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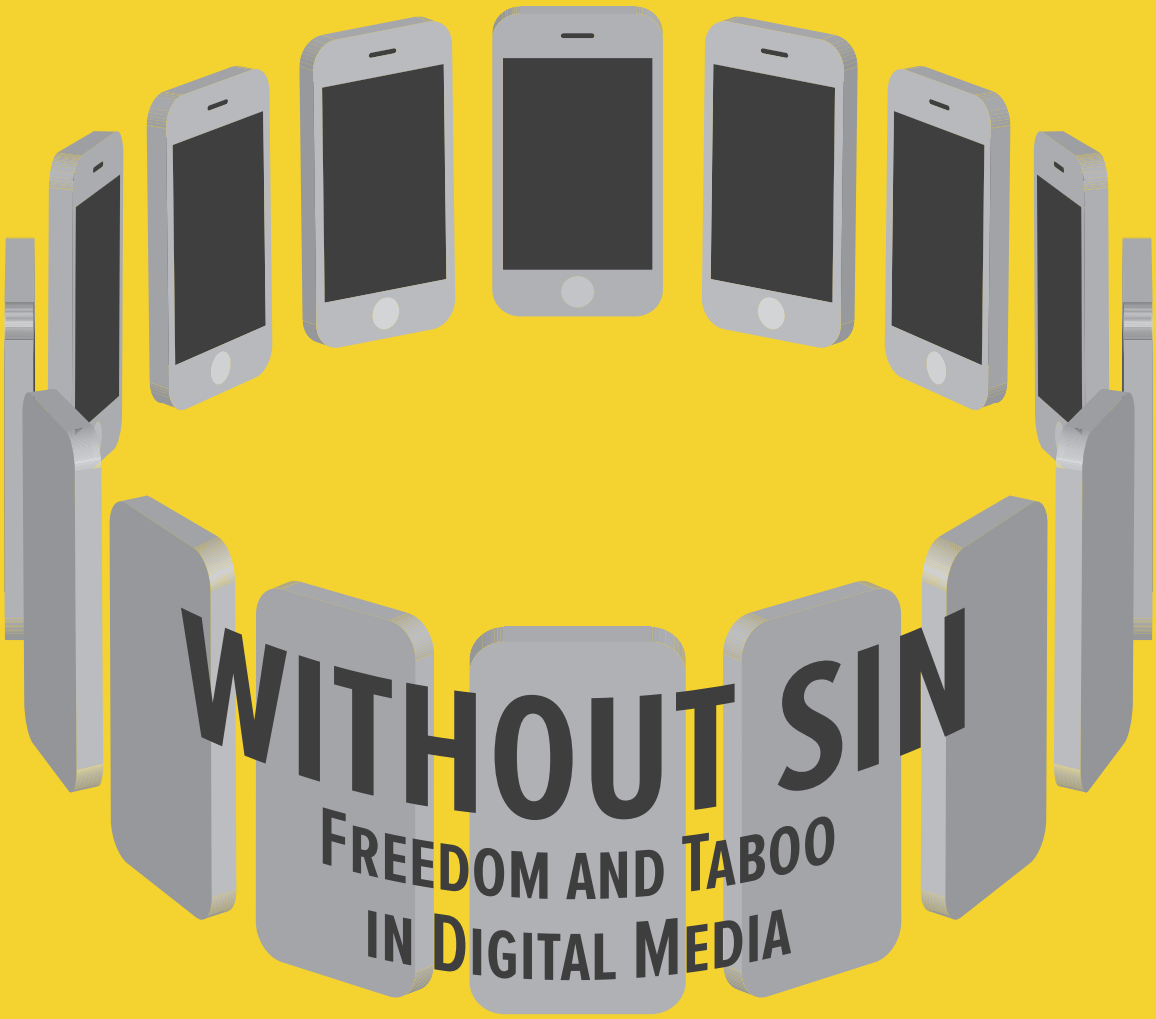
EDITORIAL MANAGERS **SHEENA CALVERT & ÖZDEN ŞAHİN**

What is the relationship between contemporary digital media and contemporary society? Is it possible to affirm that digital media are without sin and exist purely in a complex socio-political and economic context within which the users bring with them their ethical and cultural complexities? This issue, through a range of scholarly writings, analyzes the problems of ethics and sin within contemporary digital media frameworks.



