looking for ways to be agents of change while still living within the bounds of institutional frames that value the repository of artefacts and large numbers of visitors through the gate. The climate change example points towards a troubling shift in museum practice but perhaps also suggests a potential way forward to a more energised and relevant community-based focus for museum work.

Notes

- 1 See Mann (2013) for a discussion of how the hockey stick graph became an influential icon of debates about climate change.
- 2 One exception in the science museum world was the exhibition "*Race: Are we so different?*" This widely touring exhibition made use of advisory boards and extensive staff training to help support dialogue with visitors and the community (Cole, 2014).

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II.2

Mobile media, mobility and mobilisation in the current museum field

Rikke Haller Baggesen

Mobile media have entered the museum, offering new affordances for museum communication and supporting new modes of visitor engagement. Accordingly, and increasingly so with the advances of smart phone technology, the potential and implications of mobile museum media have been given a great deal of attention by museum technologists and museological research (e.g. Arvanitis, 2005; Tallon & Walker, 2008; Proctor, 2010a, 2015; Katz, LaBar, & Lynch, 2011; Kelly, 2013; Stuedahl & Lowe, 2013; Kidd, 2014; Hughes & Moscardo, 2017; Pau, 2017). As significant as the arrival of smart phones in the galleries, however, is the emergence of a mobile mindset within the museum field. This mindset and its related practises, which can be understood in terms of a “mobile museology,” is the focus of this chapter.

“Mobile museology” presents a way to describe and discuss certain movements in the current museum field. As a perspective, it relates to but goes beyond mobile media and the uses of mobile phones in museums, as the notion of mobile also corresponds to wider concepts of mobility and mobilisation. A mobile museum is thus a museum set in motion, an institution characterised by change and organisational agility. Mobility, on the one hand, relates to making the museum mobile by transcending the museum space, physically and virtually. At the same time, mobility denotes a cultural and organisational movement, taking place in the museum field. Mobilisation, in turn, represents the triadic objective of mobilising museum knowledge to make it relevant for a wider, current audience; of mobilising the public to engage with museum heritage; and of mobilising museum institutions to adopt the mobile mindset and engage with digital culture and societal needs.

This chapter will present and discuss this compound perspective through an assembly of theoretical ideas with illustrative examples of mobile museum practices. First, I will address the underlying incentive for being mobile as both a need and an urge to stay current. Next, I will zoom in on the uses and implications of mobile phones in museums. Subsequently, zooming out to see how media are also used to transcend the museum setting, I will then explore how the notion of mobility also calls for an expansion of how we understand the museum field. Finally, I will look at how museum collections, audiences and organisations are being mobilised in different ways, but with the common goal of sharing cultural knowledge and making museums relevant for society.

In the mobile museological perspective, mobile phones are seen as both a concrete medium and an exemplary technology that is emblematic of a mediated environment (Hjarvard, 2008). Hence, while this contemporary study considers the implications of mobile and digital media as both catalysts and instruments for specific, situated present-day developments, in a more general sense, the mobile museology perspective also exemplifies how museums and museology are (always) set in motion by technological, theoretical and cultural developments. The confluence of technological advancements, changing user cultures, institutional objectives and museological ideas has thus inspired museums to reach out and rethink their missions and practices. By highlighting these movements through the use of a common, multifaceted concept, mobile museology offers a perspective for considering the correlation of particular aspects of current museum practice.

As an inherently transdisciplinary field, museology is well suited to address these interrelated developments. In particular, in addition to the attention given to the experience economy paradigm on museum thinking (Weil, 2012; Weaver, 2007), recent years have seen a notable expansion in the area of digital heritage, drawing on insights and approaches from media and communication studies (Parry, 2007, 2010a, 2010b, 2013; Katz et al., 2011; Giaccardi, 2012; Drotner & Schröder, 2013a). Moreover, a new wave of “post-critical” museology (Dewdney, Dibosa, & Walsh, 2013) has again put existing practices and museum development at the centre of museum research (Macdonald, 2011), contributing knowledge that may help institutions navigate a new sea of possibilities. While this orientation towards practice is vital, the critical interests and insights of the New Museology (Vergo, 1989; Teather, 1998) are still invaluable for reflective museum practice and scholarship (Marstine, 2006, 2011).

In this chapter, these perspectives are supplemented by understandings from fashion theory (Kawamura, 2005; Svendsen, 2006; Mackinney-Valentin, 2010), presenting a new framework for understanding motivations and change mechanisms in the museum field. Hence, while often focusing on the fashion clothing field, the academic discipline of fashion studies also addresses the processes and implications of fashion as a wider societal phenomenon, showing how a range of cultural matters are affected by trends, corresponding to sociological needs and desires. Thus, institutional developments should not be seen in isolation, but as contingent with the rationales and shifts in the surrounding cultural environment. Therefore, as the desire for the new as an underlying driver of development is as acutely sensed in the cultural world and the digital domain as in the field of fashion, fashion theory can help us understand how the museum absorbs and is affected by digital trends and cultural ideas.

The desire of the new as a driver of museum development

Changing trends, reflecting changing ideals, can be traced across the museum field, e.g. in relation to exhibitionary practices (Schulze, 2014), curatorial interests (Baggesen, 2014b) and even museum architecture (MacLeod, 2013). Technology, too, has been everchanging throughout museum history, and new developments have often been met with excitement and concern in equal measure (Griffiths, 2003; Parry, 2007). According to Parry (2013), however, as digital technologies have now been an intrinsic part of museum practice for so long that digital thinking has become hardwired into some “postdigital” institutions, the persistent talk of digital media within the framework of “newness” in museological research makes little sense.

At this point, therefore, rather than discussing the novelty of digital media per se, it might be useful instead to consider digital museum developments as an example of the wider significance of “newness” in museum practice. Thus, while museums may serve as repositories of the past, they exist in the present and are therefore affected by societal changes and contemporary

demands, including the demand to be contemporary, reflecting the now and the new. Indeed, in contrast to Gertrude Stein's (alleged) comment that "You can be a museum, or you can be modern, but you can't be both" (as cited in Dercon, 1999), present-day museums are required to be exactly that.

Accordingly, museums today are faced with the challenge of navigating a technological field that is rapidly evolving. The postdigital condition is thus not simply a matter of "going digital" once and for all or shifting to a "perpetual beta" mindset, but also of perpetual assessment of or experimentation with a steady stream of newly introduced platforms and technologies, and, not least, meeting the expectations of a public switched-on to the latest tech trends. Museum communicators, educators and technologists as well as museum researchers are therefore working to understand the significance and complex uses of digital media for information seeking, meaning-making, social interaction and entertainment in society, to adapt communication strategies to existing user cultures and make best use of digital affordances for museum missions. Yet, as documentation struggles to keep up with the speed of innovation, developments are also affected by the hype following launches of new technologies or platforms:

We have learned that the scope for digital work is vast and continues to evolve, and that our collective desire is mutable and at times unpredictable. "Apps, apps, apps – we must have an app!", "Augmented Reality – that's the new thing. We've got to get us some of that", "Touch-activated tables. They're really nifty – shouldn't we get one for our next exhibition?!" The examples are legion, and the eagerness to burn money on the latest thing is huge. (Wang, 2014, pp. 180–181)

Thus, while examples such as mobile applications, augmented reality and touch tables each represent unique affordances that may successfully be leveraged for museum mediation, the adaptation of these technologies is also driven by a perceived need to keep abreast as well as a simple desire for the new.

According to fashion scholar Maria Mackinney-Valentin (2010), this craze for novelty corresponds to the modernist fascination with the new as a sign of progress, but also with a postmodern experience of the "failure of the new," a feeling of meaninglessness and lack of satisfaction that leads to perpetual lust for new impulses. As each new technology or platform promises new opportunities for museum communication, while many new services in reality turn out to disappoint in terms of experience or uptake, both of these factors are found in the museum field. Moreover, as noted by Lister, Dovey, Giddings, Grant and Kelly:

the "new" in new media as a reference to "the most recent" also carries the ideological sense that new equals better and carries with it a cluster of glamorous and exciting meanings. The "new" is also "the cutting edge," the "avant-garde," the place for forward-thinking people to be. (2003/2006, p. 11)

Digital innovation thus presents not only a solution to a practical or communicative need, but also an added signal value, marking (sometimes explicitly marketing) the museum as up-to-date with culture and technology. Moreover, and ironically, whereas musealised artefacts appear timeless in their representation of times past, digital museum technologies date rapidly, meaning that even the most "bleeding edge" media are eventually destined for the museum of past museum technologies. As a consequence, museums may feel compelled to replace serviceable but out-dated technologies and mediation formats with newer models, simply to avoid a sense of staleness.

Thus, technological trends do affect the museum space as well as museological practice and discourse, as museums take inspiration from each other (Sanderhoff, 2014b), following the lead of pioneering institutions, copying successful concepts and learning from the experience of fellow practitioners. While different institutions take different approaches, certain strategies – being also rationally motivated in accordance with institutional objectives, learning potentials and cultural tendencies – gain prominence, while others are soon forgotten. However, as is also the case for fashion clothing (despite its reputation of ruthless dismissal of last season’s looks in favour of “the new black”), trends in museum technologies and strategies are not simply a case of one dominant wave after another, of *in vs. out*. Instead, as suggested in Mackinney-Valentin’s study of trend mechanisms, we may see the development of digital trends in the museum as an “organic and sprawling” process (Mackinney-Valentin, 2010, p. 192), a dynamic evolution and ebbing out of particular tendencies, distributed spatially as much as temporally.

Either way, keeping up with the fast-paced evolution of digital media and use cultures is demanding and requires insight, resources and dedication. Not least, it requires a willingness to embrace a condition of perpetual change and a new set of ideas. Hence, this dynamism and readiness for change is (cast as) a necessity for keeping up with a changing society, including changing technologies and use practices. Following this argument, being a modern, progressive museum organisation means moving with the times and being organisationally mobile; that is, movable or in a state of movement – embracing a mobile mindset.

Mobile media in the museum

The accelerated evolution of mobile technologies, as well as the entanglement of social/mobile media with the digital culture complex that together inspire rapid adoption and innovative uses of smart phones for museum purposes, makes mobile communication strategies an interesting focal point for examining the wider conception of a mobile museology. Hence, as our daily lives and social interactions have increasingly become permeated by our use of mobile, social and online media (Ling, 2004, 2008; Castells, Fernández-Ardèvol, Qiu, & Sey, 2007; Deuze, Blank, & Speers, 2012; de Souza e Silva & Sheller, 2015), so museums have learned to inspire and engage with a networked audience through these channels (Kelly, 2013; Drotner & Schröder, 2013b; J. H. Smith, 2015). Thus, the privileged position as personal media, along with the unique possibilities for augmenting the museum experience resulting from advanced technology including cameras, Bluetooth technology and GPS software, has made the smartphone an attractive platform for museum communication. Accordingly, writing in 2010, Nancy Proctor proclaimed that “[w]eb apps and iPhones are the latest great hope, and offer exciting new ways of reaching audiences on-site and beyond” (2010a, section “It’s not about the technology;” para. 3).

As noted above, different institutions have adopted different strategies for mobile communication, yet a few prevalent approaches can be seen across the field. The most widespread solution, tailoring informative content for smart phone consumption to serve as a guide to the museum or to enrich the experience of a specific exhibition, is now common practice. Many institutions have also embraced the opportunity to rethink the traditional tour format, however, as suggested in Proctor’s instructive guidelines for designing for mobile (Proctor, 2010a; cf. Tallon & Walker, 2008). Other projects have successfully managed to break with the tour format altogether. And just as museums have been keen to experiment with new concepts for mediation, so the combination of tech and heritage has appealed to digital developers, resulting in a multitude of inventive designs.

Some of these take a playful approach, as in the case of *Tate Trumps* – modelled on the popular card game Top Trumps – or *Magic Tate Ball*, that combines information about location, time of

day and local weather conditions, to present you with an artwork from the collection to match your surroundings. Others, such as Museum of London's *Streetmuseum* app, use location software and camera-based AR technology to overlay historical images onto present-day streetscapes, while the *Vizgu* app employs object recognition software to provide information about artworks in the National Gallery of Denmark. Another notable orientation is found in projects inviting users to engage in conversation with museum curators, such as Brooklyn Museum's *ASK!* application or the recurring cross-institutional #askacurator event on Twitter.

Interestingly, despite such inventiveness, and in contrast to the popularity of mobile phones for personal and social media communication outside and even in the galleries, getting the public to use the mobile interpretation tools offered by museums has turned out to be as big a challenge as upholding former prohibitions against the use of mobile phones in museums (Proctor, 2010a; Katz et al., 2011; Sanderhoff, 2014a). Nevertheless, while the early-day excitement around museum apps has faded, a mobile phone may still prove an invaluable tool for enhancing your museum visit, whether or not you choose to engage with institutional offers.

Documenting experiences on social media and posing for museum selfies has thus become part of the museum visit, at least for a significant section of museum audiences; a practice which may be viewed as both communicative engagement (Budge & Burness, 2017) and as a form of identity work (Kozinets, Gretzel, & Dinhopf, 2017). If the dominance of visual appeal over other types of sensory experiences in traditional exhibitions can be otherwise problematised (e.g. Hooper-Greenhill, 2000), at least in the context of visual social media culture, museums' combination of aesthetic displays and cultural capital has thus proven to be a winning formula. Consequently, just as mobile phones have become visibly prominent in the museum space, so museums and galleries have gained a strong presence on visual platforms such as Instagram, thanks to uploads from the public as well as from museum communicators, who have been quick to adapt to evolving social media practices (Kelly, 2013; J. H. Smith, 2015; Wilson-Barnao, 2016). As such, these developments in mobile communication strategies illustrate the institutional agility implied in the notion of mobile museology.

As the mundane habits of social media communication have entered into the museum context, and audiences have begun to "hack" the museum experience (Mendes, 2015), however, the traditional notion of the museum as a privileged space for hushed reverence and contemplation has also become challenged by the changes of behaviour resulting from mobile and social media culture. While the actual problem with overeager photographers may be exaggerated, heated discussions about mobile etiquette and the virtues and vices of museum selfies have been doing the rounds in the general media as well as in the museum twitterverse and blogosphere, where the question of mobile media in museums has sometimes become invested with notions of "culture wars."

In this way, mobile media have not only presented museums with an opportunity to design for new experiences and rethink how to communicate institutional knowledge to their visitors. In a more profound sense, the spontaneous entry of mobile media habits into the museum has reopened the question about who has the right to define how to experience the museum.

Mobility: Transcending the museum space

But just as mundane behaviour is spilling over into the museum space, so museums are increasingly beginning to transcend their physical premises to offer cultural experiences online, on location or to-go. The *Streetmuseum* app, mentioned above, is one example of this approach, while other strategies, calling attention to local history and places of interest through city walks, mobile interfaces, augmented reality or social media campaigns, are examined by e.g.

Arvanitis (2005), Stuedahl & Lowe (2013), Sharples, FitzGerald, Mulholland, & Jones (2013) and Liestøl (2014).

That museum mobility is more than a matter of mobile media, however, is illustrated in Bautista & Balsamo's mapping of contemporary spaces of museology:

Museums utilized early versions of mobile technology in the 1950s with handheld devices based on a closed-circuit shortwave radio broadcasting system. The real innovation in new museology, however, came when mobile communications were applied to new populist practices that took the museum experience out of the physical place. Today the "mobile museum" consists of satellite museum spaces around the city or the globe, museum programs conducted off-site by museum staff in schools, libraries and community spaces, and special vehicles designed to provide a multi-media learning experience based on museum collections that travel to schools and other organizations throughout the city. In the past decade, the "mobile museum" has morphed into what we call the "Distributed Museum": a postmodern formation through which the modern museum seamlessly adapts its traditional functions and spaces to the new cultural environment of the digital age. (2011, section "From place to space," para. 4)

While Proctor (2015) similarly speaks of a "museum as a distributed network" in reference to an online network of media platforms, Bautista & Balsamo thus propose that new practices of mobility have contributed to the transformation of the museum from a place-based institution to a dispersed and practiced space (2011, with reference to de Certeau). Hence, not only is the museum space transformed by changing practices, it is also potentially present wherever practiced in public and private spheres.

Today, therefore, museums increasingly seek to become part of and relevant for the everyday life of their publics (Black, 2012; Simon, 2016). Creating social events and cultivating museum spaces as recreational hangouts; reaching out to educational institutions and local communities; and generally making museum artefacts and knowledge approachable and comprehensible for a wide audience; all these initiatives can be seen as strategies for breaking down museum walls, metaphorically speaking, and converting the temple of the muses to a welcoming public space, and, conversely, make the museum present in the everyday (Cameron, 1972; Hooper-Greenhill, 2000; Proctor, 2010b; Sanderhoff, 2014b.).

The mobility perspective is thus also connected to a growing museal interest in the everyday, mirrored outside the museum field by an impulse to curate the quotidian. The miniscule "Mmuseumm," for example, exhibits prosaic objects in a disused New York lift shaft as well as on Instagram, presenting itself as a "natural history museum about the modern world." In a similar vein, the "Museum of the Mundane" (actually a clever campaign advertising the conceptualising design agency) attaches museum-style labels to urban objects like ATMs, manhole covers or traffic lights around London and New York, to highlight the significance of design. This promotion of the ordinary is reminiscent of Nobel laureate Orhan Pamuk's "Modest Manifesto for Museums," stating that: "We don't need more museums that try to construct the historical narratives of a society, community, team, nation, state, tribe, company, or species. We all know that the ordinary, everyday stories of individuals are richer, more humane, and much more joyful" (2012, §3). Together, they show up a pattern of interest in common experiences, a "re-enchantment" of the mundane (cf. Huyssen, 1995; Gumbrecht, 2006) and a blurring of the boundaries between museums and the surrounding society.

As argued by Arvanitis, "museums can use mobile media not just to leave their walls to enter the everyday, but also to disclose the everyday that usually goes unnoticed" (2005, p. 255). Moreover, he states, mobile mediation strategies may not only serve as extensions of the museum,

however, but could also be used to bring the voices of the everyday into the museum. For that to happen, however, museums need to mobilise the public as stakeholders in the museum mission and be willing to share the ownership. Thereby, according to Proctor:

[t]he museum as distributed network is a persistently radical, rather than temporarily revolutionary, model not only because it gives voice to the silenced, but also because it decentres traditional structures of power, enabling relations both hierarchical and rhizomic between its nodes (people, communities conversations) and their connectors. (2015, p. 521)

As illustrated, mobile media have provided a useful tool for elaborating on pre-existing trans-museum practices, helping museums extend their reach and make their knowledge available in new contexts outside the museum building. Now with technological amplification, natural history can be studied in the wild, sites of historical significance can be brought to life, and art and design can be mediated in the urban space. But the transcendence of the physical museum can also take many other forms, in which the museum blends into everyday environments in partnership with local communities.

Fundamentally, the notion of museum mobility therefore reflects a new way of thinking of museums not in terms of bricks and mortar buildings or even as collections of objects and artworks, but as an inclusive practice where the museum becomes an actor or node in a distributed network of knowledge. Such a notion may prove challenging, not only to an audience that may still think of museums primarily as places to visit (cf. Falk, 2013), but also for museum institutions, as the implied symmetry between the musealised and the mundane, and between expert and everyday knowledge, upsets traditional cultural hierarchies.

Mobilisation: Of collections, audiences and institutions

The interest in breaking down the barriers between museums and the surrounding society is rooted in a long-running ambition, ignited by the protest movements of the '60s and '70s, to remodel the museum institution in opposition to earlier associations with exclusivity, elitism and authoritarianism (cf. Cameron, 1972; Mairesse, 2007/2010; Weil, 2012). However, having lost – or deliberately left – their former position of privilege, museums today need to work hard, and work differently, to legitimise their cultural status and show their relevance for society. Hence, as described by critical theorist Andreas Huyssen:

there is now a verb “to curate,” and it is precisely not limited to the traditional functions of the “keeper” of collections. On the contrary, to curate these days means to mobilize collections, to set them in motion within the walls of the home museum and across the globe as well as in the heads of the spectators. (1995, p. 21)

The various strategies for mobile mediation, referenced above, as well as all other exhibitionary or communicative strategies onsite, outside or online, can thus be seen as an effort to actualise museum collections and institutional knowledge, to make it relevant and meaningful for a current-day audience.

In keeping with both the expectations of the experience economy (Pine & Gilmore, 1998) and the inclusive and constructivist ideals of new museum practice (e.g. Hooper-Greenhill, 2000; Simon, 2010), mobilising museum knowledge has increasingly come to mean engaging, as opposed to lecturing to, the audience. Furthermore, the *ICOM Cultural Diversity Charter* explicitly calls for museums to work for inclusion, diversity, innovation and also participatory

democracy: “To promote enabling and empowering frameworks for active inputs from all stakeholders, community groups, cultural institutions and official agencies through appropriate processes of consultation, negotiation and participation, ensuring the ownership of the processes as the defining element” (ICOM, 2010, §2).

Hence, museums need engagement from the public in order to comply with these principles and meet institutional and political objectives. They must therefore work to mobilise the public to take part in outreach initiatives and co-constructive practices, such as crowd-curation (Bernstein, 2008), citizen science and crowdsourcing tasks (Ridge, 2014), remix and dialogue projects (Sanderhoff, 2014a) or Wikipedia edit-a-thons (Roued-Cunliffe, 2017).

As indicated by these examples, increasingly – if by no means exclusively – the engagement objective is realised with the help of digital means and with inspiration from digital participatory culture (Jenkins, 2006; Simon, 2010) and digital ideologists (Sanderhoff, 2014a). Mobilisation of the public is therefore often associated with (social) media, whose interactive features are discursively constructed as particularly conducive for civic engagement (Lister et al., 2003/2006; Meecham, 2013). Hence, as argued by Axelsson, “[t]he concepts of participation and interactivity are often intertwined in highly normative and persuasive discourses according to which the technological solutions for interactivity will translate into more active forms of participation, even in the field of traditional governmental politics” (2011, p. 163). Similarly, “audiences” are recast and activated as “users,” following digital jargon and reflecting an ideological investment in notions of activity, expression and (social) interaction as preferable to (passive) observation (Axelsson, 2011; Holdgaard & Valtysson, 2014).

Seeing how, in these efforts and in this discourse, the social obligations of museums are conflated with the (increasingly contested) democratising potential of digital media, it is clear that digital ideology, as much as digital technology, has had a profound impact on how museums understand their role and relationship with the public. Hence, according to museum educator Mike Murawski:

we can no longer unplug the effect of digital technologies and Internet culture on the ways we think about and re-imagine museums today. If the lights go out in the museum and all the Wi-Fi hotspots and screens go dark, we might lose the physical technology infrastructure, but we do not lose the powerful participatory, networked, open source culture that has taken root in our audiences and communities in the 21st century. (2015, p. 209)

Murawski’s essay derives from the *CODE | WORDS: Technology and theory in the museum* anthology (Rodley, Stein, & Cairns, 2015), which started as “an experiment in online publishing and discourse” on the dialogical post-blogging platform *Medium*. The original format is thus in itself interesting, as an example of the digital imprint on museum thinking and practice (and an inspiration, perhaps, also for the academic museological community). The collection of essays is written by and primarily for museum practitioners, and, like the *Sharing is Caring* anthology (Sanderhoff, 2014b), aims to inspire both action and reflection in the museum field. Of course, these informed and balanced writings also address challenges and concerns. Nevertheless, the overall message is clear: that the world of today is transformed by the World Wide Web, and that museums must get with the digital programme to stay relevant and make this a change for the greater good:

The future is ready for us now; hungry for our resources, craving our expertise, listening for what we have to say. It is our obligation – our *privilege* – to respond and serve. A few brave institutions lead the way, but even they must race to keep up. (Edson, 2014, p. 15)

What transpires in these volumes, and across conference fora, museum blogs and #musetech twitter streams, is thus an ongoing effort to mobilise museum institutions to “embrace digital” and (thereby) effect social change.

The drivers of this discourse are museum technologists and digital curators and educators seeking to inspire and engage colleagues and management, in order to accelerate digital developments. Hence, while postdigital institutions (cf. Parry, 2013) may already have been profoundly changed by the implementation of digital practices and technologies, these practitioners argue that an even more radical change in attitudes and actions with regards to openness, inclusion, agility and impact is still needed (e.g. Sanderhoff, 2014a; K. Smith, 2014; Stein, 2015; McKenzie, 2015). While museum debates have always been imbued with ideology, what is new in this particular discourse is the linking of social objectives with digital ideals and infrastructures. In the words of Ross Parry (2017), what we see is thus a movement towards becoming “digitally purposeful,” that is, using the power of digital technologies to fulfil museum missions and live up to social and societal responsibilities.

While this movement may be gaining momentum, the compulsion of a collective of digital champions to motivate their peers is, however, also fuelled by a fear of stagnation or sense of *immobility* and hence a sign of continued resistance and ambivalence in the museum sector regarding institutional change and digital developments. The concept of mobilisation, understood here as the triadic ambition to amplify collections, to activate audiences and to advance a responsive and responsible digital mindset in museums, is therefore also – inherently – related to potentially conflicting ideas and interests.

Hence, while the idea of mobilising collections may not be contested in and of itself, the strategies for doing so can be, as evident in the recurring debates decrying populist programming and rampant technophilia. Similarly, the ambition to engage the public as collaborators and stakeholders is not necessarily met with a similar level of enthusiasm by the invitees. Moreover, the role of the museum as solicitor and owner of the exchange is problematised (Lynch, 2010), as are the assumptions around the democratising powers of social media for civic empowerment (Baggesen, 2014a). And while the altruistic ethos of OpenGLAM (Sanderhoff, 2014b) and similar initiatives are clearly in keeping with the core mission of museums, is still an open question whether digital investments, participatory projects or mobile expansions, for that matter, are really the best way to realise the potential of museums in the 21st century. As such, the mobilisation perspective speaks to the ongoing experimentations and negotiations about how to be relevant and how to move forward.

Conclusion: Implications of mobile museology

Mobile museology rests on the understanding that museum change is not so much a matter of metamorphosis, in the sense of realising an inherent, ideal potential once and for all, but of perpetual morphing and moving with a changing world – being mobile. In this chapter, I have argued that modern-day museums are set in motion by a convergence of technological and cultural developments with museological and political ideals. What we see is thus a movement that is simultaneously inspired from within the museum, in keeping with the obligation to be in service of knowledge and society and the need to stay current and relevant, and stimulated by external pressures and possibilities, in particular the fast-paced evolution and inherent ideology of digital culture and technology. In this perspective, we can therefore understand digital technologies, i.e. mobile media, as both instruments for and catalysts of a changing museum field. I have furthermore suggested that a desire for the new, as explicated with reference to fashion theory, is one of the driving factors in this development, to explain how the significance

of technology in museums is not only related to communicative potential, but also to cultural currency. Moreover, the need to stay abreast means that institutions are encouraged to adopt a responsive, mobile mindset.

One of the most notable trends in museums over the past decade has been the interest and innovation in the use of smart phone media for museum communication. As illustrated in the *Mobile media in the museum* section, institutions have employed very diverse strategies for supporting the museum visit with mobile interfaces. As importantly, museum visitors are now using mobile media to explore museums on their own terms, also as part of an ongoing engagement through social media. While mobile phones have thus opened up for new types of museum experiences, they have also challenged the traditional museum ritual as well as the institutional monopoly on communication.

Mobile media have also been valuable for museums in their efforts to distribute knowledge and call attention to nature, art and heritage in original contexts. In this chapter, I have used the notion of mobility to describe this move to transcend the institutional setting and engage with the everyday. What is implied in this move, however, is also a blurring of power relationships and cultural boundaries, and a radical rethinking of the museum as practice rather than place.

Finally, as described in the mobilisation section, curatorial, educational and communicative practices are already changing, to support both intellectual and practical engagement. Hence, with inspiration from digital participatory culture, museum communities are being invited to engage in dialogue and participate in co-creative projects on-site or online. Such initiatives have already had a notable effect on how museums act and understand themselves. However, a core of museum thinkers argue that the impact of museums could be greater still if only institutions learned to harness the powers of the Internet. The concept of mobile museology suggests that we see these developments as interrelated. What the concept represents, is, however, not a fixed model of museum developments or of the interrelation of museum and media. Rather, it is an illustration, highlighting the connections between particular aspects of current museum practice, taking place in a dynamic and fluid interchange between institutions and technologies, cultures and ideologies.

Mobile media have thus created an impetus for museums to think outside the physical framework, and have also, in a very tangible way, brought connected and creative digital culture practices into the museum space. In this sense, mobile media have both required and inspired organisational mobility. The mobilisation dimension, however, reminds us that this development has not happened in isolation and is not simply an effect of media affordances. Instead, digital technologies and digital ideology have taken root in museums because they correspond to particular museum objectives and museological ideals. Hence, not only do digital technologies ease curatorial and administrative tasks; the values and practices of mobility, dialogue, openness and participation are also a perfect match for museums' commitment to create and disseminate knowledge and to secure inclusion, diversity and relevance. As these aspects of museum work have gained a greater prominence in recent years, so the attention given to the potential of digital media to support these objectives have similarly increased. But the unique value of museums in society is also still linked to material collections and to the atmosphere and architecture of the museum as place; qualities that are not easily translated into binary code. Moreover, audiences are sometimes even more conservative than museum management when it comes to finding new ways to engage with heritage. Therefore, while the interests and instruments of digital culture and museum culture may overlap, they also differ in significant ways. How digital, mobile and social media can be used as means for museum missions, and how much digital culture and technology should be allowed to influence museum practices and understandings, are therefore questions for an ongoing debate, resulting in ongoing experimentations into how to be a modern-day museum. Meanwhile, society and technology moves on, and mobile museums move along with them.

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II.3

Learning and engagement in museum mediascapes

Palmyre Pierroux

Rapid developments in digital and mobile technologies have intensified what is historically a long tradition of material experimentation with display and communication in museum buildings and galleries (Brenna, 2014; Klonk, 2009). As encounters with collections are extended and distributed by such digital means as mobile devices, social media platforms, beacons and ubiquitous Internet access, distinctions between experiences of material and virtual displays and objects are becoming increasingly blurred. Kidd (2014) conceptualises these developments as *museum mediascapes*, and in recent years implications of new forms of museum communication and design have been explored from a range of perspectives (Drotner & Schröder, 2013). As with other sectors tackling the impact of emergent media developments on established practices and institutions, questions are raised about how museums may stay relevant for the communities and citizens they serve (Simon, 2010; Kidd, 2014), and how they may foster trust, diversity and democratisation through new forms of learning and engagement (Laws, 2015).

In this chapter, there is a focus on how opportunities for visitor learning and engagement are constructed in museum mediascapes and how these may be studied from a “meaning making” framework. The term “meaning making” (Wertsch, 1991) is used to highlight the significance of personal agency, identity and social interaction in processes of appropriating knowledge, and to make a distinction from the primary emphasis on mastering knowledge in specific subject domains, as in schools. Meaning making is proposed as a concept to frame studies of learning and engagement in museums, both because these are public spaces with collections and exhibitions of artefacts that are uniquely rich with meaning and signification, and because museums are frequently experienced as open-ended, interpretative cultural encounters (O’Neill & Wilson, 2010) by people without a specific learning agenda (Crowley, Pierroux, & Knutson, 2014). Moreover, although school field trips to museums are often framed by formal learning goals, studies also point to the significance of students’ out-of-school literacies when digital media and tools are introduced as learning resources in field trip activities (Bakken & Pierroux, 2015; Pierroux, Krangle, & Sem, 2011). The concept of meaning making thus provides a lens for studying more broadly the ways in which digital media and other cultural tools engage visitors in exhibitions in museum settings, without being constrained to formal/informal learning classifications. Interestingly, the idea that museums are ideal “test beds” for innovative media design aligns with greater policy focus on the museum’s societal role as an educational institution and

increased professionalisation of museum curators specialising in education (Crowley et al., 2014; Dobbs & Eisner, 1987). In the museum sector, education curators are thus challenged to develop an expanded and updated view of knowledge, learning and learners (Bevan & Xanthoudaki, 2008), prompted not least by developments in digital content, social media and their use in designing learning experiences for gallery settings, interactive websites and online archives.

A particular challenge for learning and the “educational turn” in curating (O’Neill & Wilson, 2010) is competition for wilful, voluntary attention (Leont’ev, 1994; Vygotsky, 2004). Voluntary attention, or what Lawson & Lawson (2013) call attentional engagement, is understood as culturally developed and entails an experience of exertion that flows from the mastery and control of attention (Leont’ev, 1994). Given today’s globalised and ubiquitous access to information and entertainment, the audience’s ability to produce or withdraw attention is an important curatorial and design consideration in museums. For this reason, museum mediascapes are ideal sites for exploring how encounters in art, cultural heritage and science museums facilitate attentional engagement and other skills needed for learning in the 21st century, such as planning, implementing and evaluating one’s own learning processes, and being inquisitive and persevering in self-directed learning (Ludvigsen, 2015). Importantly, these skills are not only related to educationally framed academic subjects but are part of what Erstad, Gilje, Sefton-Green and Arnseth (2016) term “learning identities.” This concept describes the ways in which interests, knowledge and engagement become activated and facilitated in ways that are significant for learning trajectories throughout a lifetime. This chapter aims to clarify the importance of museum mediascapes as arenas for educational research on learning identities and the development of 21st-century skills.

The meaning making framework, presented in detail below, is developed to explore the main question posed in this chapter: how do features of museum mediascapes construct opportunities for visitor learning and engagement? The theoretical framework draws on sociocultural research and findings presented in a recent review of learning research on engagement (Lawson & Lawson, 2013), in which three types of engagement are identified: cultural congruence, cultural correspondence and cultural relevance. I use this framework to relate key developments in museum mediascapes – in art, science and history museums – to the study of meaning making in these settings.

A perspective on meaning making

Sociocultural roots

Visitors become engaged and attend to features in museum exhibitions when these are experienced as relevant, whether alone or as part of sharing experiences in a group (Leinhardt & Knutson, 2004). In her new book, *The art of relevance* (Simon, 2016), American researcher Nina Simon refers to two key aspects of relevance theory from a “cognition and communication” perspective (Wilson & Sperber, 2004) to discuss how museums might better address the challenge of engaging audiences in learning activities and museum events more broadly. According to this theory, Simon explains, relevance is achieved when the communicative intention 1) stimulates positive cognitive effect through information that yields “new conclusions that matter to you” and 2) is obtained and absorbed through the least amount of effort (Simon, 2016, p. 32). To “matter,” then, involves a process with affective and cognitive dimensions that make it possible to build on previous knowledge, in the sense of cognitive change or learning something new. Simon extends these general principles in relevance theory to form a broad framework to discuss museum projects, many of which are oriented toward fostering large-scale community

engagement. However, as a theory primarily concerned with mapping interpretation from a single speaker's informational intentions to a single hearer's comprehension (Wilson & Sperber, 2004), it does not address the analytical challenge of understanding how relevance is constructed through participation in social structures and institutional settings.

It is in this regard that a sociocultural approach augments notions of relevance based on classic conceptions of affective and cognitive engagement, by allowing one to relate individual psychology to sociohistorical contexts or "activity settings" (Wertsch, 1985). Sociocultural perspectives were introduced in museum learning research in the late 1990s (Hein, 1998; Schauble, Leinhardt, & Martin, 1997) and have since gained broad acceptance, introducing new areas of inquiry into the role of physical contexts and social interaction for meaning making in museums. Sociocultural approaches focus on mediated human activity, whereby analyses include the cultural and social organisation of the context in studies of learning. Vygotsky's (1978) "general genetic law of cultural development" situates the very genesis of thought-language relations in the social plane:

Any function in the child's cultural development appears twice, or on two planes. First it appears on the social plane, and then on the psychological plane. First it appears between people as an interpsychological category, and then within the child as an intrapsychological category. This is equally true with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition. (Vygotsky, 1978, p. 57)

Applying Vygotsky's genetic approach to the study of museum mediascapes directs attention to how digital resources, museum settings and social practices (sociogenetic level) mediate visitors' learning and engagement (ontogenetic level). What are the mediational features of museum mediascapes, and how do these features structure opportunities for visitor learning and engagement?

Sociocultural studies of engagement

In their review of learning research on engagement, Lawson & Lawson (2013) use this genetic approach to organise their discussion of studies that include "sociocultural indicators of engagement." Although the studies reviewed have primarily examined student engagement in higher education, the findings are relevant for this discussion. First, they identified studies of engagement that focused on interaction as it unfolds on a "second by second" basis, or on a microgenetic level. Lawson & Lawson (2013) explain engagement at this level as cultural congruence: "the degree to which students experience support for their social-cultural and personal identities *while participating* in activity" (p. 446). It is at this level that media designs support attentional engagement requiring minimal effort. A second sociocultural indicator of engagement identified is termed cultural correspondence. This is engagement specifically linked to learning, and "the extent to which a particular task, activity, or setting socially and/or cognitively activates and/or connects with students' prior knowledge and experience" (Lawson & Lawson, 2013, p. 447). Studies of visitors' learning in museum exhibitions using media that distinguish between different levels of expertise would be an example of how this concept could be applied analytically. The third sociocultural indicator of engagement identified in the research is termed cultural relevance, which ties the experience of an activity's personal significance (it "matters" emotionally and cognitively) to one's sociocultural background. This activity aligns with and supports an individual's identity construction and lifelong developmental trajectory. From a learning perspective, cultural relevance might be experienced through media platforms that support personalisation and identity-building over time and in a community.

Importantly, in contrast to engagement research on mental processes that presumes a temporal sequence of context→motivation→engagement→outcome, a review of findings from sociocultural studies suggests that contexts mediate engagement in “a complex and nested arrangement of social–ecological features and processes” that may differ according to subpopulation and institutional features (Lawson & Lawson, 2013, p. 444). Such nested features include engagement with “various tools/objects/technologies (e.g., computers), tasks (e.g., labs/assignments), activities or disciplines (e.g., dance or math), people (e.g., peers, teachers, coaches) and places/social settings (e.g., school or community agency)” (Lawson & Lawson, 2013, p. 444). By closely analysing visitors’ interactions in museums as they unfold, it is possible to unpack how these levels are connected (Maxwell & Chmiel, 2014).

In the section below, I present a framework for understanding how museum mediascapes, as activity settings, structure visitor engagement at these different levels: cultural congruence, cultural correspondence and cultural relevance. References to recent studies of museum media designs are used to illustrate the concepts rather than for systematic review purposes. Following this, interactional data from an empirical study in a national art museum are analysed applying the multilevel framework.

Sociocultural indicators of engagement

Cultural congruence

Linked to research on attentional engagement (Lawson & Lawson, 2013), cultural congruence is important for learning in museums in that visitors “become actively engaged in learning the moment an artifact or museum object attracts their interest” (Banz, 2008, p. 50). To understand how museum mediascapes may be organised to support *meaning making* through cultural congruence, Steier (2014) collaborated with a national art museum in an experiment involving posing and taking “selfies.” The threshold for participating in this activity was hypothesised as low because it was culturally congruent with everyday practices. Visitors first noticed a feed of digital photographs on a screen mounted on a gallery wall that depicted other visitors “posing” like artist Edvard Munch in his different self-portraits. As they walked toward the interactive station, their own images appeared on a screen, triggering attention and interactions with the camera before engaging in the posing activity.

In keeping with the meaning making aims for the media design, the study found that visitors closely observed and discussed expressive and formal characteristics of Munch’s self-portraits as they carefully positioned themselves and compared different bodily and facial expressions for the picture. In this art museum mediascape, then, Steier (2014) found that the act of participating in the posing activity, as a form of embodiment, fostered meaning making. However, it is important to note that, in contrast to Steier’s art museum study, a frequent finding in science museum studies is that visitors engaged in hands-on exhibits have problems learning scientific concepts (Allen, 2004; Atkins, Velez, Goudy, & Dunbar, 2008; Gutwill, 2008). This suggests that facilitating engagement in museum activities that have specific learning goals also entails designing tasks, activities and settings in ways that are sensitive to the disciplinary domain and correspond with visitors’ prior knowledge and experience, whether alone or in groups. This is discussed below in the section on cultural correspondence.

In museum mediascapes, sociocultural indicators of engagement as cultural congruence are not constrained to interacting with a screen interface. In fact, there is extensive research on bodily and sensory interactions with objects and exhibits in all types of museums, and European Union research programs have consistently funded projects that experiment with “future”

technologies and new paradigms of computing in digital cultural heritage that create interactive environments and spaces for visitors without being tied to the desktop, laptop or similar “fixed” metaphors of the computer. Based on a “natural interface” metaphor (Weiser, 1994), interfaces may be designed to more or less “disappear” during use, whereby gestures and motions seamlessly mediate interactions between human beings, machines and their environment. The idea is that eventually, as with “touching” or “swiping,” new human–computer interactions become part of a natural vocabulary of gestures. Responsiveness and different forms of feedback give a sense of control, maintain focus and continue the interaction (Hirsh-Pasek et al., 2015). Human–computer interaction (HCI) research thus frequently attends to microlevel engagement in the design of user experience interfaces for museum settings, including monitoring and adapting the influence of external stimuli–devices on visitors’ interactions in exhibition settings. These developments are increasingly used in the growing field of learning analytics and the design of digital learning platforms that provide continuous feedback to promote self-regulated learning, a central “future learning skill” (Ludvigsen, 2015).

Augmented reality experiences using overlay technologies, and virtual reality using 3D simulations and environments, are examples of emerging technologies being designed to provide rich sensory experiences that can adapt to visitors’ moment-by-moment engagement. In the project ARtSENSE, visitors wore headsets and used natural gestures to interact with multi-sensory content designed to augment exhibitions (Damala et al., 2013). The experimental system monitored visitors’ engagement using different data, including 3D gaze point computation (Hammer, Maurus, & Beyerer, 2013) and physiological responses (biosignals like heart rate, breath rate, skin conductance level) to “obtain the psychological state of the visitor and determine the level of interest with regards to what the visitor is looking at, or listening to but also in order to determine when a visitor is disengaged” (Damala et al., 2013, pp. 125–126). At this stage of development, “engagement” in such technology-driven experimentation is far from naturally occurring; however, cultural congruence seems central to this trend in the design and research of future museum mediascapes. In terms of meaning making, it is important to note that actions at this microlevel are always embedded in “a complex and nested arrangement of social-ecological features and processes” (Lawson & Lawson, 2013, p. 444), among which are the tasks and resources specifically designed to foster learning in museums. In sum, mediascapes construct opportunities for engagement as cultural congruence through designs that trigger interest and support personal and sociocultural identities *while participating* in an activity.

Cultural correspondence

In museums, the design of learning activities often draws on formal education perspectives and resources. There are historical and practical reasons for this, due not least to the teaching backgrounds of many museum educators and the historical practice of school field trips, which commonly employ worksheets as learning resources (DeWitt & Storksdieck, 2008; Kisiel, 2003). Research on worksheet and fieldtrip practices continues to inform the pedagogical design of media use for learning activities in museums. Mobile applications for mystery games are frequently modelled on inquiry learning approaches, for example, prompting visitors working in groups to formulate scientific questions and hypotheses, make observations, collect evidence and communicate findings (Gutwill & Allen, 2011; Klopfer, Perry, Squire, Jan, & Steinkuehler, 2005). Making videos using cameras in mobile devices is an example of “multimodal worksheets” designed to engage students in learning activities. A study by Bakken & Pierroux (2015) in a science museum found that video tasks designed for a field trip were effective in orienting students toward the scientific principles conveyed in exhibits

and in drawing on the exhibits as learning resources. Importantly, the video tasks were carefully designed and tested to also correspond with school curriculum and pre-post visit lessons. The study found that the performative and collaborative activity of making a short video mediated the ways in which conceptual understandings were proposed, challenged, negotiated and eventually revised in the group. In the study presented below, the aim was to similarly explore how established pedagogical principles might be extended and applied to museum mediascapes.

Outside of school field trips, it is frequently argued that it is impossible to control for variation in visitors' previous knowledge and individual learning skills in museum settings, and thus to design for cultural correspondence. Mediascape designs should instead support visitors in taking control of their own learning processes based on what they know or believe about themselves and their knowledge, "recognizing when they understand and when they need more information" (DiSalvo, 2016, p. 4460). Designs to support learning and engagement in complex museum mediascapes are thus increasingly intertwined with developments in technology-enhanced learning (TEL). Museums are included in Scanlon's (2012) typology of areas in which research interests in TEL and informal science learning overlap, and she highlights the role of artefacts and activity in TEL designs that support "remembering and sociality." A clear overlap with TEL research is the design and study of sophisticated systems, particularly for mobile devices, in which content presentations and tasks adaptively correspond to visitors' varying levels of interest or expertise in subjects or exhibition themes to sustain engagement. This may be accomplished through "hint systems" that provide information on cue, scaffolding for different levels of skill in game play, or personalised narratives modelled on visitors' behaviours or profiles. Working with curators, focus groups and learning scientists, often in participatory design processes (Mason, 2015), designs are "concerned with the idea of adapting the selection or presentation of information to a visitor's interests or learning style" (Fosh, Benford, Reeves, & Koleva, 2014, p. 632). Engagement in the form of cultural correspondence is thus achieved by constructing opportunities in the mediascape for closing knowledge gaps on different levels.

Cultural relevance

Museum mediascapes that engage through cultural relevance are experienced as significant on a personal level and resonate with a visitor's socioeconomic and cultural background and interests. In the past decade or so, in keeping with general trends in media strategies in organisations and institutions, social media platforms are often at the core of museums' communication approaches to engage the public in broader societal issues. Social media are recognised for establishing new interactions between museums and visitors, from "liking" and "following" museums' Twitter and Facebook posts to more committed forms of engagement, such as crowd-sourced "transcribing" and "tagging" activities in collection management systems and digital archives as part of citizen science or citizen humanities projects. Studies have found that these new forms of engagement are strongly linked to participants' experiences of the activity as personally and culturally relevant (Eveleigh, 2015; Hetland, 2014; Hillman & Säljö, 2016).

Social media sites also provide museums with data on users' preferences, profiles and behaviour patterns. Nevertheless, as Simon (2016) points out, the success of curatorial approaches to make museums relevant for visitors seems impossible to predict, even when building on audience research and established museum-community relationships. Armed with knowledge or assumptions about what may be culturally relevant for their audiences, museum staff may experience outreach strategies using social media as a kind of "hit-or-miss" endeavor to engaging

visitors in museum collections, events and exhibitions. As discussed in the study presented below, researchers and curators have collaborated to explore how dialogical features of social media may be incorporated into museum settings to make content more relevant in visitors' interactions with exhibitions. In a different study, university researchers and curators at an art museum invited visitors to use social media to "write their own labels" with the aim of creating personal relevance (Parry, Ortiz-Williams, & Sawyer, 2007).

Supporting a sense of personal relevance, which emerges from an individual's cultural and socioeconomic background, also underlies aims of designing adaptive features on guided tour applications for mobile devices. Some delivery systems purposefully integrate the social context of a museum experience, by allowing visitors to design paths and tours as "gifts" for others who might share their interests. Fosh et al. (2014) speculate that "personalization algorithms may be able to learn from the examples of deep personalizations that humans make when gifting" (p. 632). Objects and narratives of personal relevance and interests are collected and shared, providing emotional and aesthetic counterpoint to authoritative interpretations in museum exhibitions.

Applying the framework

To explore how this framework may be applied to the study of engagement and meaning making in museum mediascapes, video recordings of visitors engaged in an "interactive activity" are analysed below. The data were collected in connection with a larger research project in which visitors engaged in mediascape activities in a gallery at the National Museum of Art, Architecture and Design in Oslo in 2013. The content, themes and activities were developed in a research-practice partnership that included museum curators, designers, programmers and learning researchers. The shared aim of the project was to better understand how to design social and digital media to support art interpretation in a museum setting (Pierroux & Ludvigsen, 2013).

The curatorial aim of the activity analysed below, titled "My friends," was to engage visitors in exploring the historical and social context of artist Edvard Munch's life: the relationships and friendships that influenced him, as well as their beliefs, interests, writings and artworks. The content specifically centred on Munch's association with artists and writers known as the Kristiania Bohemians, who initiated a political and cultural movement in Kristiania, the capital of Norway in the 1880s (now Oslo). A "manifesto" produced by the artists in 1889, titled *Nine commandments*, was selected by the curator as a text that illustrated how unconventional the views of this group were for the times in which they lived. A copy of the commandments was placed at the centre of a table for visitors to read (Figure II.3.1). In front of each chair at the table was the profile of an artist from the Kristiania Bohemians: Edvard Munch, Hans Jæger, Oda Krogh and Christian Krogh.

In addition to sitting and reading about Munch and his friends, visitors could read an invitation to "tweet a tenth commandment for your friends" using the *Twitter* app installed on a digital tablet attached to the table. *Twitter* was selected as the social media platform for the activity design because of its specific dialogical features. Tweets can express immediate reactions to events or statements, in the sense of primary speech genres, and they can also serve as utterances that respond to other texts and discourses, especially through the use of hashtags, to create a kind of meta-text (Rulyova, 2017). Finally, tweets correspond with the grammatical form of imperative sentences, as in "commandments." Visitors' posts were visible in a live feed on a wall-mounted screen at the head of the table (Figure II.3.2) and also appeared on the museum's website and *Facebook* page. A thorough account of the learning design aims for the activity has been previously described (Pierroux & Ludvigsen, 2013).

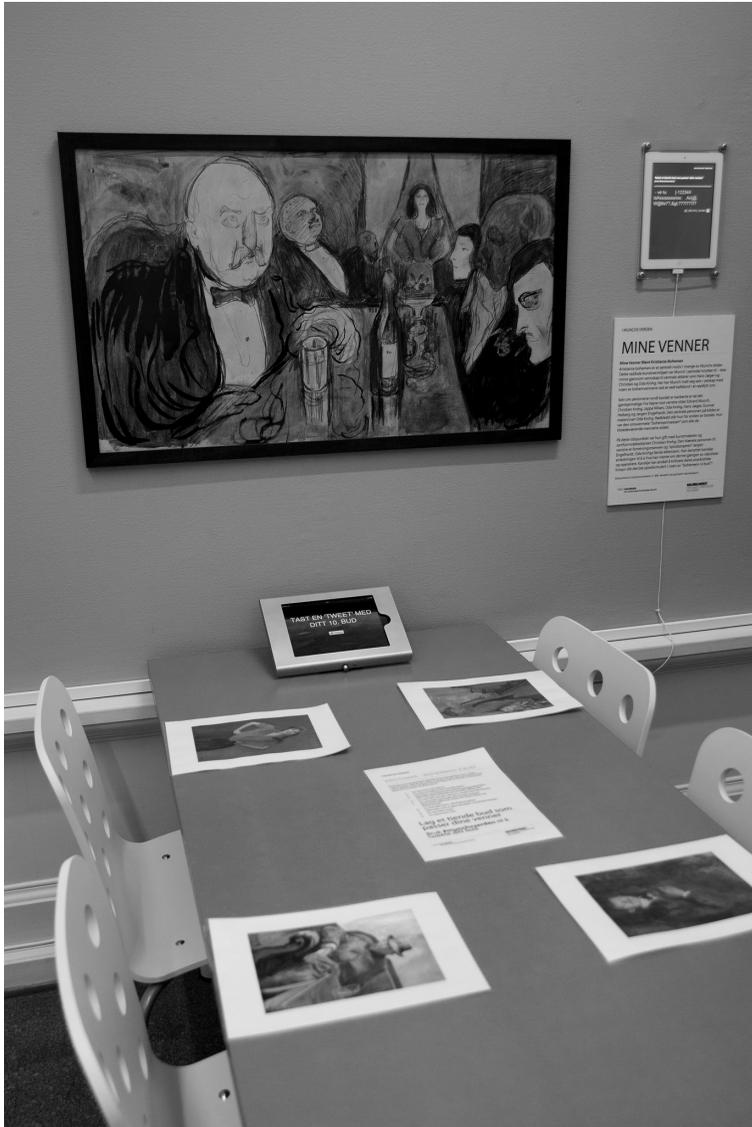


Figure II.3.1 “My friends” activity table in experiment room.

Methodological approach

The research team recruited friends (17–18 years old) at an international baccalaureate program in Oslo to participate in an observational study of a museum visit. Eight small groups participated, consenting to the terms of the study in keeping with ethical guidelines. At the museum, each group was instructed to attend to exhibits in the manner most natural to them, with the provision that they visit the interactive gallery where the “My friends” activity was situated. Three randomly selected groups were followed and video recorded by researchers during their entire visit, in keeping with methods from interaction analysis (Derry et al., 2010; Jordan & Henderson, 1995). The young people were Norwegian but spoke English during this visit, as



Figure II.3.2 Multimodal resources included Twitter feed, tablet, texts and pictures.

was customary in their study program. The recordings were transcribed, and two excerpts from one group’s interactions with the “My friends” activity are presented below. Parts of this data have been analysed in a different study (Gjone, 2015).

The excerpts were selected from recordings of two young women, named “Clara” and “Helene” for this analysis, toward the end of their two-hour museum visit. The conversational tone and exchanges in the excerpts are in keeping with the overall pattern of talk between the women during their visit. The two excerpts were selected from a sequence of interaction lasting approximately ten minutes to study how the tasks, resources and media constructed opportunities for engagement and meaning making. We enter the data as “Clara” and “Helene” approach the “My friends” table.

Excerpt 1

- 1 Clara: Should I tweet? (taking a seat)
- 2 Helene: (also seating herself) It is ... you have to do it in Norwegian.
- 3 Clara: The Bohemians' *Nine commandments*? Eh ... (reading). Oh, and they almost made it into this kind of punk thing (moves the tablet in front of her).
- 4 Helene (laughing and reading task): Oh, you should, like, tweet. Twit. From your own life (looks at the instructions). Right?
- 5 Clara: Uh-huh. (Helene leans over the table and reads the instructions. Clara observes and points to several words).
- 6 Helene: Can you ... he ...
- 7 Clara: Oooh.
- 8 Helene: Ok, so you are supposed to be ... you're him. And I'm this guy (looking at artist profile in front of her).
- 9 Clara: Wait (reading commandments), they hated people like Bjørnstjerne Bjørnson?
- 10 Helene: (shrugs shoulders) That's one of the rules.
- 11 Clara: It says, you're not supposed to ever regret ... (points to a different commandment) "You shall *take* your own life" [italics in original]. Does that mean they should commit suicide?
- 12 Helene: Yeah. It does.
- 13 Clara: Munch did not commit suicide.
- 14 Helene: He didn't?
- 15 Clara: No, he died of, like, pneumonia or something?
- 16 Helene: (shrugs shoulders) Ok. But maybe he tried or planned to commit suicide.
- 17 Clara: Ok. Who are you?

In this excerpt, Clara's attentional engagement is triggered by the invitation to "tweet." Her interest, ease and willingness to participate indicate that the activity is culturally congruent with her use of social media, her personal identity and her idea of what counts as natural behaviour in a museum, as she and Helene immediately seat themselves at the table. Their engagement is sustained while reading the artist biographies in front of them, and the *Nine commandments* on which the tweet activity is based. However, the women are confused about their roles and whose "voice" should be used to write the tweet. The confusion is caused by having an artist's picture and biography before them and ambiguity in the wording of the task: "tweet a tenth commandment for your friends." Understanding the task is a large part of what students do in school (Rasmussen, Krange, & Ludvigsen, 2003), and in this sense, their engagement in negotiating the "correct" approach to the task may be understood as oriented toward cultural correspondence.

However, the task is not the sole focus of interest, as they also express curiosity about the meaning of the different commandments and how to interpret them. This engagement with content may also be understood as cultural correspondence, in that they are clearly able to draw on previous knowledge to make sense of the texts. Clara's surprise at the commandment, "You shall hate and despise all farmers, such as Bjørnstjerne Bjørnson," is linked to her knowledge of Bjørnson as one of Norway's most famous authors from this time. She shows similar surprise when questioning the meaning of the ninth provocative commandment: "You *shall* take your own life" (emphasis in original text). Clara links her reflections on this commandment to Munch, noting that he died from sickness rather than by suicide. In sum, sociocultural indicators of engagement are apparent while the women are participating in the activity (cultural congruence) but also in the extent to which the task, activity and setting activate and connect with

Clara and Helene's prior knowledge (cultural correspondence). The second excerpt transpires a few minutes later, as Clara is taking her turn at the tablet.

