

Portfolio

Patrick LeMieux
PORTFOLIO

Art Games 2008–2009 5
Game-Space 2008–2010 37
Open House 2010–2012 79
Speculation 2012–2014 119
Metagaming 2012–2015 155
tilt/SHIFT 2014 191
Aftermarket 2013–2015 243

ART GAMES

Art Games
2008–2009

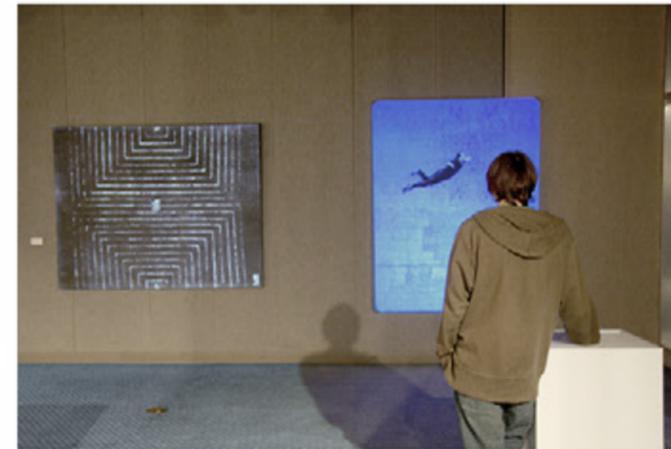
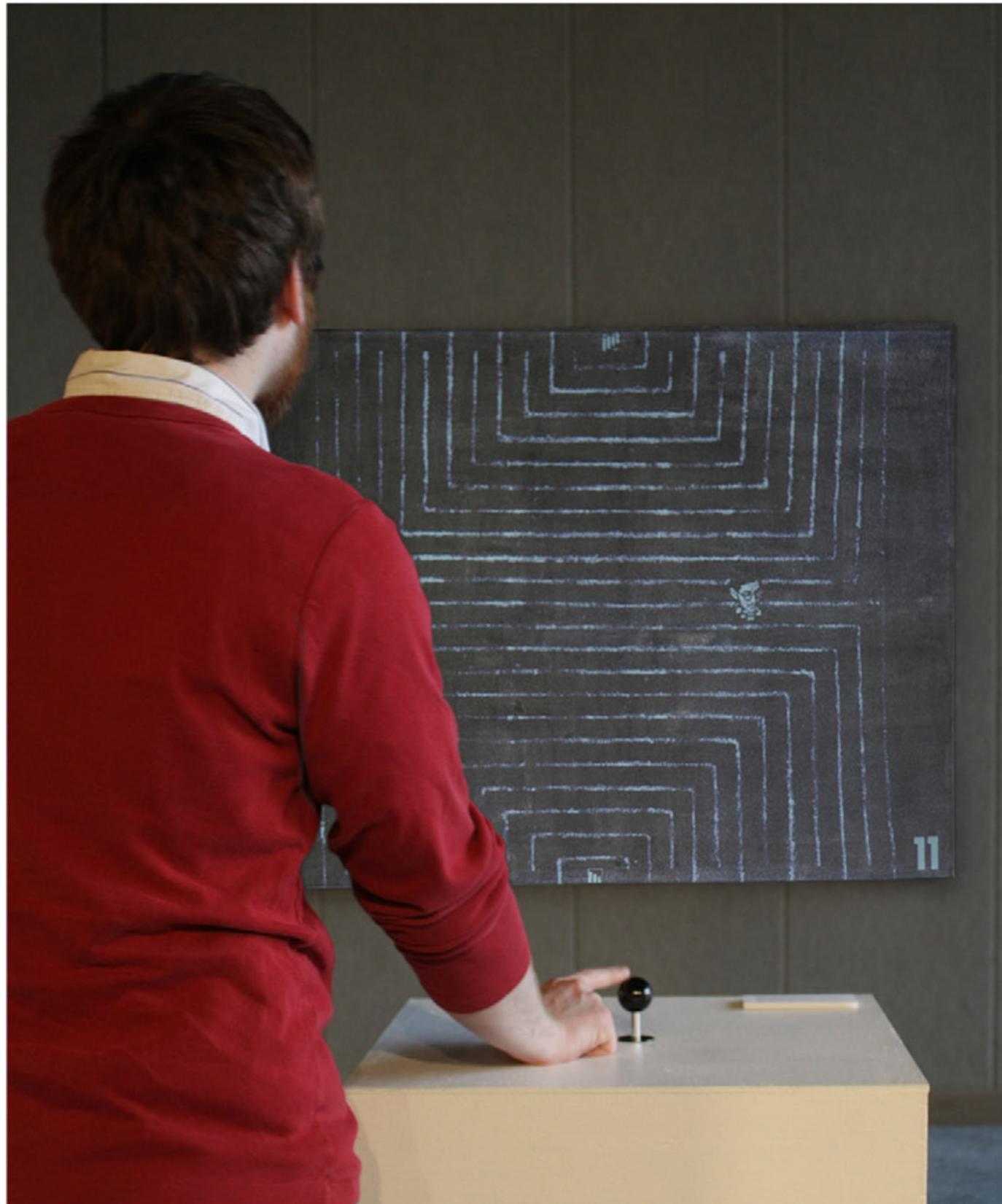
Art Games is a series of videogames that mediate the play between painter and painting by removing the ludic challenges of arcade games and projecting the avatars of artists onto their own colorfields.

Made in **2009–2010** and exhibited at the H. Don and Connie J. Osborne Family Gallery in Omaha, Mason Murer Fine Arts in Atlanta, the Museum of Fine Arts in Tallahassee, and in a solo exhibition at the J. Wayne Reitz Union in Gainesville.

In 2008 and 2009, I developed a series of videogames based on the monochromatic paintings of Ad Reinhardt, Jackson Pollock, Robert Rauschenberg, Frank Stella, Yves Klein, and Andy Warhol. Each game was designed to be projected and played on top of the original paintings by these five artists—tactical media for institutional interventions in museums of modern art. Modeled after Reinhardt’s juxtaposition of stark, black monochromes and wry, pedagogical comics, these *Art Games* stage confrontations between artist and artwork, inviting the audience to mediate the play between painter and painting.

By removing traditional gameplay from arcade games and adding the avatars and actions of mid 20th-century artists onto their own colorfields, these “painting-specific” installations adopt the strategies of so-called “art games” to make game art. As a historical genre, individually-authored and independently-produced “auteur,” “arthouse,” or “art” games typically emphasize the formal procedures of videogames to allegorize social, political, or economic concepts. *Art Games* deploy this strategy in the context of art institutions, recasting the formalism of post-war art as a blank canvas for phenomenal, performative, and practical play.

In his analysis of *Las Meninas* (1656) in *The Order of Things* (1970), Michel Foucault writes “[p]erhaps there exists, in this painting by Velazquez, the representation as it were, of Classical representation, and the definition of space it opens to us.” Modeled after *Las Meninas*, *Art Games* conflates the position of the artist, the artwork, and the audience. Standing in front of a minimal plinth, projecting images onto the surface of a monochromatic screen, play becomes a critical form of practice.



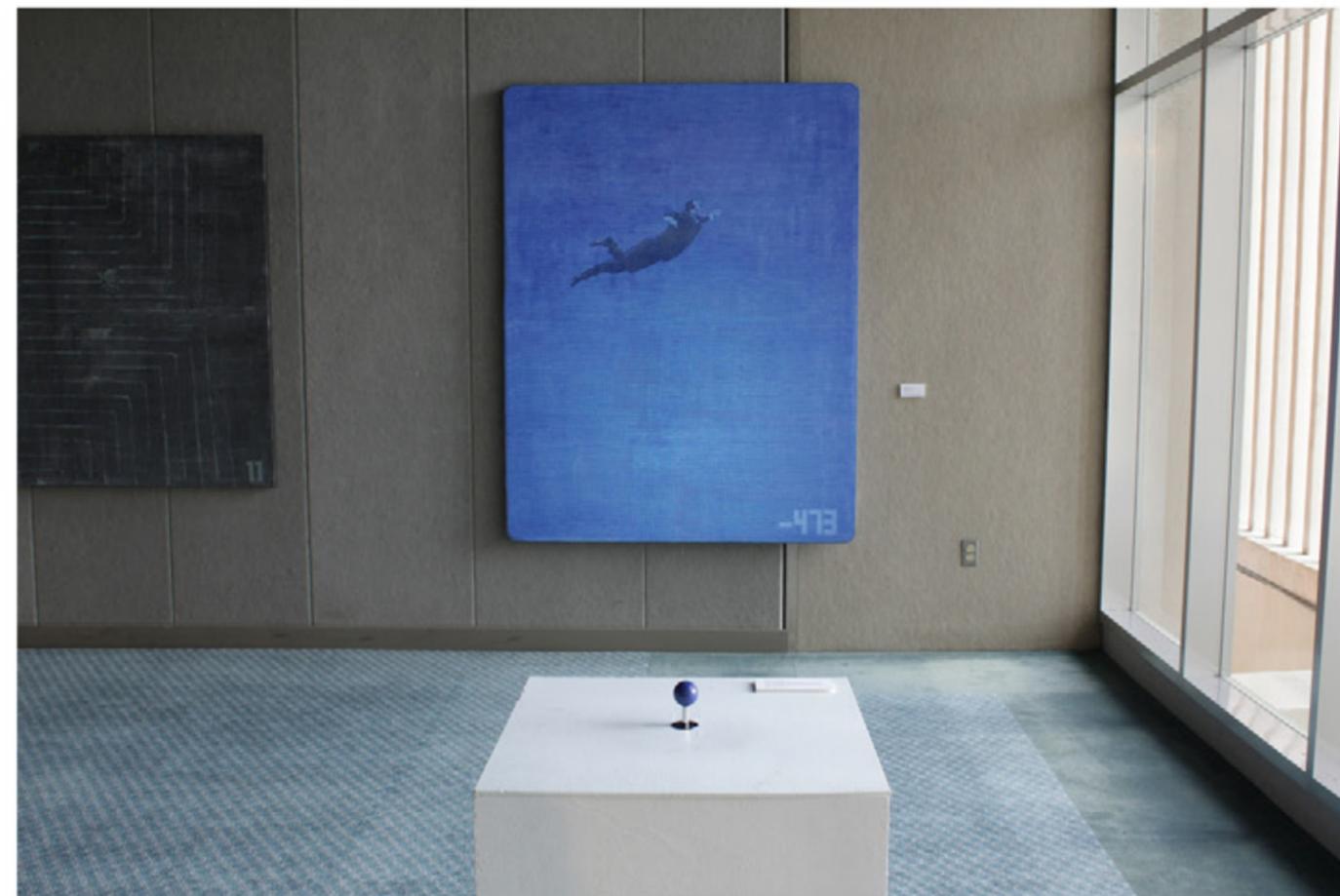




Frank Stella in Morro Castle

36 x 18 x 18 inch plinth, 84 x 107 inch painting
 Black Sanwa JLF joystick, IPAC, Power Mac G4,
 Flash Application, digital projector, wood, paint
 September 29, 2008

Frank Stella in Morro Castle (2008) places the figure of the artist within his inaugural “Black Painting” now transformed into a top-down arcade game. Photographs of Stella by Hollis Frampton during the creation of *Morro Castle* (1958) are used to construct the artist’s pixellated avatar. Here, the painting’s twenty-five black stripes fuse into a labyrinthine pathway where two divergent stairways convert the nonrepresentational marks into the very castle suggested by the title. Slowly tracing the path pioneered by Stella’s brush, the player may pilot the painter to the far stairway. After finally arriving at the finish, Stella ascends or descends only to reappear from the opposing stair.

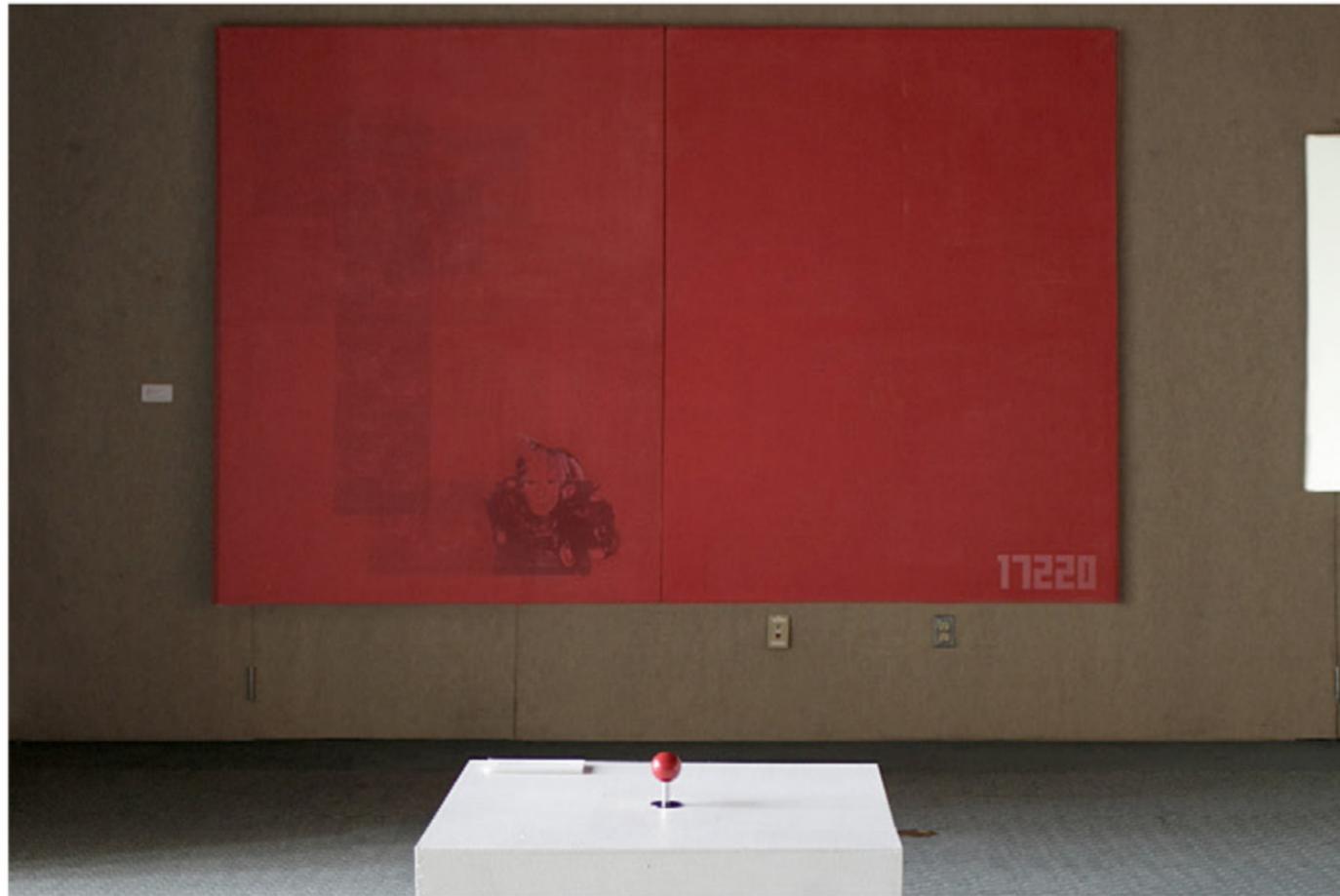


Yves Klein Leaps into the IKB Void

36 x 18 x 18 inch plinth, 77 x 60 inch painting
 Blue Sanwa JLF joystick, IPAC, Power Mac G4,
 Flash Application, digital projector, wood, paint
 November 27, 2008

Yves Klein Leaps into the IKB Void (2008) suspends the artist’s body as depicted in *Leap into the Void* (1960), Harry Shunks photomontage originally published in *Dimanche, Le Journal d'un Seul Jour* on Sunday, November 27th 1960. Finally free of gravity, neither flying nor falling, Klein's horizontal momentum stabilizes as he floats between the aerial and the aquatic. In the style of a side-scrolling shooter, Klein's body tilts up and down according to the player's input while his textured International Klein Blue (IKB) monochromes pan in the background, their pigment suspended in clear resin.





Red Andy Warhol Crash Infinite Times

36 x 18 x 18 inch plinth, 106 x 164 inch painting
 Red Sanwa JLF joystick, IPAC, Power Mac G4,
 Flash application, digital projector, wood, paint
 November 1, 2008

Red Andy Warhol Crash Infinite Times (2008) depicts the artist driving one of the crashed cars from *Orange Car Crash Fourteen Times* (1963). Constantly tracking trace elements of the fourteen car crashes on one of two monochromatic canvases, Warhol's crashed car has been modified into an automatic screen-printing device. By sequencing Warhol's series of red self portraits in time, the artist appears electrocuted as the crashed car bumps along. How long must one play before the death drive is satisfied?

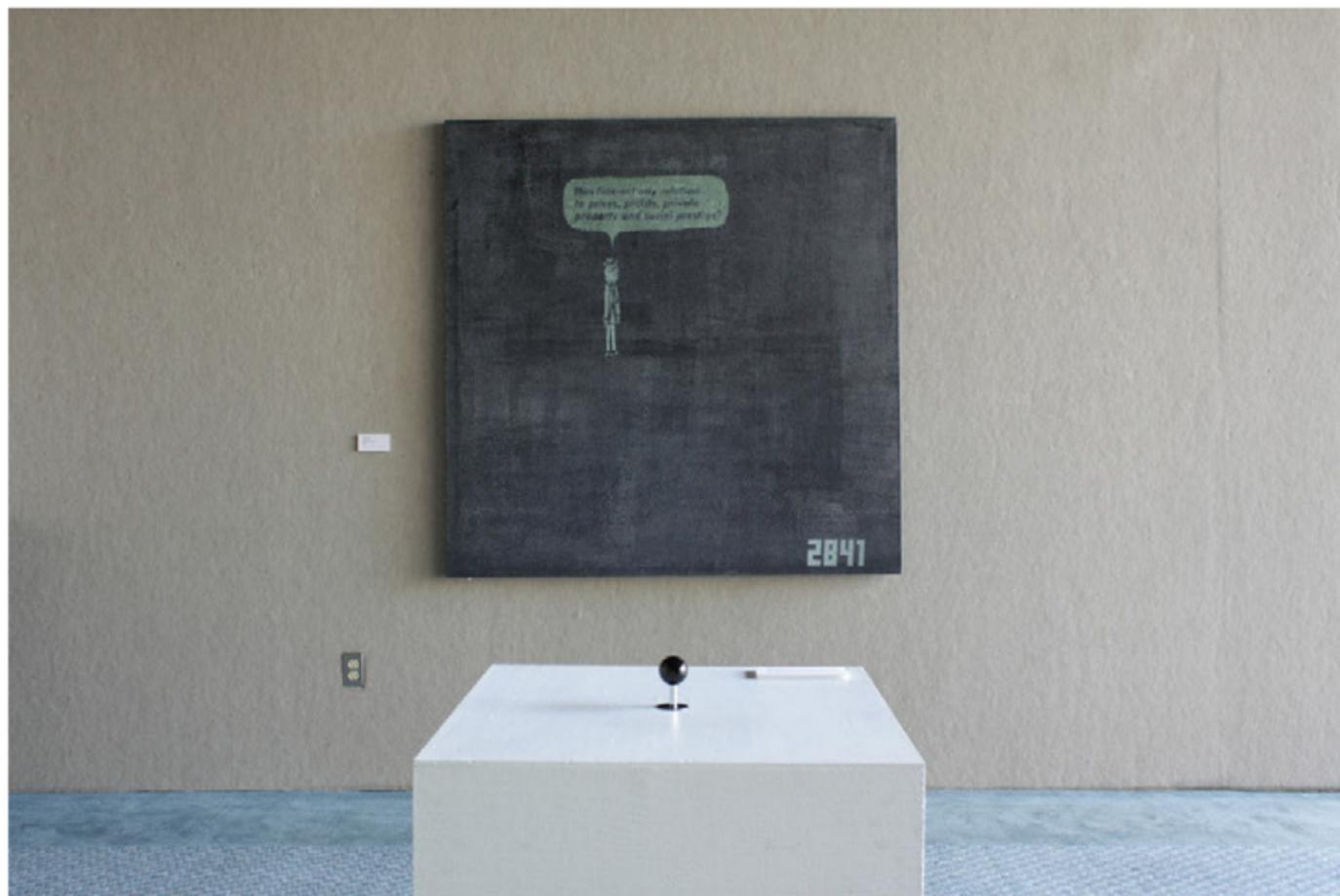


White Painting After Robert Rauschenberg

36 x 18 x 18 inch plinth, 48 x 48 inch painting
 White Sanwa JLF joystick, IPAC, Power Mac G4,
 Flash application, digital projector, wood, paint
 May 12, 2008

White Painting after Robert Rauschenberg (2008) was created on May 12, 2008, the day of the artist's death. Composed solely from photographs documenting the production of the *White Paintings* (1951) at Black Mountain College, Rauschenberg's avatar appears on what John Cage called "landing strips" for light, shadow, and dust. Despite the seemingly immense volume of the stage, the lack of distinguishing marks obfuscate the player's movement, a disorientating effect common when navigating cartography in early role-playing games. When the journey ends, the artist vanishes and the score increases by one.

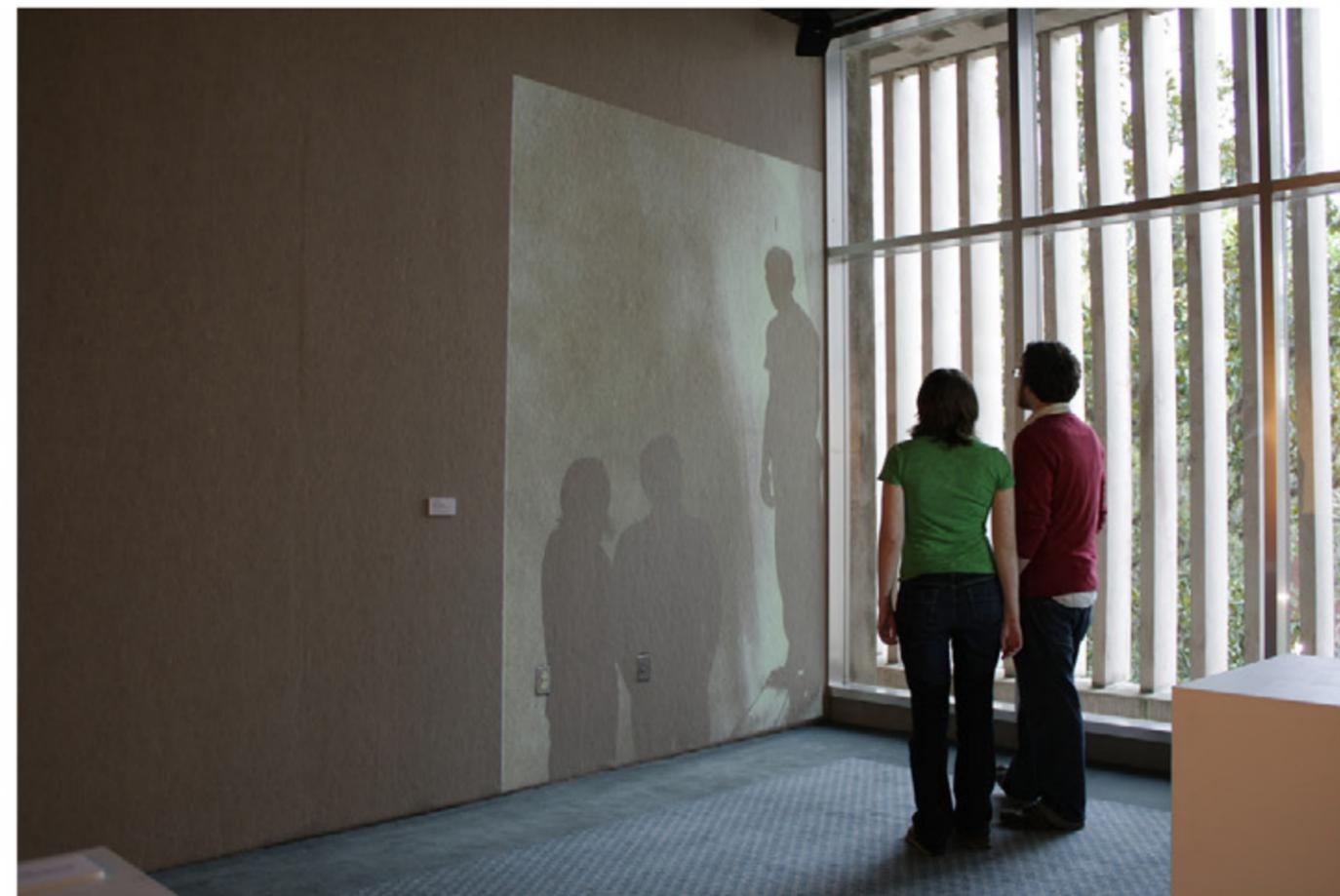




Ad Reinhardt's Abstract Painting

36 x 18 x 18 inch plinth, 60 x 60 inch painting
 Black Sanwa JLF joystick, IPAC, Power Mac G4,
 Flash Application, digital projector, wood, paint
 December 11, 2008

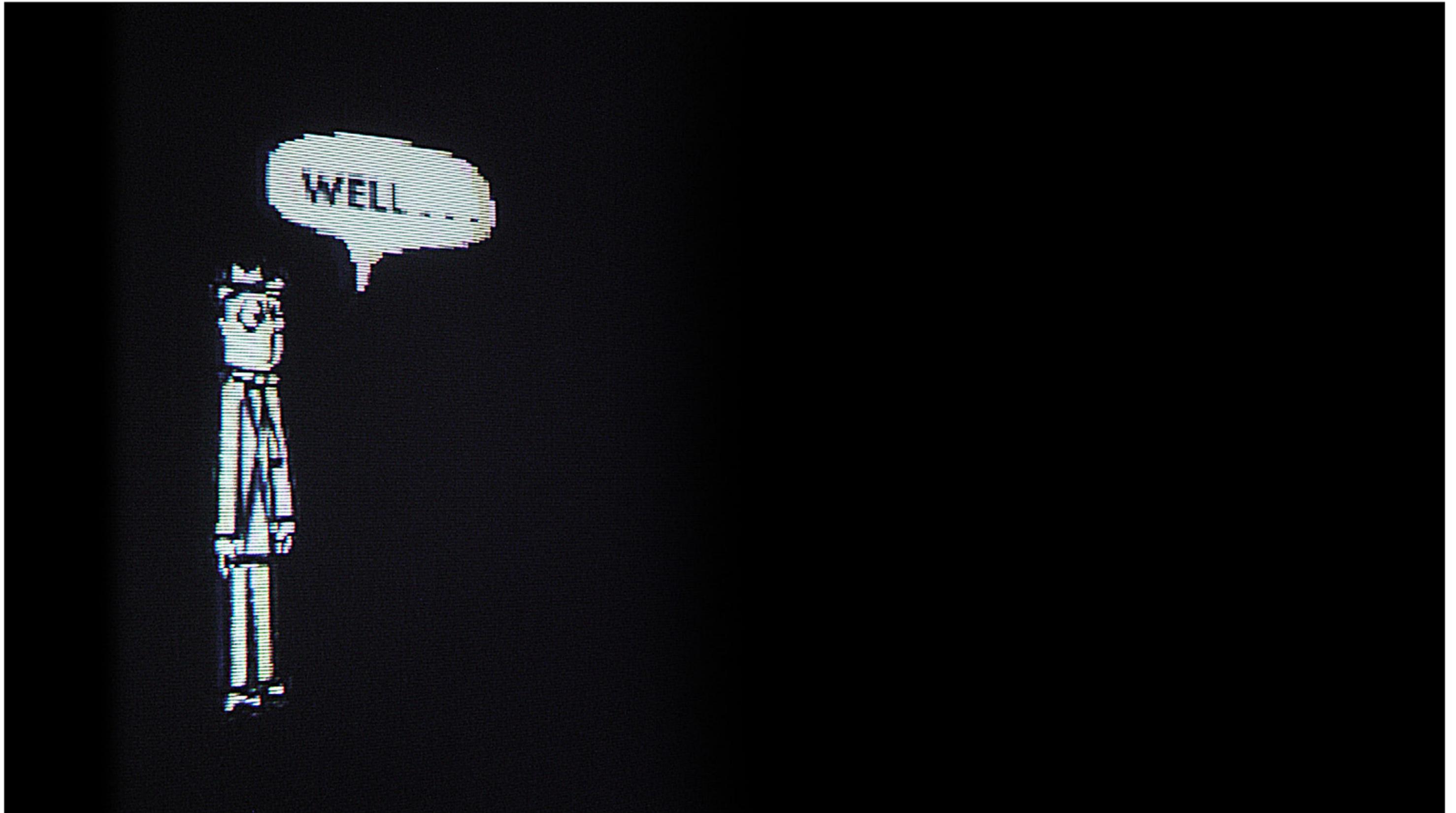
Ad Reinhardt's Abstract Painting (2008) invites the player to guide Reinhardt's most recurrent comic character within the landscape of his signature painting, *Abstract Painting* (1953-1967). As the player wanders the ostensibly black surface, the cartoon gallery goer recites dialogue sampled from Reinhardt's comics as the score ticks higher and higher. Faint red, green, and blue tint demarcate the painting's surface and form a subtle grid embedded in the black paint which directs the question and answer session. Originally used to infuse the monochrome with abstract geometry, this three-by-three grid becomes a game board—perhaps for checkers or tic-tac-toe.