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Without Sin: Freedom and Taboo in Digital Media

VOLUME EDITORS
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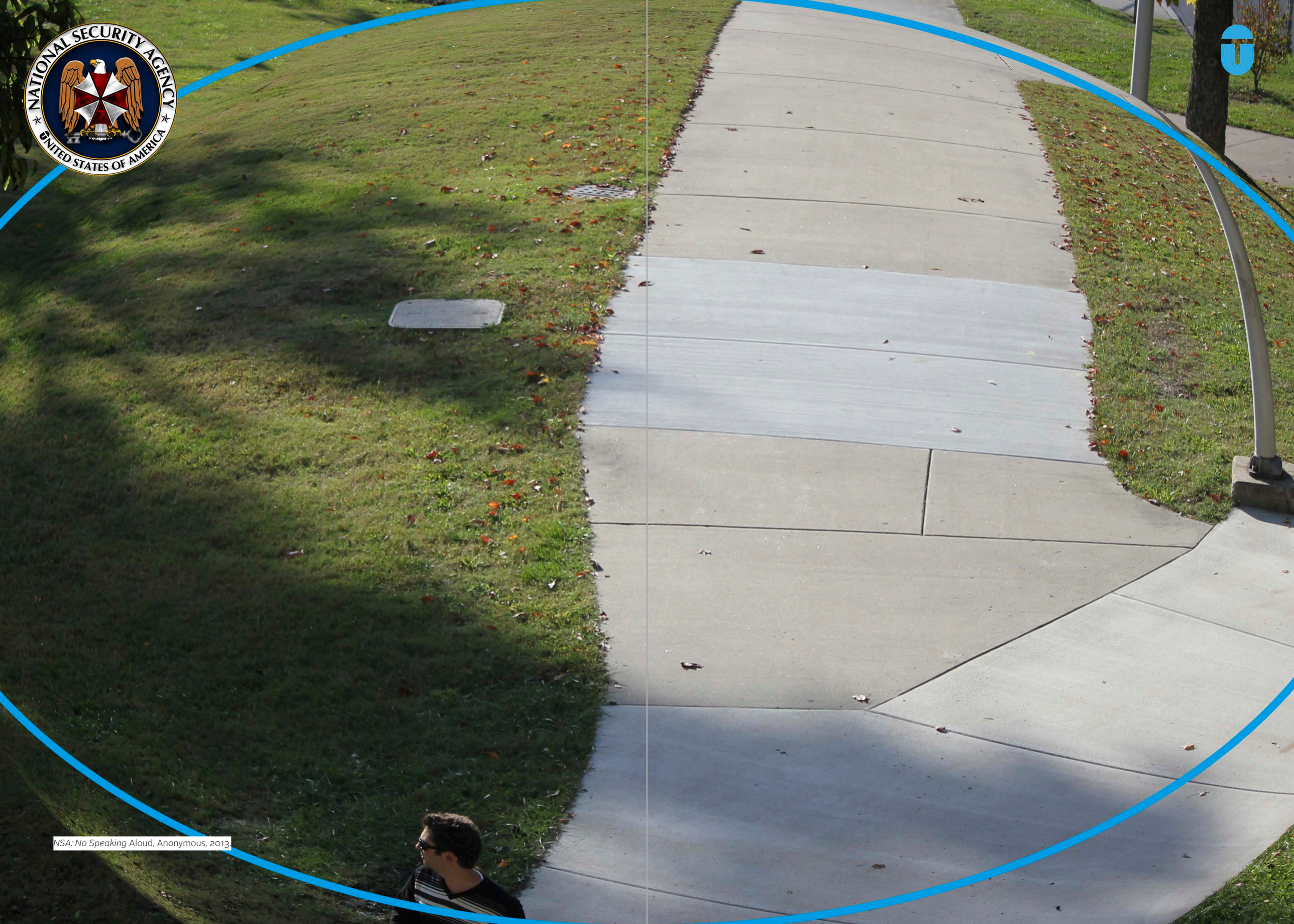

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MEDIA, MEMORY, AND REPRESENTATION IN THE DIGITAL AGE: REBIRTH

Reflecting on Lossless Imagery, Mediated Memories, and the Terrorist Attacks on 9/11

by

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ABSTRACT

In my paper, I explore the relationship between the media industry's representation of important events and our personal and collective memories of these events. Through my investigation of what happens when an important personal and collective event is recorded to digital and neuronal memory systems, I examine the spaces between an individual's personal memories of real-time events and media's influence over an individual's constructed memories of these events. With digital sequences of images being broadcast in real time across media outlets worldwide at the same time as important events unfold, an international consciousness is informed and influenced by these images both during and after these events. On 9/11, I watched the fall of the World Trade Center in New York City outside my apartment in lower Manhattan while simultaneously watching this tragic event digitally broadcast to my television in real time and, after over a decade of reflection, I examine the effects that the repeated broadcast of lossless digital imagery has on the individual and collective consciousness. Through my examination of my lossless digital media artwork, Rebirth, *as a site of resistance, I argue that digital media art offers alternative perspectives to the hegemonic media industry's dominance over memory formation.*

INTRODUCTION

The more than twelve years that have passed since the September 11, 2001 (9/11) terrorist attacks on the United States have provided a meaningful space to reflect on those events and examine the media's influence in forming memories of the events. While corporate media outlets have commemorated 9/11 in a journalistic context, both my article and my lossless digital media artwork, *Rebirth*, offer a personal remembrance of, and reflection on, the tragic events that took place on 9/11 in New York City. In my article, I explore the influence of the media industry's representation of important events on our personal and collective memory formation of these events. I examine *Rebirth* as an example of a digitally mediated memory that acts as a site of resistance against the hegemonic media industry's repeatedly broadcast lossless imagery.

