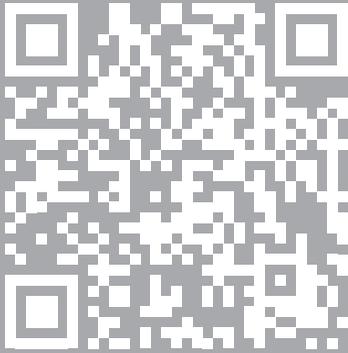
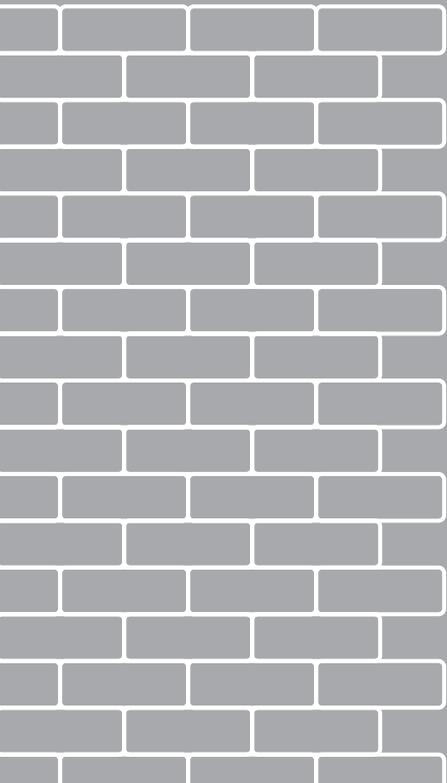




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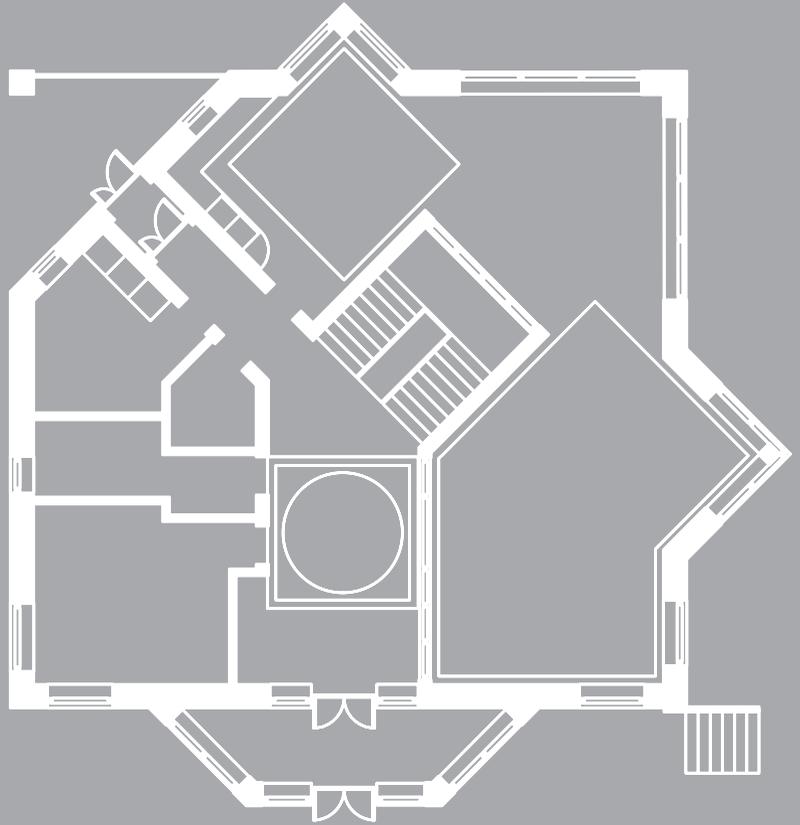
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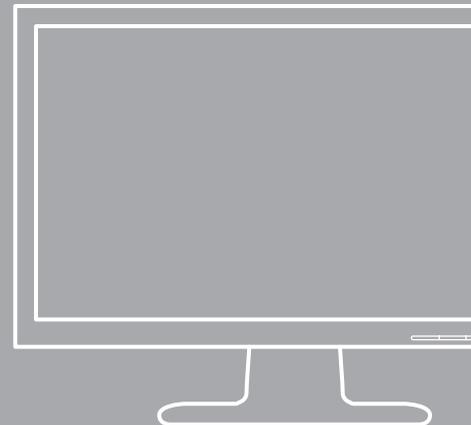
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EDITORS **ÖZDEN ŞAHİN**, **JONATHAN MUNRO** AND **CATHERINE M. WEIR**

This LEA publication has a simple goal: surveying the current trends in augmented reality artistic interventions. There is no other substantive academic collection currently available, and it is with a certain pride that LEA presents this volume which provides a snapshot of current trends as well as a moment of reflection on the future of AR interventions.



NOT THERE



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LEONARDO ELECTRONIC ALMANAC, VOLUME 19 ISSUE 1

Not Here Not There

VOLUME EDITORS

LANFRANCO ACETI AND RICHARD RINEHART

EDITORS

ÖZDEN ŞAHİN, JONATHAN MUNRO AND CATHERINE M. WEIR

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Not Here, Not There: An Analysis Of An International Collaboration To Survey Augmented Reality Art

Every published volume has a reason, a history, a conceptual underpinning as well as an aim that ultimately the editor or editors wish to achieve. There is also something else in the creation of a volume; that is the larger goal shared by the community of authors, artists and critics that take part in it.

This volume of LEA titled *Not Here, Not There* had a simple goal: surveying the current trends in augmented reality artistic interventions. There is no other substantive academic collection currently available, and it is with a certain pride that both, Richard Rinehart and myself, look at this endeavor. Collecting papers and images, answers to interviews as well as images and artists' statements and putting it all together is perhaps a small milestone; nevertheless I believe that this will be a seminal collection which will showcase the trends and dangers that augmented reality as an art form faces in the second decade of the XXIst century.

As editor, I did not want to shy away from more critical essays and opinion pieces, in order to create a documentation that reflects the status of the current thinking. That these different tendencies may or may not be proved right in the future is not the reason for the collection, instead what I believe is important and relevant is to create a historical snapshot by focusing on the artists and authors developing artistic practices and writing on augmented reality. For this reason, Richard and I posed to the contributors a series of questions that in the variegated responses of the artists and authors will evidence and stress similari-

ties and differences, contradictions and behavioral approaches. The interviews add a further layer of documentation which, linked to the artists' statements, provides an overall understanding of the hopes for this new artistic playground or new media extension. What I personally wanted to give relevance to in this volume is the artistic creative process. I also wanted to evidence the challenges faced by the artists in creating artworks and attempting to develop new thinking and innovative aesthetic approaches.

The whole volume started from a conversation that I had with Tamiko Thiel – that was recorded in Istanbul at Kasa Gallery and that led to a curatorial collaboration with Richard. The first exhibition *Not Here* at the Samek Art Gallery, curated by Richard Reinhart, was juxtaposed to a response from Kasa Gallery with the exhibition *Not There*, in Istanbul. The conversations between Richard and myself produced this final volume – *Not Here, Not There* – which we both envisaged as a collection of authored papers, artists' statements, artworks, documentation and answers to some of the questions that we had as curators. This is the reason why we kept the same questions for all of the interviews – in order to create the basis for a comparative analysis of different aesthetics, approaches and processes of the artists that work in augmented reality.

When creating the conceptual structures for this collection my main personal goal was to develop a link – or better to create the basis for a link – between ear-

lier artistic interventions in the 1960s and the current artistic interventions of artists that use augmented reality.

