

Please do touch: Discourses on aesthetic interactivity in the exhibition space

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Abstract:

Interactivity is widely acknowledged but poorly understood. This paper discusses the meaning of interactivity, comparing the literature with findings from a discourse analysis, which picks apart how we talk about interactivity. The discussion specifically explores aesthetic interactivity, one of several themes found circulating in public discourse. Aesthetic interactivity reflects the sensory aspects and subjective experiences of interactive digital media and is frequently associated with museum and gallery communications. The analysis tracks how this aspect of interactivity is represented in public discourse over a decade and explores why, despite technological and theoretical advances, successful interactivity can still happen as often by accident as by design. Gallery artworks and museum exhibits reflect differences in approach to aesthetic interactivity, revealed in discussions of interface selection and the balance of curatorial control and user choice. The paper argues that discourse analysis provides valuable data for research, allowing interactivity to be better understood, not as one defined and bounded concept but as a variety of multi-faceted styles in communication.

Keywords: Aesthetic, agency, interactivity, discourse analysis, interactive media, museum interactive, public discourse

Introduction

Interactivity is integral to everyday digital communications experiences. Yet the concept rouses questions, debate and frustration within the academic community as well as for audiences and digital media practitioners. Many studies on interactivity have been conducted from various disciplinary perspectives over the last two decades, yet it is still a contested and ideologically charged concept (Lister et al 2009). While the literature offers many valuable theoretical and technical descriptions of interactivity, most studies invariably pivot on the search for a single bounded universal definition (e.g. Rafaeli 1988, Jensen 1999, Downes McMillan 2000). This has generated debates over where interactivity resides (Bucy

2004, Stromer-Galley 2004), critique of the ideologies and technologies associated with it (Aarseth 1999) and divided opinion on whether or not it even exists (Manovich 2001). Meanwhile the proliferation of digital technologies, content, participants and practices continues, presenting a challenge for practitioners relying on academic research for direction.

Rather than searching for one universal definition, an alternative approach is to focus on how interactivity is understood 'in the wild' (after Jensen 2005) through its circulation as a concept in public discourse. It is important to recognise how our understanding of interactivity has developed over time. This paper illustrates how we have talked about interactivity over the last two decades. It presents findings from an analysis of fifteen years of public discourse on interactivity and discusses some of the issues relating to museums and galleries in particular. It begins first with a comprehensive introduction to the literature on interactivity in general, and then addresses how an historical discourse analysis methodology offers new directions for understanding interactivity, not least to provide what Parry (2009) calls an 'historicised' approach to digital heritage. The paper then presents a number of detailed explorations of public discourse to illustrate a particular 'aesthetic' mode of interactivity found most frequently in discourses relating to the museum and gallery context. The discussion focuses on how the public discourse can offer some new ground for building a critical theory of interactivity of benefit to both academics and digital media practitioners.

The Evolution of Interactivity Theories

Investigations into interactivity tend to define it as either: a) a characteristic of the medium, b) dependent on the context in which messages are exchanged, or c) "a perception in users' minds" (see Kiousis 2002:356 citing Heeter 1989 and McMillan 2000, see also Reinhard 2011). Indeed the question over which of these defines interactivity or whether it is a combination of all three, takes up much energy in the debate between 'rival camps' in the literature (see Hales 2002, Kiousis 2002, Quiring 2009).

From an evolutionary perspective, early definitions of interactivity focused on the characteristics of the technology. This emerged from what Huhtamo (1999) calls the 'engineer approach', focusing on practical developments in technologies first, and later their uses or effects. Later studies switched emphasis to the context in question, reflecting the rapid proliferation of 'new media' with interactive potential (Sundar 2004) combined with a research emphasis focusing more on both the 'cultural and computing' (Manovich 2003). This was accompanied by a notable parallel increase in academic interest and publications on interactivity (see Koolstra & Bos, 2009). In the mid-1990s, interactivity was deemed 'fashionable', giving rise to new catchwords such as 'interactive shopping', 'interactive television' (Huhtamo 1999). By the turn of the millennium, everything from "snoring dolls...to online transactions" was considered interactive (Downes and McMillan 2000:157), diluting the value of the concept further. Next, the debate over what makes 'interactive television' interactive (see Kim & Sawhney 2002, Holmes 2004) reflected the 'ideology' of

interactivity – a perceived new media characteristic deployed as a ‘buzzword’ to sell the capacities of multimedia (see also Shultz 2000, Lister et al 2003). Winston (1998) suggested the failure of the CD-Rom to live up to the promise of its ‘interactivity’ had a particularly negative impact on the concept.

Since 2000, there has been a turn to the user in interactivity research (see Jenkins 2003, Koolstra & Bos 2009, Reinhard 2011). Researchers now acknowledge that users may have preconceptions about interactivity, before engaging in research on interactive communications (Quiring, 2009), implying a kind of literacy in interactivity emerging among audiences. Further studies suggest that because interactivity refers to several distinct phenomena it can be observed as several ‘interactivities’ within a single communication event (see KB Jensen 2002, Reinhard 2011), which is echoed in Richards (2006) notion of the ‘generative’ capacity of interactivity. The analysis explored here aligns with this view and discusses aesthetic interactivity is one of several potential styles identified in public discourse.