Curs(e)ored Pollock

Variable size (approximately human scale)
 Single channel digital video
 December 25, 2007

A standard blinking cursor is added to Bernard Schardt's photograph of Jackson Pollock. In this photograph, the artist hesitates in front of the large blank canvas that will become Peggy Guggenheim's commission, *Mural* (1943). Pollock delayed until the night before his deadline to begin what would become his first large-scale abstraction. Enacting Pollock's pause, the player is immobilized without a keyboard or console.



Player's Guide

8.5 x 11 inches

LaserJet print

February 16, 2009



Yves Klein Leaps into the IKB Void

Yves Klein Leaps into the IKB Void (2008) suspends the artist's body as depicted in the photograph Leap into the Void (1960), originally published in *Dimanch - Le Journal d'un Seul Jour* (Sunday - The Newspaper Only for One Day) on Sunday, November 27th 1960.

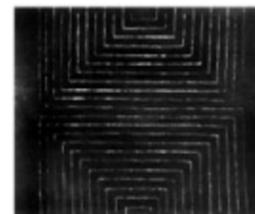


Finally free of gravity, neither flying nor falling, Klein's horizontal momentum is made consistent as if floating in space. In the style of a side-scrolling shooter, Yves Klein's body tilts up and down according to the player's influence while textured International Klein Blue (IKB) monochromes pan in the background, their pigment suspended in clear resin.



Frank Stella in Morro Castle

Frank Stella in Morro Castle (2008) places the artist's figure within one of his earliest black paintings now transformed into a top-down arcade game. Photographs shot in Frank Stella's studio during the creation of *Morro Castle* (1958) animate the avatar of the artist. The painting's twenty-five black stripes fuse into a single labyrinthine pathway while two divergent stairways convert the nonrepresentational marks into the very castle suggested by the title.



Controlling Stella, the player must slowly trace the path pioneered by the artist's brush in order to reach either staircase. Arriving at the finish, Stella's figure ascends or descends only to reappear from the opposing stair. The scoreboard in the bottom right corner tallies as one vertically traverses a stack of two dimensional floors in this castle of infinite height and depth.

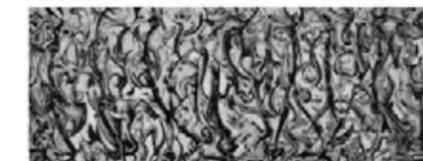
White Painting [single panel] after Robert Rauschenberg

White Painting [single panel] after Robert Rauschenberg (2008) was created on the day of Rauschenberg's death and revisits his White Painting series from 1951. Composed solely from photographs documenting the production of the white series at Black Mountain College, Rauschenberg's ethereal form appears when summoned on what John Cage referred to as a "landing strips" for light, shadow, and dust. The inclusion of the artist's body transforms the surface of the monochrome into an indeterminate landscape, a spectral topography. Despite the seemingly immense volume of the stage, the lack of distinguishing marks camouflages the player's movement, a disorientating effect common when navigating cartography in early role playing games. When the journey ends Rauschenberg evaporates and the score increases by one.



Curs(e)ored Pollock

A standard blinking cursor is added to Bernard Schardt's photograph of Jackson Pollock. The artist hesitates in front of the large blank canvas that will become Peggy Guggenheim's commission, *Mural* (1943). Pollock would delay until the night before his deadline to begin painting what would become his first large-scale abstraction. Enacting Pollock's pause, the player is immobilized without a keyboard or console.



Red Andy Warhol Crash Infinite Times

Red Andy Warhol Crash Infinite Times (2008) depicts the artist driving a crashed car from *Orange Car Crash Fourteen Times* (1963). This crashed car has been modified into an automatic screen-printing device, constantly tracking trace elements of the fourteen car crashes around one of the two monochromatic canvases. The other canvas tallies Warhol's progress, functioning as a large scoreboard which reflects its opposite. By sequencing Warhol's series of red self portraits in time, the artist appears constantly electrocuted as the crashed car bumps along. How long must one play before the death drive is satisfied?



Ad Reinhardt's Abstract Painting

Ad Reinhardt's Abstract Painting (2008) invites the player to pilot Reinhardt's most recurrent comic character within the landscape of his signature painting, *Abstract Painting* (1960). As the player wanders the ostensibly black surface, the character recites dialogue sampled from Reinhardt's comics while the score increases. Faint red, green, and blue tint demarcate the painting's surface and form a subtle grid embedded in the black paint which directs the question and answer session. This three by three grid, originally used to infuse the monochrome with abstract geometry becomes a game board—perhaps for checkers or tic-tac-toe.





Open Source Library

Wood, paint, paperwork
3 x 3 x 1 foot shelves
February 16, 2009



Demarcated by color, the contents of each shelf originally correspond to one of six artists featured in the exhibition. As time passes and papers shuffle, the shelves lose their specificity. Visitors are encouraged to take anything of interest as well as to deposit their own documents in order to build the library.

Las Meninas

25 x 29 inches

Vinyl print, crown moulding, gold spray paint

February 16, 2009







Art Games mediate the play between painter and painting.

Game-Space
2008–2010





Game-Space is a gallery-within-a-gallery, a ubiquitous media environment that combines surveillance systems, analytic engines, and real-time simulations to mirror the architecture of the art institution.

Made with **Jack Stenner** in 2008–2010 and exhibited at the University of Florida, the Tampa Museum of Art, and the Samuel P. Harn Museum of Art in Gainesville, Florida.



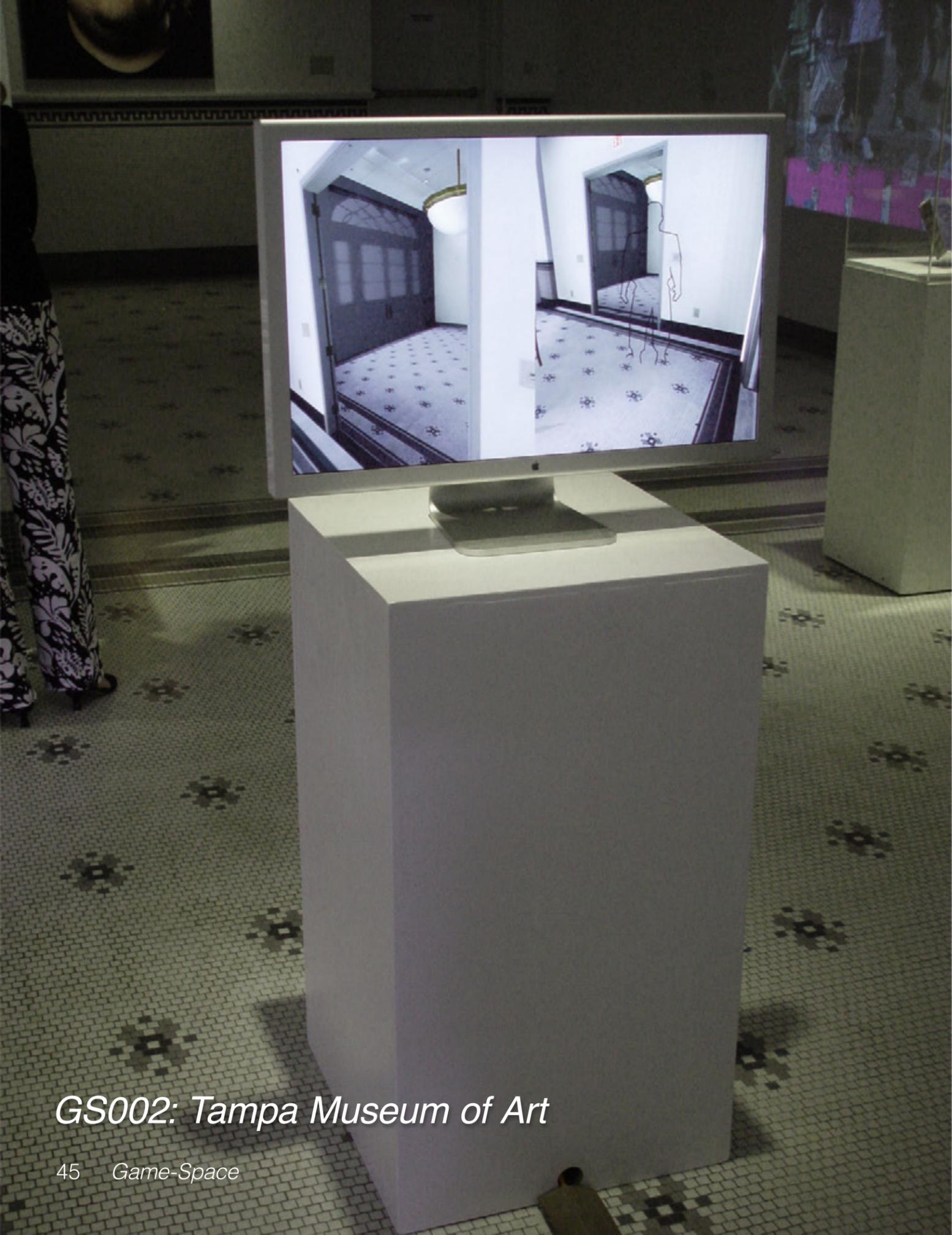
Between 2008 and 2010, Jack Stenner and I installed *Game-Space* three times: once at the University of Florida, once at the Tampa Museum of Art, and once at the Samuel P. Museum of Art. Through the development of site-specific surveillance systems, gallery analytics engines, and real-time simulations, *Game-Space* transforms traditional galleries into ubiquitous media environments for experiments with art and surveillance. In this sense, *Game-Space* both mirrors the architecture of the art institution as a technology for manufacturing desire, capturing attention, and disciplining bodies.

Within *Game-Space* a network of security cameras captures live video of the gallery. Computer vision applications employ motion capture and facial recognition algorithms to analyze the video and produce data correlating to the position of individual audience members. These data points used to propel a virtual avatar along a path within a photorealistic visualization of the gallery. Displayed on monitors or projectors and accessible via mobile devices, the recursive feedback from *Game-Space* offers viewers an uncanny mediation of the ways in which our bodies are surveyed, analyzed, and remediated within institutions of power.

Beyond capturing, analyzing, and visualizing the movements of gallery goers and reenacting the disciplinary power of art institutions, *Game-Space* also serves as a platform for making “smart art”—art that can respond and disrupt the surveillance of human and nonhuman viewers alike. A gallery-within-a-gallery, *Game-Space* offers artists a site for the curation and creation of artwork sensitive to the embedded technologies and surveillance systems that already exist within art spaces. Thus, *Game-Space* functions not as representation, but as a laboratory for experimentation with the art of surveillance and the surveillance of art.

