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Digital interactivity in public memory institutions: the uses of new technologies in Holocaust museums

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Research has shown that people learn about the history of the Nazi Holocaust from a variety of interpersonal and mass media sources (Reading, 2002). Evidence from that previous study shows that this includes history explored on-line at home or through interactive kiosks in museums (Focus groups Gdansk, Lodz and Cracow, 1998; New York and Washington, 1999; London, 2000).¹ Individuals and organizations dedicated to educating people about the history and memory of the Holocaust have developed extensive on-line materials which can be accessed from the office or home. A search using the word 'Holocaust' with a standard commercial search engine such as Alta Vista results in 1,143,332 available pages related to the Holocaust. In addition, archives and museums such as Yad Vashem and the US Holocaust Museum now have extensive materials on-line. The Shoah Visual History Foundation, which has recorded 51,721 video testimonies of Holocaust survivors and witnesses, as well as providing analogue copies to the countries where the interviews were conducted, is developing digital interactive systems that will allow researchers to call up by computer extracts of digitized video testimonies on indexed subjects (Douglas Greenberg, Director, Personal Communication, 2002). Within public institutions such as museums, web-sites and interactive digital media consoles are also increasingly part of the memorial landscape. This is not surprising given the recognition by museum organizations of the possibilities of new technologies. London's Science Museum Curator, Suzanne Keene, has argued that web interfaces, particularly with museums, will make knowledge more important than the

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collections themselves, 'People will be able, so to speak, to help themselves to the information that the collections embody without mediation or interpretation' (Keene, 2000). Keene's report showed that 50 percent of museum visitors have on-line access at home and that the high access figures for museums and cultural web-sites has a positive effect on visitor numbers (Keene, 2000). In some Holocaust museums, such as the Sydney Jewish Museum or the US Holocaust Museum, interactive digital technologies are used as one way to tell the story of what happened; in others their use is purposefully minimalist so as 'not to distract visitors from having the same narrative experience' (Suzanne Bardgett, Director of the Holocaust Exhibition, Imperial War Museum, interview with author, London, 2002). But in some cases – as with the Simon Wiesenthal Multi-media Learning Center, part of the Museum of Tolerance in Los Angeles – digital interactive kiosks or consoles are a central way in which the public are educated about the events.

Yet, do interactive technologies in public environments offer different kinds of possibilities in terms of articulating the social memory of the Holocaust and what use do visitors themselves make of these technologies? Such an inquiry raises key issues for media scholars more broadly in terms of developing critical practice in relation to new technologies, as well as for Holocaust scholars, historians and museum curators.

This article investigates the role of interactive digital media technologies in constructing socially inherited memories within public spaces - specifically the museum environment. Its objective is to extend debate on the developing use of kiosks and consoles with interactive media technologies in Holocaust-related museums. The article uses empirical research to begin to critically situate and theorize the uses of interactive digital technologies in relation to memory and history. It suggests that current use and practice does not necessarily articulate a new relationship with the past but tends to replicate familiar patterns. How people use technologies within museum spaces is by following established memory tropes that are essentially people- and story-centred. This indicates that museums could do well to critically explore other ways in which they could use new technologies within public institutions, which would place greater emphasis on agency and the relationship between the user's identity in relation to learning history and developing socially inherited memories. However, this approach is in conflict with a number of elements: the public service ethos advocated by some museums, the ethics of dealing with living memory, and the established institutional paradigms in which the history of the Holocaust has come to be publicly represented.

The article begins by considering why it is necessary to consider new media technologies in relation to the memory of the Holocaust and specifically in relation to Holocaust museums; it then looks at how such a study may be framed in terms of broader literature on digital technologies

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and Holocaust memory, before proceeding to an analysis of museum-based empirical research.

Why the Holocaust?