Excerpt 2

- 30 Clara: Ok, I tried ... to make one ... that fits (moves tablet toward Helene).
31 Helene: "You shall live in the moment" (takes a picture of the tweet while Clara types).
32 Clara: I wanna go online and remove the tweets. I wanna write them in *nynorsk* [new Norwegian].
33 Helene: Nooo. You know they were against *nynorsk*.
34 Clara: I don't care. I'm making my own.
35 Helene: Hey, you can't write like a "commandment" in *nynorsk*. There's more to it than that. Like, I write in *nynorsk* and then you write –
36 Clara: No, I like *nynorsk*. Do you say *levar* or *lever* [living]?
37 Helene: *Lever*.
38 Clara: *Lever*.
39 Helene: You're supposed to represent them.
40 Clara: No, I'm supposed to represent my friends.
41 Helene: Nooo
42 Clara: Or me.
43 Helene: That guy.
44 Clara: Yeah, that says. No, it says make a tenth whatever that suits your friends.
45 Helene: Make for my friends? (reads the paper while Clara types). You're writing a tenth commandment for the Christiania Bohem (puts paper down). Get it?
46 Clara: How do you know?
47 Helene: Cuz they hated it. That's why they hated Bjørnstjerne Bjørnson.
48 Clara: Bjørnstjerne Bjørnson had something to do with *nynorsk*?
49 Helene: Yes.

In this excerpt, tensions between mastery and appropriation (Wertsch, 2002; Pierroux, Krange & Sem, 2011) come into play in the meaning making process and are linked to social media and the use of multiple resources in an interesting way. Clara's reasons for wanting to write in *nynorsk* are unclear. As one of two official written forms of Norwegian, this is a compulsory subject in school that is hotly debated by Oslo students. Many students consider the language irrelevant and difficult to learn. Moreover, *nynorsk* has always had political overtones, intertwined with nation-building by paying homage to Norwegian roots in nature and rural life. In arguing that she is writing for herself and her own friends and should thus be able to choose the language, Clara indicates that there is something personal at stake in her plan to write tweets in *nynorsk*, strongly related to her identity as knowledgeable in *nynorsk*. In the face of new knowledge presented to her about the Christiania Bohem's disdain for both Bjørnson and *nynorsk*, Clara's engagement wavers between "appropriating" the task by making it her own, or "mastering" the task as Helene interprets it based on the resources available. Applying the analytical framework, then, Clara's engagement may be understood in terms of cultural relevance, in that the experience of personal significance (it "matters" emotionally and cognitively) seems to have some connection to her background and identity construction.

Summing up, applying the analytical framework to the excerpts above made it possible to "zoom in" on the *My friends* mediascape and study how features of the activity constructed opportunities for engagement and meaning making on different levels. Indicators of cultural congruence were found in Clara and Helene's attentional engagement, which was triggered and

then sustained by the “write a tweet” activity. As discussed above, engagement at this microgenetic level is linked in sociocultural research to the experience of support of social and personal identities while participating in an activity. Indicators of cultural correspondence were identified in Clara and Helene’s engagement in understanding both the task and the art historical information about Munch and his friends. Engagement at this ontogenetic level is linked in the research to the ways in which specific tasks, disciplines or settings activate or connect with prior knowledge and experience to support meaning making. Finally, at the sociogenetic level, indicators of cultural relevance were seen in how differing approaches to the activity were disputed and took on personal significance for each of the women, with engagement linked to issues of identity and sociocultural background. As opposed to modelling engagement as a temporal sequence of mental operations, then, the sociocultural framework supported the analysis of how the nested semiotic, disciplinary and social contexts (i.e., texts, tablet, social media, peers, art history, task, setting) mediated Clara and Helene’s meaning making.

Mediascapes and meaning making

Museums may be considered media producers (Kidd, 2014) in the sense that visitors seldom experience unconstructed and unmediated encounters with museum objects and narratives, whether digital or physical (Bradburne, 2008). In parallel with media productions for exhibitions by museum curators with disciplinary expertise, computer scientists and learning researchers have used museums as “sites” for design experiments, testing and developing digital prototypes and for studying informal learning and expert practices (Roberts, 1997; Macdonald, 2002; Pierroux et al., 2007). Interests among interaction designers and technology developers have centred on testing hypotheses about user experience and the affordances and constraints of specific features of devices and media formats, such as mobile content delivery systems, interactive tabletops, augmented reality platforms and immersive environments. Learning researchers, alternatively, have focused on how new technologies may facilitate meaning making for different types of visitors and the advancement of pedagogical theories, design principles and practices.

Given that these respective fields mutually inform the research and design of museum media, projects increasingly involve multidisciplinary teams – including museum partners – working together in a purposively reflective way. As described in the case and sections above, explorations in museum mediascape designs are increasingly cohering in multi-professional collaborations, with learning researchers, museum curators and interaction designers working with shared – but also distinct – interests and skills to produce innovations and rich visitor experiences in different settings (Jornet & Jahreie, 2013; Pierroux & Steier, 2016). These collaborations are producing new methods and practices, often involving visitors, participatory approaches and museum-initiated prototyping spaces (Mason, 2015; Pruulmann-Vengerfeldt, Tatsi, Runnel, & Aljas, 2014) to create opportunities for visitors to learn and experience meaningful encounters with art, science and cultural heritage in museum mediascapes. Looking forward, studies of such multidisciplinary research teams will provide insight into how innovation in museum media challenges organisational values, visitor and learning perspectives and the expertise of designers, curators and researchers.

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II.4

The museum as an arena for cultural citizenship

Exploring modes of engagement for audience empowerment

Pille Pruulmann-Vengerfeldt and Pille Runnel

“Hi! Let’s go and play in the tree house! ... Certainly, you have ideas about what the coolest tree house in the world is. But perhaps you didn’t have the material, skill or a suitable place to build it. Imagine your dream tree house and draw that on paper.”

This is an excerpt from a text distributed by the Estonian National Museum (ENM) to Estonian school students in the first–sixth grade as part of the #ChillingAroundTown exhibition. This exhibition was the research site wherein children’s understandings of urban space through drawings could be explored. The “tree house” emerged as a central concept: several ideas about tree houses were generated, suggesting that this dimension of children’s urban space had to be explored in depth (Runnel, 2015a). Therefore, children were asked to share their imaginings of tree houses as a part of urban culture during the iterative ENM research. For the drawing competition, children were asked to imagine that they were architects preparing a construction project that had to include a plan view of the tree house and explanations about the materials, main elements, location and usage of the building.

These tree house designs were not representations of object-oriented design for simply viewing; rather, they represented relational spaces, domains of communal exchange that children as designers intend to become part of. Although the designs were initially meant to be a methodological tool of exhibition production rather than architectural plans to be realized, four tree houses – a house on wheels, a robot hut, a cactus-like single-mould polycarbonate object and a traditional wooden hut – were constructed as central elements in the exhibition space (Figure II.4.1).

The participatory method not only allowed children to tell their stories but also encouraged ENM researchers to carefully listen to their stories so that the children’s agendas could direct the museum’s exhibit.

This participatory activity at the museum demonstrated the multidimensional potential for engaging audiences in museum-making. It also illustrates how engagement activities can

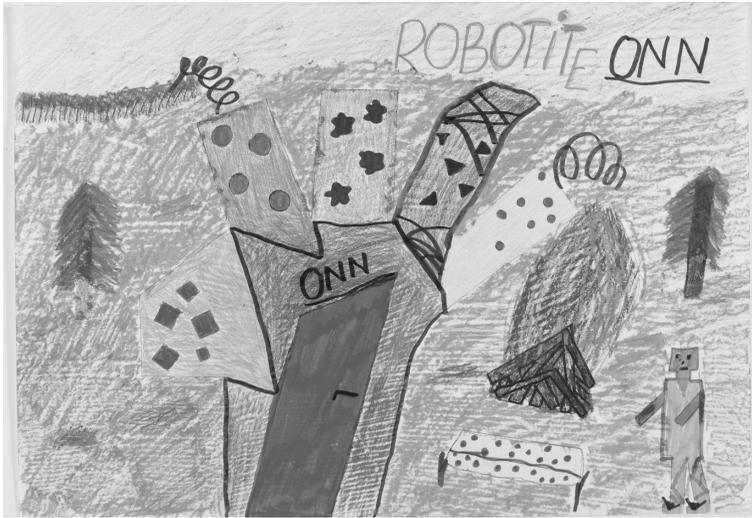


Figure II.4.1 Tree house drawings. Robot hut by Kristin Rüüt.

eventually lead to unexpected, larger outcomes that develop participant–museum relationships which cannot be achieved by professional management alone.

In this chapter, we treat museums as cultural institutions central to democratic society, with potential to advance cultural citizenship through participation and dialogue with museum audiences. We first discuss the theoretical premises of cultural citizenship, participation and engagement. Subsequently, we use various analytical typologies to examine a variety of empirical examples from our own as well as other researchers' experiences. We have limited the empirical examples of the chapter explicitly to audience-centred exhibition-making and museum development onsite. We then examine various communicative and participatory choices available to museums and the barriers to these processes from both the museum's and visitors' perspectives. Finally, the change from a public museum to a space of participatory relationships is discussed, and the benefits of altering these relationships are explored.

Museums as democratic institutions

Cultural citizenship and cultural representation

The museum is considered a public institution responsible for creating opportunities for democratic and participatory culture. Museums are perceived to be a part of a maximalist democratic framework (Carpentier, 2011), where democracy operates beyond traditional political institutions, extending to the cultural field. Giddens (1998) asks us to “democratise democracy” by listing the responsibilities of institutions like schools and museums to encourage democracy and participation.

Adopting a somewhat normative stance, we view cultural institutions as a core pillar of democratic society. We have previously discussed how the museum is located in the economic, cultural and political fields (Pruulmann-Vengerfeldt & Runnel, 2011; drawn from Bourdieu, 1984). The concepts of democracy and participation, which belong to the political field, permeate cultural institutions through the concepts of cultural and historical representation. Historically, the museum has been considered an authority on cultural representation, implying that the public's inclusion in performing this central function of providing expertise could threaten professional

identities in this field (Tatsi, 2013). With the growing public interest in heritage in the 1990s, museums became part of the “industry” that packaged history, which (arguably) only served to distance people from their own heritage (Walsh, 1992). Today, the social roles of the museum, the question of being included in or excluded from the practices of cultural representation and cultural heritage, have become central. Nonetheless, to reject the view of the museum as authoritative institution is not easy, and some museums are slow to recognize the value of seeing audiences as active cultural participants.

Several studies have examined whether the notion of cultural citizenship helps to understand and deconstruct audiences’ position in relation to contemporary museums (Dahlgren & Hermes, 2015) as well as recognize the value of participatory engagement. Cultural citizenship recognizes the relevance of activities of everyday life: citizenship is embedded in the structures of life and culture as “processes of bonding and community building, and reflection on that bonding” (Hermes, 2006, p. 303). Cultural citizenship is rooted in the notion of “civic cultures,” that is, “cultural patterns in which identities of citizenship, and the foundations for civic agency, are embedded” (Dahlgren, 2009, p. 103). Of the different dimensions of cultural citizenship, identity is especially relevant for museums, as they can “nourish civic identities by the way they deal with people, with the democratic assumptions and modes that they embody in their communicative interaction” (Dahlgren & Hermes, 2015, p. 130). Thus, civic culture and cultural citizenship serve as starting points to explain how culture is a domain of wider civic practice in a democratic society, offering knowledge, meaning-making, identity, social interaction, and so on, “all of which serve to enhance the attributes needed for civic agency” (Dahlgren & Hermes, 2015, p. 130).

Museums are sites that can promote – or deflect – the advancement of citizenship (Bennet, 2005), as their many practices can support democracy from the bottom up. The democratic museum (that encourages citizenship) has to consider participation and engagement as modes of communication that help the museum support democracy.

Participation and engagement

Participation in the cultural sphere involves processes related to practices of cultural representation creating, consuming and belonging. There are two dominant approaches to interpreting cultural participation: the sociological view, which sees cultural participation as cultural consumption, and the political view, which treats cultural participation as cultural production (Lepik, 2013). The latter assumes that non-professionals have the right to produce culture and participate in decision-making processes at the cultural institution.

In museum practice, participation is an umbrella term applied in a variety of settings; it can be used simultaneously or exclusively for social activism, as a method of audience development or a tool of empowerment. Simon’s (2010) typology of non-discriminatory participation can be used to distinguish between the levels of engagement of audiences. Simon (2010) proposed four models of participation: contributory, collaborative, co-creative and hosted. In the case of contributory participation, the visitors are solicited to be part of an institutionally controlled process, as opposed to the collaborative relationship in which people become active partners of institutions. In various co-creation settings, individuals, groups or communities work together throughout the process, jointly defining the project’s goals, while museums adopting hosted participation release a gallery or programme to be controlled by the participants (Simon, 2010).

In the context of the museum, Carpentier (2011) distinguishes between access, interaction and participation: access is considered compulsory (i.e. entry to museums), while interactivity and participation are considered optional add-ons that can attract more individuals to museums. In the everyday language of museum work, the concept of participation is closely associated

with the concepts of interaction and interactivity, “the processes of signification and interpretation triggered by the media” (Carpentier, 2011, p. 66). It therefore differs from the more encompassing and power-laden concept of participation.

For our purpose, the theoretical concepts of interactivity and participation are too narrow. Instead, we introduce the term engagement. Dahlgren (2006) describes the concept of engagement as subjective states, indicating a mobilized, focused attention on some object, “a prerequisite of participation” (Dahlgren, 2006, p. 24). Based on these theories, Lotina (2016) links museum and audience perspectives and defines engagement in the museum context as “a two-way process combining the performance of both the museum and the active audience by responding to the stimulus of engaged parties and initiating new actions with the aim to improve museum work, enhance the experience or make a difference on a larger scale in society” (Lotina, 2016, p. 35). Hence, the term engagement permits a whole repertoire of activities, which, depending on the type and nature of the museum, can attract and include different kinds of audiences.

New museology

The idea of museums as sites for participation and cultural citizenship can be viewed as part of the new museology, which itself has roots in the broader field of cultural studies. New museology “is interested in questions about the ways in which power is socially deployed” (Witcomb, 2012, p. 580).

Core analytical concepts, such as cultural citizenship, participation and engagement, are rooted in the theoretical and ideological frameworks of new museology and (post)-critical museology, framing the museum as a communicative and social institution, within the democratic social structure. In the framework of new museology, museums are located in the political field. The democratic museum is perceived as socially relevant: as an inclusive museum across all dimensions of museum practice, from education and exhibitions to collecting and documentation.

The concept of social inclusion popularized by Sandell and others (Sandell, 2000, 2002; Sandell, Dodd, & Garland-Thompson, 2010) foregrounds the interrelated ideas of access, representation and participation. Therefore, the focus is on the role and responsibility of museum professionals, including the shared responsibility of museums, museum workers and audiences/communities. The principles of the social inclusion approach are increasingly recognized and applied across the museum sector. Some strategy and development documents, for example, the Cultural Diversity Charter of International Council of Museums call on the museum sector “to promote empowering and enabling frameworks to active inputs from all stakeholders, community groups, cultural institutions, and official agencies through appropriate processes of consultation, negotiation and participation, ensuring the ownership of the processes as the defining element” (ICOM, 2010).

Therefore, the modes of engagement can be seen as ways to challenge and redefine the authoritative discourse of heritage. We argue that it is important to value the communicative museum for both the museum and audience. In the following discussion, we also suggest that the museum can be active, such that engagement need not always be a clearly identified political project, but where cultural citizenship can be supported by highlighting the seemingly mundane and ordinary.

The museum’s perspective

Communicative and participatory choices for museums

At present, museums have to choose whether to endorse or disregard public engagement. To systematise these options, we adopt Tatsi’s (2013) ideal-typical model that employs two axes to

yield four types of museum (Figure II.4.2). Tatsi (2013), drawing from Simon (2010), suggests that museums and their different communicative approaches can be systematised using the social dimension of museum communication to understand *who* gets to speak in the public institutions of the museum (Tatsi, 2013, pp. 23, 26): at one end of the scale lies the monovocal museum, while at the other end lies the multivocal museum (Tatsi, 2013, p. 23). The second dimension identifies authoritative and collaborative museums to understand the basic power dynamics of truth and ownership in museums. Both axes have several degrees of intensity; therefore, in reality, there are many grey areas in the choices that can be made.

When the axes are combined (Tatsi, 2013, p. 50), four prototypes of museum emerge (Figure II.4.2) where potential engagement possibilities are modelled. Please note that no actual museums are ideal representations of any of the types proposed. Rather, this model provides a framework of understanding how to shift along the axes to select different possibilities of museum transformation. These four ideal types can exist simultaneously in a museum, implying different modes of engagement, although there can be a primary mode of engagement.

In order to prepare for the opening of the new ENM building with new permanent exhibitions, the museum's research department established an informal experimental unit called the Exhibition Lab, where different forms of audience participation, collaborative exhibition-making, design and technical solutions were developed and tested through temporary exhibitions. The Exhibition Lab was located in the museum's temporary exhibition spaces.

From our field experiences in the Exhibition Lab, the first open call for contributors to fill an exhibition space with their own exhibition can be considered *community curatorship*. As part of this pioneering step, a member of the community curated an exhibition of contemporary funeral and graveyard customs in Estonia based on her work as a funeral director. It adopted a monovocal perspective on the subject, excluding all other voices and cultural diversity present in funeral customs, focussing solely on one particular example (Tatsi, 2013; Pruulmann-Vengerfeldt, & Aljas, 2014). In a sense, this exhibition was more closed and monovocal than traditional professionally curated exhibitions. In this case, collaboration implied less insistence on the professional standards of balanced and inclusive storytelling. Hence, a single voice from the community,



Figure II.4.2 Communicative and participatory transformations of museum-embedded cultural experience (reproduced from Tatsi, 2013, p. 50).

selected through a public voting process, told her story. The museum became a little more open with respect to collaboration, but it was just one member of the community who had a voice.

Professional curatorship – wherein museum professionals decide on the stories to be told or excluded – can become more multivocal through community contributions. In one Exhibition Lab initiative, children's drawings of their favourite or most-disliked gift and short explanations of their choices were curated within an exhibition called "Shopping fever: Consumer culture in Estonia of the 1990s and 2000s" (Pruulmann-Vengerfeldt & Aljas, 2014; Järv & Runnel, 2012).

Contributory community engagement was realised through a non-discriminatory exhibition of all the drawings completed by 3225 children from 174 Estonian schools. The unexpected volume of the contributions meant that while the authoritative voice of the museum determined the original topic, it was strongly challenged by the limited space envisioned for the exhibition.

The subsequent exhibition, #ChillingAroundTown (Järv, Kallast, & Runnel, 2014), centred on growing up in cities, and therefore ways in which the younger generation creates its urban experiences through quotidian practices, that is, localised experiences of children up to young adults (Runnel, 2015b). This can be considered an example of *collaboration on an open work*. The process of mapping experiences and collecting the stories of children and young people was intended to be participatory, implying that the children and youth were given more control. They were involved during the exhibition production process through participatory activities and were allowed to have their own agenda and introduce new topics. Each stage of the exhibition production was modified according to the children and youth's everyday practices.

Similarly, decisions about subsequent stages of the research were not centred on the final exhibition objects; rather, the emphasis was on understanding emerging topics. Therefore, as the focus was on the participants, the exhibition modified its activities (e.g. urban games involving the building of tree houses) and conceptual ideas (e.g. the tree house as a theoretical representation) to ensure children and youth's collaboration in museum-making. Hence, shifts between different types of museum approaches can occur during the process. In this case, the ENM learned from designing different participatory activities through trial and error, beginning with a more authoritative approach to exhibition production leading up to a more collaborative approach. While these ideal types of museums can feel restrictive and normative, a practical solution may be Lotina's (2016) modes of engagement, which provide museums with a repertoire of communication solutions that could be oriented toward mono-/multivocal and authoritative/collaborative approaches.

Implementing modes of engagement

In this section, we discuss Lotina's (2016) modes of engagement, as it may help re-evaluate museum practices and methods for implementing different degrees of vocality and authority. We use Lotina's (2016) modes of engagement because they are based on empirical investigations of museum practice and reflect a variety of museum activities that engage with audiences, thereby overcoming the limits to the concept of (political) participation. Lotina (2016) proposed seven ideal-type modes of engagement: informing, marketing and advertising, consulting, collaborating and connecting with stakeholders, participants/audiences and professionals.

The most common museum-engagement mode is perhaps *informing*, which refers to educational activities and communication of factual knowledge (Lotina, 2016, p. 59). The ENM, which opened a new museum building and permanent exhibitions in autumn 2016, ran a special training course for more than 100 aspiring museum guides recruited from the general public. The course focused on the museum as cultural entity and involved a series of lectures by curators on sections of the permanent exhibitions and seminars on exhibition design conducted by exhibition

designers and architects. Participants were examined primarily on their factual knowledge of exhibition content at the course end. The number of participants that are going to remain engaged as part-time guides is unknown, as several participants revealed that their main motivation for participation was improving their general knowledge of the museum and its future exhibitions. Both the course format and participants' expectations were rooted in rather traditional, monovocal museum practices, even though it aimed at building a community of potential museum guides.

Marketing and advertising refers to the promotion of any museum activity (Lotina, 2016, p. 59). The advertising agency that created the ENM's new brand identity (having a brand identity complying with the rules and demands of the economic field) proposed an idea based on participation. Consistency and flexibility in the brand's visuals was achieved by using a dynamic container logo, filled with a changing list of people's faces. The growing photograph database of faces to be used with the logo was obtained using a large travelling camera tent (Figure II.4.3) installed at public events in the summer, inviting the public to have their portraits taken to become part of the brand. Although initiated by the authoritative museum, this project contributed to the multivocality of the museum because the portraits inserted into the design were selected randomly for each occasion. The logo does not frame faces as a single message; rather, the faces become part of the larger message of the museum's identity ("we are the museum").

Consulting is a mode of engagement that actively raises issues, particularly those that are socially significant (Lotina, 2016, p. 60). The following example of consulting indicates how the museum's positions in the cultural and political fields intertwine when existing collections need interpretation. The ENM owns the largest Finno-Ugric ethnographic collections, obtained during the 20th century. During this period, collection practices and the ethics of display changed significantly. When the ENM began creating future permanent exhibition of Finno-Ugric ethnographic culture, previous museological standards (of the 1950s onwards) had to be re-evaluated following the search for new ways for heritage institutions to build and



Figure II.4.3 The travelling camera tent used by the Estonian National Museum. People were invited to have their portraits taken in order to become a part of the museum's visual identity. Photograph Arp Karm.

maintain relationships with Finno-Ugric peoples (Karm & Leete, 2015). In the 1990s, the same team produced an exhibition that included sensitive aspects of the Finno-Ugric worldview, which stretched cognitive–ethical limits for indigenous communities (Karm & Leete, 2015). The team learned that while ethnographers believed that they had had the ultimate scientific right to study and collect anything (cf. Sandahl, 2007, as cited in Karm & Leete, 2015), some objects were obtained in ethically questionable ways. When the Forest Nenets poet and reindeer herder Yuri Vella visited the ENM in late 2000 to study the collection’s spirit figures from his home region, he contended that there was no way that anybody could have given these figures away in a culturally acceptable way. After discussing the conflicts between the traditional museological imperative of collecting and exhibiting culture and the indigenous understanding of spiritual logic, the curators decided to limit exhibiting indigenous sacred items (Karm & Leete, 2015, p. 110), demonstrating that a clear shift from an authoritative towards a collaborative position can also occur in a limited museum sector or in relation to a particular collection. While they acknowledged that the real owners of the museum objects are always the people themselves, other museum processes at the same institution were conceptually unaffected.

Collaborating involves inviting and enabling audiences to participate in social processes (Lotina, 2016, p. 60), thus making the museums more collaborative and multivocal. The challenge of collaboration can often be seen when working with indigenous communities. In the British Museum’s Living and Dying gallery, the display of New Zealand’s Māori culture was based on collaboration with Ngāti Rānana (the Māori London cultural group and diaspora). They collaborated on choice of objects and photos in the display and editing of texts to ensure the re-contextualisation of objects in the Māori framework. Museum-studies researcher Natasha Barrett proposed that the main agenda of representation was to choose objects that are more culturally appropriate to source communities, implying that they give audiences a fuller and richer experience. This approach, developed by the British museum based on common museum practices in New Zealand, also ensured that a variety of Māori perspectives were included in the exhibition (Barrett, 2016). Barrett considers these as the museum’s “contact zones,” which, according to Clifford (1997), highlight the ability of museums to act as spaces of cultural reciprocity.

Connecting with stakeholders (Lotina, 2016, p. 60) refers to building networks of related professional entities, sharing projects and offering mutual support. For example, museums in Nordic countries have longstanding subject-specialist networks of cooperation and many mutual interests, such as professional development and mutual learning, as well as joint exhibition or contemporary research and collecting projects, are supported through them. Networks such as Samdok (network for contemporary studies and collecting) in Sweden (1977–2011), or the Finnish museums network TAKO (which coordinates contemporary collecting and was initiated at a meeting of the Finnish National Museum in 2009), have been founded on the multivocality of the involved stakeholders.

Additionally, building stakeholder networks is very common in museum education, where teachers help develop educational material. Although the collaboration is likely to retain its authoritative voice, it still allows museums to strengthen themselves by using external expertise.

Collaboration with stakeholders can also be achieved in multiple stages. The Museum of London used a two-step engagement. The museum established the Youth Council, an engaged group of active teens aged 14–19, in the first stage of collaboration, where they create cultural activities related to the Museum’s mandate of art and history and work with other organisations to realise various projects at the museum.

Lotina (2016, p. 61) described *connecting with participants/audiences* to include various activities sustaining the museum’s relationship with its community. Community engagement has probably received the most attention in museological research, requiring political visibility, in

general, debates about culture and identity, but more particularly, in relation to heritage and heritage management. While community engagement has recently received considerable attention in research on museums and indigenous communities, it has also been discussed in other fields. Many examples are interpreted through the lens of the politics of power, with museums positioned in authoritative, monovocal discourse. Watson (2016) noted that Norwich Castle Museum (Norwich is a city in England, United Kingdom) was a focal point in the city and a well-used venue. However, it was not considered relevant by locals as a museum and was described by visitors as having “little to offer” and being “poor on the inside.” Watson concluded that “if we don’t understand people’s emotional responses to sites and objects we run the risk of making them difficult to understand at best, irrelevant to them at worst” (Watson, 2016).

This implies that while the museum engaged people in the economic field through entertainment, generating revenue, they failed at community engagement with respect to cultural field by maintaining an emotionally distant monovocal and authoritative heritage position.

According to Lotina (2016, p. 61), *connecting with professionals* refers to activities with persons who have professional knowledge in fields relevant to the museum. Contract work with different professionals may include recruiting and engaging university researchers, other museum experts and enterprises required through all stages of exhibit production, such as the new ENM permanent exhibitions. Presently, several museums have outsourced many of their activities. Because professionals are considered partners and negotiators, conflicts between artistic ideals and economic profitability emerge (see the chapter by Knudsen and Olesen in this volume). Often these clashes are related to exhibition design, website and app building, or the private agenda of professionals that also influences the development of not only the form, but also of the content of the museum. Although outside professionals are invited to collaborate, they still often exercise authoritative positions within museum structures. Lotina (2014, p. 101) cites an example from the Museum of Photography in Latvia where professional photographers were invited to participate in a competition evaluated by museum experts and external arts professionals – by which the museum relinquished control over its annual exhibition plan and allowed different voices to be present in the museum.

Barriers to participation in the museum organisation

Managing conflicting interdisciplinary demands is a challenge for museum workers. Even when the benefits of transforming museum practices are evident, several barriers need to be overcome. Metsmaa (2015) conducted ten interviews investigating different participatory initiatives across a diverse range of Estonian museums. Six categories of barriers were identified: fears, aims, design, resources, lack of understanding and lack of participants.

We observed that *fears* were usually regarding uncertainty in participatory activities. Museum workers tend to doubt the quality of participatory activities and believe that any kind of engagement implies additional responsibilities. Willingness to cooperate was sometimes considered a sign of an employee’s weakness, which could indicate a lack of resources from the museum’s perspective. However, museums in our sample also tended to avoid asking for feedback from stakeholders. These fears stem from a lack of shared experience – both positive and negative – and the lack of critical evaluation of participatory processes. Fear often stems from resistance to changes in established practices.

Another cluster of barriers stem from perceived external pressure to adopt participatory approaches, or when the *aims* of participation are questioned and reviewed. Several museum professionals considered participation a fad with unclear aims. Simon (2010) argues that participation has to be valuable to three parties: the organisation, participants and onlookers. Hence, all

museum activities including participant engagement need to define the aims involved. Moreover, it is possible to broaden engagement repertoires without using collaborative approaches. For meaningful engagement, collaboration must be founded on mutual respect.

The *design* of participatory initiatives may be a barrier, especially in terms of efficient execution. Therefore, it is important to choose appropriate platforms, allocate resources efficiently, ask the right questions and adopt suitable approaches for initiatives. The importance of exhibits can also be a source of anxiety. The success of museum engagement depends on good activity conceptualisation and design. The *lack of understanding* about situation-specific strategies can be a major barrier. Difficulty with identifying suitable strategies is often related to insufficient experience and the need to plan activities in highly uncertain conditions.

This uncertainty and the lack of *resources* – finances, staff or time – are considered hindrances to participatory engagement. The lack of human resources is a bigger problem in museums with limited staff; they are often overburdened with different activities and challenges. The challenge of finding participatory activities then depends on having the right know-how and on being able to mobilise it in a timely and relevant manner.

The final cluster of barriers stems from the *lack of participants*. It is a challenge to understand the public's motivations for participating in museum activities. Does the museum trust them? Do they trust the museum to be a worthy partner when volunteering their contribution? What kind of resource do museum activities require: time, knowledge, finances? What can the participant get in return? The success or failure of museum-engagement activities often depends on how well these questions can be answered on behalf of the participant when participatory events are designed.

Thus, different modes of engagement are highly dependent on the type of organisation and available resources (time, money and people). Whether participatory activities can be chosen for museum engagement depends on the museum's policy and value system. Is, for instance, the democratic quality of the engagement valued and acknowledged or does the value system only recognise professional criteria? Diverse engagement repertoires generate challenges for the museum management. In order to encourage richer exhibition content and democratic exhibition design, museums require a network-leadership model. Organisational culture that supports decision-making and innovation across different museum-management levels allows museums to overcome some of these barriers.

The visitor's/public's perspective

From public to visitors to participants

Individuals involved in museum activities can be conceptualised in various ways by linking ideas from different perspectives. Runnel, Lepik and Pruulmann-Vengerfeldt (2014) proposed a shift from public to participants (Figure II.4.4): therefore, people can be classified according to their level of engagement and interest.

As indicated in Figure II.4.4, the more engagement expected by the museum, the smaller the size of a committed audience. Similarly, the number of participants significantly decreases when tasks become more complex and demand more time and resources. The sociological understanding of cultural participation treats the entire public as participants; however, a more nuanced distinction of levels of engagement helps the museum identify and understand their potential audience and event partners.

Individuals may also alter their participatory relationship with the museum, depending on museum-related or personal factors (e.g. knowledge, identities and resources). These

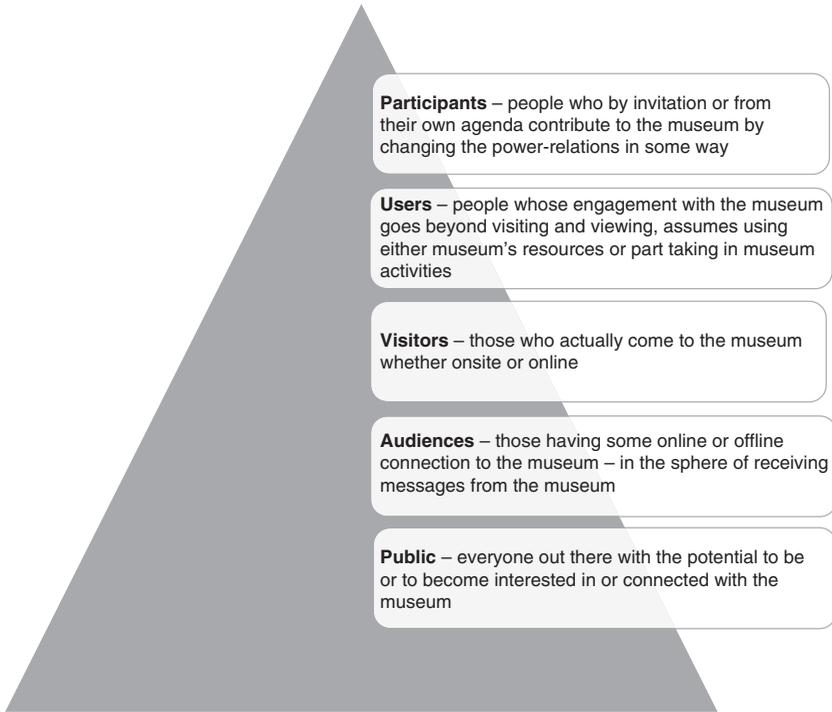


Figure II.4.4 Progression of people's involvement in-and-around museums from the passive public to participants (reproduced from Runnel, Lepik, & Pruulmann-Vengerfeldt, 2014, p. 222).

conditions are context dependent and can change with time, group-type and situation. From the museum's perspective, a conscientious participation design can shape participants' relationship to the museum. For example, a temporary, collaborative, museum-like installation in the urban square in Helsinki's Kallio neighbourhood, "Light is History" (2012) by Samir Bhowmik (Lightishistory.tumblr.com), involved community participation and new media approaches in the public display of artefacts operated by electricity. In addition to donating the artefacts to the "museum," 16 participating families volunteered to display their daily energy use on the project web portal. This data helped determine the brightness of individual therapy lamps and contributed to lighting the installation's artefact displays for over one week, offering wellness from light and energy to viewers and passersby. When using the framework in Figure II.4.4 to understand this initiative, it is clear that the participatory design initiative pushed individuals from the lower part of the pyramid to become participants. Samir Bhowmik's installation design turned the public into active participants, starting a conversation around issues of energy and the environment. In a sense, the 16 participating families from the neighbourhood represented the whole community by bridging private home spaces and the public, and the individual and the collective.

Why should people participate?

Russo and Peacock (2009) argued that the debate around peoples' motivations to participate in museum-engagement initiatives is complicated and not well understood. The cultural-political

ideals of citizenship, participation and the remodelling of democracy are often not visible (or even intended to be visible) in the context of museum-participation initiatives. Aljas (2015) classified participants' accounts of their motivations as personal-individual, personal-social and personal-institutional. This classification is explored further in Table II.4.1 and is based on the analysis of ten unique museum-engagement activities at the ENM. None of the analysed initiatives discussed the wider cultural implications of the activities but focussed on potential personal gains. Consistent with Simon's (2010) and Lotina's (2016) arguments, Aljas (2015) purports that relevance to audiences is a crucial factor in designing and understanding appropriate museum-participation activities.

Aljas notes that in most cases, personal-individual or institutional motivations tend to be prioritised over the social dimension, suggesting that in the analysed ten participatory-engagement activities, the social dimension of museum participation was probably under-developed. This is common to several museums, according to Russo and Peacock (2009). One of the ENM's more elaborate participatory engagements was the "My favourite from the collections of the ENM" initiative, for which 35 participants made a total of 54 handicraft objects that were either copies of or inspired by items from ENM collections. Since the activity involved a competition aspect and time demands, the question of motivation is an interesting exploration. Handicraft specialists or hobbyists needed to work with the collections and therefore required prior knowledge of the institution, many of whom sought recognition from institutions as legitimate (re)producers of cultural heritage. Thus, in addition to personal-individual motivators of gain, fun, curiosity and challenge, institutional recognition is considered a reward in itself. This is consistent with Simon's (2010) observation regarding the visibility of participation, which can be a way for the environment to support the participant.

Aljas (2015) also considered the participatory environment as a motivator and identified six potential contributing factors: 1) participation is made easy and meets the participants' knowledge/literacy level, 2) participation as a side-effect, 3) presence of supportive and encouraging communication, 4) recognition and incorporation of participants' needs, 5) the impact of participation on collections or activities and 6) influence of previous experience with museums. These can work both in favour of and against the success of participatory activities. Aljas (2015) attempted to evaluate the relevance of these factors in relation to the activity's expected workload. The Museum of Broken Relationships – which began in 2006 as a temporary travelling exhibition of the material traces of people's failed romantic relationships and was established as permanent museum in Zagreb, Croatia – is a good example of how it relied on acknowledging

Table II.4.1 Summary of individual motivations to participate in the Estonian National Museum's engagement initiatives using Aljas' (2015) classifications.

Personal-individual	Personal-social	Personal-institutional
Personal interest	Expressing ideas and opinions	Documenting one's experiences
Curiosity	Dialoguing	Gaining institutional recognition
Relevance to one's own life experiences	Helping others	Achieving goals to receive rewards for participants
Seeking new knowledge and/or alternative perspectives for personal benefit	Developing solutions	
Challenging one's personal skills and knowledge	Gaining respect and visibility	
Seeking fun and enjoyment	Sharing a sense of belonging	

participants and addressing their need to talk about their experience of different devastating relationships. Moreover, participants' impact on the museum was permanent and relevant as the museum's collections comprised their personal contributions. Participation can be considered easy, as any object accompanied by an explanation of its emotional significance can be submitted to the museum. Further, the museum recommends that the stories be written in participants' first language to facilitate story-telling.

Summary

Undoubtedly, "expectations for civic and social engagement are profoundly changing museums' scope, reach, and relationships" (Johnson, Becker, Estrada, & Freeman, 2015, p. 18). Museums are usually held in high regard by the public; as a result, dialoguing with a "higher authority" can be difficult. However, its authoritative position allows museums to recognise, accept and acknowledge participation, and can hinder the recognition and support for collaborative processes both within museums and with their public audiences. Cultural-political ideals, cultural citizenship and the museum's relevance as a democratic institution are ongoing discussions in the museum world. These discussions must also include the benefits of going beyond one-way communication (Aljas, 2015). However, the museum itself must value different modes of engagement (Lotina, 2016). One way of overcoming barriers is to share experiences within museum networks and recognise the added value of a rich repertoire of museum engagement.

We also discussed how engagement modes vary in terms of the degree of authoritativeness and collaboration. Thus, visitors can be invited as users and producers as well as passive viewers. The fields in which museums operate offer different motives for selecting and realising engagement repertoires. A crucial aspect of engagement is the willingness to listen and recognise participants' voices. Collaborative and multivocal museums are founded on the belief that a diversity of voices is valuable, and they demonstrate a genuine interest in visitors'/producers'/participants' contributions, allowing their agendas to direct the museum to unexplored territories of mutual gain.

What happened to the tree house? How the story of youth in the city lives on

This tree house (Figure II.4.5a+b) was built as part of an exhibit on youth and urban cultures. Observations of visitor dynamics at the #ChillingAroundTown exhibition indicated changes in the ways young people and children related to the museum exhibition. Typically, a school group visiting a museum exhibition is an interaction between museum professionals, students and their teachers in a specific educational setting, where learning happens across different sites and contexts (Runnel, 2015b). This exhibition was produced in collaboration with children and youth; thus, it triggered young visitors to become active agents in the museum visit, shaping the situated dynamics of talks and interactions during the museum visit. As a result, they also shaped the visiting experience of adults by indicating and explaining exhibition objects related to their own prior lived experiences. Children actively created intercontextual links between different learning experiences (ibid.), and cultural citizenship operated implicitly. The retrospective analysis suggests that by varying engagement modes, shifting from an authoritative to collaborative approach and genuinely listening to participants, the museum encouraged urban youth to engage in museum-making, perhaps contributing to their active citizenship in general.

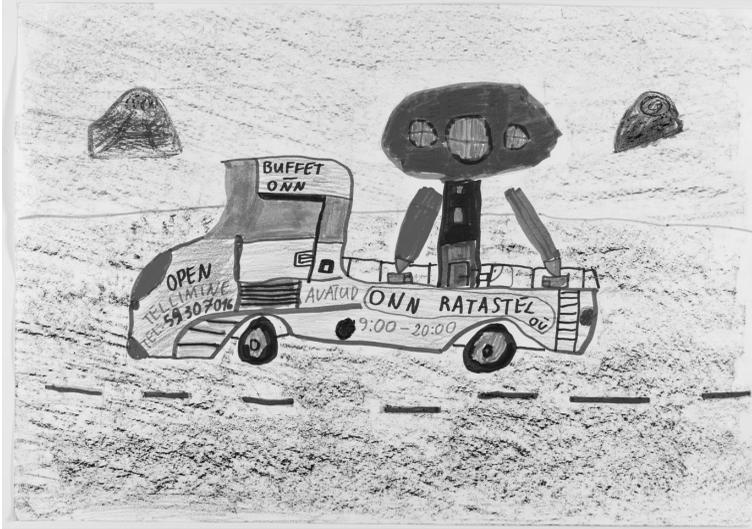


Figure II.4.5a Hut on wheels. Drawn by Artur Soo.



Figure II.4.5b The built car hut from the exhibition. Photograph Arp Karm.

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The museum as a charged space

The duality of digital museum communication

Bjarki Valtysson and Nanna Holdgaard

The development of digital media has given rise to high expectations of the transformative potential afforded by these media technologies, and it has become a truism that the Internet, but more recently also social media, have changed our social, political, economic and cultural life. These expectations have also permeated established cultural institutions such as museums, which have to react and adjust according to the digital agenda. In this agenda, *digital* has become a symbol of liberation and transformation that unleashes the authoritative museum institution.

The aim of this chapter is to discuss digital museum communication from the perspective of the museum as a *charged space*. Using two case examples, Rijksstudio and VanGoYourself, we will argue that in addition to the liberating potentials and promises, the digital museum space is also a charged space. The notion of charged space refers to the museum's historical, cultural and political significance as an institution that produces, maintains and represents our common identity, history and heritage. We will discuss the duality of digital museum communication and relate this discussion to how the museum's ability to charge its objects with certain values and meanings is used to promote political and commercial goals. We further argue that the structuring and facilitating of behaviour and actions are closely linked to dominant cultural policy discourses.

When conceiving of the museum as a charged space, it is important not only to look at its institutional structures narrowly, but rather its place within the larger field of cultural production. In order to account for the museum as a charged space and how it is affected by power, institutional positions and policy objectives, this chapter will make use of the French sociologist Pierre Bourdieu and his conceptualisations of the *field of cultural production*, *position-takings* and *space of possibles* (1993), as these prove to be particularly useful to identify and unfold the duality of digital museum communication in relation to power relationships and power struggles. According to Bourdieu, the field of cultural production is a system of structured relational positions. With the advent of digital media, the field of cultural production has been widened, not just in the intersections of the analogue and the digital, but as Bourdieu maintains, in other forces that form the field of cultural production. These include policy discourses, which encourage user-involvement and participation and the wider framework of cultural economics. This can be seen in strategies, visions and contracts where museums are meant to tailor their digital communications to reach out to new target groups in accordance with the governance techniques of new public management, experience economies and the creative industries

(McGuigan, 2004), and to invite users to actively engage and participate, embracing the new offerings of production, reception and consumption digital media have to offer (Bruns, 2008; Jenkins, Purushotma, Clinton, Weigel, & Robison, 2006).

The chapter begins by setting the stage for the dominant museum and digital media discourses, accounting for favourable and critical views concerning digital participatory cultures and how these have commonly referred to museum studies. We pay particular attention to how political visibility and cultural economics encourage user-involvement and participation. This is followed by a presentation of the two exemplary cases of digital re-use: Rijksmuseum (Rijksstudio) in Amsterdam¹ and the VanGoYourself project,² a Europeana Creative initiative. Both cases represent museum projects that marry commercial interests, political objectives and emancipatory potential of digital media technologies. The case presentations are followed by a discussion of the duality of digital museum communication in relation to digital engagement and participation introducing and using Bourdieu's concepts as point of reference.

Setting the stage: Getting visitors to create

Many of the popular discourses present digital media and museums as both a very recent combination as well as an odd and almost incompatible combination. Interestingly, though, it should be acknowledged that computer and information handling systems made an entry into museums already in the 1960s, in order to automate and share data within and between museum institutions (Jones-Garmil, 1997; Parry, 2007). As Ross Parry has argued:

Museums have always been associated with technology. [...] Indeed, over the centuries, our museums, libraries, and archives have found their beginnings and shaped their changing roles at the same time as they also found new ways to present, process and protect their objects and ideas. Communication technology continues to inform and support the purpose and practice of the museum world, from the cabinet of curiosity to the illusory diorama, and from glass-fronted display case to the hands-on interactive, and from the punched card catalogue to the database management system. (2007, p. 137)

Concurrent with the computer's entrance into the museum, visions of disseminating technologies were also starting to be formulated. In 1968, Everett Ellin, director of the newly established Museum Computer Network (MCN), stated: "As the museum audience everywhere continues to grow, we are coming to recognise that the textual and visual data descriptive of our public collections of art and of scientific and historical material must be made more accessible and employed in far more imaginative ways than are possible by conventional means" (Ellin, 1968, p. 65). Ellin presented a vision of increased accessibility to the public brought about by computers. Interestingly, the vision of Ellin was very similar to the later expectations to the digitisation of cultural heritage, i.e. where the trajectory has been marked from providing access to digital materials to encouraging *active* user-involvement, participation and creative re-use.

A significant subset of literature addressing the implications of digital and social media on museums was inscribed within Henry Jenkins et al.'s widespread notion of "participatory culture" (Jenkins et al., 2006), which put emphasis on the transformation these media can bring about (Giaccardi, 2012; Sánchez Laws, 2015; Simon, 2010) and on Internet visions treating technological developments and digital media as emancipatory (Gauntlett, 2011; Lessig, 2008; Negroponte, 1995; Shirky, 2008). According to Henry Jenkins and his co-authors, participatory culture is related to amateur DIY-culture where the creation and the distribution, sharing and social interaction around the creation are crucial. Jenkins et al. emphasise that

participatory culture is one that focuses on the collective and collaborative process instead of having a sole focus only on the individual expression. However, the authors stress: “Not every member must contribute, but all must believe they are free to contribute and that what they contribute will be appropriately valued” (Jenkins et al., 2006, p. 6). In this sense, participatory culture both allows and encourages participation, but it is not necessarily a culture where everyone participates.

Many of the Internet visions adopted in the museum literature focus on transformations in power relations where emphasis is given to the empowering potentials of citizens, thereby suggesting radical changes in the relationship between citizens and museums. This discourse is particularly noteworthy within the discourses of museum professionals manifested in conferences such as the Museums and the Web³ and Sharing is caring⁴, but also within academic literature.

The expected museum transformations resulting from the appropriation of new modes of digital museum communication are related to the museum institution itself, its relationship with the public and the museum objects, and are most often associated with visions of democracy, interactivity and participation. Digital and social media are considered to enable museums to reach out to audiences other than the traditional museum audience, such as young people and minority groups and communities, and to engage users in interactive and participatory ways, thus ideally breaking down the elitist and authoritative museum by creating a multi-vocal and egalitarian space that builds on new modes of communication. By inference, these initiatives attempted to win support for a more democratic approach to museum communication (Cairns, 2013; Runnel & Pruulmann-Vengerfeldt, 2014; Stuedahl, 2011).

The wider cultural implication of such emphasis on activation of citizens often implies a certain polarisation, such as *read-write* culture as opposed to *read-only* culture (Lessig, 2008) or “making and doing culture” as opposed to “sit back and be told culture” (Gauntlett, 2011). Lawrence Lessig emphasises the motivation factor behind such actions in terms of education and community kinship, whereas David Gauntlett points to factors such as the desire to share thoughts and creative doings so others can learn or be entertained, to be an active participant in various discussions, to be a media maker and not just consumer, to get feedback, to show off, to collaborate and contribute to and be a part of a community (Gauntlett, 2011).

However, the arguments for increased visitor participation and re-use of digital museum assets are not exclusively delimited to sustainability or democracy issues, but should also be considered within the economic realities, the implementation of new public management in the 1980s and the development of the creative industry as an economic growth instigator (Hartley, 2005; McPherson, 2006; Rectanus, 2002; Rottenberg, 2002; Skinner, Ekelund, & Jackson, 2009). This resulted in a need for museums to demonstrate effectiveness and impact where the importance of revenue was highlighted, turning museum visitors into consumers and transforming the museums’ key function into recreation and leisure (Lin, 2006; Stephen, 2001). In this relation, the concept of the *experience economy* (Pine & Gilmore, 1999) is regularly mentioned, mainly in the Scandinavian cultural policy and museum studies literature (Bille, 2012; Skot-Hansen, 2008). Outside the fields of cultural policy and museum studies, experience economic impact is primarily found within tourism studies (Hayes & MacLeod, 2007; Richards, 2001; Sheng & Chen, 2012).

Finally, it is important to note that recently a growing body of literature has emerged which treats creative participatory cultures from a critical view, where the focus lies on Internet *prosumer* commodification, the fantasy of participation and free labour (Dean, 2005; Fuchs, 2010, 2014; Terranova, 2013). These perspectives will feature to provide a more nuanced discussion on the duality of digital museum communication and how these relate to the museum as a charged space.

Exemplary cases

The two cases discussed in this chapter represent different interests that museums are met with when engaging in digital communication. Both examples are open licensed at the same time as they encourage use of commercial social media, thereby serving as convenient cases to illustrate the duality of digital communications from the perspective of the museum as a charged space.

Case 1: The Rijksstudio: Make your own masterpiece

Rijksstudio is an online presentation of more than 200,000 objects and artworks from the Dutch Rijksmuseum's collection, where the public is invited to creatively interact and re-use the images in any possible way, make a personal collection within the online space, create stories and share the copyright-free images. Rijksstudio was funded by the BankGiro Lottery (the national cultural lottery of the Netherlands) and launched in 2012 as a prelude to the reopening of the physical Rijksmuseum. Taco Dibbits, Director of Collections, said: "The Rijksmuseum is a museum for and of everyone, and with the launch of Rijks Studio we are excited to share the extensive collection with art lovers around the world using the latest digital technology. We created Rijks Studio based on the belief that the collection of the Rijksmuseum belongs to us all. The collection inspires, we want to unleash the artist in everyone" (Artdaily.org, 2012).

In particular, the re-use of images has been central in the branding of Rijksstudio, and to illustrate this, the museum asked artists, designers and architects to select an object or artwork from the Rijksstudio collection and to create new artworks or products re-using the original object or artwork image. The first unveiled work was a tattoo inspired by a flower painting in the collection called "Still life with flowers" from the 17th Century. The Dutch fashion designer Alexander van Slobbe designed a dress and shawl, which were later sold at the de Bijenkorf department stores in major cities across the Netherlands. Other examples of re-using image objects from the Rijksmuseum collection in new designs include wallpaper, jewellery, make-up and iPhone covers.

The Rijksstudio is composed of four main functions. First, users are encouraged to save works of art in their own Rijksstudio. Here, they can choose to save the complete artwork or just a detail. Second, users can order and pay for a reproduction of a work of art or a detail of the work of art. This function allows users to cut specific sections of the artwork and choose what kind of product they wish for (poster, canvas, aluminium or gallery print) and to select a format (square, rectangle-portrait or rectangle-landscape). Third, users can make their own creations from an object or work of art. This way they can cut a specific part of an artwork, download the high-resolution image and "make your own masterpiece" (Rijksstudio, n.d.). In terms of inspiration for what users can do with their creations, the Rijksstudio proposes the following: "The image you just downloaded is supersharp. Sharp enough to turn a single detail into a shirt. Or a car. Or a phone case. Start creating your own masterpiece!" (Rijksstudio, n.d.). Furthermore, users are asked to inspire others by adding photos of their creations to the Rijksstudio community. Finally, the last function allows users to download an app and collect their favourites during their visit to the museum.

Case 2: VanGoYourself

Similarly, the VanGoYourself project takes advantage of established artworks in a digitised form where users are encouraged "to recreate classic scenes from some of the world's most famous paintings and then share with your friends" (VanGoYourself, n.d.). It includes more than 100 paintings

from more than 34 different museums and galleries across 15 countries. The VanGoYourself project was initiated by the United Kingdom-based Culture24 and Plurio.net in Luxembourg – both nonprofit, independent cultural entrepreneurial organisations – as part of the Europeana Creative project and co-funded by the European Commission. The main aim behind VanGoYourself is to trigger an emotional response to an artwork, documenting it and sharing it with others. The functions of the site are further described with the following words: “First, channel your inner artist and pick a painting from the selection on the VanGoYourself website. Get together with your friends to recreate the famous scene, take a snap and upload it to VanGoYourself, which will twin your new master with the original artwork for you to share on social media, immortalising your artistic talent for all to see!” (VanGoYourself, n.d.). Since its launch in Spring 2014, VanGoYourself has received recognition within the museum and heritage sector and has won the award Best of the Web for best Digital Exhibition⁵ at the Museums and the Web conference in 2015 and came in second place at the Best in Heritage conference 2016.⁶

Just as the case was with Rijksstudio, VanGoYourself has an “own me” component where users can print their digital recreation of established paintings on T-shirts, greeting cards and mugs. Both projects do therefore take their point of departure in offline settings of the museum as a charged space where the artworks are ascribed an authoritative meaning, and as digitised objects they are framed by certain interfaces to encourage active user participation and creative re-use. In both cases, these digital reproductions can then be reprinted as commodities which users can pay for, thereby shifting from online environments to offline again, re-contextualising the artworks from the museum to everyday products. Finally, apart from encouraging users to contribute to the communities that are created on Rijksstudio and VanGoYourself, further communication is encouraged on commercial social media platforms. The Rijksstudio highlights Facebook, Twitter and Pinterest, while VanGoYourself adds Tumblr to that mix.

Creative digital re-use

With regards to digitisation of cultural heritage objects in Europe, Europeana plays a significant role. Europeana.eu⁷ was launched in November 2008 as Europe’s digital library of cultural heritage and one of the flagships of the European Union’s i2010 strategy for a European Information Society. Accessibility was one of the key goals, as President of the European Commission Barroso stated in the press release: “Europeans will now be able to access the incredible resources of our great collections quickly and easily in a single space” (European Commission, 2008). At its launch, the Europeana portal gave access to 4.5 million digital objects from more than 1,000 contributing organisations – libraries, museums, galleries, archives, etc. Today, Europeana includes more than 54 million digitised objects and has moved beyond the idea of Europeana as a portal to Europeana as a platform (Europeana Foundation, 2013). With the replacement of portal to platform, Europeana emphasises new forms of usage and partnerships beyond mere access to digital cultural heritage objects building on aspects from social media and remix culture, as well as business models from the creative industries. In this respect, Europeana underlines the concept of re-use: “Europeana is well-positioned to be this platform for cultural heritage, a cultural innovator that brings together people and businesses who want to view, use and re-use heritage, and people and organisations who have heritage to share” (Europeana Foundation, 2013, p. 11).

The importance of creative re-use of existing digital cultural heritage assets from Europeana was further highlighted with the introduction of Europeana Creative initiative, a subproject under the Europeana umbrella, which ran for 30 months from February 2013 and from which

the VanGoYourself project originates. The main aim of Europeana Creative was to enable and promote greater re-use of digital cultural heritage resources by Europe's creative industries from Europeana: "The project set out to demonstrate that Europeana, the online portal providing access to more than 40 million digitised cultural heritage objects from Europe's libraries, museums, archives and audiovisual collections, can facilitate the creative re-use of digital cultural heritage content and associated metadata" (Europeana pro, n.d.b).