GS001: University of Florida





GS002: Tampa Museum of Art





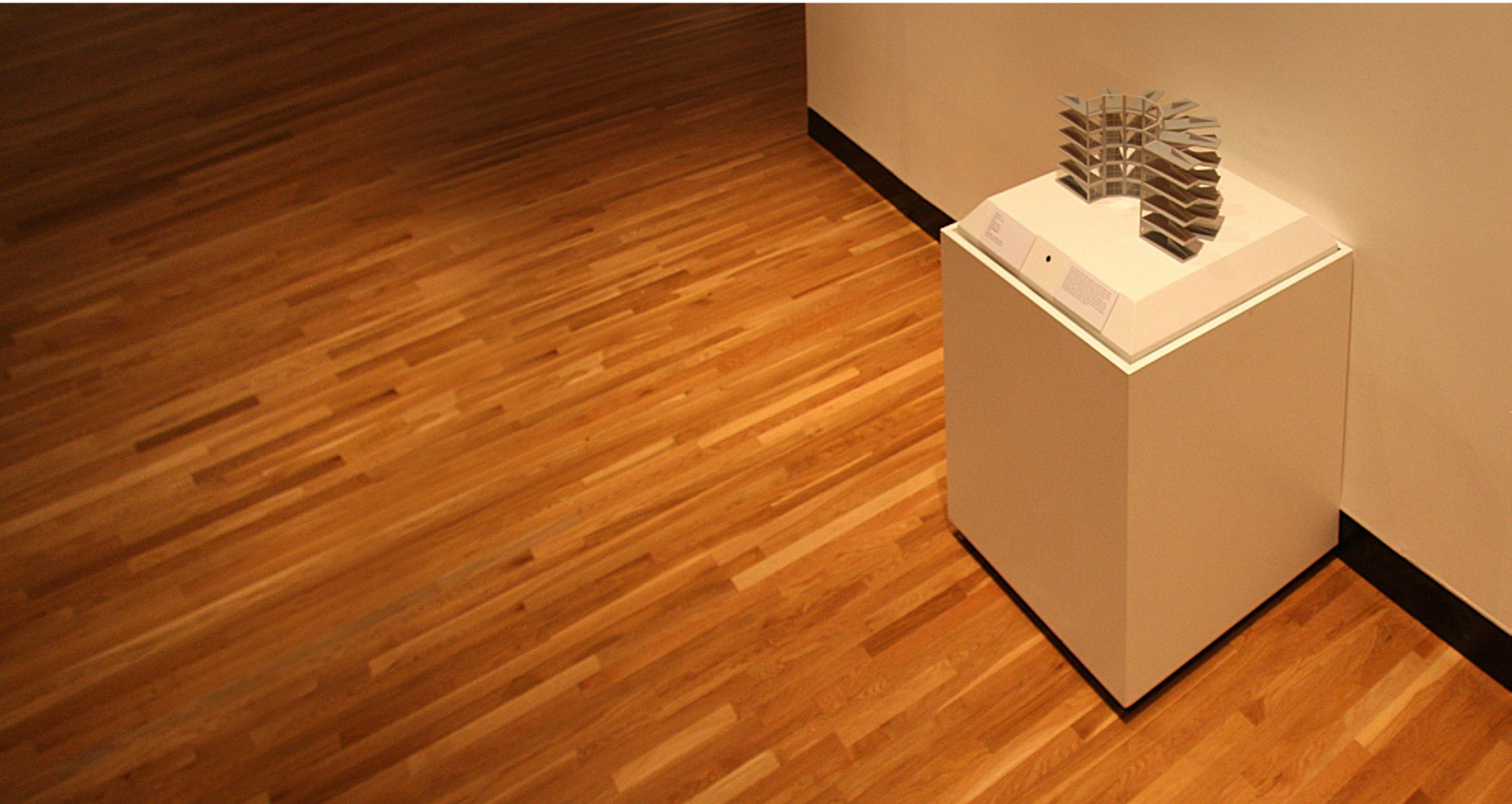
EXIT

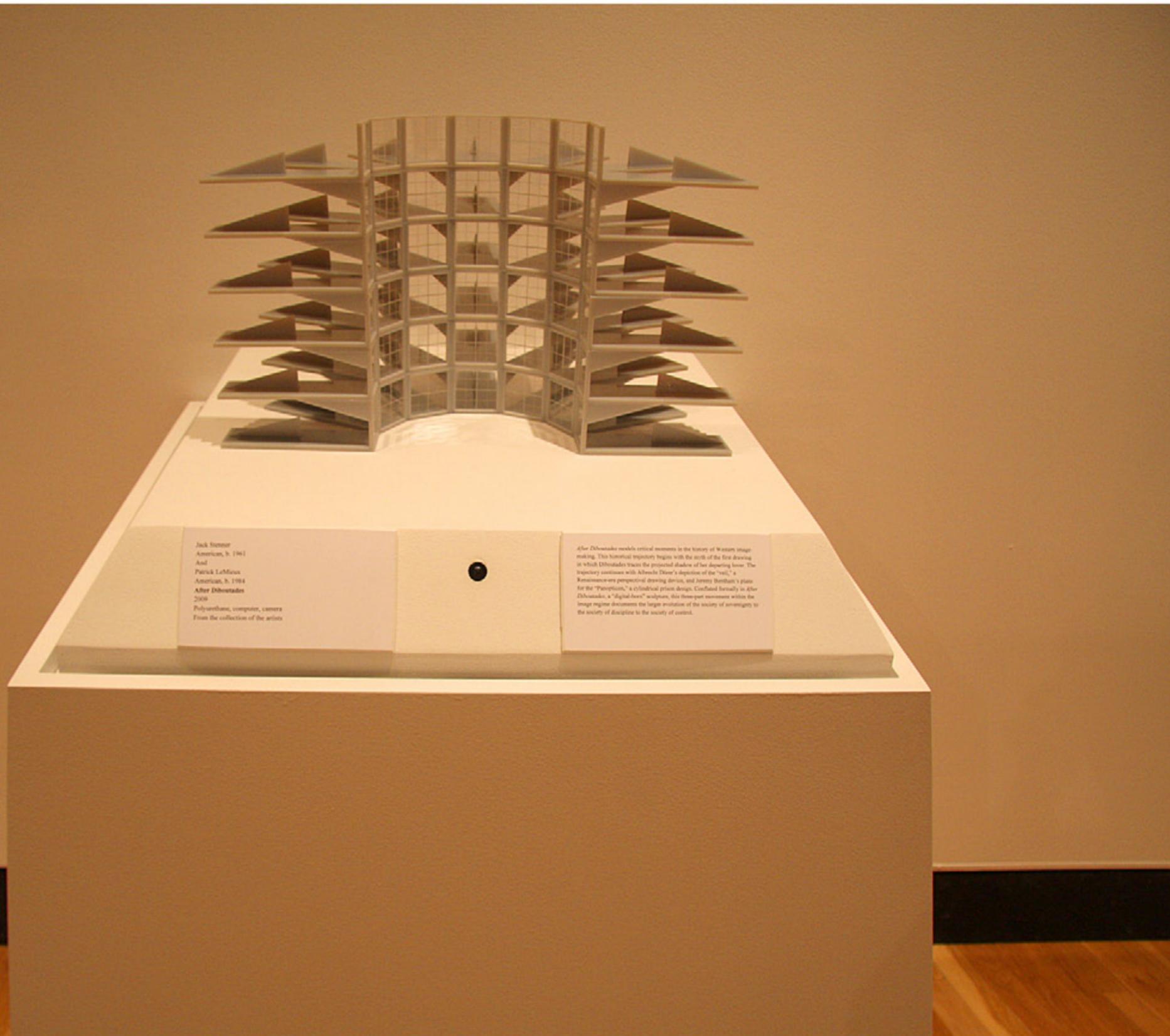
Please do not touch

Informational placard

Informational placard

GS003: Samuel P. Harn Museum of Art



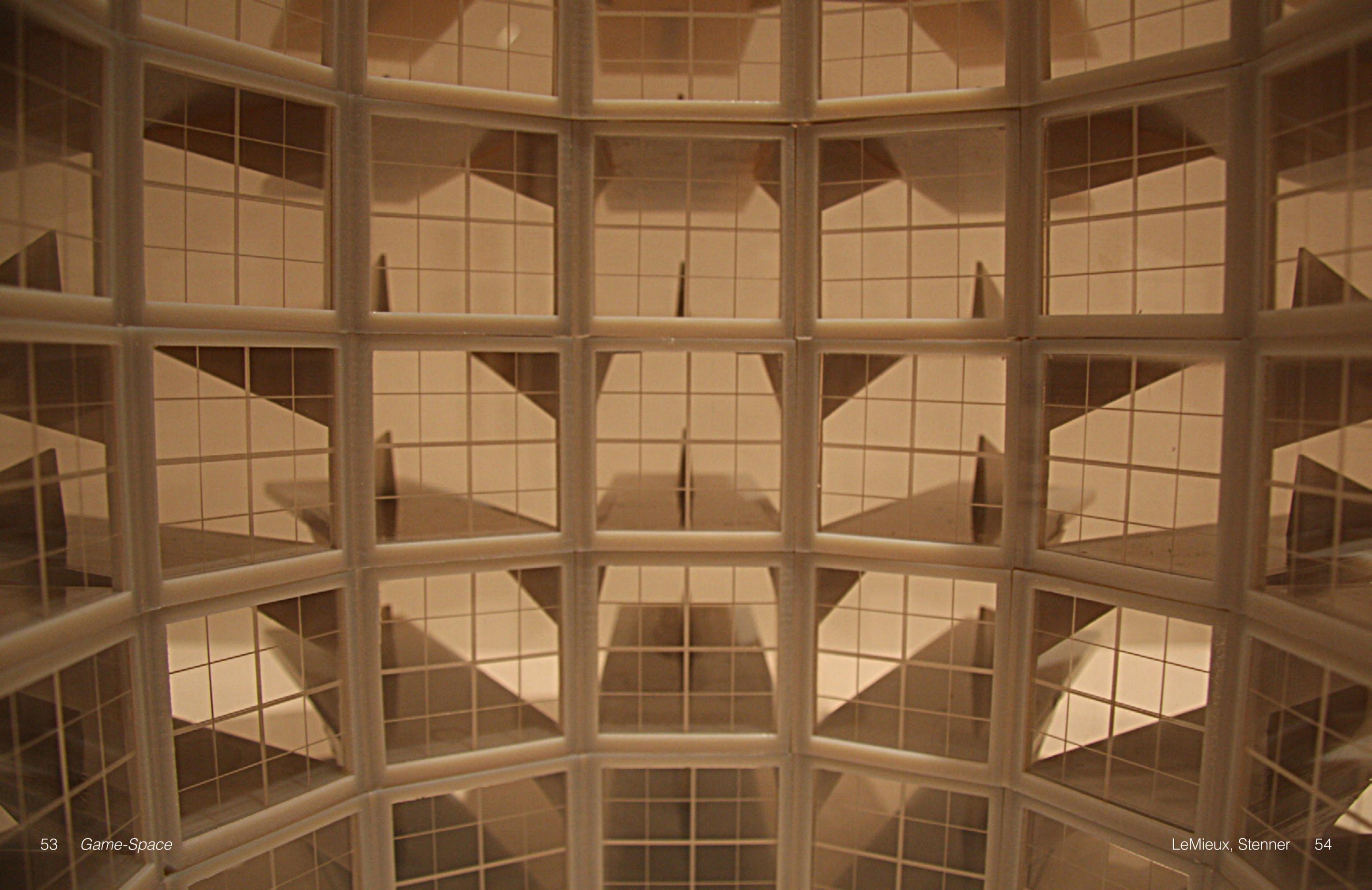


After Diboutades

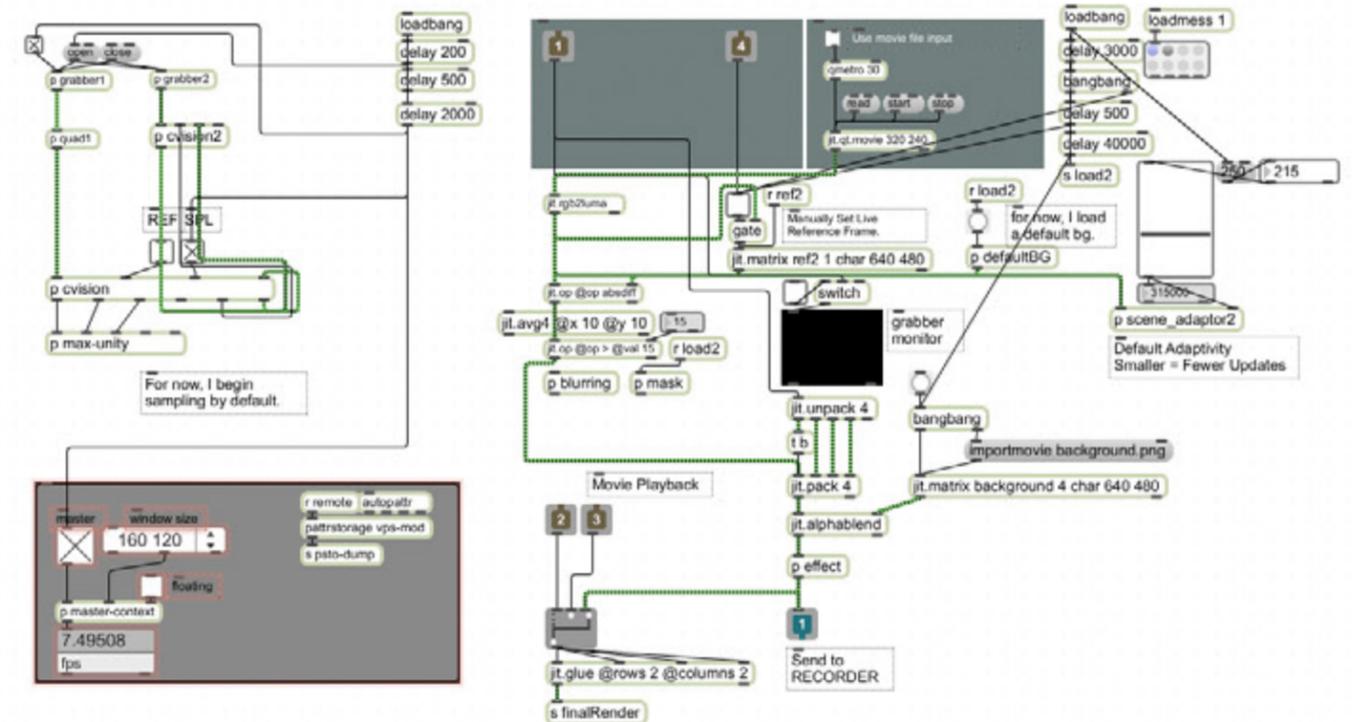
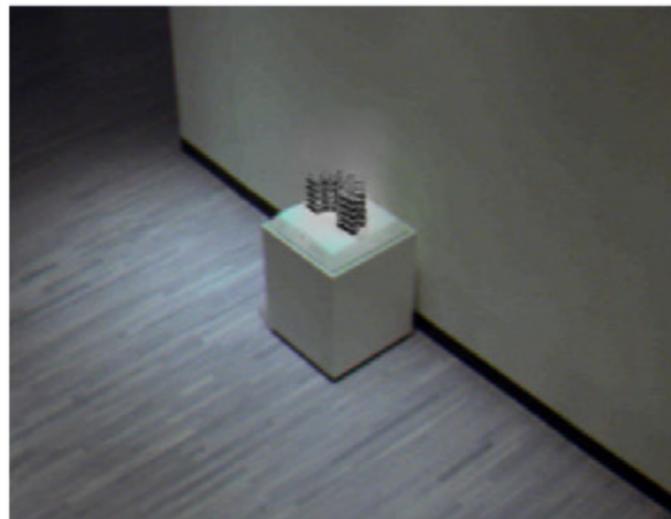
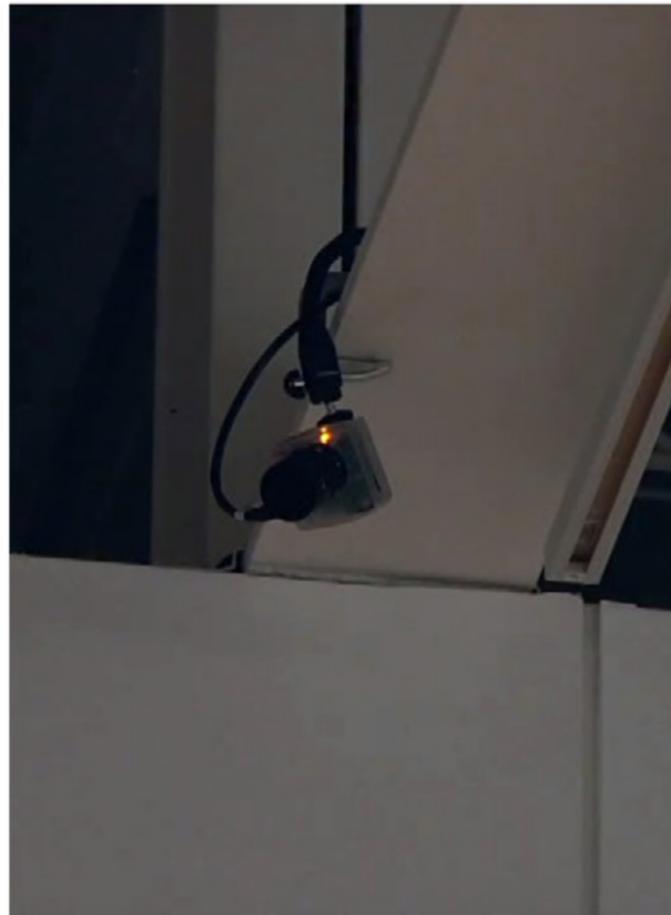
24 x 24 x 24 inches

3D-printed acrylic polymer, laser-scored plexiglass
2009

Designed to be exhibited exclusively within *Game-Space*, *After Diboutades* functions both as the locus of a site-specific surveillance system and an index between the physical gallery space and its virtual simulation. This digital-born, 3D-printed sculpture models three moments in the history of perspectival vision. First, in his *Historia Naturalis* Pliny the Elder recounts the birth of mimesis through the story of the daughter of the Corinthian sculptor, Diboutades, who traces the projected shadow of her departing lover. Second, in a series of woodcuts Albrecht Dürer depicts the “veil,” a Renaissance-era drawing device that maps the bodies of subjects to a cartesian grid etched in a sheet of glass. Third, Jeremy Bentham’s plans for the “Panopticon” detail a cylindrical prison design in which occupants are surveyed not only by a central guard tower, but their fellow prisoners. Symbolically conflated in *After Diboutades*, this three-part history of perspectival vision allegorizes the epistemic shifts from a society of sovereignty to a society of discipline to a society of control.







GS003: God's-Eye View

Size variable

Two Unibrain Firewire cameras, Mac Mini, custom Max/MSP/Jitter patch 2009

Game-Space begins with a site-specific surveillance system. Two small cameras installed on the ceiling of the gallery survey the space. The first camera, mounted directly over *After Dibutades*, uses a perspective-correcting lens by Theia Technology to produce a flat, plan view of the space around the sculpture. The second camera, tilted at a 45-degree angle, renders a high-resolution, orthographic view of the sculpture. A video processing computer logs these feeds and analyzes changes in pixel values to produce position data corresponding to the location of individual audience members navigating the environment. Using TCP/IP protocol, these “gallery analytics” are then relayed to a second computer running a videogame simulation of the space.



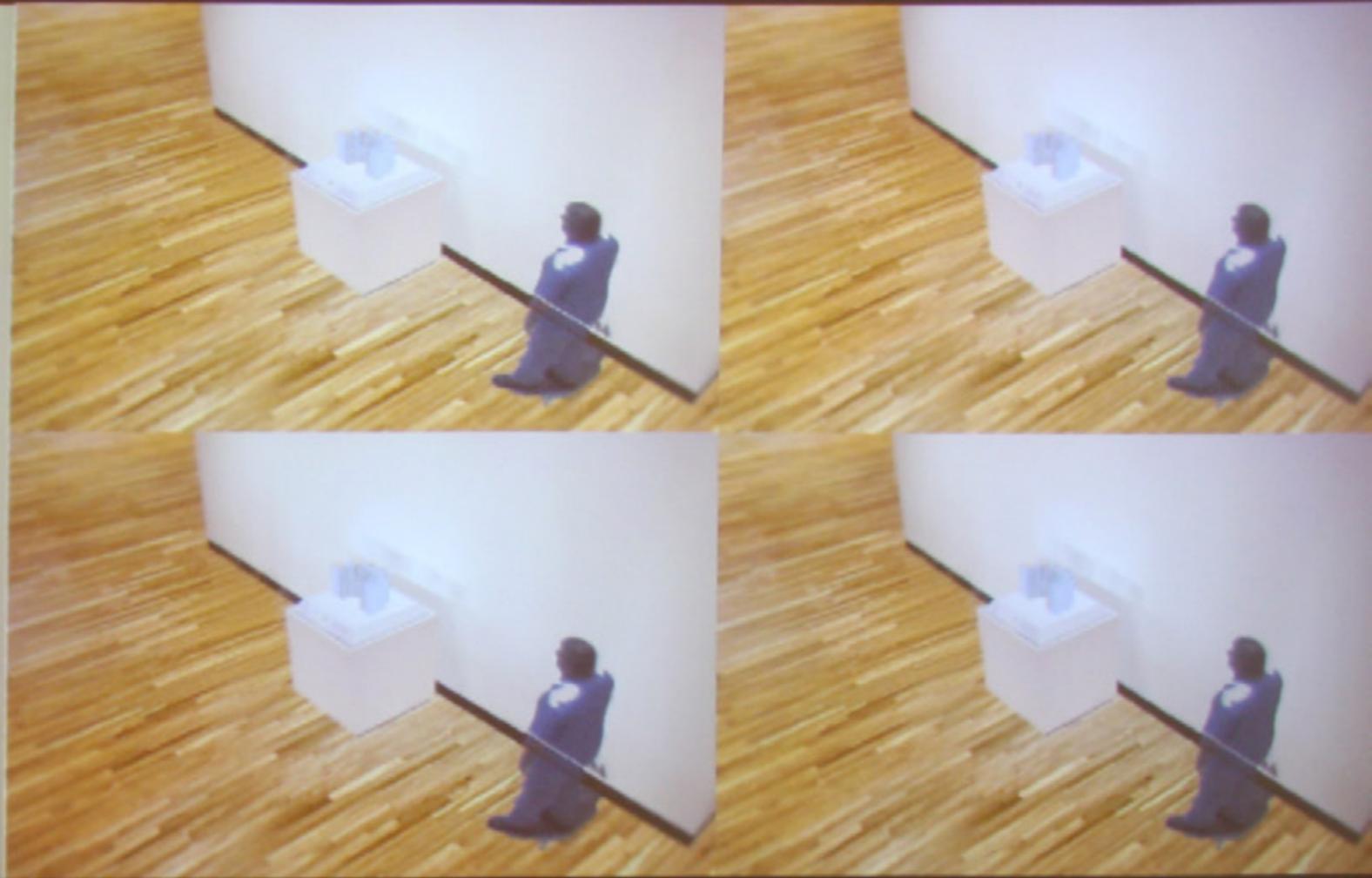


GS003: First-Person View

Size variable

Mac Mini, custom Unity3D application

After carefully constructing an architectural model of the gallery space and texturing it with high-resolution photographs from the site itself, a virtual camera in a videogame simulation is matchmoved to the coordinates captured by the surveillance system. This *First-Person View* syncs with the movements of gallery goers and is echoed in video feed displayed in *GS003: Third-Person View*.



GS003: Third-Person View

Size variable

Mac Mini, custom Max/MSP/Jitter patch

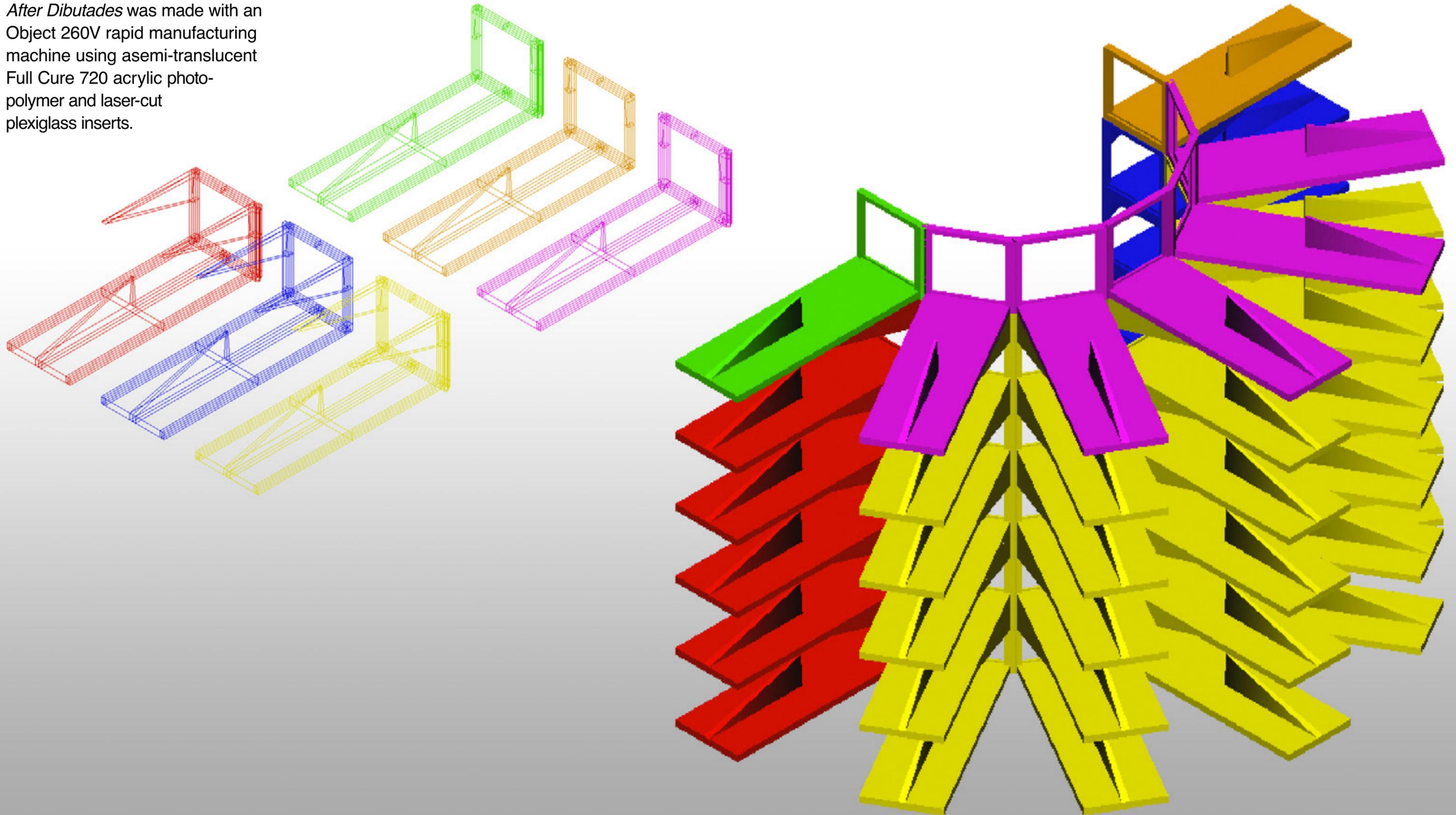
Adopting the aesthetic of a multiscreen security console, bodies are extracted from the live video retrieved *GS003: God's-Eye View* is composited on top of a simulated vignette of the space. The *Third-Person View* is the only part of *Game-Space* that includes an image of the body.

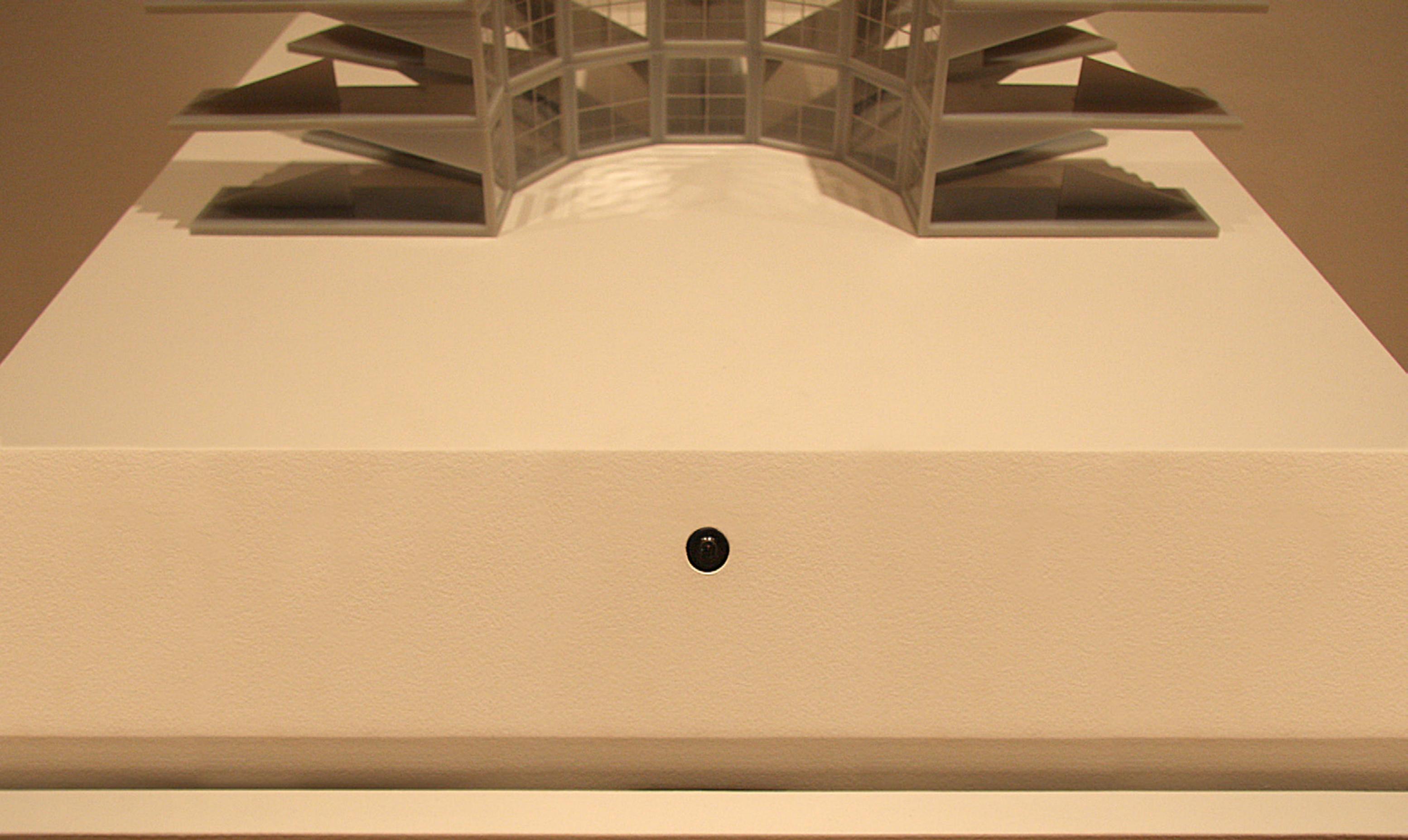


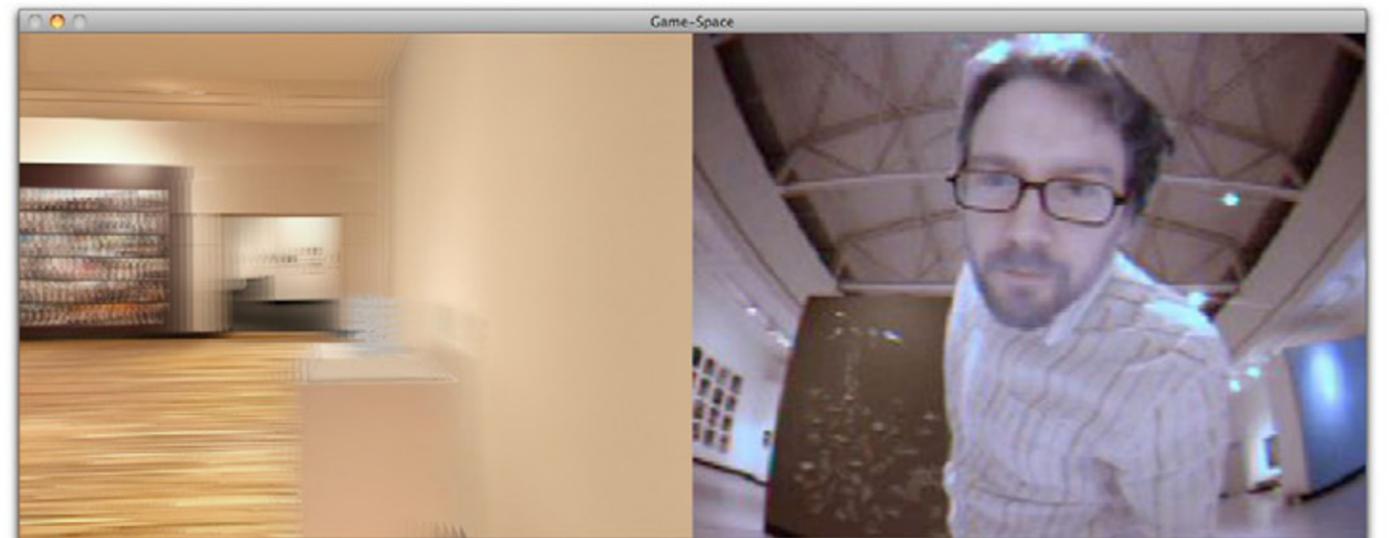
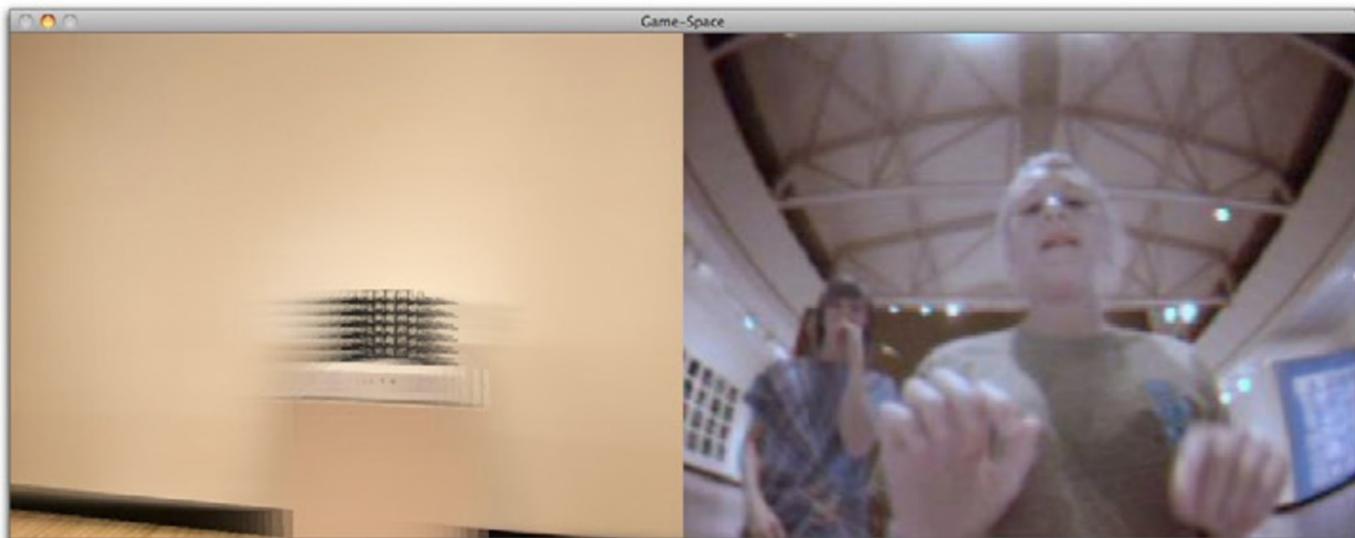
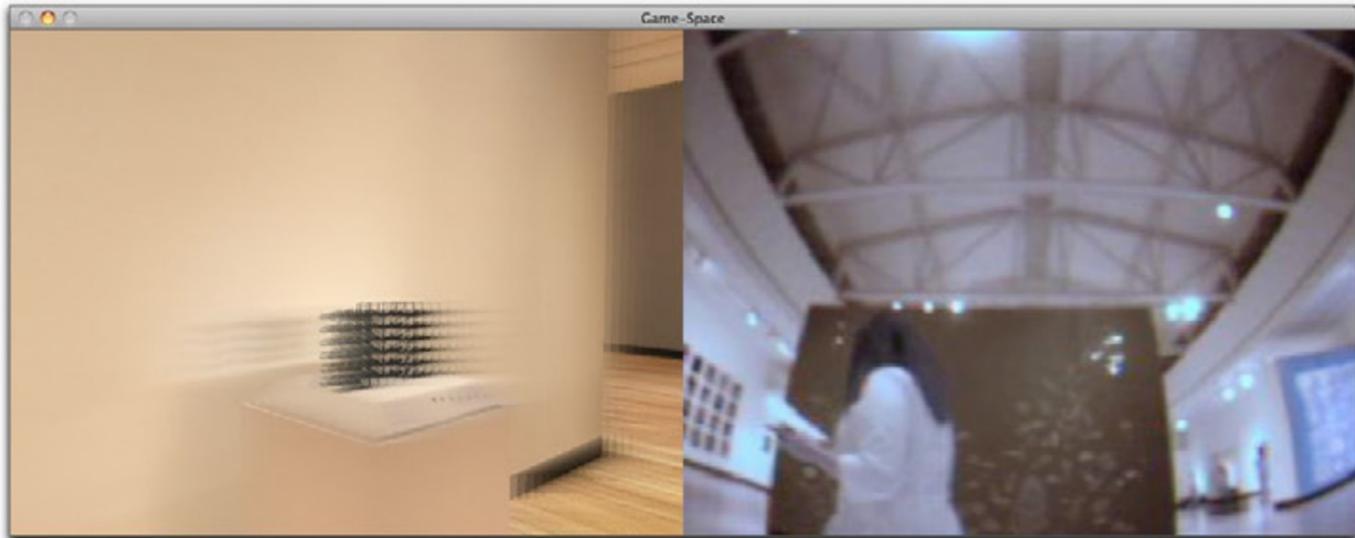
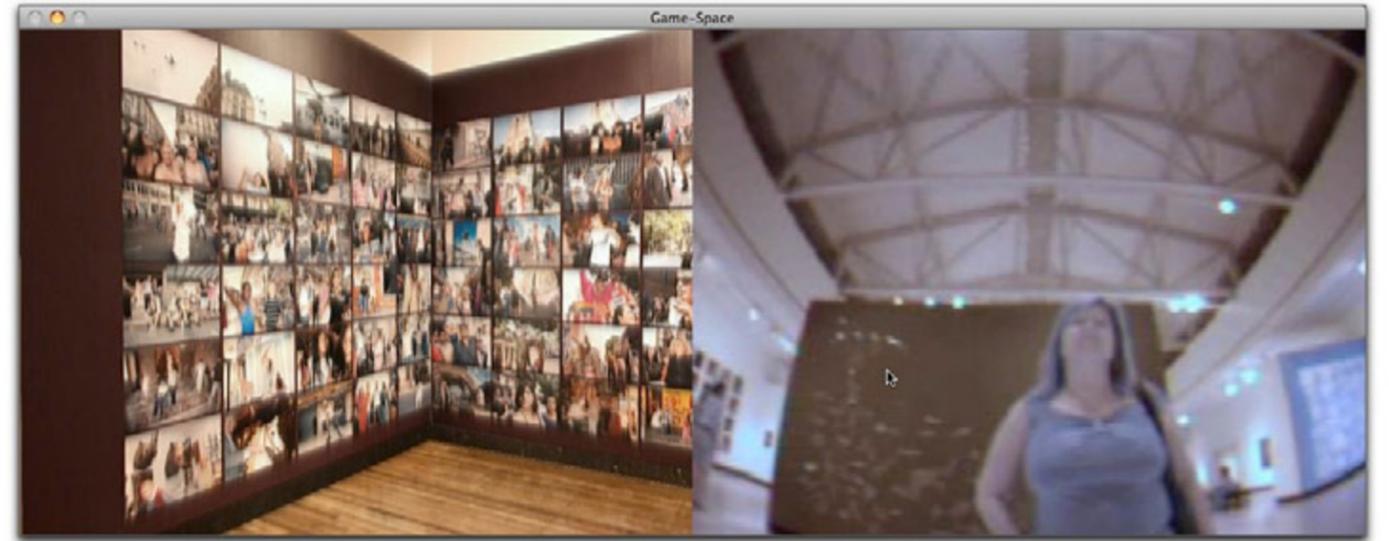
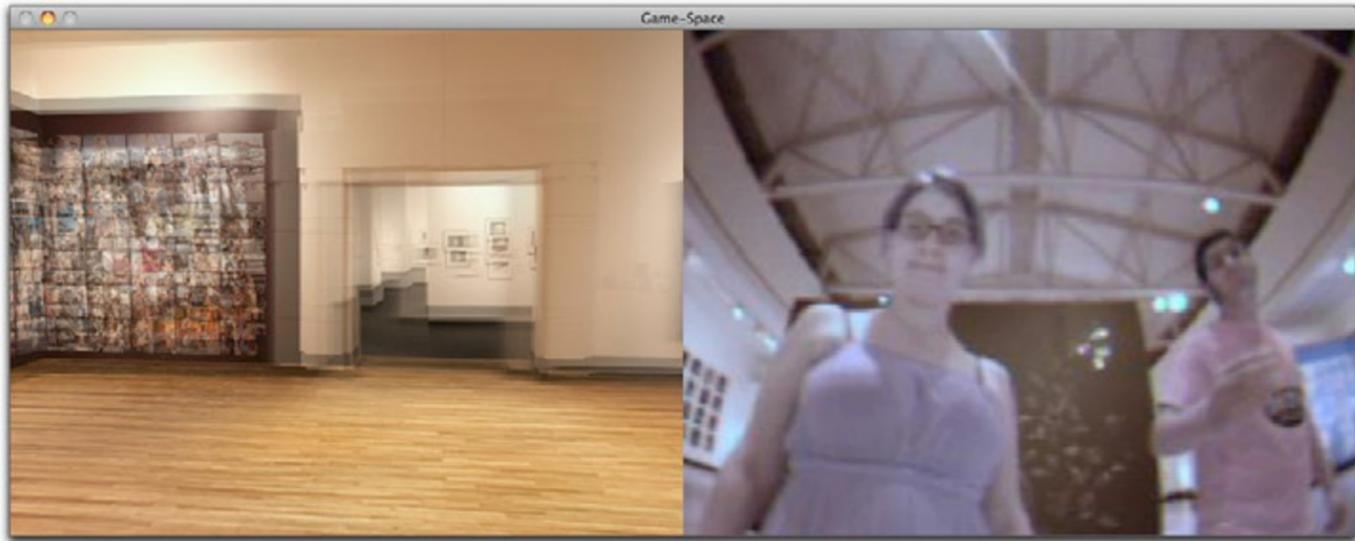


