

Scanning Memory: Three Case Studies of Memorials in the Digital Age

Jeremy Kargon, Architect
Mohammad Gharipour, Ph.D.

Morgan State University
Morgan State University

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00 Abstract

Although the planning of memorials has deep roots, long intertwined with architecture's, more recent proposals reflect contemporary trends in digital art and net-based social media. The following case studies serve to illustrate what represents a profound change in the definition and design of memorials:

- 1) 2010 Mount Rushmore Digital Scanning Project
- 2) MemoryLoops: 175 Audio Tracks on Sites of NS Terror in Munich 1933-1945
- 3) National September 11 Memorial and Museum

Despite their differences, these projects demonstrate three themes generally shared by memorials influenced strongly by digital media. The first, "displacement and reintegration," describes the transition through which certain digital technologies reconfigure object/subject relationships, traditionally space-based, through effects of mediated presence or other digital simulacra. The second, "proliferation of connection," describes the effect of net-based technologies, social media, and ubiquitous computing. The third theme is "stimulation," by which digital technologies magnify visual, aural, and even social experiences to engender a memorial's intended message.

00 Key Word Set

Digital Memorial Design
Memory Discourse
Virtual Community

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01 Introduction: the impulse towards memorial architecture

The planning of memorials has deep roots, long intertwined with architecture's. Memorial efforts seek to evoke shared perceptions of a stable past, especially in relation to present-day events.¹ Architecture's role, for instance, as vehicle for commemoration has persisted across time and culture, so that even today communities around the world devote considerable resources towards the elaboration of their memories in "fixed" material form. But the traditional impulse towards the creation of memorials has been inevitably transformed by recent trends among digital representation, parametric design, and net-based social media. Examples range from web-based, interactive sites (which might establish a virtual "space" bearing memorial inscriptions) to fully-immersive environments, the sensorial characteristics of which are controlled digitally. Still other memorials have been inspired by the imagery and processes of digital modeling itself, yet constructed from the same heavy materials as traditional monuments. In all cases, a kind of frisson has emerged for both designers and public, as digital technologies infiltrate what had been an overwhelmingly anthropocentric phenomenon. How has thinking about memorials changed in this nascent "digital age"?

Case studies can serve to illustrate these changes. Among the many new digital projects proposed within the last decade, each of the following represents a unique approach:

- [2010 Mount Rushmore Digital Scanning Project](#)
- [MemoryLoops: 175 Audio Tracks on Sites of NS Terror in Munich 1933-1945](#)
- [National September 11 Memorial and Museum](#)

Despite their differences, these works demonstrate general principles shared by other memorials influenced strongly by digital media. Each case study may be understood to reflect alternative perspectives on the following themes: the relationship between memory and mediated (or virtual) presence; the effect of net-based social behavior upon the public's expectation towards memorials; and the impact of digital culture upon rituals of commemoration, considered across political, cultural, generational, and religious boundaries. Without doubt these technologically-inspired changes relate, reciprocally, to previously-existing trends within memorial architecture.²

That the history of architecture itself begins with the erection of memorial forms presupposes an obsolete distinction between architecture and "mere" construction.³

¹ Andreas Huyssen, *Present Pasts: Urban Palimpsests and the Politics of Memory* (Stanford: Stanford University Press, 2003), 1.

² See, for instance, Ed Martini's review of older web-based memorial sites, dedicated to veterans of the Vietnam War, in *The Journal of American History* 87 (2000), 987-991.