The idea of creative re-use is prominent in both the Rijksstudio and VanGoYourself projects, as in the Europeana context. Here it becomes obvious that re-use carries and covers different meanings, such as re-distribution, re-mix and re-enactment. In the case of Rijksstudio, the user is offered these options: 1) to re-distribute a Rijksmuseum artwork or object (or a detail), reproducing the artwork or object as a poster, print or on a canvas; or re-distribute artworks or objects in your own collection, creating new narrative or connections between the selected artworks or objects; 2) to re-mix a Rijksmuseum artwork or object by creating a new artefact, i.e. an iPhone cover. In this example, the user is able to utilise the artwork or object (either in its original form or modified) for a different purpose than the original. In the VanGoYourself project, the re-use is in the form of re-enactment of an artwork from the VanGoYourself collection, which then can be re-distributed through social media platforms.

When the interfaces of Rijksstudio and VanGoYourself are further examined, it becomes evident that they condition the participative potentials of users at the same time as they facilitate certain forms of communication. It is therefore useful to be attentive to what kind of *user-manoeuvrability* a given technology allows for, and more importantly, which context it grows from (Valtýsson, 2014). The context in question is that of the museum as a charged space, which means that the objects that are being distributed and encouraged to be actively reproduced do carry different values than say an amateur home video of cats and dogs, because they are selected from authoritative cultural heritage institutions to serve ordinary people's creative, participatory purposes.

In both cases, these projects are framed by the premises of *read-write* culture (Lessig, 2008) and "making and doing" culture (Gauntlett, 2011), where the role of the *producers* (Bruns, 2008) and *prosumers* (Toffler, 1980) is established on the basis of empowerment and emancipation. Indeed, according to this narrative, the common user is also a producer, which in the context of museums also indicates a shift in the roles of professional museum workers, such as curators, and the empowered user, who has now been equipped with tools to make his/her opinion known, and as demonstrated in the discussion of our cases, to actively re-use established artworks commonly known to be of such reach when perceived from the onsite museum space.

Another interesting feature of both cases is the idea that users are contributing to a community of enthusiasts, just like Lessig and Gauntlett accounted for. Bruns discusses this on the premises of productive users, or *producers*, which refers to a type of user-led content creation that blurs the boundaries between passive consumption and active production. According to Bruns, the chain of production of content on digital media should be reconsidered due to the seeming absence of producers or consumers, as users act as producers and vice versa. Bruns therefore maintains that producers are "engaged in the act of *produsage*" (2008, p. 23). Certainly, there is no doubt that such processes of creative re-use are quite evident. However, even though technology can in these cases be said to allow for user-manoeuvrability (Valtýsson, 2014) that encourages such creations, the context in question needs to be considered, as well as the economic structure in which these projects are encapsulated. In other words, it is not enough only to look at the isolated projects, or for that matter, the isolated museums, but also as Bourdieu (1993) claims, at the networks they constitute and the networks they are constituted by in a broader field of offline and online cultural production.

Museums and networks of cultural production

Museums, like other cultural institutions, are not disconnected nodes in a network. On the contrary, they have affinities with other museums, cultural institutions, policy frameworks, regulation, industry, civil society organisations, etc. This is also true of Europeana/VanGoYourself and the Rijksmuseum/Rijksstudio. On a policy level, a project like Europeana is both of economic and political significance for the European Union, as it was one of the flagship projects of the EU's i2010 strategy for a European Information Society for growth and employment. This is still the case when a closer look is taken at the Digital Agenda for Europe, which is one of the seven flagships under the Europe 2020 strategy. This link to the Digital Agenda for Europe is directly established on the Europeana Creative site where this is stated: "The re-use of digital content is an essential part of the Digital Agenda for Europe. Several activities are stimulating the re-use of cultural heritage in order to demonstrate the social and economic value of cultural content" (Europeana Pro, n.d.a). Europeana therefore has different objectives, where political aims stand side-by-side with broader cultural and social aims that celebrate creative re-use of digital cultural assets as a tool to democratise the European cultural heritage by making it accessible and relevant to a wider audience. The tightly knitted relationship between economic growth and increased audienceships and democratisation and equality is exemplified in both cases of the Rijksstudio and VanGoYourself.

Rijksstudio combines digital accessibility to the museum collection, which at Rijksstudio's launch was inaccessible due to a largescale renovation of the physical museum, and value of sharing objects with sponsorship agreements, as well as direct sale of user-generated reproductions. These aims, which promote democratisation and "sharing is caring" objectives, therefore come at a cost. As Drotner and Schröder maintain, policymakers, industry and public stakeholders are involved in strategic alliances and partnerships, and these partnerships are often characterised by corporative economic gain, or as they put it, "[k]nowledge economies, rather than knowledge societies, are at the core of interest" (2010, p. 5). This is true of any museum, public or not, as sponsorship agreements and partnership with industry are increasingly important parts in ensuring funds (Rectanus, 2002), and the same goes for Europeana, which has clear affiliations with the economic aims of the digital agenda for Europe and the digital single market. However, this is not a recent development, and we will now turn to Bourdieu's theory of the field of cultural production (1993) in order to account for the power relations and dominant value positions with which museums are traditionally infiltrated, and how the two cases in question play on the duality of digital museum communication.

According to Bourdieu, artworks are constituted by their recognition as material and symbolic productions: "Given that works of art exist as symbolic objects only if they are known and recognised, that is, socially instituted as works of art and received by spectators capable of knowing and recognising them as such, the sociology of art and literature has to take as its object not only the material production but also the symbolic production of the work" (Bourdieu, 1993, p. 37). Bourdieu therefore recommends that we attend to the structural relations between overlapping dominant and dominated positions, thereby merging the conditions of cultural production and reception. The main argument is "relationality," which is put into effect in his concept of *field*.⁸

As a result, a field is not a static monolith; it is dynamic, as it constantly develops and transforms. In the field of cultural production, the work of art only gets ascribed certain capital if it is socially instituted as such and received by spectators as such. This "acceptance" is constituted in a complex network of senders, receivers, the material and symbolic production of the work and the value it is given by established voices and, of course, established spaces: "In short, it is

a question of understanding works of art as a *manifestation* of the field as a whole, in which all the powers of the field, and all the determinisms inherent in its structure and functioning, are concentrated” (Bourdieu, 1993, p. 37).

In order to conceptualise the power struggle or negotiation of privileged positions, Bourdieu operates with two interdependent concepts that constitute a field: *space of positions* and *space of position-takings*. The latter, space of position-takings, is defined as “a structured set of the manifestations of the social agents involved in the field” (Bourdieu, 1993, p. 30). These manifestations include artistic works, political acts, pronouncements and polemics. The space of position-takings is inseparable from the space of positions, which is defined by “possession of a determinate quantity of specific capital (recognition), and, at the same time, by occupation of a determinate position in the structure of the distribution of this specific capital” (Bourdieu, 1993, p. 30). Position-taking is thus defined in relation to space of positions in which the actual and potential position-takings receive their values in a negative relationship with other position-takings and are therefore determined and delimited by the coexistence of other position-takings. It is not the content of the positions that defines and determines the position-takings, but rather on-going negotiations of boundaries between the different occupants of various positions. Therefore, changes in the field of cultural production can result from radical changes in the space of positions and can be caused by new demands from producers, recipients or the greater public, as Bourdieu maintains that position-takings automatically change “whenever there is change in the universe of options that are simultaneously offered for producers and consumers to choose from” (Bourdieu, 1993, p. 30).

This universe of options offered to producers and consumers is constantly expanding, and developments in information technologies and informational infrastructures have undoubtedly contributed to this expansion. This perspective is especially relevant to museums as it adds to the complexity of the field within which it is encapsulated and formed. As demonstrated by the cases of the Rijksstudio and VanGoYourself, the museum takes on a central position within this manifestation of the field of cultural production, as it is not only contained within the field of power but is one of the main institutional forces to constitute hierarchies of value-making, and in our case, what constitutes an “established artwork” worthy of creative re-use. Most importantly, in the context of the duality of digital museum communication, the museum is one of the most agile creators of the transformative axis that Bourdieu refers to as the *heteronomous principle of hierarchisation* and the *autonomous principle of hierarchisation*. According to Bourdieu, the heteronomous principle is “favourable to those who dominate the field economically and politically (e.g. ‘bourgeois art’),” whereas the autonomous principle is related to “art for art’s sake” (Bourdieu, 1993, p. 40). The field of cultural production is at all times a site for power struggles between the two opposing principles of hierarchisation, an opposition between economic and cultural capital. This double hierarchy is one of the elements that contribute to the museum as a charged space as it constantly plays on different elements of heteronomy and autonomy. Indeed, the museum space, offline as well as online, is a space infiltrated by political and economic elements at the same time as it suspends the ordinary law prevailing in the field of power, generating processes of symbolic and cultural capital. The museum constitutes this duality, and also forms its movements, depending on the context in question. This is clearly demonstrated in autonomous works gaining their value from the charge that the museum inscribes into them and then transforming or moving this charge from the autonomous part of the axis to the heteronomous one, where digital reproductions of these works become subject to active re-use, and later on, take the role of commodities.

Online projects that encourage active user-engagement and creative re-use of artworks present significant challenges to museums. Indeed, in his account of this recoding of the museum,

Parry discusses the *media museum*, which acquires the properties of a computer (digital files, user-driven functions and distributed network presence), making it difficult to detect the blurred boundaries between the museum and the computer (Parry, 2007). However, even if this is the case, we would argue that it is not the boundaries that are of importance, as policy objectives and aims for the creative industries have for some time now made all museums into media museums. The interesting part is how museums as charged spaces and as onsite constructions give value to digital museum communication, and how this is exploited by policy discourses on creative re-use and in bolstering creative industries' agendas.

While Parry talks about the blurring of boundaries, we would rather talk about the expansion of the networks, which museums have to relate to in an expanded field of cultural production. A crucial expansion factor is to be found in digital museum communication, which does not only manifest itself in isolated projects, but is also interlinked to larger networks that nowadays both constitute online communication within a narrower scope of the museum realm, such as homepages, apps, etc., and also museums' doings on commercial social media. It is quite clear from the two cases that much of the sharing is supposed to take place on social media. However, by advocating this, the museums do expand their field of cultural production, consumption and distribution, from their own sites to that of external platforms with their own statement of rights and responsibilities, data use policies and community standards. Digital content creation therefore also has a critical side, which requires us to scrutinise the intense data mining with commercial purposes, surveillance, privacy breaches and the category of prousage/prosumer commodity (Fuchs, 2010). Indeed, Fuchs maintains that the notion of participatory culture, when framed as an emancipative force, is not attentive to the corporative domination when it comes to the cultures of the Internet. In offering an alternative version of policies and emancipative discourses on creative re-use, Fuchs points to its exploitative nature: "Creativity is a force that enables Internet prosumer commodification, the commodification and exploitation of the users' activities and the data they generate. Creativity is not outside or alongside exploitation on Web 2.0; it is its very foundation" (Fuchs, 2014, p. 61).

While Fuchs carves out the force of creativity in a quite blunt manner, focussing on its exploitative side, he is far from alone in being attentive to this side of creative participatory cultures. The reason why we mention this in the context of Rijksstudio and VanGoYourself is that at the same time as open licensing is crucial for the projects to thrive, in both cases commercial social media are considered instrumental in reaching wider audiences; and this expands the network in which museums operate as central nodes in the field of cultural production. This expansion is largely due to external pressures from policy discourses and economic incentives (McGuigan, 2004; Rectanus, 2002), which now have been transformed to online experiences, user-engagement and creative re-use. The environments in which museums are situated therefore operate under increasingly competitive regimes, having to maximise visitor numbers and attract new user groups. As previously demonstrated, digital museum communication is considered ideal to do that, and therefore museums, in general terms, do not critically question their doings on commercial social media but rather see it as an ideal place to meet their potential visitors. This is again in stark contrast to the goals of the two projects that advocate for the use of open data, which, when distributed through the networks of commercial social media, become quite closed and commercialised.

However, as Bourdieu claims, position-takings change when there are changes in the universe of options offered to producers, consumers, producers or prosumers. Online environments, commercial or not, have expanded the universe of options, and museums have to react. They can react by taking up the challenge of operating within digital environment, such as commercial social media; or in principle they can choose not to. However, to opt out is not really an

option, as these environments are formed by policy objectives that increasingly favour quantifiable results. However, the duality of online museum communication allows for a more nuanced discussion, as museums as charged spaces are not just common *senders* in a communication conducted by loops of producers and prosumers, but senders who add quality, authority and prestige to their message, online and onsite.

The duality of digital museum communication

The duality of digital museum communication is related to Bourdieu's axis of autonomous and heteronomous hierarchisation. The artworks that are chosen in Rijkstudio and VanGoYourself are established in a process where the museum as a charge space has assigned certain values to them. As Bourdieu points out, this is by no means a "natural" process only steered by some kind of sublime characteristics of artworks. Rather, the field of cultural production is a field of struggles and forces in which works of art only get ascribed certain capital if they are socially instituted as such and received by spectators as such. These artworks and objects have indeed been socially instituted from the viewpoint of the field as whole, in which the determinisms inherent in its structure and functioning are concentrated, and here the museum as an onsite charged space plays a pivotal role.

When established artworks and objects of this sort are digitised, they still keep much of this value, even if they have been re-contextualised from onsite museum settings to specifically tailored interfaces that allow for certain kinds of user-engagement. The digitised versions of these works are therefore still "charged," precisely because of the works' significance in its "analogue" onsite museum settings, which places them on the autonomous side of Bourdieu's axis. The duality of online museum communication lies in the constant movement between the autonomous and the heteronomous hierarchisation where, as digitised objects, they gain value because of their analogue, autonomous original. The museum, as an important node in the value-making of the field of cultural production, is instrumental in giving the "original" artworks this "autonomous" status. It is therefore not the creative re-use of the producers and prosumers that give the end-products of Rijkstudio and VanGoYourself value, but the values that the museums have ascribed to them. The interesting part in terms of value-making is that even though, as Lessig and Gauntlett argue, there is value in the act of creation, the extra charge is still provided by the artwork, as being constituted as such. Undeniably, these are not creations that take their point of departure in cats and dogs of someone's arbitrary home. These are products that are charged with extra values because of the museums' ability to act as a charged space.

When the objects in the Rijkstudio and VanGoYourself have been digitised, they therefore stand as "charged digitised objects," which makes them valuable. Seen with the eyes of the emancipative side of participatory cultures, the value lies in the motivation to engage in creative re-use of charged digitised objects. This is the reason why they do manage to create vibrant online communities. When these creations are distributed via social media, they again get enmeshed in a different value system, which operates by the logics of data mining, data tracking, free digital labour and customised advertising.

However, in both cases discussed, there is a more direct economic model that is not to the same extent subject to concealed algorithms, namely the recreation of the digitised artworks as mugs, T-shirts, mobile phone covers and decorated cars. These creations are ignited by museums' position as a charged space and dressed up as processes of emancipative creative re-use, while simultaneously responding to political and economic goals. This link between the engaging producers and prosumers, digital technologies and economic potentials is quite common in definitions on the creative industries, as John Hartley's celebrated version indicates: "The idea of

the creative industries seeks to describe the conceptual and practical convergence of the creative arts (individual talent) with cultural industries (mass scale), in the context of new media technologies (ICTs) within a new knowledge economy, for the use of newly interactive citizen-consumers” (Hartley, 2005, p. 5).

The motivational value in creative re-use manifested in Rijksstudio and VanGoYourself is ignited by the items’ charge as they originate from museums, where they have been formed by the autonomous axis of hierarchisation. These re-uses can have aesthetic value and certainly enrich the experiences of the producers/prosumers that create them. However, when framed within the premises of creativity, active user-engagement and participation, as policy and creative industry discourses tend to, only half the story is told. Nevertheless, the other half is equally important, i.e. the half that takes on issues of data mining, privacy, exploitation of free labour and in the direct selling of mugs, shirts or in the act of decorating and exhibiting your car.

In both cases, the charge that museums ascribe to the artworks is used, or exploited, to play on the duality that lies in the axis of autonomous and heteronomous hierarchisation, from the artworks’ value as onsite museum objects, to being digitised and manipulated under the logics of creative re-use, to being commoditised as analogue objects to be purchased. These projects, fun and innovative as they are, can therefore not only be seen with the eyes of the likes of Lessig, Gauntlett and Bruns, because they are encapsulated within the field of cultural production as a whole. This also entails that the museums as charged spaces are used (exploited) to encourage processes of creative re-use under open licensing, engaging producers in the act of produsage. At the same time, these processes of creative re-use link to a larger network of commercial social media and the production of commodities, staging users not as producers, but as prosumers. In these kinds of processes, the user is indeed not a user in Bruns’ sense, but a consumer. Nevertheless, this fits perfectly with dominant policy objectives of cultural economics and creative industries where the newly interactive citizen-consumer generates free labour at the same time as he/she contributes to the new knowledge economy.

Notes

1 rijksmuseum.nl/en/rijksstudio

2 vangoyourself.com/

3 <http://www.museumsandtheweb.com/>

4 <http://sharecare.nu/>

5 <http://mw2015.museumsandtheweb.com/best-of-the-web-winners/>

6 <http://www.thebestinheritage.com/news/the-best-in-heritage-2016>

7 <http://www.europeana.eu>

8 According to Bourdieu, a field is defined as a network or system of structured relational positions; each field has its own set of rules, values and interests, which enable and limit how the different position occupiers act in accordance with whether they want to defend or improve their position in the field. Furthermore, each position’s value attribution happens through its relation to other positions in the field (polar and hierarchical).

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Part III

Practices

*Kirsten Drotner, Vince Dziekan, Ross Parry and
Kim Christian Schrøder*

How do media play into the practices of museums in terms of their relations to audiences, to their modes of organisation and to their strategies of development? This part provides answers to these pressing questions. Parts I and II have mapped the historical trajectories and the structural contexts of the intricate media-museums nexus, and chapters have illuminated how media have been, and still are, constitutive to the ways in which museums define themselves and interact with visitors and local communities, and with nationally and transnationally distributed audiences. This part homes in on how museums apply media as part of their daily communication practices and as catalysts of change.

Theorists of everyday life such as French Michel de Certeau (1980/1984) and Henri Lefebvre (1947/1991) noted how daily practices are often understudied for the simple reason that they are unassuming, taken-for-granted routines and thus fall under scholars' radar of intellectual interest. This situation is also true for studies of the relations between media and museums. For while mediated forms of communication are important practices in museums, indeed often fundamental to their institutional identities, these forms are relatively underappreciated as practices. Most publicly funded museums conduct research based on their holdings, so art historians and conservationists are strongholds of research in art museums and galleries, while historians and archaeologists, for example, hold a similar position in museums of cultural and natural history. But, until fairly recently, few museums have conducted systematic and research-based studies of their own modes of mediated communication.

So, the chapters in this part rest on a potential research paradox between an unquestioned focus on media *in* museum practices versus an equally unquestioned marginalisation of media *as* museum practices. This is why the authors in this part have been selected to demonstrate a range of academic and professional vantage points in tackling this paradox, thus allowing readers to consider media practices in museums from multiple angles. Unsurprisingly, the chapters are structured along the lines known from established communication models with key elements being sender (museum), message (objects) and receiver (visitors, audiences). So, museums are at the core of interest in the ensuing chapters mapping options and obstacles that occur when museums practice mediated communication and try to understand its social uses. But at the same time, the authors in varying ways display how the divisions found in established models of

mediated communication are insufficient when examining the complexities of these practices. As a result, more relational, processual and performative approaches emerge as joint frames of reference.

Vince Dziekan and Nancy Proctor open the part with an overview of evolving trends in museums' mediated modes of communication. With their combined expertise in art practice and digital leadership and curatorship, the authors argue that museums now find themselves approaching what they term "a post-digital horizon," where spatial practices and mediation begin to converge. The chapter illustrates this unfolding movement through examples of cultural curating, artist-lead projects and cultural storytelling initiatives; and it demonstrates how a redirection of institutional authority and a dispersal of curatorial agency characterises a process leading towards what the authors call "the pervasive museum."

Next, Jenny Kidd explores a contentious aspect of these transformations in museums' practices of mediated communication, namely, digital museum ethics. From a cultural studies perspective and based on a number of analytical examples, the chapter suggests four issues that museum professionals working in and with the digital should focus on: user contributions and debates about how to value them; risk and its management; playing with the truth; and power and its negotiation. The chapter demonstrates that the appraisal of ethical issues within the digital environment is fast becoming an institutional and professional priority, intersecting with debates that are currently underway about museums' relevance and responsibilities.

In their chapter, Line Vestergaard Knudsen and Anne Rørbæk Olesen examine another practice of growing importance, as museums develop new modes of mediated communication. These developments often take shape through collaboration across various stakeholder groups, and the chapter focuses on how these forms of collaboration unfold and are actually practiced. Working from a media and communication studies perspective, and informed by perspectives from Science and Technology Studies, the authors unravel potentials and pitfalls when new mediated forms of communication are designed through collaboration between different groups holding different organisational positions and different forms of expertise. In particular, the chapter homes in on collaboration between and across three different groups, namely collaboration between museum professionals, collaboration between museum professionals and third-party design professionals, and collaboration between museum professionals and museum users. It is shown how reflexivity and transparency about these differences can optimise potentials in these entanglements of innovation.

Innovation of museums' mediated communication is also key to the final chapter. Here, Dagny Stuedahl offers a critical examination of audience participation practices that many museums and policymakers are drawn to. Drawing on a Scandinavian tradition of participatory design, the chapter focuses on how participatory methods can be utilised in museum exhibition design development, and it documents how these methods can be applied through analysis of case studies. Finally, the author highlights the challenges posed by an uncritical adoption of audience participation as a communicative strategy, and she discusses the dilemmas museum professionals face inside their own institutions when established methods of profession-led exhibition design are exchanged for more participatory ones.

Taken together, the chapters in this part demonstrate the analytical validity of a practice-based approach for museums that wish to adopt more systematic studies of their mediated modes of communication and, importantly, for museums that wish to innovate such modes through design. Through their in-depth analytical examples, the chapters also highlight new and emerging modes of working – through co-design, co-curation and interdisciplinary collaboration – that are characteristic of mediated communication within the museum. Last, but not

least, the chapters frame new dilemmas in these emerging practices, and they problematise new orthodoxies that potentially underlie general claims of collaboration, participation and interaction. Thereby, the part also serves as a timely reminder that the devil is often in the details, and that we may all learn by knowing more about and sharing this detail.

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III.1

From elsewhere to everywhere

Evolving the distributed museum into the pervasive museum

Vince Dziekan and Nancy Proctor

Museum digital transformation has unfolded as a series of continuous disruptions that track the evolutionary trajectory of the World Wide Web over the past quarter century. During the digital era, we have seen the *modus operandi* of the museum shift inexorably towards increasingly open and integrative modes of engagement and content creation, both inside and outside of its institutionally defined boundaries and professionalised practices. While the tide of new digital modes of communication have certainly enabled museums to create, publish and share their content more broadly with audiences, museums have also begun to embrace an accompanying paradigm shift towards openness in wide-ranging ways that place an onus on greater co-creative meaning-making. How museums and their collections are understood and reframed today, along with the role, purpose and institutional values associated with their curatorial practices, have been transformed by the cultural currency of digital media and their networked economies in the Internet age.

In order to discuss the implications of this transitional moment, this chapter begins by undertaking to reprise the logic of the *distributed museum*. While this model provides an effective frame for negotiating issues associated with digitisation, arguably, museums now find themselves approaching a *postdigital* horizon. The term “postdigital” can be defined as a response to the entanglements of media life after the advent of digitalisation. Rather than approaching the processes, experiences and actuations of digital as distinct from other, non-digital aspects of material culture and societal practices, postdigital instead describes a hybridised approach through which the implications of computation can be broached as a defining problematic of contemporary life (Berry & Dieter, 2015). From this vantage, digital disruption is not transcended as such, but becomes more a matter of fact; and the obsessive fascination and over-played enthusiasm that was once synonymous with new media is contested and critiqued, reappraised and reassembled. Representative of this broader socio-cultural phenomenon, the *postdigital museum* posits that a normative condition has been reached operationally within the institution in regard to digital practices and their functions (Parry, 2013). This state of affairs carries with it a new challenge: that of redefining the museum in relationship to cultural conditions existing outside, or “elsewhere,” that have emerged from the convergence of spatial practices and digital mediation. The process of transitioning from a phase of digital “adoption” – illustrated in the theorisation of the distributed museum provided by Susana Bautista and Anne Balsamo (2011) – to postdigital

“adaption” opens up fresh possibilities along with their inevitable institutional challenges; notably, to (i) create new kinds of museum experiences that exceed binary, oppositional definition as physical or virtual, fixed or mobile; and (ii) curate cultural content in a manner that escapes the impasse of closed versus open processes. In order to engage with these key problematics, we will turn our discussion towards curatorial practices in the expanded field that ubiquitous computing technologies and pervasive connectivity have created and address cultural curating, artist-led projects and cultural storytelling initiatives that leverage the power of audiences in indicative ways. These modes of practice go beyond crowdsourcing as a neoliberal economic gambit that promotes participatory contribution but actually capitalises on the free labour of individuals for the benefit of the institution. More distinctively, these practices illustrate how the relative *dissolution* of institutional “authority” and *dispersal* of curatorial agency characterises a shift towards what we will call the *pervasive museum*. In the process, the trajectory of this movement leads towards the transformation of the museum from a treasure house to a production house of culture. The production of culture – as a discursive practice – becomes co-created and co-emergent with a broader range of agents and stakeholders than represented in prevailing “top-down” institutional models, which, in turn, are enabled to exercise exploitation rights over the cultural products of their labour.

Reprising the logic of the distributed museum

There was a time when the museum could be said to exist “somewhere.” As incessant tides of digitalisation lapped against the gates of the museum, both its architectural and internal institutional structures could only protect its long-standing object-centric practices from the rising digital flood outside for so long. As museums’ resistance to new media technologies eroded, “multiplatform” strategies emerged to manage the multifaceted nature of communications associated with the initial phase of digital adoption. By suggesting the co-presence of the museum’s physical sites in relation to its multiple digital contexts, multiplatform describes a “remediated” approach whereby a single content source is published to multiple outlets and channels; the aim, here, being to create an accurate digital representation of the same original (physical artefact or content type) on different platforms, or to at least control the message and experience from a centralised publishing source. As the number of distribution platforms increased and the audiences they were capable of reaching expanded exponentially, museums began realising the need to develop dedicated strategies to address content and experience design for visitors who engage with them across these many digital destinations, including where online audiences and third parties publish their own content and commentary with or without the direct knowledge, permission or editorial recourse of the museum itself.

In 2008, in an effort to articulate new media strategy and initiatives for the Smithsonian American Art Museum, Nancy Proctor mapped the proliferation of platforms on which content about the museum and its collection could be found (Figure III.1.1). This inventory encompassed everything from wall labels to lectures, docents to signage; time-honoured formats that serve the museum’s exhibitionary, interpretative and educational functions by operating conventionally within its structured galleries and institutionally sanctioned spaces. Additionally, other groupings duly recognised both mobile and online platforms – spanning audio and interactive portable tours to the museum’s website and podcasts, respectively. These formats have come to establish themselves incrementally as indispensable features of the late-20th century museum. In such cases, the museum itself acts principally as producer or content provider, serving these forms of museum media and communication to its audience on site and via its online channels. However, the very dimensions of the “mediatic” (Henning, 2006) experience of museums

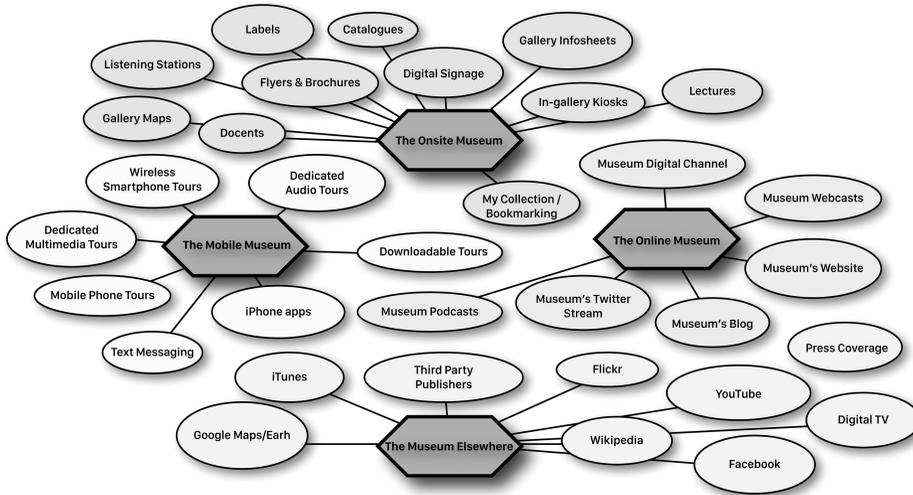


Figure III.1.1 Visualising the distributed museum.

extend well beyond the platforms that fall under their immediate control: mediated exhibits and gallery spaces, the museum's websites and managed presence on social media that construct meaning and organise experience by directing visitor attention. Museum content can also be found on platforms that Proctor's diagram label as existing "elsewhere," which have *not* been published or created directly by the museum or its agents. Rather, (then) emerging platforms and services, such as YouTube, Flickr, Facebook, Wikipedia, Google Maps and iTunes, offered members of the public and other third-party publishers with opportunities to share and disseminate content about museum collections and exhibition programs widely and at times *wildly*.

Distributed museology

The distinctive cultural conditions that these dispersed and nonlinear spaces produce have come to define museology in the digital age. Representing the "multimedial" nature of the contemporary museum (Dziekan, 2012) as a distributed constellation map of sorts reveals the ways that museums have – and continue to – adapt to the disruptive pressures associated with digital transformation by introducing processes that reflect new cultural economies of content production and consumption (Proctor, 2010). As new modes of knowledge formation relating to the "digital humanities" attest (Burdick, Drucker, Lunenfeld, Presner, & Schnapp, 2012), knowledge, rather than being produced and disseminated from a centralised position of disciplinary expertise and authorial control, is created generatively and collaboratively, while content becomes more relevant and therefore sustainable through circulation and use. The value of the "original" is not diminished but, rather, increased by being found in new, often unexpected contexts alongside content from other sources. As Internet search engines demonstrate – whereby the more sites linking to a piece of digital content, the higher it ranks in search results – connectedness is the chief criteria determining quality. It should be stressed that these implications are not restricted or delimited to the museum's "virtual" spaces as they have been conventionally framed (the museum website, for instance), but rather the resulting understandings ("know-how") and practices ("how to") are being extended to a wider, more encompassing range of spaces in – or better still, across – which the museum now operates.

As part of the 2011 *Museums and the Web conference* (an important international forum for advanced scholarship in digital cultural heritage and practice-led research involving the application of museum technology), Susana Bautista and Anne Balsamo took stock of the constitution of the museum's emergent digital spaces. Their accompanying conference paper maps these spaces against a set of conceptual coordinates that distinguish between the structured and unstructured dimensions of the kinds of "digital experiences" associated with the contemporary museum. Within their encompassing typology, physical/virtual defines spatial location or site, whereas fixed/mobile exaggerates the temporal, "situatedness" of the experience. The distributed museum describes the formation of museological spaces, placing an onus on how institutional "presence" is dispersed across both physical and virtual environments and its operations spread across their spectrum of activities. As a theoretical construct, it heralds the transformation of museum practices whose identity and functions were formed in strong relation to material concerns and physical place to the new, *fluid* cultural environment of the digital age, whose cultural conditions – it would seem – contradict the museum's promise to withstand the "flow of time" by providing art with its "materialist eternity" (Groys, 2016, p. 2). Yet, rather than heralding their dissolution and demise, museums have in fact proliferated today and become themselves "immersed" in this flow by:

ceas[ing] to be a place for a permanent collection and bec[oming] a stage for changing curatorial projects, guided tours, screenings, lectures, performances, etc. In our time, artworks permanently circulate from one exhibition to another, from one collection to another. And this means that they are getting more and more involved in the flow of time. (Groys, 2016, p. 3)

Consequentially, museums – and their curatorial operations most directly – have become increasingly attuned to the dependency of the artwork on "context" and "mediation" rather than "contemplation" and "meditation."

The built infrastructures designed to anchor the museum's affiliated digital experiences – whether dedicated education and technology centres, computer kiosks, interactive "multimedia" productions or virtual exhibition programmes drawing upon museum collections – are indicative of the physical/virtual manifestations of the distributed museum. One tendency identified by Bautista and Balsamo entails reproducing the conventions of physical exhibitions as an organisational principle to help provide an understandable navigation context for online visitors to engage with digital collections. Keeping this orientation in mind, does the design of embedded digital experiences found in today's visitor-centred galleries effectively invert this approach by transferring the nature of interacting with content on the Internet into hyper-connected spatial encounters? This type of museological environment – such as Cleveland Art Museum's celebrated Gallery One or Tate Modern's "eco-system" of digital spaces identified under the "Bloomberg Connects" umbrella – blurs, if not more fully transcends the boundaries of physical and virtual that served as one of the epistemological bases or pillars of the distributed museum.

The second tendency identified by Bautista and Balsamo involves the relationship between fixed and mobile. In this respect, the prospect for new ways and means of engaging with cultural content beyond the walls of the museum continues to raise interesting implications. However, as Koven Smith rightly observed, technological advances can simply reinforce traditional models, rather than upend them by presenting new ones. Writing contemporaneously to Proctor, Bautista and Balsamo, Smith (who was then in the role of Manager of Interpretive Technology at the Metropolitan Museum of Art) expressed excitement in the nascent promise of location-based services to extend the traditional model of the museum tour by promoting experiences

premised upon “an entirely different kind of interaction model, one that substitutes serendipitous and disposable experiences for the more immersive, intentional ones that museums are accustomed to” (Smith, 2010, para. 1). He imagines the following scenario:

A user who follows the Metropolitan Museum of Art, for instance, could check in at the Black Canyon in Colorado and be presented with [a] photograph and accompanying data from the Museum’s Timeline of Art History: In essence, this approach takes content that was originally designed to be experienced as part of a museum visit (whether physical or online), and re-purposed it as a contextual/interpretive layer on a user’s experience out in the world. (Smith, 2010, para. 1)

As illustrated by this example, the museum serves as a provider or purveyor of information. He goes on to note:

Most online collections essentially attempt to replicate the experience of viewing an object, with a digital image as a stand-in for the real thing. In this experience, however, the experience of viewing the object is downplayed in favour of its relevance as a means of connecting one information node (location) with another (whatever information you wish to provide to the user). (Smith, 2010, para. 2)

The museum of everywhere

While the location-based social networking applications that Smith champions in his otherwise unassuming blog post may have since become obsolete, the appeal he makes for curated experiences that raise a different value proposition has become even more pronounced and urgent – especially as we consider how the “museum of everywhere” takes shape. For their part, Bautista and Balsamo highlight the active, participatory potentials of augmented reality (especially augmented reality games) and “geocaching” – the activity of using global positioning system- (GPS-) enabled devices to discover physical objects linked to particular physical locations – as examples that extend the possibilities of mobile digital experience. Research-led initiatives such as the Tate’s *ArtMaps* and *ArtCasting* projects serve as cases in point that illustrate continuing innovation in this particular area, while more broadly raising implications for thinking about museums and their role as open platforms for public engagement (Stack, 2013a; Giannachi et al., 2017; Artcasting, 2017).

The *ArtMaps* project was initiated in 2012 with the stated aim of improving the quality of the geographical data relating to the over 70,000 works held by the Tate in its collection of British and international art (Tate, 2014). By developing an online digital application, crowdsourcing activities involving members of the general public were promoted through public-facing initiatives undertaken in an effort to give account to the rich and diverse histories that archival materials contain. Complementing this form of open-ended “geo-tagging,” the project continues to be fuelled by a series of curated “challenges” designed to explore the social nature of archives.

Illustratively, it is worth noting that this project arose during a particularly transitional period within the institution, as the Tate took steps to operationalise a successive series of strategies designed in response to the “revolutionary” implications of digital and social media on the gallery’s main functions. Under the guidance of John Stack, first the Tate’s Online Strategy (2010–12) and then its Digital Strategy (2013–15) were set out with the stated aim to normalise digital by establishing a “digital culture” across the Tate that makes digital “a dimension of everything.” In order to establish these cultural conditions, the Tate’s Digital Transformation project

outlined a series of core objectives to achieve its institutional aims; including maximising the potential for digital in all activities, considering online and offline experiences as one, having a multichannel and multimedia mindset, and enabling more dialogical as well as broadcast modes of engagement. According to Stack:

The museum of the future is not just a place where objects related to cultural heritage are cared for and displayed. It is not just a place where the stories of these objects and their significance are presented. It is a place where visitors (real and virtual) can interact with those objects and those stories, with the museum's staff, and with each other. Through these activities, the museum of the future is a platform where new ideas and meanings are generated, exchanged and preserved. (Stack, 2013b, para. 3)

Representatively, while *ArtMaps* explores the creative interface between what Bautista and Balsamo categorised as fixed/open digital experiences in a number of discernible ways, ultimately it offers a portent of what a pervasive museum might look like.

Curating in the expanded field, or the nature of the pervasive museum

The logic of the distributed museum reflects the cultural conditions of the networked information era. Contemporary art historians and theorists reiterate this perspective. Boris Groys, for one, recognises the comparability of art and the Internet as “powerful medium[s] for spreading information and documentation” (Groys, 2016, p. 6); while David Joselit, in reflecting upon the networked effects of the Internet, identifies how value, rather than being premised upon authenticity and authority, results from achieving a degree of saturation – “the status of being everywhere at once” (Joselit, 2013, p. 16) – through mass circulation, while “aura” is superseded by “buzz.” According to Joselit, cultural circulation “aris[es] not from the agency of a single object or event, but from emergent behaviours of populations of actors (both organic and inorganic) when their discrete movements are sufficiently in phase to produce coordinated action” (Joselit, 2013, p. 16). He goes on to define three paradigms of cultural circulation that describe an object's distinctive relationship to site of origin, form of value and migratory status; for instance, the cultural value associated with migrant objects is deemed as primarily aesthetic, while cultural identity largely determines the value of native objects. In both of these cases, the traditional museum (as it *has been* instituted) is especially effective in communicating such qualities.

In contrast, however, the cultural value of documented objects proceeds from their informational nature, and so it follows that knowledge derived from them – whether shaped interpretively or communicated representatively through subsequent manifestations – “remains part of the cultural commons” (Joselit, 2013, p. 12). While documentation is inherently tied to the production of art in the digital age, as part of her conceptualisation of the “virtual feminist museum,” Griselda Pollock asserts that the meaning of artworks is never fixed but, rather, mobile, because “being interpreted and reinterpreted is their cultural destiny” (Pollock, 2007, p. 11). These observations lead us to reimagine “how material culture, and image cultures of all descriptions, may be valued differently than as property” (Joselit, 2013, p. 12). This point of view is echoed by contemporary exponents of the networked society – such as Bruno Latour and his conception of the work of art as a “trajectory” (Latour & Lowe, 2010) – and, perhaps more unexpectedly, by visionary founders of the public museum in the 19th century, most notably Sir Henry Cole, who championed the universal reproduction of art. Historically, the Victoria & Albert Museum took the lead in adopting practices of copying as part of its

mission; an idealised vision of which endures in the museum's iconic Cast Courts. Outlined in his "Convention for promoting universally reproductions of works of art for the benefit of museums of all countries" of 1867, Cole advocated for a pan-European museum-led commissioning programme to collect, produce and share reproductions of artworks, in the form of plaster casts, electrotypes and photographs. Fast-forward to today, instigated in large part by advances in digitalisation and fabrication technologies, copying has taken on new urgency and relevance in the service of preserving "at risk" material culture, as evidenced by cooperative open-source projects, such as Project Mosul, that promote the recovery of lost art and cultural heritage through crowdsourcing methods of documentation (Rekrei, 2017). Serving as a portent of the pervasive museum, rather than seeing the cultural value of art and artefacts diminish as they migrate and proliferate across platforms, digital objects accrue value by adding stock to the cultural commons, through their social and political activation and by being curated "everywhere."

Cultural curating

Curating, it is fair to say, has become something of a ubiquitous feature that characterises the present day. Exceeding the remit of the professionalised definition of the term, the scope of curating activity has broadened markedly under contemporary mediatised conditions, leading to what some theorists and cultural commentators have described as a distinctive *curatorial* turn (Martinon, 2013; Lind, 2012) or *curatorist* moment (Balzer, 2014; Obrist, 2014). Pre-eminent new media curator Steve Dietz pronounced that technological advances associated with the accelerated development of the Web during its first decade had "inevitably placed stress on the curator's central role in the museum," and that:

regardless of how the curatorial role is defined, however, the Net in particular and interface culture in general introduces interesting and perhaps profound opportunities, which might also be perceived as competitive pressures in the culture arena. (Dietz, 1998, para. 2)

Does the proliferation of everyday, social practices of "curating" that have arisen in contemporary culture over the intervening years devalue the expert knowledge, skill and central importance that curating plays within the modern museum system? Whereas curatorial strategies can be thought of as carefully conceived, actionable plans that proceed from a position of institutionalised power, "tactics" – in the de Certeauian sense (de Certeau 1984) – are directed at mobilising courses of action in more opportunistic and improvisational ways. How can expert knowledge be channelled into authoritative content under networked conditions, when value is determined to a large degree by "find-ability" and linked relationally to other informational content and implicit knowledge embodied within the organically evolving dataset of the Web? The dynamics of circulation not only casts the notion of the "original" art object to one side, it also places a strong onus on both formally ascribed and informally constituted economies of curating. Initially, there was a feeling of strong resistance towards putting collections online based on the fear that people would no longer visit the museum. In a not dissimilar way, a perception that the popularisation of curation somehow risks diminishing the value, credibility and importance of curating as a professional practice arises from an economics of "scarcity," as expounded in Chris Anderson's "Long Tail" theory (Anderson, 2004). In the digital economy, we are no longer bound by the space and time constraints that analogue collections are subject to, nor the concurrent logic of limited selection, and instead can learn from how online distribution of digital content makes the "super-serving" of niche audiences economically viable. Further, "when information is cheap, attention becomes expensive" (Gleick, 2011, para. 21). As James Gleick

observes: “Attention is what we, the users, give to Google, and our attention is what Google sells – concentrated, focused, and crystallized” (Gleick, 2011, para. 21). These observations hold consequence to the way we see the role of museums (as a programmable, information infrastructure) and curating (as a means of framing and mediating public attention), transformed by the influence of global networks and their economies of abundance upon cultural production.

Within this context, new media challenges the underlying basis of the traditional art world by inducing a shift in long-established, institutionalised practices, such as “its customary methods of presentation and documentation, as well as its approach to collection and preservation” (Paul, 2008, p. 1). Elaborating upon how museums and galleries themselves have been predicated by forms and practices of “objectification,” leading media art curator Christiane Paul has asserted that because new media art is deeply interwoven into the network structures and collaborative models of our information society, it will “always transcend the boundaries of the museum and gallery and create new spaces for art” (Paul, 2008, p. 2). In turn, the distinctive challenges presented by new forms of cultural production and agency spawned “(after) new media art” (Graham & Cook, 2010) are certainly demanding a re-consideration of the central role of the curator within the museum. As both Dietz and Paul foresaw, the networked structure of the Internet and the economies associated with digital culture call for a reformulation of curating in order to reassert its significance as part of the postdigital museum.

If there ever was a time when digital technology was seen as being revolutionary, in and of itself, that time has passed. “Digitality,” rather, has become a pervasive condition. A postdigital museum, therefore, is one that has progressed from a state of *adopting* digital processes and platforms to there being evidence of wider digital integration or *adaptation* occurring across the organisation, whether embedded in strategic and operational policies or naturalised through various museological practices, including modes of curating. Broadly speaking, curatorial practices might be said to *mediate* the nexus that draws together and connects art, the museum and the public. Within the institutional setting of the museum, curating does so in a distinctive way by traversing a combination of internal as well as public-facing work. As Beryl Graham and Sarah Cook (2010) note in their defining survey of new media curating, *Rethinking curating: Art after new media*, the curator’s purview within its museological context has developed from a specialist who “cares” for the objects found in its collection to serving as a crucial intermediary who acts – or better yet, *transacts* – between artist, artwork, the institution and its audience. And while the “auteur” curator has become a preeminent figure in the contemporary art system, and the gallery still remains its “default zone,” the programme architecture of the postdigital museum is made up of a greatly expanded constellation of museological spaces, formats and event-structures that stake a challenge to established modes of museum practice. Indeed, the auteur curator and the postdigital curator represent fundamentally opposed concepts: the former being the product of a neo-liberal economics in which power is increasingly consolidated in fewer hands; the latter more akin to the distributed logic of the Internet and its economy of abundance. According to leading contemporary curator Jens Hoffmann, the curator should be regarded as a kind of storyteller, who in the process of making exhibitions turns the viewer into a reader. Informed by the critique of auteur theory formulated by the likes of Roland Barthes and Michel Foucault, the rise of independent curating since the 1990s marks a significant paradigm shift through which “curating has reinvented itself to such a degree that it will never return to the situation in which the curator was perceived as facilitator or caretaker” (Hoffmann, 2015, p. 33). While acknowledging that curatorial “authorship” is exercised as a functional principle of selective exclusion, Hoffmann’s redefinition recognises that the curator is part of a larger, decentred structure; “hold[ing] a subject position, not always the core, despite occupying a more powerful distributive agency than some of the other elements or individuals in that structure”

(Hoffmann, 2015, p. 33). So, what part does the curatorial play when what is being distributed is not just the art, but also the very process of curating itself? While this can be characterised by applying open-source principles of co-production and collaboration towards exhibitions whose conceptual development or selection process is expanded in one way or another by the input of “citizen curators” or involvement of audiences, Paul (2006, p. 95) makes a crucial observation that “within a technological framework, curating is always mediating and agency becomes distributed between, the curator, public, and software.”

Implications and insights drawn from artist-led practice

Distributed approaches to curatorial programming have transformed the nature of mediated museum experience as it involves public access, participatory engagement and exhibition-making approaches. New technologies associated with museum media and communications have certainly played an influential part in these developments by expanding the range of exhibition formats and narrative structures, as well as the kinds of audience behaviour that can be precipitated. However, it is important to reinforce that ultimately it is not about technology application but rather innovation that occurs at the level of the content production and experience that instigates a different value proposition for museums. While location-based services, for example, enable the traditional museum tour model to be extended towards realising the promise of engaging with cultural content beyond the museum’s walls, re-tooling the museum as a “super-server” of information carries far deeper systemic implications. These challenges require models of communication design that are responsive to the evolving dynamics of mediatisation – including participative authorship, social software and corresponding new approaches to intellectual property ownership and licensing – and emergent cultural economies and ecologies comprised of increasingly accessible, convivial technologies. Moving from the technological aspects of “digitisation” to the socio-cultural consequences of “digitalisation” equates with a transition from processes of “adoption” to “adaptation”; while initiating a shift from authority to agency (by degrees) requires correspondingly radical yet persistent approaches to public engagement and participation, content curation and production, and experience design that reimagines and transforms the museum’s relationship to its publics, from passive audience to active participant.

In this regard, it is important to acknowledge the influence that artists have had on museum-based innovation with creative technologies. While it is not possible within the scope of this chapter to do proper justice to a fuller, more representative survey of artist-led projects, for illustrative purposes a subset of examples will be drawn from MWX, the exhibition initiative of Museums and the Web. As explained earlier, Museums and the Web’s annual conference has tracked the latest digital advancements taking place across the Galleries, Libraries Archives and Museums (GLAM) sector since 1997. For the most part, the evolution of museum media and communication practices during this period has been adequately accounted for in traditional conference formats and documented in academic papers. Inaugurated in 2013 under the curatorial purview of Vince Dziekan, MWX introduced an alternative platform designed to showcase “state-of-the-art” practices by contemporary artists using creative technology that respond to mediatisation.

The inaugural exhibition was staged at MW2013 in Portland, Oregon, and focused on augmented reality projects by artists affiliated with the distributed collective, manifestAR. Complementing the presence of (otherwise invisible) artworks – “public ARTworks” by John Craig Freeman and Will Pappenheimer that were re-situated in the public domain immediately adjacent to the conference venue – an augmented reality event was commissioned that wove

itself insidiously into the conference format. Co-produced with artist group Future of Reality as a curatorial intervention, the “Museum of Future Objects” (MoFO) was an elaborate museum fiction purportedly launching a ground-breaking art/science museum. Curatorially, the work was incorporated (almost) seamlessly into the main conference program as one of the many “exhibitors” and vendors that showcase industry projects and services that hold out the promise of the museum’s digital future, today. Assuming the guise of museum educator and “R&D” lab director, the artists staged a performative intervention that blurred the boundaries of fact and fiction, thereby creating a state of suspended belief. While modest in its scale of ambition despite the grand claims conjured by its own moniker, this example of speculative design (Dunne & Raby, 2013) was indicative of what participatory mobile experiences can glean from the practices of immersive theatre and pervasive gaming.

The performative aspects of *mixed reality* were extended further the following year at MW2014 in Baltimore. As part of the conference’s opening event hosted at the Baltimore Museum of Art, new media artist/musician Dan Deacon presented a series of micro-performances in context of the museum’s William Woodward Collection of English Sporting Art (Figure III.1.2). Within this quintessential gallery environ of paintings, period pieces and trophies celebrating the city’s long-standing relationship to horse racing, Deacon expertly conducted a consensual, deeply immersive experience through employing a rule-based choreography blending voice, action and mobile telephony. The emergent behaviour that resulted under Deacon’s masterful manipulation of the assembled crowd verged on telepathic; creating a cacophony of mixed messages and partial dialogues parsed together from members of the audience and disembodied voices summoned “from elsewhere” into a swirling vortex of real and virtually present participants. Deacon’s séance-like performance conjured the spectres of early digital tele-communications by reanimating the somnambulist-quality of the museum-goers recorded in classic filmed documentation of mobile audio trialled at the Stedelijk in Amsterdam in the early 1950s.

The following year, MW2015 was hosted in Chicago. On this occasion, its curatorial focus was trained upon the city’s distinctive “dirty new media” art scene. So termed by its leading proponent, artist/educator Jon Cates, this approach exaggeratedly draws out the incongruity,



Figure III.1.2 Dan Deacon. Performance. MWX2014. Baltimore Museum of Art. 2 April, 2014. Photograph Vince Dziekan.

fragmentation and impurities or “glitches” inherent to digital media as a critique of technology, alongside modes of production that lend themselves to open, collective and distributed creation. Of the multiple artist projects represented in this survey, works by John Kannenberg and Branger_Briz have been singled out here to extend the current chapter’s main line of discussion.

John Kannenberg’s sound mapping project was presented as a stealth intervention of field recordings of the Art Institute of Chicago. The resulting audio mixes relate a series of meandering journeys that traverse a full array of the museum’s spaces. The sonic tapestry woven from this montage of sound recordings presents the listener with a range of acoustic experiences that communicates a heightened state of acute attentiveness to the atmospheric quality of museums: eavesdropping on passing conversations, juxtaposed alongside expanses of white noise punctuated by footsteps and echoes of barely discernible environmental noises. These episodes, of course, are particularly uncanny when they are experienced in an immediate, site-specific relation to place. Resulting juxtapositions strikingly reveal the museum as heterotopic: a palimpsest of real and virtual; a parallel space of duality and contradiction. According to Michel Foucault’s conceptualisation, a heterotopia “describes places and spaces of *otherness* that function in non-hegemonic ways. Such spaces are experienced as simultaneously material and mental ... exist[ing] inside as well as outside of time” (Foucault, 1967/1984). This aspect is given a distinctively digital inflection in the distributed artwork commissioned specifically for MWX2015 by artist collective Branger_Briz. The practice of Branger_Briz reflects the ubiquity of digital media culture, thereby providing an illustrative basis to help appreciate the postdigital conditions under which contemporary museum communication and cultural curating operate. Using custom software, Branger_Briz brought together artists associated with Chicago’s experimental media art community for a single-night collaborative desktop performance (Figure III.1.3). The resulting work, titled *virtualpublic.network*, existed simultaneously online across the artists’ networked computers as well as physically as a site-specific media installation using a collection of locally-sourced CRT monitors. The combination of live and recorded media served from media sharing and social media platforms created the effect that temporal and spatial boundaries had been eclipsed by a state of consensual connectivity from which it was virtually impossible to disentangle individual constitutive parts from the larger ensemble. Representatively, experimental art works like this – along with that produced by other contemporaries, including Eva and Franco Mattes, Constant Dullaart and Lauren McCarthy – offer propositional models for audience participation, real-time experience, and consensual content production that revive the participatory social concepts of pioneering media artists from the 1970s, such as Kit Galloway and Sherrie Rabinowitz, whose “aesthetic research” creatively investigated networked technologies in order to reflect upon the new medial and social processes of the times.

Indicatively, the curatorial framing of these artist-led projects has aimed to demonstrate ways in which distributed media has transformed the nature of cultural production, particularly in relation to museal experience. As eminent media art curator and historian Rudolf Frieling has pointed out, an enduring quality of art practices that engage experimentally with creative technologies entails testing the distinctive attributes of platforms – physical, networked and online – for creating interactive exchanges with the public. The museum itself plays an integral part in doing so by articulating the social aesthetic conditions needed to create or support “open spaces for undefined interaction” (Frieling, 2008, p. 47). For the museum to take up this mantle doesn’t come without its administrative and curatorial anxieties, Frieling concedes; nonetheless, by instigating more inclusive forms of creative practice and cultural curating, the perception of the museum as an “inflexible, deadening container” (Frieling, 2008, p. 47) can be radically transformed into a discursive public space co-produced with – and defined by – new audiences.



Figure III.1.3 Branger_Briz. virtualpublic.network. MWX2015. Palmer House, Chicago. 10 April 2015. Photograph Nick Briz.

Implications of cultural storytelling

Gathering, preserving and presenting objects is at the core of the museum's mission and the very definition of the institution itself. However, in comparison to the substantial investment that museums have made into their collections, not enough attention nor resources have been paid, broadly speaking, to the question of "for whom" this work is being done, and why it matters. Over the final part of this chapter, we will propose how museums might redress the balance between their obligations to both collections and communities through a radical shift in curatorial practice informed by cultural storytelling.

A standard curatorial process might be characterised as follows: an expert conceives a theme or thesis which subsequently directs the selection of objects for presentation; as part of the unfolding museological process, museum media and communication content is created around this material of an interpretive and didactic nature; then, typically towards the end of the exhibition design process, marketing and outreach are brought in in an effort to attract target audiences to experience the production. There is an element of “build it and they will come” in this waterfall process. By contrast, in a curatorial practice that is more agile, iterative and responsive, those audiences have been defined at the outset of the process and the objects, content and encompassing communication design developed with their needs and interests in mind. In some cases, members of the target audience may even be invited to become part of this creative process. While this kind of approach to *co-curation* has certainly led to more inclusive and empathetic museum experiences, in order to truly democratise museum access and thereby create long-term sustainability, we must go further still.

We can start by considering a new definition of the museum “collection”: as not just the material culture that the museum cares for under its custodianship, but also the information that accrues around these items over time. This content is made up of archival materials as well as the products of digitisation processes, including various forms of digital copies and metadata. Additionally, it incorporates stories about those objects. Typically authored by experts – namely curators, educators and scholars – it is these narratives that serve as the main portals to the museum experience for most people. Stories, therefore, are as essential to the quality, value and impact of the collection as the physical objects themselves, and these accounts should be treasured, collected, preserved and transmitted with commensurate care because with the stories comes relevance and, hence, audiences. Without stories, museum objects risk falling like trees in the forest – with no one there to hear them, they make no sound. Moreover, who gets to tell the stories determines not just what connections can and will be made to collections and by whom, but what culture is and how it is transmitted.

So, what happens if equal weight is given to the stories that constellate around collections, as has been granted to the artefacts themselves? We would argue that such a reorientation shifts the very foundations of curatorial practice, making it no longer enough for museums to continue to operate as “broadcasters” that transmit knowledge to their audiences in a unidirectional manner. Rather – as theories about the distributed museum have already established; and the pervasive museum requires – in a time of “deep mediatisation” (Couldry & Hepp, 2017), museums find themselves thoroughly enmeshed in a rhizomic structure, connected to multiple nodes and sources of knowledge. In such a hyper-connected context, the museum’s mission is redirected towards putting as many diverse attractors out there on as many platforms as possible and seeing what happens. Arguably, the most radical change that today’s mediatised culture promises museums is the opening to new audiences, beyond the formally educated, managerial elite who constitute the majority of museum visitors today. The potential here is to go beyond participatory or crowd-sourced models as they presently stand, to true economies of co-creation that begin with the cultural stories that people and communities *draw* from museums and collections; and what they proceed to reveal to the museum about what’s interesting, important and valuable about it and the collection.