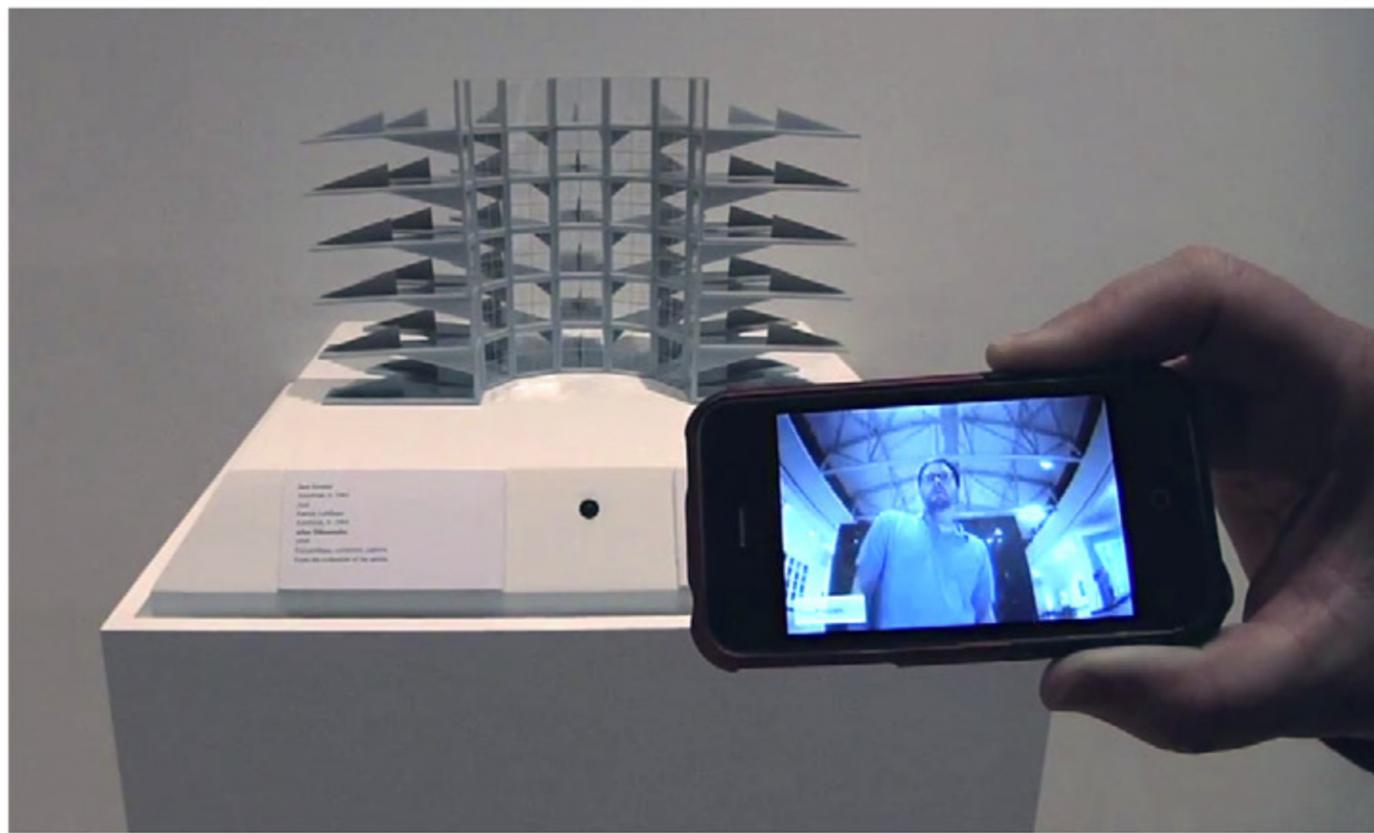


After *Dibutades* was made with an Object 260V rapid manufacturing machine using asemitranslucent Full Cure 720 acrylic photopolymer and laser-cut plexiglass inserts.









GS003: Second-Person View

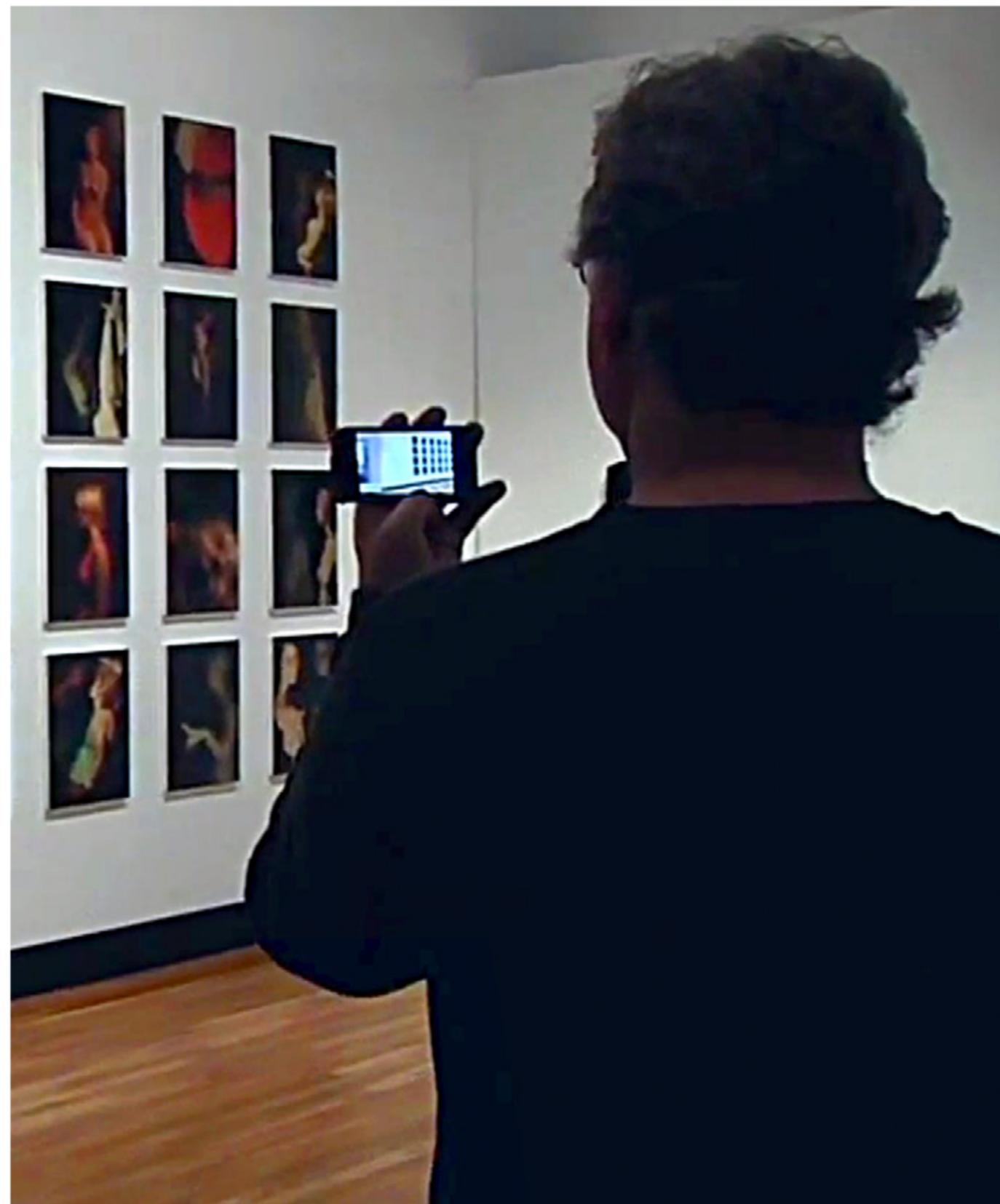
0.5 inch diameter

Unibrain camera, small-scale remote lens, Mac Mini,
custom Max/MSP/Jitter patch, custom Unity3D application

2009

In this plastic Panopticon, there is no central guard tower. Authority seems to shift to the subject slowly circling the artwork. However, embedded within the plinth is a small video camera and networked computer that uses facial recognition software to surreptitiously survey the subject, snapping photos of faces and feeding them into a central database to produce a dynamic video assembled from the point-of-view of the sculpture.

Each view of *Game-Space* was also accesible on both web-based and mobile applications for the duration of the installation.



Game-Space experiments with the surveillance of art . . .



. . . and the art of surveillance.



Open House
2010–2012



Open House is a networked installation that allows visitors to telematically squat in a Florida home undergoing foreclosure after the U.S. housing bubble burst in 2008.

Made with **Jack Stenner** in 2010–2012 and exhibited at the University of Florida, the High Museum of Art in Atlanta, SIGGRAPH 2011 in Vancouver, and published in *Leonardo*.



When the U.S. housing bubble burst in 2008, so did the dreams of many middle and lower-class Americans. Florida, California, Nevada, and Arizona were hit particularly hard, and not by a force of nature or an act of God, but by the abstract and invisible hand of the market. Prior to the collapse, the movements of global capital seemed like a distant reality to most homeowners, but in the end it was imaginary systems of value and not bricks and mortar that fell apart. *Open House* is a networked art installation that allows visitors to telematically inhabit a "distressed" home in Gainesville, Florida.

From 2010 to 2012, the house at 1617 NW 12 Road was in financial limbo while undergoing an extended process of foreclosure due to the housing collapse. Virtual markets transformed this otherwise livable property into a ghost house. *Open House* allows individuals to repopulate the disenfranchised space and assume the role of virtual squatters opening the doors, flicking the lights, rattling the shutters, and remotely occupying abandoned property. Live video feedback integrates real-time physical events with virtual actions. Through *Open House*, virtual squatters can temporarily resist eviction by mirroring the market and haunting both virtual and physical space.

In 1981, Ronald Reagan's speechwriters popularized the image of the U.S. national debt as a billion thousand-dollar bills stacked 67 miles high. This image was recalled during the U.S. bailout in 2008 when 67 miles turned into 67,000 miles, or the distance to the moon and back. The problem with this visualization of national debt is that a massive stack of bills reduces the totality of a complex system in terms of a single human perspective. By contrast, *Open House* offers a series of computational processes, mechanical relays, and human actions to trouble the distinction between the abstract and seemingly immaterial interactions of finance capital and the phenomenology of physical space.





1947



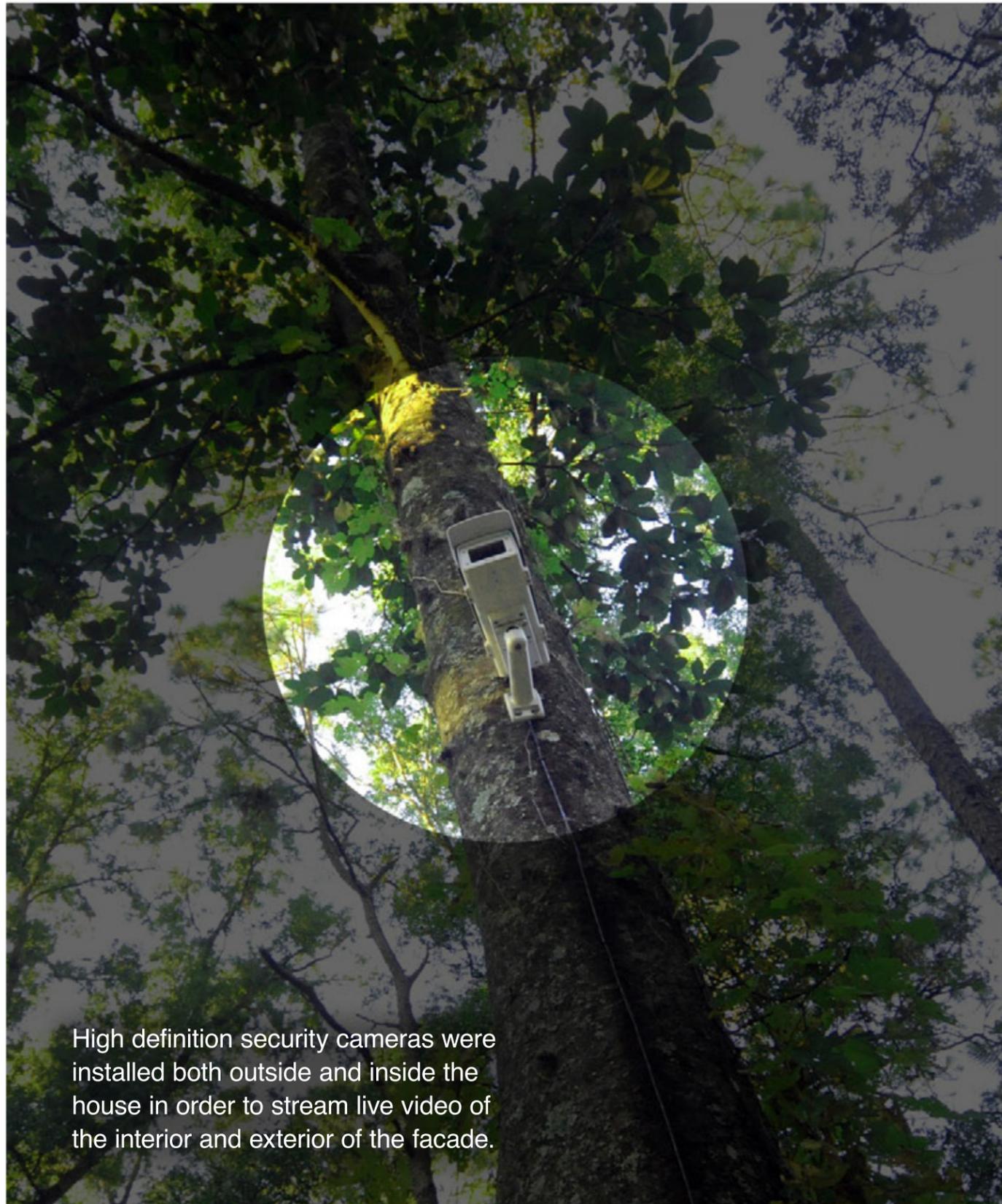
2007

The house at 1617 NW 12th Road in Gainesville, Florida was designed and built by M.H. Johnson in the late 1940s. The decorated World War II submarine officer and University of Florida architecture professor was able to realize his dream house despite post-wartime material shortages. After Johnson's death in 1968, this Mid-Century Modern, Florida-bungalow style home was maintained by his widow Dr. Nedra Johnson until 2006 when she sold it to Jack Stenner, a newly hired assistant professor of digital media art at the University of Florida. As young assistant professors, Stenner and Johnson had radically different experiences of the American Dream.

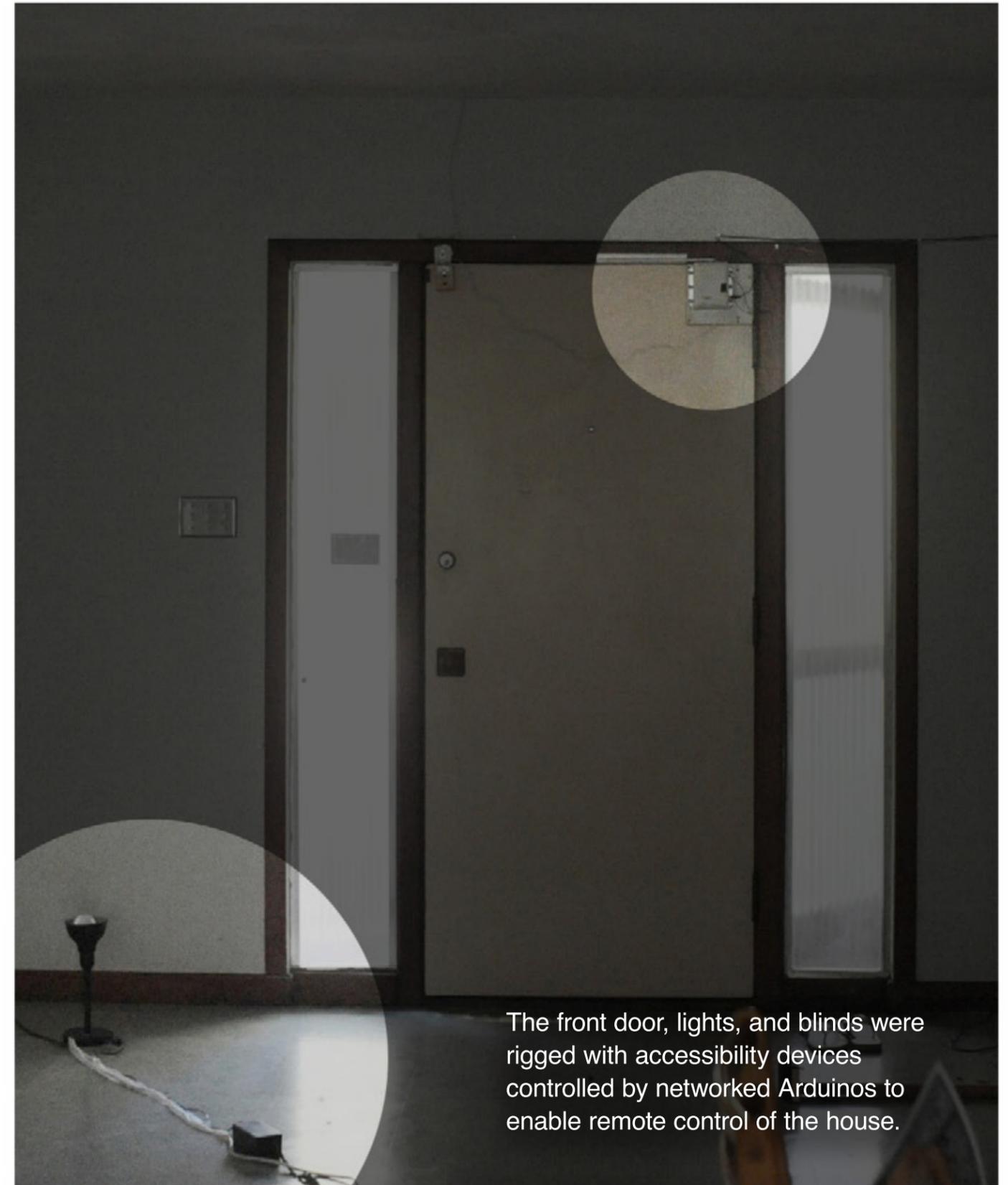
In the process of moving down the street into a house with space enough to accommodate Stenner's art practice, the nearly \$300,000 mortgage on 1617 NW 12th Road became worth about \$150,000 overnight. Caught between two mortgages with no possibility of selling the house, Stenner had no choice but to default in 2009. Though the Bank of America motioned to foreclose, they could not produce the necessary paperwork. The deed had been so indiscriminately traded during the Housing Bubble that its paper trail had grown into an illegible labyrinth. As the foreclosure was delayed for months then years, 1617 NW 12th Road became an "open house" that not only supports virtual visitors, but local squatters now rooming within the networked installation.



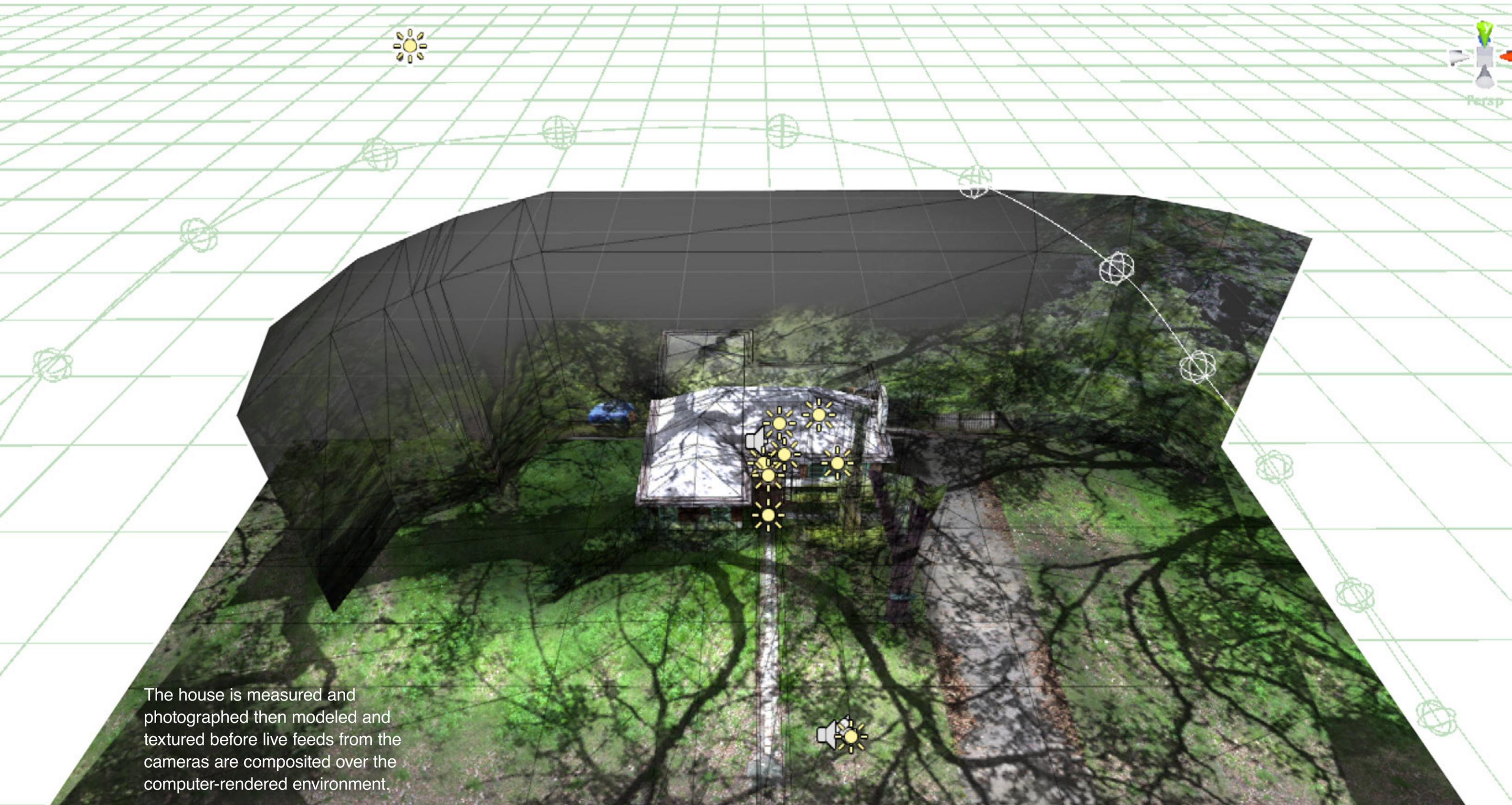
2010



High definition security cameras were installed both outside and inside the house in order to stream live video of the interior and exterior of the facade.