Aesthetics and the cognitive effect of interactivity:

An alternative history of interactivity to that in computing, traces it through a variety of mediated art forms from the early 20th century (see Dinkla 1994, Manovich 2001). Early forms require a low level of effort by the viewer, at most perhaps movement in order to experience sculpture. Next, the viewer’s mental effort is challenged with developments of montage, abstraction, and minimalism – leaps of association, reconstruction and representation must be made. Then, with new forms such as installation and performance in the 1960s, art places new demands on the audience, in the destruction of linear narrative (Genosko, 1997). This paves the way for interactive computer installations (Manovich 2001).

The emphasis on viewer effort correlates to theories of constructivism over the same time frame, describing the ‘active reader’, a view strongly influential on early theorists of hypertext, but also in active audience film and television theory (Morley, 1998). But the suggestion that hypertext interactivity can be compared to interactivity with art and is essentially a postmodern feature allowing users to become ‘co-authors’, contributes to another ‘myth of interactivity’ (Manovich, 2001). This myth is based on the notion that hypertexts objectify and represent mental processes, reflecting a ‘larger modern trend to externalize mental life’, popular in cognitive psychology perspectives (ibid: p.57).

Indeed evolutionary psychology has attributed the ability to process meaning to the externalisation of memory in technological rather than biological formats, giving humans the ability to deal with ever larger amounts of information existing outside the immediate context of communication (see Donald, 1993). The retrieval capacity of external memory has changed our memory architecture so that, to the expert reader, “the encoding strategies are so deeply established that the medium itself is invisible; ideas literally pop out of the page and the processing of the message is unconscious” (ibid:163). This active interaction with a display is seen as an essential tool for modern styles of thinking, influencing new directions in psychological research such as ‘distributed cognition’ and

ethnographic studies in the workplace (*ibid.*). It is also influential in ubiquitous and distributed computing theory, in which the concept of interactivity with and between machines is central (see Dourish & Bell, 2007).

Manovich (2001) however, asserts that interactive hypertext links cannot be equated with interactivity in art because they simply ask us to “follow the mental trajectory of the new media designer” (*ibid.*: p.59). Although Manovich is correct in clarifying who controls the hyperlinking structure (the designer), this control does not extend to the action. Neither does it preclude interactivity with data on a cognitive level by users. It merely suggests an intermediary in the interactivity between user and data, an intermediary who could even be viewed as a remote participant. By creating the interface, links, potential for feedback, control and engagement with data, the digital media designer facilitates interactivity in much the same way as an artist does in creating an artwork. But the designer does not control the level to which a participant will cognitively engage with the data anymore than an artist can control the level of meaning a viewer takes from their work. The art and satisfaction for both is in the challenge and may suggest a further layer or potential mode of interactivity, in the interface.

The act of hyperlinking does not imply that the user actually engages totally with all potentially connected data, no more than turning the page of a book suggests one is actually reading and taking in all its intertextual lexia. The ‘myth of the aleph’ may be applied to art and other media objects as much as to new media in the overstatement of narrative or cognitive power. By questioning the potential for cognitive processing in hypertexts, Manovich privileges the cognitive interactivity of art and other media objects over the merely physical interactivity of ‘new media’. This occurs partly because he relies so heavily on cinematic theory, which emphasises the psychological relationship between viewer and screen content (see Polaine, 2005). But it could also be another misapplication of critiques of representation, which are inadequate in discussing the ‘power of the interactive experience’ (see Penny, 2004).

Manovich’s critique is important however, not so much for what it adds to discourses of interactivity, but in how it exposes the interdisciplinary tensions in the literature between computer science and aesthetic and cultural theory. His later thesis that new media should be understood as an aesthetic stage in all newly emerging technologies is more persuasive, acknowledging the ability of the user ‘to change the work through interactivity’ as a key element (Manovich, 2003). Indeed, interactivity enables a ‘genuinely new experience’ of user agency within digital narratives (Mateas, 2001), which along with immersion and transformation are the key ‘aesthetic’ categories for analysing interactive narrative experiences, particularly games (Murray, 1997). But interactivity is more than a stage in development; it is the defining feature of games (Salen & Zimmerman, 2004), contributing to their aesthetic qualities as a new artistic medium (Deen, 2011). Indeed games studies have focused productively on the specific challenges of balancing the user agency and artistic control enabled by interactivity (for example, see Sicart, 2008).

Interactivity in museums and galleries:

The use of digital technologies for display and communication has repositioned museums within the digital space (Keene, 2000). Indeed, digital media objects that have cultural content “appear to particularly favour the database form” (Manovich 2001:p.219), thereby encouraging interactivity. This has allowed museum studies discourses around interactivity to filter through to cultural studies and into public discourse, not just from recent digital experiences but from the older museum rhetoric of exhibitionary technique (see Witcomb, 2003, 2006). Until the late 20th century, museum studies was concerned mainly with the traditional educational and conservation focus of these institutions (Fyfe, 2006). The turn to the visitor and the museum’s embrace of the digital has brought museum studies to the attention of sociologists, cultural theorists and media and communications researchers (see Hooper-Greenhill 1992, McDonald 2002, Parry 2005). Parry (2007) later emphasises the importance of recognising the long history of computing in museums, a story which does not merely reflect heritage institutions reacting in a technologically determinist way to new developments, but a far more ‘reciprocal and complex’ relationship (ibid: p.5).