Storytelling starts with listening. Crucially, in order to collect and communicate stories about objects, curators and museums must first learn to listen – not just to their peers and other professional experts but also to a wider range of storytellers and their communities. This is not a matter of simply putting the audience at the centre of curatorial practice, as this approach risks over-simplifying the nature of museum mediation by substituting social engagement for deeper cultural investment. Rather, it is putting people’s stories at the centre of mediatisation processes

for collecting and designing museum experiences, that matters. After all, it is through the stories people tell that we learn what is most meaningful to them: what they care about, what delights, thrills and intrigues as well as shocks, worries or frightens them. A radical curatorial practice would start with these stories and relate them not just in the museum but also in other media environments, including their own local communities. The pervasive museum requires the curator, therefore, to be equally adept and fluent in cultivating stories from the museum's communities as in the domain or subject expertise that inflects upon how they perform the role itself. Starting with stories means museums are listening and giving equal attention and respect to their audiences as to the objects entrusted to their care. Inherently dialectic in structure and poly-vocal in nature, this is a radically inclusive practice whose rewards are reaped in both directions. Far from side-lining the role of the expert, a story-led approach requires vast knowledge of the many facets of the collection to be able to find the right hooks and angles that will respond to the interests and needs of people who are now positioned as museum interlocutors and co-creators, not just passive audiences. With each response, new lines of inquiry and scholarship are opened up, adding further dimension in both depth and breadth of cultural understanding to the collection as a *communicative figuration* (Hasebrink & Hepp, 2017).

The form of *cultural curating* being advocated here begins, firstly, by listening to communities and their interests, concerns and aspirations as expressed through the stories they tell of their own cultures and environments; then, pointing the storytellers of the community – whether identified as the elders or *griots* who pass on the collective histories and traditions of a social group or the social media mavens, bloggers and podcasters that relay communications in real-time – towards museological resources (objects, archival materials, digital assets, scholarship) that can serve as the raw materials for new, emergent stories to be crafted. In return, the stories created by these “cultural curators” grow the value of the objects that make up museum collections by adding an essential diversity of content, perspectives and living voices to them.

“Programming” the pervasive museum

An underlying issue for museums today involves how the various acts of mediation associated with museum practices are made manifest. In the face of increased diversification of museum media and communication (their forms, expressions and means of generating cultural content), the curator acts as the chief agent of museal literacy: as enabler, facilitator or intermediary; context generator or “filter feeder” (Schleiner, 2003); or distributor of content produced about objects and topics that the museum mobilises across its multiple and distributed platforms, including those to which it is connected in the broader “mediascape” (Appadurai, 1996). Crucially, the distributive capacity of electronic media to aggregate as well as disseminate information as part of a complex global cultural economy whose order “cannot any longer be understood in terms of existing center-periphery models” (Appadurai, 1996, p. 32) raises a host of implications for established museum practices, not the least of which involves curating in this expanded mediated context.

The pervasive museum escapes being bounded – spatially as well as conceptually – by the dichotomies that have structured museum/digital relationships (such as physical/virtual, fixed/mobile and closed/open, which Bautista and Balsamo categorise as the basis of the distributed museum). Rather than being anchored at the epicentre of the galaxy of technologies, services and media platforms that Nancy Proctor illustratively drew together only a decade ago in an effort to visualise the discrete elements that constitute the distributed museum, it has become increasingly apparent in the intervening years that the museum as we need to understand it in the 21st century has become the product of their proliferation. In this chapter we set out to

extend the internal logic of the distributed museum – represented through the relationships forged between the onsite, mobile and online platforms – by drawing attention to critical, interrogative and imaginative acts of curatorship whose practices reveal “a *poesis* of the future, not a simple programme of corrective demands” (Pollock, 2007, p. 10). When the museum itself becomes distributed – which Proctor indicated in her diagram as “The Museum Elsewhere” – curating assumes even greater importance by serving as a means of drawing elements of this eco-system together into a new, dynamic formation – or *programme architecture* – that serves as the economy as well as the ethics of the pervasive museum.

The programme architecture of the pervasive museum provocatively carries the prospect for dissolution – if not a more comprehensive collapse – of the physical and architectural determinants that museological practices have in large part been erected upon. Redefining curation as “programming” – through reactivating the original etymological sense of the word by drawing back to the Greek *prographēin*, meaning to “write publicly” – places emphasis on the practice of active meaning-making; of exhibitionary process rather than product. As a consequence, practices that premise the material object and the built environment will be supplanted by those that take better account of mediation; and in doing so, also resist neo-liberal economies and the oppositional logic of phallogocentric systems to instead “co-emerge” (Ettinger, 2006) with the communities and co-creators with whom the museum is inextricably linked, interlaced and, thus, mutually implicated. To this end, curatorial programming can inform how the museum in the postdigital age more characteristically and integrally goes about serving its enduring mission to draw together, communicate and converse.

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III.2

Digital media ethics and museum communication

Jenny Kidd

On 13 July 2016 it was reported via international media outlets that the Auschwitz-Birkenau State Museum, Poland, was banning visitors from playing Pokémon Go on their smartphones as they toured the former death camp, saying that to play in such a place was “disrespectful” (Morley, 2016). Similar stories have emerged in other contexts, such as the Holocaust Museum in Washington, DC. The bans have been widely accepted as an appropriate response to a (perceived) problematic collision of our modern media landscape and uses of technology with one of our most challenging heritages. It is a vivid example of how fully mediated our experiences of the world and our encounters with heritage have often become, and a useful reminder of the ethical dimensions of that shift. This chapter explores these developments and their consequences.

Contemporary museums are hybrid spaces that collapse a range of dichotomies: digital/analogue, past/present, open/closed, amateur/professional and fact/fiction. This renders them exciting but intensely challenging makers of meaning and facilitators of experience. To compound these challenges, and as is hinted at in the example above, museum users also now inhabit a broader media ecology, which makes possible (if not always encourages) practices of user-creativity and remediation. This raises questions about how visitation is being changed by access to digital media and the invitations to participate and collaborate that they often facilitate.

This chapter will introduce and contextualise the complex communications landscape museums now inhabit, before highlighting a range of ethical questions that such a varied media environment brings sharply into focus. These include, for example, questions about institutional voice, ownership, data and – perhaps most crucially – power, that are core to those developments. They point to a potential tension between the playfulness that is increasingly a characteristic of that broader communications landscape and the principles currently enshrined in the global museums discourse about ethics. This collision between playfulness and principles has the *potential* to be a productive one (although never inevitably so), forcing recognition of the myriad ways that the very definition of a museum, and of communication within that context, might need revision. Indeed, the term “visitor” is becoming a more difficult one to utilise. You will note how I move between “visitor,” “user” and “audience” in this chapter, seeking to find the most appropriate terminology in each instance. However defined, we are becoming accustomed to heritage experiences that challenge, fragment and spill-over into the everyday, those other

territories we occupy, online, offline and in the spaces between. We oftentimes enjoy museum encounters characterised by serendipity and chance, losing our way, and that embrace randomness and incompleteness. These are enticing propositions, but they raise many questions also, as will be seen.

Published scholarship on museums and digital media is no longer a rarity, and there are a number of key texts that highlight the range of ways in which such media have changed – in sometimes small, sometimes large ways – museums' varying practices (see, for example, Silverstone, 1988; Parry, 2007, 2013a, 2013b; Tallon & Walker, 2008). There is an emergent scholarship from museum practitioners also on these themes (Katz, LaBar, & Lynch, 2011; Beale, 2011; Decker, 2015; Rodley, Stein, & Cairns, 2015) and a comprehensive archive of key debates and cases from the Museums and the Web forum¹ and other online sources. Indeed, the blogosphere is an incredibly rich resource for debate about museums' uses of the digital. What has been less forthcoming, however, is scholarship that engages with the knotty issue of digital museum ethics.

Although museum ethics have never been simple or straightforward, professional codes offering guidance have been a feature of the landscape, seeking to support museum professionals as they acquire, steward, finance, display and dispose of artefacts of cultural heritage. These ethical codes have been open to revision in recent years as part of broader discussions about museums' evolving role in society (Bounia, 2014; Murphy, 2016). Georgios Papaioannou (2013) notes that the museums ethics discourse is shaped by debates about “heritage-related values, concepts of right and wrong conduct, acceptable and unacceptable behaviours, [and] moral rules on how one should act,” but that museum ethics have “acquired new dimensions” in the 21st century in part because of the advent of new technologies. Such technologies introduce complex layers of ambiguity to many of the ethical dilemmas that preceded them and of course add numerous new issues for consideration. Museums' work with the digital has not been immune to recent debate about ethics, but their consideration has been limited (for example, in Marstine, 2011; Fouseki & Vacharopoulou, 2013; Pantalony, 2016; Kidd & Cardiff, 2017). The following section will provide an introduction to and historical perspective on those debates. The chapter will then go on to use a number of analytical examples to demonstrate some of the concerns raised in that discussion. In sum, this contribution does not argue for a consensus or framework for a digital museum ethics (although debate about whether such a consensus is appropriate would be welcome and timely) but does demonstrate that the appraisal of ethical issues within the digital environment is fast becoming an institutional and personal/professional priority.

Museums as part of the broader communications landscape

It is recognised that the museum encounter is increasingly a mediated one, “connected,” “networked” and “participatory” (Adair, Filene, & Koloski, 2011; Giaccardi, 2012; Drotner and Schröder, 2013; Kidd, 2014; Ridge, 2014). Angelina Russo has said that “the contemporary museum is a media space” (Russo, 2012; see also Henning, 2005, and Kelly, 2013), and Ross Parry has asserted that a museum is in itself “a medium” whilst being simultaneously “*full of media*” (2007, p. 11). Parry goes as far as to suggest that “media define the museum” (2007, p. 11). But media are of course not static; the landscape is a shifting one, and new and emergent technologies are a part of that picture. As we talk more about virtual and augmented reality, 3-D printing, mobile applications and increasingly sophisticated content management systems for museums, it is easy to forget that for most people and institutions, opportunities to connect via social media, blogs and video posting sites (for example) are only a decade old. The platforms upon which such participatory media are made available are still evolving, and the terms upon which they operate are mutating fast. Gerard Goggin (2012, p. 12) has proposed that rather than

seeing such technologies as a “given,” a more productive way to approach them is as an “open set of questions,” and this is an approach adopted in this chapter. Media and communications scholar Sonia Livingstone says that “today’s media simultaneously converge and diverge, fusing and hybridising across digital services and platforms” (2013, p. 22). This makes them incredibly dynamic but intensely challenging spaces for museums to navigate.

Given that dynamism, to approach the contemporary museum simply through an online/offline distinction would be reductionist in the extreme and not very helpful. The boundaries of the online/offline nexus are now recognised as porous if not frictionless, and the distinctions very quickly lose their meaning when one talks to museum users about how their own “visit” has meandered; starting perhaps in TripAdvisor, moving into the What’s On pages of a Museum’s own website, taking in the Twitter feed, watching a documentary or reading a book, arriving at the physical museum, checking in on Facebook, listening to an audio guide, following a site map or brochure, posting their #museumselfie and maybe consulting online resources such as Wikipedia or Google as they go. For many visitors, a physical museum visit is rarely completely offline, just as an online visit is not disembodied. Instead, both are best conceived of as multifaceted and multimodal (Christidou & Diamantopoulou, 2016). Jason Farman notes that “locating one’s self simultaneously in digital space and in material space has become an everyday action for many people” (Farman, 2012, p. 17), and we need a museology that recognises that fact without being alarmed by it.

Consequently, the boundaries of the museum visit become unclear. When does a museum visit start? When, indeed, does it stop? (Samis, 2008, p. 3). How do visitors distinguish between the different types of information that they “consume” on a visit, and does it matter if they cannot? How do visitors conceive of themselves as implicated in the museum narrative when posting their photos during a visit or pinning a piece of content to come back to once they arrive home? How do search engines, museum websites, performances on site, interactive exhibits or artworks, apps, the exhibition catalogue, the site map or the museum shop and its wares help to construct or complicate the narrative of a visit?

A more elaborate picture of museum communications is emerging, which this book attests to, one that requires re-appraisal to account for the subtleties and peculiarities of the changed media landscape. Elsewhere (Kidd, 2014), I have outlined one possible approach to this in the embrace of Henry Jenkins’ notion of “transmedia” (Jenkins, 2007, 2011). Transmedia is a term that has been used to describe the extension of narratives across multiple media platforms that can then be accessed from varied entry points. Many blockbuster film and television franchises now approach the creation of storyworlds with this possibility in mind. Doing a Web search for, say, *Dr. Who* or *Harry Potter* reveals complex webs of content and narrative that extend across multiple platforms. Both storyworlds also support thriving fan cultures that feature and promote multiple acts of user creativity. Audience members engaging with such narratives do so in diverse and complex ways, sometimes constructing unexpected interpretations of the story or finding ways to shape it themselves through participatory media. Such a way of viewing the construction of meaning and of narrative seems congruent with the ways many users now interact with history or with other narratives about the world, including the interpretations produced by museums.

Henry Jenkins refers to “consumers” of transmediated content as “hunters and gatherers ... trying to stitch together a coherent picture from ... dispersed information” (2007). This nod to nomadic people foraging for food and resources in the wild is a seductive metaphor for museums, not least because it accords with recent conceptualisation of museum learning as constructivist, inquiry-led, lifelong, contextual and often informal. I wish not to suggest that this is purely a digital phenomenon, but it is one that is rendered more visible in the “connected”

museum. Such an approach acknowledges complexity and ambiguity in practices and patterns of communication but crucially does not seek to neutralise or rectify them. Instead, it embraces the idea that such complexity can itself be a rewarding part of engagements (in our case with a heritage, or with an institution), and that piecing together a jigsaw of meaning and evaluating what one finds might be a productive part of the experience.

In considering museum communications as allied to, indeed as part of, other forms of communication and ways of telling stories, a number of ethical challenges emerge that are not easy to unpack. Acknowledging that museum users and visitors roam from platform to platform – indeed, encouraging them to do so – no doubt has ramifications for museum professionals and their perceptions of the visitor journey, and this has an ethical dimension, as will be seen. Yet that digital ethics discourse is in its infancy. As Ross Parry asserts with respect to social media in particular, ethics “are still absent or at best, only emergent” (Parry, 2011, p. 321). It is telling that in the museums’ sector, professional codes of ethics continue to gloss over the implications of work with the digital (International Council of Museums [ICOM], 2013; Museums Association [MA], 2016).

Janet Marstine suggests that we need to look beyond such ethical codes in order to truly explore ethics in the new museums and information ecology, and that this signals the need for a complete overhaul of the museums ethics discourse. She notes that:

The traditional museum ethics discourse, created to instil professional practice through a system of consensus and its correlative, coercion, is unable to meet the needs of museums and society in the twenty-first century. (2011, p. xxiii)

To Marstine, ethics are unpredictable and rather more haphazard than we might like to think. They are necessarily both “adaptive and improvisational” (2011, p. 8; see also Sola, 1997, and Edson, 1997, for more on museum ethics).

But what might that mean in relation to the landscape of participatory media that this chapter has set out to explore? What kinds of things do museums need to think about as they further embrace the affordances of such activity?

Museum ethics in participatory media: Some themes and some examples

This section will introduce four themes that demonstrate the difficult ethical terrain that museum-makers must navigate in their embrace of participatory media. These are: user contributions and debates about how to value them; risk and its management; playing with the truth; and underpinning all of the above, power and its negotiation. The examples used open up a series of questions which, when considered, potentially lead to more nuanced and productive encounters within the new communications landscape for both institutions and their varying constituencies. Although the examples themselves may in time recede into oblivion (ephemerality being a feature of this landscape), the issues they raise will remain pertinent ones.

Valuing user contributions

There have been debates across the field of media and communications about how best to make sense of and to utilise the contributions of members of the public, or “user-generated content,” as those contributions were, for a time, collectively termed (Kidd, 2014). Broadcasters and news outlets, for example, have been engaged in searching debates about the use-value

of contributions such as comments on news stories, with some now seeking to retract such opportunities (BBC, 2015). These are debates that museums are engaged in also as they operate in increasingly sophisticated ways within social media spaces and the blogosphere. These discussions are not trivial, connecting as they do with issues of power, representation and voice.

In recent years, we have seen the websites of museums and heritage sites become the hosts of archives of reflection and memory, and their social media spaces serve as the nexus for great outpourings of opinion and even grief. These activities raise questions about what the responsibility of institutions might be to look after people's emotional welfare within these spaces (the public, but also their own staff), and what their responsibility might be to the content that is being created as a result. We might well ask what the value is of the intense subjectivity museums now court in such spaces in calls to remember, share stories, photos and memories. Are museums and their "followers" clear about why such contributions are being sought and what will become of them once they are rendered "content" or even "data"?

One case that allows us to explore these themes is that of #towerpoppies, the hashtag that accompanied the Tower of London's Blood Swept Lands and Seas of Red installation in 2014. This was a high profile and hyper-visible artwork which became a central focus of the United Kingdom's activities to commemorate the Centenary of the First World War. Whilst over five months, 888,246 red ceramic poppies were "planted" in the moat at the Tower of London, members of the public were encouraged to share their responses via social media. In response, there were tens of thousands of posts on #towerpoppies, ranging from the critical to the poignant and emotional. The hashtag is in itself a staggering archive of remembrance, but potentially an ephemeral one. We might ask on reflection: who now "owns" that archive? The public, the institution or a third party (perhaps Twitter)? Who can now decide what its value might be and what would be a fitting way of making sense of it? What might be the copyright entanglements if it is decided that the Tower of London wants to accession that content or use it in another format? What permissions would need to be sought? Of course, we should remind ourselves that the ethical responses to such questions might be rather more ambiguous than the legal ones.

Museums' social media sites also often become sites of intense memorialisation. It continues to be the case that people turn to museums in moments of crisis and of tragedy. After the terrorist attacks in Paris in November 2015, people around the world went to the Facebook pages of the City's many well-known cultural institutions to express their grief and anger, and some of this content was of course political in tone. Again, we can ask what should be made of such activity? Without eliciting it, a museum's digital presence can become a live space for personal testimony on themes that are expressly political. How should museum staff respond to posts that are full of hurt, and sometimes hate? Is moderation appropriate and defensible within such contexts? What might be the limitations of moderation? People often talk about museums as "safe spaces" as if they were objective, impartial and apolitical. Such language should make museum professionals uncomfortable and needs to be tackled where it is found. Moderation continues to be a key part of the debate about museums' uses of (especially) social media, yet these roles can oftentimes fall to more junior members of staff, and their parameters can be ambiguous at best (Kidd & Cardiff, 2017). Vetting comments is of course an interpretative act and is itself a risky business.

Risk and its management

Picking up again this theme of moderation, we can begin to see how risk – and reputation – management become a part of the debate about what is ethical. Moderation is perhaps at its most problematic when and where it verges on the censorial, such as in instances where public

debate about an institution's corporate affairs takes place on social media, as has recently been the case with both Tate and the Science Museum in the United Kingdom. Both institutions have been openly criticised for their ties with oil companies (BP and Shell respectively), and activist groups such as Big Oil out of Culture and Liberate Tate have used digital media in order to amplify their messaging on this theme.² This is part of an ongoing debate about the kinds of corporations that should be able to benefit (and profit) from relationships with cultural institutions, and whether there is a moral and ethical duty for museums and galleries to cease such ties where they are found to be problematic. Where these kinds of criticisms are voiced within participatory media spaces, institutions tread a very difficult line. To manage or moderate all comments out of existence would be to censor debate within precisely those platforms where dialogue is being promised and encouraged, and does nothing for positive public relations where it is found out.

Perhaps less politically sensitive but by no means inconsequential is the increased complexity of copyright protections within the digital domain. It is in this arena that the incongruence between legal positions and ethical ones is most clearly demonstrated. Institutions might legally own the copyright for an artwork, for example, but it might still be considered ethically problematic for them to assert that users should not download, re-use, mashup or otherwise distort a reproduction of (say) an artwork or photograph, or for them to charge them to do so, especially when held on behalf of those people within a national collection. There are ethical issues associated with the commercial imperative and how it informs museums' digital strategy, and there is seemingly a broad mistrust of the public to respect the integrity and commercial sensitivity of works within online collections. Thinking about ownership and how it is being frustrated within the online environment raises further questions for those interested in ethics: Who bears responsibility in cases of misuse or non-accreditation? And what might constitute reasonable repercussions for those who fall foul of the law? (Kidd, 2014). This also, fairly acutely, raises the question of what ethical responsibilities users or visitors might reasonably be expected to uphold.

Figure III.2.1 exemplifies some of these issues. It is a mashup of Leonardo da Vinci's Mona Lisa, famously located at the Louvre, Paris, and lyrics from American hip hop artist Nicki Minaj's "Super bass". The print was re-mixed by Fly Art Productions and might be seen as a commentary also, a new derivative work that raises questions about art, cultural value and relevance.³

Some museums have begun to embrace the possibilities of "remix culture," offering high-resolution artworks (for example) for re-use and circulation. The Rijksmuseum's Rijksstudio⁴ is a beautifully crafted example of how this can work in practice, offering 125,000 ultra high resolution images of artworks from the collection for members of the public to download and use as resources to "create their own masterpieces" (Gorgels, 2013). But of course, many other digitised art collections don't go as far as this, offering poorer quality images or rigidly policing their copyright. The e-Kokohu/e-Museum initiative bringing together digitised images of works from four national museums in Japan is one such case in point.⁵ E-Kokohu features digitised paintings, sculptures, textiles and other objects archived online with detailed metadata and an intuitive interface for viewing in high definition. It does so, however, without a download function and with a strongly prohibitive line on re-use. Rather than indicating to users of the site ways in which they *can* use the works, the language is instead inhibitory: "You are not allowed to use the content of this site beyond the purpose of private use or the scope permitted by law ... For permission to use the images, please contact the office of each museum that owns them" (e-Kokohu, n.d.). Such a perspective is understandable in a landscape where many museums and galleries still view their digitised collections as a source of revenue income as other institutions, scholars, creatives and advertisers pay for licenses to use content. But this would



Figure III.2.1 Mona Lisa, Leonardo da Vinci (c. 1503)/“Super bass,” Nicki Minaj. Courtesy Fly Art Productions.

seem a challenging long-term proposition in a digital landscape where sharing and doctoring are becoming the norm.

Here we see examples of the myriad ways in which risk needs to be negotiated within participatory media projects and platforms, and where the ethical and the legal can diverge.

Playing with the truth

A related concern is whether and how fact and fiction are being demarcated within digital heritage work, and whether the distinction is always clear. Of course, it might be said that there has always been a frustrated relationship between fact and fiction within museums (Parry, 2013a), but it is nonetheless still the case that members of the public value the truth-claims that such institutions make. As has been noted, digital media lend themselves to playfulness (such

as in the acts of distortion referenced above), and it might not always be clear to users where mischief-making has taken place. This begs the question of whether museums have an ethical responsibility always to tell the truth. Or perhaps it might be time to ask instead if museums have a moral responsibility to make the fictions and distortions that have always been a part of the museological encounter more visible.

This segues into the issue of voice within participatory media initiatives. Museums often embrace polyvocality within social media spaces (especially perhaps Twitter); that is, making space for multiple voices and perspectives, and not indicating a correct or preferred interpretation. But how is that to be read and negotiated by the public? One brief demonstration of such polyvocality comes from the National Media Museum in the United Kingdom in the form of a series of tweets:

Tweet 1: Hugh Jackman, star of the frankly **RISIBLE** *Les Misérables*, was born #OnThisDay in 1968

Tweet 2: Hugh Jackman, star of the utterly **BRILLIANT** *Les Misérables*, was born #OnThisDay in 1968

Sent almost simultaneously, the tweets in juxtaposition are a playful, even mischievous, conversation starter about a film which was itself divisive. The tweets were illustrated with different stills from the film, each featuring the actor Hugh Jackman in character as Jean Valjean in Tom Hooper's 2012 adaptation of *Les misérables*.

Such an example, although seemingly inconsequential, brings into sharp relief debates about voice within social media spaces especially. How do visitors distinguish between the different modes of address? The official and authoritative, the playful or the voices of other visitors (in retweets for example)? Does it matter if they cannot? Is it always clear who is talking and who they speak for? Such questions are, at their core, questions about truth and its interpretation, and connect with debates about other values such as public interest and taste. They also bring us to a consideration of power relations, a continuing pre-occupation of much communications research and scholarship.

Power and its negotiation

Participatory media undoubtedly have issues of power at their nexus; indeed, according to Nico Carpentier, participation is "a political-ideological concept that is intrinsically linked to power" (2011, p. 10). Digital projects are very often articulated as having a radical potential for empowerment and for being a great leveller, but again these claims need tackling, as does the passive-active binary that they rely upon. Sonnet Takahisa has asserted that museums' participatory work needs to be taken to task, as it masks imbalances of power and issues around "control, authority, and access" that need to be foregrounded (Takahisa, 2011, p. 114; see also Lynch, 2011, 2014). These are not small matters, with the issue of access being a core ethical one. We know there are digital divides in place along lines of geography, age, socio-economic status, disability and ethnicity, and that real-world inequalities tend to be replicated online (Hindman, 2009). If museums are not careful, then those very people they have tried so hard to court and embrace in recent years under the banner of widening access will be exactly those people who they will exclude online (Hartley, 2015).

Considering individual projects through a critical lens should mean exploring the dynamics of power they reveal. Rhetoric surrounding this work often speaks of shared power: collaboration, interaction, democracy. But what kind of democracy are museum professionals talking

about here, and are they committed to it? Who does it exclude (hint: it no doubt excludes someone), and are they okay with that? It becomes incredibly important to think about how a call to participate is framed so that it speaks honestly to the kinds of experiences museums are hoping to architect and the outputs they might be trying to elicit. If a project is about securing new content for marketing purposes, then that is a very different end-goal to sourcing new designs for an exhibition space, or collecting additional metadata to support a collection. Making a digital story based on personal testimony will likely make a contributor feel very different to another who is responding to an Instagram Story. Being upfront about expectations and likely commitments for all parties will be increasingly crucial.

Also important is the right of reply if those participants find contributing unsatisfying, chaotic, pointless, challenging, heart-breaking or infuriating (which is not to suggest that museums have a responsibility to avoid all of those outcomes). Museum professionals need to openly reflect on whether projects have been in any way exploitative or manipulative and how that might have been avoided, otherwise participants can feel a sense of continued exploitation that can become difficult to resolve (Lynch, 2011).

Allied to these crucial questions about power are, increasingly, questions that need to be asked about the longer-term use, archival and disposal of visitor data. A museum's data policy (assuming they have one) speaks to its perceptions of power also. Are museums clear about how they will use the data they collect? For example, is there clarity about when and whether those signing up for use of public Wi-Fi in museums will go on to receive marketing messages? How will their data be stored? How might it be disposed of further down the line, and when? Are museum professionals comfortable encouraging their audiences and visitors to use proprietary platforms wherein their data is sold to advertisers (Facebook, Instagram, Twitter)? And are they keeping abreast of wider debates about privacy and surveillance, and public perceptions of those debates?

One crucial question remains: where can those who are working at the sharp end of delivery of participatory digital media projects go for guidance on all of these issues when their professional codes of ethics are found wanting? It is clearly important that space is made for professional development in response to these challenges, but there may be concerns about how willing an institution is to support that kind of skills development.

One response to that question has been a turn to the very platforms that have been problematised in this chapter. As noted in the opening paragraphs, there is an incredibly active community of practitioners debating many of these issues in the blogosphere and in social media spaces (see #musetech, #musedigital and #musesocial). Moreover, such spaces have also become live sites for negotiation of a broader set of debates about museum ethics if one looks hard enough. In recent years, and in response to the seeming lack of radical change within the profession, many museum professionals have begun campaigning online. Movements such as #Museumsarenotneutral,⁶ #MuseumWorkersSpeak and #MuseumWomen have carved out space for difficult questioning of museums' practice and of their ethical responsibilities.

This section began by discussing anxieties about how the contributions of museum audiences should be understood and valued and ends with a consideration of the impact of museum workers' own contributions on the very face and values of the profession itself. These are some quite profound and remarkable debates, and their longer term implications are only beginning to crystallise.

Reflections

The previous section covered a lot of ground with regard to museums' digital practices and the variety of ethical questions they raise. Chief amongst them were questions about valuing

digital participation, managing risk, playing with the truth and negotiating dynamics of power. Finding the answers to the multiple questions raised here is of course not easy. As with all ethical problems, there may be no clear distinction between “right” and “wrong,” and for some ethical dilemmas there may only be undesirable outcomes with a difficult choice to make about which course of action will be the more defensible in the longer-term. What is key is not *answering* those questions definitively – the answers will differ by context, and will certainly change over time – but making ongoing attempts to *explore* them with care and reflexivity.

Making decisions about ethics has become a daily part of museums’ digital practice, whether recognised as such or not. Going forward, considered appraisal of ethical issues should be identified as a legitimate, indeed central, literacy for museum professionals who operate in and with the digital. Such consideration should intersect with investment of time and (where necessary) resources in increased media literacy, data literacy and work toward data justice (Dencik, Hintz, & Cable, 2016). Those doing this work must daily be mindful of two things: that their entries into the participatory media space are not inconsequential, and that the tech and platforms that underpin their practices are not neutral. Consideration of these issues might lead to difficult discussions internally and externally to institutions, but such discussions are increasingly unavoidable and, as has been noted in the previous section, already underway. Participatory media are becoming a complex site of negotiation and possibility for all involved in the global museums’ sector. This comes through overwhelmingly in the above examples when viewed through a lens of digital ethics. This is an exciting and dynamic site of contestation, and the need to be “adaptive and improvisational” emerges powerfully (Marstine, 2011, p. 8).

Notes

- 1 The archive can be found at <http://www.museumsandtheweb.com/bibliography>.
- 2 Both sponsorships have now ceased.
- 3 <https://www.instagram.com/flyartproductions/?hl=en>, with t-shirts for sale at <http://www.rad.co/us/collections/fly-art.html>
- 4 <https://www.rijksmuseum.nl/en/rijksstudio>
- 5 http://www.emuseum.jp/top?d_lang=en
- 6 See the work of LaTanya Autry and Mike Murawski on this.

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III.3

Complexities of collaborating

Understanding and managing differences in collaborative design of museum communication

Line Vestergaard Knudsen and Anne Rørbæk Olesen

In the museum literature, collaboration is portrayed as an essential activity of museum practice. Numerous accounts emphasise that collaboration is practiced internally at museums (e.g. Hansen and Moussouri, 2005; Lee, 2004; Macdonald, 2002) and that museums furthermore collaborate with external parties, such as other cultural institutions (e.g. Kavanagh, 1995; Robinson, 2014; Waibel & Erway, 2009), museum users (e.g. Simon, 2010; Mygind, Hällman, & Bentsen, 2015), education institutions (e.g. Boddington, Boys, & Speight, 2013; Søndergaard & Veirum, 2012) and private businesses and consultants of all kinds (e.g. Fischer, 2001; Olesen, 2015; Roberts, 2015). Historical studies (e.g. Schneider, 1998; Star & Griesemer, 1989) have demonstrated that collaboration is not a new museum activity. On the contrary, these studies showcase how museums have engaged in complex collaborative activities for centuries. However, it may be argued that the past decades have seen a rise in the attention to the potentials of collaboration across earlier demarcations, thus resulting in increasingly complex constellations of collaboration (Springuel, 2001; Davies, 2010). In spite of this, the museum literature often deals with collaboration in relation to overall perspectives and outcomes, rather than on how collaboration is actually practiced as a complex work process across various stakeholders (Olesen, 2015).

Inspired by insights from Science and Technology Studies (STS), this chapter frames collaboration as a complex work process that benefits from a detailed analytical attention. More particularly, we are interested in collaboration in regard to the design of museum communication relating to museum exhibitions and media. In the first section, we broadly introduce collaborative design practices in the museum area and give overviews of potentials and challenges of collaborative design by drawing on conclusions from the museum literature. We conceptualise differences as a particularly important factor across dissimilar constellations of collaboration and argue for the value of a detailed analytical attention to the complexities of differences when researching and managing collaborative design of museum communication. In the second section of the chapter, we refer to the manners in which STS-researchers have studied knowledge and technology development processes by various approaches to complexity. Based on our own studies of collaborative design processes in museums, we give examples on how two

STS-approaches can be used to investigate differences in order to understand the socio-material practices that come to influence collaborative processes across various stakeholders. By way of conclusion, we discuss how the advocated approach can introduce new directions to both research and management of collaborative design of museum communication.

Potentials and challenges of collaborative design

Museum studies on collaborative design particularly revolve around three different constellations: First, collaborative design internally across different museum staff groups; second, collaborative design across museum staff and external design professionals; and third, collaborative design across museum staff and museum users. These constellations seem to be particularly important for developing museum communication today, signalling a need for involving expertise about museums, about design and different media types and about usage. Even though this division is simplistic, since collaboration often more or less involves all of these groups, studies on collaborative design of museum communication tend to focus on one of the groups. We therefore find it to be a relevant distinction in the overview of the museum literature on the subject below.

Collaboration across museum staff groups

Museums employ different staff groups that hold dissimilar expertise, such as curators, educators, designers and so on. Studies touching on collaborative design internally across these groups often focus on exhibition design. Indeed, designing a museum exhibition is generally considered to be a team effort (e.g. Dean, 1996; Lord, 2002). The potentials of collaborative design across museum staff groups are often argued to be greatest if the groups holistically take part in all aspects of the process, in contrast to silo culture and linear exhibition-making, where the work of, for instance, curators, is finished before educators become involved (e.g. Grasso & Morrison, 1999; Hooper-Greenhill, 1999; Jung, 2016). Thus, educators can be “forced into a remedial role, making the best of a bad job once the exhibition has opened” (Hooper-Greenhill, 1999, p. 38).

Studies on exhibition design tend to focus on overall perspectives or finished exhibitions, as for instance pointed out by Lee (2004) and Macdonald (2002). However, some studies have portrayed collaborative design practices as messy and complex work processes (e.g. Lee, 2004; Macdonald, 2002; Star & Griesemer, 1989; Yaneva, 2003). A central theme in these studies is the challenge of collaborating across differences between museum staff groups; using words such as “factional warfare” (Macdonald, 2002, p. 260), “battle” (Schneider, 1998, p. 32), “struggles” (Schneider, 1998, p. 32) and “fire-fighting” (Hansen & Moussouri, 2004, p. 171) to illustrate the potentially intense conflicts occurring due to differences. A variety of theoretical frameworks have been used to understand these differences. For instance, conflicts in exhibition design teams have been argued to be caused by the co-presence of different communities of practice (Lee, 2004; Hansen & Moussouri, 2004), different educational intentions (Lindaur, 2005) or different values (Davies, Paton, & O’Sullivan, 2013). The majority of these studies do not come up with concrete ways of dealing with these conflicts, other than to be attentive to the differences. As stated by Lee (2007, p. 183), differences of opinion arising in exhibition teams should be seen as “the inevitable result of communities of practice coming together to create something new.” Thus, conflicts are not necessarily seen as something that needs solving but rather as something that occurs naturally in collaborative environments and holds potentials for innovation. Furthermore, artefacts, such as sketches and prototypes, have been demonstrated to have significance for conducting collaborative design across museum staff groups (Lee, 2004, 2007).

Collaboration with external design professionals

Besides collaborating internally across different staff groups, museums engage in collaborative design with a range of external professionals with expertise in design, such as exhibition design, digital design and interpretation design, etc. Engaging in these collaborations has the potential to bring new knowledge and know-how into museums. Particularly, the increasing use of digital technologies in museum exhibitions (Parry, 2007, 2013; Parry & Sawyer, 2005) has resulted in the need for collaboration with external design professionals. Thus, since the early days of museum computing, studies have noted on the lack of digital knowledge and technical expertise in museums (e.g. Sarasan, 1981; Parry, 2007; Jones-Garmil, 1997). As Sarasan (1981) for instance concluded in a study of the application of computer technology for collection management, museum staff was said to have “a serious lack of understanding the use of computers.” While the lack of knowledge may be argued to be less of a problem today (Parry, 2013), there are still studies pointing to poor integration of technologies in museums for this reason (e.g. Holdgaard & Simonsen, 2011).

Lack of knowledge and know-how in relation to an area of design expertise may then be an argument for engaging in collaborative design with external design professionals. At the same time, lack of knowledge and know-how is often mentioned as a challenge. Conservative attitudes and inexperience can cause grave conflicts or a situation where the external design professionals need to educate the client (Holdgaard & Simonsen, 2011; Skot-Hansen, 2008; Parry, 2007; Roberts, 2015). This may also result in late or limited engagement of external design professionals. Similar to arguments made about collaborative design across museum staff groups internally at museums, some studies argue against silo culture and linear development processes by pointing to benefits of early and deep engagement of external design professionals (Olesen, 2015; Roberts, 2015). Other studies simply urge museums to be attentive to the level of engagement (Davies, 2010; Holdgaard & Klastrup, 2014). For instance, Davies (2010) finds that external collaborators are not so commonly involved in management planning and key decision-making. This “may be entirely appropriate but it is only a limited form of co-production,” as Davies (2010, p. 318) concludes. The way funding is granted to museum design projects can be a reason for such late or limited engagement (Olesen, 2015, 2016; Clay, Latchem, Parry, & Ratnaraja, 2014).

These challenges are related to the basic challenge of collaborating across differences, which again is a main theme in the literature on collaborative design, here in relation to external design professionals. Thus, challenges of differences in terms of knowledge, know-how and experience may have great influence on the success and extent of collaborative design. Furthermore, differences in terms of concerns, work cultures and languages are mentioned in the literature (Clay et al., 2014; Davies, 2010; Parry, 2007). Involving a broker with knowledge about different sectors can be a way to overcome the challenge of collaborating across differences (e.g. Clay et al., 2014; Søndergaard & Veirum, 2012). For instance, brokerage can help participants in collaborative processes “to feel comfortable outside their professional ‘comfort zones’,” as pointed out by Clay et al. (2014, p. 5). Additionally, artefacts, such as sketches and prototypes, have been demonstrated to have a positive role in collaborative design processes across museum staff and external design professionals (e.g. Mason, 2015; Olesen & Knudsen, 2018). However, recent studies point to the need for on-going reflexivity as essential for the success of such measures (Olesen, 2015; Olesen & Knudsen, 2018).

Collaboration with users

Recently, more and more projects that involve users in design processes in museums have occurred (Smith, 2013; Taxén, 2005; Smørdal, Stuedahl, & Sem, 2014; Davies, Tybjerg, Whitely,

& Söderqvist, 2015; Mygind et al., 2015), and several studies have researched the potentials and challenges when museums collaborate with users (Mygind et al., 2015). Rationales behind such processes have predominantly been formulated as democratic. Thus, involving users can potentially help museums become more reflective to the multiple practices of cultural heritage in society at large (Mygind et al., 2015; Schorch, 2013; Smith, 2013; Lagerkvist, 2006). Further, such processes can be seen as expressions of “a political rationale” which “implies an attempt at giving voice to a group of people, using a system or an institution to create more democratic processes and goals” (Mygind et al., 2015). However, more pragmatic rationales have also been formulated, such as aims to develop “high-quality user-oriented information technology” (Taxén, 2005; Knudsen, 2016; Mygind et al., 2015) or to mobilise new visitor groups (Fuks, Moura, Cardador, Vega, Ugulino, & Barbado, 2012; Termini-Fridrich & Shepherd, 2010).

Again, the challenge of collaborating across differences is a main theme. Differences are described in numerous dimensions, such as differences in terms of foci (Lynch & Alberti, 2010), work culture (Giersing, 2012), language (Mygind et al., 2015) and values regarding cultural heritage (Morse, Macpherson, & Robinson, 2013; Fouseki, 2010; Ashley, 2011; Tzibazi, 2013; Smith, 2013). Differences are seen to be challenging, as they can lead to lack of recognition, respect, openness and trust (Smith, 2013; Tzibazi, 2013). When differences arise in relationships with users, museum staff tend not to have sufficiently considered “the full ramifications of co-production in practice” (Lynch & Alberti, 2010, p. 28). Also, when faced with conflicting interests, they are sometimes not ready to let the foreign practices and beliefs be truly influential in museum processes (Tzibazi, 2013; Thumim, 2010; Fouseki, 2010; Lagerkvist, 2006) and neither to openly reject or refuse such influences. Sometimes, they even “defly avoid ... conflict, subtly by-passing differences of opinion and effectively overriding ... [participants’] passion and anger” (Lynch & Alberti, 2010, p. 22). Thus, in some studies, differences – combined with museums’ inabilities to deal explicitly with them – are considered barriers to success on both the democratic and pragmatic outcome measure levels.

However, some studies point to differences – and the controversies and conflicts arising because of them – as potential possibilities towards more genuine negotiations and dialogues (Lagerkvist, 2006; Fouseki, 2010; Tzibazi, 2013). Here, “unpredicted reactions and developments” should be regarded “as *necessary* for the project, rather than as barriers” (Lagerkvist, 2006, p. 60). These studies also pinpoint that museums’ ability to reflect on such controversies are significant for their usefulness and influence on museum practices. However, there are various – if not conflicting – ideas of what it requires of museums to be reflexive in collaborative processes with users. Tzibazi (2013) stresses that museums should pursue “institutional transformation” while Morse and colleagues (2013, p. 102) emphasise that museums should operate with well-defined codes of purpose, take an “ethical stand” and thus maintain a clear position and authority in relation to such.

Several studies (Morse et al., 2013; Tzibazi, 2013; Lagerkvist, 2006; Fouseki, 2010; Thumim, 2010) indicate that differences are – if not constituted, then – developed in the encounters between participants, and as Fouseki mentions, museums can even work as “diversifying zones” (2010, p. 188). This points towards the significance of planning, facilitating and managing the activities of collaborative practices in ways that are sensitive towards the development of differences. However, methods to do so have not, with few exceptions, been presented and discussed in the literature. Fouseki (2007) introduced a model for training museum practitioners in negotiations and the management of diversity. In addition, Davies and colleagues (Davies et al., 2013) presented the Museum Values Framework (MVF) in order to help museums reflect on the different management roles (“team leader,” “facilitator,” “guardian” and “business manager”) they take on in collaborations (with both internal and external partners).

Altogether, the literature creates an ambiguous view on collaborative design where especially differences of various kinds are seen to pose potentials and challenges at once. Also, the impossibilities and sometimes undesirabilities of setting up certain aims, codes of purpose and ethics because of the evolving and unpredictable nature of collaborative design processes add to the difficulties of managing such processes. Here the majority of the literature recommends that actors apply their skills of reflexivity rather than certain rules or recipes to help navigate in collaborative design processes. Thinking of the ambiguousness of differences brings our attention to the manners in which STS-researchers have studied complexity and touched upon questions of how to both understand and manage differences in collaborative work processes.

Ways of differing

Inspiration from STS

For decades, STS have researched the partaking of multiple agencies when developing science and technology (Pinch & Bijker, 1984; Callon, 1986; Latour, 1988; etc.). Scholars within this field have sought to understand the socio-material assemblages of knowledge practices in order to better comprehend what drives technological and scientific development. Studies have shown that different socio-material *modes of ordering* (such as *enterprise, administration, vision* and *vocation*) form a scientific research laboratory (Law, 1994), and that different practices (such as blood pressure measurement, ultrasound, clinical conversation, rehabilitation therapy, etc.) take part in diagnosing and curing a bodily disease (Mol, 2002). Thus, STS approaches have paved ways for innovative findings about basic processes, by for instance showcasing a well-established research laboratory or a disease as sites of socio-material complexity (Mol, 2002; Law, 1994).

Obviously, processes of collaborative design in museums can be viewed as complex encounters where numerous differences are at stake. As mentioned earlier, differences are thus a main theme in the museum literature on collaborative design, and previous STS-inspired studies of museum practices have made us aware of how museums and their knowledge are made up of numerous socio-material connections (Star & Griesemer, 1989; Yaneva, 2003; Macdonald, 2002; Bennett, 2005; Meyer, 2008; Lee, 2004).

STS not only emphasises complexity. Another central point is that while the multiple agencies within which science and technology evolve cannot necessarily be rationally orchestrated, they still, in practice, *co-exist* (Law & Mol, 2002, p. 20). The Dutch STS-researcher Annemarie Mol subsumes attentiveness towards *co-existence* in the following manner:

... what are attended to are resonances and similarities between, for instance, the mechanics of ways of relating. What is it to differ? How many styles of differing are there, how may different entities or actors both clash and show interdependence, what is the character of the “sides” involved, what kind of materials (and socials) are they made of? (Mol, 2002, p. 115–116)

Co-existence thus terms the manner in which complexity is handled in a socio-material assemblage, and complexity can be handled by a variety of such co-existences, or *styles of differing*.

Following this attention to differing, STS operate with an inexhaustible list of concepts that help comprehend the various types of co-existence (e.g. Mol, 2002; Meyer, 2008; Jensen, 2010; De Laet & Mol, 2000; Star, 2010). For our studies, we have been inspired respectively of the method of “positional mapping” introduced by Adele Clarke (2005) and the concept of “partial connections” introduced by Marilyn Strathern (1991) and applied by, for instance, Helen Verran

(2001). “Positional mapping” proposes a method of mapping dissimilar positions in a situation in order to understand how different positions co-exist and evolve across aspects such as social groupings and time. “Partial connections” proposes to search for and understand the generative correlations and mutual influences between different cultural practices.

In our pursuit of better understanding and managing the complexities of collaborative museum design processes, what we particularly suggest to import from STS is thus the approach of examining and discussing the complexities of differing by various foci on co-existences of difference. In the following, we give examples of how to apply this inspiration into concrete cases of collaborative museum design.

Two examples of collaborative design

Designing museum communication for all or for some? Investigating differences by positional mapping

At an art museum, a design team set out to design three apps. The team consisted of employees from various staff groups at the museum – such as educators, curators and communication specialists – and staff from an external design company with expertise in digital design. The goal of the collaborative design process was to develop three apps for three exhibitions, with the overall aim of developing a digital format for communicating artworks in an innovative way.

The participants in the project often had different opinions and wishes, resulting in many discussions and sometimes conflicts. Particularly one way of differing stood out as a recurring issue throughout the 1.5 years in which the project lasted, namely, how to define the target groups – i.e., the type of users that the solutions were targeted at. There were different opinions about who the target groups should be and, more particularly, how narrowly they should be defined. Simply put, one could say that there existed an opposition between wanting the digital solutions to appeal to a broad range of users and wanting them to appeal to a more narrowly defined type of users, such as, for instance, fashionistas, the creative segment, gadget lovers, etc.

At a first glance, these different opinions could be linked to typical concerns of two arenas involved in the project: The museum arena and the design arena. Arguments for appealing broadly were often accompanied by what the participants articulated as classical museum concerns about inclusivity, seeing the museum as a place for everyone. A digital solution should therefore be useful for as many as possible. On the other hand, arguments for appealing more narrowly were often tied to concerns about usability, following what the participants tended to understand as a design logic in which a digital solution would be most useful if it was designed for a specifically selected target group. To give an example of this opposition, the team discussed at one of the first meetings in the project an idea proposed by staff from the museum to conduct focus groups with four different types of users: School classes, the museum members club, families and young people. The digital designers questioned this idea, asking, *Are they the target group you want to communicate to?* and stating, *We cannot make a digital solution that appeals to everybody, so you have to dare to make a choice.*

While this opposition could easily be framed as rather simple and static, anchored in different groupings involved in the project, the STS perspectives presented in this chapter provide ways for more careful examination and discussion of the complexities of differing in the situation. For instance, the collaborative design process could be analysed by the use of positional mapping (Olesen, 2015), a method developed by STS researcher Adele Clarke (Clarke, 2005) within the framework of *situational analysis*. The idea of positional mapping is to map positions in relation to an opposition in the situation studied. In this case, the different opinions on how to define

target groups could be mapped. Importantly, these positions should not be linked to individuals or groups in the first place, but instead be represented on their own terms (Clarke, 2005). Thus, the mapmaker formulates positions on the basis of the data and draws a range of maps of how the positions are related to each other. Furthermore, positional maps could be drawn in relation to different periods in a project in order to map the development of positions – thereby illustrating how some positions change, new ones arise and others disappear. For instance, a map of one period might not have any positions in the centre, while a map of another period might almost only have positions in the centre. In the example, maps were drawn in relation to three periods corresponding to the development of the three different apps. To give an idea of what a positional map could look like, see the unfinished positional map in Figure III.3.1.¹ This map presents a set of basic axis parameters that were used in the analytical work of the example.

For instance, one of the positions in the map could be *we cannot make a digital solution that appeals to everybody*; another could be *the museum is obliged by law to appeal to everybody*. These two example positions would be drawn rather far from each other, since they relate to the opposition under study in very different ways. In a map of a later period, these positions would not be drawn if the positions weren't represented in the data from that later period. Maybe other positions, more or less related to these, would take their places. Or the places would be empty. Importantly, positional maps should never be understood as final representations of a situation but rather as analytical tools for continually challenging one's ordering of the positions under study by visual means. Positional maps can be used for presentational purposes (Olesen, 2015), but it takes a considerable amount of textual explanation, which is why the example in Figure III.3.1 is a rather abstract example.

Using this approach gave way to a more detailed understanding of difference in the situation: A range of positions were expressed in relation to the opposition under study, and these

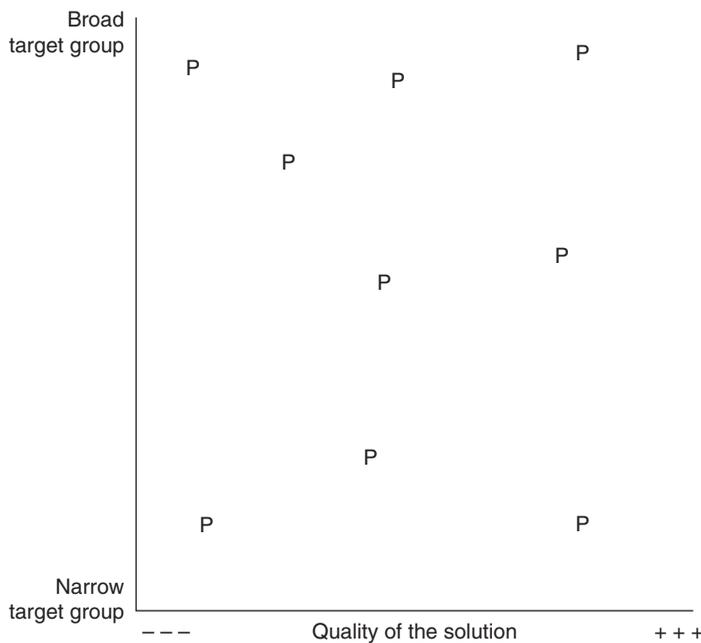


Figure III.3.1 Unfinished positional map. The “P”s indicate where positions, for instance, could be inserted.

positions changed throughout the course of the process, as did the way the participants related to the opposition. Indeed, while museum staff and design staff at times related to positions linked to what in the situation was largely comprehended as typical concerns of the museum arena and the design arena respectively, they also did the opposite. For instance, after having developed the first app, a new group of museum staff was involved in the project, and some of the original museum staff participants positioned themselves quite strongly in line with what was initially comprehended as a design logic, saying: *We have experienced that a very specific target group has to be chosen, to whom it should appeal.*

Furthermore, mapping positions made it clear that some positions were very strongly arguing for the one or the other approach, while others were more vague or middle-seeking. For instance, some of these positions portrayed an interesting ambivalence between wanting to target the solutions narrowly but at the same time wanting them to be inclusive. In addition, one of the middle-seeking positions that developed throughout the course of the project took the difference into account in another way. This position argued that it might be possible to combine the approaches of targeting broadly and narrowly by working with several specifically defined target groups and not just one specific target group. For this to be successful, another solution format would be more appropriate, and the design team therefore quite radically changed the materiality of the project: While the original intent was to develop mobile apps, the final solution was an app for stationary iPads positioned at different locations in the museum. The larger screens of the iPads and their relation to only one artwork at a time made it more appropriate to provide different entry points targeted dissimilarly. In this way, a middle-seeking position resulted in a new idea that became defining for the final app developed.

This solution should not be seen as a final consensus defining the situation but rather as a complex resolution formed by the continuous interplay between different positions. The differing was comprised of multiple positions that related to and developed each other in complex ways throughout the project. The collaborative design process was managed in a way that allowed these different positions to co-exist and evolve. Sometimes the participants consciously related to or “talked to” certain positions, and this attention to positions seemed to have great significance for the solutions developed. Thus, the decision to change the solution format was anchored in a position that deliberately sought to combine or order other, differing positions. In that way, differences were managed not as a static challenge but as something worthy of exploration that had the potential to catalyse new ideas about how to communicate artworks digitally. While the ambition to develop innovative digital museum communication catalysed collaboration across participants from different departments at the museum and the external design company, the innovation itself only happened due to the manner in which the differences across these various participants were managed.

To sum up, examining the complexities of what might at first glance seem a simple opposition paved the way for a richer understanding of differing in the situation. In addition, this examination gave insight into how differences were managed in order for the participants to develop new ideas about how to communicate artworks digitally.

Places of facts or experiences? Differences as partially connected

At a cultural history museum, a digital platform for mapping and describing Danish rock music history was designed (Knudsen, 2015, 2016). The platform was developed over a 1.5-year period collaboratively across museum staff, museum users, a digital designer and other professional partners, such as a venue owner and a rock journalist. It was envisioned by the museum that the meeting places of Danish rock music, such as music venues, festivals, youth clubs, etc., should be

mapped and described by digital content, such as collected or created pictures, videos, written text, etc. These materials were to be uploaded at the digital platform by both users and museum staff in an ongoing process.

On the surface, this collaborative design process also presented a rather simple opposition, here between imaginations of either an experience-based or a fact-based digital mapping. For instance, it was discussed what the primary content of the site was entitled to document: One participant suggested that site-specific hallmarks were to be identified for each of the meeting places of rock music put to the map. This would include descriptions of establishment phases, organisation structure, music genres, architecture, etc., thus a rather fact-based mapping. As a reaction to this, several participants flagged *the experience of rock music* as another, maybe more important, issue to be documented on the map. They stated that the portraits of meeting places of rock music would necessarily have to contain the specific personal reactions, reviews, stories and memories of fans and musicians who had engaged with rock music in these places.

However, when taking a more detailed look at the different versions of the digital platform emerging in the design process, it was not always an overall opposition between two routes that appeared. Rather, myriads of different issues were at stake. For instance, topics of how to make the communication format most attractive were raised:

Rock music librarian: I simply have troubles reading long passages on a screen, I will rather listen, I think it's excellent listening to someone telling a story.

In addition, the issue of use and users were discussed: Some participants emphasised that *attracting the normal user* was one of the most important missions of the digital platform. While others suggested that the platform should appeal to historians (amateurs and professionals) who already had an interest in rock culture as a historical subject and were searching for specific information on the places of Danish rock music.

Rock journalist: I don't think of the map as something to be sold as an experience. The map should be a good tool for those who have an interest in rock music history or local history.

As can be seen from these excerpts, there were several differences at stake in the formulations of what purposes the map was going to serve. Some were pointed at the topical content, others at the format of content (between the fact-based or experience-based), others at the navigation and entry points, and again others were occupied with discussing who the users of the platform should be.

At the same time, the participants very often made use of dual oppositions in their arguments. This could be seen when the spoken-for design idea or direction was substantiated by a negative description of its imagined opposite. Oppositions thus helped shape and specify the participants' imaginations and design ideas regarding the map. At the same time, the oppositions related to many dimensions in the design process and certainly did not all centre around the same issue. Table III.3.1 shows a list of oppositions articulated by various participants in relation to the design object.