The front door, lights, and blinds were rigged with accessibility devices controlled by networked Arduinos to enable remote control of the house.



The house is measured and photographed then modeled and textured before live feeds from the cameras are composited over the computer-rendered environment.

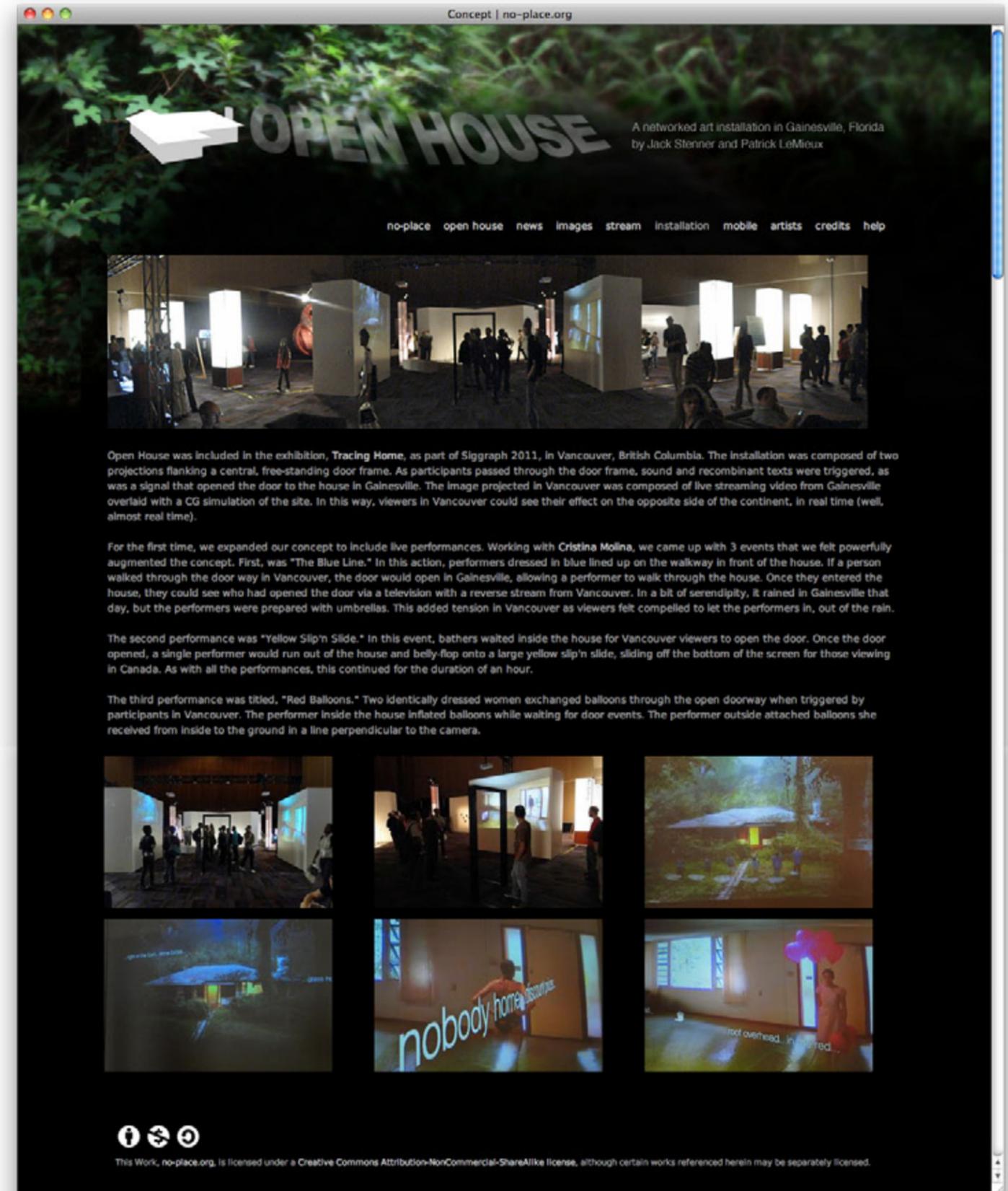


With *Open House*, a small application for Windows and Macintosh becomes a real-time interface to physical space in Gainesville, Florida. Live streaming video is combined with a photorealistic, architectural model of the house on 1617 NW 12th Road. By pressing and holding the mouse button to “push” on the image of the home, the wind begins to whip and whistle as glowing particles light up the house.

Holding the mouse for a short duration transitions from the front yard to the front door. Using the same interaction, virtual squatters can “push” to open the front door. Because the image is partially composed of live streaming video, with every “push” physical events occur in Gainesville. Inside the house, squatters can open the blinds, turn on a light, or reopen the door to exit *Open House*. For the live-in squatters that occupied the home, these digital poltergeists came and went, making a ruckus at all hours of the day.



*Virtual squatters can open the door, flicker the lights, and rattle the shutters—remotely occupying **Open House** from any networked device.*

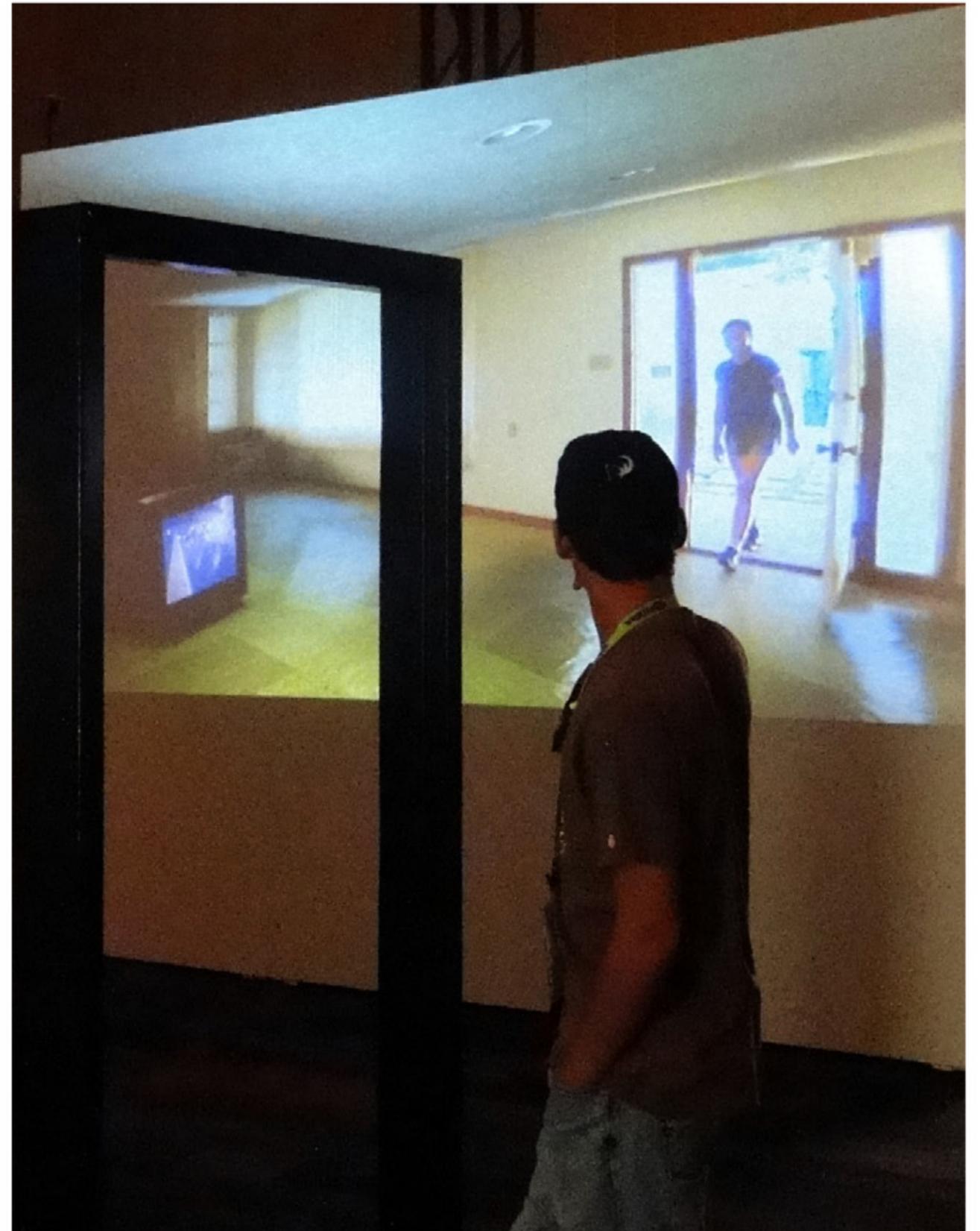


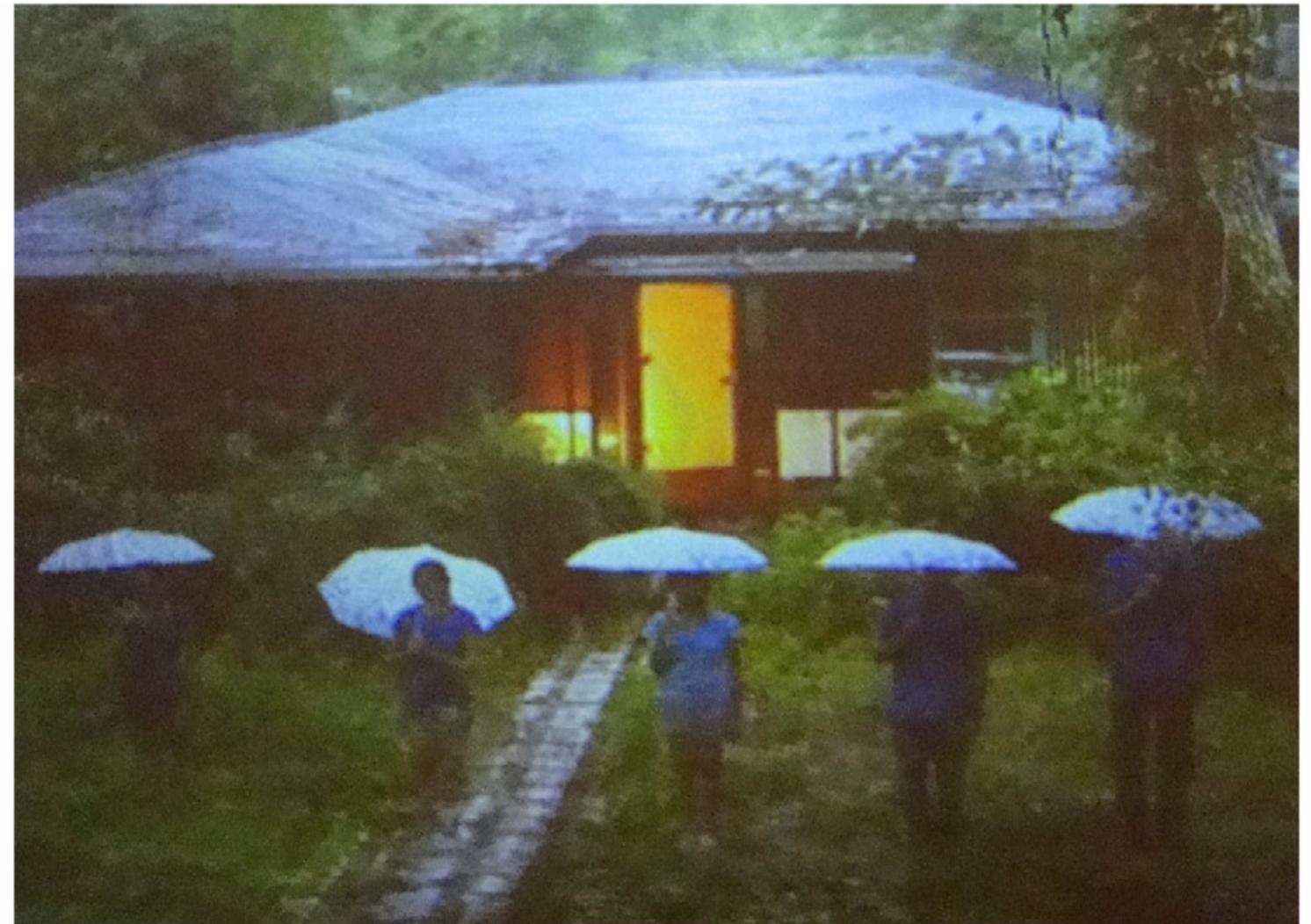


Open House: SIGGRAPH 2011, Vancouver

Open House was also featured in *Tracing Home*, an exhibition of media art at SIGGRAPH 2011 in Vancouver. In this version of *Open House*, two projections flank a free-standing door frame. As participants passed through the door frame, sound effects and recombinant texts were triggered on both screens, as the door began to swing open 2000 miles away.

For the first time, the concept was expanded to include live performances over three days. *Blue Line*, *Yellow Slip n Slide*, and *Red Balloons*. In all three performances, viewers in Vancouver had control of the door and could allow performers to enter the home on a rainy day, free them from the inside in order to fly down a slip'n slide, and facilitate the exchange of red balloons that eventually lined the front lawn.





Blue Line

Size variable

Telematic performance

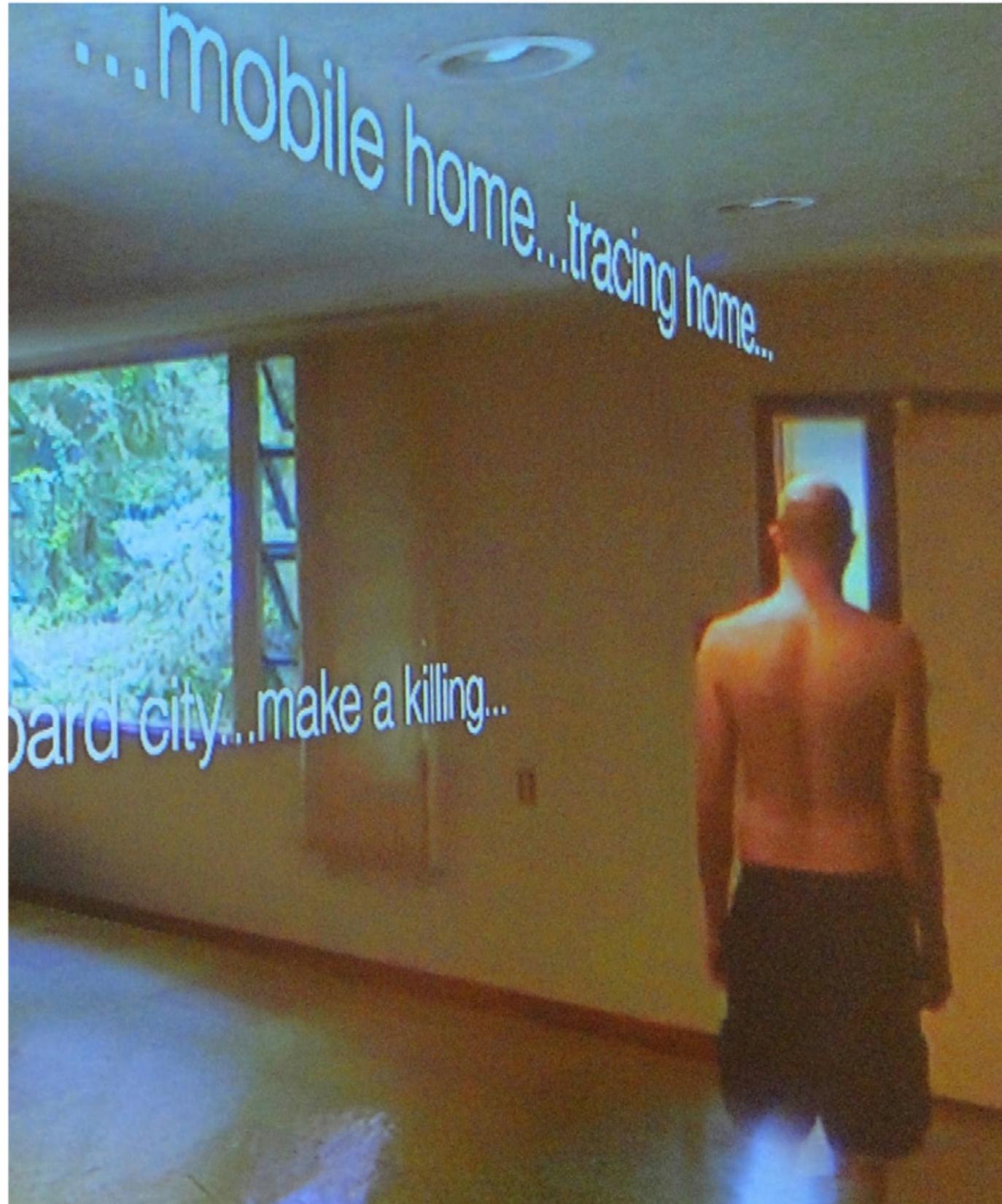
August 8, 2011

In the first performance, University of Florida students dressed in “Gator Blue” lined up on the walkway leading to *Open House*, just a few blocks north of campus. For each person entering the threshold in Vancouver, the door in Gainesville would swing open and allow a single performer to enter the house. Inside, entrants could see who had opened the door via a televised live stream from the gallery space at SIGGRAPH. Prepared with umbrellas, the students queued in the rain as if waiting for some bureaucracy or breadline.

...out of house and home...rain check...

...home stretch...break the bank

...home free...housing boom...



Yellow Slip'n Slide

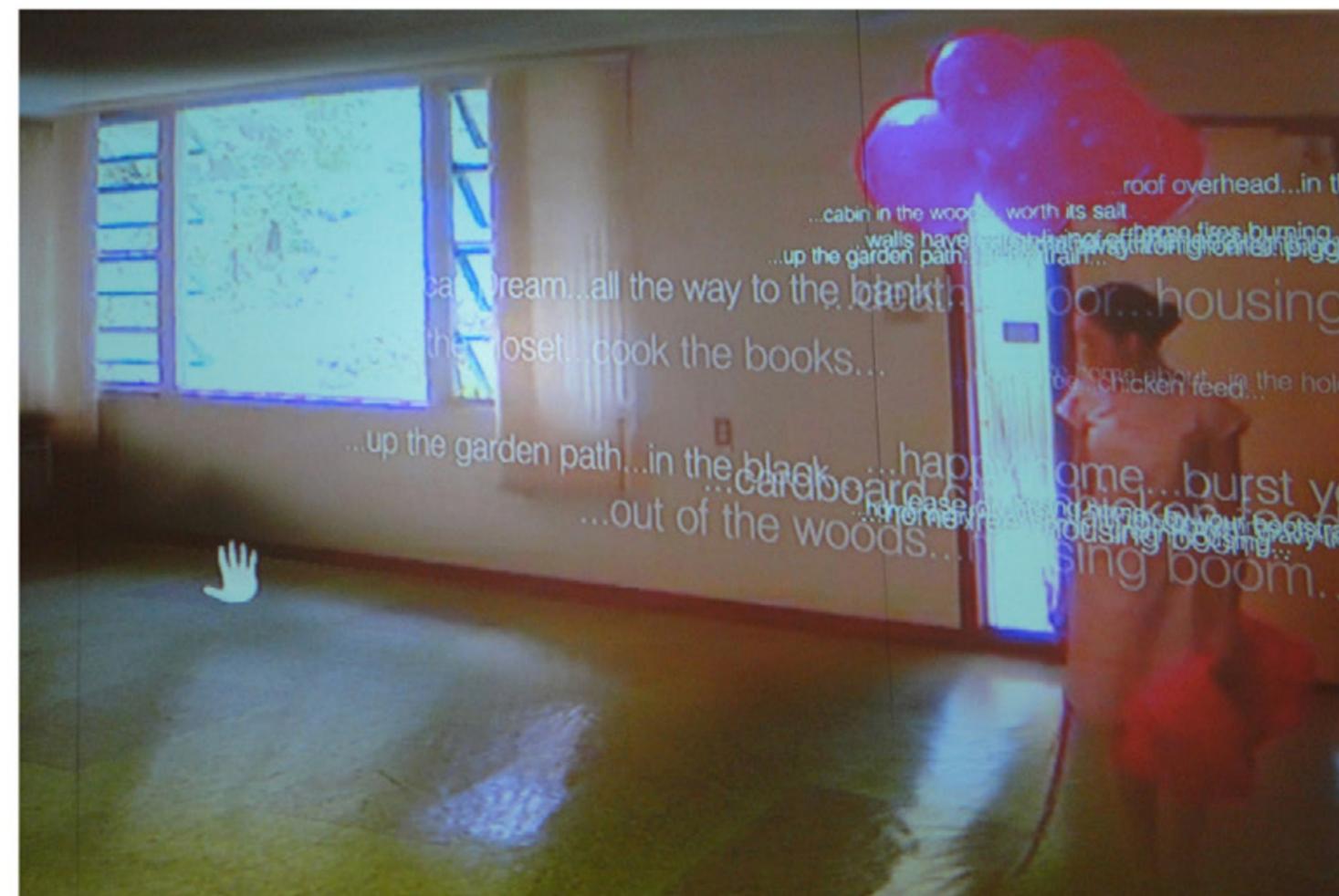
Size variable

Telematic performance

August 9, 2011

In the second performance, a group of Gainesville bathers waited inside the house for Vancouver viewers to open the door. Once opened, a single performer would sprint out of the house and belly-flop onto a large yellow slip'n slide, hurtling off the bottom of the screen for those viewing in Canada. Dumpster diving, house parties, and other forms of suburban mischief culminate in childlike play on an abandoned lot.





Red Balloons

Size variable

Telematic performance

August 10, 2011

In the third performance, identically dressed artists Christina Molina and Lu Cao exchange balloons through the open doorway when triggered by participants in Vancouver. Inside the house, Molina inflates balloons while waiting for the door to open. Outside, Cao attached each balloon she receives to a length of red yarn pinned to the ground in a line. After an hour, both women exited the house, spread a checkered picnic blanket, and slept in the sun as their red balloons bobbed in the breeze. The fragile, domestic utopianism of the nuclear family tethered to dreams of economic and military peace.



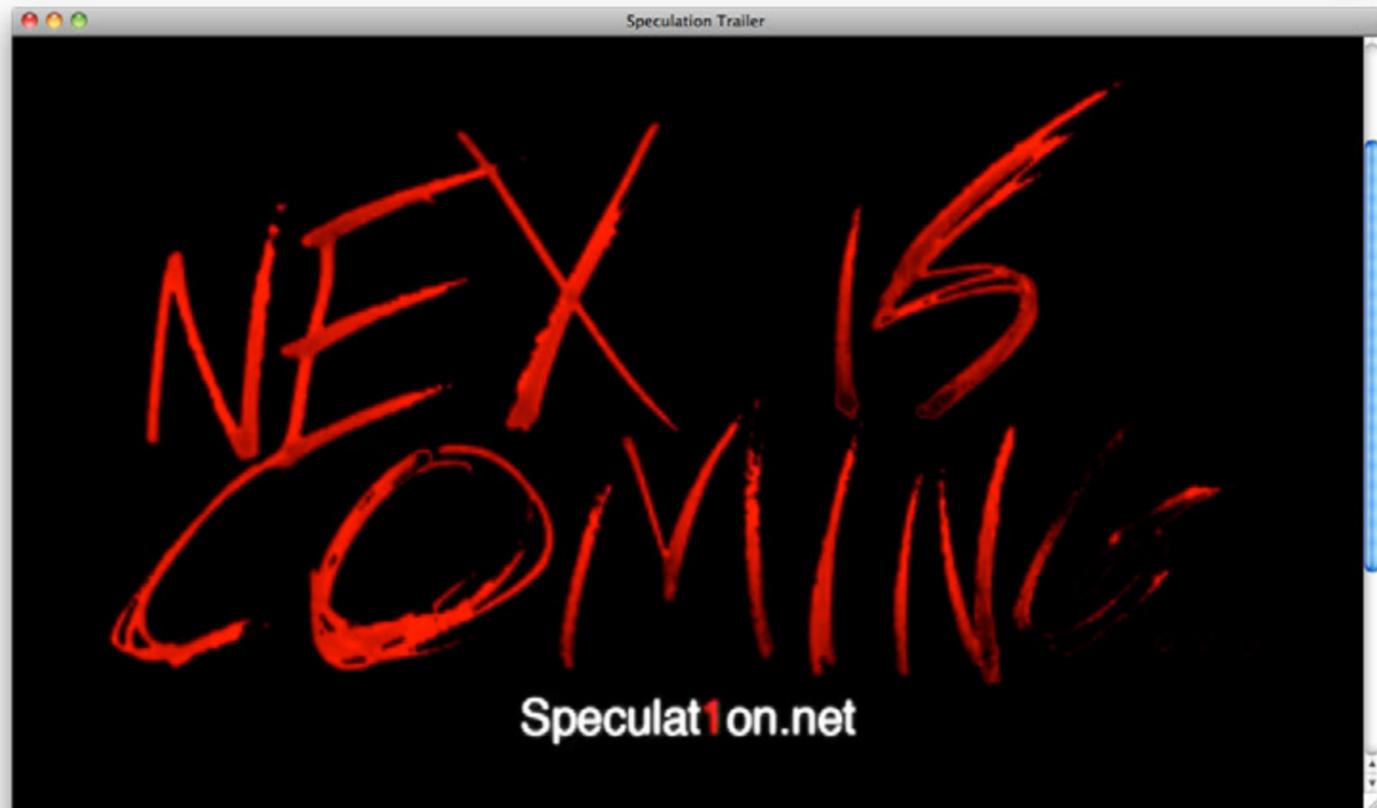
*In 2014, the bank finally foreclosed
Open House and sold it to
the highest bidder for
a quarter of its
original price.*



1817 NW
12 RD.



Speculation
2012–2014



<https://vimeo.com/39947942> (*Rabbit Hole*)

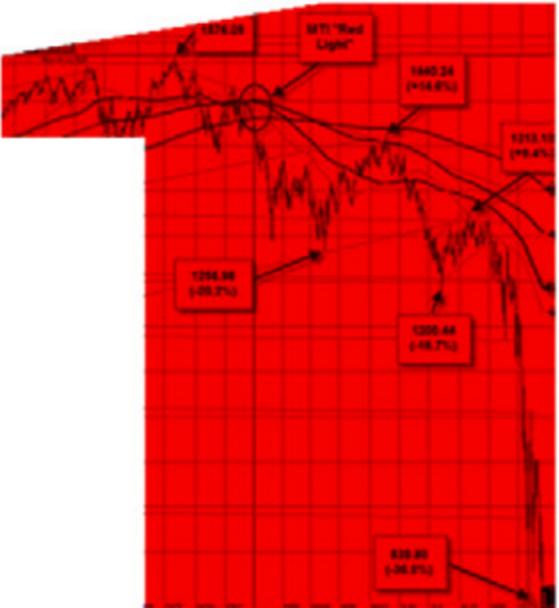
1280 by 720 pixels, 1 minute
Color video, stereo sound
2012

Alongside enigmatic emails, audio excerpts, fake business cards, and even a modified stack of Zimbabwean currency, *Speculation* began with a viral video, a "rabbit hole" designed to lead players to the game. In the video, red clues flicker and flash across images of Occupy Wall Street protesters clashing with the NYPD, the New York Stock Exchange devoid of traders, and Alan Greenspan testifying at a congressional hearing. Part political propaganda, part corporate advertising, the video depicts a future of greed branded by a monolithic logo: MetaCorp. In contrast to this sans-serif stamp, the video ends with a splash of red graffiti that announcing "NEX is Coming" above a web address: <http://speculat1on.net/>.