The Nazi Holocaust is a key point in the history of the last century: it changed irrevocably the world that has come after it, as well as altering perceptions and understandings of the world that preceded it. In Jürgen Habermas's now well known phrase: 'Auschwitz has changed the basis for the continuity of the conditions of life within history' (1989: 251-2). Inquiries into how its history is remembered and handed down can provide insights into when the events themselves took place as well as into the workings of contemporary culture and society. The latter is crucial: genocide has not ceased since the Holocaust. As Stein shows, within the terms of the Genocide Convention of 1948 (Article II), genocide has continued around the world, with massacres in Cambodia, East Timor, Rwanda and Burundi, Sierra Leone and the former Yugoslavia (Stein, 1996). It is often repeated that the Holocaust should never be forgotten, yet surely one of the reasons for remembering what happened is to enable reflection on how to prevent further atrocities by teaching the history and memory of the events in ways that enable people to make connections between the past and their own lives, actions and responsibilities? From the 1970s onwards many academics have approached such questions relating to the uses and forms of memory of the Holocaust from a variety of perspectives (Friedlander, 1993; Hartmann, 1994; Herf, 1997; Huyssen, 1995; Krondorfer, 1995; Langer, 1991; Novick, 1999; Zelizer, 1998). As James Young has stressed, the concern with how the memory of the Holocaust is being handed down is because it is not simply understanding what happened that is important, but also how the actions taken by those involved - as victims, perpetrators, rescuers and bystanders - were influenced by socially inherited myths, ideas and cultural forms (1988: 4). Focusing on how the memory of the Holocaust is being articulated by new technologies in public spaces can provide important clues for understanding the relationships between media, culture and memory that, in turn, can enable reflection on the role of different media and socially inherited memories in current events and subsequent atrocities.

Museums as memory institutions

Critical consideration of the uses of new technologies within museum environments is particularly important, since museums as public spaces constitute prime social 'memory institutions' – along with archives and libraries (see Digital Cultural Heritage IV: Networked Virtual Museums and Memory Institutions, 2002). Museums are now central repositories of national and community memories of the Nazi genocide: there are museums and permanent exhibitions about the Holocaust in most European countries including Austria, Belgium, Czech Republic, France, Germany, Italy, the Netherlands, Poland and the UK. The public memorialization of the Holocaust by museums also extends well beyond Europe, articulating the transcontinental diaspora of those Jews who fled persecution by the Nazis, or who were survivors seeking to make new lives after liberation in 1945. Holocaust memory has become configured within museum environments in virtually every community world-wide in which Jewish people and other Nazi displaced persons were forced to re-settle. One of the earliest of these museums to be established was Yad Vashem: the Holocaust Martyrs and Heroes Remembrance Authority in 1953 created by an act of the Israeli Knesset in Israel (see www.yad.vashem.org.il). In the US, 15 years after President Carter established the Commission on the Holocaust, the US Holocaust Museum was opened on prime land in Washington, DC. On the West coast, the Simon Wiesenthal Center opened in Los Angeles in 1993, with smaller museums and permanent exhibitions opening up in the past decade in many other states, including Maryland, Michigan, New York, Pennsylvania and Texas. There are Holocaust museums in Argentina, Australia, Canada and South Africa. There is an exhibition in Shanghai, and in Japan there are Holocaust Education Centres in Tokyo and Fukuyama City. In addition, the numbers of people visiting these museums is not insignificant. According to the Director of the Imperial War Museum, London, its Holocaust Exhibition admitted 140.000 people in its first year (Bardgett, 2001: 5). Auschwitz-Birkenau, a UNESCO world heritage site, has more than half a million visitors a year (Smolen, 1995: 263). In its first year of opening, the US Holocaust Museum saw 2 million visitors pass through its doors (Linenthal, 1997: 338). The Simon Wiesenthal Center had 360,000 visitors per annum (Geft, 2002), with even the much smaller Sydney Jewish Museum attracting more than 30,000 visitors in the same period (Wesley, 2002). The tiny Holocaust Centre in suburban Melbourne received 240,000 students since 1984, with just over 16,000 total visitors in 2001 (Jewish Holocaust Centre Melbourne, 2002; Wright, 2001:49). Even an independently run Holocaust centre in a small village outside Fukuyama City in Japan attracted 10,000 visitors in its first year (Otsuka, 2002). Although not explored in this study, the question of why these museums are so popular is an interesting one; another interesting question concerns the kind of people who choose to visit such museums. Certainly, in some cases, it is evident that the majority of the visitors are school parties whose visits are part of their history or social studies curricula. During my own visit to the Holocaust Education Centre in Fukuyama, Japan, children visited as part of high school peace studies, which also included a visit on the previous day to the Peace Memorial Museum at Hiroshima. At the same time, although many of the adults visiting Holocaust museums do so because of family connections to the victims, I would suggest from my own observations and visits that there are also many adults who have no personal connections and who visit Holocaust museums as tourists – an indication of a popular interest in the memory of genocide and war.