How oppositions played a strong part in the collaborative design process could be understood by the concept of *partial connections* (Strathern, 1991; Verran, 2001). This concept pinpoints difference as something that emerges and is practiced in interdependent relations and thus within partial connections. Difference is therefore not a latent, logical and essential phenomenon *between* humans but rather something we develop by our *connections*. Difference is something we practice and manage "by contingently separating or connecting" (Verran, 2001, p. 30).

Table III.3.1 A list of oppositions articulated by participants in the design process towards a digital platform mapping the places of Danish rock history.

<i>Oppositions</i>	
Information tool	Experience
Edited	Personal
Historically angled	"Everything"
Facts	Entertainment
Facts	Social
Encyclopaedia	Fan site
Encyclopaedia	Personal
Academic	Concert experience
System	Feeling
Site-specific	Experience
The History of Denmark	Memories

As differences are emergent, they also vary and can be moved in several directions. Furthermore, differences can move into either simpler or more complex constellations.

With this attention in mind, the participants in the collaborative design process could be seen to gradually order the divergent directions and different oppositions into a simple and overall opposition between *facts* and *experiences*. For instance, one of the museum staff representatives described the results of a group discussion to the larger group by saying: *We spent ample time talking about facts versus experiences ...* The discussion was much more complex than that, but in this way, the participants tended to relate the opposition between facts and experience to all issues concerned with designing the digital map, such as the platforms' purpose, users, media, etc. Thereby, the many shades of difference, as well as their changeability, were not maintained in the further implementation of design ideas. As a consequence, the map was designed with a clear and static division between the *factual* and the *experience-based* content. A division which also clearly demarcated a division between the factual rock historians and the experience-searching "normal users," between the encyclopaedic and the personal content, the factual and the social media, the system and the feelings, etc. In this way, many diffuse and vaguely related working oppositions were managed into one collapsed and more static overall opposition.

By understanding difference through the analytical framework of partial connections, we get an understanding of how various differences emerged, co-existed and interacted, even though one opposition was eventually conceptualised – and practiced – as the overarching opposition by the participants. As in the other example, the ambition to develop innovative digital museum communication catalysed collaboration across various partners – in this case, staff from different departments at the museum, museum users, a digital designer and other professional partners, such as a venue owner and a rock journalist. However, the differences that transpired from this complex constellation came to be managed in a rather simplistic way. Thus, the design largely centred on what came from discussions of the one opposition, and other oppositions or ways of differing were not really maintained and explored.

Detailed analytical investigations of differences could have paved way for a richer understanding of the oppositions in the situation as well as the way they were managed. Instead of generating a single dual division in the collaborative process, as well as in the design of the platform, the participants could have thought along, and maintained, the lines of vague multiple directions regarding both content, users, media, etc. The many different directions towards the

Map of Danish rock history could have been separately explored and concretised more thoroughly, for instance in design sketches and prototypes. In this way, each different version of the platform might have gained a more concrete and less conceptual form before being drawn into co-existence with other versions (Olesen & Knudsen, 2018). Possibly, this could have paved the way for a digital platform making more sense in a complex and hybrid landscape of content and communication. A landscape where differences are constantly generated and changed, as they emerge and dissolve in their concrete and materialised relations to each other, and thus change their *ways of differing*.

Conclusion

As described earlier, a great variety of challenges and potentials of collaboration are mentioned in the museum literature on collaborative design. In this chapter, we have conceptualised difference as a common denominator and somewhat overall factor of particular importance. Thus, we find that differences of numerous kinds are presented as challenges, but also, to some extent, as potentials in all of the three constellations of collaboration highlighted (across different museum staff groups; across museum staff and external design professionals; and across museum staff and museum users).

Inspired by the attention towards complexities applied within STS, we suggest that detailed analytical investigations of differences can inform our knowledge about the challenges and potentials of collaborative design processes. As discussed in the examples, we can for instance understand differences and the ways they unfold, change and influence a design process through STS concepts of *positionality* and *partial connections*. Mapping positions on their own terms, we see how different positions change and mutually inform each other in complex ways across aspects such as social groupings and time. Here, differences are understood as a potential, as they foster new positions and ideas that traverse through divergent types of expertise and logics. In line with this, we can move towards focusing on differences as generative and emerging and thus as something inherent in a collaborative design process rather than in the partaking participants. Thus, approaching differences as consequences of partial connections that evolve into either vague parallels, multiple directions or strong oppositions can give us a view as to how processes unfold differences in dissimilar ways.

The two examples presented in the chapter illustrate how such developments can be understood by various approaches to complexity. The act of investigating difference is approached dissimilarly in the two examples. In the first example, difference is approached *internally*, since the focus is on *one difference* and how that difference holds a complexity. Here, the oppositional view on how to target users is conceptualised as one key opposition in the collaborative design process at the art museum. By use of positional mapping, the example illustrates how the opposition comprised a myriad of different positions and their interactions – thus internally complexifying the understanding of the too-simply-framed opposition. In the second example, difference is more overly approached *externally*, since the focus is not just on one difference but on *many differences* and their interaction. Here, the example points to how one opposition that is conceptualised as overall to the collaborative process is actually collapsed from a range of other oppositions – thus complexifying the too-simply-framed opposition externally. Importantly, both approaches can be used to complexify differences internally and externally. However, we have sought to showcase dissimilar approaches to a detailed analytical attention to differences. Thereby, we also emphasise that dissimilar ways of operationalising the STS perspectives have potentials for introducing new insights into the understanding and management of collaborative design of museum communication.

In terms of managing these collaborative design processes, looking at ways of differing can, for instance, provide insights into how creative thoughts depend on the formulation of

oppositions. At the same time, oppositional differences can turn out to be exclusive and simplifying in a complex collaborative field of directions. Such views on the formations of difference may provide hints as to how differences can be handled in divergent ways, thus giving food for reflection on how to manage collaborative design processes. Depending on the concrete situation, some activities will seem more likely than others to either spark oppositions into being or to keep the differences in vague parallels. Also, managers may choose to explicate or frame differences in certain ways to try to achieve or avoid certain discussions. An ongoing and detailed attention to the complexities of differing can thereby be a useful part of a design strategy.

Thus, the STS perspectives presented in this chapter can introduce new directions to both research and management of collaborative design of museum communication. For researchers, these perspectives function as tools for obtaining a more nuanced and complex understanding of the challenges and potentials of collaborative design across various stakeholders. For managers, a detailed attention to the complexities of differing can be essential for the generation of new ideas and the ability to collaboratively develop communication solutions that adhere to an increasingly complex media usage in today's museum world.

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Note

- 1 For other visual examples of positional mapmaking, see for instance Clarke (2005) and Olesen (2015).

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III.4

Participation in design and changing practices of museum development

Dagny Stuedahl

An important discussion in the field of museum studies is about how museums may shape new dialogues with audiences and integrate a new understanding of diversity in institutional values and practices in order to meet the global context of museums (see for example Golding & Modest, 2013). These discussions may be seen as a follow-up to Peter Vergo's critical framework for the new museology practices of transparency and pedagogy (Vergo, 1989) and Stephen Weil's (1999, 2002) argument for a museum with a clear purpose for its communities. The "engaging museum" (Black, 2005), the "responsive museum" (Lang, Reeve, & Wollard, 2006), and the "participatory museum" (Simon, 2010) are all notions that support the shift away from an inward collection focus towards an outward focus on the museum's role in social development, education and community-building. The participatory paradigm and the shift towards thinking about visitors as active interpreters and performers of meaning-making practices (Hooper-Greenhill, 2006) are closely connected. Participation is complex and includes museums being open to the diverse ways that people may engage and express themselves.

The concepts of the "connected museum" (Drotner & Schröder, 2013) and the "distributed museum" (Balsamo, 2011; Stuedahl & Lowe, 2015) capture the central role that digital media have for this development as key tools for enacting audience engagement, democratisation, social development and activism. This participatory paradigm shift (Holdgaard & Klastруп, 2014) has changed the understanding of media, mediation and media practices in museums. The shift goes from understanding media as tools that simply supply installations or objects with additional information (McManus, 1989) into a means for social interaction, participation, co-creation and contribution. Mobile media, social network sites (for short: social media) and digital interactives have thus become part of what may be termed a museum media ecology. This new media ecology requires museums to think beyond the traditional curation of objects and to address social curation that includes social interaction, connection and collaboration as part of curatorial and educational thinking. This represents a shift that has to be taken into consideration in every museum design project, whether the museum is designing an exhibition, a new learning programme or outreach initiative. This shift raises key questions of how museum professionals gain knowledge about their users, how they may implement participatory methods in their practice of audience collaboration to gain this knowledge and how the museum may embrace participatory methods as social interactions in ways that are meaningful to diverse

visitors and their needs. Based on the ongoing challenges that the participatory museum brings, and the various forms of visitor- and user-involvement that new forms of media-use introduce, it is time to draw attention to the methods that museums use to explore emerging concepts, practices and forms of engagement.

Lately, several museum projects in the Nordic countries and the United Kingdom have explored the potential of extending museum participation into actively involving users in the process of museum design. These endeavours involve visitors as collaborators who provide the museum design processes with a deep knowledge of their diverse experiences and expectations of both media and the museum. The aims of this active visitor involvement are multiple and include the pragmatics of shaping relevant activities of participation as a democratic endeavour to open up the institution. Visitor involvement is also to establish connections with visitor groups that go beyond just community involvement in collecting objects, creating relations that help museum professionals work in tune with their visitors' interests. Rather than being understood as activities related to content, visitor participation can thus be framed as a knowledge process that connects museum staff with society, and as a method of opening up all museum processes in exhibition design, design of communication programmes and in the design of learning activities.

Thus, the participatory paradigm addresses more than just the visitor's participatory activities in museum exhibitions. In this chapter, I address how the participatory paradigm is essentially about the methods and techniques used to build stronger relations between museums and society by involving people in the design process. I particularly emphasise how the participatory paradigm in museums may be inspired by current discussions within the Scandinavian tradition of participatory design (PD) that originally grew out of political concerns about workers participating in decision-making in technology development at the workplace. The approach is influenced by action-research perspectives and has, in the last decade, focused on democratic participation in innovation processes by involving people and drawing on their experiences of everyday life (Björqvinnson, Ehn, & Hillgren, 2012). The action-research focus on changing participants' knowledge has in these projects evolved to a focus on involving people to collaboratively shape new services to meet their needs. This is where PD becomes co-design, and this chapter aims to discuss how the co-design method becomes relevant for future museum work with audiences and exhibition-making.

Changing practices of museum media participation

The museums' concern with participation, democracy and learning is considerably extended by digital media practices that users bring into the museum. Participation has become a question of both the museum's forms of communication to meet the diversity that visitors bring and the institutional practices that need to be developed to meet this diversity. In particular, museum participation has become a question of how digital media are designed in order to support multiple media practices within the museum's media ecology. Museum media is complex and is composed and orchestrated by the diversity at play in museum communication: museum practices and everyday practices the visitors bring into the museum.

The changing practices of museum media are reminiscent of the discussions within media studies about the non-media-centric perspective that suggests de-centring the understanding of media's role in studies of how everyday life and media processes are interwoven (Morley, 2007). The de-centring perspective proposes instead a focus on how media are playing a central role in all social and cultural processes in contemporary societies (Hepp, 2010) and builds an alternative perspective to traditional media-centric media studies. The non-media-centric perspective thus represents a shift in how we understand media's role in democracy

and participation (Carpentier, 2011). Framing media as part of social and cultural processes includes recognition that the concept of media participation refers to “influence or (even) power relations in decision-making processes” that “cannot be equated with ‘mere’ access to or interaction with media organizations,” which the discourse on participatory culture (Jenkins, Purushotma, Weigel, Clinton, & Robison, 2009) routinely brings forth: “Access and interaction do matter for participatory processes in the media – they are actually its conditions of possibility – but they are also very distinct from participation because of their less explicit emphasis on power dynamics and decision-making” (Carpentier, 2011, p. 69). Carpentier relates discussions on participation and democracy in cultural institutions to the history of art, where participation and interactivity aim to nurture a more active audience. He points to how recent new museology/new museum theory deepens the emphasis on representation, politics and power, through their agenda for audience participation reintroduced into the debate to counteract the mono-vocality of museums (Ross, 2004). Participation is used as a plea for a socially and culturally responsive museum that “is transparent in its decision-making and willing to share power” (Marstine, 2006, p. 5, as cited in Carpentier, 2011). This definition of participation as related to decision-making is shared between current discussions in museums and media studies, as well as in the field of participatory design.

Thus, the museums’ participatory paradigm may be seen as a parallel to this non-media-centric perspective in media studies in the sense that museum media design goes beyond packaging messages curated by the museum. This includes issues such as visitor agency as related to cultural and social interaction: the new roles museums may take for democratic practices and for society in the future. Sharon Macdonald (2007), for example, can be read as taking a non-media-centric stance when she argues for a broader exhibition design perspective that includes consideration of how media structures social interaction and museum visiting in much the same way as content does. She proposes focusing on how media affords different kinds of audience relations and gives particular connotations that scaffold social interaction. Macdonald also expresses the need to understand how exhibitions work by combining perspectives from exhibition design, audience interaction and media studies in what she calls the “affective syntax of exhibitions” (Macdonald, 2007). Her questioning goes even further, as asking how exhibitions work with audiences also raises issues of how museum professionals design exhibitions when the role of museums in society is changing.

In the following, I address the methodological aspects of furthering museum participation into participatory involvement, and I discuss how core principles of the participatory design tradition (PD) are relevant for these discussions in museum media studies. I then report from some Scandinavian PD-based projects in museums, focusing most directly upon how the Norwegian project EXPAND – research in Norwegian science centres introduced a participatory method for museum educators to use in processes of re-designing exhibitions. The discussion raises challenges of organisational epistemologies when introducing participatory methods into museums.

Museum participation and audience collaboration

A recent anthology on museum participation (McSweeney & Kavanagh, 2016) points to the numerous meanings of the word participation and how the fluidity of the concept may be both a help and a hindrance to a consensus among academics and practitioners involved in museum development. In short, the anthology re-directs our attention from the general focus on audience engagement included in formative exhibition evaluation processes towards an understanding of the visitors as a collective, as groups and as individuals. This requires museums shifting

their focus from visitor participation to how institutions may collaborate with audiences in collective decision-making, co-creation and co-production (McSweeney & Kavanagh, 2016, p. 21). The United Kingdom-based initiative Our museum: Communities and museums as active partners was initiated by the Paul Hamlyn Foundation to give museums and galleries the possibility to further their methods of organisational development by brokering new cross-sector partnerships and establishing careful community consultation and co-production. This participatory endeavour also included creating productive relations with local authorities and keeping a focus on local community outcomes of museum participatory projects. However, a long-term impact did not evolve, as the funding invested in participatory projects remained separate from the museums' core budgets and did not succeed in shifting public-engagement work into the core practices of the museum (Lynch, 2011, 2016). Such innovative projects demonstrate how museums look for the long-term potential for public engagement but require a broader infrastructure of organisational and funding mechanisms to support the museum's ability to establish new relational forms with visitors and society.

In another recent review of participatory models and approaches to museum exhibition design, Mygind, Hällman and Bentsen (2015) conclude that participatory approaches in museums face many obstacles. These issues are chiefly concerned with coordinating degrees of participation, making choices of relevant methods used to involve the visitor, coordinating the multiple rationales for participation, as well as obstacles and tensions caused by power relations and sometimes contradictory rationales for participatory approaches. Their analysis is founded on a subset of studies that follow the criteria of longer-term visitor involvement, beyond formative evaluations and tests. One of the findings was that, for the process to be successful, there was a shared need for all institutional levels to have a clear strategy about participant involvement. Another finding was the need for museum professionals to accept a partial transmission of authority to the external participants. Mentioning the field of participatory design as potentially providing methods and theories which would be useful for future museum development, the authors argue for more research in order to identify the obstacles to facilitating participatory practices in museums (Mygind, Hällman, & Bentsen, 2015).

The current transformation of museums requires focus on the relation between digital media and museum curatorial practices and exhibition-making (Dziekan, 2016). Such re-focusing shifts the *modus operandi* of museums from a passive register to a more active mode of engagement through various interactions. The museums' organisational roles and routines frame the ways in which curators and educators collaborate with audiences and communities within a participatory context. However, participatory practices may also bring a shift in the overall relation between the museum and society beyond the exhibition or installation. This calls for a new methodological framework for museum development, and new ways for the museum to work in participatory ways.

Collaborative and participatory design

One option for museums is to look towards other disciplines that have developed participatory methods. PD is one such potential approach that actively involves users and stakeholders in design and development. The approach focuses on the processes and procedures and is used in software design, urban design, architecture, product design and health care development to ensure that the designed products or services meet with users' needs and expectations. Several understandings of participation from the field of PD are especially relevant for capturing the difference of participation as part of a museum visit from participation in the form of involvement

in decision-making on exhibition design or learning programmes. The terms “having a voice” and “having a say” indicate the central concerns of PD (Kensing & Greenbaum, 2012) about who has the power to participate in the decision-making, as well as indicating an awareness of how participation may have different levels (Arnstein, 1969). There is a big difference between having a voice and the opportunity to have a say, which includes having the power to influence and take part in decision-making that shapes the direction of a project or a design. Below we will look especially at how the Scandinavian tradition of PD has approached this challenge of giving users power and voice in design processes.

The Scandinavian tradition of a participatory design

The Scandinavian countries share the PD tradition of critical and collaborative approaches to development processes. PD was established in Scandinavia in the early 1970s as a collection of design practices, methods and principles for involving users as co-designers (Greenbaum & Kyng, 1991; Muller & Kuhn, 1993; Schuler & Namioka 1993). Central to PD is an awareness of power relations and involvement in decision-making, whether this is about organising new work practices or developing new systems or software. PD is based on participation and democracy as core values (Bratteteig, Keld, Dittrich, Mogensen, & Simonsen, 2012; Robertson & Wagner, 2012; van der Velden & Mörtberg, 2014), and it focuses on how design processes may be planned, organised and practised across the range of professional experiences, skills and knowledge that may exist within a PD-based design process (Simonsen & Robertson, 2012). The early PD projects and cooperative approaches involved local trade unions and paid special attention to how to enact democratic practices that involve all the people who will be affected by the workplace technology (Kensing & Greenbaum, 2012). Theoretically, the Scandinavian tradition of PD was rooted in political economy, democracy and feminism (Greenbaum & Loi, 2012). These theoretical perspectives gave Scandinavian PD its distinctive political character, compared to other user-centred design approaches that involved users for pragmatic reasons in designing better products. The guiding principles that underpinned the Scandinavian tradition still stand but are today related to ethical rather than political arguments, and this ethical grounding has paved the way for contemporary approaches to PD outside the workplace. The values of participative methods are, for example, prerequisites to enabling people to participate in the design process as experts in their everyday work or daily life (Robertson & Wagner, 2012; van der Velden & Mörtberg, 2014), and this goes beyond merely involving users in the development of a potential product or service into thinking about design as an empowering activity for users that will ultimately serve the institution. The former focus on democracy at work has been reoriented with a concern for democratic innovation, and PD projects today focus on including communities and grassroots movements in social innovation (Björgvinsson, Ehn, & Hillgren, 2010). PD is in this way developing away from design of technological products or systems towards understanding the participatory or collaborative method as an approach to exploring and shaping better futures together (Light, 2015).

Examples of participatory design in museums

Several museum projects have involved participatory methods in one form or another in exhibition design, the design of digital technologies (Ciolfi, Petrelli, McDermott, Avram, & van Dijk, 2015) or more general organisational development. For example, participatory action research methodologies have been used in United States-based museum educator research

and in endeavours to change learning concepts in informal science education (Ash, Rahm, & Melber, 2012; Pedretti & Hodson, 1995). Reflective practice has been a central issue in these debates on science learning and teaching (Scaife, 2010; Schön, 1983). Another example is a longitudinal participatory action research project in the United Kingdom where a local authority museum worked with youths aged 15 to 17 to involve young people as participants in order to explore new museum practices and professional identity (Tzibazi, 2013, p. 167). The study is based on the argument that museums need to move away from a transmission model of museum communication, where the museum's role is based on one-way communication. The participatory project aimed to define appropriate methods and outcomes for all partners included in the project. One of the obstacles identified was that an inherent lack of trust in participants' abilities forms an obstacle for museum professionals to meet their participants' needs. Tzibazi also discusses the challenges of finding the tools and techniques for collaboration within a democratic framework, where the voices of young people get appreciated at a level equal to that of the museum professionals. Thus, Tzibazi is addressing tensions well-known in both action research methodology and participatory design. These tensions relate to equalising power relations between museum professionals and young audiences – the challenge of creating situation-based actions that lead to knowledge and mutual learning between all parties involved. This aligns with Bernadette Lynch's (2016) argument that museums need to re-conceptualise their role as responsible social institutions and base their participatory projects on ethical and reflexive educational foundations.

In Scandinavia, several museum projects have been based on the PD tradition, and they offer experiences that are relevant to further methods, tools and techniques for audience participation in design processes. These projects are related to exhibition design, design of educational or outreach projects, or general exploration of the development of museum organisation. The current focus of PD on local knowledge-production through collaborative prototyping (Ehn, Nillson, & Topgaard, 2014) may be a particular challenge for museums in involving actual visitors, local communities and museum professionals, and aligning these different groups with museum curators and educators, often working with external exhibition designers and producers of interactive installations, in several Scandinavian PD museum projects.

Participatory design and visitor involvement

A PD approach to visitor involvement in general would involve visitors in the conceptual, operational and evaluation phases of exhibition design. But there are also practical challenges of hosting design sessions with visitors within the museum context, as well as managing power structures between visitors and museum professionals within established practices (Taxén, 2004, p. 33). In 2001, the Swedish Museum of Science and Technology started a collaboration with the EU/IST funded project SHAPE (Situating Hybrid Assemblies in Public Environments) and developed a number of exhibitions based on collaboration with researchers. Gustav Taxén's doctoral thesis, "Participatory design in museums: Visitor-oriented perspectives on exhibition design," argued for visitor participation as a method to find "new ways for audiences to contribute to exhibitions with their knowledge, experience, opinions, and desires" (Taxén, 2004, p. 15). Taxén describes a PD approach that involved methods containing educational brainstorming sessions suitable for children. He argues that the details of how participatory design methods are conducted in diverse contexts are important for the outcomes. In his view, PD in museum exhibition design requires that participatory methods have a common agenda for all museum professionals and visitors involved and that the methods are integrated at all levels of museum organisation.

Participatory exhibition design and involvement of youth

In 2010, the Digital Native project at Aarhus University, in collaboration with Moesgaard Museum and ARoS Aarhus Art Museum in Denmark, picked up the thread from SHAPE and focused on the involvement of young people aged 16 to 19 in exhibition development. The project involved a group of young people in creating an interactive exhibition that questioned the whole concept of “digital natives” (Prensky, 2001). The value of incorporating young people was that they could provide a critical reflection on what it is to be identified as a digital native. The Digital Native project addressed participatory process as interdisciplinary dialogue between teenagers, museum staff, anthropologists, interaction designers and programmers as much as the exhibition as an object of design (Smith, 2013; Smith & Iversen, 2014). The project experimented with how a focus on values of PD in museum settings may scaffold the engagement of young people, and was conceptual rather than just being focused on the exhibition outcome. In this respect, the Digital Natives project differs from other participatory projects which aim at participatory exhibition design or making incremental changes to museum practice (see Tzibazi, 2013). The Digital Natives was a design-led exploration of “unanticipated futures together [sic] based upon situated professional and personal experiences” (Smith & Iversen, 2014, p. 266) with the museum as context and arena. The project deliberately planned the process to support the young people to work both with and without the designers. In this way, the participants gained ownership of the exhibition project, and they developed their own ideas, undisturbed by the designers’ professional views. While this approach helped the young people’s confidence in the project, it challenged the professionalism of the designers and museum professionals by giving authority and legitimacy to the youngsters at a very early stage in the design process (Smith & Iversen, 2014). The goal was to create a design process that belonged to neither the teenagers nor the designers and to open a space for joint negotiation and critique in order to develop meaningful alternatives. The real challenge was for the professionals to handle this process, as this required them to redefine and share authority.

Participatory design to integrate social media-based audiences

In Norway, the TRANGO (Transformations in cultural heritage NGOs and museums) project at the University of Oslo (CONTACT/NFR 2009–2013) conducted several PD experiments to explore social media inside and outside the museum. For example, the project collaborated with the Norwegian Museum of Science, Technology and Medicine on small-scale participatory experiments to investigate how social media could be used as platforms for involving audiences, crowds and urban citizens in the design of a mobile audio guide along the Akerselva River in Oslo (Smørdal, Stuedahl, & Sem 2014; Stuedahl & Lowe, 2015). In collaboration with the Norwegian Maritime Museum, the project conducted another longitudinal participatory design project that involved museum professionals exploring different modalities of social media and their relevance to communicating museum backstage practices. Here, the project established an experimental zone as part of the regular museum exhibition where craftsmen, museum curators and conservators explored how communication with visitors could be continued online (Stuedahl & Smørdal, 2015). Also, the project “To – and from – youth” at the Norwegian Museum of Science, Technology and Medicine explored digital storytelling as a participatory method for including young people in the design of a learning programme on digital democracy (Stuedahl & Skaatun, 2018). These projects focused on PD and collaborative design as a concrete method to develop educational and communication practices as part of real development projects in the natural and everyday settings of the museum.

Future workshops as a participatory method for museum educators' changing practices

PD and collaborative design provide a number of techniques and methodological tools to support dialogue and knowledge-building in participatory projects. The role of means such as mock-ups, prototypes and different types of media to support participants' processes of exploring and negotiating tensions between different stakeholders involved in the project are central (for a discussion of these means, see, e.g., Olesen & Knudsen, 2018; Smith, 2013; Smith & Iversen, 2014). The means used to support collaborative processes need to be thought through in relation to the types of participants and contexts of the participatory project. In the research project *Expand: Research in Norwegian Science Centres (UtVite in Norwegian)*, the Future Workshop method was used to support science centre educators in their endeavour to apply educational theories in re-designing installations. The *Expand*-project ran 2011–2017 as a collaboration between the INSPIRIA Science Centre, Norway and the science education researchers at Norwegian University of Life Sciences. The main objective was to develop interdisciplinary research methods and analytical concepts to support the relation between meaning-making and interaction with installations in science centre exhibitions. An important part of the project was to scaffold science educators' reflective practice and their need for training through practical learning projects.

EXPAND organised a Continuing Professional Development (CPD) course to support a longitudinal collaboration with science educators from all science centres in Norway during the research project.¹ The course was practice-based and conducted over two years through a series of workshops and Skype meetings. The intention was to develop a shared language and practice among science centre educators (Tran & King, 2007) on learning through exhibition objects and installations. The educators conducted qualitative observations and video recordings of visitor interactions, analysed these video-recordings, identified the problems of interaction with the installation and reasons for misunderstandings of learning content and, finding possible solutions to the problem, suggested changes. In the second year of the course, they put their knowledge into practice by re-designing the installations in collaboration with colleagues. The course participants' submitted exam tasks were collected in a practical handbook relevant for other museum re-design processes involving educational theory.

As part of the focus on participatory design methods, the Future Workshop method was introduced as a technique for collaborative idea generation relevant for their re-design project. Future Workshop (FW) is a technique developed in the 1970s by Robert Jungk, Ruediger Lutz and Norbert R. Muellert to help groups of people develop ideas or solutions to social problems. The technique includes five phases: preparation, critique, fantasy, implementation and follow-up (Jungk, Muellert, & Lutz, 1987; Vidal, 2005). It was introduced as a technique to scaffold collaborative creative thinking by involving colleagues and visitors in the re-design of installations. After the Future Workshop session, the science educators wrote micro-texts about their experience that constitute the empirical material for this analysis together with video recordings of the discussions. We can identify from these texts that the educators found the Future Workshop method exciting and interesting and that they understood the method as a way to bring more people into creative processes in exhibition design. However, the method seemed successful only to the point of speculation. None of the participants followed up on the method in their subsequent course work.

In analysing the contradiction between the description of the re-design work in the final exam report and the engagement and enthusiasm about the future workshop method in their micro-writing logs and the recordings from the session, it becomes clear that there is a mismatch

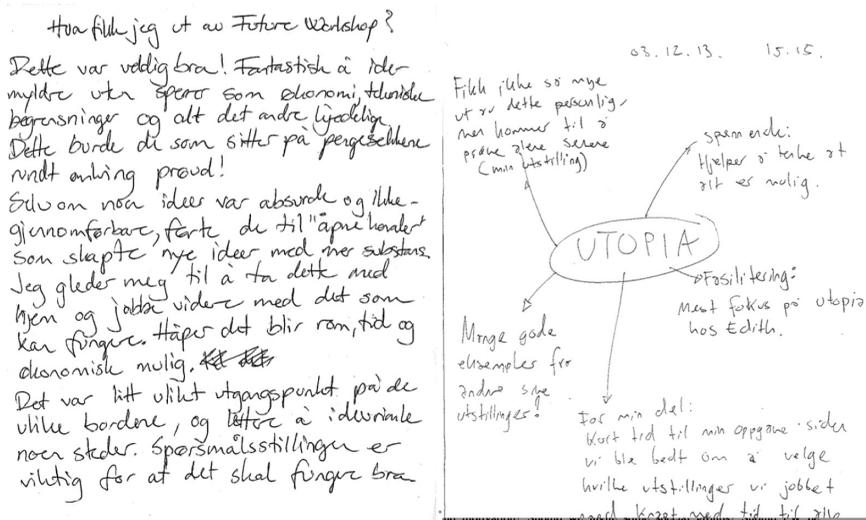


Figure III.4.1 Science educators’ micro-writing reflecting on the relevance of a Future Workshop for their re-design of installations.

between the educators’ enthusiasm for the method and the realisation. It seems as if the Future Workshop was appreciated as a participatory method but was not seen to be in confluence with the more traditional and systematic research methods they needed in order to argue for the re-design at their science centre. Also, it seemed that the fantasy phase of the Future Workshop method in fact distracted them from discussing solutions and preparing arguments relevant for their colleagues. To argue for re-designs of installations, they needed evidence, but this evidence would be video-recordings of visitor interactions. Ideas generated in a workshop had less legitimacy. Video documentation of visitors’ interaction with the installation was better suited to arguing about why the installation miscommunicates the scientific content intended and thus arguing for a didactic re-design of the installation. The evidence-based method was for them a safer design process.

The Expand case illustrates how the challenges of participatory processes first of all start with the confidence and shared language between museum professionals and the different museum departments. We saw how the contradiction between the educators’ enthusiasm for the future workshop methods and how they then pursued their re-design process in the traditional way of working in a museum to fit with criteria of professional authority and argumentation established in their institution. The existing organisational model of re-designing installations underpinned their work and the way they could be accountable for the changes in their exhibition design. Their reluctance to integrate the Future Workshop techniques as a participatory endeavour in their re-design process may also have been connected to the central role played by the content-driven logics of exhibition design as identified by Taxén (2004). This logic positions museum professionals’ design ideations above those of the audience. For the educators, their didactic-based argument was easier to pursue in relation to this content focus of curators than their ideas from a creative workshop. At an epistemic level, this interdependence between educators and curators defines the quality of museum communication and of social interactions with museum content. The example shows how museums’ participatory thinking is not only about visitor activities but also requires museums to work with established conventions, routines and logics to achieve a participatory institution.

Discussion: Museum participation: One step further

The cases analysed in this chapter have focused on the application of participatory methods in museum exhibition work as one approach to the participatory museum based on empowering audiences. The cases discussed show how the ideals of participatory methods and audience involvement may collide with existing museum professionalism. The conclusion from the SHAPE project was that participatory thinking has to be integrated at all levels of the institution. The Digital Natives project follows up on this and concludes that a shared agenda for participation is necessary for museum professionals to relinquish some authority and get to grips with participatory processes. The biggest challenge of participatory methodologies is to negotiate a shared understanding of the purpose of exhibitions. At this point, PD in museums shares challenges similar to those in other contexts; namely, building confidence and developing a shared language (Taxén, 2004). However, the Expand project demonstrates how a shared agenda for participation challenges existing practices and power dynamics within the museum; existing conventions of quality still guide professional practice and still demand evidence of how re-design would give better quality, creating obstacles to the implementation of participatory methods in museum practice. In this way, the different logic of exhibition design, of the educator and of the curator becomes a major challenge when an individual museum professional takes a step and tries to realise participatory methods as a new way to develop exhibitions.

The potential discord of the participatory museum format requires museums to analyse their notion of museum participation. Participation in the form of inclusion in decision-making requires reflection on what sort of influence museums are willing to give their audience collaborators. But it also deeply relates to the practice of the museum professional as curator or educator. Audience participation in the form of shared decision-making requires the museum professionals to find ways of embracing the pluralism, conflict and controversy that may arise when audiences are also collaborators. This may collide with the existing and the familiar epistemology of the museum profession. Participation also requires that museums think through their own criteria for successful communication. The participatory museum is an epistemic endeavour that goes beyond a focus on the content of an exhibition or on the designed media affordances or on the social interaction of audiences. It requires a new professional mind-set to engage the museum as part of the broader social and political transformations outside the museum (Lynch, 2016). To develop from the authoritarian transmission of knowledge to a multifaceted space for reflection, museums need to understand that knowledge creation is first of all a matter of negotiation (Lundgaard, 2013) as a collaborative, interdisciplinary and inherently inclusive approach to knowledge, with different approaches to meaning-making and, hence, to solutions. This is an endeavour that starts with the methodology that museums use (Fleming, 2013).

As Carpentier reminds us, there is a difference between participation and engagement in the form of access and interaction and participation in the form of having influence on production and decision-making (Carpentier, 2011). Decision-making is at the core of the power dynamics of democracy, and would, first, require museums to be willing to share power. This pluralistic character of participation in museum decision-making is a challenge that museum professionals face when applying participatory methods and opening their exhibition-making processes up to the viewpoints of audiences and users. This requires museum professionals to examine personal and institutional values and assumptions about the worth of the participation work they do and to rethink the knowledge production that goes on in museums and that still drives museum practice (Lynch, 2016). I have in this chapter endeavoured to tell stories about how the conducting of participatory methods in exhibition-development processes is not only about how museum professionals work with specific groups of audience but also about how

their colleagues and managers welcome and emphasise the results of participatory processes. In this way, participatory work becomes an institutional practice and a measure of quality in how a museum relates to its audience and to the society of which it is part.

Note

- 1 The CPD modules gave 30 ECTS credits, and participants in the CPD modules automatically became participants in the research activities of EXPAND.

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Part IV

Incident(al) readings

Vince Dziekan

1

Photographs do much more than provide a documentary account in image form; rather, they present a particular way of thinking (about people, places and things) and archiving those insights (that goes beyond the fact of recording their mere existence; intuited below the surface and read between the lines). They are literally and figuratively points of view, or views from and with a point; a purpose. In their collective form, *these* photographic images become a Latourian assemblage that brings different objects into clos(er) association; or conversely, draws together similar objects with differing motivations. The excised fragments of this inventory act as *pavilions* to a human geography whose elemental features reveal the ways human activity affects and is affected by its relation with the cultural environmental or *milieu*: a mediated relationship inflected by this French term, meaning “middle place.”

Photographs are pavilions, and pavilions, photographic. They share certain qualities that relate to being in-between time (temporary; temporal) and space (connected; detached). The act of seeing establishes our place in the surrounding world (Berger, 1972). Pavilions are temporary and detached structures, most commonly erected for the purpose of hosting events or spectacles; ceremonies of seeing ... itinerant platforms that redirect focus – even if only momentarily – towards:

A pavilion that “stripped of its glass, mullions, doors and roof, ... no longer focuses viewers inwards, but opens to the Giardini, and to the surrounding world” (Canada, p. 38). Or one that constructs a post-cinematic platform in which bodies perform their “transformation into consumable images” with every auto-portrait or *selfie*; such a pavilion describes a world in which the camera itself becomes a performer that co-exists between represented and depicted realities (Pfeffer & Smolik, 2017). These incidental spaces (are we now referring to the art, architecture or the photographs themselves?) are accessed not in a direct, straightforward fashion (entered ceremonially via a framed Greek revival portico, for instance) but inauspiciously, through the side door.

2

In photographic terms, in order to determine exposure an incident reading is used to measure the light source itself, rather than that reflected by its “subject matter.” If this technical operation was inflected critically, what would the extra-linguistic discourse of these resulting images reveal, latently ... about the interactional aspect of “art” and its contemporary infrastructures: the “museum” (as cultural construct), media (that give it shape and form) and communication (that inflects meaning and value)? An incident(al) reading of these images turns focus to the foundations, environments and practices of the milieu in which we find (or “happen upon”) art today. Exhibition environments connect bodies (people, things, familiar and defamiliarised objects) and realities (real, imagined, designed); a cultural script that inscribes in minute gestures and details a social code; “a sense that power structures are lurking in the background, invisible to the audience” (Pfeffer & Smolik, 2017).

Incidental: An ancillary by-product; occurring off-stage; to one side. Photography deployed obliquely; angled and edged. A sideways glance disguised in a flattened, frontal view. Interpretative rather than documentary. A redirected investigation whose thought-lines constellate within the notes recorded in field books and amongst the images of a proof sheet. Surely, it is too grand to stake a claim for these photographs as an aesthetic sociology: “An everyday aesthetic rooted not in distance from the world, but as immersed in the routine and mundane ‘search’ which sometimes informs, other times is informed by, aesthetics in cultural production” (Olcese & Savage, 2015, p. 721). Or is it? Beyond documenting customs and behaviours, these (ever-)formative observations appear fascinated with (the appearance and disappearance of) phenomena and the existence of things barely glimpsed; they celebrate the impossibility of capturing the momentary as a “stable state” (Macel, 2017, p. 29). These images are about noticing: ways of seeing that indicate – if not more directly expose – the discursive practices of museum communication: delicately poised encounters that “unsettle” what we see from what we know or understand. Considered more so than captured from multiple vantages and degrees of remove and situated knowing.

3

In picturing these extended manifestations of museal experience – from above, beneath, behind and around, dilemmas are traced in light and shadow; discerned in patterns of continuity and anomaly that emerge as a consequence of the museum’s embedding within the broader social and media environment. A culturescape surfaces from the meaning-making processes that museums and cultural institutions frame and reconstruct using auxiliary instruments – such as biennales, festivals and cultural events – as “event-structures.”

In this latest instalment of the Venice Biennale, the shape that these disturbances assume are symptomatic of a curatorial conceit – around art bearing witness to “the most precious part of what makes us human, at a time when humanism is precisely jeopardized” (Macel, 2017, p. 16) – that ultimately leads nowhere. Rather than cultivating a fertile ground for art’s reinvention of the world, this instalment of the biennale exuded the air of a “memento mori”; its flatness exposed, leaving it open to criticism for being full of earnest well-meaning but devoid of incisive wit, irony or edge.

Such moments are few and far between, and demand searching out ... innocuous wedges that hold doors ajar, inviting furtive entry. A masquerade of deconstructed parts; an empty stage that brackets an implicit call-to-Pirandellian* action.

To breathe life. To compose (our own) narratives from “bodies, sound and architectural spaces [that] overlap, interpenetrating until a brief congruence is reached, only to break apart moments later” (Germany, 2017, p. 64). While the aspiration of the biennale to ensure art’s vitality and longevity will (al)most certainly live on (cue the Biennale exhibition’s title: “Viva arte viva”), it might just end up doing so in ways that we may well find (increasingly) difficult to recognize; to distinguish “cultural communication” from the mediated experience of contemporary life/forms and the act of living itself.

4

*Postscript: With reference to the Italian dramatist Luigi Pirandello; most notably illustrated in his play *Six characters in search of an author*, which recounts the fate of a group of characters whose destinies have been left unrealised by their author. In an act of collective desperation, they hijack the rehearsal of another play written by Pirandello, *The rules of the game*, demanding that their story be staged in its place in an effort to resolve its incomplete narrative.

All works from the photographic series: Vince Dziekan, *Incident readings (Venice Biennale)*. Photograph ©Vince Dziekan, 2017. In tribute to my incidental teachers: Henri Cartier-Bresson, Robert Frank, Lee Friedlander and Duane Michaels.

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IV.1

Visual essay

Vince Dziekan









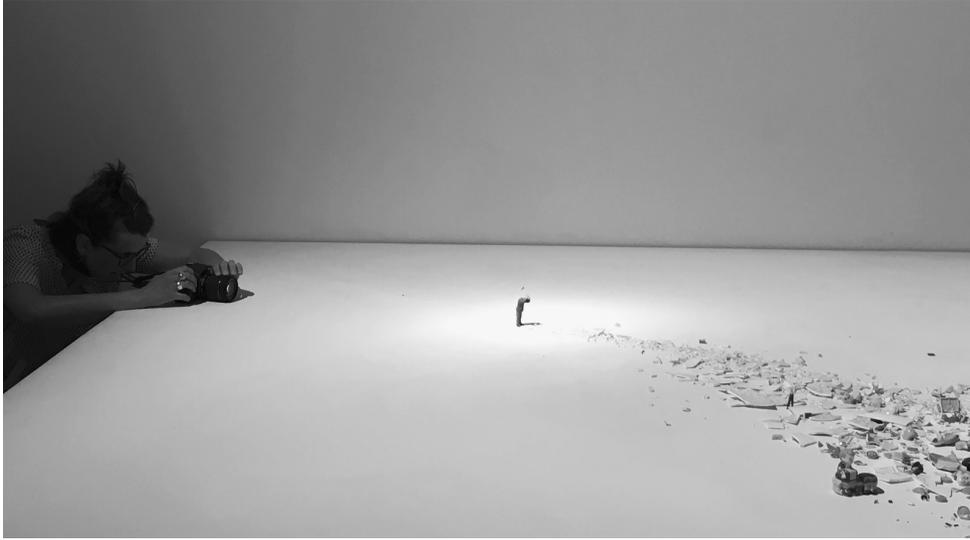






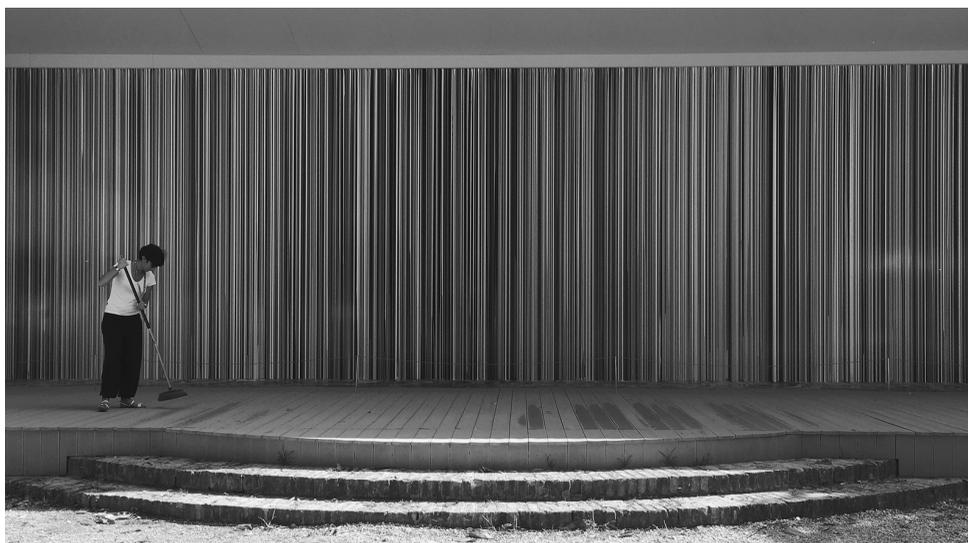




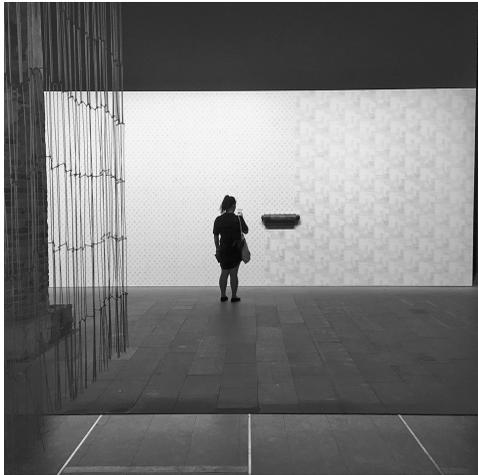
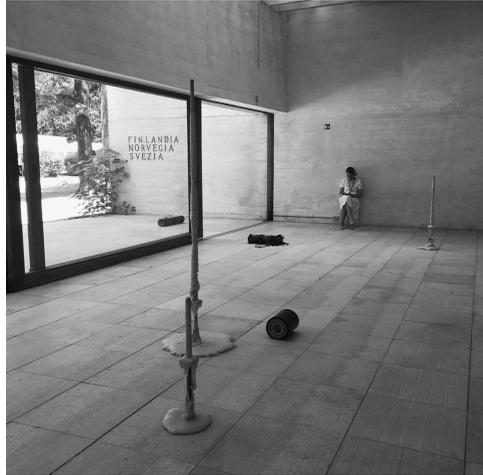














an artwork

for after / and later

training exercises to create the artwork ecosystem

you're with your friends,
you're talking about the artworks you've just seen,
the conversation you're having is the place to get it.
(some don't where things happen.)
what's one of the many sites where artworks take a public form?
where can we get from an ordinary conversation?
in that conversation, what if we were not talking about an artwork,
what if the artwork was activating itself through our conversation?
what if the artwork made for other artworks and is made for
after this show (the morning after): you can use it anywhere, any time,
with anybody.

1. represented by other artworks
"but what we think of this other
artwork?" the unknown the work of
the other one? in conversation,
artworks are created by being
included in a body of artworks,
how/when/where/why/through our conversation
contains many things.

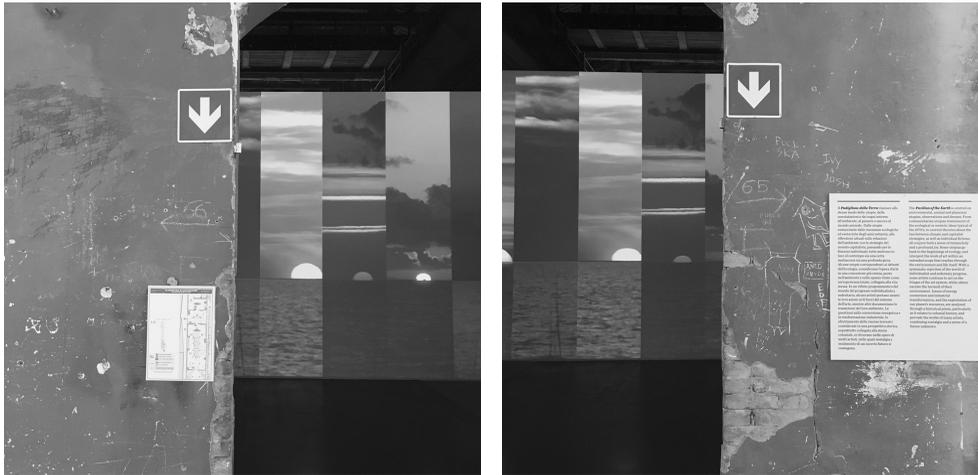
2. represented by ideas and
conversations
an artwork gets discussed through
many and many it is usually
difficult, what/when/where/why/through
including sites of responses.

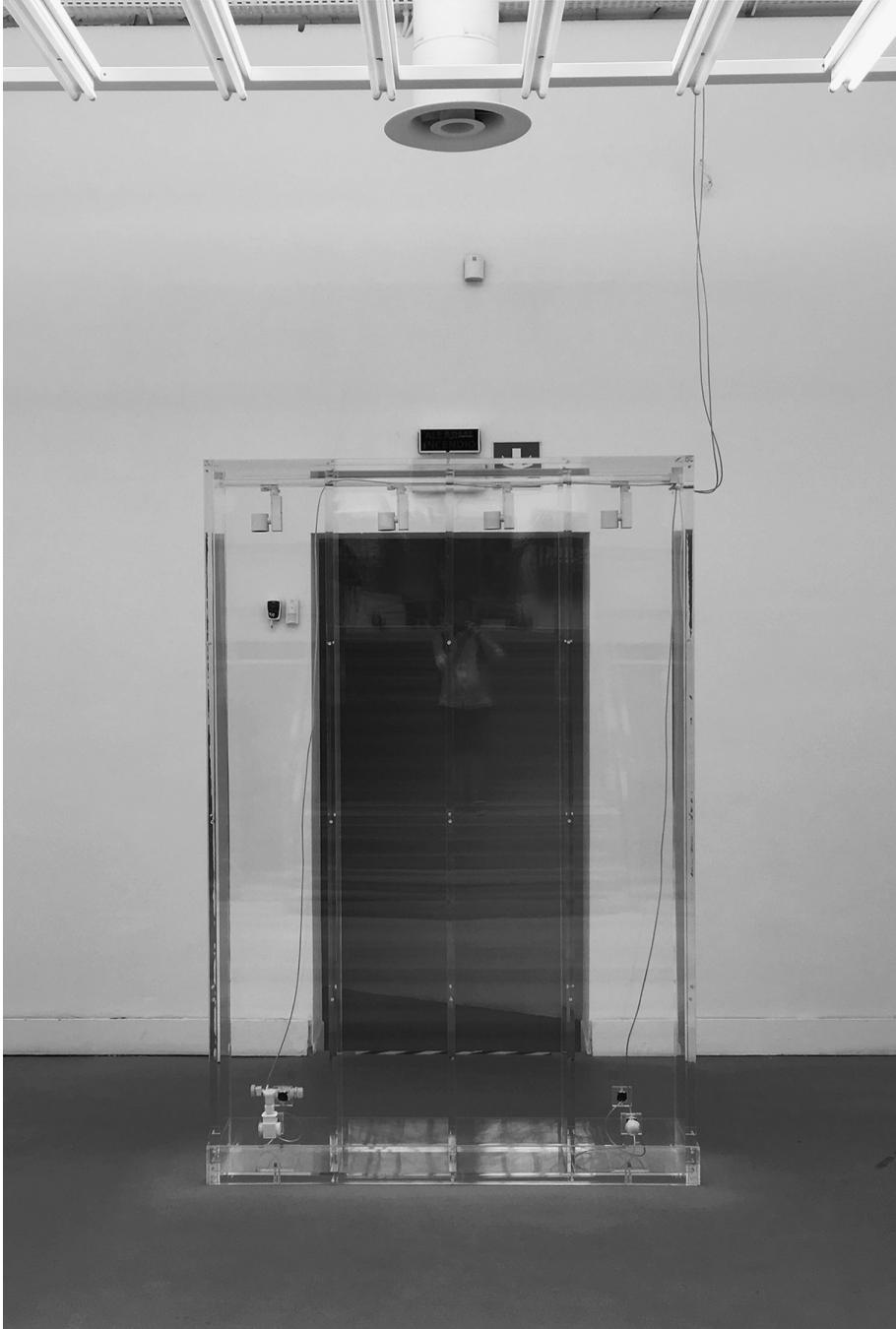
3. the practices
which actions does the
artwork needs to be made,
actioned, and maintained?
and when and where, and
how? can we decompose
an artwork in a series of
actions?

4. the collector
how many people take part
in it, and when?

5. lifespan
what is the lifespan of an artwork in
a conversation?

6. distribution / circulation
how was the artwork discussed in your
last conversation? was it through a
monologic, a set of questions-answers,
a series of statements?





Order of images

- Page 237 *Incident I, Giardini*. Photograph. © Vince Dziekan, 2017.
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(Bottom) Incident III, Giardini. Photograph. © Vince Dziekan, 2017.
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- Page 241 *(Clockwise from top left) Incident VI (Pavilion), Giardini*. Photograph. © Vince Dziekan, 2017.
Incident VII (Pavilion), Giardini. Photograph. © Vince Dziekan, 2017.
Incident VIII (Pavilion), Giardini. Photograph. © Vince Dziekan, 2017.
Incident IX, Giardini. Photograph. © Vince Dziekan, 2017.
- Page 242 *(Clockwise from top left) Incident I, Arsenale*. Photograph. © Vince Dziekan, 2017.
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(Bottom) Incident XII, Giardini. Photograph. © Vince Dziekan, 2017.
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(Bottom) Incident XIII (Café), Giardini. Photograph. © Vince Dziekan, 2017.
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Incident XXI, Giardini. Photograph. © Vince Dziekan, 2017.

Page 251 (Clockwise from top left) *Incident XXII, Giardini*. Photograph. © Vince Dziekan, 2017.

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Page 252 *Incident XXV, Giardini*. Photograph. © Vince Dziekan, 2017.

Page 253 (Top) *Incident XXVI (Gold Lion), Giardini*. Photograph. © Vince Dziekan, 2017.

(Bottom) *Incident VIII (Diptych), Arsenale*. Photograph. © Vince Dziekan, 2017.

Page 254 *Incident XXIV (Self-portrait), Giardini*. Photograph. © Vince Dziekan, 2017.

Part V

Directions

*Kirsten Drotner, Vince Dziekan, Ross Parry and
Kim Christian Schrøder*

To this point in the volume, the previous chapters have helped to illustrate and evidence an idea of the “mediatized museum”: not only within a modern society infused by a proliferation of omnipresent media technologies, but a museum that is also a unique media environment, of itself, in which communicative media is a constitutive property. By looking back at over a century of innovation, design and communication, Part I (Foundations) showed not only the fundamental part communicative media has played within the museum, but – in doing so – attempted to demonstrate the value of historicity and a time-based perspective in our scholarship around museum media. Then, calibrated against both administrative (politico-managerial) and critical (socio-cultural) concerns, Part II (Environments) mapped out a series of wider ecologies into which museum mediatization needs to be understood. Aware of both these temporal (historical) and spatial (environmental) contents, Part III (Practices) then turned its attention to everyday practical applications of media, as well as to the complexities of new and emerging modes of working that are coming to characterise mediated modes of communication in the museum. Part IV offered a visual expression of the relationships formed between the museum, media that give it shape and communication which inflects meaning and value. Set out across these previous four parts has been this volume’s claim for seeing the museum permeated by technologically-mediated forms of communication. But it has also been a claim for conceptualising museum media as an ensemble, specifically a trialectic between: the material and symbolic properties of communication technologies; the modes and processes of meaning-making; and the dynamics of museum practices.

The chapters in this final part (Directions) sustain this sensibility to the historical, this openness to the interdisciplinary, and this circumspection to a more holistic and inclusive view of media and mediatization – within and without the museum. Together, they consider the datafication of culture, the overlapping ubiquity of media technologies, and the proliferation of digital platforms – from virtual reality and augmented reality, and from smart data to social media. In doing so, they circle back to the properties of a mediatized society, with which this volume began. Here, however, the attention is primarily to the future trajectories of scholarship, to emerging themes of research, and to new evolutions in practice. As a group, these chapters animate for us (as previous chapters have done) the breadth and diversity of the enquiries already active around museum media and mediatization. But – more specifically – this part is also intended to point principally to new questions, alternative approaches and likely challenges ahead.

The authors of this part were selected to offer a set of contrasting subjects and perspectives. This, after all, is about sharing and setting in motion multiple academic and practice-based directions, rather than providing a single manifesto or model. Intentionally, therefore, the authors here are new writers and emerging scholars alongside established and esteemed academics. Some are practicing curators, others active researchers, and some are both. Some are writing from within museum studies, some closer to media studies, others elsewhere – from cultural studies to business studies, and from sociology to anthropology and pop music studies. Likewise, their subjects are intentionally varied and contrasting, representing waypoints and bearings to multiple future trajectories for museological research and curatorial practice.

In the part's first chapter, Lauren Vargas considers the communicative media of museums within a wider data landscape that extends beyond the walls of the institution. Her focus is on the multiple forms of operational, experiential and visitor data (beyond simply collections data) that is available to the museum, and the opportunity there is not only to connect these datasets in new ways, but to then use them to inform the choice, usage and design of communicative media in the museum. For Vargas, it is, specifically, the power of "big data" (harnessed as "smart data") through which museums can "frame new forms of more personalized communication with their visitors."