My historical artist of reference was Yayoi Kusama and the piece that she realized for the Venice Biennial in 1966 titled *Narcissus Garden*. The artwork was a happening and intervention at the Venice Biennial; Kusama was obliged to stop selling her work by the biennial's organizers for 'selling art too cheaply.'

"In 1966 [...] she went uninvited to the Venice Biennale. There, dressed in a golden kimono, she filled the lawn outside the Italian pavilion with 1,500 mirrored balls, which she offered for sale for 1,200 lire apiece. The authorities ordered her to stop, deeming it unacceptable to 'sell art like hot dogs or ice cream cones.'"¹

The conceptualization and interpretation of this gesture by critics and art historians is that of a guerrilla action that challenged the commercialization of the art system and that involved the audience in a process that revealed the complicit nature and behaviors of the viewers as well as use controversy and publicity as an integral part of the artistic practice.

Kusama's artistic legacy can perhaps be resumed in these four aspects: a) engagement with audience's behaviors, b) issues of art economy and commercialization, c) rogue interventions in public spaces and d) publicity and notoriety.

These are four elements that characterize the work practices and artistic approaches – in a variety of combinations and levels of importance – of contem-

1. David Pilling, "The World According to Yayoi Kusama," *The Financial Times*, January 20, 2012, <http://www.ft.com/cms/s/2/52ab168a-4188-11e1-8c33-00144feab49a.html#axzz1kDck8Rzm> (accessed March 1, 2013).

porary artists that use augmented reality as a medium. Here, is not perhaps the place to focus on the role of 'publicity' in art history and artistic practices, but a few words have to be spent in order to explain that publicity for AR artworks is not solely a way for the artist to gain notoriety, but an integral part of the artwork, which in order to come into existence and generate interactions and engagements with the public has to be communicated to the largest possible audience.

"By then, Kusama was widely assumed to be a publicity hound, who used performance mainly as a way of gaining media exposure."² The publicity obsession, or the accusation of being a 'publicity hound' could be easily moved to the contemporary group of artists that use augmented reality. Their invasions of spaces, juxtapositions, infringements could be defined as nothing more than publicity stunts that have little to do with art. These accusations would not be just irrelevant but biased – since – as in the case of Sander Veenhof's analysis in this collection – the linkage between the existence of the artwork as an invisible presence and its physical manifestation and engagement with the audience can only happen through knowledge, through the audience's awareness of the existence of the art piece itself that in order to achieve its impact as an artwork necessitates to be publicized.

Even if, I do not necessarily agree with the idea of a 'necessary manifestation' and audience's knowledge of the artwork – I believe that an artistic practice that is unknown is equally valid – I can nevertheless understand the process, function and relations that have to be established in order to develop a form of engagement and interaction between the AR artwork and the audience. To condemn the artists who seek publicity

2. Isabelle Loring Wallace and Jennie Hirsh, *Contemporary Art & Classical Myth* (Farnham; Burlington, VT: Ashgate, 2011), 94.

in order to gather audiences to make the artworks come alive is perhaps a shortsighted approach that does not take into consideration the audience's necessity of knowing that interaction is possible in order for that interaction to take place.

What perhaps should be analyzed in different terms is the evolution of art in the second part of the XXth century, as an activity that is no longer and can no longer be rescinded from publicity, since audience engagement requires audience attendance and attendance can be obtained only through communication / publicity. The existence of the artwork – in particular of the successful AR artwork – is strictly measured in numbers: numbers of visitors, numbers of interviews, numbers of news items, numbers of talks, numbers of interactions, numbers of clicks, and, perhaps in a not too distant future, numbers of coins gained. The issue of being a 'publicity hound' is not a problem that applies to artists alone, from Andy Warhol to Damien Hirst from Banksy to Maurizio Cattelan, it is also a method of evaluation that affects art institutions and museums alike. The accusation moved to AR artists of being media whores – is perhaps contradictory when arriving from institutional art forms, as well as galleries and museums that have celebrated publicity as an element of the performative character of both artists and artworks and an essential element instrumental to the institutions' very survival.

The publicity stunts of the augmented reality interventions today are nothing more than an acquired methodology borrowed from the second part of the XXth century. This is a stable methodology that has already been widely implemented by public and private art institutions in order to promote themselves and their artists.

Publicity and community building have become an artistic methodology that AR artists are playing with by

making use of their better knowledge of the AR media. Nevertheless, this is knowledge born out of necessity and scarcity of means, and at times appears to be more effective than the institutional messages arriving from well-established art organizations. I should also add that publicity is functional in AR interventions to the construction of a community – a community of aficionados, similar to the community of 'nudists' that follows Spencer Tunic for his art events / human installation.

I think what is important to remember in the analysis of the effectiveness both in aesthetic and participatory terms of augmented reality artworks – is not their publicity element, not even their sheer numbers (which, by the way, are what has made these artworks successful) but their quality of disruption.

The ability to use – in Marshall McLuhan's terms – the medium as a message in order to impose content by-passing institutional control is the most exciting element of these artworks. It is certainly a victory that a group of artists – by using alternative methodological approaches to what are the structures of the capitalistic system, is able to enter into that very capitalistic system in order to become institutionalized and perhaps – in the near future – be able to make money in order to make art.

Much could be said about the artist's need of fitting within a capitalist system or the artist's moral obligation to reject the basic necessities to ensure an operational professional existence within contemporary capitalistic structures. This becomes, in my opinion, a question of personal ethics, artistic choices and existential social dramas. Let's not forget that the vast majority of artists – and AR artists in particular – do not have large sums and do not impinge upon national budgets as much as banks, financial institutions, militaries and corrupt politicians. They work for years

with small salaries, holding multiple jobs and making personal sacrifices; and the vast majority of them does not end up with golden parachutes or golden handshakes upon retirement nor causes billions of damage to society.

The current success of augmented reality interventions is due in small part to the nature of the medium. Museums and galleries are always on the lookout for 'cheap' and efficient systems that deliver art engagement, numbers to satisfy the donors and the national institutions that support them, artworks that deliver visibility for the gallery and the museum, all of it without requiring large production budgets. Forgetting that art is also about business, that curating is also about managing money, it means to gloss over an important element – if not the major element – that an artist has to face in order to deliver a vision.

Augmented reality artworks bypass these financial challenges, like daguerreotypes did by delivering a cheaper form of portraiture than oil painting in the first part of the XIXth century, or like video did in the 1970s and like digital screens and projectors have done in the 1990s until now, offering cheaper systems to display moving as well as static images. AR in this sense has a further advantage from the point of view of the gallery – the gallery has no longer a need to purchase hardware because audiences bring their own hardware: their mobile phones.

The materiality of the medium, its technological revolutionary value, in the case of early augmented reality artworks plays a pivotal role in order to understand its success. It is ubiquitous, can be replicated everywhere in the world, can be installed with minimal hassle and can exist, independently from the audience, institutions and governmental permissions. Capital costs for AR installations are minimal, in the order of a few

hundred dollars, and they lend themselves to collaborations based on global networks.

Problems though remain for the continued success of augmented reality interventions. Future challenges are in the materialization of the artworks for sale, to name an important one. Unfortunately, unless the relationship between collectors and the 'object' collected changes in favor of immaterial objects, the problem to overcome for artists that use augmented reality intervention is how and in what modalities to link the AR installations with the process of production of an object to be sold.

Personally I believe that there are enough precedents that AR artists could refer to, from Christo to Marina Abramovich, in order develop methods and frameworks to present AR artworks as collectable and sellable material objects. The artists' ability to do so, to move beyond the fractures and barriers of institutional vs. revolutionary, retaining the edge of their aesthetics and artworks, is what will determine their future success.