However interactivity and learning are both connected and contested within the museum community. The ‘fetish’ of interactivity – a central feature of museum design particularly in science museums – can be traced back to their 19th century origins (see Hughes 2001, Witcomb 2006). More generally, ideological tropes associated with interactivity such as ‘empowerment’ and ‘participation’ are utilised in science museums to bridge the perceived gulf between science and society (Barry 1998, Barry 2012b). Indeed interactivity in museums is deliberately associated with ideas of ‘choice’ and ‘democracy’ as though these are natural partners for the concept (McDonald, 2002). Therefore, the ‘interactive’ museum is seen to become part of a branding exercise in the increasingly homogenised design of the museum experience internationally (see Hughes, 2001).

The rhetoric of “exploring” and “touching the past” along with “discovery” and “hands on” learning shows how pedagogic theories inform interactive exhibits in terms of the communication strategies and goals. However, the design of interactive exhibits in museums is more often found to be the didactic and stimulus-response style, resulting in inconclusive pedagogical outcomes. The ‘discovery’ style on the other hand is more frequently associated with children’s museums (see Witcomb, 2006). Barry’s (2012b) analysis of public discourses around plans for an ‘interactive’ science museum in Ireland reveals the conflicting representations of interactivity used to gain political support or control over an institution yet to be realised.

Interactivity is frequently considered an aesthetic tool for museums (Henning, 2007), a ‘mode of display’ rather than an exhibition object (Witcomb, 2003). Nevertheless, museum ‘interactive’ interface design tends to be informed by a traditional HCI or AI model, unsuited to a public venue where users more frequently interact in groups (Reading 2003, Heath et al 2005). Indeed successful interactives are thought to happen by luck rather than by design (McDonald 2006, Heath & vom Lehn 2008). In the case of museums, the strategies and procedures of interactivity are only beginning to be understood in terms of the venue

itself, the changing nature of its communicative features and purposes, and its place in the assemblage of communication contexts. Indeed it is becoming increasingly appropriate to regard museums as media not least because they ‘encourage’ interactivity (see Silverstone, 1994, Parry 2010, Barry 2012a).

Problematizing interactivity:

The meaning of interactivity is considered to have value in media and communications, because of its impact on ‘effectiveness’ and information retention (see Heeter, 1989, Koolstra & Bos, 2009). Its meaning is important to the design and development of media and communication artefacts in which interactivity is an integral part (Hughes, 2000, Lister et al, 2003, Heath & vom Lehn 2008 etc). In his investigation into interactivity “in the wild”, KB Jensen (2005) called for research into the circulation of ideas about interactivity precisely because of its practical value, recognising that “...different notions of interactivity may be passed back and forth, and negotiated, between discourses of marketing, public debate and practical design...” (ibid: p.11). Yet, despite the volume of research and the detailed and valuable analyses carried out on interactivity, the academic discourses have failed to fully explain it, indicating a ‘problematization’ of the concept (after Foucault, 1984) which could benefit from discourse analysis.

The literature on interactivity shows that discourses emerge from the structures of academic discipline as well as from the contextual, social and political structures of technology and media and their uses. Public discourse on the other hand reflects wider conversations in circulation which can influence its reception and implementation. By taking an historical perspective to public discourse we can follow the meaning of interactivity that has emerged from the many contexts in which it has arisen over time, while expressly seeking contradictions outside of the disciplinary boundaries of a technologically determined evolutionary scale of definition.

Sourcing Public Discourses:

This analysis is part of a larger study of fifteen years of public discourses on interactivity (Barry 2012a).¹ It is based on a content analysis, which quantitatively described public discourses on interactivity², coupled with a qualitative discourse analysis of the different meanings of interactivity found, one of which is ‘aesthetic interactivity’. The analysis unpicks these discourses and follows citations, references and sources, acknowledging where discourses are transported interdiscursively between orders of discourse (following Fairclough, 2009). The goal of discourse analysis is a widening of the discussion towards better understanding and an examination of the different ‘threads’ which construct interactivity, following the ‘combined’ methodological approach (Jorgensen & Phillips, 2002).

Aesthetic interactivity addresses the sensory values interactivity contributes to communications and the subjective experience of participants during a communication

event. The term 'aesthetic' is used broadly to cover a variety of perspectives which address interface design, sensory engagement, communication relationships and philosophical enquiries as to the nature of user, author, interface, text, narrative and so on. It is strongly associated with discourse communities in the museum and gallery sector, with artists and institutional representatives among those most frequently quoted. While this paper does not present the quantitative findings, it is worth noting that references to museums/galleries featured strongly, emerging among the most frequent topics and venues associated with interactivity.³ This association was greater than anticipated and reflects the number of articles specifically considering museum/gallery activity along with coverage of plans for an 'interactive science museum' in Dublin.⁴ Overall, the findings further support the argument that the museum is a valuable but underrepresented context in communication research, specifically in relation to interactivity (see Silverstone 1994, Heath and vom Lehn, 2008).