³ The former view is most famously expressed in Nicholas Pevsner's dictum, "A bicycle shed is a building; Lincoln Cathedral is a piece of architecture." See his introduction to *An Outline of European Architecture* (New York: Penguin Books, 1977), 15. Since the original publication of Pevsner's book, of course,

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Nevertheless, even if the earliest archeological remains of buildings are vernacular, the structures which have remained intact from earlier civilizations are memorial monuments. Erected often to assert “political legitimization via the symbolic possession of [social] spaces,”⁴ ancient monuments such as Egypt’s pyramids or Persia’s rock-cut Achaemenid tombs attest to the persistence through time of power, ideology, and personality. Their original memorial purpose, of course, has long since eroded along with the societies from which they emerged. Yet the expressive power of these edifices has persisted, and so new memorial messages have emerged over time, based on the monuments’ physical characteristics, which connote grandeur and magnificence. One consequence over time has been the general conflation in popular usage between the very concepts of “monument” and “memorial.”

A similar conflation has come about between “history” and “memory.” Writing a generation ago about the American scene, J. B. Jackson admitted confusion concerning his culture’s engagement with both of those terms. He wrote:

I am puzzled by what seems generally to pass for a historical object or a monument. We admire and try to collect things... for their association with a phase of our past; and that is understandable, every generation has done the same. But with us the association seems to be not with our politically historical past, but with a kind of private vernacular past.⁵

Other writers have identified a similar distinction, finding in it a shift in the value that societies plan upon “history” and “memory.”⁶ Both relate contemporary events or acts to those of the past, but the former – ostensibly objective, canonical, and stable – has been increasingly displaced by the latter in the public eye. Although our essential understanding of memory derives without doubt from each individual’s personal, subjective experience, the notion of collective memory is by now an accepted theoretical basis for social identity, held by groups as small as families or as large as nations.⁷ What has remained consistent is an impulse to embody either history or memory in material form, conceived especially to afford groups with a physical locus for their rituals or celebrations concerning the past. Some writers point to the consistent role

historians interested more by social than formal matters have found as much to study among bicycle sheds as among cathedrals.

⁴ Peter Carrier, *Holocaust Monuments and National Memory Cultures in France and Germany Since 1989* (New York: Berghahn Books, 2005), 17.

⁵ J. B. Jackson, *The Necessity for Ruins and other Topics* (Amherst: University of Massachusetts Press, 1980), 89.

⁶ See Kerwin Lee Klein, “On the Emergence of *Memory* in Historical Discourse,” *Representations* 69 (2000), 127-150.

⁷ The best known text about “collective memory” is Maurice Halbwachs, *On Collective Memory*, tr. Lewis A. Coser (Chicago: Univ of Chicago Press, 1992). A review of recent literature about related concepts under the rubric “social memory” is presented in Jeffrey K. Olick and Joyce Robbins, “Social Memory Studies: From ‘Collective Memory’ to the Historical Sociology of Mnemonic Practices,” *Annual Review of Sociology* 24 (1998), 105-140.

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played by museums in support of national and cultural myths⁸; others point towards the traffic in representative statuary, the re-contextualization of which attests to those artifacts' continued role in political, or otherwise non-material, events.⁹

Figure: [Memento Park, Budapest: Statue Park Sculptures](#)

Source: <http://www.mementopark.hu/index.php?Content=Szoborpark&Lang=en>

Andreas Huyssen, professor of German and Comparative Literature at Columbia University, has suggested that “our contemporary obsessions with memory in the present may well be an indication that our ways of thinking and living temporality itself are undergoing a significant shift.”¹⁰ Huyssen has sought evidence for the shift not in representational concept but in formal medium and method. These are more naturally the provenance of artists, and not historians; certainly, the constantly evolving sensibility of artists towards their work has indelibly affected visual manifestations of history and memory – and, therefore, memorials. Throughout the last century, two trends have had a particular impact: one, the use of visual abstraction as an armature for free-association among both artists and their audience; and, second, the displacement of artwork from authoritative spaces, such as galleries, museums, or even their pedestals.¹¹ In the last two decades, however, an additional trend has had an even greater impact upon memorials and their art: the accelerating proliferation of digital technologies.