These are the reasons why I believe that this collection of essays will prove to be a piece, perhaps a small piece, of future art history, and why in the end it was worth the effort.

Lanfranco Aceti

Editor in Chief, *Leonardo Electronic Almanac*
Director, Kasa Gallery



Site, Non-site, and Website

In the 1960's, artist Robert Smithson articulated the strategy of representation summarized by "site vs. non-site" whereby certain artworks were simultaneously abstract and representational and could be site-specific without being sited. A pile of rocks in a gallery is an "abstract" way to represent their site of origin. In the 1990's net.art re-de-materialized the art object and found new ways to suspend the artwork online between website and non-site. In the 21st century, new technologies suggest a reconsideration of the relationship between the virtual and the real. "Hardlinks" such as QR codes attempt to bind a virtual link to our physical environment.

Throughout the 1970's, institutional critique brought political awareness and social intervention to the site of the museum. In the 1980's and 90's, street artist such as Banksy went in the opposite direction, critiquing the museum by siting their art beyond its walls.

Sited art and intervention art meet in the art of the trespass. What is our current relationship to the sites we live in? What representational strategies are contemporary artists using to engage sites? How are sites politically activated? And how are new media framing our consideration of these questions? The contemporary art collective ManifestAR offers one answer,

"Whereas the public square was once the quintessential place to air grievances, display solidarity, express difference, celebrate similarity, remember, mourn, and reinforce shared values of right and wrong, it is no longer the only anchor for interactions in the public realm. That geography has been relocated to a novel terrain, one that encourages exploration of mobile location based monuments,

and virtual memorials. Moreover, public space is now truly open, as artworks can be placed anywhere in the world, without prior permission from government or private authorities – with profound implications for art in the public sphere and the discourse that surrounds it."

ManifestAR develops projects using Augmented Reality (AR), a new technology that – like photography before it – allows artists to consider questions like those above in new ways. Unlike Virtual Reality, Augmented Reality is the art of overlaying virtual content on top of physical reality. Using AR apps on smart phones, iPads, and other devices, viewers look at the real world around them through their phone's camera lens, while the app inserts additional images or 3D objects into the scene. For instance, in the work *Signs over Semiconductors* by Will Pappenheimer, a blue sky above a Silicon Valley company that is "in reality" empty contains messages from viewers in skywriting smoke when viewed through an AR-enabled Smartphone.

AR is being used to activate sites ranging from Occupy Wall Street to the art exhibition ManifestAR @ ZERO1 Biennial 2012 – presented by the Samek Art Gallery simultaneously at Bucknell University in Lewisburg, PA and at Silicon Valley in San Jose, CA. From these contemporary non-sites, and through the papers included in this special issue of LEA, artists ask you to reconsider the implications of the simple question *wayn* (where are you now?)

Richard Rinehart

Director, Samek Art Gallery, Bucknell University

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Re-visualizing Afghanistan in WHAT IF IM THE BAD GUY: Using Palimpsest to Create an AR Documentary

by

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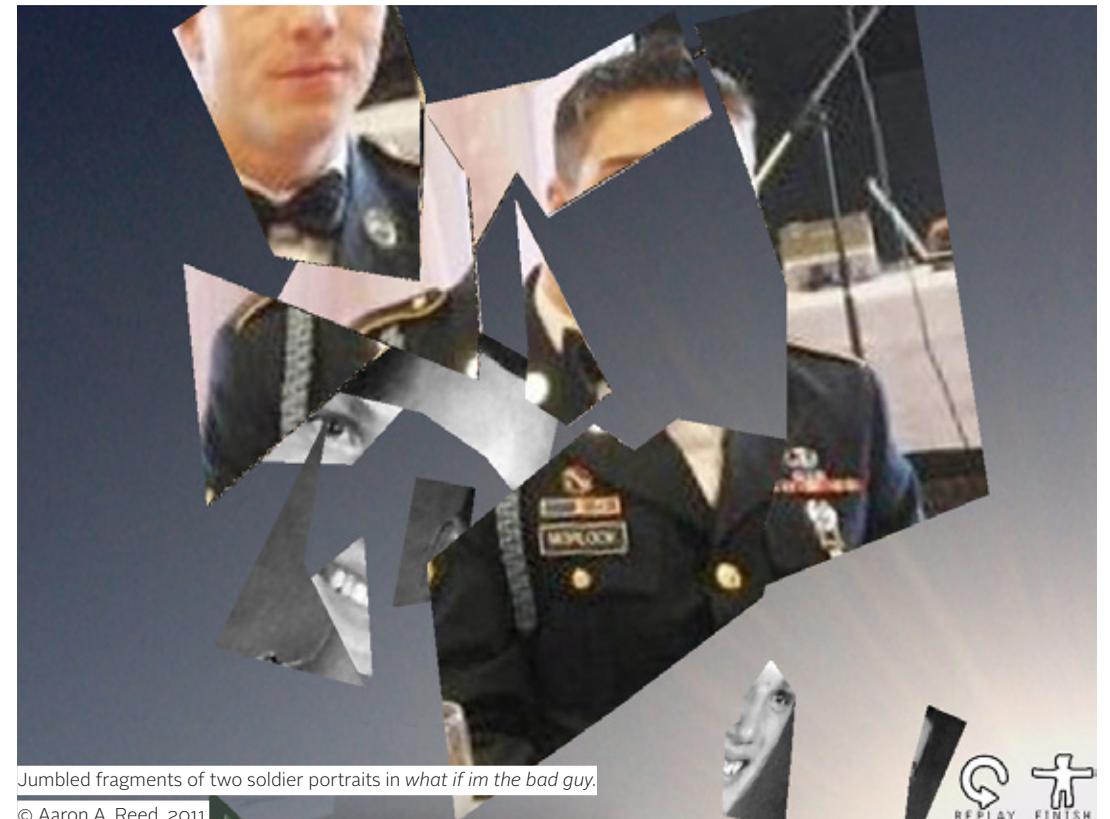
Sharp-edged fragments of faces loom above the grassy expanse behind a concrete building, in pieces thirty or forty feet high: a giant eye, a pixelated nose.

At first these fractured portraits seem hopelessly jumbled. However, as one moves through the space and becomes more familiar with the experience of seeing these virtual objects overlaid over the environment, it starts to seem that perhaps there are places from which these fragments would line up, would appear to form a single, unbroken image. Coming to this realization is one entry point into *what if im the bad guy*, an experimental augmented reality (AR) documentary created in a new framework for AR narratives called *Palimpsest*.

Based on the stories of three US soldiers in Afghanistan and three unarmed civilians they shot and killed in early 2010, the piece embeds narrative fragments into an explorable, outdoor 'playing field.' Some of the fragments can be regarded from a perspective that causes them to re-align, triggering point-of-view re-stagings of the killings from the perspectives of various accused soldiers; other fragments represent moments in their stories, and can be repositioned

ABSTRACT

what if im the bad guy is an augmented reality documentary based on the stories of three US soldiers in Afghanistan accused of war crimes. Narrative fragments are embedded into an explorable, outdoor "playing field" where the participant is invited to find a point of view from which the story makes sense, and to explore the often-hidden motivations, contexts, and realities behind the surface of an at-first unapproachable news event. The piece is built on a new open-source framework for AR narrative called Palimpsest, which combines a powerful scripting language with a sophisticated low-level 3D engine capable of producing highly reactive and configurable narrative environments in real spaces.



Jumbled fragments of two soldier portraits in *what if im the bad guy*.

© Aaron A. Reed, 2011.

by the viewer into configurations that offer different windows into the narrative: chronological, thematic connections, serendipitous juxtapositions. In various ways the participant is invited to find a point of view from which the story makes sense, and to explore the often-hidden motivations, context, and realities behind the surface of an at-first unapproachable news event. The field becomes a space for re-enactment, reflection, mourning and investigation.