The majority of Holocaust museums are still primarily artefactual: the story and narrative of what happened during the Holocaust is told through man-made objects from the time that include uniforms, children's toys, letters and photographs configured in relation to contemporary textual explanations and edited video and audio testimonies by survivors. They are also 'narrative' history museums that take visitors on a set journey. From different national perspectives, they tell an established global narrative of the history of the Holocaust that takes visitors through 19th-century European anti-Semitism, the rise of Hitler, the establishment of the Nuremberg Laws, the outbreak of the Second World War, the creation of ghettos and camps, the 'Final Solution', resistance and rescue, and, finally, liberation. However, not all museums are primarily artefactual: the Simon Wiesenthal Center's Museum of Tolerance in Los Angeles was established with the view that new technologies could provide young people especially with important new ways of learning about the events. It has devoted almost an entire floor to its Multi-media Learning Center. Digital interactivity in a variety of forms has been at the heart of the museum's philosophy since it opened in 1993 (Geft, 2002). For many smaller museums, interactivity comes from Holocaust survivors who act as educators within the exhibition spaces themselves. The Holocaust Museum in Melbourne and the Jewish Museum in Sydney are classic examples of this. However, as the last of the survivors are moving towards the end of their lives, such museums are also seeking to find ways of tactfully retaining their stories in the form digital interactive multimedia consoles located in the exhibition space (Morris, 2002; Wesley, 2002).

Memory and interactivity

The role of digital interactive technologies, and their use by museums and their visitors raise important issues about the form and effectiveness of 'interactivity' and about the tensions between visitor agency versus a shared memorial experience. Despite this, however, the area of inquiry has been virtually ignored by scholars in the field of Holocaust studies, although the role of museums generally in the memory of the Holocaust is something that has been addressed fairly extensively. Andreas Huyssen, for example, explains the place of Holocaust museums in modern culture as providing something permanent and fixed in a late capitalist world in which time and space, fact and fiction are collapsed and continually reconfigured (Huyssen, 1995). Within Holocaust studies, research on museums is predominantly concerned with the content of exhibitions and the ways in which different national contexts shape and influence the ways in which museums articulate and represent the events (see Brownstein, 1992; Crownshaw, 1999; Hoffman, 1998; Huyssen, 1995; Kushner, 1994; Young, 1993; see also Hoskins in this volume). Part of my previous research was also concerned with representations of the Holocaust in different museums and how these were shaped in terms of gender, with objects and artefacts, films and photographs and text articulating in particular ways the complex relationships between genocide and gender (Reading, 2002).

What has been observed is that museums play a key role in relation to people's use of web-sites: the most popular Holocaust-related web-sites are those that interface with memorial sites of atrocities and public museums, suggesting that users are reassured by the legitimacy and authority accorded these sites, especially amidst the confusion of web-sites that dress up anti-Semitism and Holocaust denial as historical truth (Reading, 2001: 335).

Holocaust museums themselves, however, have conducted little critical empirical work on the subject, although museum organizations more broadly are in the process of considering new technologies and their role in providing new ways of understanding and communicating cultural heritage. The British-based National Museum Directors Conference, for example, set out the possibilities for the uses of 'digital space' within the museum environment (see Keene, 2000). The International Council of Museums' Multimedia Working Group has also produced an extensive report that includes multimedia in museums and exhibitions. The report argues that since visiting a museum has long since been a multimedia experience anyway, computerized multimedia should be seen as part of the continuum of a 'tradition of interpretative and explanatory technology and techniques that grows from slide shows, text panels and dioramas' (Van der Starre, 2002a). It defines interactive multimedia as that which 'enables communication between the multimedia system and its users'. The Report describes the different uses for interactive multimedia within museums and exhibitions: how, for example, the technology can allow for artefacts to be seen from a variety of perspectives and contexts, unrestricted by location within an exhibition narrative; how it can provide for visitor orientation to exhibitions (Van der Starre, 2002b), test visitors' knowledge, provide for digital catalogues and allow for personalized visitor experiences through the use of ID card interfaces, whereby visitors can receive print-outs of information on a particular character (Van der Starre, 2002a). This certainly captures the variety of digital interactivity that is to be found in different Holocaust museums, including the Museum of Tolerance in Los Angeles. However, as with other museum-originated studies, the literature

is driven by the institutions themselves, with very little situated critical discussion. Examples of uses within very different museums are used anecdotally, with no acknowledgment of the differences between different kinds of museums or local cultural contexts. There is little complex exploration of how digital multimedia interactivity in relation to museums of history, and particularly museums of the Holocaust, may raise different questions from interactivity in a museum of science and technology, and how this may have particular implications for media-related learning and socially inherited memory. There is also no acknowledgement of broader discussions within media studies concerning new technologies and the difficulties of defining interactivity.