Another alternative but equally arresting direction of practice and research is framed in the next chapter by Sarah Kenderdine and Andrew Yip as they consider the possibility of accepting digital copies as authentic objects. Whereas Vargas reflects on the dilemma of being confronted with a massification of data, here the authors confront another new problem associated with modern developments in technology – namely, what happens when communicative media can "produce sufficiently high resolution to produce visual replicas with a spatial and structural integrity that respects the original's materiality"? Rather than seeing authenticity located in the materiality of an object, they see a direction of curatorship and scholarship (stimulated by the arrival of these new high-fidelity digital copies) in which the idea of authenticity is understood instead at the confluence of "material concerns, digital mediation and viewer perceptions."

Kenderdine and Yip's questioning of museological orthodoxy is taken even further in the next chapter, by Pirrie Adams. And again, as with the previous chapter, this is an example of mediated communication and media technologies acting as both a practical and an intellectual challenge to the defining tenets of the museum. Whereas with Kenderdine and Yip it is the presence of digital veracity in copies and simulations that challenges our notion of the authentic, here it is the ubiquity and normativity of media technologies (and specifically digital media technologies) that challenges our notions of collection, exhibition and interpretation. Working from the premise that communicative media has a constitutive (rather than simply additive) role to play in the museum, Pirrie Adams' proposition for a mediatised museum is one in which the language of computation and interface design is used to describe the core provision of the museum – therefore aligning it, as she says, "with the symbolic forms of the prevailing culture."

Core museum principles are again challenged in the part's fourth chapter, although this time with respect to the body, embodiment and the sensory. Here, Maholo Uchida and Jingyu Peng reflect on the awakening of creative practice and scholarly enquiry that has accompanied the "sensory turn" in museum studies. In doing so, they highlight important dilemmas for future work. Not least that there remains a tension between activity in this area that looks to strip the communicative technology away and reflect and focus specifically on an unmediated sensory experience for the visitor, and that activity which in contrast sees afresh new interest in the sensual as a means to creatively explore new modes and applications of communicated technology and in-gallery digital experiences – from the multi-sensory to the immersive and the multi-user.

The courage to expose and articulate difficult challenges and dilemmas is then amplified in the last chapter in the part. In contrast to the optimism and confidence of the previous chapters, Ien Ang ends the volume with a soberer note of caution and mindfulness around what she sees as the “limits of the museum’s communicative power.” Reminding us of the assertion made at the start of this volume (that a study of media and mediatisation ought not fixate on digital technology), Ang chooses to set down media technology and instead turns to the other parts of the museum media ensemble – towards the modes of meaning-making and the dynamics of practice. Specifically, by evoking Falk (2009), she challenges any future direction for media and museums to acknowledge that the relationship between diverse audiences and the diverse content of the museum is “complex, contradictory, and uneven.” Through her discussion of the museum as “a pre-eminent space of representation,” our frame of reference draws back and widens, and we see museum media in a global and societal way. And as we do, we are asked to problematise the construction of a single “public,” to recognise the challenge of communicating with a diverse multicultural audience and to adapt to what she calls “more postcolonial, multi-cultural and transnational times.”

Crucially, these forward-looking chapters demonstrate a set of new starting points, terms of references and modes of working for the subject of media and museums. The predications for these lines of enquiry in this part come from technology industry writers such as dana boyd and Kate Crawford (2012) – guiding, as they do, Vargas to fundamental questions around consent and the ownership of data. Similarly, it is business studies and information studies that provide a reliable street atlas to navigate the new and unwieldy world of big data (Cukier & Mayer-Schonberger, 2013). It is the philosophy and sociology of Bruno Latour and Adam Lowe (specifically on the relationship between an original work of art and its facsimiles) that forms the platform from which Kenderdine and Yip are able to consider an opportunity for authentic engagement with a physical object that is absent (Latour & Lowe, 2010). Whilst it is the computer science of Lev Manovich (2001) that provides the “foundational text” for Pirrie Adams’ assumptions concerning the effects of computerisation on society as a whole, and for understanding both the symbolic and material forms of media. Contrastingly, it is from design studies and theatre studies that Uchida and Peng are able to respond to the rise of the sensorial, with a practical set of scenographic methods (Lam, 2014). Whereas Ang, in her mobilisation of the work of Sandell (2002) on social inclusion, and Schorch, Waterton and Watson (2017) on “affective cosmopolitanism,” reminds us of the central core of museum studies scholarship that will continue to drive this subject area – if joined increasingly by the insights of other disciplines.

Amidst this multi-disciplinarity and inter-disciplinarity, we also – excitingly – hear a new language of museum media research emerging. This is the language of the “terroir” (Vargas’ term to describe the unique characteristics a museum’s wider demographic, physical and media environment); of “digital materialities” and of “auratic virtual experiences” (that Kenderdine and Yip use to articulate their new authenticities); of the “sensorium” (that Uchida and Peng evoke to capture the museum as a distinctive multi-sensory space); as well as the language of “assets,” “platforms” and “affordances” (Pirrie Adams’ daring media-informed re-expression of the collections, exhibitions and interpretation). These are not hollow and performative neologisms. Rather, they stand, meaningfully, as further evidence of a subject substantively and genuinely re-aligning itself as it continues to reflect on museum mediatisation.

The chapters in this final part project a series of propositions and provocations on how both scholarship and practice around communicative media in the museum might be approached. Rather than closing and concluding, their approach here is to initiate and to lead. Vargas challenges us to “think forward about how data is structured and shared amongst museum professionals.” Kenderdine and Yip resolve that much broader continuing research is required “to

determine whether visitors to fine arts museums assess virtual copies on equal footing with original objects." Pirrie Adams alerts us to "a pressing need to develop a methodology for media analysis from the concept of 'assemblages,' which holds promise but at present remains somewhat abstract." Uchida and Peng accept the need for "new conceptual frameworks for our criticality – frameworks that might involve a multi-sensory body, moving through a multi-channel space and an elapsing time." And, without compromise, Ang points to the requirement for "a more fundamental change in the representational strategies of museums towards inclusiveness of plural perspectives of the nation." Together, their fresh insights and new writing represent a call to action, responding to what we now know and showing us where we might head next.

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Smart media

Museums in the new data terroir

Lauren Vargas

According to Internet giant Google, five exabytes of information was created between the birth of civilization and 2003. That same total of information after 2003 is generated every two days (Kitchin, 2014, as quoted from Hal Varian, chief economist with Google in Smolan & Erwit, 2012). Confronting this phenomenon, this chapter considers how – in the age of “big data” – museums have the opportunity not only to understand behaviours of visitation, but to form new connections with their visitors. The discussion considers some of the ways museums are responding to the necessities and opportunities of big data, and how they can mine for information about their visitors through new forms of media in order better to understand the wants, needs and challenges of the communities they serve. In particular, the chapter considers how museums may begin to think about “big data” in the context of the experiences, best practices and scholarship developed outside of the cultural sector. The chapter suggests that with the knowledge of this power of “big data” and this rapid growth, museums have the opportunity to frame new forms of more personalised communication with their visitors.

Drawing from the maturing scholarship of “information ecologies” (Nardi & O’Day, 1999) amongst other researchers and business pioneers who are transforming data-informed analytics, the approach here is to present how organisations have been, and are still, challenged with the technology and conceptual frameworks and language circulating around “big data.” Our discussion here will consider, therefore, how visitor collection data and media might be seen as, in essence, the “terroir” of the museum. Here, “terroir” is the contextual characteristics unique to a certain place that influence and shape its character. In agriculture and ecological terms, a “terroir” is the soil, the topography and the climate that collectively give produce a particular characteristic. For cultural institutions, “terroir” might, therefore, be attributed to the type and size of the museum, its visitor demographics, its physical location and all forms of media. Collectively, this information produced within the museum may potentially be a big data set and is influenced by external variables that may or may not be within the museum’s control.

The volume, velocity and variety of data today are influencing change across “informational ecologies” – as originally defined by Thomas Davenport (1997) and then expanded by other knowledge management researchers as “the system of people, practices, values, and technologies in a particular local environment” (Nardi & O’Day, 1999, p. 49). Successful data integration and knowledge sharing not only requires an original lexicon for use and understanding of the

information but also the financial, technical and human resources to extract insights from the data relevant to the needs, goals and objectives of the organisation. Our discussion here works from the assumption that, currently, there is no single solution or platform for obtaining, storing and analysing the combined museum physical space, object and personal or sociocultural data. Therefore, it is also suggested here that institutions might instead be better served by bringing together an array of separate operational, experiential and visitor data sets.

Defining big data

The essence of big data is the ability to economically capture and collect very large amounts of data of various formats and consume this raw material in real-time, making data viewable at the granular level. Much of the study around big data has been limited to the discussion about the growing volume and the defined amount of data being explored, outside of any agreed academic or industry definition of this data's characteristics (Kitchin & Lauriault, 2015; boyd & Crawford, 2011). Due to past technological constraints of data storage, only what was deemed important information was sampled and later analysed. The paradigm shift of how big data is collected and analysed may be described as the ability to see the forest and the trees, rather than just the forest. With big data, organisations can see the big picture view; unlike with "small data," where very specific data sets produced using sampling techniques tend to limit the volume, velocity, variety and veracity of information captured (Miller, 2010, as cited in Kitchin & Lauriault, 2015). In other words, "small data" is the study of the tree instead of the forest.

For context on how big "big data" may be or become within the museum sector, consider the extent to which the Internet has transformed the communication data landscape. In 2016, every second, approximately 7,000 tweets were tweeted, almost 800 Instagram photos uploaded, 136,000 YouTube videos viewed, 39,000 GB of Internet traffic, over 57,000 Google queries searched and two million emails sent (Internet Live Stats, 2016). University of California communications professor Martin Hilbert, citing Papas, has commented, "[t]he Internet stores information, the Internet communicates information and the Internet computes information. The communication capacity of the Internet can be measured by how much information it can transfer, or how much information it does transfer at any given time" (Pappas, 2016). Therefore, it is important for museums to be able to define and distinguish the various data being captured and collected so the institution can better make sense and use of the information in the context of the goals and expectations of itself and its community. New forms of media and communication, enabled by the Internet, are producing data that museums may extract and analyse alongside traditional structured data kept in customer relationship management (CRM) systems to spawn improved visitor experiences.

In their seminal study of the scale and depth of this digital transformation, *Big data: A revolution that will transform how we live, work, and think*, authors Viktor Mayer-Schönberger and Kenneth Cukier define big data as "the ability of society to harness information in novel ways to produce useful insights or goods and services of significant value" (Cukier & Mayer-Schönberger, 2013, p. 2). The revolution is not how or what data is being collected; rather, it is how or why full data sets are conjoined and interpreted versus sampled data sets. Technology researchers danah boyd and Kate Crawford state the importance of big data is the "relationality with other data," and that this is what is changing the definition of knowledge in ways similar to the innovations of Henry Ford developing mass production and the Industrial Age (boyd & Crawford, 2011, p. 3). Just as Ford revolutionised industrial production in the first half of the 20th century, big data is revolutionising the way organisations are organised and managed, as well as learning about who is consuming their products and services and why. The information age is giving way to

a knowledge age (Martin Hilbert, as cited in Pappas, 2016), where the sum of an institution's information is available for investigation in company with behavioural and use data from external sources.

Boyd and Crawford not only espouse big data benefits but also caution the industry that the effects of "big data and whole data are not the same" (2011, p. 7). Big data possibilities may have spurred data-driven thinking, but small data may prove to be more attainable and effective to push for deeper data-informed thinking and data-based decision-making. The challenge, therefore, for institutions such as museums, is to bridge big data with small data, resulting in a valuable business objective. The value to be achieved is recognising an element within a large data set that requires deeper understanding with smaller data sets that then produces next-best actions for the organisation to implement. Some critics of using big data exclusively, such as Rob Kitchin and Tracey P. Lauriault (2014), note the merits of small data as the conjoining and scaling of disparate data sets to be used with big data analysis. Whilst both big and small data have their weaknesses, the fusion of their strengths may result in a more holistic outlook of the museum's visitor, operational and transactional data.

Big data infrastructure and value is still difficult to obtain at scale and requires long-term strategy and planning. Depending on the goals and objectives of the cultural institution or department, small data thinking may pave the way for big data successes. Trends like those captured in a *NMC Horizon Report* predict that museum education and interpretation are increasing the focus on personalising experiences in museums and focusing on the power of data analytics to inform museum operations (Freeman et al., 2016, p. 1) and the purview of small data. Museums could develop a framework embracing the development of data collection and use by blending big and small data sets with an infrastructure designed for big data with systems integration and networked data sets. Then small data via visitor personalisation opportunities and omni-channel experiences have the potential to become more consistent and attainable for the museum. The museum would then have immediate access to interpretation and use of this new media and communication data.

Until the advent of pervasive media and communications, data organisation, management and consumption tended to focus on collections management. For over a decade, museums have been in the process of digitising their collections with the aim of documenting better knowledge and interpretation of their collections by their users. Consider the comprehensive overview of museum technology advancements moving into the 21st century shared within *The wired museum*, where Katherine Jones-Garmil (1997) outlines the steps taken by museums to move from collections to content management system development, and the need for required planning and resources to support these investments. The more recent ability to analyse user activities across interactive media to question and study the global cultural universe is an additional future opportunity and benefit of big data. Media theorist Lev Manovich (2015, p. 1) coined the phrase "cultural analytics" in 2005, meaning "the analysis of massive cultural data sets and flows using computational and visualization techniques." Third-party data about what people post to social networks and how they interact with content and each other is now accessible, and the technology to process and visualise such data is available. Manovich has advocated the study of large data sets with multiple variables, referred to as "wide data," that seek out "new similarities, affinities, and clusters in the universe of cultural artefacts, but first of all, help us question our common sense view of things, where certain dimensions are taken for granted" (Manovich, 2015, p. 13). The challenge cultural institutions face is centred on the new skills required to weave data-informed critical analysis into every aspect of the museum's culture and terroir. It is up to the museum to choose to work with small-scale data or attempt to capitalise and learn from big data.

Therefore, as a first attempt to frame a way of thinking about (and working with) new forms of media, museums might consider the following processes as a useful proposition for the collection and use of both big data and small data. If one were to begin to set out the array of questions and new operations that big data brings to the museum, they could be dissembled as follows to inform and support a data-informed foundation. The activities described in each step of the framework may be executed in sequential or parallel order. As we set these steps out, we are only now exposing the new complexity (and opportunity) of big data management within the museum and the methods with which data may be understood, associated and explained. This is the museum data beyond the era of collections data and visitor metrics. The culmination of these steps is the establishment or enhancement of a data-rich terroir and information ecology present in all museums yet having a unique interpretation and application with each museum.

Step 1: Developing a “single source of truth”

First, any museum developing its new big data operation needs to start by understanding its information systems design and identifying a single source of truth (SSOT). This SSOT is essential in the creation of data models so that every data element is stored only once. Every physical and digital transaction within the museum is documented and, in some cases, tracked and analysed. The breadcrumb trail of data left as organisations and people conduct business online, both behind and outside of the firewall, is referred to as “data exhaust” by O’Reilly Media Company Research Director Roger Magoulas (Lorica, 2010). Such vast amounts of data may lead to incorrectly linked duplicate data or de-normalised data elements if a SSOT architecture is not advocated for and maintained. There is a broader question as to if the data should be stored or if organisations can use analysed and synthesised data findings as the SSOT. Cultural institutions may be feeling pressure to package and interpret data to build dynamic structures and experiences for the everyday visitor and risk incorrect, outdated information if not pursuing a SSOT model. A museum can collect and act on the “data exhaust” of visitor and development data to build a more in-depth view of visitors; provide a standardised, central personal and sociocultural context database across the institution; and perhaps increase customer service in the hopes of increasing membership and donations.

Data in and of itself does not provide a narrative. It lacks context and empathy as well as the ability to understand the sentiment of the individuals making up the collected information. It is simply raw data, both structured (data stored in a traditional format like that of a CRM) and unstructured (data that is not easily stored or indexed in traditional formats like email and social media conversations). Many organisations have this data being collected and stored in multiple locations rather than a SSOT structure promoting interconnected information. Museums have the opportunity to combine visitor information with artefact information to create a rich base of knowledge that could positively inform exhibit design, marketing efforts and interactive visitor experiences that span multiple touch points in and outside of the physical museum space. One of the ways to take advantage of this opportunity is to change visitor information collection processes and database design by allowing employees across the museum access to this data, thereby freeing or democratising the information. By identifying integration points and altering the collection of visitor information, the data sets of museum objects and people can be analysed and accessed alongside each other to determine actionable insights to improve the visitor’s museum experience. Yet, it is not the technical limitations that are an obstacle for most organisations but the strategic and organisational challenges of such a connected environment (Malik, 2013).

There are models and exemplar outside of the sector, for instance, that can illustrate ways in which museums might interact with the many communities they serve, and that can show

how interactions and feedback loops can be collected to build more contextually relevant visitor experiences. For instance, the leisure industry can offer some strong examples of expanding the collection and use of data. The most vivid illustration is the way in which data is managed at the Walt Disney Company. Since it opened in 1971, Disney World has been a family destination. From Mickey ears to princess dress-up studios to meticulously painted details on park sets, Disney created an experience people enjoy more than once. Disney keeps upping the price of the experience. Disney World has a return visitor rate of 70 percent, and for every 1 percent increase of customer retention, profits soar 7 percent (Connellan, 1997, p. 6). Disney has woven together science and animation. For the effortless experience of scheduling breakfast with Cinderella, Disney trades a frictionless vacation for personal information. The second a park visitor steps off the airplane, a scan of their Disney MagicBand places them and their family or friends at the centre of action. No hassle required. The MagicBand is an experiment of human engineering.

Context-aware technology is the result of decades of engineering. The MagicBand was a \$1 billion dollar bet on “big data” value. A seemingly simple plastic wrist band with RFID chip tracks your every move and anticipates your needs as you move from the airport to the resort to any one of the parks. Disney has cultivated the Magic Kingdom experience for decades from the TV screen to the physical park experience to the online expansion. No detail is too small. The magic is a contained physical and digital environment, and it is because of this clear separation from reality that Disney is able to obtain visitor information that in any other environment may appear intrusive (Kuang, 2015). Once children are snug in their beds and parents are fast asleep after a long day at the park, the magic behind the curtain is revealed. Chipped paint is refreshed; sidewalks are cleaned and the parks return to their sparkling appearance. Through an intricate set of underground tunnels and trained staff, guests never see the mess behind the experiences and creation of memories. This attention to detail and storytelling craft is the result of Disney needing to get better and faster at knowing where, when and what visitors were consuming in the park.

The less time visitors wasted in line at the park or other friction points in transition between the parks and hotels, the more time they could spend at the park and increase Disney business. The gains in technology were targeted to improve customer service efficacy and park effectiveness, ultimately impacting Disney’s financial performance (Pedicini, 2016). In exchange for convenience, clear information policy, and Cinderella addressing the visitor by name, visitors give their credit card information and Disney receives a detailed view of how they spend their time and money.

While the MagicBand initiative gained considerable media attention since the formal launch in 2013, the project to develop a streamlined data collection for the improvement of visitor satisfaction started as experiential operation. The team crafting the networked experience started with five people. Challenged with identifying all the barriers for a faster attraction visit, the Fab Five team, as dubbed by fellow Imagineers, drew inspiration for their recommendations from wearable technologies (Kuang, 2015). They envisioned a park with kiosks instead of turnstiles that synced with the wristband and ended with a flash of green and a “pleasing tone” granting entry or cash register transactions (Kuang, 2015). A matrix network of sensors has paradoxically allowed for more ease and spontaneity by offering pre-planning and advanced personalisation. The redesigned Disney experience thrives on making people happier by giving them more choices instead of limiting their number of options. The information does not start and stop within the parks either. While commenting on the intricacies of cross-channel experiences, Thomas O. Staggs, Special Advisor to CEO, Walt Disney Company, said:

Also, I believe if you look forward as we increasingly establish those direct-to-consumer relationships, that expertise in customer engagement will be a skill set that’s transferable

around our business, even if you're not handing off an ESPN consumer to other Disney businesses. (Fritz, 2016)

The MagicBand had collected reams of data to analyse visitor behaviour to conceive and design many more features going beyond what is currently possible. The information not only makes the Disney park experience more accessible, it also develops a new workforce profile to serve visitor needs regardless of media, communication or physical space.

The end experience may appear seamless for the Disney visitor, but not so simple in the creation of infrastructure or the protection of the data elicited with every swipe of the MagicBand. There are numerous privacy concerns and challenges that accompany any data project. To extract value from data, museums should be clear with visitors about what data is being collected and how this data will be used. What the Disney example shows so overtly to museums is the powerful connection that can exist between the collecting of data and the generation of a frictionless visitor experience. In their own SSOT structure, museums may take inspiration from this example and organise around visitor behaviour, scale relevant knowledge across the institution and set the stage for a seamless approach to user experience.

Step 2: Establishing ever-connected and augmented experiences

Once technology is integrated into daily life and each platform, device and media are used to interact, the groundwork for a seamless user experience is then set. As new technology opportunities enter into the communications and media mix, museums are challenged with how to incorporate the activity into an already rich and complicated interconnected information structure. Visitor behaviour and patterns now extend beyond controlled observations to include tracking methods using indoor-way finding technology. Museums are discovering their role in the Internet of Things movement and how they can expand the relationships between visitor and collection to bring innate objects to life. For example, the Royal Ontario Museum in Toronto launched the augmented reality (AR)-enabled "Ultimate dinosaurs" exhibit in 2012 to learn more about their visitors' behaviour using motion-tracking data, and they are among many museums experimenting with technology on the visitor experience (Rielad, 2012). Similarly, the Solomon R. Guggenheim Museum in New York allowed visitors to post messages on exhibits using smartphones and electronic transmitters dispersed throughout the museum (Gamerman, 2014b). In examples such as these, the museum sector is beginning to address the gap between the front-end visitor experience and the way in which this set of experiences is powered and connected with back-end systems.

Whether AR, social media or traditional visitor engagement studies, such interconnected data infrastructures are amassing information the museums have the opportunity to analyse in order to understand challenges, gaps and potentials for all digital and physical interactions. This raises the question of what a museum might learn from the presence of these data sets. How can all communication channels work together to provide a "360-degree view" of visitor behaviour so museums can offer a harmonious experience across digital and physical visits to their institutions? It is not the tools that make a successful data-informed culture and seamless cross-channel experiences; rather, it is the challenge of the status quo to rethink the institution's data collection and use policies and processes (Patil & Mason, 2015). Data collection, big or small, requires a guide to use and extract every relevant detail. This guide or direction is influenced by the museum's terroir. When reviewing the current state technologies and processes, Patil and Mason suggest this is the time to invite all areas of the institution to ask questions to better understand the data flow, unearth flaws or opportunities to evolve

the data collection and use and build a common language to discuss how the data is derived and interpreted. The direction of the museum depends on knowing what data is available, how this data may be used and recognising which outcomes impact the organisation and why. It is with this recommendation that the third step in the process is critical to achieving democratisation of information.

Step 3: Creating trustworthy dashboards and scorecards

With potentially vast amounts of data being generated from these new forms of media and communication, museums will also need robust and trustworthy mechanisms to visualise and monitor this data. In addition to an open discussion about data flow, a data-informed culture is fuelled by transparency of data performance and interpretation. Dashboards are a living, breathing extension of data infrastructure strategy and planning, and a useful business tool to help jump-start conversation and establish a common language for data collection and use (Patil & Mason, 2015). Building and sharing collective knowledge across an institution is an integral part of any digital transformation process and is not a new process for the cultural institution. It is important to note that dashboards capture a visual moment in time that is only as powerful as their data and insights design. Dashboards are a source of information, and action on this information is the goal or intended outcome of having a trusted dashboard.

For more than five decades as museums have sought out new ways to explore digital heritage, museums have examined the multiple ways information has been collected and examined. While this examination has almost exclusively been collections data, the probing of what cultural institutes have collected and why and its place in the digital future has already begun to take share in the exploration of these digital heritage pioneers since the 1970s. From their initial efforts, we can delve deeper to understand the depth and breadth of information the museum now owns or has access to explore. To prepare for the future, it is essential to understand the questions and learning that has preoccupied researchers in the past.

If a museum is to make productive and profitable use of information, it needs not only to define what information means for it but also to understand itself as a community of users of information, to recognise the “stakeholders” in information and to provide them with the means of negotiating over information (Orna & Pettit, 2010, p. 28).

The difference between those first discussions in the museum sector about data and the debates about present data sets is the presence of user information. Yes, the volume and veracity of the information has increased over time, but the information has moved from innate objects to animated visitors experiencing collections and employee interactions within the physical and digital museum ecosystem.

Rather than trying to capture all of this data, the dashboards and scorecards that include only critical information about the people, places, things, methods and events aligning with the cultural institution’s purpose with corresponding narratives and alarms to trigger review and action, are tools the institution can manage without the tool managing the institution (Patil & Mason, 2015). While writing about the information revolution within the National Museum of Australia (NMA), Darren Peacock also explored the metaphor of information ecology and ecosystem and through a series of internal workshops and experimentation settled on the concept of “commonwealth of information” to epitomise the content versus collections management system direction in preparation of a networked information society (Peacock, 2008, p. 67). When Peacock shared this snapshot of strategic planning and thinking with the museum sector, the networked information society had yet to explode with the types of social media and ease of mobile or responsive communication. The scholarship surrounding the movement of

collections to content management systems or importance of best-of breed capabilities of both systems has led to this critical juncture where technology is beginning to offer museums ways to meaningfully connect the information stored and analysed in both alongside information from a broader set of media and communications resources.

If there is too much information, the tool may become intimidating and ignored, and if the dashboard or scorecard includes only those data inputs that give a sense of the outcome the institution wants to address, the tool may assist in identifying opportunities and refining processes. The flexibility is not in the tool chosen to visualise the data but the test-and-learn approach required to identify, collect and take action with the data and the skills required to help prepare and make sense of the information.

Approximately 20 years ago, Howard Besser challenged cultural institutions to understand the changing form of text and images into digital form and explore how museums could bridge and bond the still distinct “camps” of information practice centred on collections data and content management (Besser, 1997). In addition to Besser, David Bearman (2008) foresaw how collections data and interpretation would take on “a life of their own,” and museums would need to reconcile museum knowledge. The questions big data bring into cultural institutions are an extension of those historical insights examined with newer technology processing and analytics capabilities.

Whilst there is a case to be made for museums to share data between each other, there is an urgency for cultural institutions to look to the past and questions asked to review data organisation, to prevent siloes of information capture and analysis and understand what data they have (how it is stored, the problems considered and the people who can manage and interpret the data collected) and how insights are turned into actions before common links are defined and shared with other institutions or community partners. Perhaps it is Jennifer Trant (2008) who more accurately challenged museums to expand their role in the ecosystem by reimagining their role with information ecology:

But to play this role they need to be connected, organized, available, engaged and of relevance: connected to each other and to many communities that they serve; organized, so that the content in their care remains connected to related content in other institutions; available to a wide range of users in many different contexts; engaged with the active interpretation and documentation of their collections; and relevant because they are responsive to user needs and interests. (Trant, 2008, p. 288)

Information challenges and needs have been expressed by the museum sector for decades, and it is now that the sector has the ability to begin to tackle these requirements in earnest as technology has matured. Using history as the guide, institutions can share these data sets and foster information ecology ripe for testing and learning (Figure V.1.1).

When operating with big data, we see the importance of the museum incorporating data collection and use as a strategic objective. If you recall, in Step 1, “Developing a ‘single source of truth’,” museums are identifying their single source of truth. Then, in Step 2, “Establishing ever-connected and augmented experiences,” museums are bridging these new media elements to form experiences. Once the museum has a basic understanding of their data landscape, they then begin to visualise the strengths and weaknesses of the data quality and connections in Step 3, “Creating trustworthy dashboards and scorecards.” It is after this understanding that museums may identify and strategically choose the narratives the museum uses to describe how and why this data is valuable. The data then begins the transformation from its raw state to be packaged into information and knowledge to improve the visitor experience.

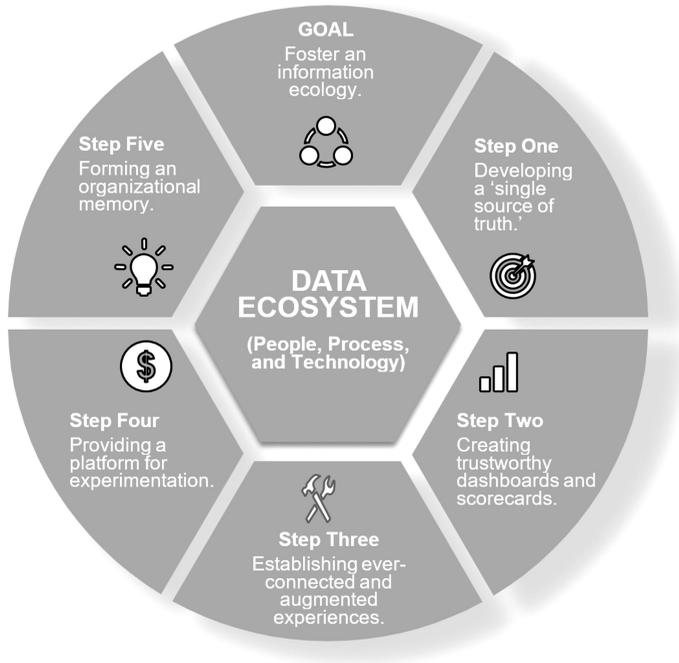


Figure V.1.1 The Data Ecosystem.

Step 4: Providing a platform for experimentation

As Nardi and O'Day (1999, p. 53) remark on the characteristics of a healthy ecology, “balance is found in motion, not stillness.” Big data does not equate to big thinking or action. As Disney displayed, the “think big, act small” approach is based on focused data challenges, hypothesis and actions. The Norman Rockwell Museum in Stockbridge, Massachusetts, is an example of a small museum embracing a test-and-learn environment to consistently learn from and evolve as a result of the data being collected and interpreted. The museum knew they had a group of profitable visitors returning each year, but as this visitor group aged, their return to the museum became annual instead of multiple times a year. The museum started gathering data and listening to their customers. Using transactional data, the museum parsed out patterns of visitor behaviour and began to test data rules and product recommendations through email communications. In the span of a 90-day test in 2013, the museum increased second-time purchasers of art by 150 percent, delivered \$20,634 incremental revenue (a 49 percent increase) versus 2012, and delivered an overall 77 percent increase of annual revenue during campaign weeks (Olavsrud, 2014). This type of experimentation may begin with smaller projects and data sets and then mature into an always-on concept baked into the testing of new ideas and larger data sets.

Museums are also tapping into crowdsourcing, as a test-and-learn method, by inviting the community to participate in the selection or interaction of the collection. The Brooklyn Museum has several examples of crowdsourced exhibitions and interplay they are using to influence what they display and how the institution participates with and in the community (Gameran, 2014a). The goal of such projects is to explore how the industry can better understand visitor behaviour and scale participation. Cultural institutions of all shapes and sizes are exploring ways to open and access data that have significant impact and influence on developing

and promoting culture. The culmination of this data, gathered indirectly or directly across these four steps, results in an information ecology with a rich history and future growth potential due to interconnecting people, tools and processes (Nardi & O'Day, 1999).

Step 5: Forming an organisational memory

An accumulated body of data, information and knowledge created in the course of existence is referred to as organisational memory. The direct link between new forms of media and communication, the data produced and the structure to connect such information is evident with the final industry example in this chapter. Beginning in 2002, the Cleveland Museum of Art (CMA) embarked on a \$350 million capital campaign to physically revamp and expand the permanent collection. The museum made a resolute effort to rethink its collection and how it would be displayed and to forge new relationships between the objects and the local community as new additions and changes were being made to CMA galleries. The CMA had a desire to build on the visitor behaviour theories and direction of museum communication specialist John Falk, with a digital strategy lens and mission to transform the museum for the 21st century (Alexander, Barton, & Goeser, 2013). In 2009, the CMA partnered with a research firm to study the visitor behaviour in the then newly renovated European and American Art Galleries. The research targeted answers to two questions: how can we hook visitors as they browse, and how can we provide the kind of interpretation that will open up our expectations and honour visitors' browsing behaviour (Alexander et al., 2013)?

The research findings led to the CMA launching the Gallery One project in December 2012 to test a transformative digital strategy, objectives and collaboration mindset. The analysis revealed people felt intimidated by art museums and found those types of institutions to be elite, old and boring (Alexander et al., 2013). The CMA wanted to seize an opportunity to give people the toolsets to engage with art on their own. Gallery One is a 40-foot multi-touch MicroTile screen in the United States displaying over 3,800 objects from the CMA Collection. Visitors may interact with the MicroTile Collection Wall and other interactive spaces, using indoor wayfinding technology and an accompanying Art Lens iPad application, to filter the art they want to see and create personalised tours of the museum (Alexander et al., 2013).

The entire information technology infrastructure was re-imagined to support the Gallery One screen and interactive spaces. In the midst of renovation challenges that kept parts of the CMA collection off view or in temporary storage, the Museum discovered a desire to see all objects by theme in one location and immediately know if the object was available to be viewed in the open physical space (Alexander et al., 2013). A cascading Collection Management System (CMS) approach governs the CMA dynamic data management with weekly refresh of object-related metadata to the main Digital Asset Management (DAM) system, and then information is passed onwards to the Collections Online DAM and Gallery One CMS (Alexander et al., 2013). The final design of Gallery One is the product of an internal collaborative vision brought together by the technology, education and interpretation, design, curatorial and collections management departments (Alexander et al., 2013).

The applications team then committed to meeting routinely to discuss all ongoing and future projects, as well as how the technology will interact in the back-end and how these projects will fundamentally impact all areas of the museum. The Gallery One infrastructure was created to address the challenges of universal access and unnecessary social media and digital platform sign-ins. The design of the data flow indicates the CMA was intent on creating a museum prepared for the future by thinking about a digital strategy that would enable sustainability, modularity and scalability and support evolving hardware and software needs (Alexander et al., 2013). The

CMA addressed a gap and need for supporting technology platforms to connect across the institution and is collecting valuable data about how its visitors are interacting with the physical objects.

Today, museums have the opportunity and challenge to link the participatory experience with the museum's customer relationship and visitor behaviour information. Legacy platforms have given way to newer technology solutions for small data study, and while big data is still managed by large platform vendors, new and affordable solutions are being created so organisations can operationalise big data one data set at a time. Cultural institutions may approach data collection and analysis incrementally to build trust with visitors and take the necessary time to build an information ecology based on researched patterns in data to understand visitor interaction across an interconnected system of media and communication.

Thinking big, acting small

This chapter has attempted to outline the process of defining actionable insights from raw data. As we saw highlighted in the Disney example, data collection and use requires a well-nourished ecosystem of interconnected people, processes and technologies. The aim of this chapter has been to review the advent of big data in the industry and how such museums may begin to plan and resource for an ever-connected ecology through the application of the five-step framework. Big data is not limited to big museums. Any size cultural institution may benefit from the understanding of its current data landscape. Once the museum has taken the first step to clarify the "single source of truth" of data collection and how the museum uses this data, the museum may move to the second step of the process and craft smarter experiences. To better understand visitors and act on this data, museums need to visualise what the information is and find ways to communicate the impact of this data to internal and external stakeholders. Once a structure and data collection and use routines are established, the museum's staff is then freed up to experiment with the possibilities of what they can learn from this data and explore innovative and relevant exhibitions and communications initiatives. No one individual or department can take on the burden of solving for all steps by themselves. Instead, as new methods are explored, information policies revised and technology evolves, knowledge must be documented and continuously updated. It is this last step that is the most vital to the success of the museum. By sharing the research context, successes and failures, museums can expand and enhance their data skills and capability as museum staff transition to new roles and staff without any such background step into the museum and must learn from the organisational memory.

The five steps may be acted upon in sequence or in parallel to build a data-informed culture, test-and-learn different engagement approaches and share valuable visitor behaviour across the organisation. Having access to and investing in the analysis of all types of data moves museums into taking actions based on what people want to see and do in their spaces.

For the future of communication and media use in the museum, big data represents a new way museums can learn from each other. However, like information ecologies, the terroir of the museum results in many and unique data types and sets, requiring time, patience and constant cultivation. New forms of media and communication are generating new forms of data, and it is data which can be leveraged and harnessed to give insights into visitors. Data yields a number of interpretations or stories, and it is up to a museum to take the time and resources to understand the specific wants, needs and challenges of the communities they serve. Knowing and understanding visitor behaviour and analysing in real time yields insights that can be promptly used. In order to take advantage of this opportunity of big data, museums are confronted with acknowledging and understanding that these new (or newly combined) data sets are part of a

wider information ecology. With the advent of big data, museums have the opportunity to challenge scholarship, reach into the past and build on the questions (originally posed by Besser, Orna, Pettit, Trant and others) to look and think forward about how data is structured and shared amongst museum professionals. Through data, museums have the power to determine how visits to their institutions can become magical and repeatable experiences.

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The proliferation of aura

Facsimiles, authenticity and digital objects

Sarah Kenderdine and Andrew Yip

When mobilised through augmented and virtual reality platforms, high-fidelity digital facsimiles of cultural artefacts and landscapes present new paradigms for engagement by which museum visitors may access and interpret objects via sensorial and embodied investigation. Technologies of reproduction are able to record objects and sites in sufficiently high resolution to produce visual replicas with a spatial and structural integrity that respects the original's materiality. Spatial modes of interaction with these replicas, where viewers are immersed in navigable virtual worlds, offer affective, user-driven encounters in which viewers experience not only a form of geographical transportation connecting them with the actual site, but a temporal travel linking present day to historical past. These modalities are not merely didactic strategies; the agency and consciousness of the viewer in encounters with virtual objects are mediums through which networks of meaning and understanding are constructed.

The value of object copies to cultural heritage research and conservation is well established. Indeed, in the case of sites and artefacts threatened by destructive forces such as iconoclasm, climate change and mass tourism, reconstructions may be the only way through which "originals" (objects and physical spaces) may be accessed. However, in the context of museum cultures of display, digital reproductions still occupy an uneasy space. The materialities of digital objects – intangible, reproducible and transmissible – can be perceived of as a threat to traditional institutional claims of the authority of collected objects, as well as to the conventions surrounding their display.

21st-century museums undertake sophisticated digitisation programmes that document artefacts through high-resolution photography, video and analytical scanning. These digital resources initially served as adjuncts to the processes of object collection and conservation. However, as their uses have evolved towards public display and finally as mediums for artistic intervention, it has been argued that digital copies can possess the ability to evoke emotion and memory (Cameron, 2010; Hazan, 2001). These affective responses are often described in similar terms as the sense of the transcendence experienced through a work of art – what Walter Benjamin described as the "aura" of an original (Benjamin, 1936/1968).

This chapter engages with the aura of real, digital and material copies of objects in the context of museum exhibitions to explore the notion of the "proliferation of aura" as digital artworks reverberate with the iconic, original (or primary source) objects they reference.

Following Bruno Latour and Adam Lowe's re-evaluation of the discursive relationship between an original work of art and its facsimiles through which the aura is proposed to *migrate* from one to the other (Latour & Lowe, 2010), in the first part of the chapter we consider critical approaches to Benjamin's conception of aura and authenticity as it has been interpreted and applied in the context of museum and gallery collections and exhibitions. This broader, critical discussion takes place alongside a practice-based case study of an interactive installation.

The second part of the chapter provides a detailed description of *Pure land augmented reality edition* (Kenderdine & Shaw, 2012/2016; hereafter *Pure land AR*), a virtual reconstruction of a Tang Dynasty Chinese Buddhist cave installed as part of the antiquities exhibition *Tang: 唐 Treasures from the Silk Road capital* at the Art Gallery of New South Wales, Australia. Employing augmented reality technology to create interactivity within a virtually reconstructed world, *Pure land AR* presents a form of embodied immersion in which visitors are able to walk around a life-sized cave from the UNESCO World Heritage-listed Mogao Grottoes at Dunhuang, China. This case study presents a unique instance of a high-fidelity digital copy being exhibited in a fine arts museum alongside thematically and historically related cultural antiquities. Through an analysis of visitor perceptions of the installation, we describe the conditions by which the aura of a work of art proliferates in digital materialities through association with the original. In doing so, this chapter builds on emerging models for evaluating affective museum experiences to argue that the authenticity vested in objects is not always solely located in their materiality. In the case of high-fidelity digital copies, authenticity is constructed through a combination of material concerns, digital mediation and viewer perceptions.

Re-siting the aura of virtual encounters

Discussions of auratic affect in media theory inevitably begin with Walter Benjamin's seminal essay, "The work of art in the age of mechanical reproduction." Here, he asserted that in spite of the fact that artistic cultures of copying predate mechanical means, what "wITHERS in the age of mechanical reproduction is the aura of the work of art" (Benjamin, 1936/1968, p. 223). For Benjamin, the aura of a work – its unique, sublime presence in the eye of the beholder – is bound to the object's authenticity, located in the projection of a sense of a unique and grounded cultural history. It is rooted in the mystical, ritualistic origins of art and its essence is "all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which it has experienced" (Benjamin, 1936/1968, p. 223). He argues that this authenticity is destabilised by mechanical reproduction through two core processes. First, reproduction substitutes the singular existence of the original for a multitude of identical instances. Second, it allows the original to be contacted by the viewer outside the sphere of its site-specific origination or belonging, severing it from its historical and cultural context.

From the standpoint of the museum, these conditions present a quandary, for even while the museological mission is well served by the promotion of access to cultural material through digital reproduction and dissemination, the presence of the copy represents a challenge to traditions of object-based curatorial custodianship. The implications, as Andrea Witcomb describes, "are a loss of aura and institutional authority, the loss of the ability to distinguish between the real and the copy, the death of the object and a reduction of knowledge to information" (Witcomb, 2010, p. 35). These ideas will potentially persist until the institution reinvents itself or until new forms of media are subsumed into the historical canon. What Benjamin identified, therefore, was perhaps not the irrevocable loss of aura through reproduction but a point at which rapid technological transformations precipitated a "crisis" that continues to this day "in which the experience of aura is alternately called into question and reaffirmed" (Bolter, Macintyre, Gandy,

& Schweitzer, 2006, p. 22). Questions surrounding the authority and aura of objects resurface at the arrival of new forms of media that facilitate novel paradigms of object mediation.

Recent debates have re-configured the interplay between original and copy to be a discursive relationship in which the copy exists as one form of the material “trajectory” of the object’s cultural career. Philosopher Marcus Boon in his book *In praise of copying* offers us a summary of contemporary critical theory in relation to ontologies of the original and its copy – ranging from Gilles Deleuze, who observed that the Platonic Ideal is always accompanied by a swarm of simulacra, fakes and copies that threaten and distort it, through to Baudrillard’s famous *Simulations*: a world of “copies without originals” (Boon, 2010, p. 24). Within the conventions of exhibition, art theorist Boris Groys questions the validity of “original” aura, arguing that “a museum piece is an object minus its invisible aura” (that is its relationship to time and space). On the contrary, he maintains that digital archiving “ignores the objects and preserves the aura.” The object is absent but its metadata about the here and now of its original inscription is preserved. The museum object has always required interpretation to substitute for its loss of aura, and digital metadata creates an aura without an object (Groys, 2016, p. 4).

A parallel argument is mounted by Latour and Lowe in a process they describe as the “migration of the aura” (Latour & Lowe, 2010). Rather than causing the aura of an original to wither, the authority and desirability of the original increases with the availability and accessibility of its high-fidelity copies (indeed, the word copy comes from the Latin *copia*, meaning “abundance,” “plenitude” or “multitude”). The copying of the original can benefit from a symbiotic relationship with its replicant rather than suffer a diminished existence. Thus, “the real phenomenon to be accounted for is not the punctual delineation of one version divorced from the rest of its copies, but the whole assemblage made up of one – or several – original(s) together with the retinue of its continually re-written biography” (Latour & Lowe, 2010, p. 278). The “re-written biography” of an artwork is its evolving cultural trajectory over time and the processes by which it is reproduced, conserved and exhibited in various contexts. In order to describe this state, Latour and Lowe borrow from anthropology the expression “career.” It is against this career that the value of a particular work and its copies should be determined, regardless of the particular materiality of the original.

A culture of copying is proof of the fecundity of the original – evidence of the ability of the object to evoke continuing engagement. Thus, as Latour and Lowe suggest, the question should not be whether a viewed object is a copy or not, but “Is it *well* or *badly* reproduced?”; a badly-reproduced object risks disappearing, while the authenticity of a well-copied original is enhanced (Latour & Lowe, 2010, p. 278). The artistic gesture of copying has also become an interrogative practice, exemplified by works such as Takashi Murakami’s collaboration with Louis Vuitton, whose handbags have been called the most copied object in the world. Infamously, Murakami sold “fake fakes” of handbags to bring attention to the phenomenon of counterfeiting, the production of illegal copies and value (Boon, 2010, p. 13).

Evidently, the criteria by which good reproductions are assessed are not limited to materiality alone. In the domain of archaeology, Siân Jones has led arguments about authenticity that have moved away from purely materialistic traditions around which positivist research methods assess and confirm value, towards a constructivist position in which authenticity is culturally construed dependent on the context and viewer (S. Jones, 2010). Jones argues that authenticity is vested when truthful relationships are formed between a network of objects, people and places. Copies can also be vested with authority through the agency and acceptance of the communities in which they were made. To illustrate this, Jones draws on the example of the excavation of the lower section of the 8th-century Hilton of Cadboll cross slab in Scotland. While the object was rediscovered outside its primary context, village locals expressed a deep connection

to the associations it generated with the local environment. Furthermore, Jones suggests that a reconstruction of part of the cross acquired authentic qualities in locals' eyes because it had been carved in the village, creating a relationship between the object and the community of its creation.

In studies of conservation practice, Jones also demonstrates that authenticity emerges through complex interactions between expert practitioners and material conditions (Jones & Yarrow, 2013). Critiquing Jones' position, Cornelius Holtorf argues for greater emphasis on object materiality by suggesting that an object might exhibit authenticity through the construction of "pastness" – an evaluation of perceptible material clues such as traces of decay that connect the audience to a plausible historical narrative. Borrowing from Alois Riegl's concept of the affective "age value" of an object, he asserts that what matters is people's perception of pastness in the context of its viewing (Riegl, 1982). Object, buildings and monuments can evince pastness even if they were created recently. Holtorf suggests that regardless of the date of its construction, a church might acquire pastness via allusions to Romanesque or Gothic architecture – tropes that conform to a viewer's stylistic expectations of historicity.

The ability to explore the original by activating its biography is central to the power of the copy to extend aura rather than dilute it. For an increasing number of cultural heritage sites and objects, the facsimile provides the only means of public access and may even provide a superior viewing experience due to the necessary constraints on visitors to the original. True-to-scale physically built models (it seems necessary to distinguish these from virtual, rendered models) of caves and subterranean sites, enabled by high-fidelity digital registration, include the Lascaux Caves, Altamira Caves and the Tomb of Thutmose III. Replicas of the Arch of Triumph of the Temple of Bel (Baal) in the ancient Syrian city of Palmyra destroyed by Isis in 2015 are copies – real "fakes." In collaboration with UNESCO, the Institute for Digital Archaeology (IDA), Harvard University, the University of Oxford and Dubai's Museum of the Future developed a 3-D computer model of the arch to be rendered in stone and installed in London and New York in 2016. IDA director of technology and founder/executive director Roger Michel stated:

ISIS was hoping to destroy the arch forever, to erase it from the surface of the earth and from our memory. Instead, they made it the best-known piece of ancient architecture in the world. Pictures of it have appeared on television and in countless newspapers and magazines. Thousands of people visited our model arch in London. We'll be sending our 3-D files all over the world so that other arches can be created. (*New York Times*, 2016)

Yves Ubelmann, whose images of Palmyra feature in the exhibition *Eternal sites: From Bamiyan to Palmyra* at the Grand Palais, Paris, echoed this sentiment:

The terrorists were uploading videos with them blowing up monuments and smashing statues to manipulate public opinion. ... We felt the best response was to magnify the pictures of these places and show their splendour and their importance to the culture. It became a war of images. (As cited in Simons, 2016)

Institutionally proliferated, the images and replicas erected around the world carry something of the auratic experience of the Palmyra site but are imbued with the significance of loss. The depth of engagement with the site is enhanced by similar projects such as #newpalmyra, a collaborative and interdisciplinary open data project to crowd-source a virtual reconstruction of the site. These instances of heritage art as political intervention or statement interact with authenticity in particular ways – here, the "migration of aura" is a necessary and conscious

collaboration between cultures and heritage workers globally rather than a result of consumerism and “copy culture.” The context that is crucial to an experience of the Palmyra replicas is, importantly, one that is defined by distance and absence. It is the inauthentic nature of the replica that highlights its removal from the conflict in Syria; the absence of the destroyed arch triggers a palpable relation with loss, resulting in the resurrection of aura.

While such high-fidelity digital copies offer unique opportunities for exploration, they have until recently struggled to escape the stigma of being data-driven, didactic visualisations. Stuart Jeffrey argues, for example, that digital objects have been perceived to possess an inability to inherit aura due to a neglect of creative imagination (Jeffrey, 2015). Digital interaction, he argues, represents a conceptual break from interacting with the world and its history, which unless mitigated alienates the copy from its original. He identifies five key traits that digital objects must overcome: their lack of physical substance compared to real objects, their lack of native location, the ease of their infinite reproducibility, their inability to degrade and the difference between original ownership and digital licensing.

Algorithmic augmentation and authenticity

There is another sense in which digital reconstruction may rupture cultural history. That is, by making virtual the agency of the artist in the creation of the original, as occurred in *The next Rembrandt*. Purportedly devised by advertising executive Bas Korsten as part of an advertising campaign for ING Bank in 2016, *The next Rembrandt* is the product of a program that utilises data derived from 168,263 Rembrandt painting fragments to compose and 3-D-print a textured, “painted” image (Brown, 2016). *The next Rembrandt* is a new work of “art” in the sense that it is not a composite of features from Rembrandt originals but the result of a pattern recognition program that has generated new features. It is, then, authentically *not* a “copy.” In spite of the earlier development of artificially creative software, the arrival of *The next Rembrandt* has been polarising. Korsten hoped the project would be “the start of a conversation about art and algorithms,” but there were mixed responses to the images, signifying the depth and prevalence of traditional concepts of fine art, genius and authenticity and the continued attachment to and reverence for a masterpiece. The inevitable comparison between *The next Rembrandt* and actual Rembrandts resulted in the accusation of fakery and the presumption that Korsten and his team have been engaged in an attempt to reduce artistic “genius” to a series of imitable features. Jonathan Jones of *The Guardian* wrote:

What a horrible, tasteless, insensitive and soulless travesty of all that is creative in human nature. What a vile product of our strange time when the best brains dedicate themselves to the stupidest “challenges,” when technology is used for things it should never be used for and everybody feels obliged to applaud the heartless results because we so revere everything digital. ... What these silly people have done is to invent a new way to mock art. (J. Jones, 2016)

In spite of Korsten’s insistence that he has “creat[ed] something new” through algorithmic processes and that “only Rembrandt could create a Rembrandt,” Jones resents the perceived implication that “great art can be reduced to a set of mannerisms that can be digitised” (Brown, 2016; J. Jones, 2016). For detractors like Jones, several key structures of high art are at stake in *The next Rembrandt*: first, the aura of the masterpiece, that which is deserving of the “Rembrandt Shudder” and the intangible impact of the artist’s psyche on the work of art. Second, the exclusive rights of the original and authentic art object to be a result of “genius.” The possibility of

artificial processes for creation calls into question which aspects of the context and provenance of a work of art are most important to the category of “art.” Jon McCormack and colleagues ask, “Why dismiss outright that a machine and a human might share experiences that result in something meaningful and worth communication?” (McCormack et al., 2014, p. 135). Korsten puts this more simply and aptly: “Do you need a soul to touch the soul?” Besides the implication that the creators have attempted to pilfer a portion of the aura of a Rembrandt, the sheer resemblance of the computer-generated piece to that of an actual Rembrandt calls into question the importance of authentic experience. Jones’s outrage is at least in part motivated by the notion that *The next Rembrandt* is a fake – even though it is not a copy or computer-generated duplicate of an extant composition.

In other instances, the fake or the copy carries with it entirely different attachments. Engineering an artificial experience of the lost original appears to be more universally acceptable as a mode of technological intervention into art and cultural heritage. For example, where a digital reconstructive tool is used to augment an original where some loss has occurred, such as is the case with Mark Rothko’s Harvard Murals in the USA. Significantly damaged, the murals have rarely been exhibited since they were removed from display in 1979 (Khandekar, 2014). In 2014, a digital projector was used to augment five faded paintings by the artist (Stenger et al., 2016). Based on studies of an undamaged original and Ektachrome photographs of the works taken in 1964, projected light digitally “restored,” pixel by pixel, the light-sensitive pigment lithol red, which give Rothko’s murals their deep crimson hues. The projectors were switched off every day at 4PM in order to highlight the effect of the projectors on the faded paintings, allowing visitors to “experience a transformation that took many years in a few seconds” (Menand, 2015).

This passive restoration technique, while expected to incite debate around conservation and restoration methodologies (Sheets, 2014), interacts with the materiality of the original in a referential way that appears to carry none of the controversy of acts such as *The next Rembrandt*, or even active forms of restoration such as physical in-painting used in conservation. As Thomas Lantz of Harvard Museums asserts, the crucial distinction is that “we are not restoring the paintings, we are restoring the *appearance* [emphasis added] of the paintings. Even in their unconserved state they are really these kinds of magnificent runes. They are very powerful” (as cited in Walsh, 2014). Christopher Rothko, son of Mark Rothko, remarked that “they still felt like real paintings” (Sheets, 2014). This affective response that the paintings still “feel” like paintings is important, and the transformative effect of the projectors being a temporary one seems crucial to the delicate evocation or amplification of the original work. Nothing is removed from the “site” of authenticity (the canvas itself), and nothing is really added – it is an installation that may be considered as a virtual heritage project that powerfully brings the work back into focus, and, with it, some re-invigoration of the auratic experience.

As the Harvard Mural installation demonstrates, the sensorial shortcomings of digital interventions might be mitigated when they are encountered via modes of immersion that stimulate a sense of co-presence with the cultural biography of the original. These encounters are tied to the specific exhibition environments in which they occur as relational exchanges between viewer and object (Dziekan, 2012). This sense of presence, a feeling of being convincingly immersed in an alternate world, has long been a staple measure for researchers of virtual reality (Sheridan, 1992; Kenderdine, 2013a, 2013b, 2013c). However, it has been argued that auratic experiences in virtual encounters are contingent on not only maintaining presence but on creating a sense of “distance-through-proximity” (Bolter et al., 2006). This is a reparsing of Benjamin’s definition of the aura of natural phenomena, which he describes as “the unique phenomenon of a distance, however close it may be ... [following] with your eyes a mountain

range on the horizon or a branch which casts its shadow over you” (Benjamin 1936/1969, pp. 224–225). In virtual encounters, Bolter et al. argue, aura is transmitted when the immediacy of the experience makes the subject appreciate the cultural and historical significance of the site.

Digital, embodied encounters are particularly apt vehicles for enacting historical connection, as they require viewers to negotiate meaning within the environment. This negotiation can take place through an individualised immersive experience, in the case of head-mounted virtual reality platforms, or through social interaction, in the case of augmented reality installations that further emphasise the temporal link between past and present. As Christopher Tilley argues, bodily immersion necessarily introduces time as a contingency: “any moment of lived experience is thus orientated by and towards the past, a fusion of the two” (Tilley, 2004, p. 12). It is this negotiation that remedies one final aspect of Benjamin’s construct. In his discussion of the loss of aura between stage and cinema, Benjamin focused on modes of spectatorship. While stage acting involves an interplay between subject and viewer, cinematic viewing predetermines the gaze through the camera’s lens and removes both the agency of the viewer and the influence of the actor. Embodied interaction restores this field of negotiation between viewer and subject, and it is through this agency that embodied virtuality emerges as a key medium by which the aura of an original might be vested in its digital copy.