HEADING: MEDIA AND MEMORY

9/11 was a perfect example of a paradigm shift in the way real-time memories are processed using digital media technology. It illustrated the expansive reach of digital media technology and its importance on memory formation. On 9/11, United States civilians experienced an attack on U.S. soil via digital broadcast in real time as the events were unfolding outside their homes. This catastrophe was an example of a larger shift at the intersection of technology and memory. Digital media technology allows viewers to experience events as never before possible because the archived digital recordings of memorialized events do not dematerialize each time they are recalled. Instead, the digital, lossless memorialized events remain intact and preserved, irrespective of the number of times the digital memories are replayed. Before exploring the dramatic effect of digital media technology on memory, it is helpful to examine some of the differences between using analogue and digital media technology to mediate memories.

Analogue, Lossy Media and Memory

The nature of analogue and digital media technology affects its quality and accessibility and, therefore, its mediation of memories. Analogue, lossy media is used to record and playback audio-visual content, but because the storage medium is analogue, it is degradable and will deteriorate over time with each playback. [1] For example, analogue film and video cameras record images to physical film stock and magnetic tape respectively and these images are projected or played

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back on a physical screen. Each time an analogue film or video is played, the film or video's images decay losing clarity and definition. [2] When an important event is captured on analogue film or video and recalled many times, the quality of the imagery and the media itself degrades and, because analogue data is based upon and encoded in "physical quantities" [3] with measurements such as length physically representing numbers, the film and video itself degrades over time. [4] Over time, the analogue images dematerialize and fade, even without playback, because of the physicality of the medium. Ultimately, after multitudinous viewings of the film or video over time, the film or video becomes illegible to the viewer rendering the imagery of the event illegible and less useful for the viewer's memory creation and recall.

Analogue, lossy media is a less accessible media than digital, lossless media for inscribing and recalling memory. Individuals have been largely left out of the inscription process because large media institutions have predominantly controlled the costly and specialized tools that are needed to record and decode analogue media. [5] [6] The hegemonic institutional control over media content can be traced to the late Middle Ages when institutional actors beginning with the Church and later the media industry constructed a "monopoly of knowledge." [7] These institutions control and influence analogue media technology and limit people's access and contributions to memorialized information. [8] This institutional control and influence over analogue media technology has traditionally made it challenging for individuals to record and recall important events to add to the institutional and collective memory archive. [9] [10]

Digital, Lossless Media and Memory

In contrast to analogue, lossy media, digital media is a lossless form of communications technology that is used in the mediation of memories. As Sturken and Cartwright point out:

> *Whereas analog [sic] images, such as photographs and most video images, are defined by properties that express value along a continuous scale, such as gradations of tone (or changes in intensity through increasing or decreasing voltage in video), digital images are encoded as information.* [11]

Since digital media is coded as discrete, digital information, the audio-visual information that is recorded and played back on digital media does not degrade over time. In fact, "the idea of the difference between a copy and an original is nonexistent" in lossless, digital images. [12] Because digital media does not degrade over time regardless of the amount of times the media is played back, the content is lossless and retains all of its original qualities as if played back for the very first time. For example, when a digital video camera records an event, the digital video can be replayed an infinite amount of times without losing picture or audio quality. [13] Whereas our organic memories, those that we archive in our minds, and our analogue film and video recordings, the recordings of our past, degrade over time and are lossy, digital recording of raw material remains both intact and preserved in its entirety irrespective of the number of times the memory is recalled and played back and is therefore lossless.

Digital, lossless media is also distinct from analogue media because it is far more easily accessible than analogue media. Indeed, the "value of a digital image is derived in part by its role as information, and its capacity to be easily accessed, manipulated, stored in a computer or on a web site, downloaded, etc." [14] Digital content can be inscribed using a wide array of inexpensive and easily accessible authoring tools including free or low-priced software. For example, Autodesk, a global software company, provides students and educators free licenses for its content-authoring software. [15] Unlike the expensive and largely inaccessible analogue hardware of the past, such as unwieldy analogue film projectors and cumbersome Beta magnetic tape audio-visual cameras and players, the hardware necessary to author digital content is compact, widely available, and already in use by people worldwide. For example, in societies ranging from the most privileged to those in the Global South, mobile phones are popular devices to record content using the mobile phone's camera and microphone as well as distribute content by accessing the Internet. [16] Consumer digital audio and video recorders, digital cameras, and digital mobile devices have become inexpensive and widely available in North America, Europe, and many parts of Eastern and Western Asia. This broad access to digital media technology has allowed viewers to personally and collectively experience events as never before possible because the archived digital recordings of memories do not dematerialize each time they are recalled. Instead, the digital, lossless memories remain intact and preserved, irrespective of the number of times the digital memories are replayed.

PARADIGM SHIFT AND MEDIATED MEMORIES

The shift from analogue to digital media has therefore created a paradigm shift in personal and collective memory formation. The increased quality and broader accessibility of digital media has shifted the paradigm in personal and collective memory formation because digital media enables people to more economically inscribe, access, distribute, and preserve lossless memories across a wider range of platforms and geographies than ever before in recorded history. The progression from using analogue media to using digital media to receive and inscribe memory has resulted in an increase in individual and public accessibility to and distribution of inscribed memories.