02 General characteristics of digital art

Although a cursory comparison between a traditional memorials and their digital counterparts might emphasize merely technical differences, a review of the last decades' history of digital art points towards many more fundamental differences. Accounts of digital media emphasize the distinction between designs which implement digital tools as means towards a traditional product and designs which make use of the new technologies' intrinsic properties, often characterized as “interactive, participatory, dynamic, and customizable.”¹² The translation of human sense-impressions into machine-readable information affords digital art with its essential – and revolutionary – fungibility. As curator and historian Christiane Paul has written, “One of the pragmatic aspects of digital practice is that information can be infinitely developed, recycled, and reproduced in various contexts -- it can breed new ideas through recombination. The

⁸ See Annie E. Coombes, “Museums and the Formation of National and Cultural Identities,” *Oxford Art Journal* 11 (1988), 57-68.

⁹ Jeremy Kargon, “Changing Monuments and Monumentality: Reconstructing Perceptions of Civic Identity,” *Interdisciplinary Themes Journal* 1 (2009), 114.

¹⁰ Huyssen, *Present Pasts*, 4.

¹¹ See Rosalind Krause, “Sculpture in the Expanded Field,” *October* 8 (1979), 30-44.

¹² Christiane Paul, *Digital Art* (London: Thames & Hudson, 2008), 67.

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recontextualization of information in various relational combinations is inherently connected to the logic of the database, which ultimately lies at the core of any digital art project.”¹³ Paul elsewhere cites the interactive filmmaker, Grahame Weinbren, whose essay “The Digital Revolution is a Revolution of Random Access” makes the point that these characteristics imply an art of “two kinds - the first based on the possibility of random access to material in a database, the second on digitization which leads to the computer's transformation of materials in real time.”¹⁴

That digital art analogies so often find “memory” at their core is naturally of significance for the iconography of digital monuments; but that digital technologies are literally a manifestation of this new memory paradigm is fundamental to their influence. “Random access,” “real time,” and “recombination” are hardly qualities which have long been associated with traditional monuments, the static nature of which has long been the subject of both veneration and satire.¹⁵ Furthermore, a potential for alternative perspectives and open contribution by many participants dovetails well with the widening rhetoric of democratization heard in many contemporary societies; on the other hand, social or political forces which reject such openness are certainly quick to identify digital media’s role among the opposition.¹⁶ In all of such cases, through the proliferation of digital media, “memory discourse” becomes quickly a matter for public policy, and so accommodation of (or reaction against) digital art and technology often becomes, too, an integral part of that policy.

The impact of digital art upon memorials can be understood, therefore, through three overlapping themes. The first, “displacement and reintegration,” describes the transition through which certain digital technologies reconfigure object/subject relationships, traditionally space-based, through effects of mediated presence such as telepresence or other digital simulacra. The second, the “proliferation of connection,” describes the effect of net-based technologies, social media, and ubiquitous computing. This theme may also touch upon the unprecedented explosion of access to information through digital means,

¹³ Ibid., 69.

¹⁴ Grahame Weinbren, “The Digital Revolution is a Revolution of Random Access,” *Telepolis* 17 (1997). Accessed December 30, 2010. <http://www.heise.de/tp/r4/artikel/6/6113/2.html>

¹⁵ See Musil’s famous essay, which depicts both sentiments: Robert Musil, “Monuments,” in *Posthumous Papers of a Living Author*, trans. Peter Wortsman (Hygiene, Colorado: Eridanos Press, 1987), 63.

¹⁶ Two recent examples of the political role of digital, social media are the following:

Robert Mackey, “Arab Bloggers Cheer on Tunisia’s Revolution,” *New York Times*, January 14, 2011, accessed January 30, 2011. <http://thelede.blogs.nytimes.com/2011/01/14/arab-bloggers-cheer-on-tunisias-revolution/?hp>

Robin Wauters, “China Blocks Access To Twitter, Facebook After Riots,” *TechCrunch*, July 7, 2009, accessed January 30, 2011. <http://techcrunch.com/2009/07/07/china-blocks-access-to-twitter-facebook-after-riots/>

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affording new relationships defined by virtual adjacencies and geographies. The third theme is “stimulation,” by which digital technologies magnify visual, aural, and even social experiences. Each of the following case studies may be understood in light of one of these three themes, although all of the examples incorporate aspects of the full scope of digital art.