Evaluating auratic experience

Relatively few audience studies of auratic experiences in museums have been conducted, let alone on the question of whether copies of objects of historical or cultural significance are perceived differently from originals (Hampp & Schwann, 2014b). The first steps towards formulating a methodology for observing auratic museum experiences were taken by Catherine Cameron and John Gatewood, who hypothesised that not only do people visit museums to seek a form of transcendent experience, but that historic sites and exhibits can conjure emotional responses that link museum visitors to a historical past (Cameron & Gatewood, 2000, 2003). They described a framework for analysing what they termed “numinous experiences” characterised by three traits: deep engagement or transcendence, empathy through affective connection, and awe or reverence akin to spiritual communion.

Kiersten Latham further developed this model with reference to Louise Rosenblatt’s work in literature on transactional theory wherein external texts generate internal associations (Latham, 2007; Rosenblatt, 1978). In 2013, Latham conducted a study of numinous visitor experiences in five museums of various disciplines (art, history, living history, and state history). After phenomenological analysis, she identified four themes essential to numinous experiences: a unity of the moment, a link to the object, a sense of transportation and the formation of a connection beyond the individual. While Latham’s findings supported the formulations of Cameron and Gatewood, she nuanced and developed them, concluding that museum objects held a central role in linking viewers to “other dimensions, perceptions, thoughts and feelings,” and that temporal and embodied experiences were essential to establishing this sense of transcendence (Latham, 2013, p. 12). A unique finding of this study was that the numinous experience was dynamic and transactive between visitor and object, employing both the sense and the intellect – a relationship of exchange tested in the case study of *Pure land AR* that follows.

More recent studies by Constanze Hampp and Stephan Schwan tested perceptions of authentic and inauthentic objects in science museums. In the first study, focused on objects of mundane status in a context where functionality was paramount, they found that the perceived authenticity of an object did not play a prominent role in the visitors’ evaluations of them (Hampp & Schwan, 2014a). The second focussed on objects with iconic historical significance – a moon

rock and a space suit – presented at the Deutsches Museum in Munich in a context that focused on history, myths and uniqueness. Representing each object either as authentic or a replica to participants, Hampp and Schwan found not only that the most important evidence for authenticity was the fact of the objects' presentation in a museum, but that personal responses to the objects depended more on the type of object rather than whether or not it was a replica:

Surprisingly, objects perceived as replicas were able to induce similar thoughts and feelings of excitement as objects perceived as originals. ... Thus, it seems as if the “aura of the original” indeed is able to devolve upon the replica, as described by Latour and Lowe. (Hampp & Schwan, 2014b, p. 363)

These findings corroborate a constructivist view of authenticity as a negotiation between the object and viewer. However, they are contingent on the context of the investigation and its terms. For example, a 2013 study at the Deutsches Museum concerned with the investigation of aura used mobile eye-tracking devices to gauge viewer fixation patterns on museum objects in showcases. The results suggested that perceived authenticity was affected by whether an object was exhibited with positive or negative associations (Fantoni, Jaebker, Bauer, & Stofer, 2013).

Hampp, Schwan and Latham acknowledge the particular contexts of their studies and urge continuing research in different contexts with different content and visitor demographics. This is particularly necessary in the context of fine arts museums, where attributions of authorship and provenance carry particular weight, and the presence of the copy occupies a more contested space. In the fine arts museum, virtual copies and digital object mediations – or high-fidelity material reconstructions facilitated by advanced digital imaging techniques – have traditionally been evaluated against a culture focused on original materiality.

Pure land augmented reality edition (2012/2016)

The case study of *Pure land AR* that follows takes place amongst this constellation of concerns about originals and their copies in fine arts museums. It builds on previous studies by assessing visitor perceptions of a virtual copy of a historically significant cultural site in the context of its exhibition in a fine arts museum alongside historically contemporaneous objects at a time in which access to the original site is impossible. The principles of numinous, auratic museum experiences remain applicable to this context: transportive, embodied exchanges evoked by the digital object are central to the construction of authenticity and the transmission of aura. In addition, this particular case study allows us to investigate whether it is possible for a high-fidelity digital copy to proliferate a sense of aura through the evocation of affective experiences and consequently to gain an understanding of how viewers evaluate a digital copy in the context of its exhibition alongside real object counterparts.

Pure land is a virtual reconstruction of Cave 220 at the UNESCO World Heritage-Listed site of the Mogao Grottoes in Gansu Province, China. The grottoes consist of around 750 caves on five levels, hewn into an escarpment in the desert 25km southeast of the town of Dunhuang. In total, 492 of the caves feature mural paintings totalling more than 45,000 square meters. The grottoes also contain 2,000 painted clay figures of Buddha and bodhisattvas, the largest of which measures 100 feet and dates to the Tang Dynasty (Larmer, 2010).

Since 1999, the Dunhuang Academy has been undertaking an ambitious programme to digitise the grottoes through high-resolution photography and laser scanning. The data from Cave 220 has been transformed into a range of virtual experiences by Sarah Kenderdine and Jeffrey Shaw and their team of visual effects artists at the City University of Hong Kong (Kenderdine, 2013a).

These include the augmented reality version of *Pure land AR*, which uses tracked, tablet-based navigation inside the virtual world to simulate navigating the cave (Figure V.2.1).

The structure of the installation consists of a four-walled-room erected to scale corresponding to the real cave. The interior walls are covered with life-size prints of a polygonal mesh derived from the Dunhuang Academy's laser scans of the cave. High-resolution photographs of the cave's paintings and sculptures are digitally rendered onto this polygonal mesh inside a virtual model to create a composite 3-D representation of the cave, including its ceiling and floor. The 3-D visualisation of the north wall is augmented by four animations, determined from an interpretive script stipulated by the Dunhuang Academy, that emphasise the cultural significance of the painting's iconography for lay viewers.

Viewers interact with the cave by taking a tablet into the installation and holding it up to the walls, guided by visual cues from the polygonal mesh (Figure V.2.2). As they explore the space, 24 infrared cameras placed atop the walls track the position and orientation of the tablet while computers render the corresponding view of the digital cave and transmit it to the tablet screen in real time via Wi-Fi. The tablet screen acts as a framing device that forms a direct link between the gaze of the viewer and their physical movements in navigating the physical space. It thus moves beyond being a televisual environment to an embodied social performance.

Pure land AR was first exhibited at the Hong Kong Art Fair in 2012, followed by the Shanghai Biennale in 2013. The iteration under evaluation in this essay was installed as part of the exhibition *Tang: 唐 Treasures from the Silk Road capital* (hereafter *Tang*), held at the Art Gallery of New South Wales, Australia (April 9–July 10, 2016). Three key features of this iteration distinguished it from earlier versions. First, this was the only time the installation had visualised all four of the cave walls – previous iterations visualised only three (Figure V.2.3). The cave entrance served as a threshold between the real and the virtual, conditioning visitors to anticipate an alternate reality by partially obscuring the interior of the cave and by requiring visitors to participate in the architectural fiction by ducking beneath the entrance lintel. Second, proximity-triggered animations were added to the installation, drawn from the panoramic virtual reality iteration



Figure V.2.1 *Pure land AR* (2012). 9th Shanghai Biennial, Power Art Museum, Shanghai, China, 2013. Photograph Sarah Kenderdine.



Figure V.2.2 Visitors exploring *Pure land AR* (2016) as part of *Tang: 唐 Treasures from the Silk Road capital*. Art Gallery of New South Wales, Sydney, 2016. Photograph Jenni Carter/Art Gallery of New South Wales.



Figure V.2.3 Cave entrance to *Pure land AR* (2016) at the Art Gallery of New South Wales. Photograph Sarah Kenderdine.

of *Pure land* in order to create a connection to related iconography appearing elsewhere in the exhibition (Figure V.2.4). Third, for the first time, *Pure land AR* was shown in conjunction with Tang-era objects.

To investigate auratic effects of *Pure land AR*, the experiences of visitors to the installation were surveyed and data was collected digitally on iPads using the visitor survey app *I Sho U* (Figure V.2.5), developed to derive quantitative data from qualitative museum experiences (Kocis & Kenderdine, 2014). In designing the survey tool, a key consideration was the



Figure V.2.4 Augmented content showing dancers from the Beijing Dance Academy in *Pure land AR* (2016). Photograph Jenni Carter/Art Gallery of New South Wales.



Figure V.2.5 *I Sho U* evaluation tool used to evaluate *Pure land AR* (2016) at the Art Gallery of New South Wales, Sydney, 2016. Photograph Sarah Kenderdine.

development of a vernacular to investigate auratic experience that elicited authentic responses while avoiding specialist jargon. To this end, questions were designed to test sensorial perception, and particular attention was given to open-ended responses as delivered by participants in the following discussion. Two broad areas formed the basis for our investigation: the question of whether or not the installation was able to convey a transportive sense of historical co-presence, and the manner in which viewers perceived the virtual copy in the exhibition context.

Spatial temporal immersion

When asked to describe their experience of *Pure land AR*, participants conveyed a pattern of immersive experiences characterised by a sense of physical and temporal transportation, which was evident in 43% of responses. Of the 10% of participants who reported having been to the real Dunhuang Caves, three respondents favourably compared their virtual experience to their memories of their actual journeys. One recalled that “sixteen years ago I went to the Dunhuang Caves, and this experience has brought back to life all that I was seeing there at that time.” Another stated that it was “a wonderful experience. I have been to the caves and this reminds me of what I saw there.” Others who had not been to the Dunhuang Caves also felt transported to and immersed in the site. Both group and individual responses recorded a general sensation of presence in the virtual environment: “we feel as if we’re actually visiting the cave”; “it was fascinating and entirely absorbing, and it felt like I was really present in the cave.”

An interesting result was that for some people, the installation’s modes of interactivity and the proximity between viewer and object enhanced the experience: “[*Pure land AR*] transports you to the place and makes it easier to see and imagine how it is like to be there, and also you can see everything up close, which probably you won’t be able to see if you were actually there.” Such responses that refer to the agency of the viewer are particularly interesting in light of the fact that the installation provides public access to a site that is no longer physically accessible. In many ways, viewing the high-fidelity model up close provides a technically superior viewing experience to a real-life visit, where most murals are covered by protective glass and during which the only light is provided by the torch of a tour guide. *Pure land AR*’s tablet interface thus provides a window onto the world that surpasses the viewer’s ability to encounter the original (Kenderdine, 2013a).

Several visitors had a conscious awareness of a “living” history and culture evoked by the experience. A typical response in this category was to feel “transported”: “[I] felt like I was actually in the virtual cave, and it was an amazing experience to be able to feel and see so much. It’s almost like the living past.” Linked to a development of historical understanding, these findings of a multi-layered experience of physical immersion corroborate the premise of “distance through proximity” that underpins Benjamin’s aura of natural phenomena as applied to paradigms of virtuality by Bolter et al. (2006). The responses suggest that embodied immersion in the cave allowed viewers to not only appreciate the aesthetics of the artworks but to make deductions about the cultural significance of the site and the reasons for its preservation.

These responses were consistent with the results of the question, “Did the virtual experience feel like being there?” to which 88% of people responded “yes.” Interestingly, none of the participants who critiqued physical or technical aspects of the installation answered “no” to this question, suggesting that the shortcomings they perceived in the experience did not wholly break their sense of immersion. This was acknowledged by one participant who recorded that “it actually feels like being in the [cave]; the only difficulty is getting used to the technology of using the device and also understanding the process of beginning the animations. But the overall effect is really amazing. You do really feel as if you’re there.” Nor did the presence of mediation through the augmented animations on the north wall seem to break immersion or negate the authenticity of the original paintings. They were referenced positively in responses, though one participant found viewing them physically difficult due to their location low on the wall (corresponding to the appropriate section of the mural in the real cave).

Context

Results to the question, “How does *Pure land AR* relate to the rest of the exhibition?” reflected a positive perception of the installation’s relationship to the original artefacts and other exhibition materials in the context of their co-exhibition.¹ Participants overwhelmingly found that the installation enhanced and extended the exhibition, with few opining that the digital intervention devalued the artefacts. These results corroborate the argument that it is possible for real and facsimile objects to function in tandem, each acting as an alibi for the other by maintaining and strengthening historical links (Cameron, 2010).

Some participants expressed the sense of awe or wonder that one associates with the auratic reception of fine art objects, marvelling at both the aesthetics of the cave paintings and the augmented elements of the installation, evidenced in responses such as: “I just felt it was quite overawing, I’ve not ever done anything like that before and I thought it was magical and extraordinary.” These responses lend weight to the notion that digital copies can escape categorisation as didactic strategies to be considered on their aesthetic merits. There was also a general appreciation of the technologies employed. However, in spite of the general acceptance of the installation, one participant questioned the value of the particular medium of the installation, questioning whether “it was any better than just seeing a large mural photograph, as per the other mural photographs elsewhere in the exhibition.”

The general positive reception to *Pure land AR* should of course be read against arguments that museum viewers can accept authenticity based on the institutional authority of the exhibition context (Lowenthal, 1992, 2008). The processes by which objects are selected for digitisation and display by museums naturally ascribe value to those objects. Yet it is also the case that the reverse is true, that museum practices gain currency through the critical approval and acceptance of their audiences. For example, in response to the 2012 exhibition of the 360-degree 3-D version of *Pure land AR* at the Freer Gallery of Art, Smithsonian Institute, *Washington Post* critic Philip Kennicott said:

A decade or more of efforts to use virtual reality to reproduce aesthetic experiences have generally led to unsatisfying, cumbersome and distracting technologies. The transient buzz of interactivity overwhelms the actual content or educational value. But the “Pure Land” cave is different ... it points the way forward, demonstrating how the immersion environment can be used to let visitors actively explore and understand complicated cultural objects. ... At last we have a virtual reality system that is worthy of inclusion in a museum devoted to the real stuff of art. (November 30, 2012)

Kennicott’s remarks suggest that digital mediation without immersion – technology for technology’s sake – results in an unsympathetic union of content and platform. This could perhaps be rephrased as a severing of a work of art from its biography.

Conclusion

It is beyond the scope of this chapter to determine whether visitors to fine arts museums assess virtual copies on equal footing with original objects or accept the display of virtual reconstructions as a core function of museum interpretive practice or pedagogy. Much broader continuing research on these questions is required in a range of museological contexts, and it may be the case that shifts in museum professional cultures may precipitate changes in viewer perception as readily as the accelerating acceptance of new types of digital media as socially-normative

viewing and interactive paradigms. Rather, the perceptions of people who experienced *Pure land AR* in this context validate a particular model developed by theorists of cultures of the copy: that the proliferation of aura in digital objects is contingent on the presence of transportive and immersive exchanges between viewer and object that connect the viewer to the histories and traditions of the object's cultural trajectory.

If, as Jeffrey argues, the acceptance of digital copies as authentic objects is dependent on their ability to evoke aura (2015), this description of *Pure land AR* offers avenues for museums to reconsider larger questions of how collecting institutions might renegotiate the relationship between real and virtual materialities. Copies, virtual or otherwise, will never supplant the role of museums to collect significant objects and, by doing so, document cultural narratives. However, the deployment of auratic virtual experiences – particularly through augmented reality as opposed to more individualised virtual reality experiences – has the potential to extend the function of museums from being only repositories of material traces to being dialogic social spaces in which identities and histories are explored through transportive encounters between viewers and objects. The museum might be understood more broadly as a place of memory collection and sensorial formation (Gurian, 1999). We might then recast traditional assignations of object value from the binary consideration of whether the substance of the object is material or immaterial to an affect-oriented question: has the object maintained its cultural trajectory in the place and performance of its encounter?

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Note

- 1 Allowed to select up to three words from a pool of eight positive and negative words to describe this relationship, 74% of participants recorded that *Pure land AR enhances* the exhibition, 66% that it *extends*, 50% that it *embodies* and 28% that it *transports*. One participant (0.4%) recorded that it *detracts*, two (0.8%) that it *devalues*, one (0.4%) that it *confuses*. No participants chose the final option, *replaces*.

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Assets, platforms and affordances

The constitutive role of media in the museum

Kathleen Pirrie Adams

Digital media forms the horizon of much contemporary experience. It surrounds and suffuses family life, education, leisure, market relations, science, statecraft and heritage. Experientially, media permeates our lives at different levels of visibility. Sometimes it is identified as a particular, branded channel; at other times it is spoken about in more general terms, such as social media or the Internet. Increasingly, digital media has the character of infrastructure or source code – invisible but constitutive. By all accounts, digital media has transformed living conditions in the 21st century in ways that have been unpredictable and are now irreversible.

Museums and other heritage institutions inhabit this complex world of overlapping and intersecting media and, as custodians of public memory, have in recent years found it necessary to take this context into account in rendering their public service. At the same time, museums have undergone internal transformations in response to the challenges of the digital revolution. Today the influence of the digital is visible in the organisation of the museum's conversations with its audience; in the tools and techniques that it uses to put its collections in order; within the materials used to animate its exhibitions; and in the organisation of professional roles and workflows. Thus, now as we begin to see traces of digital technology becoming "normative" in organisations, we are challenged to re-think a number of our assumptions about the museum's structures and strategies (Parry, 2013). One way of answering such a challenge is by proposing a new vocabulary for describing the core provision of the museum. By using a vocabulary drawn from the language of software, computation, and interface design, it is possible to develop a conceptual framework that presupposes digital media's presence not only in the museum's surroundings but within its core provision as well. Specifically, what is proposed here is that we think about the collection as comprising "assets," exhibitions as "platforms" and interpretative activities as being about the management of "affordances."

In recent discussions of the epoch-making technologies of the current era, some media scholars have discussed the centrality of computation and networks as central to both emerging world systems and dominant symbolic forms (Hayles, 2007; Castells, 1996; Mansell, 2017; Berry, 2011). In *The language of new media*, one of the foundational texts for this line of inquiry, Lev Manovich (2001) offers an analysis of the general principles of new media to "understand the effects of computerisation on culture as a whole." He speaks of a "process of 'conceptual transfer' from the computer world to the culture at large" and makes explicit reference to Panofsky as an

inspiration for understanding what this entails. Unlike Panofsky, however, Manovich does not employ an art historical method that focusses on finished objects “as reflecting larger cultural patterns.” Rather, he offers a detailed examination of the software tools, their organisation, and the default settings through which the objects of digital culture are constituted and uses this to distil five core principles of new media: numerical representation, modularity, automation, variability and cultural transcoding. Describing his method as “digital materialism,” Manovich asserts that as the computer becomes more integrated within media production of all sorts, “the computer layer will affect the cultural layer.” Thus, Manovich provides a model approach for examining media that takes into account both its symbolic forms and its materiality.

This chapter uses the language of computation and interface design to suggest a way of aligning core museum provision with the symbolic forms of the prevailing culture. It first and foremost proposes a conceptual framework for understanding how media reconfigures a particular existing institution: the museum. It begins with the assumptions that the computer layer and the culture layer exercise mutual influence (Manovich, 2001) and that digital media has become hegemonic. It does not see the process by which the computer layer comes to suffuse cultural communication as inevitable, but it does recognise it as pervasive and highly influential. It presents evidence of the influence of the computer layer on the cultural layer of the museum and notes how this builds on a history of previous media encounters that have informed its structures and strategies. It also suggests that within the context of “the digital,” the symbolic forms associated with it can sometimes be seen within contexts where digital media are insignificant or even absent.

The introduction of this new vocabulary is more than simply a matter of metaphor. The terms “assets,” “platform” and “affordances” in fact operate metonymically, serving as both figures for and links to existing museum practices. They highlight aspects of exhibitions and museum infrastructures that reflect the reconfigured hierarchies of knowledge and experience set in motion by ubiquitous digital media while also offering tacit acknowledgement of what media archaeology has demonstrated – that media itself is a material process (Chun, 2011; Ernst, 2013; Parikka, 2012). It uses examples from a diverse set of institutions, including the MoMA (New York), the Experience Music Project (Seattle), and the Wellcome Collection (London), and refers to artists and curators who are well known for having pioneered approaches that extended the conventional boundaries of the museum.

Because the proposed terminology of “assets,” “platforms” and “affordances” presupposes the digital dimension of contemporary reality, it offers a perspective on what constitutes heritage that is directly informed by media and communication studies. In highlighting the mutability of the museum, the proposed terminology resonates with debates within the museum and art worlds about the institution’s changing social responsibilities and the role media technologies and participatory social practices play in fulfilling those responsibilities. And, in taking an interdisciplinary approach, hopes to demonstrate the value of media studies for museology. Thinking in terms of computational and interface-design structures is, most centrally, useful for dramatising the difference between the additive and the constitutive role of media for the museum. By highlighting the latter, it is my hope that this chapter will resonate with those whose understanding of culture and digitality are inextricable, and perhaps provide them with a useful point of entry into the ongoing dialogue about the future shape of the museum. While this future belongs to those who will inherit and re-invent it, it remains meaningful to those whose work over the past decades has sought to define the museum as a sphere of vital public engagement. A place where prevailing social narratives are contested and rethought; where demands for increased access and accountability have found passionate support; and where innovation and experimentation find thoughtful embrace. In addition to facilitating an intergenerational

dialogue about the future of the museum, the act of translation that this chapter proposes will, it is expected, help illuminate the continued relevance of the museum as both a heritage institution and as a medium for cultural communication.

The collection comprises “assets”

For many years, museums have been viewed as “institutions based on objects” (Hooper-Greenhill, 1995, p. 10), and it has even been said that “museums are not museums if they are not centrally about material culture” (Moore, 1997, p. 23). The term “assets” proposes a reconsideration of such assumptions by providing a generic term that describes the contents of a collection in a manner that highlights the co-existence of a variety of entities. Objects, texts, images, media and records of immaterial culture all assemble beneath the canopy of the term “assets.” Its use here also intentionally highlights the links between the museum and other fields of practice that use this term: specifically, media production and information management. Thus, the museum is situated on a continuum of media practices rather than ensconced in any primary opposition.

The emergence of “asset thinking” can be traced back to the MoMA (New York)’s early efforts to integrate media into its collection, well in advance of the advent of the digital. It is also prefigured in early conversations about museum computing that began in the 1960s and can be seen to have reached a defining moment when the Experience Music Project (Seattle) devised its innovative informational infrastructure at the end of the last millennium.

Use of the term “assets” within the museum context raises two central concerns that merit consideration. The first questions the fate of the collection once the museum’s traditional object-based epistemology gives way to another with increased emphasis on the informational aspect of the artefact, and it introduces apprehension about how this might result in a loss of the sensory, tactile power of the “real” thing. The second concern arises as a consequence of the association of the term with the realms of finance and commercial culture and flags the potential for confusion of market and heritage value.

The most familiar use of the term “asset” refers to a resource controlled by a distinct entity that can expect to reap future benefits from its use or exchange. The term is applied to real estate, livestock and other material belongings, as well as intangibles such as patents, copyrights and stock investments. The association with market value is evident not only in this everyday use of the term but also becomes increasingly prominent in the academic world. And, it is manifest in the efforts of scholars in the field of economics to establish valuation models for cultural goods and heritage assets (Mazzanti, 2002; Held, 2014; Zorloni, 2013; Zeybek, Yozgat, & Gurunlu, 2016). Concern about the loss of a sense of intrinsic value resulting from the inundation of neoliberal values within the arts and humanities is not unfounded. The creation of financial products specifically focussed on art as an “asset class” with superior market performance, and the undermining effect that overheated markets have on public life and shared cultural heritage, for instance, give weight to this disquiet. Perhaps the most poignant example of this in recent years is seen in the attempt on the part of trustees of the state of Michigan in 2013 to initiate the sale of the renowned collection of the Detroit Art Institute to pay off municipal debts. But the proposed use of the term here has less to do with a notion of value as something dormant until reaped through a process of liquidation than it does with a performative understanding of value.

Within the context of media production workflow, the term is commonly used to describe elements (photos, videos, sound files, animations, 3-D models, etc.) that are integrated into a single presentation. When stored in the database, such elements might be described as “assets.” However, once they are in use, they are reconfigured as content. A website, for instance, is essentially a set of assets that have been “deployed” when addressed by a user. This process of activation

has been discussed in reference to the “real-time” character of the Internet (Lovink, 2012; Berry, 2011) and can be summarised as the “processing of information ... at such speed that it allows for access without perceptible delay” (Weltevrede, Helmund, & Gerlitz, 2014, p. 128). This technological transformation of time is one of the central effects of the “computational turn” (Berry, 2011). And, it has been the subject of detailed research relating to the underlying structures that sustain it (Gehl, 2011), its broad social effects (Hassan & Purser, 2007) and the platform-specific configurations that embed specific temporalities in the “back-end” (Weltevrede et al., 2014). While new media intensifies a set of questions relating to immediacy, museum collections, as storehouses of history and memory, have always been concerned with time. Thus, it is possible to see that each era in museum history reflects a unique temporal framework. Early efforts by museums – such as the V&A (London), the Smithsonian (Washington), the George Eastman Museum (Rochester), and the MoMA (New York) – to collect “new media” cultural materials such as photography, music and film, not only stretched the conceptual boundaries of the collection, they also refashioned the kinds of temporal experience associated with the museum. And it is within such efforts that we can see an early instance of the relevance of “asset-thinking.” Perhaps the most striking example of which is visible in the history of the MoMA (New York)’s Department of Film and Video.

Established in 1935 at the behest of Alfred Barr Jr., the museum’s original director, the MoMA (New York)’s film department was “tasked with saving and exhibiting films that were in danger of being forever lost to public view” (Wasson, 2005, p. 1). Under the leadership of British film critic Iris Barry, the museum began to collect, preserve, restore and screen film “classics” and related artefacts. This undertaking proved to be no simple operation, as the museum was also regularly required to justify its relevance and cultural value.

The product of photochemical processes, the “film object” possessed a highly unstable materiality, one that existed in a “perpetual state of decomposition” (Slide, 2000, p. 3). As a time-based medium, it was also a dormant object that required playback to disclose its cultural significance. Thus entailing acquisition or use of another set of objects for its display: the projector, screen and sound system. As film historian Haidee Wasson (2005, p. 8) succinctly puts it, “the film object was like no other cultural object.” As a mass medium, film brought questions about the original and the copy directly into the archive, along with challenges relating to the system of legal rights that defined it as an object of the entertainment industry. Early on, the collection also began to amass the ephemera of film history – posters, fan magazines, business documents and production materials – as the archive sought to preserve and make sense of “film history’s sprawled and varied remains” (Wasson, 2005, pp. 114, 4).

The archiving of film changed the ephemeral condition of its cultural and material life and made possible new forms of attention arising from repeated viewing (Wasson, 2005, p. 6). Removed from the production and consumption cycles of the commercial ethos, the films of the collection were relocated within new temporal frameworks informed by historical reflection and “the formation of a creative and critical community around cinema” (Wasson, 2005, p. 105). At the same time as the cultural identity of film was being transformed by its inclusion in the museum collection, it was, in turn, exerting a modifying influence on some of the conventions of its new habitat. As a time-based medium that had to be played to be seen, film introduced the new temporality of the screening into the museum. It also challenged conventional thinking about the museum’s collection because of the copyrights that attached to many of the films it acquired. With this medium, the ownership of copyrights often remained distinct from the possession of the material artefact. Ownership of the object did not automatically entail the right to its public display.

Collecting and exhibiting film realised Barr’s ambition of “inserting the museum into the ephemeral dialogues that characterise modernity” (Wasson, 2005, p. 85). For, through its film

programmes, the MoMA (New York) expanded its audience both for the actual museum (helping to increase overall attendance by one-third) and at the national level through its travelling programmes and broadcast partnerships (Wasson, 2005, p. 155–162). Despite resistance and outright opposition from “untrusting trustees,” and notwithstanding the voices within the popular press questioning whether film belonged in the museum alongside more respectable cultural endeavours (Wasson, 2005, p. 120–27), the MoMA (New York) was, over time, successful in integrating the new media into its remit. And this served to inspire other institutional efforts (such as those of the Motion Pictures Division of the U.S. National Archives, the British Film Institute, the Worker’s Film and Photo League, and the Harvard Film Foundation) to collect, preserve and exhibit film.

Thus, the museum’s commitment to collecting film had relocated a number of its institutional boundaries: both practical and conceptual. As a form of mechanically reproducible recorded media, film challenged certain presumptions about materiality and object-hood even though, as an analogue media, film could still fulfil certain traditional expectations regarding the museum’s identification with its material objects. It also began to redefine how the museum thought about and communicated with its audience. In keeping with the vision of the museum’s director, the inclusion of a new medium within the museum collection involved it in a broader cultural conversation. As the museum’s first time-based media content, film played a pivotal role in changing institutional thinking about cultural value. Its inclusion in the museum led to the reorganisation of certain exhibition routines and stretched the definition of the museum object. Similarly, the integration of computers within the museum’s collections infrastructure had a profound effect on the possibility of imagining collections in terms of “assets.” Principally, it radicalised thinking about what might constitute an artefact, moving it away from a strictly material conception toward a more informational one. Also, the museum’s efforts to introduce automation to collections management quickly led to the spread of supportive networks of knowledge and expertise sharing, some of which evolved into formal professional associations.

Recoding the museum: Digital heritage and the technologies of change, Ross Parry’s account of the early history of museum computing, examines the explorations of collections automation undertaken by the Smithsonian Institute, Museum Computer Network project, the Information Retrieval Group of the Museums Association. It situates these initiatives within a context of the rapid expansion of the heritage field and increased demands for access that gave rise to the juggernaut of standardisation and sharing within the museum sector (Parry, 2007, p. 15–28). Parry’s narrative highlights how the development of systematic general information structures and the notion of interoperability by museum computing professionals transformed the collection from a container to a part of a network. Parry also points out how a comparison between museum collections and those of libraries, a related public memory institution similarly tasked with massive record keeping, made obvious one of the museum’s distinguishing features. For libraries, it was mainly the information of the title page that needed to be captured. But once written up as a record, such information remained essentially static. In contrast, the museum record had to reflect the ongoing development of knowledge about a given item. Museums had unique objects, not standard and duplicated items. And, unlike libraries, museums needed to document the history and the meaning of that object (Parry, 2007, p. 23). Thus, even in its most fixed material form, through the lens of the new computerised collections management tools, it became strikingly evident that the museum object possesses a dynamic social character.

For some, the expansion of the museum’s media infrastructure represented an unsettling drift away from the traditional understanding of the museum as an institution necessarily rooted in materialism. And this gave rise to a sense that the sensory, tactile of the “real” thing was at risk to the “virtual” (Parry, 2007). However, while both computation and time-based media present

challenges to the museum's traditional object-based epistemology, the outcome of those challenges has been far from a simple demotion of the material object. What has emerged, instead, has been a new emphasis – visible in the work of scholars like Sandra Dudley (2010) and Helen Chatterjee (2008) – on the material object as something “consist[ing] of an enmeshing of the physical thing and human sensory perception of it.” And a deepening concern for how “the object's sensible attributes still speak in the absence of information” (Dudley, 2010, p. 6–11). Thus, rather than being demoted, the particularity of the physical artefact becomes more pronounced within the context of abstract equivalence provided by “asset-thinking.” The distinguishing value of the physical presence of the object is understood as being precisely about its potential for hosting embodied encounters that have the ability to excite awareness of our own sensory, spatial experience, and to welcome the affective and subjective understandings upon which experiences of awe, wonder and absorption rest.

The emergence of the notion that a museum collection might comprise “assets” rather than objects or artefacts is rooted in the museum's digitisation of its collections infrastructure and its integration of time-based media objects (including documentation of intangible and performance-based cultural heritage). For many museums, these sorts of developments are grafted onto pre-existing structures grounded in the object-based epistemology. For others, such as science centres and children's museums, the traditional understanding of the collection has already been reinterpreted through the lens of “the experiential” (Hein, 2000). As a result, these types of museums have proven more amenable to the idea of the museum as an “information utility,” an institution in which artefacts, audio-visual materials, databases, staff expertise, oral histories, replicas, re-enactments and live performances are understood as complementary, layered and overlapping communicative resources (MacDonald & Alford, 1991). Perhaps the most striking example of a museum that puts this information-oriented approach into practice is the Experience Music Project in Seattle, Washington. It is here that we can see not only the collection conceived of as assets but also the development of a model of its use that puts the collection in direct contact with the museum's audience in a way that reimagines the dynamic of deposit and deployment.

The Experience Music Project (Seattle) grew out of Microsoft co-founder Paul Allen's efforts to establish a museum to honour the legacy of another Seattle native, Jimi Hendrix. Allen initially conceived the museum as an establishment that would house his collection of music memorabilia. The group that Allen assembled to develop and design his “Hendrix museum” included a curator from the Museum of History and Industry, several architects and two popular music experts. The team sought to actively re-think the provision of the museum to welcome a general audience and take full advantage of the opportunities represented by new technology (Bruce, 2006, p. 132). They immersed themselves in an intense period of research, suspending all presuppositions about the centrality of the material artefact and allowing questions of audience engagement to take centre stage. When the process was complete, what emerged was a museum designed with the Internet as its conceptual model: “non-hierarchical and multilayered, with ‘browser’ capabilities for vast amounts of information ‘available to all’” (Bruce, 2006, p. 148). Exhibitions were designed to let “visitors explore their own creativity” rather than have them follow the historical narrative set out by the museum (Blecha, 2005, p. 85), and networked with the collections so that visitors could “bring the museum's activities directly into the home” (Woog, 2000, p. 13). To this end, the Experience Music Project (Seattle) created the digital collection interface in such a way that “storytelling capabilities were facilitated by the symbiotic relationship between the museum's cataloguing system and workstation in the Digital Lab and the Web” (Andolsek & Freedman, 2001). Another important element in this information ecosystem was the Museum Exhibit Guide (MEG): a handheld device that provided access to

enhanced artefact descriptions, broadcast-quality videos, music and oral histories which visitors could bookmark and call up later online. In short, the system provided each museum visitor with “tools to build their own pathways” (Parry, 2008, p. 180) and facilitate the creation of “drillable” follow-up opportunities in which they could undertake a focussed and concentrated exploration of content (Jenkins, Ford, & Green, 2013). The MEG system was retired in 2006 because of its resource-heavy demands: the 2,500 custom hardware devices requiring daily maintenance to transfer visitor data to the website, update content, clean and recharge (Andolsek & Freeman, 2001). Nevertheless, it made a significant contribution to the reconceptualisation of several aspects of the museum collection, including what the collection might comprise and how the collection might interface with other core provisions of the museum. It had successfully introduced an approach that blurred the traditional distinction between artefact and document, fostering the emergence of hybrid objects and flexible taxonomies.

Because the term “assets” provides a non-specific and non-hierarchical description, it allows for the coexistence of various elements or entities. Using the word to describe the contents of the museum’s collection thus suggests a way to think about how media, material and immaterial culture co-exist within it. And it highlights how these various elements operate in concert and how heritage value manifests itself within a wide range of contexts for public engagement – including exhibition, tagging, liking, commenting, researching, linking, circulating and sharing. This ecumenical, medium-agnostic approach to collecting, on the one hand, emphasises the equivalence of the items in the collection in the latent state of deposit, while on the other stressing their particularity when deployed or put to communicative use. Although earlier the term “assets” was set apart from markets and money, the term “assets” nevertheless retains the suggestion that there is latent within it the possibility of reaping future benefits from use or exchange. The museum’s holdings are its assets in the sense that they have potential use in the occasioning of heritage. Thus, thinking about the museum’s collection as its assets serves to reinforce the institution’s legitimacy as the custodian of a shared cultural property.

Exhibitions are “platforms”

Thinking about exhibitions as “platforms” provides a clear illustration of how the 21st-century museum has been moving away from a transmission model of communication and replacing it with transactional and participatory models (Drotner & Schröder, 2013). Like the term “assets,” the term “platform” brings with it connotations from the various contexts in which it has previously been used, including software development, theatrical and multi-modal models of exhibition design and its politicised use within the context of contemporary art. A platform is a place where something assembles, and as such, it implies a performative or active making of meaning. In today’s culture, the idea of actively making meaning is routinely associated with social media and the forms of participation associated with it. The value of the term “platform” finds illustration in two contemporary exhibitions of art and culture – *Nirvana: Taking punk to the masses* and *12 ballads for the Huguenot House* – while simultaneously taking into account some of the critical discussions of participation that help clarify the contours of “platform thinking.”

In the context of computing, a “platform” is the site of a software application’s execution. It is both structured and dynamic, which differentiates it from a device (a thing made for a particular purpose), but not purpose-made, which differentiates it from software. Although it has a functional infrastructure, it is one that hosts or is responsive to multiple inputs or options in a manner that operates more or less invisibly. For instance, when in use, mobile applications tend to obscure the operations of the smartphone or tablet platform that hosts them. The user engages with the app rather than the phone, the sociability of which is strengthened by its being part of

a network. And, there is something important in this for, indeed, the structure of a platform is unlike that of a monopoly or monolith in that it accommodates the activities of various others (users, apps, agents, etc.) according to shared standards for compatibility rather than controlling action or predetermining outcomes. In fact, the term “platform” helps re-conceptualise museum exhibition precisely because it implies both a performative dynamic and an underlying structure.

Recent scholarship focussing on exhibition design suggest a growing interest in the need to develop conceptual models that will explain and address aspects of exhibition experience that are marginalised by textual or narrative models. Rather than conceiving of exhibitions as a form of “storytelling,” they entertain conceptual models that reference scenography, spectacle and the creation of dramatic intensities (Crawley, 2012; Bruce, 2006; Skolnick, 2012), and characterise exhibitions as labyrinthine or prismatic (Basu, 2007; Peña Ovalle, 2009) spaces of navigation (Hillier & Tzortzi, 2007). Such discussions often take for granted the role of media, looking at it not as something that operates in isolation but as part of a complex of forces at play in shaping and reshaping display conventions in ways that are dynamic, nonlinear and reconfigurable. In the context of exhibition-making, the term “platform” calls to mind the theatrical aspects of public presentation that see the museum “become a site for the production of new experiences” (McQuire & Radywyle, 2010, p. 17). In Seattle, the Experience Music Project’s *Nirvana: Taking punk to the masses* is an exhibition characterised by such properties. And, as such, it provides an excellent opportunity to observe “platform thinking” at work.

Nirvana: Taking punk to the masses is a dynamic, multi-media history of the emergence of the underground music into the mainstream in the early 1990s. It brings together artefacts, oral histories, interactives, graphics, music and video to tell the story of the band Nirvana’s rise to fame, situating it within a broader social history. The exhibition is organised in a manner that emphasises a cultural narrative that includes the band’s influences, fans, ambivalent involvements with the music industry and, to some extent, the political landscape of the early 1990s.

The exhibition occupies a u-shaped space organised to communicate the overlapping narrative threads. One strand traces the evolution of the local scene in which a network of musicians, fans, promoters and journalists created the culture from which Nirvana emerged. The other makes reference to an overarching constellation of musical influences and inspirations that extended well beyond Seattle in the late 1980s, connecting that world to other faraway times and places such as the mid-’70s New York of Patti Smith and Television, or the Southern California hardcore scene of the early 1980s. The idea is made manifest in spatial terms by unscrolling the two stories along the inner and outer walls of the exhibition space and offering the visitor a path through the content, but no vista from which to collect it as a single visual panorama. Behind the inner wall of the passageway resides a chamber in which fan testimonials are recorded and screened. The exhibition includes more than two hundred labelled artefacts and more than four hours of audio-visual material. As a layered and variegated experience involving artefacts, expository text, screened and projected video, touch-screen kiosks, infographics, listening stations, a recording booth and an ambient soundtrack, the exhibition has a density that is immersive but far too rich and too complex to consume in even the most extended visit. Instead, the exhibition offers the visitor a context in which to engage in open-ended and self-directed sense-making activities, and, in so doing, the museum withdraws from the role of narrative authority and moves toward that of experiential information resource. The history of Nirvana is presented here as one without a single, authoritative narrative through-line, as a set of overlapping life-worlds involving both imagination and practice, the local and global: a fragmented history in need of assembly by the visitor.

Thus, like the “platform,” the Nirvana exhibition serves as a place to stage meaning in a manner that is dynamic and non-monopolistic, responsive to multiple inputs, structured but without

narrowly prescribed outcomes. It hosts a range of possible encounters by serving as a point of contact between individual and institution, between the database and the user, between a history (of the band) and those who are invited to make sense of it (the exhibition audience). The limit of this open-mindedness, however, is evident in the online component of the exhibition, where fans are invited to “share their Nirvana” but can only do so on platforms that allow posting but do not support dialogue, exchange or co-creation – the activities usually associated with participatory media. Interestingly, in a context frequently imagined as a site for the untrammelled exercise of the audience’s agency, using software with relatively restrictive parameters affords the underlying structures of communication and the institution’s agency an unexpected visibility.

The question of “participation” is one that vexes both media theorists (Gehl, 2011; Langois, 2012; Beer, 2013; Mansell, 2017) and critics and curators concerned with contemporary art and museums (Rogoff, 2005; Bishop, 2012; Kundu & Kalin, 2015; Noy, 2016). Academics whose research focusses on the overlap of social media and the museum also seek to understand how participatory media “merges heritage with the every day” (Giaccardi, 2012) and increases visitor involvement (Simon, 2010). Or, how participatory media challenges organisational forms of authority and reflects the interests of the corporations that freely provide the social networking applications (Drotner & Schröder, 2013). Broadly speaking, the paradox at the heart of the participatory paradigm is one of “agency”; that is, of “the good intentions of recognition” obscuring questions of what constitutes the public realm and defines a consequential claim within that realm (Rogoff, 2005). Nowhere is the issue more thoughtfully illuminated than in José van Dijck’s *The culture of connectivity: A critical history of social media* (2013). Here, the author demonstrates how the seemingly naturally occurring, informal and ephemeral communication that takes place within social media is in fact highly engineered and proprietary. And how it exists within a context in which the “pinnacle of a company’s success ... [occurs] when a brand turns into a verb” (van Dijck, 2013, p. 7). The “veneer of simplicity” that treats the social as self-apparent and perhaps even self-generative does so at the cost of erasing the physical dimension of the network and the central position held by corporations in the historic coevolution of these new public spaces. Having established her analytical framework, van Dijck goes on to systematically disassemble the structure of several branded social media platforms according to their use of technology, user activities, content generation, ownership, governance and business model. By highlighting the distinct structure and use of each platform, the analysis also enacts a significant disassembly of the generic category of “social media” itself and offers in its stead the more precise phrase “platformed sociality.”

Of course, a critical analysis such as this has a political agenda. For van Dijck, the objective is to call into question the process of “making sociality saleable” (van Dijck, 2013, p. 14). In part, to resist the marginalisation of those dimensions of communication that are difficult to reconcile with the dominant tropes of “platformed sociality”: sharing, trending, following and favouring (or, “favouriting” in the lexicon of life online). This is important because it constitutes these core categories from within the phenomenon, thus limiting the use of overly abstract types such as are found in claims about the “democratising” effects of networks or social media. Although the museum exhibition is not strictly speaking a “branded platform,” it is nevertheless important to acknowledge and reflect on the role of the institution as the source of “shared standards” for participation. Thus, the term platform, in addition to emphasising the dynamic process of making meaning, can also bring to light the underlying structures that condition museum communication.

One of the most influential early uses of the term “platform” within the contemporary art world occurred when curator Okwui Enwezor used it to frame a series of five issue-oriented zones of public engagement for Documenta11 in 2002. Here, the term “platform”

was employed to create a space for dialogue but also invoke the infrastructure underlying the exhibition to decentre curatorial authority and bracket its tendency to pursue the conquest of the new and the other (Lamoureux, 2005, p. 72). Enwezor's approach was an "insistently transnational, interdisciplinary and transgenerational ... [series of] discursive, public interventions ... creating a network of partners, collaborators, and interlocutors." It was seen as having re-conceived the exhibition as an "overflowing abundance of elements" (Lamoureux, 2005, p. 73) and extended the critical positions of earlier practices of site-specificity and institutional critique. By engaging the notion that the work involves collaboration with the audience, Enwezor advanced a line of thinking introduced by Duchamp that has now become widely recognised as a central proposition of contemporary art. Recognition of the polysemous character of art and its inevitable incompleteness (McQuire & Radywyl, 2010, p. 15) suggests that the discursive origin of the notion of the platform is as important as the influence of any particular technology. A further reflection of this attitude is visible in the work of artists such as Lucy Orta, Rirkrit Tiravanija, Olafur Eliasson and Tino Sehgal, for whom the exhibition is defined by what is possible as much as by what is produced. They share an approach to the exhibition that treats it as a framework for initiating experiments and conversations, orchestrating social and phenomenological experiences or instigating audience interaction. In such circumstances, the exhibition provides the platform for the execution of a public act of display, but one without a predetermined outcome.

Theaster Gates' project, *12 ballads for the Huguenot House* (2012), which was produced by the Museum of Contemporary Art (Chicago) for presentation at Documenta13, provides a compelling example of this sort of "platform thinking," even though the exhibition bore no direct relation to digital media. Characterised by one of the participants as a "love song from one vacant building to another" (Preus, 2012), the project involved the transport of materials salvaged from an abandoned residential building and a decommissioned school in Chicago's South Side to another abandoned property: the Huguenot House in Kassel. That neither building belonged to the commissioning museum meant that the institution constructed the "platform" off-site rather than within its galleries. With nine builders living on-site, the Huguenot House was cleaned, repaired and made habitable again. It then became the site for an installation and performance space that hosted performances by The Black Monks of Mississippi, a Chicago-based musical ensemble who have collaborated with Gates for some years. With a background in urban planning, ceramics and religious studies, Gates' approach to art-making is multi-dimensional and interdisciplinary. His projects raise questions about how materials from one place (Chicago) can be relevant to another (Kassel), how materials are transformed through repurposing but also bring meaning with them, acting as stand-ins for people or past times. Gates also talks about how "acts of restoration" create or renew cultural life, and how the "reactivation of sites" provides a context for thinking about how communities are formed (TEDTalks, 2015).

12 ballads for the Huguenot House marks its multiplicity in its title. The songs took shape in a Chicago building during an 18-hour jam session that happened just before demolition workers gutted the building. Video recordings of the Black Monks of Mississippi's performance appear in the rooms of the Huguenot House, bringing with them their power to re-activate the neglected space. Live musicians further augment the animation by staging informal rehearsal-like performances. Despite the quality of the music, its making was suffused with a sense of the ephemeral and even incidental – especially when surrounded by other everyday activities, such as sleeping and cooking, and rendered atmospheric by the steady flow of visitors. Even without any direct or obvious relation to digital culture, the exhibition in Kassel reflects the dynamic character of the platform, an underlying structure upon which things (including concepts and social bonds) can be fashioned.

Imagined as a “platform,” the exhibition evokes new associations with shared space, multi-modality, multi-media and non-monopolistic agency. It helps reveal the symbolic forms and social bonds that constitute the underlying structures of the exhibition, but it does not erase the sense of the exhibition as a site of staged display. It finds resonance with the discourse of visitor-centred museum but avoids the confusion of cultural expression and democratisation often seen in the celebratory rhetoric surrounding “the participatory.” Because the term emerges from the realms of computational and networked communication, it lives comfortably within “the digital” and the related notion of overlapping informational networks. But, because it also takes into account the use of the term within contemporary art to evoke the kind of social space-making that both favours the event over the object and calls into question centralised authority, it does so without making it an end in itself.

Interpretation involves the management of “affordances”

The dynamic relations made evident when the exhibition is reconceived as a “platform” also affect the conventional understanding of the interpretive functions of the museum. One way to account for these changes is to reframe the interpretive activities in reference to “affordances.” Historically, the interpretive role has been the monopoly of the museum and its curators. The term “affordances” is imported from the field of user-experience design to release interpretation from institutional authority and render it relational. It is also useful for describing emerging curatorial practices because it draws together both physical and digital aspects of design applications within the same process. This conveniently parallels the evolving communicative routines of the museum, which increasingly involve the production of multi-channelled messaging meant to engage the complex subjectivities of its audiences. Thus, employing this term is one way to begin to answer the questions: How does the museum realise its interpretive provision in light of the emerging forms of digital communication that diffuse the organisation’s interpretative authority? And, how can the museum’s acts of interpretation mesh with those generated by its increasingly diverse audience?

“Affordance” is a term first used by cognitive psychologist James J. Gibson in his book *The ecological approach to visual perception* (1979/2015) to denote the possibility of action latent in a given environment or object. A stick, for example, affords prying, poking, striking, leveraging and so on, while a cave affords sheltering, hiding or nesting. The central significance of Gibson’s development of the idea of affordances is that it shifted thinking about how humans engaged with their environment, and especially the objects that populated it, away from the self-apparent character of functional interaction toward a more adaptive and improvisational understanding. A decade later, designer Donald Norman gave the term a slightly different emphasis when he established the principles of user-centred design for human-machine interactions (1988). Here, the discoverable possibility for action is tied more directly to practical design problems and thus more directly associated with the clues a given design provides the user. In thinking about the guidance that design offered to action, Norman also encouraged an increased awareness on the part of the designer of the conceptual models that people bring with them to the encounter with the thing. By highlighting the relational character of design communication, the complex dynamic between the actual and the possible, he redefined design as a process of invitation rather than prescription. Thus, the user’s habitual or improvisational response becomes an important part of what the term “affordances” references. Here, again, we employ a term that includes but is not limited to any particular medium, but that is part of the spectrum of communication in today’s world – including but not restricted to the contemporary museum.

If the introduction of the notion of affordances evokes the concept of the interface, it is not by coincidence. Whereas once scholars spoke about “media and the museum” or “media in the

museum,” today we see the claim made the museum itself is a media-form (Henning, 2006). As a result, awareness of the mediating being done by the institution heightens, and the tools, techniques and traditions that facilitate its mediations become more readily apparent to both critics and those tasked with guiding its communications strategies. Like an interface, the museum promotes the contact between different components; it is a point of intersection. It “delimits a cultural space, within which a specific set of relations may occur” (Hookway, 2014, p. 17). An interface conditions the making and circulation of information and meaning according to its surface arrangement, its connectivity, depth, responsiveness and reconfigurability. The way an interface positions itself between things is dynamic but creates thresholds and boundaries that condition what may occur – it is not “randomly extended” (Chun, 2011). Because the museum operates as an interface, its interpretive provision thus becomes the management of affordances with the curator assuming increased responsibility for configuring the museum’s public programs as sites for engagement and the negotiation of interpretive possibilities. Consequently, there is a shift in emphasis from a narrative or thesis-driven communicative approach to a practice involving fields of information and perceptual filters. A final example from the Experience Music Project (Seattle) helps illustrate how this is manifest.

The Seattle Band Map is an example of a museum project that successfully realises the interpretive provision by approaching it as an informational field and working with the expectations, attitudes and prior knowledge of its audience. The project consists of two side-by-side 8x12-foot murals that trace the connections between members of the numerous bands that make up the Seattle music scene. One wall summarises the crowd-sourced findings of musician and DJ Rachel Ratner’s efforts to document and map the scene’s sprawling network of musical collaborations. The other uses a dry-erase board to invite audiences to contribute and continue the project, making additions and amendments. Ratner manages the affordances of this simple, low-tech interface to facilitate a high level of audience involvement. The curatorial minimalism of this project – consisting chiefly of framing a question and then inviting the public to help answer it – reflects a model of practice that is less narrative or thesis-driven than is traditional in the museum world. It is a method that is more open to hypothesis, concerned with affect, less declarative than interrogative, and more amenable to experimentation and collective activity. It starts from a position in which the information it contains can be reconfigured and uses a mode of communication that is inherently dialogic. Thus, the museum’s interpretive efforts afford the possibility of audiences sharing their knowledge with one another as well as communicating the institution’s recognition of the significance of cultural memory as something that is co-owned with the public.

The management of affordances does not necessarily involve the audience in “hands-on” participation. As a recent exhibition at the Wellcome Collection (London) illustrates, the museum has other ways of manifesting a non-monopolistic approach to interpretation, one that encourages the production of a range of possible meanings. *This is a voice* is an exhibition that explores the properties of the human voice from a variety of perspectives using a diverse set of media. It brings together medical illustrations and devices, ethnographic objects and contemporary artworks by Marcus Coates, Jochen Gerz and Imogen Stidworthy, with documentation of performances by acclaimed vocalists such as Laurie Anderson, Joan La Barbara and Meredith Monk. Two lullabies – one from Uganda, the other from India – play inside a partially enclosed listening cove, creating an intimate and focussed encounter with a musical form that for millennia has been used to facilitate emotional bonding and support language development. Another of the projects in the exhibition documents a performance by the German conceptual artist Jochen Gerz, who has recorded himself standing some distance from the camera shouting “hello” over and over for almost 20 minutes until his voice becomes so hoarse it becomes impossible for

him to continue. Other exhibits include displays of tools used in the diagnosis and treatment of throat conditions; a tubercular larynx and trachea in a specimen jar; and a print of the topography of the Liverpool accent created with voice analysis software. As well, there is a notebook that belonged to Virginia Woolf in which she complains of the “horrible voices” that precipitated her nervous breakdown (Muñoz, 2016).

Interestingly, the “affordance oriented” curatorial practice preserves the value of material culture within its broader medium-agnostic framework. It stages the exhibition of the material or media object according to the particular communicative needs of each for proximity, duration, light level and volume. And, in its interpretive attention to staging, evident in the creation of thematic zones where historically distant artefacts coexist, offering the audience an opportunity to compare, contrast and connect, the “affordance oriented” approach highlights the particularity of each component. Thus, it helps dissolve the “unhelpful” opposition between material culture and multimedia (Witcomb, 2010) that sees the one threatening the value of the other. Rather than viewing media as additive, it offers a perspective that views material culture as a medium and media as having material dimension.

Reframing the museum’s interpretive provision as a process entailing the management of “affordances” allows us to envision the role of the curator in terms that directly correspond to the understanding established earlier of the museum’s collection as “assets” and its exhibitions as “platforms” for the presentation of art and ideas. Some might see in this a loss of narrative certainty, but the examples of “affordance-oriented” curation offered above make evident the value of an approach to interpretation informed less by text-making and more by a facilitative approach to curation. One in which the curator presupposes that the audience will selectively engage with and appropriate content and fuse it with the information and knowledge they bring with them, or that which they might subsequently pursue on one of the museum’s other platforms. Thus, understanding museum interpretation as the management of “affordances” allows for digital media but does so within a broader context of museum communication and audience appropriation. It takes us beyond the transmission model of communication in its recognition of the constitutive role played by the visitor in the making of meaning. And, finally, it situates the museum within a broader context of communication in which digital media has become normative and operates in a manner that results in all media influenced by its structures and symbolic forms.

Conclusion

We began this consideration of the constitutive role of media in the museum with an inversion of the recommendation of an early champion of digital heritage, the museum director George MacDonald. Rather than, as MacDonald recommended, establishing analogies between “the real-world museum” and new media capacities, we have proposed a reverse comparison suggesting that traditional museum provision be rethought in reference to computation and interface design (MacDonald & Alsford, 1997). This inversion is not merely a literary device; rather, it is a declaration about an epistemological shift. The substitution of the terms “assets,” “platforms” and “affordances” for collections, exhibitions and interpretation reflect how powerful the new communication technologies have been in shaping definitions of culture, heritage, memory and materiality. These large-scale issues bear across all disciplines and social practices. The culture of the museum and the discipline that studies it are also subject to the seismic shifts of “the digital” that have rearranged mass media, educational institutions, government and the economy. While it is important to imagine these changes in ways that are critical and grounded in actual practice, it is also important to consider how they organise the patterned arrangement of elements,

the forms, that condition experience. According to literary critic Caroline Levine, forms are “abstract and portable organising principles” that limit, differentiate, overlap and intersect, travel and operate within particular historical contexts (Levine, 2015, p. 5–7). They stabilise communication, but because communication takes place in particular historical contexts using specific materials and agents, forms are variable rather than fixed stabilities. And so, to appreciate the range of possible variations, she recommends that we think of forms in both aesthetic and socio-political terms, as assemblages constituted both materially and symbolically.