Multimedia interactivity is treated by critics in media and communication studies, in their discussions of the field of cyberculture, as much more problematic and complex, and it is from this field that this study draws in forming its methodological and theoretical framework. Political economists have approached on-line technologies in terms of how computer technologies, far from creating a new democratic medium where people can construct their own knowledge base, are actually exaggerating already established information and educational inequalities (Carter, 1997; Dear and Flusty, 1999; Streck, 1998). This raises the question of what kinds of visitors in Holocaust museums approach and use interactive digital consoles, and how they do so. Other critics of new technologies have suggested that the format itself offered by computers provides for alternative uses in relation to thinking about the past. Janet H. Murray, for example, argues that 'digital environments are procedural, participatory, spatial and encyclopaedic', and it is these features which constitute 'most of what we mean by the vaguely used word "interactive"' (1997: 71). What often happens in discussions of interactivity, however, is that it is often conflated with agency. Activity – moving a mouse, pressing a button - according to Murray, is not the same as agency. She suggests that one of the interesting possibilities of computers is that they allow narrative to be moved to a realm structured by games. 'Just as Art Spiegelman used the format of the comic book to tell the story of his father's experiences, a digital artist might use the structure of the adventure maze to embody a moral individual's confrontation with state-sanctioned violence' (1997: 131). If, as Murray argues, it is the games format, with its rhizomic structure, that allows for the full pleasure and effect on the user of experiencing their own agency in the developing narrative, then to what extent is this true of consoles currently in use in Holocaust museums – and are such 'games' formats appropriate to such content?

Some cyberculture critics go further in their visions of how interactive technologies can revolutionize social memory: Sparacino et al. argue that the museum could become, 'a living memory theatre' by incorporating wearable computers to create immersive museum environments: Our approach is that of bridging story and space through the Web. It is based on the observation that both museum and the World Wide Web are memory devices, repositories of information that we explore and navigate, seeking for knowledge and education. (Sparacino et al., 2002: 81)

They contend that new technologies should be used to 'immerse us in a memory device to imprint us with the memories of the past and project them indelibly into our future' (Sparacino et al., 2002: 81). But would visitors to a Holocaust museum really want to be faced with the immersive experience of an extermination camp selection? Do they need to? And yet, would not the immersive experience offered by characters facing moral choices – such as being someone in a position to hide those in peril but with the threat of your own family not having enough to eat or worse still being killed – help enable visitors to understand the steps on the road to tyranny and genocide?

This article is based on a study that explores these questions in relation to the uses of interactive digital technologies in the museum context. The Simon Wiesenthal Center's Multi-media Learning Center in Los Angeles was chosen as the prime focus because it has been at the forefront of new technology use within the Holocaust museum sector. The research involved interviews with museum staff, analyses of interactive console materials and participant observation as a visitor/observer over several weeks within the museum itself. The latter involved observing how members of the public used the consoles and the multi-media narrative choices they made. The latter draws on Clifford Geertz's idea of the researcher 'setting down the meaning particular social actions have for the actors whose actions they are' (1973: 5), as well as setting down 'specifications' or 'diagnosis' in which the researcher states 'as explicitly as we can manage, what the knowledge thus attained demonstrates about the society in which it is found, and beyond that, about social life as such' (1973: 27).

Re-articulating the past?