The following analysis explores discourses on aesthetic interactivity and shows how public discourse reflects the literature while also revealing alternative trajectories. It traces discourses through a number of articles, from either end of sample timeframe, selected as quantitatively representative of the aesthetic theme as well as for the richness of discourse, the intertextual references they expose and the variety of technological contexts providing qualitative material for analysis.

"Confusing the Gallery with the Playground": Discourses on Aesthetic Interactivity

The first article in the sample to reflect on aesthetic interactivity dates from 1998 and combines an exhibition review and interview with the artist Grace Weir.⁵ She explains her 'interactive' artwork, which comprises a projected image and trackball device and explores ideas around technology, narrative, creativity and interactivity:

Any work is about the unfolding of events in the real time of the human body. It's to do with the lived experience of the body. And I'm not interested in the idea of so-called interactive media where there's no author and so on - I'm the author, I'm still telling a story. I'm wary of those debates. And the piece is not about QuickTime VR, the technological aspect of QuickTime VR - it's about the middle of a circular image where there's no beginning or end to it. Technology on its own doesn't interest me - it's what we do with it that interests me.

The artist clearly attributes the aesthetic experience of interactivity to the physical and psychological impact on the audience of a process in which the audience is consciously participating. But despite the conscious process, the use of technology and physical handling required by the installation, Weir pre-empts any attempt to categorise it as merely 'interactive media'. At first, she appears sceptical about interactivity. The qualification – 'so-

called' – implies a connotation she disagrees with, ascribed to others. However, her use of the phrase 'interactive media' along with her statement of interest in technology's uses, suggests that she does not dismiss interactivity itself, perhaps just 'those debates' that treat it as a characteristic of the medium rather than a function of design or what is 'done with' technology. That she is 'not interested' in these debates and ideas, is more than just a statement of her position on the matter. It reinforces her assertion of control over the 'unfolding of events', as an artist dictating the aesthetic experience and very definitely as the author, still telling the story. Her scepticism is centred on the ideas associated with interactive media rather than the interactive technologies themselves.

The reference to "no author" alludes to poststructuralist ideas recirculating widely during this time on how interactivity might finally represent Barthes (1967) terminal prognosis for authors, as readers/users/audiences were being digitally empowered to interact and shape the 'unfolding' text. Her rejection of this thesis is not a rejection of interactivity in itself but rather the idea that it undermines the authority of the artist, thus asserting that art (and indeed all communication) is not a game of equals. It also anticipates Manovich (2001) who privileges the cognitive interactivity of art over the merely physical interactivity of 'new media'. Even if the audience can physically trigger, shape or respond to the work, the artist is ultimately in control:

I'm not interested in the way a vast amount of multimedia has so many things happening as quickly as possible. I wanted to strip it down and edit severely. The technology exceeds our philosophical ability to deal with it." She quotes philosopher Paul Virilio on how the Internet collapses our sense of physical distance and attacks Renaissance notions of perspective.

Subjective experiences and audience reactions to art and technology are central to Virilio's work. Indeed he had recently described interactivity as a catalyst for the disintegration of society, proposing that "interactivity is to real space what radioactivity is to the atmosphere".⁶ Virilio suggests that the facility to shrink distances between places and people and to speed up processes (which Weir alludes to) makes interactivity a central component of the 'information bomb' which will eventually lead to a catastrophic 'rupture'.⁷ This is the 'integral accident' that all new technologies contain, the unforeseen side effects of a technology (see Armitage, 2000).

Virilio's views are clearly influential for the artist and important for an intertextual analysis in several respects. First, it serves to clarify that aesthetic discourses on interactivity are not always focussed on how interactivity positively facilitates communication but how it might also detract from it. Weir is determined to retain control of the message regardless of technology's potential. Secondly, Virilio's view of interactivity goes beyond individual communication events to the collective impact of successive and multiple interactivities, an avalanche of information and feedback, which as Weir observes may exceed our "philosophical ability to deal with it". It is worth noting that the projected image in her

installation was described in the article as appearing to show “the aftermath of some catastrophic flood”, perhaps a play on the notion of a flood of information and other themes circulating around its creation, yet long before the floods of information created by the development of wi-fi, ubiquitous computing and social media. Thirdly, Weir invokes Virilio and Barthes along with Gleick’s Chaos theory and other interdisciplinary ideas through her comments on interactivity, displaying an awareness of current discourses but also sympathy towards them. These strands had currency generally in the art/technology discourse community of the late 1990s, not least through the emergence of new degree programmes in ‘multimedia’ at that time, of which Weir was one of the first graduates. Ultimately she sees the artist as a bulwark against the flood, whose role is to control and edit technological potential thus allowing the audience to process the experience.