NEXUS00

speculat1on.net

This is not an alternate reality game. This is a reality game. This is an economic stimulation. This is a corporate brain drain. This is a histrionic transmission. This is an electronic exploit. This is a realist fiction. **WELCOME BACK.**



 MMMMMMMMM

 EEEEEEEEEEE

 [Empty]

 AAAAAAAAAAAAA

 CCCCCCCCCCCC

 OOOOO

 RRRRRRRRRRRR

 PPPPPPPPPP



This is NEXUS00, the first in a series of interlinked nodes designed to acclimate users to a future of speculation. Be warned. The process of remediating MetaCorp's reticular meshworks to millennial technologies has left holes, gaps, and fractures within this speculative solution. A working knowledge of early internet protocols such as uniform resource locators, hypertext markup language, server-side directory structures, turn of the century browser software such as **Google Chrome**, and something called the **Unity Web Player** may be required to progress further. Aside from a proximity to the culture of finance capital, it is essential for historical subjects to learn to navigate what was once called the "World Wide Web" via NEXUS00. **LET'S BEGIN.**

< 1-- 00

It was a bright cold day in April,
and the clocks were striking eight.

Next, noumenon of my nightmares, fire of my wall.

I am an invisible thing.

eXchange was spiteful.

The sky above the north tower was the color of a reticle,
projected onto a dead world.

I am a sick man...I am a derivative man.

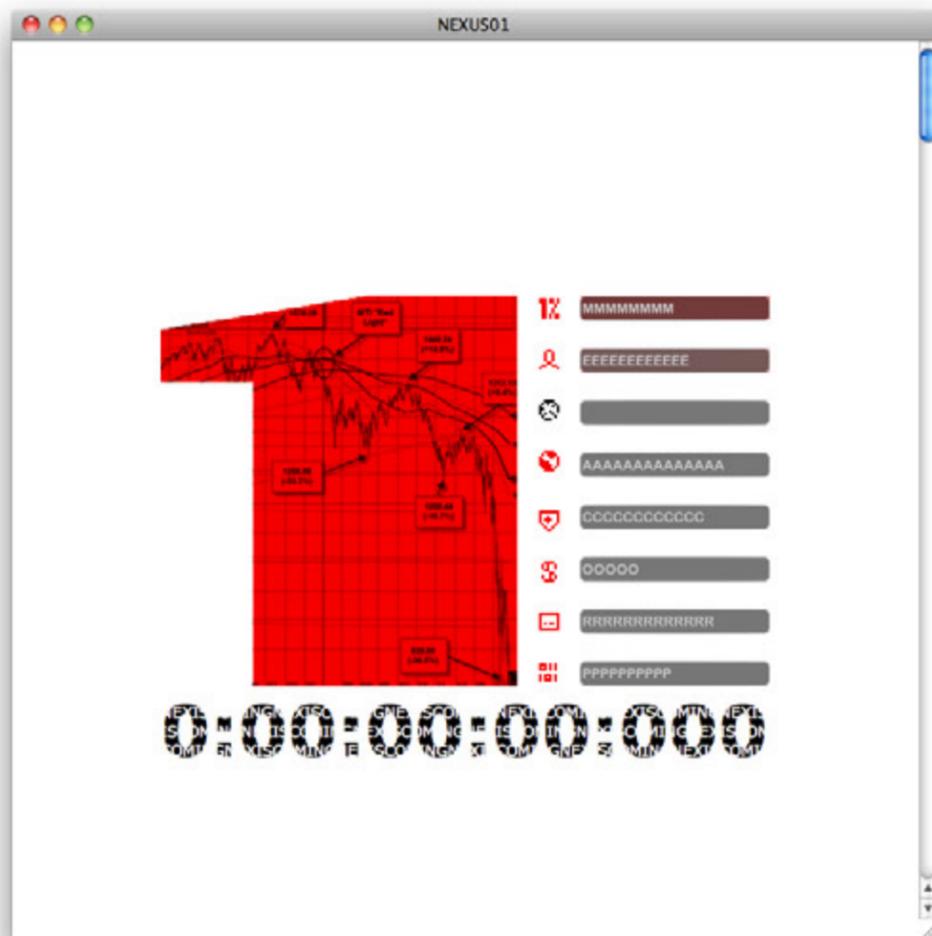
It will be like so, but won't be.

Call me JP.

--

Beginnings are impossible. Shows how much good comes from a B.A. in English. If they found this verbal vomit, this defense mechanism, this journal, they'd take away my psychopersuasion degree. I'll hide it good. I'll split it into 64 bits. I'll secret away these pieces. These shards. These fragments. Packages, packets, protocols. All my protected perversions. Risky business. I'll have to encrypt each one. Strands of hair across their covers. My hair-triggers. Winston's diary. I'll know exactly when and where they're finally found. But no one will find them all. If I'm lucky, even I'll forget about some of the hidey-holes, the cracks, the interstices.

-->



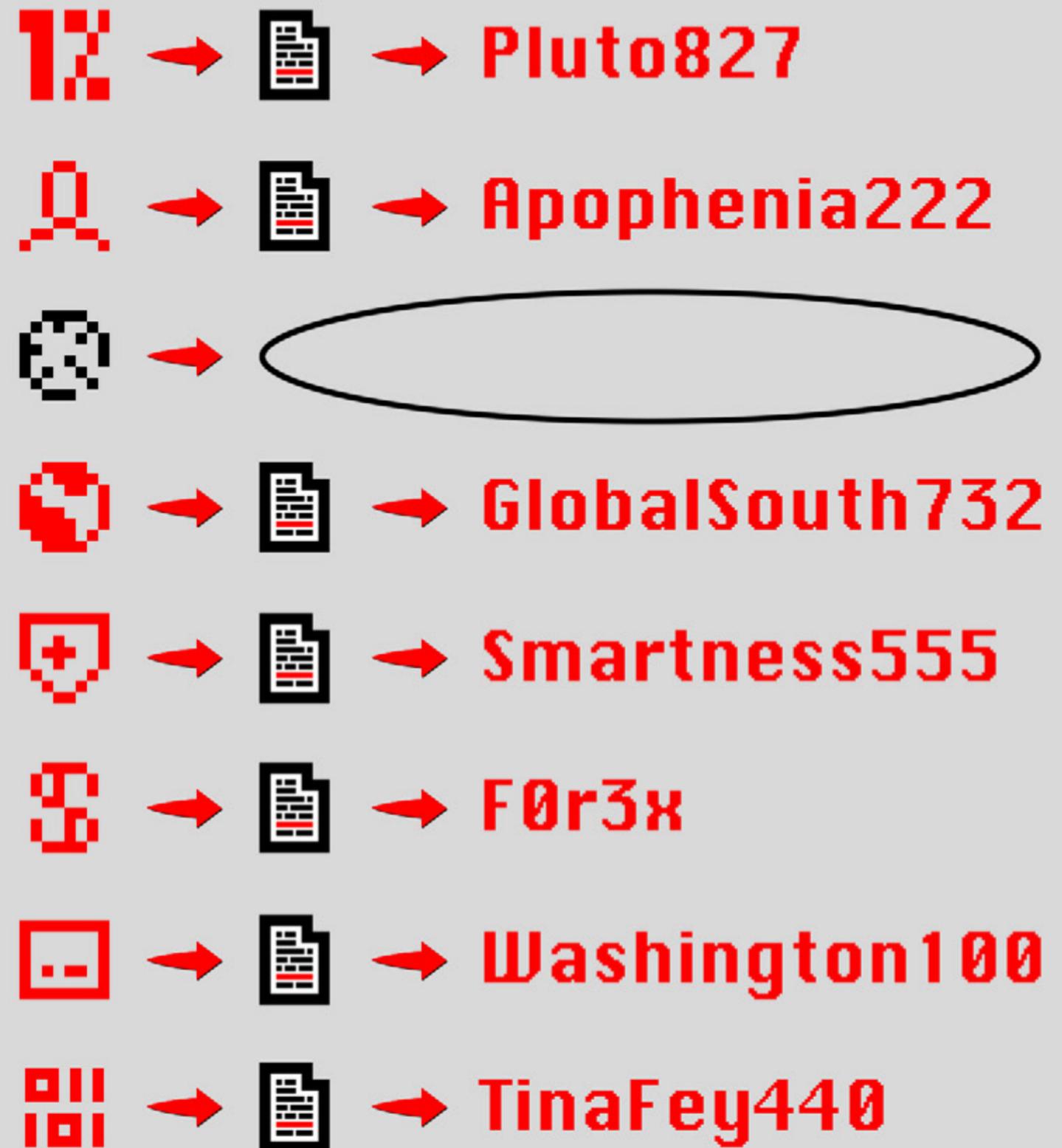
<http://speculat1on.net/001.html> (NEXUS01)

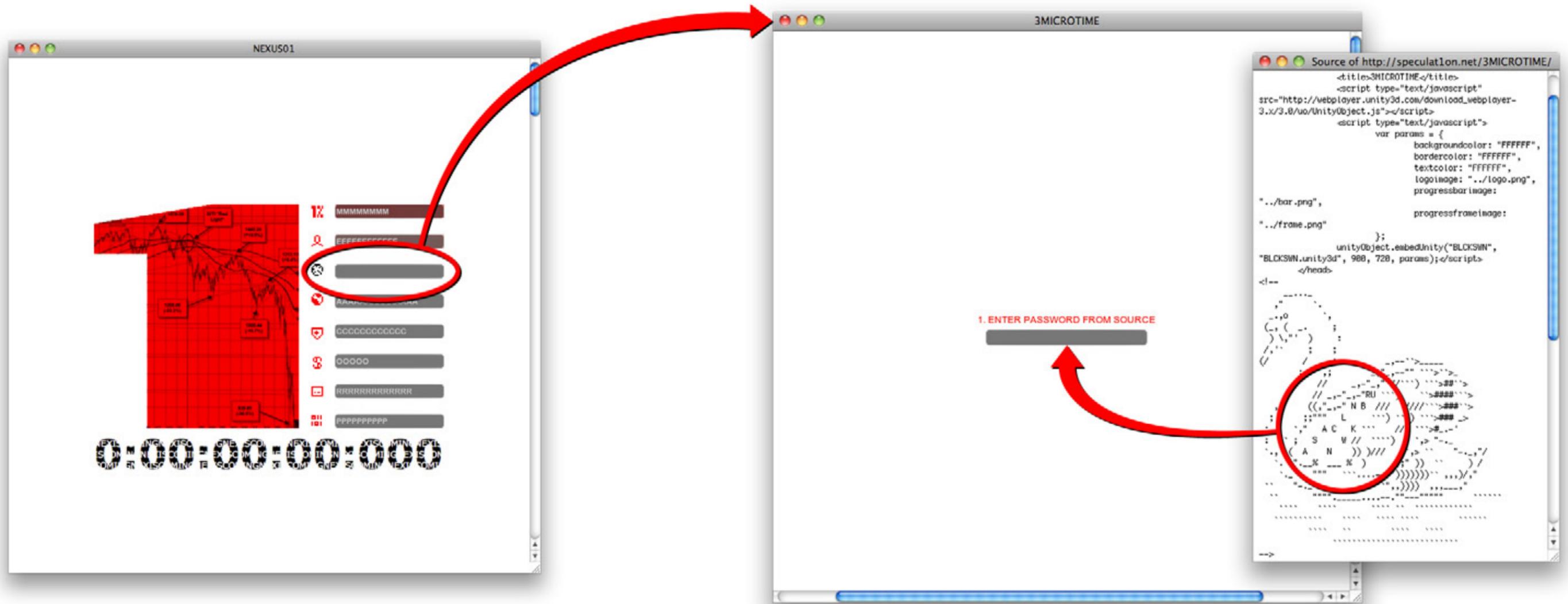
640 pixels wide

HTML, CSS, JavaScript, Unity plug-in, stereo sound

2012

After arriving at <http://speculat1on.net/>, players confront a large, red numeral offset by eight small icons and eight blank password fields. Clicking each pixilated icon leads to a short puzzle or ludic challenge. These game modules operate according to different genres of videogames, from cryptograms and quizzes to financial simulations and interactive fictions. Rather than simulate the processes of finance capital, *Speculation's* mechanics engage the logic of complex derivatives, international currency evaluation, high speed algorithmic trading, and even the psychology of investment bankers.





http://speculat1on.net/3MICROTIME/ (BLCKSWAN.EXE)

900 by 720 pixels
 HTML, CSS, JavaScript, Unity plug-in, stereo sound, Rich Text Document
 2012

Based on the concept of credit default swapping, the third module, BLCKSWN.EXE, mirrors this strategy—to win by losing. The game resembles a side-scrolling shooter videogame but appears to take place at microtemporal scales at which automated trading programs operate and outside the capacity of conscious experience.

meta corp

BLKSWN_101111.EXE
SATELLITE: BLKRTCL3
14-5-24 9-19 8-5-18-5

RAM LEAK [REDACTED] 12.1.20.1.15.14

ERROR!! RANDOM ACCESS MEMORY LEAK 1.13039048589932029... -10:34:06PM-10:34:07PM GMT, APRIL 1, 12 B.R.
BLKSWN_101111.exe [METACORP EXCHANGE ALGORITHM] ON BLKRTCL3 [METACORP EXCHANGE SATALITE] ERROR!!

// black swan events // particle emitters // territorialization // un... exchange // financial climates // emergent errors

Level 3 April 1, 12 B.R. - 10:34:07:00 Goal: \$187500

/BS-MemLeak-120401103406.rtf

SUBTOTAL	\$397646
TAX	\$70780.98
META TAX	\$34992.84
TOTAL DUE	\$291872.1

BLKSWN.EXE: TEST SUBJECTS DISCOVERED EMERGENT ACTIVITY POSSIBLE
STN_845581: Origin inconclusive transmission's sent from BR 127
BLKSWN.EXE: CONTACT: GENERATING FIRMS, GENERATING GERMINATION...
MCA_212041: I'm trying something new. I should get results soon.
ROJ_334514: june 9? 10? did a day truly pass in 8 milliseconds??
BLKSWN.EXE: DEFUSING DRAFT DIFFERENTIALS ACROSS TEMPORAL FIELDS.
MCA_212041: We are harmonized. WE are glad to have made contact.
MCA_201212: I've initiated the test. What's the meaning of life?

meta corp

BS-MemLeak-120401103406.rtf

[10:34:06:11:21PM, April 1, 12 BR] - Logic Gates 00100001 - Trade Number 10^1735866 - //IncPrngs 7
[10:34:06:11:22PM, April 1, 12 BR] - Logic Gates 10010010 - Trade Number 10^1735867 - //FileHdg 14
[10:34:06:11:23PM, April 1, 12 BR] - Logic Gates 00101111 - Trade Number 10^1735868 - //PrgrmCls 13
[10:34:06:11:24PM, April 1, 12 BR] - Logic Gates 00111001 - Trade Number 10^1735869 - //ExAsst 12
[10:34:06:11:25PM, April 1, 12 BR] - Logic Gates 01111011 - Trade Number 10^1735870 - //OrgCll 7
[10:34:06:11:26PM, April 1, 12 BR] - Logic Gates 00011001 - Trade Number 10^1735871 - //StblzCptl 1
[10:34:06:11:27PM, April 1, 12 BR] - Logic Gates 11010000 - Trade Number 10^1735872 - //NzDeriv 9
[10:34:06:11:28PM, April 1, 12 BR] - Logic Gates 10100110 - Trade Number 10^1735873 - //ExAsst 12
[10:34:06:11:29PM, April 1, 12 BR] - Logic Gates 01000011 - Trade Number 10^1735874 - //StblzCls 0
[10:34:06:11:30PM, April 1, 12 BR] - Logic Gates 11101101 - Trade Number 10^1735875 - //FileCll 5
[10:34:06:11:31PM, April 1, 12 BR] - Logic Gates 11100100 - Trade Number 10^1735876 - //FIClls 6
[10:34:06:11:32PM, April 1, 12 BR] - Logic Gates 01001100 - Trade Number 10^1735877 - //ExPts 9
[10:34:06:11:33PM, April 1, 12 BR] - Logic Gates 00001010 - Trade Number 10^1735878 - //ExAsst 1
ERROR!! [10:34:06:11:34PM, April 1, 12 BR] - Logic Gates 01101100 - Trade Number 10^1735879 - //StblzStcks 6 - //PURCHASE CALL - PASS A 3.1: S
[10:34:06:11:35PM, April 1, 12 BR] - Logic Gates 01010011 - Trade Number 10^1735880 - //NzClls 11
[10:34:06:11:36PM, April 1, 12 BR] - Logic Gates 11001111 - Trade Number 10^1735881 - //NzLvrg 6
[10:34:06:11:37PM, April 1, 12 BR] - Logic Gates 11001111 - Trade Number 10^1735881 - //BuyCls 12
[10:34:06:11:38PM, April 1, 12 BR] - Logic Gates 11001111 - Trade Number 10^1735881 - //ExPrngs 7
[10:34:06:11:39PM, April 1, 12 BR] - Logic Gates 11001111 - Trade Number 10^1735881 - //SellPts 3
[10:34:06:11:40PM, April 1, 12 BR] - Logic Gates 11001111 - Trade Number 10^1735881 - //FIHdg 9
[10:34:06:11:41PM, April 1, 12 BR] - Logic Gates 11001111 - Trade Number 10^1735881 - //TrdAsst 0

/BS-MemLeak-120401103406.rtf

SUBTOTAL	\$397646
TAX	\$70780.98
META TAX	\$34992.84
TOTAL DUE	\$291872.1

STN_845581: We'll never hear the flocking, honking, or stalking.
STN_845581: We can't develop new solutions for this one problem.
STN_845581: We can't develop new solutions for this one problem.
STN_845581: Unpredictable dives are only tracked after the fact.
ROJ_334514: blkswns seem to be flocking today...what's going on?
BLKSWN.EXE: METACYCLIC EXCHANGE FIELDS RECURSIVE NESTING ENABLED
STN_845581: Don't worry about the algos, it's not our buisness.

Completing each game leads to a unique document related to important moments in the history of finance and the world of *Speculation*. Nestled within each hidden document, whether via encryption or as part of the file structure, is a single password. These passwords operate as keys to unlock each subsequent Nexus. Once typed into the password fields accompanying each Nexus, the large, red icon changes, revealing a hint that would lead players, collectively, to the next level of the game. *Speculation* features eight such levels that included approximately sixty-four ludic challenges, sixty-four financial documents, and sixty-four unique passwords.

3: BLKSWN (Page 1) / Speculation v1 (04/12/12 - 08/12/12) / speculation.net/WE

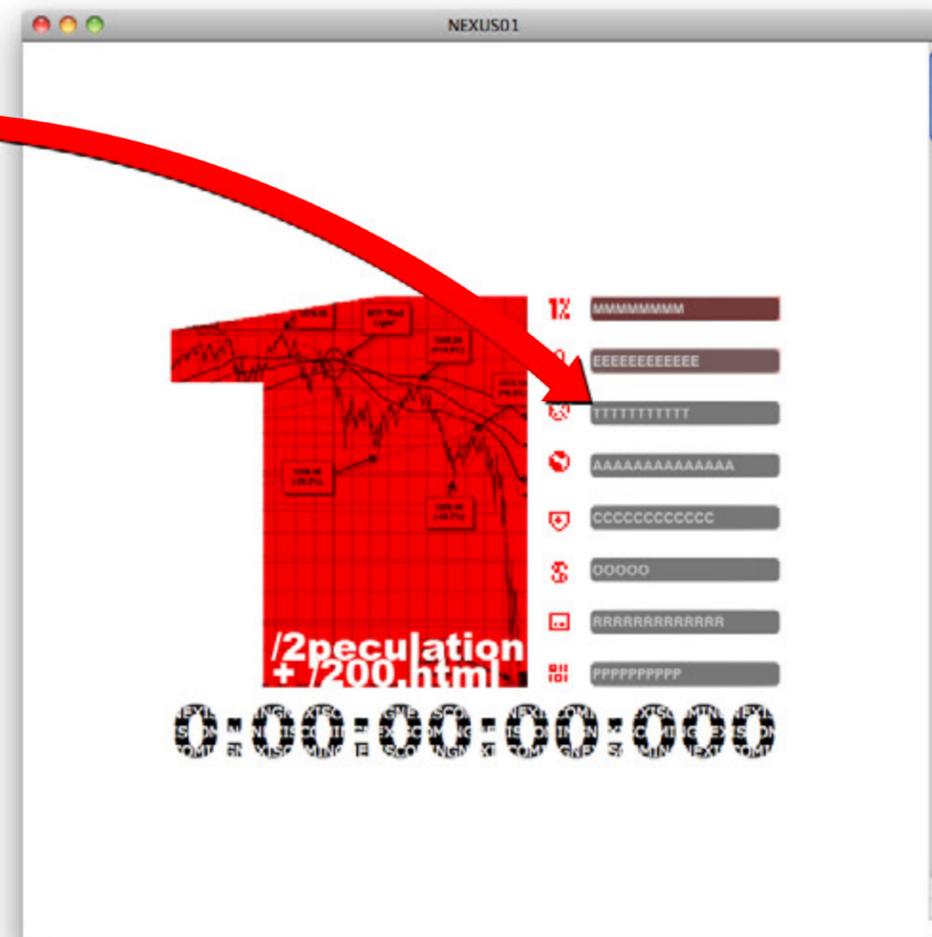
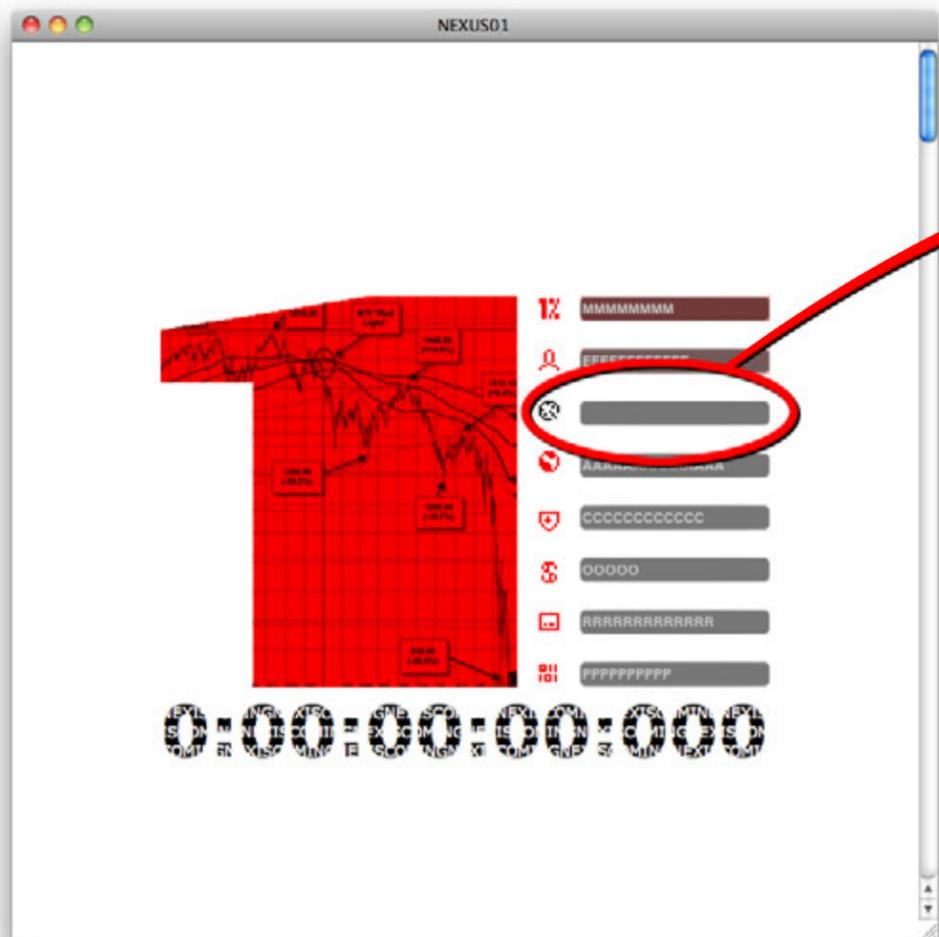
Hollywood 12-04-17 21:25 #2