The curatorial philosophy of the Los Angeles-based Simon Wiesenthal Museum of Tolerance, which focuses on the genocide of the Nazi Holocaust, was that it would be technologically rather than artefactually centred in order to appeal to young people and to create 'a museum without walls' that would extend through the world-wide web the limited amount of time visitors are able to spend in the actual museum (Elana Samuels, Deputy Director, 2002). Thus their Multi-media Learning Center (MMLC), which is the focus of this study, is both available to visitors to the museum and can also be accessed by anyone from their own home, office, library or cybercafe anywhere in the world (see www.motlc.Wiesenthal.com/pages). Combined with this, according to the Museum Director, Liebe Geft, the museum's

communicative and educational philosophy is based on a constructivist approach which makes transparent the process of representing information and knowledge about the events, as well as encouraging visitors to ask questions and put together information for themselves. Liebe Geft maintained that the 'idea here is that people go away with questions, and the journey is one of self-discovery. History is important to learn but people need to know why they are learning it.' (Geft, 2002). At the same time, the Holocaust section of the museum is also based - like most Holocaust exhibitions, including those at the US Holocaust Museum, Washington, and Imperial War Museum, London - on the belief that people should experience all of a single narrative about the events, with all visitors absorbing the 'same foundational experience', with exits limited so that visitors 'can't skip bits' (Geft, 2002). Thus the Environrama Exhibits, in which visitors are taken through various scenarios, including a 1938 German café scene and a gas chamber, remain in darkness until the commentary has finished; visitors move round at a pace decided by the museum, with electronic doors only opening at timed intervals.

At the same time, the constructivist educational approach allowing for greater visitor agency and interactivity in the learning process is, arguably, reflected in the many forms of conventional as well as computer-mediated interactivity within the museum. These include educators providing visitor guidance, the 'Point of View Diner' and 'Millennium Machine' where people vote on complex issues relating to contemporary racism and tolerance. There are also various forms of computer kiosks within the museum. These include lobby-located museum information kiosks, eight touch-screen consoles showing various hate sites and Holocaust denial sites on the world-wide web. In addition, each visitor, once given a plastic photo identity card of a child Holocaust victim is instructed: 'A Personal History from the Archives of the Simon Wiesenthal Center: Insert Your Passport Card Below'.

The MMLC consists of an 'Interactive Research Room' with eight separate computer booths. The content of the MMLC consists of a hierarchically structured multimedia information system about different aspects of the Holocaust with initial choices configured around the following subjects: the Jews, the Nazis, World War II, Anti-Semitism, Resistance, World Response, Righteous among the Nations and After the War. There is also a button entitled This Week in History. Outside the Interactive Research Room there are additional consoles that provide selected extracts of materials from the research room. Four sit-down consoles focus on the Nazis, Anti-Semitism and the Final Solution; five sitdown consoles focus on The Jews and Resistance and Rescue; four sitdown consoles on World War II; and six touch-screen stand-up kiosks on each of the separate narrative branches. The MMLC digitized materials include photographs, sound, brief extracts from films and videos, documents, maps and textual information.

The digital textual material is drawn from conventional media sources such as the Macmillan's 1990 *Encyclopaedia of the Holocaust* and *Encyclopaedia Judaica*. The thematic narrative structure replicates the already now conventional and established narrative of Holocaust museums in different global environments. In terms of the form, far from using the possibilities offered by virtual environments and interactivity, the consoles are essentially interactive multimedia books, encyclopaedias on-screen. These features, however, are fairly typical of the more conservative ways in which digital interactive consoles – as a relatively new medium – are being used. As Sean Cubitt argues in relation to CD Roms and web-sites in *Digital Aesthetics* (1998: 141) 'All too often, they [interactive technologies] fall back on apparently simple, apparently intuitive, apparently tried and tested schema of older cultural forms, like the illustrated encyclopaedia, or the Hollywood film, a familiar tactic in any new medium.'

Interaction is achieved through touching or clicking on icons relating to each of the headings. The Jews are represented by a black and white image of Anne Frank beside a yellow star. The Nazis are represented by a colour image of Adolf Hitler next to a swastika. Resistance and rescue are signified by an icon of a rifle. The 'Final Solution' is signified by an icon of Auschwitz-Birkenau. The icons, I would suggest, are reliant on the established hegemony of Holocaust memory and re-articulate it in wordless form. The well-known images of Anne Frank, Adolf Hitler and Auschwitz-Birkenau are reduced to symbols to click on. In this respect, the technology re-inforces the tendency, remarked by a number of scholars writing about traumatic memory and especially Holocaust memory, towards re-using the same images, which become formulaic and habitual (Herman, 1994: 177). Barbie Zelizer has described how visual memories of the Holocaust have been reduced to familiar images and cues (1998: 158). This short-hand often screens out and prevents people from integrating more traumatic, complex and difficult historical events and issues. In some key ways, then, the digital interactives in the Museum of Tolerance's Multi-media Learning Center do not re-articulate Holocaust memory, but follow established pathways in terms of digital aesthetics and historical narrative content.