03 Manifestations in Three Case Studies

- *Mt. Rushmore Digital Scanning Project: Displacement & Reintegration*

The first example makes use of those digital technologies which have changed the traditional spatial relationship between the subject and its object of perception. The *Mt. Rushmore Digital Scanning Project* is, first and foremost, a copy of an existing physical monument; yet the mission of the digital project extends beyond the making of a mere facsimile. The existing, physical monument, located among the remote Black Hills of South Dakota, is itself exceedingly well-known. Composed of the incomplete busts of four United States presidents, the memorial glorifies the nation’s executive office. Sited far from any urban setting and crafted as if emerging from the very geology of the region, the Mt. Rushmore National Memorial is the epitome of traditional physical monuments: enormous in scale, impressive in materiality, and specific to place.

Figure: [Mt. Rushmore National Memorial](#)

Source: http://upload.wikimedia.org/wikipedia/commons/8/82/Mount_Rushmore.jpg

Announced in 2009 and implemented in July 2010, the *Mt. Rushmore Digital Scanning Project* was conceived by CyArk, a non-profit organization with the mission of “digitally preserving cultural heritage sites through collecting, archiving and providing open access to data created by laser scanning, digital modeling, and other state-of-the-art technologies.”¹⁷ The work for Mt. Rushmore is part of CyArk’s world-wide initiative for the “virtualization” of other monuments, which include religious buildings, archeological sites, and other famous structures from the past¹⁸.

Figure: [CyArk Heritage Sites](#)

Source: <http://archive.cyark.org/project-list>

The global scope of CyArk’s projects illustrates that, in the context of digitalization, today’s commemorative commissions have little to do with communities in the traditional sense – that is, linked by geography, language, or national identity. Instead, new liaisons (and new exclusions) may be easily configured among agents connected only by digital means. The *Mt. Rushmore Digital Scanning Project* brought together teams from

¹⁷ CyArk, “About CyArk,” accessed December 30, 2010, <http://archive.cyark.org/about>

¹⁸ CyArk, “Heritage Sites,” accessed December 30, 2010, <http://archive.cyark.org/project-list>

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California, South Dakota, and Scotland for the eventual assembly of the project's digital image.¹⁹

With the support and collaboration of the United States National Parks Service (USNPS), survey technicians used 3-D laser scanning equipment to record a digital map of the stone monument's surface. The survey team descended from the summit of the monument with the digital equipment, suspended by a complex system of ropes and stabilization framework. Multiple drops assured complete top-to-bottom and side-to-side coverage for the digital map.

Figure: [Mt. Rushmore digitization: Ropes Team with Tripod](#)
Source: <http://www.nps.gov/moru/images/20100520212916.jpg>

Subsequently, the Scottish team assembled the collected data into a digital model, access to which will eventually be allowed to the public in several, still undetermined ways. The digital model itself can be conceived as a manifold, the shape of which exactly matches the surveyed monument – a mask, as it were, cast by the light of the laser instrument used to survey the enormous presidential faces. Initial animated views of the digitized work have been released to the public on the CyArk website.

Figure: [Digitized Mt. Rushmore animation: CyArk and CDDV scan Mt. Rushmore](#)
Source: <http://www.youtube.com/watch?v=LEk4BZ-fDTw>

The model's earliest release is imaged with a narrow color spectrum, from red through green, expressing only the density of the scanned data and evoking coincidentally the familiar color of holograms and laser light. Onto this data mesh will be superimposed image data from true-light photographs, so that "photo-realistic" animations may be prepared and disseminated.²⁰