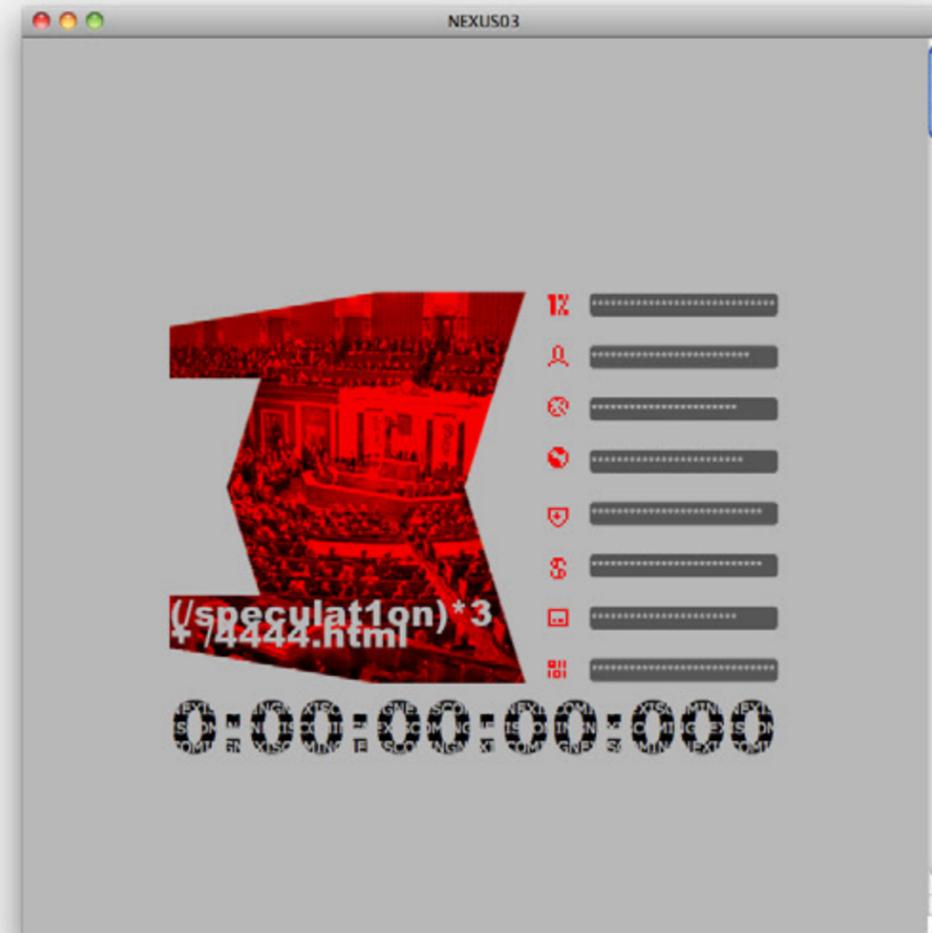
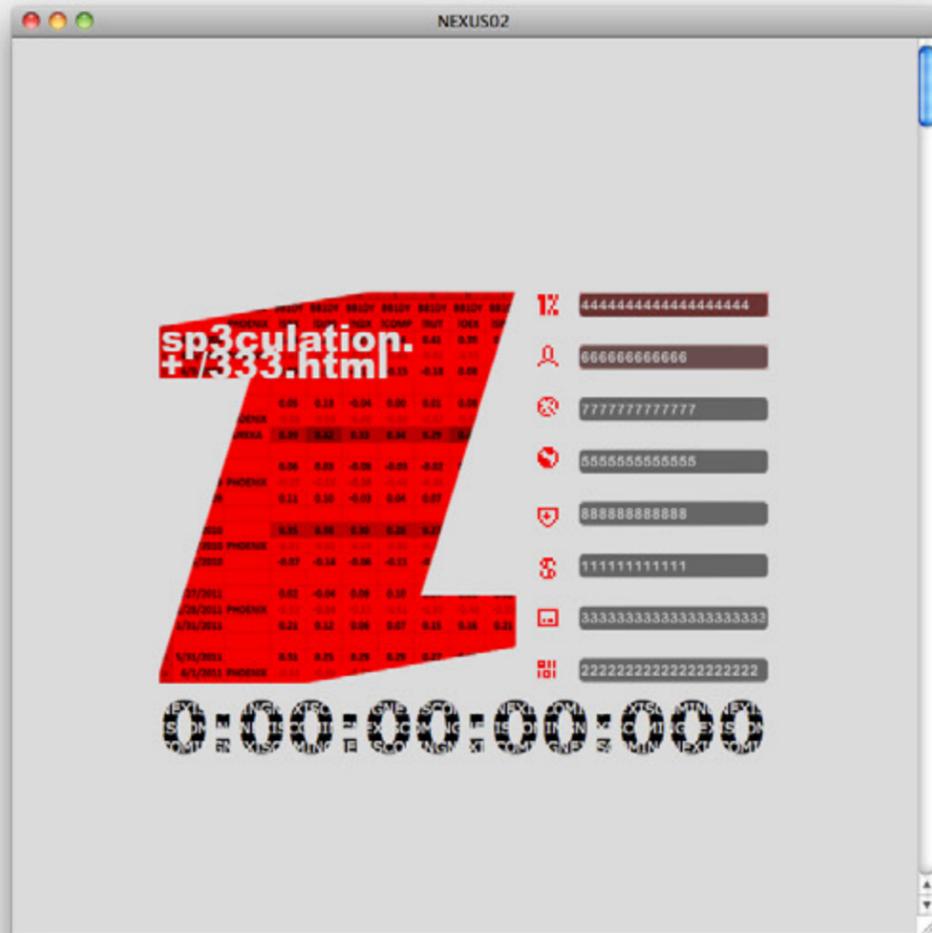
Member

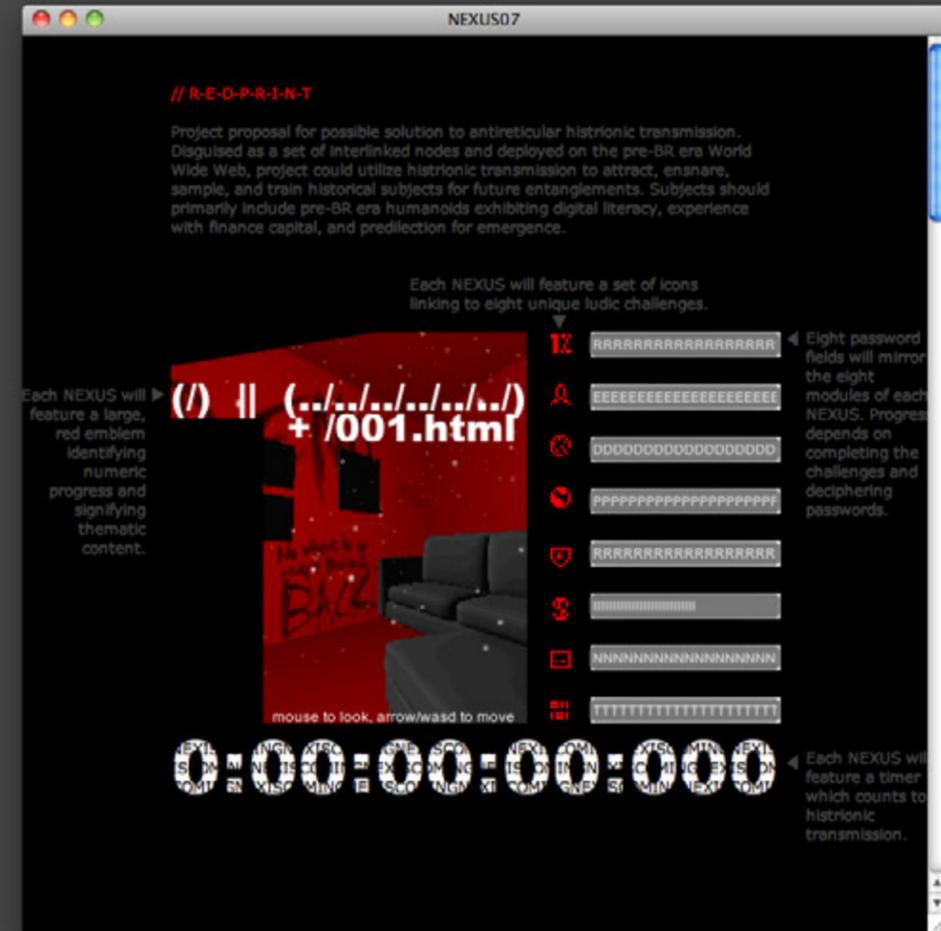
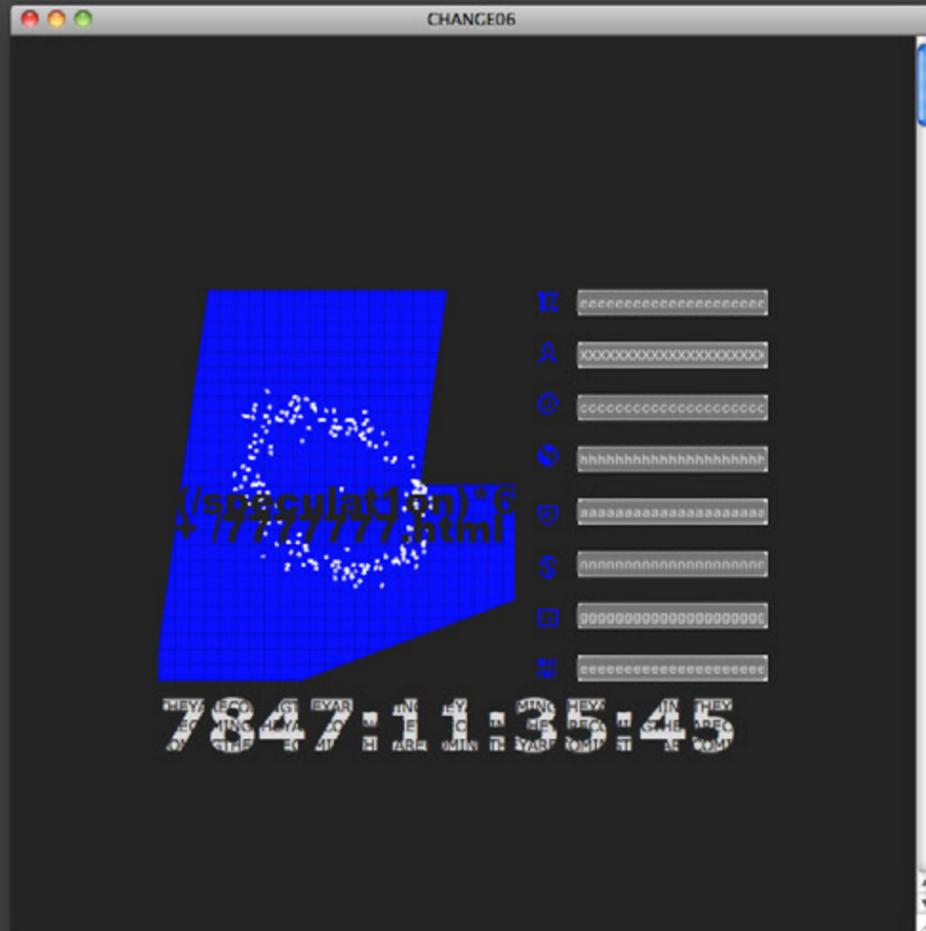
If you scroll through all of the text, some of the lines are in red. I deleted all of the text except the red lines, and the letters at the end of the lines spell:

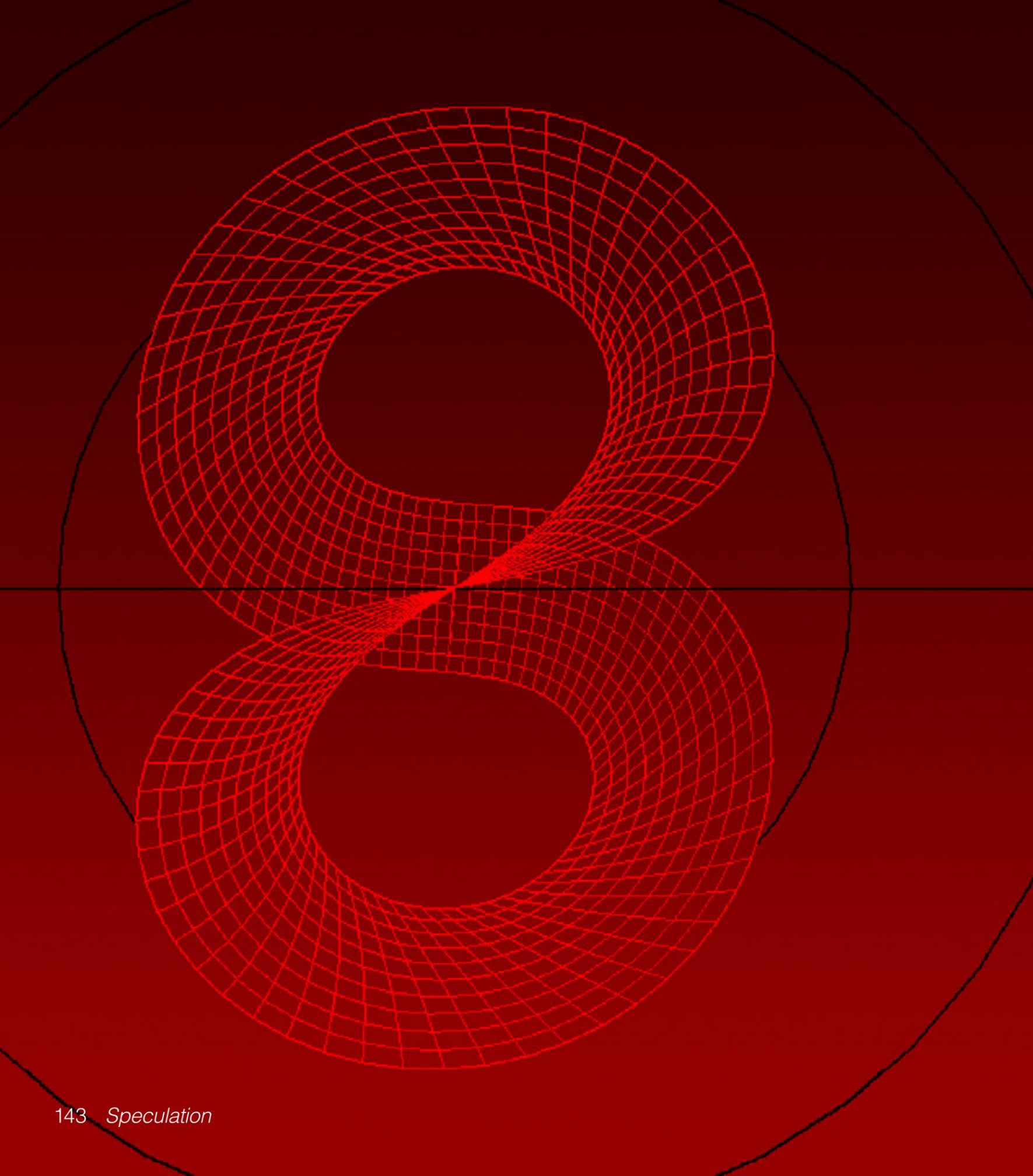
SwanSong333 for Password #3.

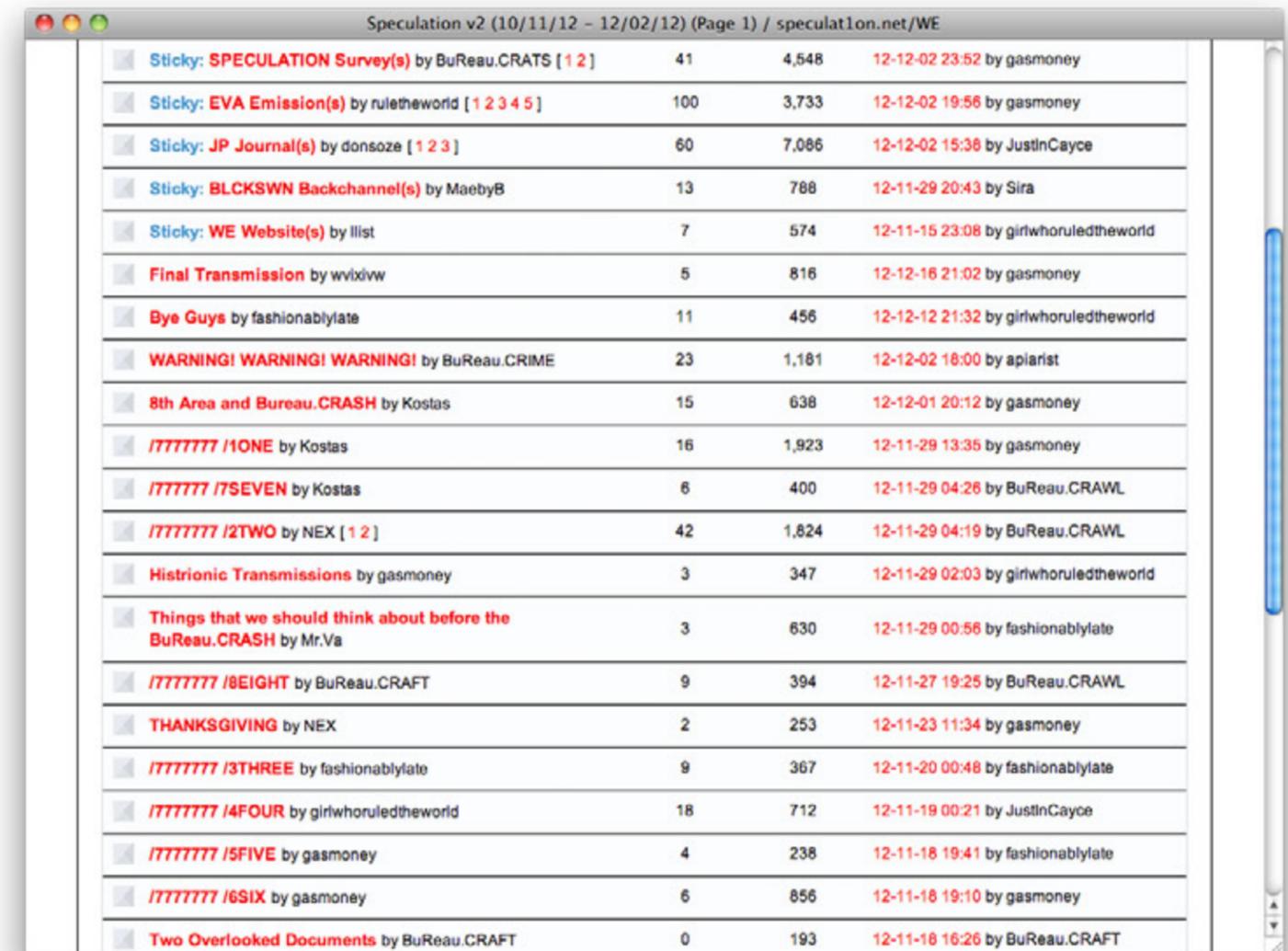
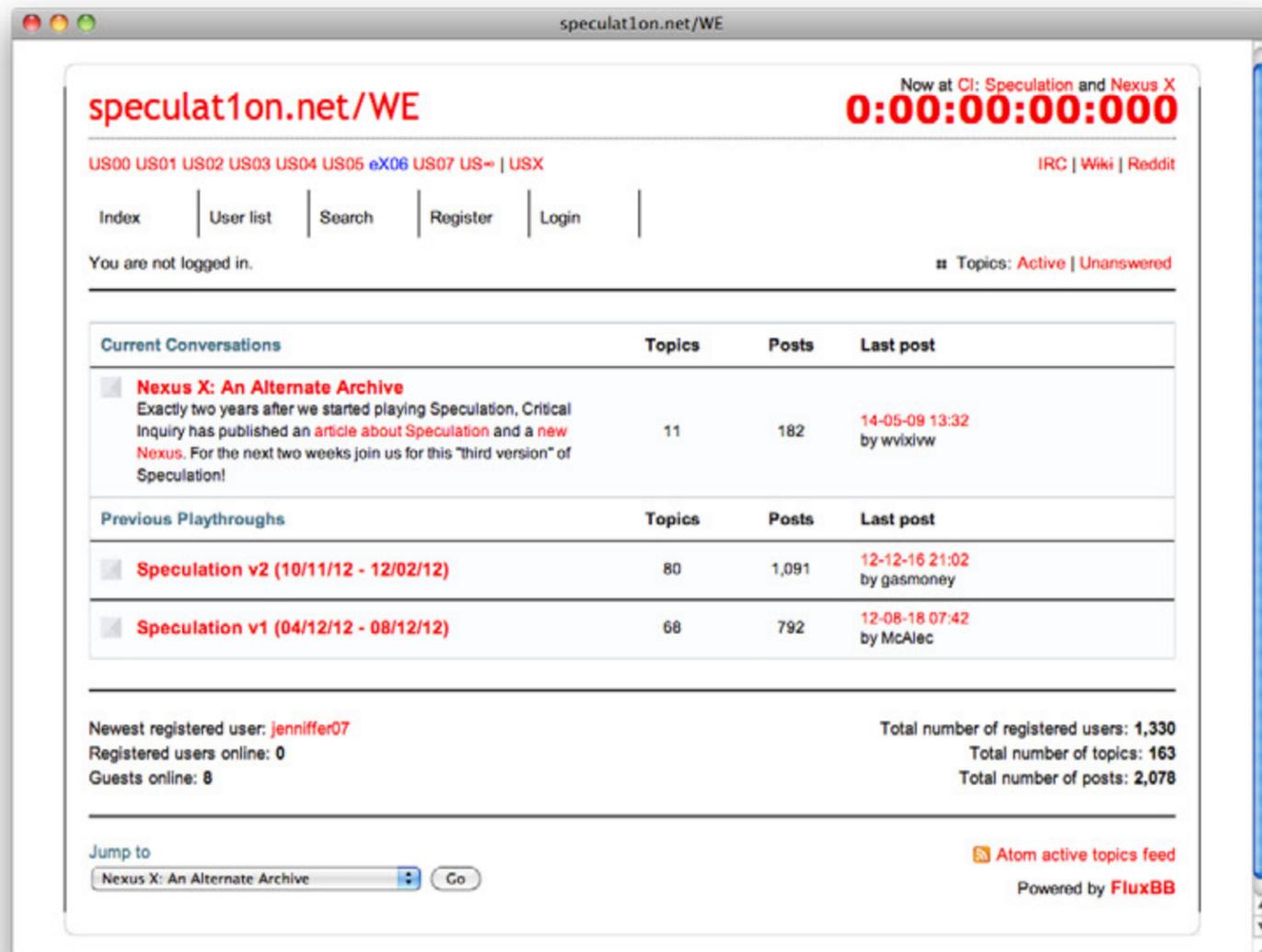
Offline











<http://speculat1on.net/WE/>

Size variable

HTML, CSS, JavaScript, PHP, FluxBB

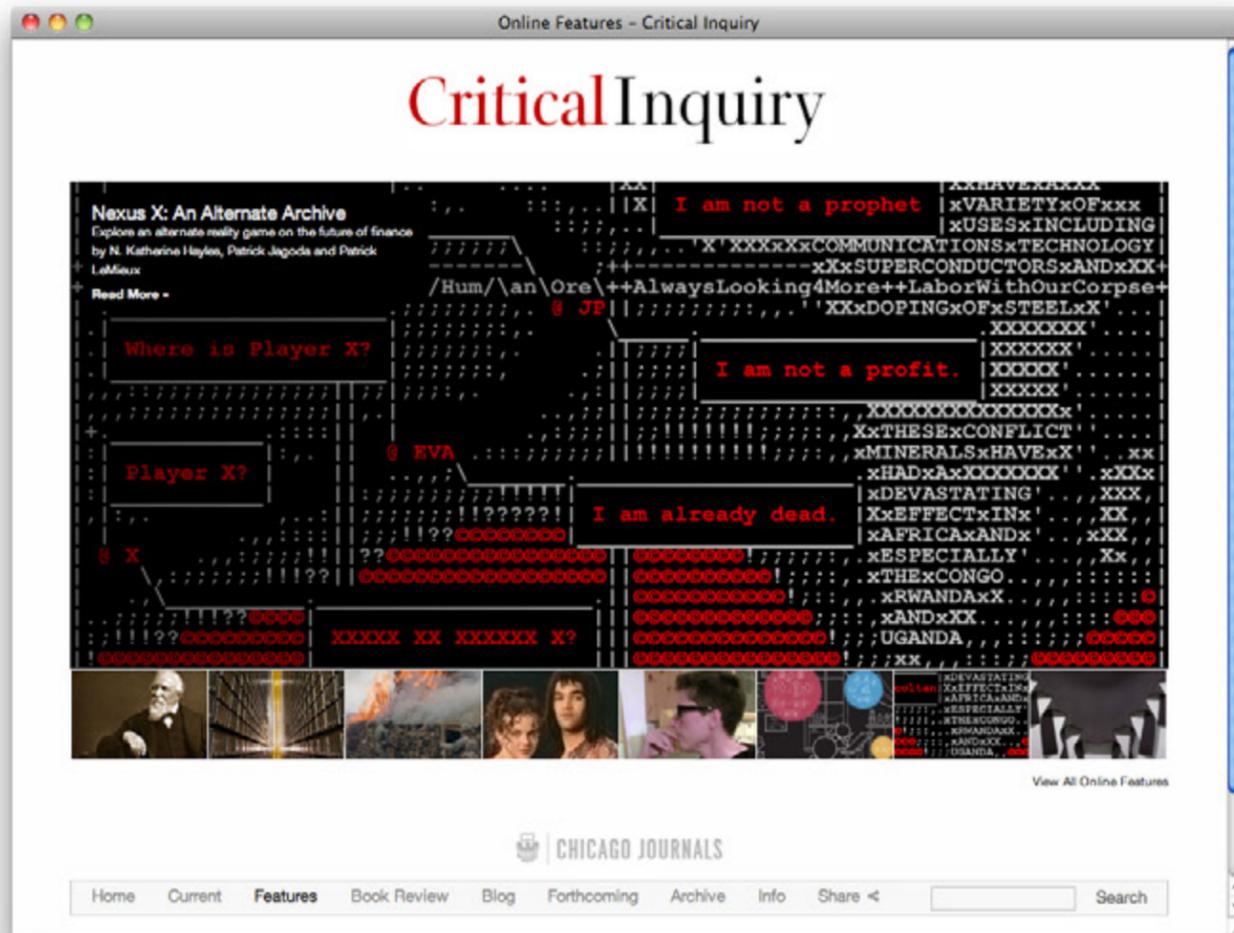
2012

Players used *Speculation's* forum for numerous purposes that included sharing requests for help, posting strategies, solving puzzles, coordinating play, announcing discoveries, summarizing the story, debating concepts, analyzing gameplay, and making metagames that the designers had not anticipated. Although some participants may have encountered the game on an individual basis, the forum demonstrated the predominantly social character of *Speculation*.