Yet perhaps visitors themselves use multimedia interactives in unexpected ways? Outside the museum the MMLC web-site is extremely popular (Geft, 2002). Within the walls of the museum itself, though, the MMLC is very often empty, with groups visiting for as little as five minutes as part of a much longer museum visit. The kiosks in the MMLC are set up for individuals, when observations showed that people tended to use the technologies in groups of two or three (Museum Observations, March–April 2002). Museums are, after all, social as well as educational places; thus how people use computers as a tool to access the past in public

within a memory institution may be different from how people use them in private. Using a multimedia encyclopaedia designed for one is problematic for more people: hence those not in control of the interactive consoles often drifted away. Unlike film, photographs, text or artefacts in the museum, visitors of all ages also repeatedly demonstrated a reluctance to approach the kiosks, often voicing a lack of entitlement to the digital world: 'Can we use this?' 'Is it okay to . . .' 'Is this for us?' 'Can anyone use this?' (Museum Visitors, 22 March). In contrast, visitors approached Holocaust artefacts behind glass and video exhibits with confidence. Yet they would then take minutes to approach computer technologies, circling nearer and nearer before then initially touching the screen at a distance. Even then there was often the expression that further instructions were needed - with high school children asking their teachers 'Where do we go to?' 'Where's the keyboard?' 'What are we looking for?' 'What's it do?' Even in a late capitalist context, in which popular culture is heavily configured around computer games consoles and there is a high concentration of personal computers in private homes, it should not be assumed that people in the context of a public memory institution will know how to use new technologies, or want to do so. I would suggest that just as art requires what Pierre Bourdieu describes as cultural acquisition as part of an individual's habitus (Bourdieu, 1984) so too with technology for learning about the past. Interactive digital technologies are not yet established elements that are part of most people's cultural acquisition in the public context. In private, however, MMLC generates 10,000 hits from people who remain with the site for some time every day, according to the Museum's Director (Geft, 2002). Hence there was predominantly relief expressed when people discovered they could access the material on their computers in private: 'Oh look, honey, we can access this at home, that's much better. Let's get the address' (Museum visitor, 26 March 2000). This I would argue is not solely about the short amount of time that visitors have in the memory institution and the social context of the technology. It is also to do with the kinds of memories the technology is articulating. Witnessing atrocity – however distant – is painful, and perhaps there are some crimes that visitors prefer to witness and integrate as individuals in private. At the same time, the preference for logging on at home is also in accordance with how people treat experiencing and learning about the past more generally; after a visit to a castle or an historic site, people seek a souvenir to extend the memory between the public to the private lifeworlds. The word 'souvenir' comes from old French meaning to remember and is usually associated with an object that recalls a certain place, occasion or person (Hanks, 1990: 1120). With Holocaust memory, too, people want a reminder of the occasion, a reminder of their visit, and seek to take an 'object' out of the institution with the web address as their souvenir. The differences in public and private use also indicate how the integration of social memories is complex and on-going, taking place over time in different contexts, rather than learnt all in one go from one medium.

Since each of the stand-up kiosks in the Los Angeles-based MMLC had additional outward-facing monitors, as well as the monitor facing the user, it was possible to unobtrusively observe the interactive narrative choices that visitors made. Click on a branch of the main menu: the Jews, the Nazis, World War II, Anti-Semitism, Resistance, World Response, Righteous among the Nations and After the War and visitors are presented with four choices – Places, People, Organizations and General Topics. What was particularly interesting was that whichever first branch visitors chose, which had no established pattern, almost 100 per cent of visitors then opted to interact with information related to People. This is not unexpected: the history of the Holocaust is about atrocities and crimes committed against people. A general study of North American individuals and their approaches to history also shows that individuals are most interested in history about people, such as family history (Rosenweig and Thelen, 1999). Likewise, when history is within living memory the sources cited as most important in the development of socially inherited memories are other people: family members, school teachers, survivors, witnesses (Reading, 2002). This suggests that, in constructing materials for interactive consoles, media practitioners need to interogate how this preference can be used to extend and challenge users' memories of the events. Visitors want to know about other people's stories.