The piece was created as part of a collaboration between an artist/coder and a writer/game designer, both MFA students on the UC Santa Cruz Digital Arts & New Media program at the time the piece was completed. (Though born from intensive theoretical discussions between both authors, the final piece was largely the work of Aaron A. Reed, while the technological innovation behind it largely driven by Phoenix Toews.) We share a strong belief in the promise of Augmented Reality (AR) to provide not just amusing diversions, but new ways of seeing truths that the corporate and governmental entities increasingly colonizing our digital lives might prefer remain obscured. As we enter the age of Google AR glasses and the internet of things, it becomes increasingly possible to alter, censor, or invent the experiential reality of technology users, providing access to altered realities for (especially) non-privileged and overlooked viewpoints. *bad guy* is an overlooked news story made re-visible for its viewers, and Palimpsest is a new software platform for enabling such re-visualizations: in the remainder of this article we'll describe both in a little more detail.

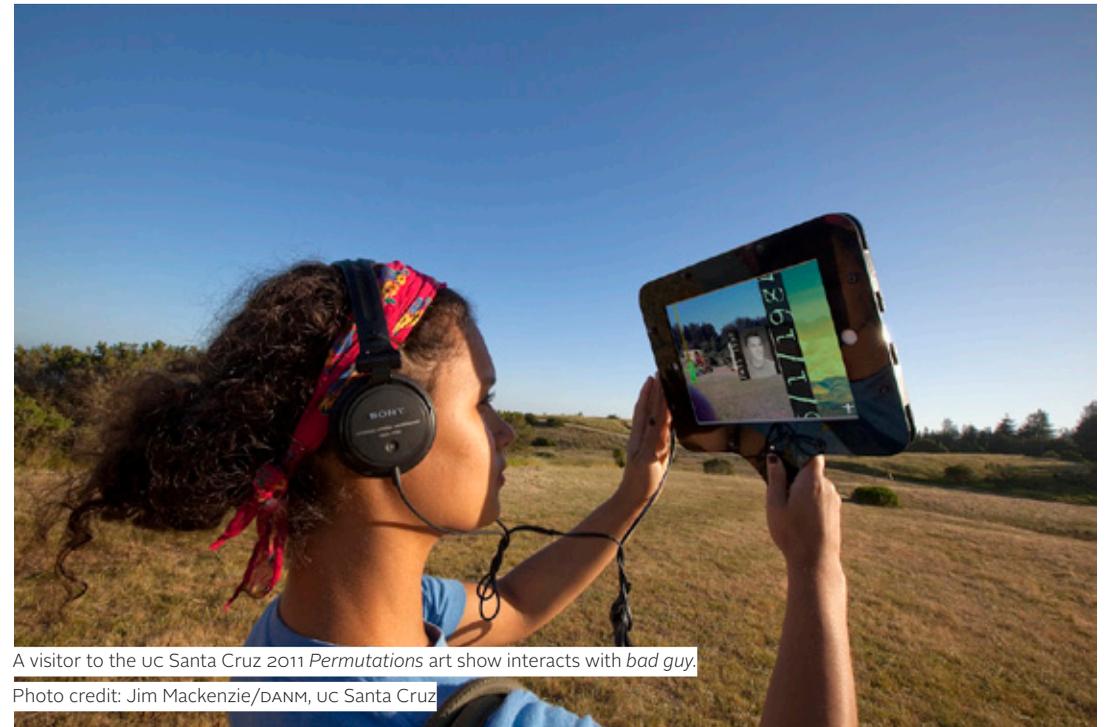
The *bad guy* project was born from a visceral reaction to a disturbing news story and incredulity over the next few weeks at how few people had heard about it and how little the press followed up. The story outlined, in brief, the shocking tale of a platoon of US

soldiers in Afghanistan that had been systematically murdering unarmed civilians for sport, then planting weapons on the bodies to make it appear the victims were insurgents. ¹ The killings, which took place throughout the spring and summer of 2010, were not stopped until an unrelated incident accidentally brought them to the attention of Army investigators. (During the investigation of this initial incident, photographs documenting a soldier's beating at the hands of his platoon-mates appeared online; one of these shows a tattoo reading "what if im not the hero // what if im the bad guy," a quote from the film *Twilight*.)

At the time we first encountered this story in the final months of 2010, media coverage was sparse, and details were still coming out in bits and pieces. However, despite the shocking picture emerging, it was not a page one story: among our peers, few were even aware of it. We began to see this as symptomatic of the weariness and disgust felt by most Americans with the war in Afghanistan, then approaching the end of its first decade with no end in sight. Journalist Gary Younge was writing at the time:

The American people, it seems, are bored with war. Like a reality show that's gone on too long, it ceases to shock, shame or even interest...The conversation has moved on; the trouble is, the troops haven't. ²

We came to feel the story was going untold, not because it was not worth telling but because most people refused to hear any more stories from Afghanistan. We began to wonder whether we could use new technology to tell these stories in a way people had not heard before, a way they had not already trained themselves to tune out. *Palimpsest* was already well into development, and we began discussing how AR's



A visitor to the UC Santa Cruz 2011 *Permutations* art show interacts with *bad guy*.

Photo credit: Jim Mackenzie/DANM, UC Santa Cruz

ability to physically instantiate virtual objects could make it a tool for bridging the divide between a war half a world away and the unreality of news reports about it.

An early conceptual framework we developed was the notion of perspective. Humans use visual and spatial metaphors constantly to talk about how we process ideas and understand each other: I can see your point of view, get where you're coming from, or where you're going with that; I can talk past you, appreciate your perspective, or meet you halfway. The concept of "finding the point of view from which the story makes sense" became a key phrase in our early thinking about the work. We also explored metaphors of map and mapping, but realized early on, that navigation through the space was less important than getting participants to enter the space at all (a notion echoed in Wendy Chun's assertion that "in an info-rich society, a map is not a solution but a further problem.") ³ There was also the question of site-specificity: would we ask participants to travel to rural Afghanistan locations where the killings took place, and if not, what value could positioning pieces of that story in other places in the world have? We decided that our project was explicitly to bring those inaccessible places into uncomfortable proximity with an American audience:

to place the events in a familiar setting and force participants to take a perspectival relationship to them. Conversations with D. Fox Harrell also helped us focus on the way AR's proprioceptive qualities could establish a connection between participants and the people in our story: the feeling of being *this* close to someone, or *that* far from safety.

Born from these discussions, and a great deal of research, was an experimental documentary told through AR and based on the stories of three of the accused American soldiers, as well as three of their Afghan victims. ⁴ Participants held an iPad 2 like a mirror in front of them in a custom case to view the embedded virtual objects, and wore headphones to hear positional audio, instructions, and narration. The installation code was written in Lua, which Palimpsest uses as a scripting language to tap into a powerful low-level 3D engine. With this technical framework we could embed participants in a complex, GPS-positioned and motion-tracked space capable of containing dozens of animated, interactive 3D objects and sounds, with a high enough frame rate and tracking accuracy to create a convincing augmented environment.