A second article from 1998 discusses how American sculptural installation artist Peter Shelton (also exhibiting in Ireland at the time) was retreating from the interactivity of his previous work:

In the past, his work has incorporated substantial interactive elements...It seems however that Shelton has more recently been at pains to remove some of the toy-like qualities of his previous works. “If you make something like that,” he says, “people are apt to confuse the gallery with a playground.” This apparently is a bad thing. Interactivity these days is of a subtler kind.⁸

Not unlike Weir, Shelton restricts the potential for interactivity in order to control the activities of the audience and ultimately shape the experience of the artwork. The playful aspects of interactivity are problematic and may not be considered appropriate in the serious environment of an art gallery. This echoes Baudrillard’s (1997) then recent assessment of interactivity in art:

... some new museums, following a sort of Disneyland processing, try to put people not so much in front of the painting – which is not interactive enough and even suspect as pure spectacular consumption – but into the painting....The masses usually prefer passive roles and avoid representation. This must change, and they must be made interactive partners. It is not a question of free speaking or free acting – just break their resistance and destroy their immunities. (1997:p22)

This is a serious criticism, implying that interactivity not only has a simplistic commercial impetus but also a technological force that bends the audience to the museum or gallery’s will rather than that of the artist. Baudrillard’s description of what the masses ‘usually prefer’ does not reflect Shelton or Weir’s approach to their work, which is still targeted at and respects individual audience experiences. In fact, Weir is attracted to the more playful and sympathetic attitude of museums and science galleries towards technology and art

rather than the more formal atmosphere of art galleries. She notes that science “embraced the use of multimedia in those kinds of spaces far more effectively than art galleries”. Perhaps it is the curators who are confused about appropriate behaviours in their space.

A portrait of the artist online – interactive hypertexts:

A third article from 1998 reflects the fascination at the time with the potential of the world-wide-web, tracing the hypertext aspects of interactivity back to its roots. It describes James Joyce as the “Patron Saint of Interactivity” for pioneering a hypertextual literary style.⁹ A hypertext theorist suggests that Joyce would have been drawn to the ‘polyphonic qualities’ of the web. However, the complexity of transferring Joyce’s hypertext works to the hyperlinked world of the web forces both the theorist and a Joycean scholar to think again about interactivity:

... to create interactive versions of *Ulysses* and *Finnegans Wake* [would] force the text to be what it is not, that despite the non-linear structure of *Ulysses*, the fact that it is written as a sequence of pages, in print, is essential to it as a work of art. [the Joycean scholar] Callahan acknowledges the way in which the interactive element of hypertext can be distracting...”one of the concerns is that such a translation might actually flatten the texts once a reader is faced with a screen-full of bright hyperlinks whereas she previously had to intuit and construct her own connections”...

Both contributors give different reasons for being wary of interactivity by exploring each other’s field of interest – the hypertext author believes the material integrity of the original work should be preserved while the Joycean scholar is concerned that displaying the hyperlinks would dilute the hypertext reading experience. Both clearly associate interactivity with hypertext, but as produced on the digital web rather than the analogue hypertext of Joyce. The overall assessment is that taking interactivity to its limit may have a negative aesthetic effect for the user/reader. Again, the author’s control asserts itself over when and how the audience/reader/user experiences the work.

At this time however, more complex issues of authorial control were emerging. From the late 1990s, several attempts to translate Joyce’s works into hyperlinked digital texts were met with legal rather than aesthetic barriers, due to the zealotry with which his estate guarded copyright until its expiry in 2012. This led the Irish Government to enact emergency legislation in 2004 to allow an exhibition (including ‘interactive’ displays) on Joyce and *Ulysses* at the National Library of Ireland to go ahead in celebration of the centenary of Bloomsday.¹⁰ The legislation relates to the ‘displaying’ of certain works, but is not specific about hyperlinking or interacting with them. Neither activity proved litigious in the event, as another article in the thread outlines:

Much of the display is interactive in a most exciting fashion; a visitor will be able to turn the pages of Ulysses virtually, to home in on a particular episode or passage, and to learn much more about it through touch-screen technology.¹¹

This representation of interactivity alludes to both empowering and aesthetic qualities, and acutely so with regard to Joyce's Ulysses. Its perceived impenetrability for non-literary scholars combined with the lack of physical public access to manuscripts of production, until the legislation enabled the exhibition to take place, means that the museum 'interactives' embody user agency. By enabling access, interactivity empowers users to have an aesthetic experience which, is given here as a right of citizenship given protection in law. The public can interact with the text in new ways not possible with the analogue original, with the added value that, via interactivity, Ulysses might finally be understood – well, almost.

Please do touch. Or, watch while others do: museum interactives:

The cultural and social implications of 'aesthetic' interactivity continue to be the focus of later articles from the sample, such as that featuring a permanent exhibition on Ireland's military history at the National Museum Collins Barracks, which opened in 2009.¹² The author describes the experience of handling a rifle "while a drill sergeant shouts instructions" as:

... part of an interactive addition to the museum that will give the public a hands-on experience of what barracks life was like for a soldier in the 1890s and in 1942. Although it's not so hands on for everyone apparently. "The Irish can be a bit shy," says Lar Joye, curator of the museum's Soldiers and Chiefs exhibition. "The tourists are usually much more eager to give it a go, but the Irish aren't so sure"...