When visitors are subsequently presented with icons relating to a range of media – video, photographs, text, maps – they nearly always sought to interact with video materials first; then, digital photographs, then digitized maps or documents and finally text as their last choice. However, there were also some gender differences: girls and women gave more focus to reading and to text. Thus while girls and women would take the time to read the 75 words of captions accompanying many photographs, boys and men would generally choose to press the enlarge photo button. This gender divide is supported by earlier research on Holocaust sources and memory in Poland, the USA and UK, in which men stressed the importance of images on the Internet and women the usefulness of question and answer and textual information. One man said, for example, that on the web-site of the Holocaust Museum in Washington, DC, he found that images in particular were useful to him: 'the visual images to me were more than a lot of words', and that they brought 'home the depth of the hurt' (Peter, aged 29, focus group, Washington, DC, April 1999).

What was also observed was that for all visitors over several days, when faced with a screen of choices relating to lesser known aspects of the Holocaust, they either literally walk away or keep navigating through 'select other topics'. Thus, faced with a screen of buttons of names of

people that only Holocaust scholars or experts would know, people randomly choose one and then lost interest. In public, I would suggest, people prefer to make interactive choices based around 'what they already know' from what is established within the socially inherited memory of the Holocaust of their cultural and national context. Thus, on the point of the programme relating to 'the Jews' visitors chose 'people' then 'scholars, writers and artists' and then 'Anne Frank'. On the part of the programme relating to 'the Final Solution', visitors chose 'extermination camps' and, when faced with a choice of different camps, they chose 'Auschwitz-Birkenau'. Thus, with digital interactives in public there is navigational predictability related to the knowledge and understanding that is part of people's development of social memories. This suggests that the extent to which visitors will actually extend or have challenged their knowledge and socially inherited memory of the Holocaust through interactive technologies that utilize traditional encyclopaedic forms in a public context may be limited.

Alternative conclusions?

The article used empirical research from the Museum of Tolerance in Los Angeles to begin to critically situate and theorize the public uses of interactive digital technologies in relation to memory and history. It suggests that in terms of multimedia content and narrative structure, digital interactivity tends in this context towards the conventional reproduction of established media forms, notably the encyclopaedia. Further, the use of click-on icons based on familiar Holocaust figures - Adolf Hitler and Anne Frank – to navigate the materials, reinforces the tendency within traumatic memory and Holocaust memory especially towards familiar visual cues, which can act to screen out more complex approaches to what happened. Further, it is notable that visitors using consoles in public do not demonstrate the same interest, cultural entitlement or authority towards using new technologies to access history as they do towards conventional exhibition media - the artefact or the photograph. How they then navigate through a hierarchical multimedia system is configured around interactions with history related to people, and around events and stories that are wellestablished within the socially inherited memory of the events. Laclau and Mouffe's concept of articulation theorized in Hegemony and Socialist Strategy (1985: 105) may be usefully applied here to extend our understanding the relationships between new technologies and socially inherited memories of the past. The concept refers to the process by which relationships between different elements are established in ways that modify identity through articulatory practice. This, I would suggest, can be used to frame an understanding of how socially inherited memories may be modified – or not – through what can be termed articulatory practice. Articulation explains how representations of the past in different mediations interlock with subjectivities in specific situations. Thus it is not simply that new technologies do or do not offer a new way of representing or accessing the past, but rather there are a complex set of articulations between context, the technology, the philosophy of the museum, and the visitors themselves. How the memory of the Holocaust is socially inherited through curators' constructions of the events articulated within new technologies is, in turn, re-articulated by visitors' know-how of the technology articulated by the public context and the events learnt within the museum itself, and from previous social interactions and other media.

This also raises the question of whether or how museums should pursue a more radical approach to new technologies; for example, using a games format with a more rhizomic structure that Murray argues allows for the full pleasure and effect on the user of experiencing their own agency in the developing narrative? Or whether museums should go further to create 'a living memory theatre' by incorporating wearable computers to create immersive museum environments (Sparacino et al., 2002: 81)? Games formats could disrupt the tendency towards re-articulating the familiar and avatars facing moral choices could help enable visitors to understand their own responsibilities in the steps on the road to tyranny and genocide.