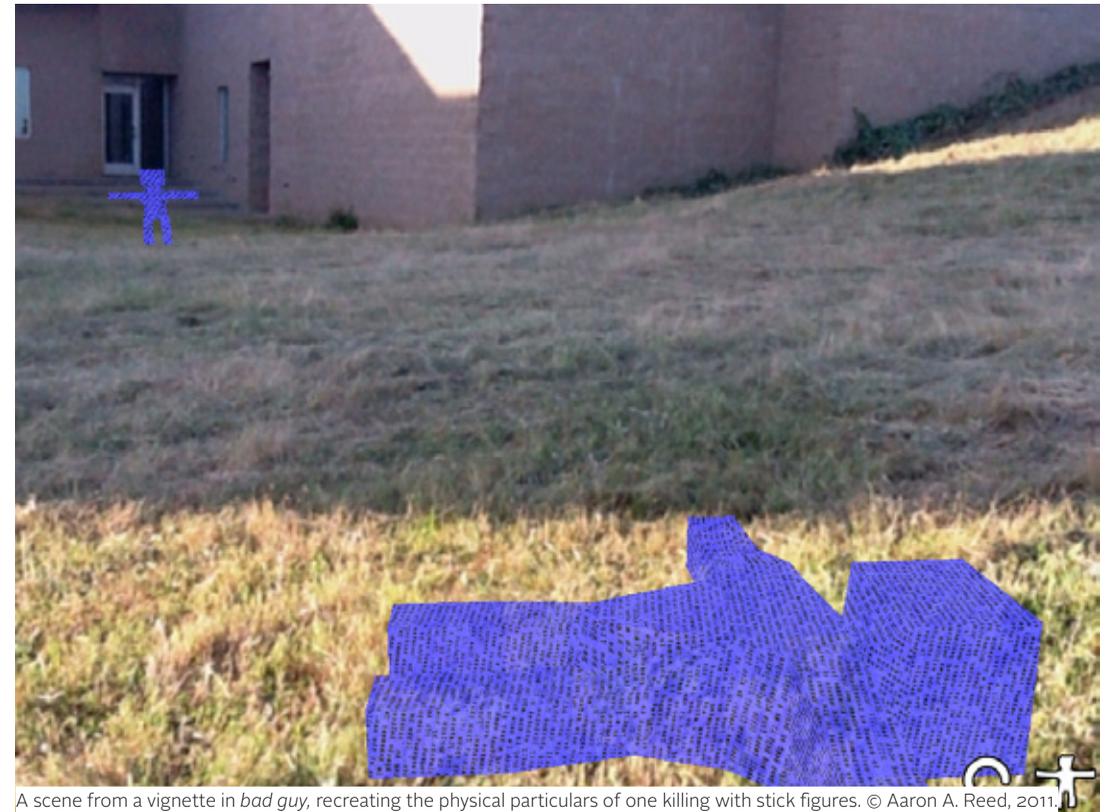
bad guy consists of four major thematic elements, presented as an at-first disorienting maelstrom of ob-



Looking down over the playing field of *bad guy*, showing rotating events. © Aaron A. Reed, 2011.



A line of chronologically ordered events the participant has just realigned. © Aaron A. Reed, 2011.



A scene from a vignette in *bad guy*, recreating the physical particulars of one killing with stick figures. © Aaron A. Reed, 2011.

jects and sounds spread out over a “playing field” approximately 100 meters across.⁵ The most significant element is a collection of “events,” each corresponding to a nugget of information unearthed by the press about the soldiers and the killings. When first encountered, the events (each embodied as a square image two meters to a side) are all revolving slowly around the center of the playing field, which is suffused with a sound of grinding machinery, suggesting a medieval orrery (another era’s attempt at using technology to understand a complex world). When approached and touched, the events expand to reveal a text description, a date, and a series of keywords representing location, participants, and thematic labels such as *Promises*, *Strategy*, or *Deception*. Touching a keyword causes all the events associated with that keyword to rearrange (with a groaning mechanical sound suggesting tortured machinery) into a chronologically-ordered column along the direction the participant is currently facing. The participant can then walk forward to explore the events that happened after the one selected, or turn around and walk the other direction to explore what happened before. Any new event encountered can be touched to bring up new information and key-

words. The participant thus creates an ever-changing configuration of events determined by his or her movement through and interaction with the space. Much like a journalist cutting and pinning newspaper articles to a wall to discover patterns and connections, we hoped the playing field of *bad guy* could be a dynamic space where participants could rearrange and reorder the pieces of this story in an attempt to make personal sense of them.

The second major element of the piece is three fractured portraits of the three accused soldiers, looming as giant fragments suspended in the air above the playing field. From most perspectives, the three fractured photos interpose or obscure each other, seeming hopelessly jumbled; but as the participant moves through the space, they begin to notice that each set of fragments will line up from a certain location to reassemble one portrait. (We suggest here traditions such as anamorphic art, where parts of the image are hidden in plain sight or only revealed from the right perspective.)

When participants stand at a spot where a portrait aligns, they trigger one of three events that retell a killing from the point of view of the aligned soldier. Blocky stick figures textured with words from news reports of the killings are positioned in a tableau recreating the spatial relationships between the soldier (standing at the player's position) and other nearby actors in the scene. A narrator describes how the killing took place, during which the stick figures change position: when a victim is shot, his figure changes from being upright to face down on the ground. These events recreate, in as much detail as possible, from available reports, the exact physical positioning of the actors involved in each killing: if a victim was "about 50 feet away," the stick figure representing him is placed that distance from the player's location; if the soldier whose eyes you're looking through was short, the stick figures of the other soldiers are increased in size so they seem taller than you as you look around at them. While we could not bring participants to the site of the killings, we could try to make them feel the spatial realities of being surrounded by others, the shortest one in a group, or just a few paces from a man being shot.

The three victims are also represented in the piece. At the spot where each victim is first seen in a vignette is an angry series of overlapping, slowly spinning funnel shapes suggestive of a frozen explosion. The shapes are formed from distorted images of the accused soldiers and text fragments of dry details about the killings. An audio montage of warfare, war protesters, mourners, and news coverage of the killings originates from each memorial; this can be heard across the playing field but becomes louder as one steps closer. If one approaches each shape and then steps inside, all sound stops and other imagery vanishes, replaced by a wraparound panorama of a beautiful, tranquil landscape, and floating text marking the name, oc-

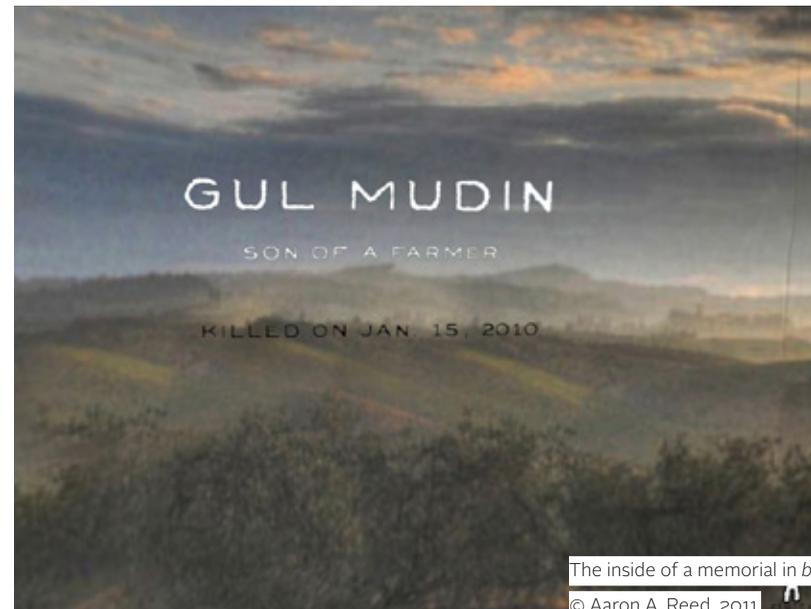
cupation, and date of death of the victim (often the only information known to Western media). The player can remain in this memorial space as long as they like before stepping outside back into the external chaos.