Both the USNPS (a government agency) and CyArk (a privately-administered non-profit organization) explain their mutual interest Mt. Rushmore's digitization in a similar way: to protect the memorial's legacy, if not the physical monument itself, from irreparable loss. The two organizations emphasize, however, quite different scenarios and concerns. The USNPS has described the digital simulacrum as a tool for preservation and "interpretive programming."²¹ For CyArk, however, the Mt. Rushmore digitization is a necessary reaction to what the organization describes as an ongoing assault upon diverse societies' memorial inventories. "Unlike cultural artifacts safely housed in museums,

¹⁹ Paul Gallagher, "Scottish Laser Pioneers Lead Way in Preserving World Heritage Treasures," *The Observer*, August 23, 2009, accessed December 30, 2010. <http://www.guardian.co.uk/environment/2009/aug/23/mount-rushmore-conservation-historic-scotland> .

²⁰ Scott Lee, "Project Update: Mt. Rushmore," accessed December 30, 2010. <http://archive.cyark.org/project-update-mt-rushmore-blog> .

²¹ National Parks Service, "Digital Scanning Journal," accessed December 30, 2010. <http://www.nps.gov/moru/parknews/digital-scanning-journal.htm>

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cultural heritage sites are constantly at-risk. They are exposed to the daily effects of the natural environment, from the seemingly benign: sun, wind, and rain; to the dramatic: earthquakes, fire, and human aggressions.”²²

Figure: [“Heritage at Risk”: CyArk Hazard and Flood Map](#)
Source: <http://archive.cyark.org/hazard-map>

In a strategic sense, the motivation for CyArk’s wide-ranging digitization initiatives is *fear*. And although the organization’s fear of natural hazards may itself be mild, CyArk’s work more directly addresses those threats the company calls “dramatic.” The Mt. Rushmore project, seen in this context, points towards three particular concerns: concern for loss of the shared memories embodied by a particular memorial; concern for the maintenance of the shared contemporary experience of those memories; and, finally, concern for the collective identity which that experience engenders.

Several aspects of the digital scanning process address these concerns directly. The process of Mt. Rushmore’s digitization, for instance, proceeded with a celebrated, public, and *physical* encounter with the actual monument. Even before the digital model was released to the public, the story of the persons involved – technicians, park personnel, and related project consultants – was announced with great fanfare. Furthermore, the digitization process was itself non-invasive and did not damage the original monument. The physical Mt. Rushmore memorial continues, therefore, its trajectory through American society’s “memory-space.” Likewise, its digital counterpart – that is, the data collected, composed, modeled, and disseminated by CyArk’s team – has begun a parallel trajectory, the path of which traverses a very different cultural geography: network-based, implicitly trans-national, and defined demographically by those who have access to digital resources (and by those who do not).

- *MemoryLoops: Proliferation of Connection*

Other digital memorials have been based upon the new technology’s participatory nature, leveraged further by the commercial explosion in social media applications and tools. One such memorial is *MemoryLoops: 175 Audio Tracks on Sites of NS Terror in Munich 1933-1945*, which uses an urban framework to structure participants’ encounters with text and audio content. The memorial’s impact may be found in the intimacy (and pathos) afforded digitized data by its juxtaposition with physical space.

Figure: [Michaela Melián: MemoryLoops Home Page](#)
Source: <http://www.memoryloops.net>

²² CyArk, “About CyArk,” op. cit.

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The *MemoryLoops* project was the result of a public competition, announced initially in 2005 by the Cultural Office of the City of Munich, Germany. The competition was won by Michaela Melián, whose work in “time-based media” often combines art objects with recorded sound. The competition brief sought to solicit “new forms of remembrance,” influenced by “reflection on the contemporary access to memory.”²³ A public symposium on these themes was held in 2006, followed by an open roundtable discussion and student workshop in 2007. The completed project was inaugurated in the fall of 2010, at which time public events addressed both the new memorial and the theme “contemporary art forms of memory in the public space.” As a municipally-sponsored, publicly-endorsed project, *MemoryLoops* is consistent with the conventional view of monuments as emerging from consensus, reflecting a shared perspective on the historical past.²⁴ Quite unconventionally, however, *MemoryLoops* embraces a wide range of contemporary digital media: a web-based site for full media access; a mobile “app” for media content interaction at locations throughout Munich; map-based markers for on-site orientation; and audio media in both German and English for the bulk of the site’s content. The full impact of *MemoryLoops* depends upon one’s simultaneous experience of the virtual, web-based content and one’s view from within the city of Munich. In addition, “visitors” from around the globe can orient by the memorial’s graphic city map while they listen to audio narratives at their computers or over their mobile phones.