Indeed, the move away from the analogue, lossy media to digital, lossless media is significant because of digital media's quality and wide accessibility. [17] [18] Since digital media is lossless and the content inscribed on and recalled from digital media retains its original quality without degrading over time, people recalling memories from digital media will receive and experience inscribed memories in their most unadulterated form. This stands in stark contrast to people recalling memories from analogue media that dematerialize each time they are recalled. While all memories do not need to be part of the personal and collective memory, when important events like 9/11 are inscribed using lossless digital media, they can be transferred to future generations with unmatched clarity. Detailed records are crucial to the inscription of memory and the recall of "life as it was *before*." [19] It is important to remember the substance and experience of existence before major transformative events in history.

Lossless digital images are detailed records and serve as permanent "acts of witness and sites of memory" [20] and it is crucial to curate "a traumatic personal and generational past" that links people to meaningful events and allows them to perform "intergenerational acts of transfer." [21] In fact, this intergenerational transmittance is a distinguishing trait that differentiates humans from all other members of the animal kingdom. [22] Memorialized information stored on digital media is especially suited to intergenerational transmittance because it can be accessed globally and across a wider range of platforms than analogue media. In contrast to static, analogue media that is difficult to access, digital media is dynamic and easily accessed over the Internet by a myriad of personal

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digital devices including laptops, tablets, and mobile phones.

The shift to easily accessible lossless, digital media to inscribe and recall memorial information resulted in the burgeoning of personal memory sites being created and added to form collective memories. [23] van Dijck explores how individuals mediate digital media for memory inscription and recall, and add to and reflect on collective memory. She examines the importance of using media as a tool for "reflection and self-reflection." [24] An example of a digital platform that provides individuals with easily accessible means to add to collective memories is the Internet. Individuals who inscribe their memories onto digital media can share and reflect upon their mediated memories globally using the Internet and easily accessible portals such as laptops, mobile phones, and tablets.

9/11 AND THE MEDIA INDUSTRY

With its repetitive television broadcast of lossless digital images, the media industry's representation of the tragic events on 9/11 influenced individual and collective memory formation of these events. The digital TV broadcast was so pristine and repeatedly disseminated that it took on a hyperreal existence; it took the place of the actual 9/11 event in the personal and collective memory. The differences between the broadcast of the event and the real event collapsed and the representations, the digital TV broadcasts, were the simulacra that preceded, defined, and became reality. The hegemonic media industry's broadcast of lossless digital images of the terrorist attack on the World Trade Center were literal, hyperrealistic images that had a visceral effect on individual and collective memory formation. [25] Because the lossless images did not dematerialize each time they were recalled by the media industry for broadcast on television, the digital images took on a hyperreal, unnatural appearance. Unlike older analogue broadcast images that degraded each time a magnetic tape encoded with memorialized information was used, the digital lossless images that inundated people's televisions appeared more real than the event itself. Viewing these pristine, vivid digital images repeatedly created a hyperreal audio-visual representation of the tragic events. [26]

The media's constant barrage of pristine, lossless digital images of two hijacked planes slamming into the World Trade Center in New York City and the resulting fall of buildings in the World Trade Center complex in addition to the repetitious coverage of the event by news anchors around the clock added to hyperreal colonization of the collective memory. Dan Rather in the CBS studio and Byron Pitts reporting in New York City gave a play-by-play televised recall of the terrorist attack on U.S. soil via digital broadcast while the events were taking place. After the events took place and for several days thereafter, the media industry continued to deluge audiences with the same audio-visual information for memorialization. In fact, the Internet Archive recorded over "3,000 hours of international TV News from 20 channels" covering 9/11 during the week of 9/11. [27] This is a striking amount of digital media collected during one week centered on one event. The volume of mediated media containing memorialized information that the media industry broadcast had a profound effect on memory formation. Audiences were not given time to reflect on the events that took place on the morning of 9/11 before being inundated with the repeated broadcast of similar and nearly identical digital, lossless images across a wide band of the globally networked media industry. [28]

Figure 1. America Attacked 9/11, n.d., by unknown author. Still image from digital video. Image in public domain.

There is no mystery as to why similar and nearly identical digital footage was used globally; consolidated hegemonic media empires controlled and broadcast 9/11 digital, lossless imagery. [29] Since the first U.S. national live television broadcast took place in 1951, the global hegemonic dominance of the television media industry has strengthened as Western media companies have consolidated and captured the lion's share of international markets. [30] For example, Rupert Murdoch's News Corp. broadcasts to people in over thirty Asian countries, "from the Western Pacific to the Persian Gulf." [31] The U.S. television media industry's overseas impact has been enhanced in recent years through the use of "direct broadcasting satellite (DBS) networks in Europe, Asia, and Latin America." [32] This consolidation has limited the amount of alternative inscriptions of memorialized information available to individuals and the public. Audiences' memories of 9/11 were influenced and mediated by the hegemonic media empires through the monopoly of digital images that were chosen for global distribution to memorialize 9/11 on a global scale. This limited people from freely forming their individual and collective memories of the event.