The style of the interactive and activity it proposes are connected to a museum object and a story of the everyday experience of infantry involved in command/response communications with the drill sergeant. A strong relationship between the 'interactive' and object or story is central to effective exhibitionary design (Heath and von Lehm, 2009). But clearly one of the more unpredictable aspects of designing touchable exhibits is whether people will actually interact. If the potential for interactivity is there but visitors do not participate and only observe the linear aspects of presentation, is the exhibit still interactive? Some visitors prefer to watch while others interact, but are they still participants in the communication too? Most likely they are 'partial witnesses', one of many unplanned aspects of user experience created by the lack of understanding of how interactives in museums are actually used (see Heath & vom Lehn 2003, 2009).

An intertextual analysis reveals that the quoted curator wrote extensively in specialist journals about the design of the exhibition and the challenge in presenting Ireland's complex historical relationship with the military.¹³ However, no details were given

on the curatorial choice of guns as an interactive interface, a surprising omission, leaving it open to accusations of being an example of the ‘fetish’ of interactivity. Shyness about interacting is an unsatisfactory explanation for local visitors not engaging. Irish visitors may in fact be more reticent than their European counterparts about handling guns, because of the particular socio-cultural context weapons have in Ireland.¹⁴ Gottlieb (2008) notes how providing young visitors with a simple choice of animal character interface for a handheld audio guide had a profoundly positive effect on their engagement and immersion in a museum experience, arguing that successful interactivity emerges from ‘a combination of ‘social ethics with innovative technology and design’ (ibid: p.175). That interactivity can have different associations according to social and cultural identity is significant and raises questions for curation and design on the aesthetic aspects of interactivity.

Similar issues arose ten years earlier, in another article from the sample reviewing “an interactive exhibition that subverts the roles of asylum seeker and citizen” then taking place in France.¹⁵ The exhibition asked visitors to take part in a ‘giant role play game’ to experience life as a refugee, where they are met by soldiers, bureaucrats, smugglers, aid workers and so on. The impact of this design, incorporating digital elements replicating bureaucratic technologies, was described as highly personal and emotional for visitors who frequently came to identify strongly with their character. Of particular interest is the difference in reaction from visitors, depending on their own ethnic origin. French natives felt shocked and ‘uneasy’ with the experience while actual immigrants felt empowered by the parallels to their own lives. Tourists contrasted the aggressive officialdom they met as mock refugees to their real life tourist welcome, while actors (some immigrants themselves) playing police and administrative officials expressed surprise at how enthusiastically they plunged into their roles.

The aesthetic aspects of interactivity are subjectively experienced here and perhaps can only be subjectively measured in what is both a digital and social interactive experience. The characteristics of a person’s identity, socio-cultural or ethnic background or their life journey up to arriving in an exhibition space, all contribute to their subjective experience of interactivity. This is a variation on active audience or reception theory in media studies (see Hall, 1980, Morley, 1980, 1992, Livingstone 1998) where individual visitor characteristics and behaviours are pertinent to mediated communication outcomes. Indeed the ‘text’ of the French exhibition had cultural and ethnic difference ‘encoded’ into it specifically to provoke shock and surprise as an exhibition aim. It provides evidence that a sophisticated understanding of interactivity in exhibition design does not depend on having the most advanced digital technologies but relies on the potential for individual user agency and immersion.

At Collins Barracks ten years later, the article muses on visitors’ expectations of interactivity in exhibition design, acknowledging some innovations in the area:

In the age of interactivity, the trick for every modern museum is to give people an experience of history that is not simply confined to behind glass. This is not

possible with everything in [the exhibition] which has delicate and valuable artefacts including the shirt James Connolly wore when wounded at the GPO...But it already has some novel elements, including interactive touchscreens and mounted guns that visitors can test out.

The 'age of interactivity' alludes to a universal code or style of communication associated with modernity and with the way that museums must now communicate with their publics, in a break from the past. To give 'an experience' of history that goes beyond the observational or pedagogical role traditionally associated with museums requires a 'trick' - aesthetic interactivity. Merely seeing original artefacts as objects is not enough. Interactive objects must be touched and used and visitors should also experience, even embody the characters or identities associated with them. There are practical constraints of course due to protection and conservation of the artefact's value, but 'novel' approaches can still be made using the interactivity of touchable exhibits, including people and guns. For example the 'Stokes Tapestry' interactive¹⁶ in the same exhibition proved more touchable, as noted in an industry review:

An interactive point...allows you to animate the tapestry and have the drunken revellers at Donnybrook Fair beat each other up and activate a solemn march at a Dragoon's funeral. This makes everybody five years old, and buoys us up for the horrors of the religious wars of the seventeenth century and the awful atrocities of 1798...¹⁷

Here, as a complement to the touchable aesthetic of the interactive table-top interface, the playful aspects of interactivity are invoked, portraying its childlike appeal. Both play a supporting role, effectively 'buoying' visitors for the next more adult step on the exhibition route. Interactivity has an increasingly emotional impact it appears, as interfaces move away from traditional yet impersonal kiosk and touchscreen techniques. Ultimately, the aesthetic theme emerges in discourses that describe the ways in which interactivity attempts to access the emotions through the senses and engage with game-like agency, rather than through an intellectual form of empowerment.