MemoryLoops’ graphic design for the web site and for the mobile app emphasizes Munich’s urban plan, locations within which are linked to historical events referenced in audio tracks. The audio files themselves are spoken, first-hand accounts of victims of National Socialist policies and acts. Melián has added musical backgrounds to some of these narrations, heightening listeners’ engagement with the intended mood of the memorial piece. The spoken narrations are not, however, original recordings. Transcripts are read by adult actors, historical documents by children. Furthermore, sources for the transcripts are nowhere given within the *MemoryLoops* site. So for visitors to *MemoryLoops* memorial, an apparent lack of supplementary contextual information (such as victims’ names or photographs) radically de-emphasizes the past’s role as history in the usual sense. Instead, the memorial asserts a series of impressionistic connections to contemporary Munich. In effect, *MemoryLoops*’ appropriation of anonymous victims’ spoken words displaces the power of “testimony” in favor of an aestheticized, essentially theatrical performance.

Figure: [MemoryLoops: Alte Römerstraße 75, KZ-Gedenkstätte Dachau](#)

Source: <http://www.memoryloops.net/de#!/322/>

²³ Portal München Betriebs-GmbH & Co., “Victims of National Socialism - New forms of remembrance: The Competition,” accessed December 30, 2010.
http://www.muenchen.de/Rathaus/kult/bildende_kunst/kunst_im_oeffentlichen_raum/opfer_nationalsozialismus/321635/wettbewerb.html.

²⁴ J. B. Jackson, *The Necessity for Ruins*, 94.

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If a salient characteristic of digital art is the proliferation of connections (among agents live or artificial or near or far), one may question the value of such ersatz connection, the result of which may be a false or misleading empathy. To be sure, this problem is by no means limited to *MemoryLoops* or to digital media in general; nevertheless, the too-facile nature of *MemoryLoops*' associations may be a consequence of its digital medium's essential fluidity. For instance, another unsettling result of *MemoryLoops*' use of new media (much of which has only recently been adapted from purely commercial implementations) is the association of commercial rhetoric with the memorial's digital environment. Borrowing unwittingly from language typical to on-line product placement, the "features" of a memorial for victims of state-sponsored terror are simplistically laid out for consideration, comparison, and even rating!²⁵

Figure: [tomis GmbH & Co. KG: *MemoryLoops* App on Apple iTunes](#)
Source: <http://itunes.apple.com/il/app/memory-loops-en/id399801517?mt=8>

For better or worse, one can identify in this rhetoric's appropriation a consensus among both designers of and visitors to digital memorials: the social mores surrounding digital media's proliferation have become an inevitable part of public speech throughout Europe, the United States, and in countless other places around the world.

○ *National September 11 Memorial and Museum: Stimulated Memories*

Unlike *MemoryLoops*, the digital component of the *National September 11 Memorial and Museum* (NS11MM) supplements a physical memorial through the familiar vehicle of web-based images and information. The physical monument remains, however, in development as of this writing. The website has, therefore, assumed the memorial functions of a still-inaccessible place and so has become itself a fully-functioning memorial.