However, Holocaust museums are public institutions which are usually accorded a national responsibility to tell the story of horrific events, and, understandably, curators emphasise that the events must be told in ways that are in keeping with the solemnity of the crimes that were committed. Thus Suzanne Bardgett, Director of the Imperial War Museum's Holocaust Exhibition, said in an interview, 'We decided that there was no place for games technology and that we shouldn't employ anything that smacked of theme parks . . . in keeping with our advisory group we erred on the side of solemnity. We turned away from risk' (Bardgett, 2002).

Virtual games, to the museums themselves, are, arguably, inappropriate as a form to be used in relation to the history of the genocide and the Holocaust, especially within living memory. Yet young people of different faiths in Poland, the US and the UK all said how playing games in the playground formed one of their memory practices as children in relation to the Second World War and the Holocaust, especially for boys (Reading, 2002). It is also debatable whether games or taking on identities necessarily lack either serious or moral intent: games, even amidst the most horrific of circumstances are how children, especially, come to understand the world. George Eisen has shown in *Children and Play in the Holocaust* how young people played games closely related to the scenes they witnessed in the ghettos and the camps: Girls in the Lodz ghetto imitated their mothers by pretending to stand in line, clutching in their hands 'Ghetto-Rumki' (ghetto currency or coupons issued by, head of the Lodz) for rations of vegetables. They replayed the scene with faithful realism. They quarrelled in the queue, pushed with their elbows and fought whilst pressing forward to the make-believe window. (Eisen, 1990: 77)

Boys played games such as Going through the Gate where labourers were searched by the police, or, Eldest of the Jews where a child played the role of Rumkowski and 'exhibited all the negative mannerisms and duplicity of his model' (Eisen, 1990: 77). So, perhaps the fear of 'games' is more to do with people's fear of the technology rather than the 'game', since people do use games as social tools in everyday life, even during the holocaust, and to learn about it.

Digital interactive technologies are also perceived by some public memory institutions as representing a diversion from the main narrative of the events, which must be told to visitors whole and uninterrupted. 'It's very important in that since we are charged as a national institution to tell the story that visitors have the same experience. It is important that they are told the whole story' (Bardgett, 2002). Yet how people learn about the Holocaust is in many ways no different from how people learn about other aspects of the past. It is cumulative, over a life-time, from a variety of media and personal encounters (Reading, 2002). Particularly with museums in the UK now being free to enter, it is also more likely that visitors will visit more than once, especially with a subject like the Holocaust, which is easier to integrate over a period of a time rather than 'all in one go'. It is also questionable whether it is the case that the Holocaust is one story, one narrative that can be told all at once. As James Young argues: 'In every country's memorials, in every national museum and archive, I found a different Holocaust and at times I found no Holocaust at all' (Young, 1988: 172).

How interactive digital technologies are used by public memory institutions and people themselves is in articulation with a variety of factors, including the matrix of ideas about the Holocaust itself. This study suggests that the process is not simply related to the content, or to the technology, but to the social uses of technology and the social construction and inheritance of historical events. How people actually use new technologies in relation to memory needs further empirical investigation in a broader variety of contexts. More empirical studies are needed in terms of how people in their own homes are using the Internet to access the past and how people are using kiosks in public places. Do people use kiosks differently in other national contexts? How are new technologies being used to articulate other genocides and other traumatic events? Do memory institutions and people use technologies in other ways in relation to, for example, memories of the Irish famine, or the cultural genocide committed against Australia's aborigines? As well as theoretical implications for media academics, such research has important implications both in terms of public policy and the financing of virtual memorial projects as well as for creative practitioners who want to construct the best possible materials to enable people to learn about history and the Holocaust especially.

It is, of course, crucial with the history of the Holocaust that people 'know' the facts and the story. But, at the same time, I would agree with the American high school teacher addressing his students at the end of their visit to the Museum of Tolerance: 'If this doesn't change our behaviour then what's the point in learning all this stuff?' When Art Spiegelman's *Maus* was first published, people worried about the appropriateness of its graphic novel form. The book is now translated into many languages including Japanese. When it comes to understanding genocide, it is not the form we should be scared of but ourselves.

Notes

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1. The results of these focus groups are published elsewhere, mainly in *The Social Inheritance of the Holocaust: Gender, Culture and Memory* (Reading, 2002). The groups were conducted in cities in Poland, the USA and UK, with 52 young people of different faiths and cultural backgrounds aged between 16 and 32, in 1999–2000.

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