The Age of Interactivity: Reflections on Public Discourse

These public discourses illustrate how interactivity has been discussed 'in the wild' across more than a decade of exhibition communications. They depict the multifaceted role interactivity plays in gallery and museum communications – as spectacle, story and object – and the variety of interfaces with which it is associated. But they also reveal that the most technologically advanced interactives are not perhaps always the most successful, suggesting that our understanding of interactivity is not tied to technological progress. An historical perspective reaffirms that the core challenges in designing interactive communications for museums and galleries change little over time.

The immediate sensory experience of interactivity has a central role in the discourse. Interactive exhibits represent more than just a 'mode of display'. The interface – trackball, touchscreen or tabletop – physically mediates between artist and audience, between curator and user and between visitor and institution. This 'aesthetic' quality differentiates this experience of interactivity to that of other communications. The interface is a manifestation of the relationships between participants for better or worse. Its attractiveness masks the tension between artistic/curatorial control and user freedom and remains the key to successful implementation of interactivity.

This tension produces differences between the aesthetic interactivity associated with artworks and that associated with digital heritage. In discourses emerging from the artistic space, the artist aims to retain control of the visual, tactile and other sensory aspects of communication. The audience's ability to engage with an artwork is being continuously managed and the tensions within this communication event are not negative (from the artist's perspective) but constitutive of the artistic challenge. What appears to be an empowering style of interactivity for the audience is under deliberate control of the artist – empowerment as a vehicle to carry aesthetic experience – a delicate balancing act, frequently well informed by both computing and cultural discourses.

In the digital heritage context on the other hand, communication goals are multifaceted. Museum interactives are required to carry pedagogical, political, even commercial communication, while their interactivity is subject to far less 'author' control. User freedom is enthusiastically encouraged, with curators aspiring (not always successfully) towards deep interconnections between visitors, objects, context and place. They recognise the 'fetish' value and the playful quality of interactivity, but misunderstand why visitors do not engage, implying a less well-informed planning and design process. This supports concerns expressed in previous research about the need for more detailed on-site research into museum visitor interactions.

Public discourse gives valuable insights into the relationships produced in the design and experience of aesthetic interactivity in gallery and museum communications. The analysis reveals the variety of 'communities' contributing to public discourse, from those with professional engagement in the aesthetic interactivity to theorists to journalists. Artists dislike how interactivity can interfere with communicative goals, when an audience is distracted by the technology rather than focused on the message. Cultural theorists reflect on negative effects of interactivity and its distasteful association with commercialisation, while hypertext theorists are concerned with the effect of interactivity on the aesthetics of reading. Curators opt for literal aesthetics in the selection of interfaces for 'interactives', which may meet educational or empowering aspects of interactivity yet display a lack of awareness of the deeper sensory experience for visitors. Audiences (which it should be noted are often only present in public discourse as a third party, via hearsay) are either completely immersed or unsure whether to engage, while it is unclear which outcome is the goal of the exhibition design.

Clearly individual characteristics and sentiments play a key role in predisposition towards and reception of aesthetic interactivity and require further focused research. If museums aspire towards producing an active audience of individuals, they require a more sophisticated understanding of how interactivity produces agency, a perspective that perhaps games studies can provide. Meanwhile artists may inadvertently produce more homogenised experiences for audiences, because of their understanding of and thus desire to control aesthetic interactivity. Some confusion between playground and gallery may not always be a bad thing.

While technologies for interactivity have changed radically over the timeframe of the sample, there is little sense of similar progress in the understanding of interactivity. Indeed, as technological advances create greater options for user input via a wider variety of interfaces (whose aesthetic can mask ‘computing’ almost completely), innovative technologies can push the problems with misunderstanding interactivity to the fore. To paraphrase one contributor to the discourse, recent advances in technology perhaps exceed our philosophical ability to deal with it. In contrast, traditional interfaces, limited technologies and minimal choice can still produce a more satisfying aesthetic interactivity by providing users with valuable agency, such as simply ‘turning the pages’ to read an early manuscript.

It is telling that the articles most engaged with computing and cultural discourses, where the meaning of interactivity is at the heart of the discussion, date from the last century. The recent articles reflecting more advanced technologies tend to minimise discussion and – by stating that the ‘age of interactivity’ has arrived and is making museums modern (by making objects touchable and interactive) – inadvertently echo Baudrillard’s caustic critique of such cultural imperatives. This suggests that public discourse has lost track of the longer history of ‘digital heritage’ discourse and experience (Parry, 2010). Perhaps the ‘age of interactivity’ is not just a period of time characterised by this concept, but reflects the amount of time interactivity has been around, and the wealth of experience that needs to be acknowledged. That interactives still (sometimes) fail to engage the audience shows progress can yet be made in understanding and implementing aesthetic interactivity successfully.