Figure: [National September 11 Memorial and Museum: Web Site Home Page](#)
Source: <http://www.national911memorial.org>

Like other web-sites of many different kinds, the NS11MM home page includes links for diverse activities, views, and sources of information. The graphic focus of the page is an

²⁵ Although the tone of such language and casual interactivity may appear incongruous given *MemoryLoops*' subject matter, to trend towards these kinds of discourse may be an inevitable consequence of digital media's influence. Part of what is experienced today as "incongruity" may simply be the effect of an incomplete social evolution, in which diverse behavioral innovations are tried and discarded. Highly abstracted models of such new behavior has been quantified by economists; see H. Peyton Young, "The Diffusion of Innovations in Social Networks" in *The Economy as a Complex Evolving System*, ed. Lawrence E. Blume and Steven N. Durlauf (Oxford: Oxford University Press, 2003), Vol. 3: 267-281.

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aerial view of the “Ground Zero” site itself, updated within each current month. This view is presented as an interactive palimpsest; tabs at the image frame’s lower right allow visitors to toggle to views taken before the events of 9/11 and to a view of the future memorial. These images are presented as simple pictures, not as immersive environments; but their emphasis within the web site is iconic, their viewing ritualistic. At even an initial glance, visitors to the digital NS11MM are encouraged to engage, rather than (simply) to look. Indeed, the initial entry shown on web-site’s banner is titled “INTERACT,” a heading under which are the following entries: “The Memo Blog,” “Make History,” “Artists Registry,” “Latest Tweets,” and “Facebook.” The blog entries provide day-by-day accounts, written and spoken, by persons connected directly with the Memorial’s development; public comments about the blogs may be entered in the usual way. “Make History” directs visitors to an environment similar to *MemoryLoops*’, in which panoramic views of the existing site are joined to individuals’ spoken accounts of their experiences at different times respective to the events of 9/11. An interactive street map indicates the place from which each narrator’s story unfolds. Simultaneously, visitors to this web-page are encouraged to “Add Your Story” and to upload photographic or video material to the Memorial’s archive.

Figure: [National September 11 Memorial and Museum: Artists Registry](#)
Source: <http://registry.national911memorial.org/>

The “Artists Registry” provides another way for the public to contribute actively to the Memorial through digital media. “The Registry’s mission is to provide a gathering place and virtual gallery for art... The database, which is not formally curated, reflects the democratic breadth of artistic and artisanal response to the tragedy of the September 11 terrorist attacks and their aftermath.”²⁶ For more immediate interaction, a “Twitter feed” pushes information about NS11MM-related subject matter to visitors’ mobile devices or personal computers, extending the site’s “virtual space” throughout the extended, protean geography of individuals and their lives. Similarly, a Facebook page projects information about the memorial’s events onto the social network of nearly five thousand “friends,” each with his or her own web of personal connections, relationships, and families.

Figure: [National September 11 Memorial and Museum: Facebook Page](#)
Source: <http://www.facebook.com/911memorial>

Perhaps surprisingly, for all its visual content, the digital NS11MM is itself visually dominated by text. Those words are often phrased in the imperative mood: “Participate,” “View,” “Takepart [sic],” “Learn,” “Explore,” et cetera. The relentlessness of these commands may have much to do with the tone of public speech in the United States,

²⁶National September 11 Memorial and Museum, “About the Artists Registry,” accessed December 30, 2010. <http://registry.national911memorial.org/about.php>

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where the impulse to reflect is often mistaken for the impulse to act.²⁷ But the opportunities afforded by digital media transform in this case, mediated perceptions to actions, as if by definition. The effect of the digital NS11MM is this: these myriad actions, occurring only within a virtual information-space, are nevertheless elevated by their solemn subject to become the shared memorial rituals of a community, spontaneous on the one hand and self-identified on the other, for which the events of 9/11 have become a historic watershed.