PARADIGM SHIFT AND 9/11

The tragic events on 9/11 exemplify the paradigm shift in personal and collective memory formation. The shift from analogue, lossy media to digital, lossless media changed the way people experience and mediate memories. The digital media technologies used to record and recall the events on 9/11 are lossless and stand in stark contrast to older, lossy analogue media technology used to record other important events such as the 1986 space shuttle Challenger disaster. [33] The representations of the events of 9/11 are also more instantly accessible to influence collective memories than they were in 2001. Digital media technologies that were unavailable a decade ago connect millions of people with each other's memories of important events in real time increasing access to individual and collective memories. The global accessibility of high-speed Internet connections and mobile media networks has enabled individuals separated by great geographic distances to access individual's representations of events and memories in real time. This instantaneous access to individual memory is shaping a collective global memory that is constantly updating and expanding.

The media coverage of Osama Bin Laden's death in 2011 is an example of the way digital media technologies that were unavailable a decade ago are now used to augment a collective global memory that is constantly updating and expanding. Osama Bin Laden's death saturated media beyond traditional forms of print, television, and radio broadcast communications. News of Bin Laden's death immediately inundated social media and mobile media platforms including Twitter and Facebook as well as broadly accessible websites formatted for mobile phones. [34] In fact, the White House announced Osama Bin Laden's death with a tweet and a Facebook post immediately after President Obama's first formal announcement of the event in his television address. [35]

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The immediate access to real-time information is a further move in terms of the paradigm shift in the way real-time memories are processed using digital media technology. Digital media technology and social and mobile media platforms enable participants to experience events that inform their memories in real time on a scale never before possible.

IMPACT OF LOSSLESS DIGITAL MEDIA ON DIGITAL MEDIA ARTWORK

Because lossless digital media does not degrade over time, it is a good choice of medium for artists who create memory work designed for audience's ease of access, repeated screenings and permanence. When artists use lossless digital media to create projects that mediate memories online, the public has the opportunity to gain access to the artists' lossless imagery; this imagery does not degrade over time regardless of the amount of times the public accesses and screens the memory artwork. Furthermore, digital media is an economical choice of media for artists who inscribe and disseminate memory work because it is easy to format for and globally disseminate over the Internet. By using both digital media and the Internet together, artists provide the public with the opportunity to gain wide-ranging accessibility to artists' lossless memory works for personal and collective memory formation.

Providing easily accessible sites for digital media memory work, for example making memory projects available online for screening, enables the members of the public to use their computers, smartphones, and tablets as extensions of themselves to connect with artists' memory work. Marshal McLuhan believed that media technology should be easily accessible to people and that media technology was a natural extension of one's self. [36] As an extension of one's self, McLuhan asserted that media technology opened doors to providing greater access to information. [37] The organic connections between individuals and media technology are important components of mediating digital media memory works that are easily accessible to people.

Digital media artists can use these liminal, online artistic spaces as sites of resistance to challenge the hegemonic media industry's control over the memorialized depiction and metanarrative of historical events. These online artistic spaces are liminal because they are situated at the border and outside the mainstream of the media industry's representation of information; the artistic spaces offer an alternative reading of important historical events to counter the hegemonic media industry's collections of memorialized information and encourage the public to resist the repetitious broadcasting of media industry controlled information. By using the same online, lossless digital media delivery mechanisms as the hegemonic mass media industry and providing an alternative perspective to those of the hegemonic mass media, these artworks occupy liminal sites of resistance to both the hegemonic mass media industry's dominant use of lossless media and its hegemonic media presence. [38]

HEADING: SITE OF RESISTANCE: REBIRTH

Artistic Reflection and Digital Media Artwork: Rebirth

Applying the thesis that media technology can be viewed as an extension of man, I use the Internet to combine audio-visual with textual memory work as easily accessible sites of resistance against the hegemonic corporate media industry's constructed memories of 9/11. As an artist, I use lossless digital media to create memory work so it can be easily and repeatedly accessed without dematerializing. I have found lossless digital imagery to be instrumental in inscribing, recalling, and adding my personal memories of the tragic events of 9/11 to the collective memory. For example, I used digital media art technology to create *Rebirth*, an abstract 3D computer animation examining my memory of the fall of the World Trade Center in New York City on 9/11. *Rebirth*'s lossless digital imagery and accompanying narrative are freely accessible to the global public on my website. [39]

My digital animation, *Rebirth*, associated images, website, and narrative work are sites of resistance against the hegemonic corporate media industry's constructed memories of 9/11. They comprise an alternative mediated memory archive that is not under the influence of or funded by the corporate media industry. The *Rebirth* online artistic space does not use media industry's produced and overexposed audio-visual work from 9/11. This is an important form of resistance to the hegemonic media's archives and influence over individual and collective memory construction. My digital animation, *Rebirth*, associated images, personal textual narrative, and website offer liminal spaces with alternative, lossless digital imagery from a non-corporate owned and manufactured perspective. The online *Rebirth* artistic space provides the public with an alternative, abstract representation of the events of 9/11 that challenges the corporate, media industry's perspective and control over the media and memories of the this tragic event.