The final element of the piece is its conclusion. After initial introductory narration, the participant is given very little direction and few explicit goals, but rather invited to explore the piece for as long as is desired. A button on the viewing device can be pressed to end a session with the piece. When this happens, a new stick figure is created at the precise location and orientation of the player; it literally appears around them and they must step outside of it. When they do, they see that the playing field is now filled with other silent stick figures, marking the spots where each prior participant chose to end the piece. The participant then walks back to return the equipment through a field of these figures, leaving their own marker behind to join them.

In the conceptualization and implementation of this piece, we drew on inspiration from many sources, both cultural, artistic, and technological, while also consciously aiming to push the boundaries beyond the work we were familiar with. AR has already developed traditions both as an interventionist device and a sculptural surrogate. Craig Freeman's *Border Memorial: Frontera de los Muertos*, for instance, places a virtual skeleton effigy at each location where human remains have been recovered near the US/Mexico border, "allow[ing] people to visualize the scope of the loss of life." ⁶ Making the dry GPS coordinates of an obscure database into an instantiated, located memorial re-visualizes the human cost of the public and political policies around immigration issues. While works like this may have strong user emotive engagement, the tools for creating them (in this case, the



The outside of a memorial to one of the victims in *bad guy*.
© Aaron A. Reed, 2011.



The inside of a memorial in *bad guy*.
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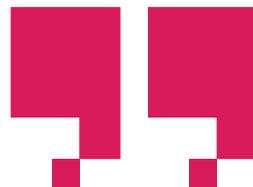
Layar platform) remain either technologically limited or financially difficult to access. The use of AR to create virtual sculpture (even on scales not feasible in reality, as with *Border Memorial*) is one way the medium can innovate, but tools for creating more reactive or procedurally involved work are still rare.

One goal of the Palimpsest Augmented Reality Toolkit is to provide such a tool-- one both powerful and freely available-- to wider audiences. ⁷ Palimpsest has been created with the specific intent of supporting the construction of nonlinear AR narratives and

documentaries using a framework capable of both hardware-pushing graphics and algorithmic power. Palimpsest authors write code in a simple but powerful scripting language built on top of a low-level AR browser for the iPhone and iPad. The system provides hooks to respond to movement, rotational, and touch actions from the user, and to script positional 3D objects, animations, and sounds. Changes in heading, proximity to particular locations, and other behaviors are all scriptable. While singular GPS coordinates are useful for creating symbolic representations of spaces, they do not represent the way that people interact



We spent significant amounts of time engaging with particular locations we knew (or grew to know) quite well, with the intent of incorporating our cultural knowledge of place with the technology we were building.



with their local environment: with Palimpsest, places are conceptualized as collections of objects and possible interactions, an area of potential rather than a singular point in space. This gives us the ability to re-visualize a physical place as a reactive space with rich narrative potential.

The creation of Palimpsest was the direct result of numerous discussions, walks, and whiteboard drawings between the authors. We spent significant amounts of time engaging with particular locations we knew (or grew to know) quite well, with the intent of incorporating our cultural knowledge of place with the technology we were building. Our envisioning of the breadth of spatial narrative possibilities within the places we encountered, profoundly impacted the design of Palimpsest. Inherent in the design process was a desire to create technologies that foster community involvement within one's own locality, a reversal of the trend towards globalizing technologies that tend to shift power away from the local. AR has a particularly powerful potential for re-engaging the local by creating a dialog between the virtual/global/networked environment and the personal/physical/local environment. We hope that Palimpsest will push the dialog towards a more engaging and complex discussion than what has formerly been possible.

Without a long tradition of AR narratives to build upon, we mostly drew inspiration from other media in assembling *bad guy*. Framing a story as a series of fragments to be reassembled into a coherent whole has been explored in film (Michael Haneke's *71 Fragments of a Chronology of Chance*,⁸ to name one example) and in computer-based media such as *Bleeding Through: Layers of Los Angeles, 1920–1986*,⁹ a multimedia project presenting fragments of narrative about a fictional character embedded in a real historical context. A more embodied approach was taken by Jessica Faith Hayden and Christopher Molla's installa-

tion *Seemingly External Things*,¹⁰ which furnishes a Silver Streak trailer with period objects that conspire with hidden technology to share fragments of story through video, audio, and motion when touched. In the VR project *Three Angry Men*,¹¹ the participant can move between chairs arranged around a table to witness a fictional drama from the perspective of any of its three characters. All of these pieces explore the dual meaning of perspective as referring to both what is visible and what is believed: as we uncover new fragments, we continually change our relationship to the characters in the story, positioning ourselves relative to them and their actions in the narrative space.

Using virtual spaces to explore real-world events also has precedent. Tamiko Thiel's *Beyond Manzanar* recreates a Japanese internment camp in virtual reality (VR), with similar experiential goals as we had with our own project: "As you explore the camp your kinesthetic sense is engaged to underscore the emotional impact of confinement."¹² The game art installation *Waco Resurrection* asks participant to wear VR helmets that put them in the head of cult leader David Koresh, pumping disturbing voices from God into the headphones while they play a first-person shooter game defending the compound and empowering followers.¹³ Outside of AR/VR, other software-based projects have engaged with real-world tragedies in journalistic or critical ways, including *Super Columbine Massacre RPG!*, *JFK: Reloaded*, and *Six Days in Fallujah*; what's disturbing is that many of these pieces were threatened, pulled, or shut down in the face of

real or imagined public outrage.^{14 15} Virtual spaces are not yet universally seen as acceptable places to engage in serious dialogue about real-world issues: in *dead-in-iraq*, a piece where the names of US soldiers killed in Iraq were typed into the chat box of in-progress games of "America's Army,"¹⁶ the artist frequently received threats and vitriol both from players and non-players of the military-funded recruiting game.

We remain, however, strongly committed to the potential of virtual spaces for re-visualizing the forgotten or invisible. *Oyster City* is a new Palimpsest-based project being produced as a collaboration between Meredith Drum, Rachel Stevens, and author Phoenix Toews. An eco-psychogeographic walking tour that takes place in an area of lower Manhattan, the piece tells the story of the rise and fall of the oyster trade in New York City, and invites participants to draw connections between the oyster trade, ecological and environmental sustainability issues, and social, political, and cultural histories. *Oyster City* will be part game and part historical narrative. A participant will be able to "collect" various virtual objects by visiting a series of sites that are intimately connected with the history of oysters in the city. Physical traversal from site to site will be required to piece together the various parts of the narrative, and the collection and movement of objects will open new narrative trajectories for the participant. *Oyster City* is expected to debut in fall 2012. Other projects are also underway: a collaboration with the Silicon Valley Toxics Coalition to create augmented reality tours of superfund sites in the Bay Area is under construction, as well as several collaborations with both national and international artists. Palimpsest itself is currently being prepared for release as an open-source, freely available system.

In early rounds of the discussions that led to *what if im the bad guy*, we considered the disturbing possibil-

ity of subscribing to “channels” of reality, imagining AR apps that would only let you see what the entities behind each channel wanted you to see. With each passing month this seems less like science fiction. Big interests will continue exploiting the steep technological barrier to creating sophisticated AR, providing access to only the content (and eventually, realities) that serve their purposes. Palimpsest is named after the practice in an earlier era of reusing the same precious paper to inscribe new writing, even though traces of the old would inevitably remain. While digital technology offers the temptation to completely eradicate the past (or undesirable presents), we hope putting access to AR into the hands of a broader audience will help keep more stories, viewpoints, and realities visible. ■

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A scene from *what if im the bad guy*.

© Aaron A. Reed, 2011.