04 Review and Projection

Taken together, these cases suggest that *activity* and *interactivity*, more than any other aspect of digital culture, have transformed the public display of memory throughout diverse environments. When Robert Musil wrote that “monuments ought also to try a little harder, as we must all do nowadays,”²⁸ his tone was arch and his intention satiric. But, today, his suggestion may be read with complete seriousness. Contemporary memorials and their audiences do in fact challenge the passivity of traditional, “invisible” monuments through both information provision and solicitation. Digital memorials challenge us to experience alternate perspectives and, furthermore, to share our own. What motivates the *National September 11 Memorial and Museum*, for instance, is the premise that on-going public commemoration is a shared responsibility and a common task. *MemoryLoops* demands a different kind of participation; but participation is, nevertheless, crucial for its memorial effect. Among all the cases reviewed here, “doing something” describes well each encounter with memorial content. Even to view the *Mt. Rushmore Digital Scanning Project* evokes the urgency of activism, if only to preserve an important memorial avatar. We are, with our monuments, indeed trying harder these days, and we are doing so with our new digital tools.

Has anything been lost by the rapid infiltration of this digital culture? Traditional monuments were meant to evoke permanence, but can memorials in the digital age provide a similar assurance? One answer is that the transition has long since occurred and has proven that, if anything, a medium which tends towards intangibility tends too towards true permanence. Almost two centuries ago, Victor Hugo wrote to this point in this well-known passage:

[D]uring the first six thousand years of the world, from the most immemorial pagoda of Hindustan, to the cathedral of Cologne, architecture was the great handwriting of the human race... In the fifteenth century everything changes. Human thought discovers a mode of perpetuating itself, not only more durable and more resisting than architecture, but still more simple and easy. Architecture is dethroned... In its printed form, thought is

²⁷ In the context surrounding the events of September 11th, 2001, see Jose Macias, “The Tragedy of Terrorism: Perspective, Reflection, and Action in the Aftermath,” *Anthropology & Education Quarterly* 33 (2002), 280-282.

²⁸ Musil, “Monuments,” 63.

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more imperishable than ever; it is volatile, irresistible, indestructible. It is mingled with the air... [w]ho does not perceive that in this form it is far more indelible? It was solid, it has become alive. It passes from duration in time to immortality. One can demolish a mass; how can one extirpate ubiquity?²⁹

The three memorials reviewed in this essay embody well Hugo's observations; they suggest too the reinvention of Hugo's words for the 21st century. "Human thought" may simply "perpetuate," but digital information *proliferates* through over distance and across media. For Hugo, thought is "volatile," but the social interrelationships encouraged by today's digital memorials are even more so. All three memorials, which stimulate the senses through their electronically-enhanced color or sound, have abandoned apparent solidity and have become, as Hugo might have it, "alive."

And despite the expansion of digital memorial culture, its physical counterpart most certainly thrives, as the NS11MM web-site attests. Real materials continue to be brought to real places to capture the attention of real persons – and not digital avatars. If the influence of digital art has transformed digital memorial culture, one may also identify a similar transformation among physical monuments of the traditional kind. The superposition of information upon the flow of perceived space has become, for instance, a recurring digital motif. But Madrid's recent *Atocha Monument*, built in memory of the March 11 attacks the city's train station, makes explicit reference to this theme.

Figure: [Memorial at Atocha Station, Madrid, Spain](#)

Source: http://www.e-architect.co.uk/madrid/atocha_monument_madrid.htm

Other examples abound and point towards the need for additional study. But one may conclude that new memorial inspiration in the digital age may well be independent of medium, whether virtual or real. Instead, the expressive purpose of our memorials may continue to be determined by what Walter Benjamin called *jetztzeit* (the "here-and-now"), and the potential for its fulfillment of our typically incomplete historical awareness.³⁰ Against contemporary lamentations about the loss of memory or, alternatively, the trivialization of history, the proliferation of digital memorial experiences promises a hypertrophy of *jetztzeit*, the consequence of which remains still to be perceived.

²⁹ Victor Hugo, *The Hunchback of Notre Dame*, trans. Catherine Liu (New York: The Modern Library, 2002), 168.

³⁰ Walter Benjamin, "Theses on the Philosophy of History," *Illuminations* (New York: Schocken Books, 1968), 261.