Rebirth is a liminal site of resistance because it encourages the public to resist the dominant media industry's metanarrative and representation of the tragic events of 9/11 to inform their personal and collective memories. *Rebirth* offers the public an alternative perspective of the tragic events of 9/11 countering the hegemonic media industry's collections of memorialized information. The online platform provides a site of resistance supplying the public with an alternative perspective to the media industry's monolithic voice.

The *Rebirth* site expands the public spaces available for resisting the hegemonic media industry's dominance and control over the memorialization, depiction, and metanarrative of the events of 9/11.

Rebirth, through using the same online, lossless digital media delivery mechanisms as the mass media industry and providing an alternative perspective to those of the mass media, subverts both the mass media industry's dominant use of lossless digital media and its hegemonic media presence. [40] As an independent artist, my representations of the fall of the World Trade Center on 9/11 provide the public with the opportunity to view sites of resistance to the media industry's repeatedly broadcast representation of 9/11.

Rebirth differs from the graphic, literal, lossless digital media repeatedly broadcast by the media industry on 9/11 because my 3D animation is abstract, reflective, and more receptive to audience's multidimensional interpretations for inclusion into the personal and collective memory than the media industry's literal imagery of 9/11. [40] In contrast to the literal, similar and nearly identical, digital lossless, imagery of the fall of the World Trade Center that was repeatedly broadcast by the media industry, *Rebirth*'s abstract imagery is more open to viewers' interpretations so that viewers can form their memories of 9/11 with an alternative to the media industry's literal, lossless images for inclusion into the individual and collective memory. The animation is representative of my experiences on 9/11 as I watched the tragic events unfold outside my apartment in lower Manhattan while simultaneously watching the events digitally broadcast to my television in real time. Viewing the abstract representation of this event in *Rebirth* opens up a dialogue between individual and collective memories of 9/11 and my memory and representation of the fall of the World Trade Center in New York City on 9/11.

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Figure 2. Sequence of stills from *Rebirth*, 2006, by David R. Burns. © David R. Burns, 2006. Still image from 3D computer animation. Used with permission.

ARTICLE

ARTISTIC REFLECTION AND PERSONAL NARRATIVE: REBIRTH

In addition to the abstract 3D computer animation, my *Rebirth* memory work includes the below personal textual narrative of my experience on 9/11. The personal narrative that follows was used to inform my abstract animation and digital media artwork within the context of my experience of living in New York City on 9/11. Providing my textual narrative in this article and including the link to my abstract 3D computer animation, *Rebirth*, offers audiences a holistic approach to mediating my memory of 9/11. This holistic approach uses textual and visual representations of my memory of 9/11 and provides the public with broader access to my memories across a variety of media. For example, the lossy analogue media of the printed text version of my memory work, the digital, lossless media version of my animation, and the written narrative viewed online are publicly accessible for the creation of personal and collective memories. The textual personal narrative of my memory of the events of 9/11 follows:

Personal Narrative 9/11: Rebirth

Early on the morning of September 11th 2001, this author was still asleep in his-apartment in downtown Manhattan until being awoken by a phone call. I can still remember the phone conversation that jarred me out of bed. "Hello? What do you mean the World Trade Center was attacked? Stop joking around. I am going back to bed! Turn on the television? This isn't funny." To verify that this was just a bad joke my friend was playing on me, I turned on the television to watch the news. There it was, playing back over and over again: a plane crashing into 1 World Trade Center. In disbelief or shock maybe, I opened my window to stare downtown at the smoke that had by now begun to billow rapidly. This event was real! I was simultaneously watching 1 World Trade Center burning both on television and out of my living room window.

The feeling of watching in real time as the digitally represented World Trade Center and the organic World Trade Center burned on both the television set and outside my living room window seemed to put my immediate world on public display, as if I was now a part of the digital media being internationally broadcast across the world. I hadn't realized yet just how powerful this connection between myself and society was in the context of what I call, a "memory footprint." Instinctively, I grabbed my digital video camera and headed for the roof. I wasn't sure why I was doing this; I just knew that something tremendous was underway that would be deciphered later.