AARON A. REED

interviewed by

Lanfranco Aceti & Richard Rinehart

Is there an 'outside' of the Art World from which to launch critiques and interventions? If so, what is the border that defines outside from inside? If it is not possible to define a border, then what constitutes an intervention and is it possible to be and act as an outsider of the art world? Or are there only different positions within the Art World and a series of positions to take that fulfill ideological parameters and promotional marketing and branding techniques to access the fine art world from an oppositional, and at times confrontational, standpoint?

There's clearly an outside to the art world, although for artists working out there I'm not sure whether (or what!) they might be interested in launching back into it. I think especially within new media art there's a lot of people creating work informed more by contexts and paradigms outside art and art historical traditions: frameworks from hacking to storytelling to game-making to DIY building. Speaking only for myself, I find that I spend most of my time when making work not thinking consciously from an "art world" perspective; it tends to be only in moments of reflection and self-critique between projects that I step back into that headspace to think about how my work intersects with those traditions and frames.

"In *The Truth in Painting*, Derrida describes the *parergon* (*par-*, around; *ergon*, the work), the boundaries or limits of a work of art. Philosophers from Plato to Hegel, Kant, Husserl, and Heidegger debated the limits of the intrinsic and extrinsic, the inside and outside of the art object." (Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge, MA: MIT Press, 2009), 13.) Where then is the inside and outside of the virtual artwork? Is the artist's 'hand' still inside the artistic process in the production of virtual art or has it become an irrelevant concept abandoned outside the creative process of virtual artworks?

VR/AR certainly blurs the lines between reality as seen by the viewer and reality as seen by the artist. Alternate reality games have explored this terrain for years, even before they were called that (the 2001 video game *Majestic* was centered around the notion of the story invading your reality through all of your available devices). Now that we live in a world where control of reality is no longer science fiction but a matter of who makes it to market first, this question of the boundaries of work (whether art, commerce, or interface) is no longer theoretical but vitally important. Artists will most likely be on the forefront of questioning what the new role of boundaries is in augmented spaces: whether the augments has a moral obligation to keep their hand visible, and how much blurring of boundaries augments will find practically and comfortably acceptable.

Virtual interventions appear to be the contemporary inheritance of Fluxus' artistic practices. Artists like Peter Weibel, Yayoi Kusama and Valie Export subverted traditional concepts of space and media through artistic interventions. What are the sources of inspiration and who are the artistic predecessors that you draw from for the conceptual and

aesthetic frameworks of contemporary augmented reality interventions?

My work in AR has been informed largely by artists and practitioners interested in making the formerly invisible visible. Wafaa Bilal's "Domestic Tension" was a huge influence on me, for its attempt to make something that was an abstraction for most Americans (civilian death in Iraq) into a visible reality both in its gallery exhibition and online, explicitly implicating participants in both contexts. From another angle, I've admired work that's used technology to make visible the implicit ideologies and assumptions of its audience, such as Michael Mateas's *Terminal Time*, a piece where audiences responses to an interactive documentary causes the narration to increasingly pander to the ideologies of the current viewers. I've also been inspired by work done by my colleagues in the Digital Arts and New Media program at UC Santa Cruz, including Phoenix Toews' use of AR to visualize underground contaminants in suburban neighborhoods, and Meredith Drum's "Louisiana Re-storied," an interactive documentary exploring the largely silenced consequences of the petroleum industry in southern Louisiana.

In the representation and presentation of your artworks as being 'outside of' and 'extrinsic to' contemporary aesthetics why is it important that your projects are identified as art?

I wouldn't say this is particularly important to me: in fact, maybe something I like about the label "story" for much of my work is that this can seem a less loaded term with which to introduce a new experience to a lay audience. With my AR piece "what if im the bad guy," despite its presence in the context of my MFA exhibition, I definitely shied away from overtly labeling it as art, preferring to call it a "documentary" or an "experience" that participants could explore on their own terms. I suppose if an individual finds something useful about conceptualizing my work as "art" then

they're free to, but I'm much more interested that they encounter it at all than that they label it a particular way.

What has most surprised you about your recent artworks? What has occurred in your work that was outside of your intent, yet has since become an intrinsic part of the work?

Creating computational fictions continues to change the way I write and think about writing. While I initially conceived of this kind of writing as collaboration with a capricious, sometimes unreliable co-author-- the algorithms responsible for all or part of my interactive stories-- I've recently come to a realization that I'm really collaborating with myself. Part of this has come from increasing my skills as a programmer to the point where I no longer feel uneasy giving myself that label, and the ability to turn more and more advanced techniques towards proceduralizing various aspects of my ideas, styles, and philosophies. This reification of parts of my artistic process into executable code has forced a precision of thought which I did not put into my fiction, but now that it is there I can not imagine writing without it. ■

AARON A. REED

statement & artwork

My work explores the largely unmapped territory at the intersection of computation and traditional literary practice.

While swaths of this terrain have been labeled as “hypertext fiction,” “interactive fiction,” “e-poetry” etc., my projects increasingly involve sorties outside these semi-established zones into new ways that interactive stories can be informed by sophisticated algorithmic processes.

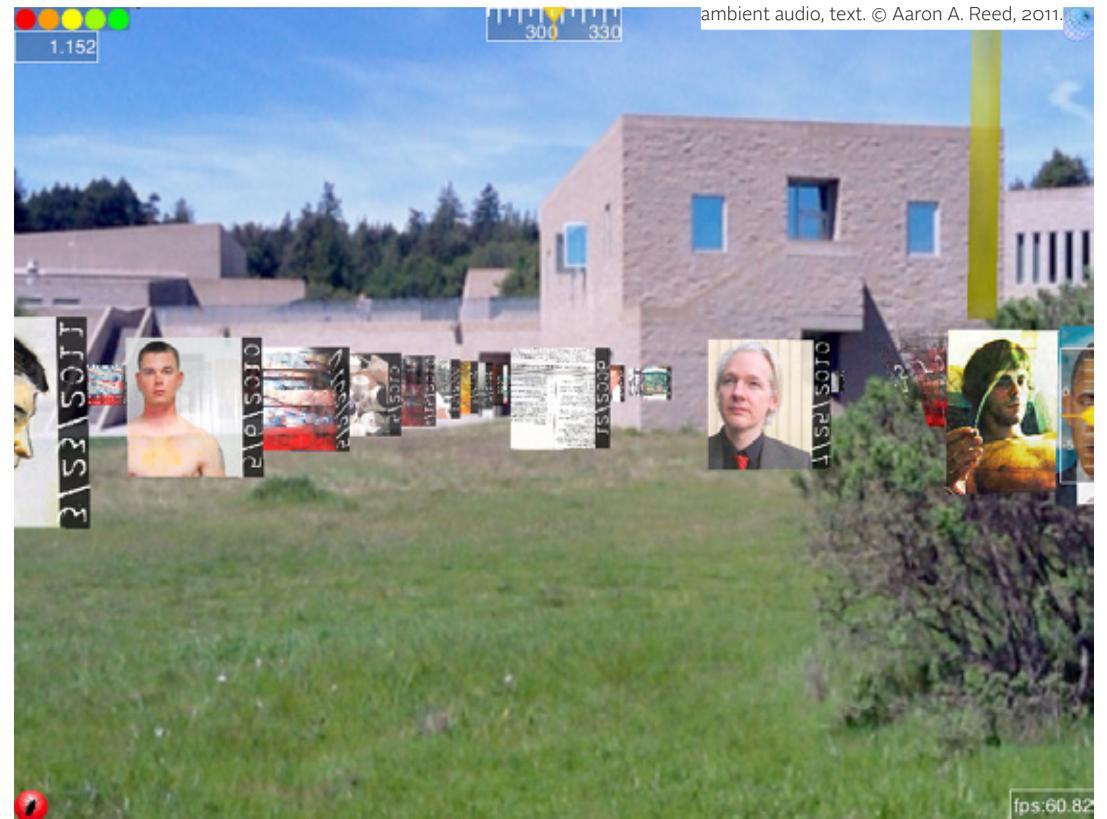
While mostly working with text-based narratives, I've also worked on graphical games and augmented reality installations. As the number of devices in our lives that can present us with computationally-driven story is increasing, augmented reality provides a preview into a future where the devices fade away into the background, giving artists (and other entities) the ability to directly inscribe stories onto our lived reality. This can't help but profoundly change the way we think about and tell stories, both fiction and non-fiction, and experimentation in this space continues to be fruitful. ■