Discourses on interactivity are not just talk. Discourse attaches recognition to a concept in specific contexts of communication and assigns responsibility for its potential to specific actors or participants. Most importantly, public discourse contains a more complex mix of communication events than can be replicated in field or laboratory research and therefore presents a valuable source of data. These discourses on aesthetic interactivity show that when the appropriate content, interface and communication strategy coalesce in context, interactives can be a success. This happens when aesthetic interactivity is a) used to attract and engage with the visitor on a sensory level, b) empowers both the producer and audience (even to different ends), and c) delivers user agency while achieving artist/curator communication goals. By understanding more deeply how aesthetic

interactivity operates, particularly in enabling user agency, the museum and gallery sector could see future success less frequently by luck and more often by design.

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Notes:

¹ The full study involved an extensive quantitative content analysis on a random sample of c.1000 newspaper articles. Newspapers are seen to represent the constitutive effect of discourse, having the power to establish what becomes discourse, through their widely disseminated content to a large audience (see Mautner, 2008). The *Irish Times* has consistently available content from 1995 and as the ‘paper of record’ in Ireland, is influential on policy and decision makers, but also records the highest readership among discourse communities considered relevant for this research. It also carries significant internationally syndicated material reflecting the flow of international public discourse. The final sample size was more than five times that stated to be required in the only comparable longitudinal research found (five years) in the literature on content analysis sampling (see Lacy et al, 2001).

² Articles were coded for over 20 variables such as: the genre and topics of articles in the sample; the contextual details of references to interactivity such as geographical location, venue, domain of communication, technical configuration and participants; the form of interactivity identified such as with machine, data, network or between people; the definitions in the text that reflect discourses in the literature; the people, organisations and literature quoted and the core research question of what different thematic representations of interactivity arise in the coverage

³ The content analysis findings showed that ‘Exhibition spaces’ represented 10% of the venues in references to ‘interactivity’ while 5% of articles referenced ‘Museums’ as main topic. In terms of the specific media involved in references to interactivity, the ‘Exhibit’ was the third most frequent configuration (after ‘www’ and ‘TV’). For a detailed overview of quantitative findings see Barry, 2012a.

⁴ Though also relevant to this discussion, the science museum analysis is omitted here for reasons of space (see Barry 2012b for detailed analysis).

⁵ “The eyes have it” by Michael Cunningham, *Irish Times*, April 20, 1998

⁶ Virilio in conversation with James der Derian 1995, published online at *Dialogues* available at <http://www.watsoninstitute.org/infopeace/vy2k/futurewar.cfm>

⁷ Virilio suggested that the Kosovo war and the Asian financial crisis of the late 1990s were but the first signs of a future ‘integral accident’ to be brought about by interactivity, as outlined in conversation with John Armitage, October 18, 2000, published online at ctheory.net available at <http://www.ctheory.net/articles.aspx?id=132>. See also Armitage (2000).

⁸ “Tubes, chambers, pipes and arteries” by Luke Clancy, *Irish Times*, March 26, 1998.

⁹ ‘Portrait of the Artist as Webmaster’ by Karlin Lillington, *Irish Times* June 16, 1998

¹⁰ The *Copyright and Related Rights (Amendment) Act 2004* – “An act to remove doubt as to the lawfulness under the Copyright and Related Rights Act 2000 of displaying certain works in public”. See also “Emergency law to prevent copyright threat to Joyce show” by Mark Hennessy, *The Irish Times*, May 27, 2004.

¹¹ As described by Terence Killeen, author of *Ulysses Unbound*, reviewing the exhibition in “Behind the words”, *Irish Times*, June 12, 2004.

¹² ‘Hands on at Collins Barracks’ by Shane Hegarty, *Irish Times*, March 4, 2009

¹³ See ‘Interpreting and designing *Soldiers and Chiefs*’, by Labhras Joye and Paul Martinovich, *Museums Ireland*, Vol. 16, 2006, Irish Museums Association.

¹⁴ Joye and Martinovich present a detailed analysis of the complexity of the historical relationship with the military. Modern Ireland’s gun licensing laws, lack of military service, unarmed police force and associations of guns with paramilitarism may produce a different attitude to handling weapons

than other nationalities. The article author notes that a Spanish family go through their drills at the exhibition and are 'not put off by the Irish language orders'. Spaniards would have a more recent experience of a military state and a different set of cultural values around gun use. Space does not allow for the development of this aspect further, but there is clearly more analysis to be done on curation of objects as interfaces for communication in museums.

¹⁵ As reported in "Oppressed for a day" by Veronique Mistaien, *Irish Times*, April 17, 1999.

¹⁶ From the 1840s, British Army soldier, Stephen Stokes while stationed in Ireland spent over 15 years working on a tapestry whose 30 panels tell the story of his career, in the Royal Dragoons and Dublin Metropolitan Police. It was adapted to a table top interactive for the exhibition. (see <http://www.100objects.ie/portfolio-items/stokes-tapestry/>)

¹⁷ "Soldiers and Chiefs: The Irish at war at Home and Abroad from 1550, National Museum of Ireland, Collins Barracks" by Catriona Crowe, *Museums Ireland*, Vol. 17, 2007, Irish Museums Association.