Once on the rooftop, I used my natural, organic eyes to view the natural images of 1 and 2 World Trade Centers billowing smoke. These images were burned in real time into my organic neuronal memory systems. Not fully comprehending what was unfolding before my natural input devices, I switched over to taping the event using a digital video recorder. Looking through the viewfinder, it became difficult for me to discern what was real and what was my memory of the earlier television broadcast. The early morning 9/11 TV broadcast images that I viewed in my living room appeared more loosely edited and composed than the images that were broadcast later that day. The early, shaky broadcast images seemed to mirror what I observed through my handheld video camera in real time, but, as the day wore on, the lossless digital images broadcast to my TV appeared increasingly constructed, cinematic, and hyperreal. The well-composed shots broadcast to my TV blurred together with my shaky, more loosely composed handheld video camera imagery of the fall of the WTC in my mind's eye. The act of alternating between looking through my camera's digital viewfinder to compose my shots of the event and viewing the professionally-edited shots broadcast to my TV blurred the boundaries of the representation of the real event on TV and my experience of the event in real time at the location of the event. The feeling was very disorientating. I had not yet processed the earlier televised images of the plane slamming into 1 World Trade Center. Now as I looked through my digital video recorder's viewfinder, I found myself looking at a composition built of digital bits similar to the memory I had of the images that were represented as color pixels on television. After staring through the digital viewfinder for a few minutes, my earlier memories that were recorded onto my natural storage device, my brain, began to be processed by my consciousness. The realization that the memory of the event I had experienced was, in fact, still taking shape and form in real time was so intense and confusing that I had to pause the digital recording and look away from the camera. I was caught somehow in a real-time memory of great destruction, but that memory was not able to pass. The memory of watching the destruction of 1 World Trade Center on television now merged into the real-time representation and memory of the destruction of both towers, 1 World Trade Center and 2 World Trade Center, that were in the process of being written to my analogue neuronal memory systems.

I was processing with my natural eyes and brain and simultaneously recording discreetly on digital videotape. What was a natural observation? What part of my understanding came from the digital representation I had just seen? Confused, I looked through the digital viewfinder again. I needed to confirm that I was in fact physically and mentally cognizant, that I was indeed on the roof of my apartment building experiencing and memorializing a real-time event. I needed to make sure that I was not trapped in the confines of my living room and stuck in front of the television set unable to differentiate what was real, what was recorded, and what was being digitally broadcast to society. I can only describe the feelings I had and the environment around me as chaos. It was as if I was trapped in a horrible film and everything that I watched through the camera's viewfinder made me a spectator of this horrible film. As I peered through my camera composing my shots, I found that my rooftop vantage point gave me a longshot cinematic perspective. The tragic events unfolding before my eyes were beyond belief; at times, I felt lost in the rectilinear composition of the viewfinder and I would pull away from the camera, not sure if I could trust what my eyes revealed. Through my handheld digital video camera, I watched the World Trade Center buildings burn with people inside their doors and people falling outside their windows. I lost myself watching the darkness, dust, and destruction juxtaposed on the canvas of clear, blue skies and brilliant sunlight filtering through the city.

Snap! I became aware of the real-time events unfolding again. Other people on the roof were shouting as something fell in the distance and more smoke billowed up into the sky. I turned and left the rooftop. Not sure what I was experiencing, I needed to sit down and process the events that had just unfolded before me. Later, I returned to the rooftop. There were many more people there now and we were all witnessing the same event. However, something had changed. The skyline looked emptier. There was more smoke now and it was coming from the smaller buildings that surrounded 1 and 2 World Trade Centers. Again, on went the digital video recorder... An almost identical sequence of images to what I had seen earlier when 1 World Trade Center and 2 World Trade Centers were burning was now being repeated multiple times as the rest of the World Trade Center network of buildings, World Trade Centers 3 through to 7 began to plume smoke.

I wonder now, looking back at the time of that event and the several days following it, if the memories that I recall are all my own. An unanswered question remains: How much have my experiences of the event and memories of that morning recorded by my organic, analogue memory banks been influenced by my

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memories of the digital, lossless images broadcast by the media industry on television repeatedly hour after hour for days and weeks on end?

CONCLUSION AND FURTHER THOUGHTS: REBIRTH

The more than twelve years that have passed since 9/11 offer a unique opportunity to reflect on what can happen when a highly personal and collective event is recorded to the neuronal and digital memory systems. It has been over a decade since I put my 9/11 digital videotape back in its case, but my organic memories have not yet faded enough for me to feel comfortable watching the digital, and therefore lossless, representation of that day's events. Rather than screen the literal, lossless digital video footage that I recorded on 9/11, I exhibit my digital, abstract 3D computer animation, *Rebirth*, representative of my memory of that day, on my website so it is accessible to the public online for recall. *Rebirth* adds to the dialogue and the process of individual and collective memory formation of the tragic events of the destruction of the World Trade Center on 9/11. Although *Rebirth* represents my memory of my experience, the abstractions of the events on 9/11 in the 3D animation are left open for audiences' reflection and interpretation at my publicly accessible website. [41] It is my hope that audiences will form personal and collective memories watching *Rebirth* online connecting them to my memory of the events of 9/11. Since the lossless imagery in *Rebirth* is abstract, I hope viewers will feel more liberated to interpret and reflect on the digital imagery in the 3D animation than they feel when viewing the media industry's literal, graphic, lossless imagery of the terrorist attacks on the World Trade Center on 9/11. ■