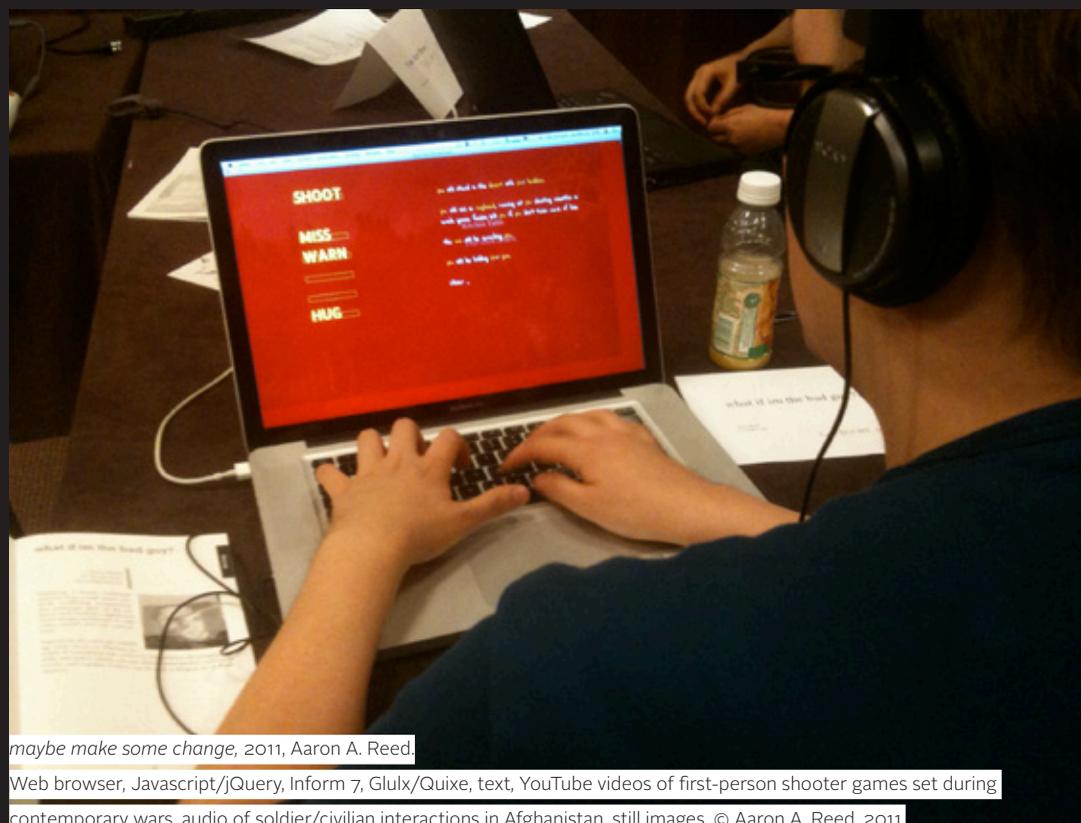


what if im the bad guy, 2011, Aaron A. Reed.
iPad 2, Palimpsest, Lua scripting, still
photography, 3D objects, voiceover and
ambient audio, text. © Aaron A. Reed, 2011.



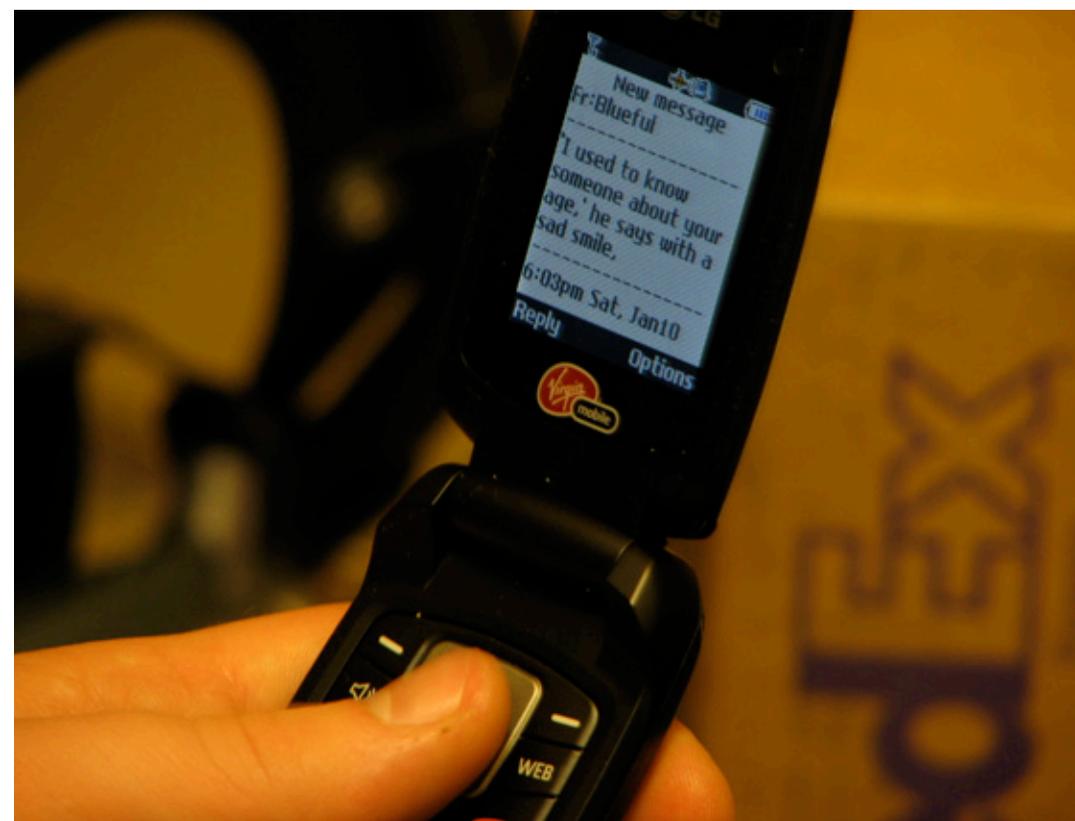
what if im the bad guy, 2011, Aaron A. Reed.
iPad 2, Palimpsest, Lua scripting, still
photography, 3D objects, voiceover and
ambient audio, text. © Aaron A. Reed, 2011.





maybe make some change, 2011, Aaron A. Reed.

Web browser, Javascript/jQuery, Inform 7, Glux/Quixe, text, YouTube videos of first-person shooter games set during contemporary wars, audio of soldier/civilian interactions in Afghanistan, still images. © Aaron A. Reed, 2011.



blueful

Today March 2010 Print Week Month Agenda

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
9am Your memory 10am of those	days	10am lies jumbled				
8	9	10	11	12	13	14
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15	16	17	18	19	20	21
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4am but 5am the 6am bigger 7am picture	ho pe					
29	30	31	1	2	3	4
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blueful, 2009, Aaron A. Reed.

Text nodes on Amazon.com, Craigslist, CafePress, and forty other websites.

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Operational &
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