Throughout this chapter, we have approached the museum as a site of media convergence within which media enlarges and augments the institution’s communicative potential. We have seen how media as museum content (film, video, music, games) connects the museum to the entertainment industries in a way that transforms the structure of the collection as well as the status of the entertainment sector’s products. We have seen how the museum’s digital infrastructure can connect the collection directly to the exhibition and itself become one of the platforms for audience engagement. And, within the context of public presentation, we have seen how the museum’s use of media and network help it establish a new range of relations with audiences, redefining interpretive agency and along with it the role of the curator. Thus, this chapter has provided an account of the museum that shows how its absorption of the symbolic forms of digital media match its operational logic to that of the broader mediascape that it resides within. However, several issues that have arisen during the discussion warrant much more detailed consideration than can be provided here. Most significantly, the casually made claims about the inherently democratising effects of participatory media deserve a more sustained critical examination than can be offered here.

And, there remains a pressing need to develop a methodology for media analysis from the concept of “assemblages,” which holds promise but at present remains somewhat abstract. Despite such unresolved issues, translating the core provision of the museum into the language of computation and design thinking has opened up a productive space for thinking about the museum’s relation to media as one that is constitutive rather than additive.

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Feeling the exhibition

Design for an immersive and sensory exhibition experience

Maholo Uchida and Jingyu Peng

Sensorially, what does a museum experience “feel” like? We can listen to an audio guide, to background music and to sound effects of an exhibition; we can touch and handle replicas; we can smell the odour of different materials; we may even feel vibration and movement. It is a multi-sensory experience, processed by the human brain through multiple channels (Pascual-Leone & Hamilton, 2001). Consequently, it is reasonable for the museum to consider shaping and creating a multi-sensory visiting experience, one that assumes combinations and interactions through the visual, the auditory, the olfactory, the tactile and other senses.

Inspired by what it sees as a “sensory turn” in both museum studies and museum practice, this chapter aims to understand in-gallery technology from a sense perspective. The chapter considers research relating to the human sensory experience as set out, in particular, within the humanities and social sciences, reflecting on the implications of this work for the subject of museum studies. By reviewing a range of current examples of vivid and creative digital practice, what emerges is a new sensibility to both multi-sensory and immersive experiences within the museum. The discussion here starts by thinking through the evolving relationship between in-gallery digital technology and visitors’ sensory experience, and what this means for mediated communication within the museum. It highlights an emerging approach to thinking about and designing digital installations. Specifically, it is suggested here that the concept of “scenography” – a term with a theatrical background – may provide a compelling means through which to design the museum’s “technologies of display” (Parry & Sawyer, 2005). Building upon the concept of “time-based media,” our discussion aims to explore (and to some extent project forward) a notion of “time-based scenography” within a museum context. It is proposed that, using the dynamic nature of media technology, time-based scenography can be a powerful bridge between museum collections, space and visitor experience. Working from this assumption, what is offered here is an overview of the influence and effect of time-based scenography in the exhibition, including the use of interactive and sensory media, as well as the use of new virtual reality technologies and 360-degree viewing systems. To assist this, we will look through two instances of a time-based scenographic approach being used in practice: *Geo-cosmos* at Miraikan (The National Museum of Emerging Science and Innovation, Tokyo); and *Björk digital*, the world’s first VR album and exhibition tour.

The “sensory turn”

In the realm of the humanities and social sciences, a discursive shift has taken place, especially over the last 30 years, to recover a comprehensive understanding of the body and the senses. The understanding of the sensual has been limited, with no clear set of canonical theory to guide its thinking (Howes, 2005). It is an academic discourse that we might trace back to the 20th century, and to works such as *Les cinq sens*, by French philosopher Michel Serres (1985), and its conception of a human body built through its senses (Connor, 2005). The great American naturalist Henry David Thoreau held a similar perspective, proposing that the body should be free and enjoy sensations at leisure (Friesen, 2005). Equally, McLuhan (1961) reminds us that “sense” can be understood as not just a product of biology and psychology, but can also carry social and cultural significances. Indeed, according to Classen (2005a), sensory experience is seen as completely permeated with social values – smells, sounds and touch all having their underlying personal and shared meanings. Here the sensory becomes a tool for people to express themselves and to communicate with others; in Classen’s (2005a) words, it is something one lives.

Increasing attention has been paid to the study of the human sensorium and senses from many disciplines within the humanities and social science, starting from history and anthropology in the 1980s, then spreading to sociology, geography, archaeology and other subject areas (Howes, 2013). Enlivened and defined by multi-disciplinary and cross-disciplinary perspectives, at the end of the 20th century, the academy saw the emergence of a defined field of “sensory studies,” driven by key scholars such as anthropologist David Howes, historian Constance Classen and sociologist Antony Synnott, and their pivotal work at the Centre for Sensory Studies, Concordia University in 1988 (Howes, 1991, 2005; Classen, 2005b).

The field of museum studies too has been affected by this prosperity of sensory studies. We see Pye (2007) rethinking the role of touch in museums and proposing ways of thinking about the impact of object handling on participation and accessibility. We see Chatterjee (2008) exploring the value of object encounters, attempting to establish a conceptual framework for understanding the benefit of touch on learning and enjoyment. Similarly, the works of Candlin (2010) and Black (2005) have highlighted the importance of touch to the museum experience. Beyond the sense of touch, we see authors within museum studies addressing issues of sound, smell and taste. For example, Clutt (2014) examines the use of sound in exhibits over the past 50 years and summarises the development of sound as a curatorial theme; Stevenson (2014) highlights the importance of the “forgotten” sense of smell and analyses how it could help to enhance multisensory museum experience for all patrons, especially for those with sensory impairments. Additionally, we find studies examining other sensations and feelings. Pallasmaa (2014), for instance, has demonstrated how architecture and design of exhibits could influence the overall perception and feelings of the physical presence of exhibits. And Dudley (2010) has expanded our current understanding of objects, sensory experience and embodiment in her work. Rooted in contemporary museum studies and informed by diverse disciplines, she highlights the importance of aesthetics and affect in museum settings and provides a way of thinking about sensory and cognitive engagement with objects (Dudley, 2010).

This whole turn towards the sensory has not been exclusive to academic studies, but has also – crucially – been manifest in museum practice as well. A growing number of museums have continued to work co-operatively with research institutions to address and discuss issues of sensory and museum experience. Notably, we see Art Beyond Sight (ABS) working with the Metropolitan Museum of Art on Art Beyond Sight: Multimodal Approaches to Learning conferences, where researchers and professionals from various disciplines, including museum studies, neuroscience, psychology and many others, come together to discuss research of multisensory

learning in art education (Levent & Pascual-Leone, 2014). Museum researchers continue to draw upon (and work alongside) expertise from other related disciplines, and to seek a deeper understanding of the human sensory experience from different intellectual perspectives.

Foregrounding the sensory experience of museum media

In the context of museum studies and museum practice, this turn to the sensory has been characterised by an essentialism, and an idea of stripping away media and returning to the fundamentals of confronting the object – unmediated. And yet, concurrently, as this discourse around the sensory has grown, the practice of visitor studies has also continued to reflect upon the experience of confronting communicative media (particularly that which is digitally-based) within the museum. Here, in contrast to stripping media away, it is the media technologies themselves that are seen to add to the sensory experience, and that have, consequently, been the focus of study and practice. Typically, within visitor studies practice there have been two routine perspectives when analysing and understanding the impact of in-gallery technology: the educational value and usability. With, today, education the defining characteristic of the modern museum (Hooper-Greenhill, 1992, 1994, 2007; Hein, 1998), educational issues have become, consequently and fittingly, the key measure when assessing the effectiveness of in-gallery interactives. We see this default emphasis on educational value of interactive technology typified in works, for instance, of interactive systems specialist Maria Roussou (2009), examining the effects of immersive virtual reality environment on leisure and learning, and in Falk and colleagues (2004) and their investigation of short-term and long-term learning outcomes of using interactives. Alongside this emphasis on educational value sits an equally strong and enduring predisposition towards the usability of digital media in museums. This theme defines the studies of a number of writers (Reich, 2006; Keramidas, 2015; Mason, 2013) who each have attempted to explore questions around the design of interfaces, interactives and digital installations in exhibitions.

In contrast to this orthodoxy around measuring learning outcomes and usability (the two traditional lenses through which to look at exhibition technology), the sensory turn in museum studies, instead, inspires us to look anew at in-gallery communicative media. In other words, one possible consequence of the sensory turn in museum studies and museum practice is that we start to understand in-gallery communicative media from another perspective – the perspective of sense and sensory experience. Viewed from this new sensory vantage point, we notice distinct characteristics of modern museum exhibition design, particularly design that harnesses digital communicative media. Specifically – and as we will now consider here respectively in more detail – we recognise the rise in multi-sensory, immersive and multi-user exhibition scenarios.

Today, digital technology enables museums to communicate, sometimes concurrently, through multiple senses (American Alliance of Museums, 2014). For instance, in interactive digital exhibitions, such as the *Universe of sound* (designed by the Science Museum of London in partnership with the Philharmonia Orchestra), we witness the framing of a multi-sensory gallery experience. In this case, by using large screens, unconventional projecting surfaces, touchscreens, motion-tracking technology and 360-degree projections, the exhibition created a high-definition and multi-sensory experience, enabling visitors to feel like a musician, conductor or composer in the orchestra. Likewise, in exhibitions such as the *Venus* simulator (opened in the end of 2016 at the National Space Centre (NSC), Leicester (UK)), visitors experience wrap-around projections, surround-sound and a vibrating floor to create an audio-visual sensation of travelling through the Venusian atmosphere, including the physical feeling of “landing” on the planet’s surface.

At the same time, multi-sensory experience is also used today by many museums as a tool to increase accessibility. By using emerging technologies, especially 3-D printing, museums can engage visitors with physical impairments or who would ordinarily be disabled by ineffective design and improve their visiting experience. For example, Brooklyn Museum's sensory tours created a unique experience for individuals with visual impairments. Through feeling 3-D printed objects and engaging in multi-sensory experiences in a series of tours, individuals who are blind or partially sighted are able to encounter art through other sensory channels.

Another key sensory characteristic of digital installations in contemporary exhibitions is the aspiration to create a highly immersive (and, in turn, inherently multi-sensory) experience (American Alliance of Museums, 2014). Immersive exhibits typically adopt technologies that utilise multiple sensory channels in order to generate special atmospheres, environments and senses of space. We see, for instance, installations such as *Rain room* (Random International) situating visitors within an engaging, multi-sensory, immersive environment of falling water. Exhibited in the Barbican (London), MoMA (New York), Yuz M (Shanghai) and LACMA (LA), *Rain room* uses a 3-D tracking camera to detect the real-time movement of visitors so that they can both see the water, hear the sound of the shower and have the sensation of walking in the rain – all without getting wet.

Apart from exhibitions like *Rain room*, giant projections and screens are, today, a familiar tool within exhibition design to create immersive environments. We witness displays such as *We are stars!*, at the NSC (Leicester), plotting its journey from the beginning of the Universe to the evolution of life, whilst immersing its audience within a 360-degree full-dome screen completely filling the visual field. Likewise, in exhibitions such as *Transcending boundaries* in the Pace Gallery London (working cooperatively with the teamLab), as waterfall cascades around the visitor, water appearing to “wash” over the visitors’ feet, large projections on the wall and floor create an experience that is defined by its immersiveness as much as by its interactivity. In this digital immersive exhibition, a waterfall travels down from the wall, escaping across the floor, and gently “washing” over viewers’ feet.

But as much as we see the multi-sensory and the immersive, a third trend in modern exhibition design involves the use of in-gallery interactives that can be manipulated by multiple users. As the influential museum digital practitioner Seb Chan (2014) explains, museums today are moving away from designing programmes for a single-person to focussing on activities that simultaneously can engage multiple users. It is no longer atypical today to encounter in museums touch-screen tables that can be used by multiple users. A much-documented example of using this type of multi-touch interactive table is the Churchill Museum, Imperial War Museums London. A 17-meter-long touchscreen table was installed in the central area of the museum displaying the lifeline of former British Prime Minister, Sir Winston Churchill. This interactive table allowed multiple users to view thousands of texts, images, film clips and documents about Churchill and his life. And yet, less augustly, but no less impactfully, we also see multi-touch tables being used in playful and capricious ways. The Computer History Museum in Mountain View, for instance, has applied “Frog Pond,” a multi-touch interactive tabletop game to assist users in learning computer programming. This innovative game can introduce complex computer programming processes to visitors while they are playing; a complex abstract process immediately rendered fun and accessible.

Beyond tables, we can also discover museums designing multi-user experiences by using other parts of the architecture – such as interactive walls. For example, “Gallery one” in the Cleveland Museum of Art has used a 40-foot interactive multi-touch wall displaying all the works of art of the museum’s permanent collection and 20 separate interfaces across the screen

wall at the same time. Additionally, with RFID the Collection Wall can be connected to other mobile devices. A signal of the success of its design, the grandeur of its execution and indeed the value that communicative media can have in a museum, this giant interactive wall became a signature item of the museum.

Across all of these examples – from simulated rain showers to animated walls, and from hemispheric films to interactive tables – museums continue to encourage and explore the importance and the possibility of the sensory. In particular, it is the qualities of the multi-sensory, the immersive and the multi-user experience that perhaps distinguish our modern exhibition design mode. This turn to (and celebration of) the human sensorium has been enabled by the intellectual framing of the sensory turn and the new sensibility to the senses within museological practice, but also – crucially – by the emergence of communicative media (particularly digital technology) that can support and realise these complex and ambitious designs.

A role for time-based scenography

However, inspired by the sensory turn, and enabled by the capabilities of a new generation of in-gallery media, exhibition design today needs new approaches through which to imagine, design and deliver interactive exhibitions. With more ambitious and more overt aspirations to deliver a sensory experience (one that is immersive, multi-sensory and multi-user), the museum may now need to look to other frameworks to conceptualise its exhibition design. To practice with sense and sensations in mind, and to conceptualise museum experience more vividly and holistically as a combination of senses, space and communication within the space, we might need to reconsider and re-evaluate the method and approaches used in exhibition design. Therefore, a design method and approach such as “time-based scenography” might be transformative, enabling us to conceptualise immersive and multi-sensory experiences and mediated communication within the exhibition space.

Historically – and somewhat ideally – “scenography” derives from the word *sceno-graphic* in Greek. According to theatre director Pamela Howard (2002), it describes a holistic approach to design theatre from the visual perspective. She defines scenography as “the writing of the stage space – l’écriture scénique ... Scenography is the seamless synthesis of space, text, research, art, actors, directors and spectators that contributes to an original creation” (Howard, 2002, p. 130).

Situating scenography in a contemporary context, art professional Margaret Choi Kwan Lam (2014) states that it is an artistic practice rooted from contemporary theatre in the 19th century. Similar to the definition given by Howard (2002), Lam also describes scenography as a word to emphasise a unity of all aspects in theatrical stages, including space, application of media, narrative and other elements. While stepping into the 20th century, the concept of scenography has subsequently developed (Lam, 2014). The boundary of the use of scenography is no longer restricted in theatrical context and has expanded to a transdisciplinary design and other related fields. Nowadays, scenography cross-pollinates into both museum theory and practice (Lam, 2014). It, we suggest, provides a transformative model for us to curate and design exhibitions and offers us an ideological lens to think about visitors’ experiences.

Based on the understanding of “scenography,” instead of considering objects, text and digital interactives independently, or viewing visual, auditory and other sensory experience separately, “time-based scenography” refers to the technique to create exhibition and visitors’ experience from an entire view of all elements. Moreover, when we start to consider all elements in an exhibition as a whole, time-based media would free us from designing for the “planar experience”

but a seamless and holistic experience within the space. Other forms of media, such as books, film, television and radio, have a fixed format from beginning to end. Whereas for exhibition, visitors can control the pace, choose what they want to view and how they view it. Visitors may walk around in the space freely and view exhibited objects from different angles and directions. Time-based scenography helps us to productively and creatively design our exhibitions with the notion of time and space in mind, and in doing so it encourages an approach that thinks beyond designing for a series of fixed planes.

Taking the approach of time-based scenography to exhibition design, some formats of non-planar technology are particularly helpful, such as VR and 360-degree sound and vision. VR gives us the opportunity to access multiple sensory channels. It can represent space from 360 degrees, accompanied with visual, auditory and sometimes even tactile stimuli; while 360-degree sound and vision systems particularly contribute to a sense of immersive experience. When designing exhibitions using the approach of time-based scenography, we see museums and exhibition designers reaching for a new set of non-planar media tools. One vivid illustration of this challenge to the planar tradition is *Geo-cosmos* at Miraikan – the National Museum of Emerging Science and Innovation in Japan. *Geo-cosmos* opened to the public on 10 July 2001, as the world's first full-colour spherical display (Machida, 2002). *Geo-cosmos*, *Geo-scope* (interactive touchscreen tables for users to search information about the earth), *Geo-palette* (an online service that allows users to design their own world map) and *Geo-prism* (an AR data visualisation system) were four tools in Miraikan's "TAUNAGARI" Project, which aims to promote the understanding of links among life forms on Earth and the relationship between Earth and individuals. In this project, *Geo-cosmos* was specially designed to show the beauty of the blue planet. The initial idea of this globe comes from Miraikan's Chief Executive Director, Mamoru Mohri. As a scientist and the first Japanese astronaut, Mohri wanted to share with visitors how beautiful Earth is as seen from space. Instead of presenting on a planar platform, a spherical display was considered more suitable, its unique characteristic providing a natural environment for geo-visualisation (Vega et al., 2014). This shining "globe-like" display is a 6-meter interactive globe that symbolises the Earth, covered by 10,362 organic LED panels with a high precision exceeding 10 million pixels. By using data transmit (provided by the University of Wisconsin and NASA) by weather satellites, *Geo-cosmos* shows near real-time displays of the current image of the Earth with detailed information such as ocean acidification and temperature change (Figure V.4.1).

This exhibition, with an overwhelming spatial scale, brings a unique experience of "feeling," "exploring" and "sharing" rather than simply "seeing." *Geo-cosmos*, similar to the huge dinosaur skeleton at the American Museum of Natural History in New York and Turbine Hall at Tate Modern in London, is designed for visitors to feel the entire space. Working from the assumption of time-based scenography, designers of *Geo-cosmos* conceptualised an environment in which visitors could feel and experience the exhibition and space as a whole. The nature of spherical displays provides an unobstructed 360-degree field for all visitors (Benko, 2008). Compared to traditional forms of display that have a fixed viewpoint, *Geo-cosmos* offers viewers more freedom and invites them to explore the exhibition from different perspectives. Additionally, *Geo-cosmos* is a "shared" display; visitors standing at the first floor to fifth floor are able to view it at the same time. In spherical displays like this, a viewer is only able to see a part of the globe at a time, so walking around the display is an instinctual way of viewing it (Vega et al., 2014). Therefore, while visitors physically navigate the space and look across or around the globe, they can naturally see and interact with others.

Björk digital, the world's first VR album exhibition, which opened in the spring of 2016 in Sydney, then went to Tokyo, London, Reykjavík and beyond, is another example that demonstrates



Figure V.4.1 Geo-cosmos at Miraikan. The National Museum of Emerging Science and Innovation, Tokyo.

what exhibitions might be like when designed in an overtly scenographic way. In this immersive digital album tour, designers, artists, scientists and other specialists worked co-operatively to explore the potential of technology using the approach of time-based scenography. Björk started this project out of her curiosity around the relationship between artist and media. She was keen to explore beyond the established boundaries of music sharing (CDs, PVs and live shows) and to test alternative possibilities to deliver her music to listeners. By using the approach of time-based scenography together with VR technology, *Björk digital* created a highly immersive and multi-sensory experience that can directly transfer her music and feelings to audiences. In this “album exhibition,” viewers can watch, experience and inhabit four of the 360-degree virtual reality videos from her *Vulnicura* album. The content of each video is different according to the theme of each song. In *Black lake*, by using panoramic visuals and a cutting-edge surround-sound system, viewers can see Björk singing in the highlands of Iceland. While *Stonemilker* is filmed in a remote beach of Iceland and viewable in full 360-degree VR, making the viewer feel Björk is singing solely for them. In the *Notget* video, Björk is transformed by stunning masks into a digital moth giantess. While in the VR video of *Mouthmantra*, viewers are able to see from the inside of her mouth: “this is definitely” one review read, “the most fun you can have inside a gigantic pulsating mouth” (Muggs, 2016). In the exhibition, Björk renegotiated the way she communicated with her fans and her relationship between them. Wearing a VR headset, listeners would step into another world where they could see Björk perform and sing in front of them, and only for them; a unique and intimate way of sharing music. Moreover, to design all of the elements in the exhibition holistically, *Björk digital* not only adopted digital media creatively, but provided a vivid illustration of the possibilities, within an exhibition context, of time-based scenography. Instead of using individual digital media in this exhibition, a strong immersive and seamless experience was designed by turning the whole exhibition into a digital environment; the exhibition “was shaped literally as a digital medium” (Parry and Sawyer, 2005).

Conclusion: Discovering sense in museum media and communication

What we see in *Björk digital*, as in *Geo-cosmos*, is the sensory experience of exhibitions being pushed, creatively explored and tested. These are exhibitions that are aligned to a museology of sensation and embodiment. In each case, the curators have assumed (and then explored) the presence of a visitor's sensing body within the multi-channel space of the museum exhibition. Both examples stand, consequently, for us as illustrations of immersiveness, the multi-sensory and the multi-user experience taken to a creative and provocative edge. But in both cases, they also show a designer (here the common practice of Maholo Uchida) using other frameworks from outside of the traditional exhibition canon to curate the exhibition. In this case, notably, the approach of "time-based scenography." Turning to (and extending) scenographic practice and the traditions of designing for the whole visual and sensorial field through time, these examples suggest other ways of understanding how an exhibition works. Therefore, theirs is not just a sensorial challenge to the visitor and a creative challenge around the use of communicative media for designers, but also an intellectual challenge about how we might conceive the very notion of "exhibition." Following the sensory turn, and following the rise of immersive and multi-sensory in-gallery digital media, practice such as this challenges us to think of new conceptual frameworks for our criticality – frameworks that might involve a multi-sensory body, moving through a multi-channel space and an elapsing time. Crucially, it is work that turns our head to other academic and critical informants outside of the museological orthodoxy – not just to theatre, but to gaming and to film. With the discovery of the body and the sensorium comes also the discovery of a new criticality.

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Museums and cultural diversity

A persistent challenge

Ian Ang

The world is experiencing a kind of museums boom today. According to the International Council of Museums (ICOM), citing the most comprehensive directory of Museums of the World from 2014, there are now more than 55,000 museums in 202 countries. This number is only set to increase as more and more new museums are being established in both developed and developing countries. China, for example, has seen an unprecedented rate of increase in museums in the post-Mao period and is set to become the country with the highest number of museums in the world in the near future (Varutti, 2014).

Considering such a large number of museums spread throughout the globe, it is impossible to generalise about “the museum” as such. Their features, purposes and contexts of operation vary greatly, as well as their size (ranging from very large to very small) or the way they are managed. There are many types of museums, focussing on different kinds of cultural objects: some of the most well-known ones are art museums, history museums, science museums and ethnographic museums. What all museums do have in common, however, is – in broad terms – what they do or claim to do: they are all, in one way or another, in the business of collecting, preserving, interpreting and displaying items of artistic, cultural or scientific significance for public education and consumption.

ICOM provides the following definition of a museum, adopted in its Statutes in 2007: “A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment” (ICOM, online). Yet this definition is highly idealistic, reflecting more an ideology of the museum – an ideal image of what a museum is and does – than how museums actually work and what they actually achieve. The definition does highlight that communication is an important core activity of museums, at least in theory.

This communicative activity purports to contribute to the education of the public by making available to this public displays of cultural objects deemed of common importance or significance for society at large, or even humanity as a whole. To go beyond this general (ideological) claim, we need to problematise generalised references to “the public.” In other words, we need to ask: who is this “public” that museums claim to communicate with? And how is

the configuration of exhibitions and displays – the museum content – determined and decided upon? Finally, if museums are supposed to play an educational role, how is this accomplished?

This chapter takes up these questions by focussing on the challenge of cultural diversity as it pertains to and manifests itself in relation to museums. Cultural diversity has emerged as a challenge – or problem – for the museum sector since the last two decades of the 20th century, at least in developed Western countries, when it became undeniable that the “public” which museums tend to attract is by no means representative of the broader society. This demographic deficit has long been acknowledged with respect to class and level of education, as the influential sociological work of Bourdieu (1984) has pinpointed, but in more recent times it has been problematised particularly in relation to race and ethnicity. As Western societies have become more racially and ethnically diverse, mostly as a consequence of non-European immigration, museums are faced with the challenge of having to communicate with a much more diverse, multicultural audience if they are to be true to their claim to serve the whole “public” in society. In other words, the demographic deficit has also been seen as a democratic deficit: a marker of social and cultural inequality that museums are being called upon to address (Sandell, 2002).

For example, at the 19th meeting of its General Assembly in 1998, the International Council of Museums passed a resolution concerning museums and cultural diversity, advocating “the development of museums as sites for the promotion of heritage values of significance to all peoples through cross-cultural dialog” (Silverman & Fairchild Ruggles, 2007, p. 6). In this regard, museums are asked to play a brokering role in reconciling national societies with the diversity in their midst, a social and political issue perceived as urgent in today’s irrevocably interconnected world with the rising threat of intercultural conflict and disharmony.

In the next section, I will discuss the way in which the museum sector has attempted to counteract the socio-demographic bias in their audiences through a strategy of targeting under-represented groups. I will describe the limitations of this strategy, pointing to the need for a more fundamental change in the representational strategies of museums towards inclusiveness of plural perspectives in and on the nation. Finally, I put the idea of museums as sites for “cross-cultural dialog” to the test. How does the rhetoric (or ideology) of the museum as a broker for cross-cultural understanding match with the realities of visitor experience?

Diversifying museum audiences: The limits of “targeting”

Survey after survey have consistently shown that ethnic minorities and immigrant populations are underrepresented among museum audiences in Western, liberal democratic societies, where going to the museum has remained a practice predominantly engaged in more by white people with higher education levels and higher incomes. For example, according to recent British data, over three in five adults (61.4%) in the upper socio-economic group visited a museum or gallery in the year ending June 2013, compared to only 39.9% in the lower group. Interestingly, the data also showed that while visitation had increased amongst most demographic groups, this was explicitly not the case for respondents from black and ethnic minority groups (Department for Culture Media and Sport, 2013). This has been a persistent problem. Almost 15 years earlier, Eilean Hooper-Greenhill (1997, p. 2) remarked that “Black and Asian people are frequently conspicuously absent” from museums. She added that “other less visible minorities are also unlikely to find museums relevant to their own cultures and therefore do not visit them” (Hooper-Greenhill, 1997, p. 2).

In the United States, a 2010 report for the Association of American Museums, entitled *Demographic transformation and the future of museums* (Farrell & Medvedeva, 2010), raised alarm bells about the growing gap between the profile of museum audiences and the overall composition of

the United States population. The report pointed out through a dramatic graphic visualisation (see figure V.5.1) that “the group that has historically constituted the core audience for museums – non-Hispanic whites – will be a minority of the population in the future” and that, if current trends continue, “museum audiences are radically less diverse than the American public, and museums serve an ever-shrinking fragment of society” (Farrell & Medvedeva, 2010, p. 5). In reviewing data from a number of surveys over the years, the report found persistent, significant disparities in museum participation by different racial and ethnic groups. For example, while Hispanics made up 13.5% of the United States population, they were only 8.6% of art museum visitors; while African Americans comprised 11.4% of the population, only 5.9% of them visited museums (according to 2008 data). So, United States museums are serving an ever-shrinking fragment of society. Only 9% of core museum visitors today are of a minority background (that is, not part of the non-Hispanic white population). This compares poorly with the situation in society at large, where non-whites make up 34% of the total population. If the trend continues, the situation will only worsen in the decades ahead: the percentage of non-white populations has steadily increased from the 1970s onwards and is projected to comprise 46% of the total population in 25 years’ time (Farrell & Medvedeva, 2010, p. 5).

In short, there is ample statistical evidence that (lack of) audience diversity is a problem for museums. In many countries, special initiatives have been put in place to raise the number of ethnic minority visitors, but often without much long-term success. As Weil (2002, p. 177) pointed out for the United States’ context, “decades of effort to diversify art museums have shown little result.” In the United Kingdom, meanwhile, in 2003 the Government made the funding of Britain’s large museums and art galleries conditional on their capacity of attracting more visitors from ethnic minorities and low-income families. Between 2003 and 2006, 18 museums had to raise the number of visitors from these categories by 8 per cent on the previous financial year (Burrell, 2003). By 2008, however, it would appear that this measure had failed to generate the desired results, as figures from the Department for Culture, Media and Sport



Figure V.5.1 Disparity in the United States between percentage of non-Hispanic white population and core museum visitors. Source: Reach Advisors’ analysis of census data and survey data, derived from Farrell and Medvedeva: *Demographic transformation and the future of museums*, 2010.

showed that the proportion of ethnic minorities visiting at least one museum and gallery in the previous year had actually fallen (Noakes, 2008).

Much research and theorising has been conducted on the reasons why visitation of museums and galleries tends to remain so stubbornly biased in favour of the white, upper-middle classes. Farrell and Medvedeva (2010, p. 13) have summarised a range of explanations given for the differences in ethnic and racial patterns in museum attendance, and why significant sections of the population do not use museums. First, there may be historically-grounded cultural barriers that make museums feel intimidating or exclusionary to many people. Second, some groups may lack the specialised knowledge and cultural capital to appreciate the cultural objects displayed in museums, especially in art museums. Third, there may be no strong tradition of museum-going habits among some groups, whether fostered in childhood or within the family. Finally, the influence of social networks and peer groups may discourage some from museum-going in favour of other leisure activities. Structural factors such as where people live, museum locations, transportation options, time constraints and financial barriers are also mentioned as reasons that work to limit museum attendance.

It is interesting that all these explanations refer to potential impediments which prevent some groups of people from visiting and frequenting museums. From this perspective, the remedy to be adopted would be initiatives aimed at facilitating access to museums by lowering the barriers, that is, by making museums less intimidating and more relevant or attractive to those who are not usually part of the museum audience. In fact, this is exactly what museums – especially the large, flagship museums with national remit – have generally tasked themselves to do: developing strategies to turn non-visitors into visitors in a bid to diversify – and thus democratise – their audience base beyond its loyal, white upper-middle class core. Charges of elitism levelled at museums (and particularly art museums) have long irked museum leaders, and they are at pains to counter such accusations by demonstrating their commitment to communicate with non-traditional visitor categories, especially minority groups.

A preferred method in this regard is the *targeting* of particular groups or communities through focussed relationship-building efforts, public programmes and educational activities, especially in connection with special exhibitions which are thought to be of particular interest to such groups or communities. For example, when the Art Gallery of New South Wales in Sydney, Australia, decided to mount a large temporary exhibition on Buddhist Art in 2003, huge effort was dedicated to bringing Asian migrant communities into the museum, on the assumption that the art on display was relevant to these communities because it reflected “their” culture (Ang, 2005). Similarly, the British Museum appointed a special-liaison person for the local Chinese community during a China exhibition it mounted (Noakes, 2008). Such strategies are commonly deployed to recruit specific minority audiences, and they can be reasonably successful. For example, when the National Media Museum in Bradford, an English city with a very large South Asian population, hosted an exhibition on popular Indian cinema in 2007, the number of visitors from ethnic minorities rose by 17% (Noakes, 2008). Since then, the museum has repeated this successful targeted approach by presenting an exhibition on Bollywood Icons in 2013.

While such strategies can work to bring people from minority backgrounds into the museum for specialist temporary exhibitions, however, it is highly questionable to which extent they succeed in turning such people into regular museum visitors. On the contrary, staging special exhibitions of particular relevance for specific groups may in fact heighten the belief that “normally” the museum is not for them. Indeed, this kind of “targeting,” while laudable as an attempt to make the museum more relevant to minorities, can inadvertently entrench a divide between the mainstream, core audience – those for whom the museum is a naturalised space to visit – and

“non-traditional” minority audiences – those for whom going to the museum is a rare, special occasion, only contemplated if there is an exhibit which is specially intended to attract them.

Targeting strategies may also lead to a narrow understanding of what might be of interest to ethnic minority visitors, limiting exhibits and programmes to cultural expressions that celebrate and reinforce their notional community identities. Not only would such strategies result in forms of ethnic pigeon-holing, they would also run the risk of homogenising minority communities, e.g. “Hispanics” or “Blacks” or “Asians” or “Muslims” – as if they were undifferentiated, unitary entities. This tallies with Hooper-Greenhill’s (1997) questioning of the effectiveness of targeting as an audience development strategy for museums wishing to cater for minority audiences. She observes that, although some people do fall into clearly definable groups with defined locations and cultural or religious characteristics, most others may belong to a number of cross-cutting groups or communities with no clear-cut cultural identities. In short, targeting tends to reinforce what Rogers Brubaker calls groupism – “the tendency to take discrete, sharply differentiated, internally homogenous and externally bounded groups as basic constituents of social life” (Brubaker, 2004, p. 8). While targeting minority groups is conceived as a positive form of affirmative action, then, it may in fact perpetuate the marginalisation of such groups from the national mainstream. In this way, it may contribute to further cultural segregation rather than integration, where minorities are recognised as being an integral part of society as a whole.

Rather than singling out specific groups for targeting, a more vexed and complex challenge for museums is to develop collections, exhibitions and programmes with inherently mixed and diverse audiences in mind. There is no doubt that there is a place for targeting as a museum strategy to compensate for the underrepresentation of particular segments of the public. However, the development of pluralistic strategies which are able to be relevant to multiple constituencies at once – both majority and minority audiences – is perhaps a more important task for museums today.

Contemporary Western countries are increasingly complex, multicultural societies in which racial and ethnic diversity is an intrinsic feature. At the same time, tensions in these societies are rising as majority populations are struggling to come to terms with the arrival of large cohorts of new migrants with very different racial, cultural and religious backgrounds, especially in Europe. The question is whether museums can play a role in addressing some of these tensions. In other words, can museums develop strategies which address “the public” in ways which recognise the internal divisions and differences within it, and work to bridge or surmount them? This question raises two issues. First, it is important to ask how “the public” has historically been constructed in museums. This takes us to the modernist origins of museums as conveyors of national culture and identity, and as such, as agents in creating a national public. In this context, the second issue to be raised is how, in a time when national cultures and identities are in flux as a consequence of globalisation and transnational people flows, museums can contribute to cross-cultural understanding amongst a much more diversified public: a goal or objective which is regularly claimed to be an important educational role for museums in contemporary multicultural societies.

Diversifying representation: Inserting difference and diversity into the national story

As an institutional form, the museum is intimately linked to the rise of the nation-state in the 19th century, and as such, museums are often enlisted as vehicles for the authoritative representation of national culture. History museums and national art galleries, in particular, have long been positioned as storehouses for the authoritative representation of national identities, serving to constitute a national “public.” This newly generated public would, with the assistance

of museums (as well as other cultural technologies such as the census, the map and the newspaper), be constructed as a national “imagined community” (Anderson, 1991), “a self-identifying collectivity in which members would have equal rights, a sense of loyalty to one another, and freedom from previous tyrannies and exclusions” (Macdonald, 2003, p. 2). National identities and national publics were defined through difference from other nations, and as territorially bounded and internally coherent, if not homogeneous (in terms of ethnicity, language and culture). Museums were suitable institutions to perform this work of national identity construction through the literal and symbolic “objectification” of the national culture through the collection and display of objects and artefacts which are deemed significant for the “national story.” As Macdonald puts it:

Public museums ... were from their beginnings embroiled in the attempt to culture a public and encourage people to imagine and experience themselves as members of an ordered but nevertheless sentimentalised nation-state. They invited people to conceptualise a sense of national or racial difference from others; and to experience their own worlds as relatively and reassuringly governed ones. They helped to convey senses of both stability and progress. ... They helped to think identities as bounded and coherent. (2003, p. 5)

In this regard, instilling a sense of cultural nationalism is a central rationale of museum communication, especially in developing countries, which, upon becoming independent nation-states, were generally faced with the challenge of creating and nurturing a coherent national identity. Almost every country around the world has at least one official national museum, dedicated to the representation of the nation’s culture and history. In postcolonial nation-states, the establishment of a national museum was often a major governmental priority, while in some countries, the formation of such institutions occurred relatively late. The National Museum of China in Beijing, for example, was established only in 2003 through the merger of two previous museums and reopened in 2011 after extensive renovations that tripled the previous exhibition space and introduced state-of-the-art exhibition and storage facilities. It is said to be the largest national museum in the world to date, containing two permanent exhibitions: Ancient China and the Road to Rejuvenation, presenting China’s ancient, pre-modern and contemporary history (*China Economic Review*, 2011). The grandeur of this new museum – and the proliferation of museums in China more broadly – indicate the extent to which museums in China are used for patriotic, nationalist purposes, and to preserve the Communist Party’s state legitimacy in a rapidly commercialising and modernising China (Vickers, 2007; Varutti, 2014).

However, in today’s globalised world, the very notion of a distinct and coherent national culture and identity, shared equally by a cohesive national public, is increasingly difficult to sustain. As discussed in the previous section, it is widely recognised today that “the public” is not only highly diversified but also internally fragmented. Moreover, in this process of diversification and fragmentation, the idea of the national itself is unsettled; it is no longer dependable as the stable cultural anchor for nation-state sovereignty but is deeply entangled with multiple global others, including those who now reside inside the nation. The question then is how, in a time when the nation and the world have become increasingly interdependent and interconnected, a more cosmopolitan ethos can be inserted into the national narratives that museums tend to convey. Can museums adapt to these more postcolonial, multicultural and transnational times?

To be sure, national museum landscapes have never been exclusively focussed on the national cultural self. As Jan Nederveen Pieterse (2005) has argued, narratives of national “others,”

especially non-Western others, have generally been told in ethnological or ethnographic museums, which have served as counterpoints for the prestigious national history museums and art galleries – and more recently, modern art museums – where the apex of national culture and history is housed. Ethnographic exhibits tended to be “display windows of empire, indirect testimonies of national grandeur” (Nederveen Pieterse, 2005, p. 164), where “other cultures” were routinely represented as “traditional” or “primitive,” through collections and displays “overwhelmingly of the shield, spear, boomerang, war-canoe type” (Hudson, as quoted in Nederveen Pieterse, 2005, p. 164). As such colonial gestures of “othering” have become less acceptable today, it has unsettled ethnographic museums in the West and, to some extent, made them obsolete. Meanwhile, ethnographic objects began to enter mainstream museums in large-scale exhibitions in the late 20th century, such as “Primitivism” in 20th-century Art at the Museum of Modern Art in New York in 1984, which included displays of tribal works that influenced modern (Western) artists. However, as Nederveen Pieterse remarks, displaying “ethnographic objects set apart in glass vitrines under boutique lighting” (2005, p. 166), as is typical in art museums, is a form of aestheticisation which demonstrates an assimilationist appropriation of the cultural other into the Western discourse of Art. The 1989 Paris exhibition “Magiciens de la Terre” was partly designed to counter the perpetuation of the Eurocentric, colonialist mentality by featuring 50% Western and 50% non-Western artists shoulder-to-shoulder in an equal manner. By the early 21st century, modern and contemporary art museums more routinely included non-Western art into their exhibitions and programmes, as exemplified by the popularity of Australian Aboriginal art and contemporary Chinese art. But this pluralism still confines the inclusion of the non-Western other to the realm of Art – a specifically Western category which has now become globalised.

Museums that deal with history and society, however, are pre-eminent spaces of representation where nations and their relationship to the world get imagined, and the style of this imagining can be more or less inclusive, more or less pluralistic, more or less cosmopolitan. Cosmopolitanism is a contested concept, but in broad terms we can define it as an openness to difference and a willingness to engage with cultural others (Appiah, 2007; Delanty, 2009). As nations are becoming more diverse and have increasingly porous boundaries, the need to nurture cosmopolitan skills and capacities has become ever more urgent. In this regard, there is a disjuncture between the continuing dominance of the nation as the anchor for social identity, on the one hand, and the growing transnationalism of people’s experience, on the other. This is the case not just for newly-arrived migrants, but also for local citizens, who – even though they have not moved beyond their national contexts – have to deal with the presence of cultural foreigners in their midst on a daily basis. As Peggy Levitt (2015, p. 5) remarks, “The social contract between state and citizen is national, but people’s lives are not.” Levitt argues that museums are arenas “where countries might diversify their self-portraits and re-create themselves as more cosmopolitan nations” (Levitt, 2015, p. 5). So how can they do this? How can museums cosmopolitanise the stories they tell about the nation?

In her book *Artifacts and allegiances*, Levitt (2015) explores this issue by analysing the production of museum displays in a range of countries around the world. Her conclusion is that, although some countries tend to imagine their national identities in more cosmopolitan ways than others, ultimately the national story holds sway everywhere. This is the case even in a country such as Sweden, where the existence of a museum such as the Museum of World Culture in Gothenburg, which opened in 2004, is evidence of the country’s cosmopolitan commitment to understanding the world beyond the nation. On the “About us” page of its website, the Museum of World Culture is described as “a meeting place with exhibitions and programs about current questions in the world around us.”¹ As Levitt (2015, p. 29) observes,

“The Museum of World Culture creates cosmopolitan Swedes, which eventually strengthens the nation.” However, while cosmopolitanism here is embraced as an openness to the world at large, the immigrant experience – that is, the experience of cultural others within the nation – doesn’t receive much recognition in Sweden’s museum landscape. It is left to the Multicultural Centre, a modest organisation in Botkyrka, a municipality in the south of Stockholm County which has a large immigrant population, to conduct research and stage exhibitions to “promote a society where diversity is reflected in Sweden’s national self-image and where migration is a natural part of the Swedish cultural heritage.”²² This suggests that the story of immigration remains separate from the main, national story; no matter how cosmopolitan Sweden’s style of imagining itself as a nation, Swedishness continues to be defined in homogenous and exclusive ways and immigrants remain “other.” There is thus a persistent epistemological tension between cosmopolitanism and nationalism which cannot easily be resolved: while cosmopolitanism involves the virtual breaking down of national boundaries, nationalism is principally defined by such boundaries (Ang, 2017).

The case of the Botkyrka Multicultural Centre reflects a more general tendency in European countries to address issues of multiculturalism in smaller local museums, often in areas with large concentrations of immigrants. This represents a marginalisation of the immigrant presence – both culturally and spatially – from the mainstream culture, keeping intact the rigorous divide between majority and minority, centre and periphery, within the national imagined community. This cultural separation is reinforced by the establishment of dedicated immigration museums around the world. Not surprisingly, this genre of institutions has first developed in traditional countries of immigration such as the United States, Australia and Brazil, but they have now also started to appear in Europe as well, especially since the beginning of this century. Examples are the Cité Nationale de l’Histoire de l’Immigration in Paris, which opened in 2007, and the Danish Immigration Museum in Farum, established in 2012. Whatever their differences in emphasis and style, immigration museums tend to share similar objectives: to acknowledge the contributions of immigrants to their host societies, to deconstruct stereotypes about migrants, and to raise public awareness and understanding about migration. An International Network of Migration Institutions has been set up by UNESCO and the International Organisation for Migration (IOM) to promote the development of such museums. As the Network’s website points out: “This kind of museum would, in particular, help collect, safeguard, highlight and make accessible to the general public certain elements relating to the history and culture of immigration, and to the process of integration of migrant communities.”²³ Such immigration museums are obviously a positive development in that they entail a recognition of the contribution of immigrants to the nation; at the same time, their very establishment as separate institutions heightens the sense that immigration is a “problem” and that immigrants somehow stand apart from the broader national society. In this regard, immigration museums could be seen as the contemporary equivalents of the ethnographic museums of the colonial past: they both focus on “the other.” The difference is that today, cultural, racial or ethnic others have a recognised presence *within* the nation, and immigration museums, by telling the story of immigrants from their point of view, are thought to ease the acceptance of these others by the nation. While this may be a welcome sign of progress, however, it still tends to reinforce the otherness of immigrants, as if they didn’t quite belong within the nation.

What actual impact such museums might have on the integration of immigrants and minorities, and whether they would contribute to a more cosmopolitan understanding of the nation within society at large, would ultimately depend on how museum visitors respond to and make sense of the exhibits and stories told. Would they foster cross-cultural understanding? This is an issue of broader relevance to museums in the contemporary world.

Promoting cross-cultural understanding?

Today's diverse, multicultural societies, where suspicion and hostility against certain minorities – especially Muslims – is on the rise, are in urgent need of public spaces where communication across ethnic, cultural or religious differences can take place in safe, respectful ways. Museums are potentially such spaces. Indeed, in museum theorising, the idea that museums can function as cross-cultural “contact zones” (Clifford, 1997; Schorch, 2013) has been popular for some time. From this perspective, museums would no longer operate as arbiters of “good taste” or authoritative narrative, but as facilitators in the communication of different forms of cultural expression and experience. Karp and Lavine (1991) have argued that, to serve diverse audiences, museums – especially art museums – must abandon their image as “temple” and become a “forum,” a place where visitors have the opportunity to learn about different cultural traditions and perspectives. In her interviews with museum professionals around the world, Levitt (2015, p. 8) has found the repeated belief among them that “museums can and should encourage empathy, curiosity, creativity, and critical thinking.” Indeed, this belief is strongly held in the museum sector, precisely because it provides a solid rationale for the social value that museums are supposed to provide. In other words, there appears to be consensus among museum theorists and museum practitioners alike that museums should be places where cosmopolitan dispositions are cultivated. But what about museum audiences? Are they equally ready to adopt such dispositions by visiting museums?

In the previous section, we have seen that the museum sector has begun to allow difference and diversity to be represented in their collections and exhibitions, in line with the greater degree of recognition both within nation-states and globally that inclusiveness towards marginalised and disadvantaged minorities is an important aim. But if the well-intentioned message or impact of such representations is one of recognition, respect or cosmopolitan understanding of “the other,” we cannot assume that such intentions are automatically reciprocated by visitors who consume such representations when they visit the museum. Indeed, there is no guarantee that the visitor's point of view might coincide with that of the museum professionals. This is an inconvenient truth for those museum professionals such as curators who are responsible for the production of museum content and who typically hold a museum-centric and content-centric outlook. As John Falk (2009, p. 24) has observed, “the belief that [museum visiting] is all about the content is so pervasive in the museum world that the vast majority, perhaps as much as 90%, of all marketing and promotion of museums is content-oriented.”

However, Falk (2009) goes on to say that the content is only rarely the single most important factor influencing people's decision to visit a museum. He refers to research that shows that while 60% of a visitor's attention over the course of a visit was spent looking at the exhibitions, approximately 40% of visitors' attention was directed elsewhere (such as on conversations with other visitors or on general observations of the setting). Moreover, not only does the content drive only part of a visitor's experience in the museum; it is also the case that the content the visitor chooses to focus on may or may not bear much resemblance to what the museum professionals who designed the experience hoped they'd attend to (Falk, 2009, p. 25). In short, as Falk notes, “The relationship between visitors and the content of the museum is not simple and straightforward” (2009, p. 27).

This problematises the educational role that museums have conferred on themselves, including the desire to promote cross-cultural understanding. Would exhibitions that feature Islamic art, for example, be able to contribute to greater understanding between Muslim and non-Muslim communities, especially in light of the twin challenges of Islamophobia and Islamist terrorism currently troubling the world? Edmund Capon, the former director of Sydney's Art

Gallery of New South Wales, clearly thinks so. Having staged a highly successful exhibition of Islamic art of the world-famous Khalili collection in 2007, with artworks from Spain, Turkey, North Africa, India, Syria, Iran and China spanning the 7th and 20th centuries,⁴ he boasted that “this was one of the most significant exhibitions that this gallery has ever undertaken,” referring to the opportunity the exhibition provided for non-Muslims “to know more of the great histories and cultures of the countries that comprise the Muslim world” (as cited in Ryan, 2012, p. 192). His belief in the transformative power of art, displayed in the museum, to overcome distrust between Muslims and non-Muslims was shared by politicians, sponsors and art critics alike, who all praised the exhibition’s aim of promoting peace and understanding by showing that Islam is “a religion of tolerance” (Ryan, 2012). In line with the strategy of “targeting,” the museum enlisted the involvement of Sydney’s Muslim community organisations, who participated in special educational events held at the museum (including lectures, talks and a community day) aimed at encouraging intercultural and interfaith dialogue between Australians of different backgrounds and faiths.

However, in-depth empirical research among visitors of the exhibition by Louise Ryan (2012) revealed that while many visitors did want to be informed about Islam and Islamic culture, many others regarded the trip to the museum as a social outing and not necessarily an educational event. At the same time, while Muslim visitors tended to appreciate the beauty of the artworks, some of them objected to the secular presentation of the exhibition, referring to the Islamic view that all art was made for God and therefore religious. The use of images of the prophet Muhammed (especially his face), forbidden in Islam, was also considered inappropriate and offensive by some. Moreover, while non-Muslim audiences considered the educational events “good value and informative,” Muslims tended to be conspicuously absent from these events, making the stated aim of intercultural dialogue an empty one. Ryan (2012) found no evidence of any significant cross-cultural engagement between Muslims and non-Muslims during the exhibition, despite access to Muslim volunteers at information desks. She concludes by questioning the impact of an exhibition such as this on anyone other than the already “converted,” those who are wedded to the liberal-humanist vision of tolerance and harmonious coexistence. Of course, it is possible that the potentially enlightening impact of museums would be more likely to occur with schoolchildren – an important visitor group for most museums – who might still have more open and malleable minds than adults, but this potential would have to be explored through empirical research.

That museum exhibits tend to confirm, rather than transform, existing views is also the finding of Laurajane Smith’s (2015) research, which has focussed on visitor responses to a range of exhibitions marking the bicentenary of Britain’s abolition of the slave trade in 2007. The bicentenary was seen as an opportunity for museums across the country to facilitate the acknowledgement of this “hidden history” in British society and to contribute to public learning and debate about the legacies of this traumatic history. Not surprisingly, Smith (2015) found that visitor responses tended to correlate with ethnic identity. The majority of African Caribbean or Asian British respondents tended to use the exhibition not as a learning opportunity at all, but as a means of validating their own views about the injustice of this dimension of Britain’s past and affirming their experiences of racism, past and present. White British and European visitors, on the other hand, tended to insulate or distance themselves from the negative emotions and reflections on history engendered by the exhibitions, avoiding any critical engagement with the exhibition contents through evasive discursive statements such as that this historical episode was just “man’s inhumanity to man” or “we must move forward” from the past (Smith, 2015, p. 470). Only a minority of visitors, coming from all ethnic backgrounds, were deeply engaged in the exhibition, confronted by it and moved to alter their understandings of past and present through

empathy and imagination. These findings suggest that overall, the predominant impact of these exhibitions has not been greater cross-cultural understanding but, rather, the confirmation of pre-existing ethnic divides in experience and outlook.

Referring to a broader survey of museum visitors in England, Australia and the United States, Smith (2015, p. 471) notes the pervasive tendency for exhibitions not to change visitors' views but "to simply reinforce the knowledge, feelings, or opinions that visitors held prior to their arrival at the museum." Again and again, interviewees talked about their visit as "reinforcing." Reinforcing what? According to Smith (2015), what is being reinforced through museum visits are visitors' identity, belonging and sense of place: identities of gender, class, race or nation. These confirmations of identity often go hand-in-hand with interpretations or decodings of museum exhibits which go well beyond the messages embedded in the exhibitions by museum curatorial staff. What we need to consider here then is the agency of the visitor rather than that of the museum itself.

Put in the language of communication theory, what needs to be questioned here is the transmission model of museum communication and learning, where museum professionals can presume to imbue preferred meanings and messages on visitors, conceived as passive recipients of those meanings and messages. Instead, visitors are active agents, and the museum visit should be understood as "a cultural performance in which people either consciously or unconsciously seek to have their views, sense of self, and social or cultural belonging reinforced" (Smith, 2015, p. 459). This tallies with Falk's (2009) general argument that the museum visitor experience is neither pre-determined by the exhibition content nor by pre-existing demographic characteristics of the visitor but formed by the confluence of the museum environment (including exhibition content) and the situated, identity-related needs and interests of the visitor.

If this is so, then the whole idea of the museum as a cross-cultural "contact zone" where cultural differences and diverse publics are allowed to meet and interact to establish mutual understanding needs to be qualified. Only for those visitors who are somehow predisposed to be challenged in this way may such cross-cultural boundary-crossing be actualised. This doesn't mean that museum staff should despair and believe they have no control over how visitors respond to their displays. Instead, they will need to develop more realistic understandings of what the educational role of museums might be, based on a greater consideration of the specific affordances of the museum as a place of cross-cultural encounter.

Indeed, a current trend in museum studies is an interest in analysing not just how museum displays construct meaning and representation (the cognitive dimension), but how they can fashion the *affective* dimension of the embodied museum experience by using display strategies and techniques that encourage particular ways of "looking, feeling and listening" to facilitate cross-cultural engagement. What Andrea Witcomb (2015) calls "pedagogy of feeling" would work at the sensorial level, rather than through the explicit communication of rational arguments or positions, "allowing more emotional and embodied forms of knowledge to take their place alongside the traditional faith in reason" (2015, p. 325). In the museum context, according to Schorch, Waterton and Watson (2017), such an approach can nurture an "affective cosmopolitanism" generated by the dynamic interaction between visitors and displays through "the cosmopolitan power of individual objects, the cosmopolitan agency of photographs and the cosmopolitan faces and stories of tour guides" (2017, p. 101). In a discussion of the exhibition strategies of the Te Papa museum in Auckland (New Zealand's national museum) and the Immigration Museum in Melbourne, Australia, they observe that each museum enacts rather than teaches cultural difference by deploying humanised cultural perspectives and multi-sensory displays. Based on interviews with visitors, they argue that the cross-cultural engagement may occur "through the performativity rather than representational function of the displays, on the

one hand, and visitors' interpretive dialectics of reflexivity and empathy on the other" (2017, p. 108), creating momentary, affective-subjective entanglements of self and other which they describe as cosmopolitan affect.

These are recent theoretical trajectories which require further research in our bid to better understand the ways museums might enhance cosmopolitan engagements across cultures.

Conclusion

In the past few decades, museums have been increasingly compelled to address the challenge of "cultural diversity." They have been tasked to diversify their audiences, seen as a prerequisite to democratising these cultural institutions. One prominent strategy to encourage immigrants and ethnic minorities into the museum is to target them as a specific audience category and to entice them with exhibitions thought to be of specific relevance to their cultural heritage and community. The problem is that such a strategy tends to confirm rather than attenuate the marginalisation of such groups, as they continue to be seen as peripheral to mainstream society and culture. To address this problem, diversification at the level of representation is required; in particular, the question is how different kinds of museums might tell more plural, cosmopolitan stories about the nation, allowing multiple perspectives to be heard and made visible. How can museums be inclusive of the voices and faces of cultural "others"? Ironically, the emergence of the immigration museum as a specific institutional genre is not just a sign of cultural recognition of these "others" inside the nation, but also – again – an indication of their continued minority positioning at the margins of the nation, requiring "special treatment." Finally, in pursuit of their purported educational role, museums have sought to establish strategies to promote cross-cultural understanding in increasingly diverse societies. However, visitor research suggests that the capacity of museums in this regard is limited: it would seem that visitors' interactions with museum displays are motivated more by a quest for confirmation or reinforcement of a sense of self and identity than by a desire to reach out to those who are culturally or racially different.

In short, the relationship between museums and cultural diversity is complex, contradictory and uneven. There is no question that museums occupy an important place in the broader cultural ecology of contemporary societies, as they struggle to come to terms with the need to recognise, embrace and represent their inherent diversity. Overly idealistic rhetoric about the museum's role as a vehicle for public learning and education for a cosmopolitan world, however, needs to be counteracted by a more sobering realism about the limits of the museum's communicative power.

Notes

- 1 <http://www.varldskulturmuseerna.se/en/varldskulturmuseet>.
- 2 <http://mkcentrum.se/in-english>.
- 3 <http://www.migrationmuseums.org>.
- 4 The travelling exhibition, called *Art of Islam: Treasures from the Khalili collections*, was first shown at the Art Gallery of New South Wales (AGNSW), Sydney, from 22 June until 23 September 2007.

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