REFERENCES AND NOTES

1. Marita Sturken and Lisa Cartwright, *Practices of Looking: An Introduction to Visual Culture* (Oxford: Oxford University Press, 2001).
2. Jan L. Harrington, *Technology and Society* (Sudbury, MA: Jones & Bartlett Publishers, 2011), 259.
3. Sturken and Cartwright, *Practices of Looking: An Introduction to Visual Culture*, 138.
4. Harrington, *Technology and Society*, 259.
5. Harold Adams Innis, *Changing Concepts of Time* (Toronto: University of Toronto Press, 1952), 15.
6. Evan Alderson, Robin Blaser, and Howard G. Coward, *Reflections on Cultural Policy Past, Present and Future* (Waterloo, Ontario: Wilfrid Laurier University Press for Calgary Institute for the Humanities, Waterloo, Ontario, 1993).
7. Harold Innis, *Empire and Communications*, 2nd edition (Oxford: Clarendon Press, 1972), 139.
8. Ibid., 139.
9. Ibid., 139.
10. José van Dijck, "Mediated Memories: Personal Cultural Memory as Object of Cultural Analysis," in *Continuum: Journal of Media & Cultural Studies* 18, no. 2 (2004): 270.
11. Sturken and Cartwright, *Practices of Looking: An Introduction to Visual Culture*, 138-139.
12. Ibid., 139.
13. Ibid., 139.
14. Ibid., 139.
15. Autodesk, http://students.autodesk.com (accessed January 29, 2013).
16. Ramon Lobato, *Shadow Economies of Cinema: Mapping Informal Film Distribution*, (London: Palgrave Macmillan, 2012).
17. D. R. Burns, "The Valuation of Emerging Media Arts in the Age of Digital Reproduction" in *Proceedings of the 2010 International Conference on Electronic Visualisation and the Arts*, London, http://ewic.bcs.org/category/15570 (accessed January 20, 2012).
18. Sturken and Cartwright, *Practices of Looking: An Introduction to Visual Culture*.
19. Marianne Hirsch, "Past Lives: Postmemories in Exile," in *Poetics Today* 17, no. 4 (1996): 665.
20. Ibid., 665.
21. Marianne Hirsch, *The Generation of Postmemory* (New York: Columbia University Press, 2012), 1-2.
22. Vilém Flusser, "On Memory (Electronic or Otherwise)," in *Leonardo* 23, no. 4 (1990).
23. José van Dijck, "Mediated Memories: Personal Cultural Memory as Object of Cultural Analysis," in *Continuum: Journal of Media & Cultural Studies* 18, no. 2 (2004): 261-277.
24. Ibid, 273.
25. Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila Faria Glaser (Ann Arbor: U of Michigan Press, 1994).
26. Ibid., 28-30.
27. The Vanderbilt Television Archive. "CBS Evening News for Tuesday, Sep 11, 2001 Attack On America / Day 1," http://tvnews.vanderbilt.edu/program.pl?ID=642383 (accessed January 20, 2013).
28. Yahoo! News, "9/11 Remembered How We've Changed," April 20, 2011, http://news.yahoo.com/september-11-anniversary-profiles/ (accessed September 03, 2011).

NPR, "Tribute Center Connects Sept. 11's Emotional Threads," September 2, 2011, http://www.npr.org/2011/09/02/140134997/tribute-center-connects-sept-11s-emotional-threads/ (accessed September 03, 2011).

CNN, "America Remembers," 2005, http://www.cnn.com/SPECIALS/2002/america.remembers/ (accessed September 03, 2011).

29. Wilson P. Dizard, *Old media, New media: Mass Communications in the Information Age* (New York: Longman, 2000).
30. John C. Merrill, John D. Lee, and Edward J. Friedlander, *Modern Mass Media* (New York, NY: HarperCollins, 1994).
31. Dizard, *Old media, New media: Mass Communications in the Information Age*, 94.
32. Ibid., 94.
33. CNN, "CNN: Challenger Disaster," http://www.youtube.watch?v=nmAbcDud2L8 (accessed December 10, 2012). See also: Sturken and Cartwright, *Practices of Looking: An Introduction to Visual Culture*, 139.
34. Mashable! Web Site, "How the Social Web Reflected on Bin Laden's Death," May 2, 2011, http://mashable.com/2011/05/02/social-media-bin-laden/#view_as_one_page-gallery_box1217 (accessed September 05, 2011).
35. Mashable! Web Site, "Timeline: How News of Osama Bin Laden's Death Unfolded on Twitter," May 2, 2011, http://mashable.com/2011/05/02/osama-death-twitter/#view_as_one_page-gallery_box1205 (accessed September 05, 2011).
36. Marshal McLuhan, *Understanding Media: The Extensions of Man* (New York: McGraw-Hill, 1964).
37. Ibid., 64.
38. Michek de Certeau, *The Practice of Everyday Life*, trans. S. Rendall (Berkeley, CA: University of California Press, 1984).
39. David R. Burns, *Rebirth*, http://www.davidrburns.com/rebirth.htm 2006 (accessed January 20, 2013).
40. Certeau, *The Practice of Everyday Life*, 117.
41. David R. Burns's official web site, http://www.davidrburns.com/rebirth.htm (accessed January 20, 2013).

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