Students uncovered the relationship between digital media and finance capital in the process of playing Speculation.

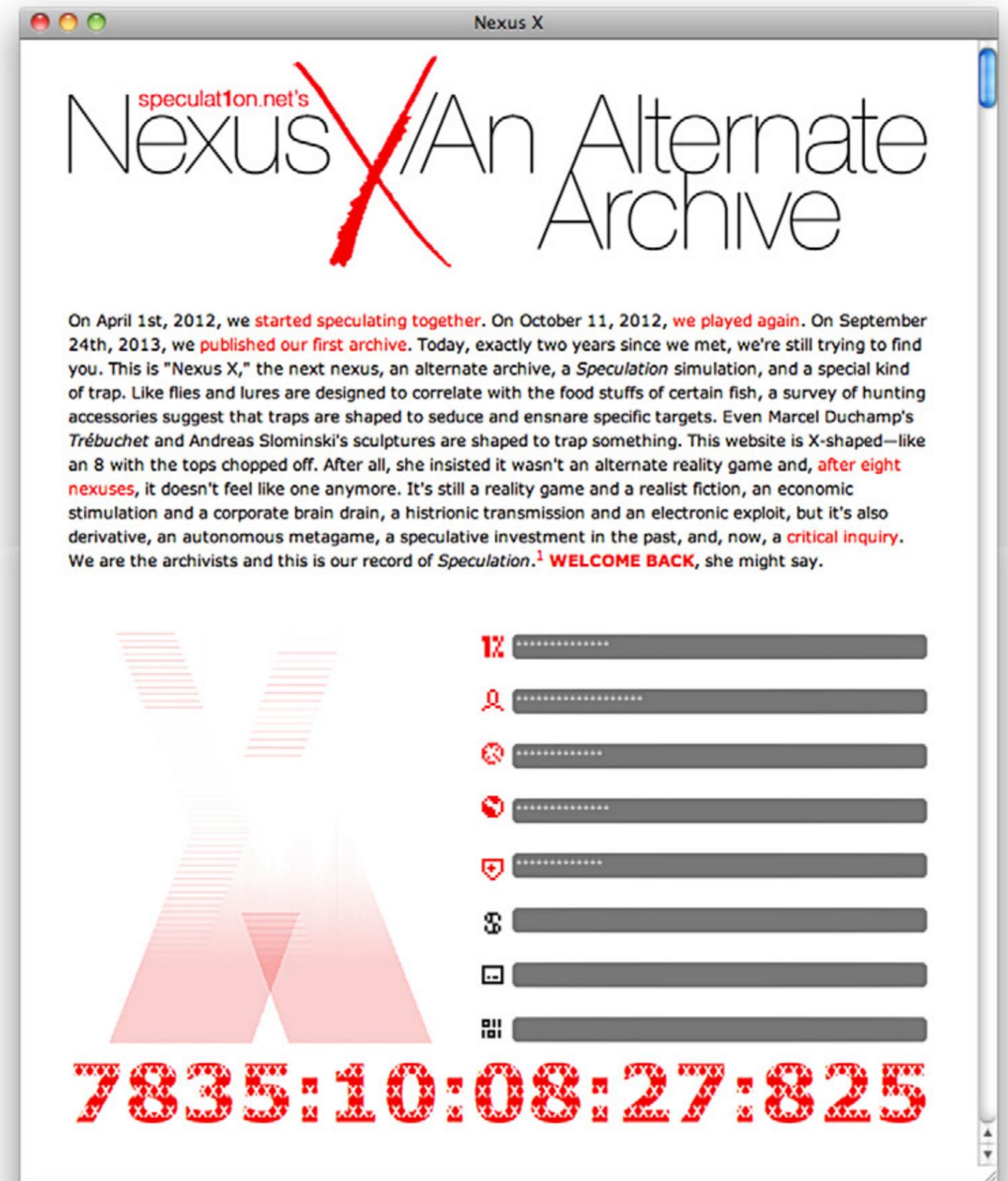




<http://criticalinquiry.uchicago.edu/X/> (NEXUS X)

Size variable
HTML, CSS, JavaScript, Unity plug-ins, stereo sound
2014

In order to archive the thousands of posts, hundreds of players, and eight online hubs of *Speculation*, *Nexus X* operates as a ninth hub and offers visitors a retrospective overview of *Speculation's* narrative and a demonstration of the ludic challenges that make up an ARG. Rather than a summary of the experience, *Nexus X* represents the third iteration of *Speculation* and operates as a diegetic document written by Parkaboy73 and featuring his ASCII artwork "Player X: A ©oltan ©omic."





speculation.net

0:00:00:00:000

An article on *Speculation* appeared in *Critical Inquiry* and a single-player version of the game is installed at criticalinquiry.uchicago.edu/X

breaking literary analysis, and text adventure game conventions. Therefore, in order to compile anything resembling a complete narrative, players had to merge puzzle solutions and acquired artifacts. In this way, the narrative unfolded across forums, wikis, live chats, and social media. In this ARG, the title and core concept of speculation took on valences of financial risk and risky thought that while appearing at times politically and ethically opposed to one another, could not be entirely disentangled. The term *speculation*, in one sense, suggests a contemplative understanding of the game's development, the creators' attention to Wall Street practices, producing critique through game form. Deeper into the development and execution process, we found the game to be a speculation about the nonhuman (and often inhuman) practices of financial modeling and algorithmic processing that are central to the trading of stocks and commodity futures.² At another level, *Speculation* addressed the worlding ethic common in speculative literature and game worlds. Our ARG's generative (rather than merely representational) practice of worlding, which was derived in many ways from science fiction, also shared the world-making qualities of the financial speculation and derivative contracts. The players of *Speculation*, as much as the designers, elaborated the tensions and contradictions proper to this sense of speculation through processes of self-reflexive contemplation, networked collaboration, and playful metagaming. We will later return to this conflated form of financial, philosophical, literary, and ludic speculation through our elaboration of the concept of derivative worlding. But, first, it is important to explain how this concept was derived through the ways in which *Speculation* both borrowed and departed from earlier ARGs.

3. Speculative Derivations: The Beast and Superstruct

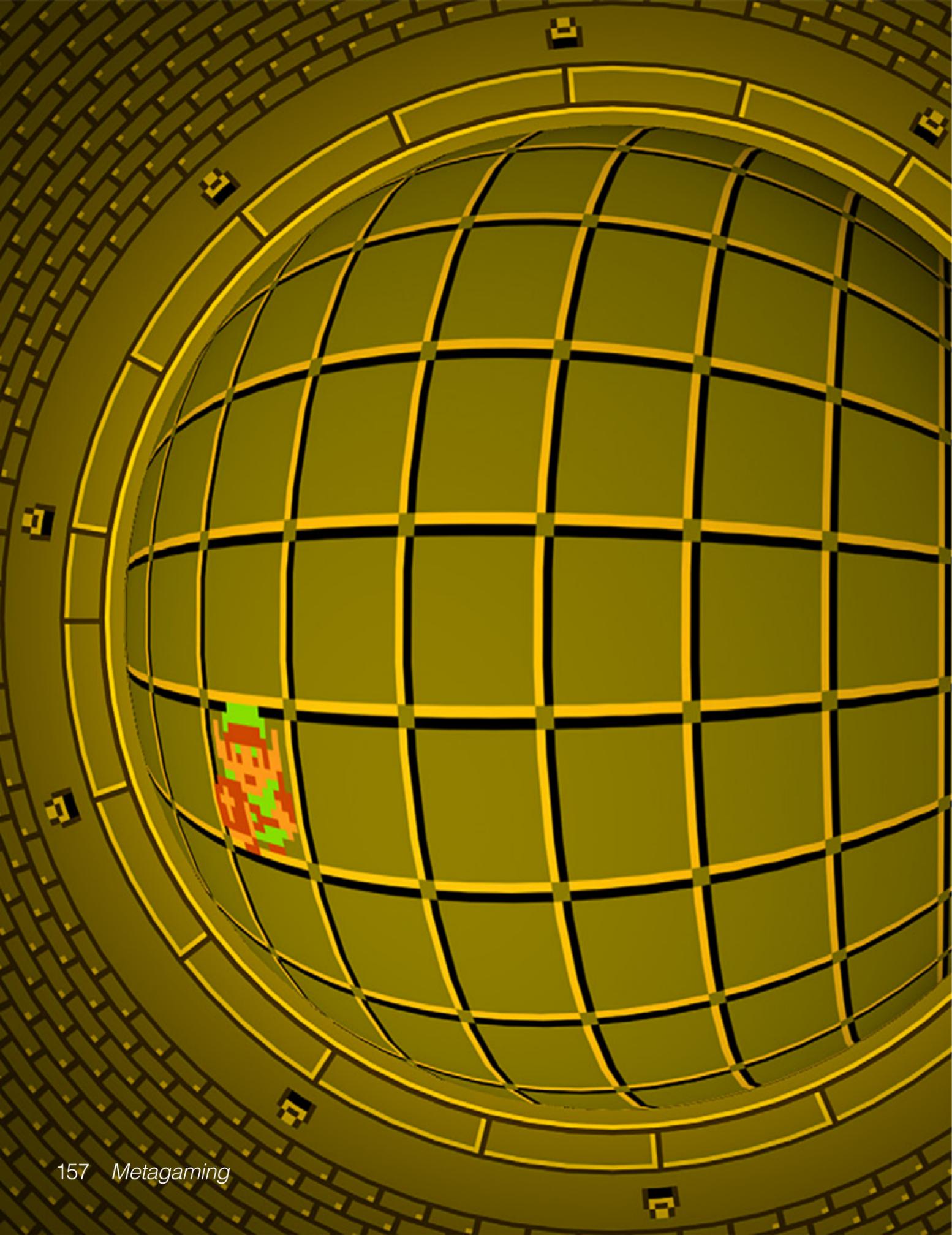
Two previous games, *The Beast* (2001) and *Superstruct* (2008), are particularly clarifying to *Speculation*'s project. These games sought to use ARG structure in ways that were formally innovative (in the case of *The Beast*) and sociopolitically ambitious (in the case of *Superstruct*). Both games, however, failed to think through the foundational interconnection of form and politics that enabled to emerge as a key form of contemporary convergence in the early twenty-first century. In department games in *Speculation*, we sought to make a difference in the early twenty-first century. In department games in *Speculation*, we sought to make a difference in the early twenty-first century. In department games in *Speculation*, we sought to make a difference in the early twenty-first century.



Figure 3. Sixty-four E ASCII poem that r source code

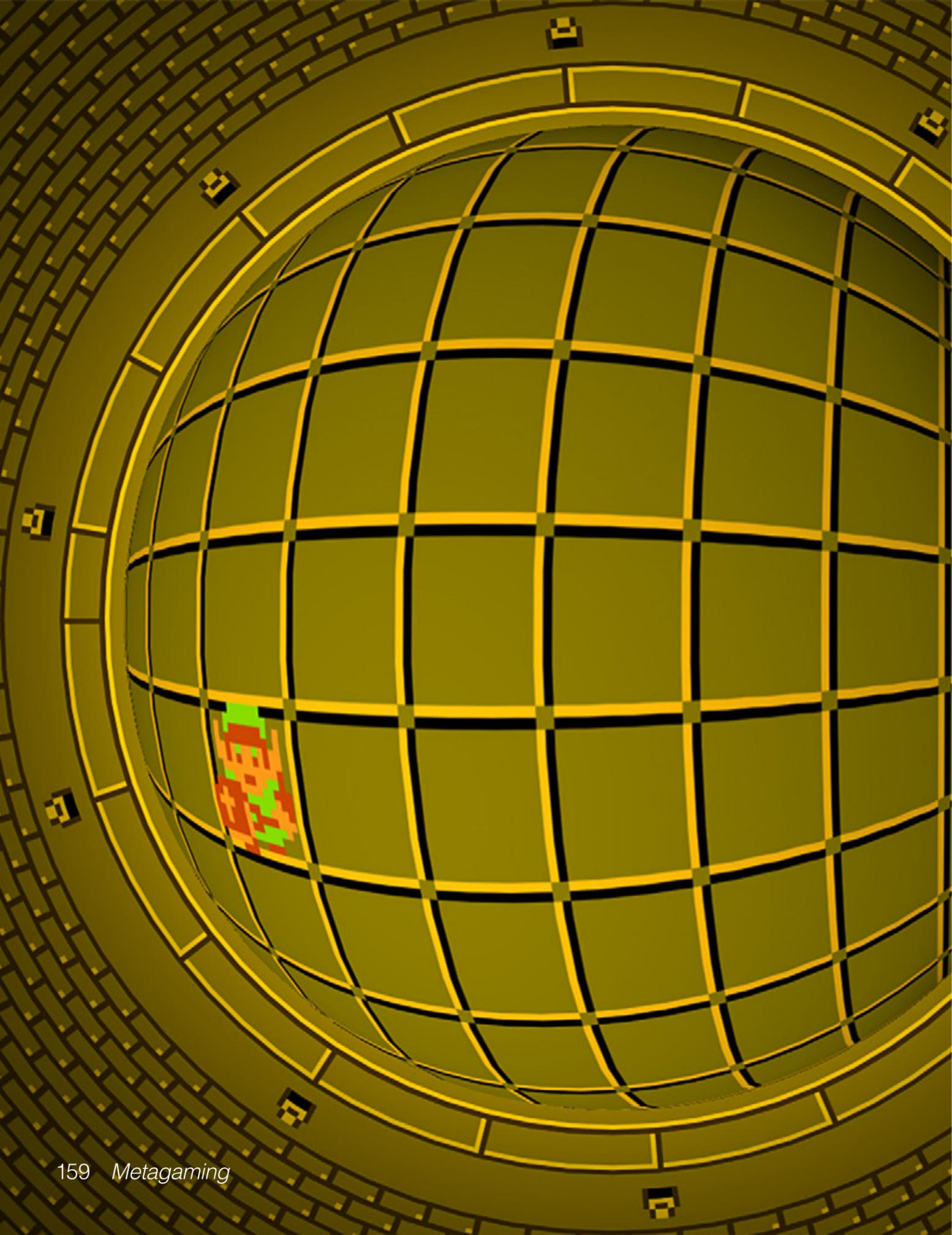


Metagaming
2012–2015



Metagaming is a forthcoming book accompanied by a suite of original software demonstrating play as a critical practice that emerges in, on, around, and through videogames.

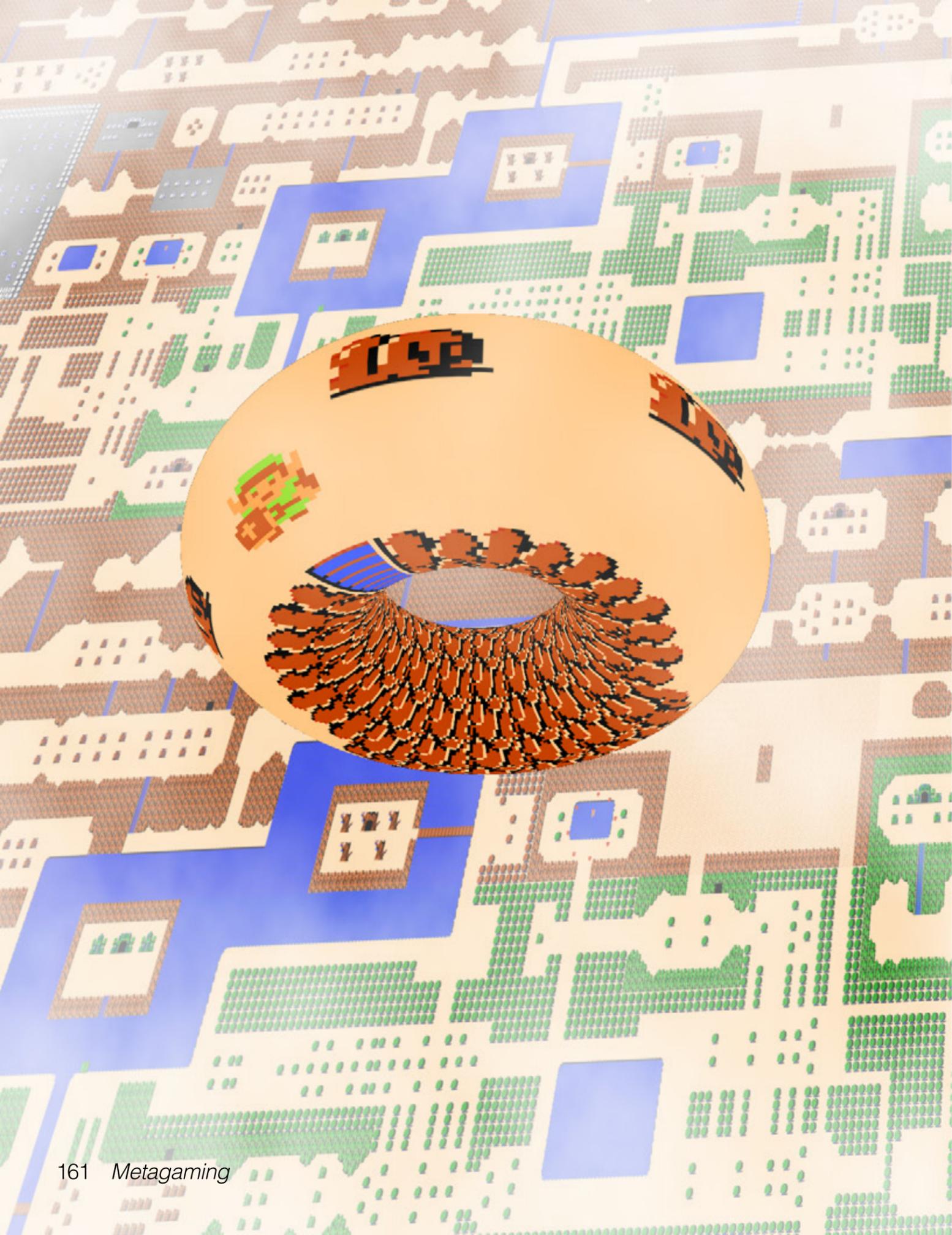
Developed in 2012–2015 and to be published in *Metagaming: Videogames and the Practice of Play*, a book co-authored with **Stephanie Boluk** and under contract with University of Minnesota Press.



Metagaming: Videogames and the Practice of Play is a scholarly monograph co-authored with Stephanie Boluk that looks beyond copyrighted code and intellectual property to historicize the wider media ecology of games we play in, on, around, and between videogames. From the embodied forms of vision required to navigate anamorphic indie games and the techniques of both blind and blindfolded players to the seriality of home consoles and the evolution of international e-sports, *Metagaming* documents and theorizes the the metagame as a dominant form of play, a game design paradigm, and a way of life not only occurring around videogames, but all forms of digital technology.

In *Metagaming*, playing, making, and thinking about videogames occur within the same act—a true game design philosophy. Part media art, part media history, and part media theory; this form of critical practice explores videogames by engaging the phenomenology, materiality, history, and economy of twenty-first century play.

Metagaming will be the first book published by the University of Minnesota Press accompanied by original videogames.



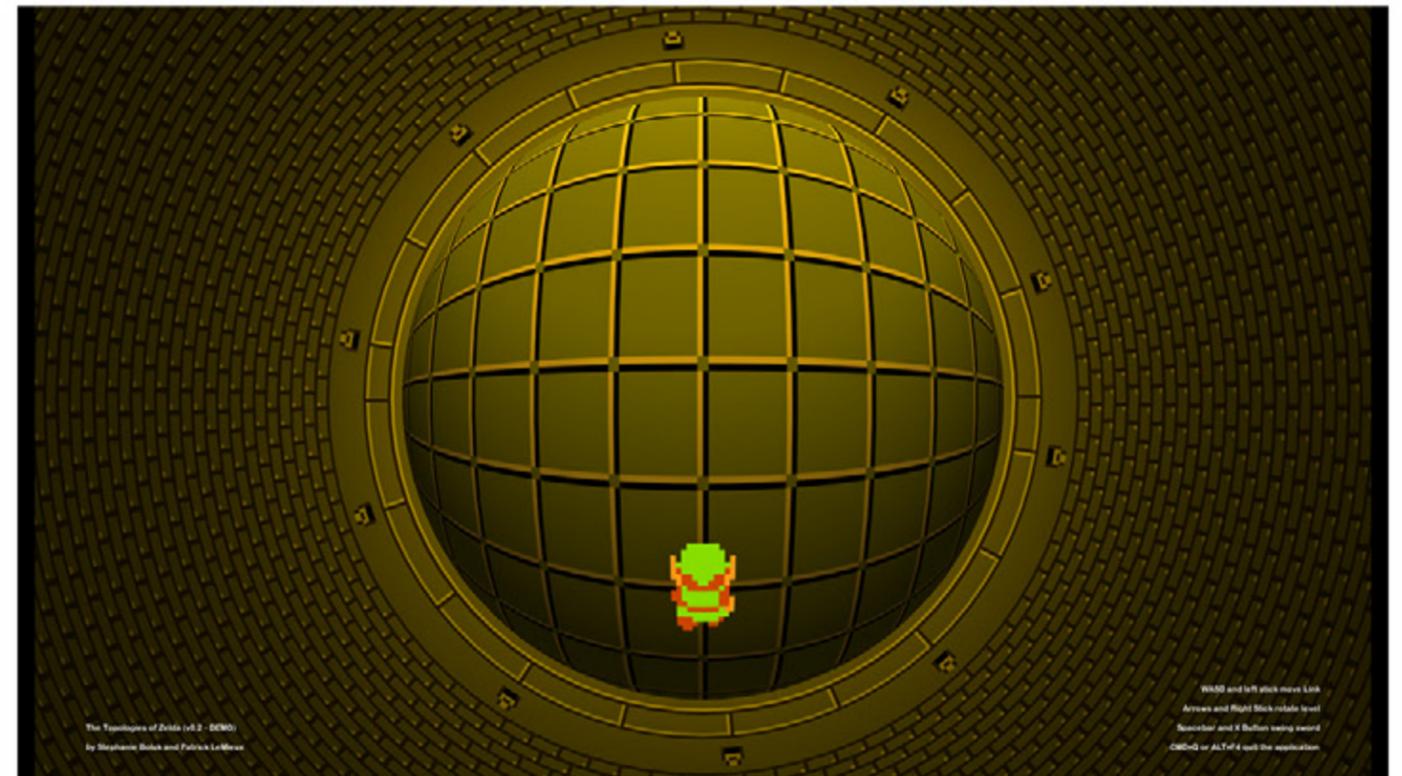
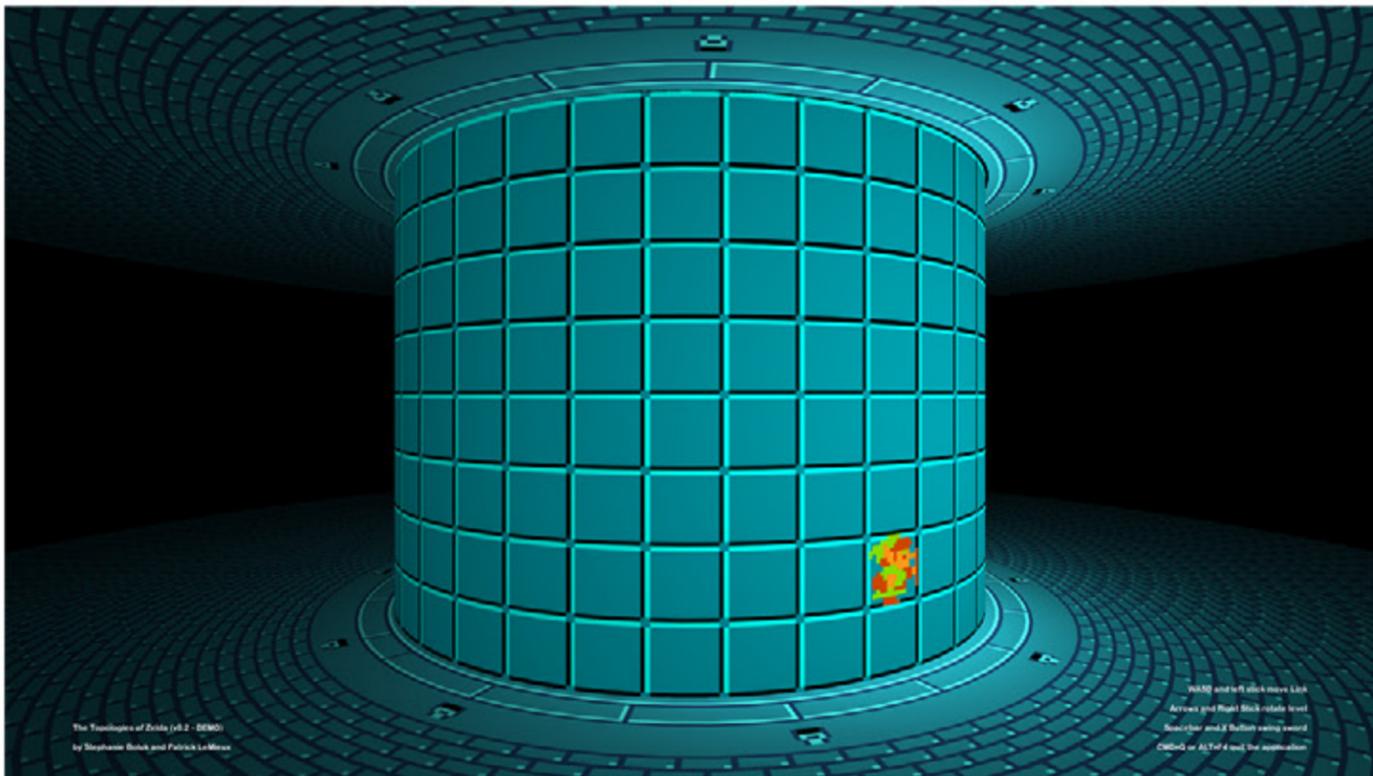
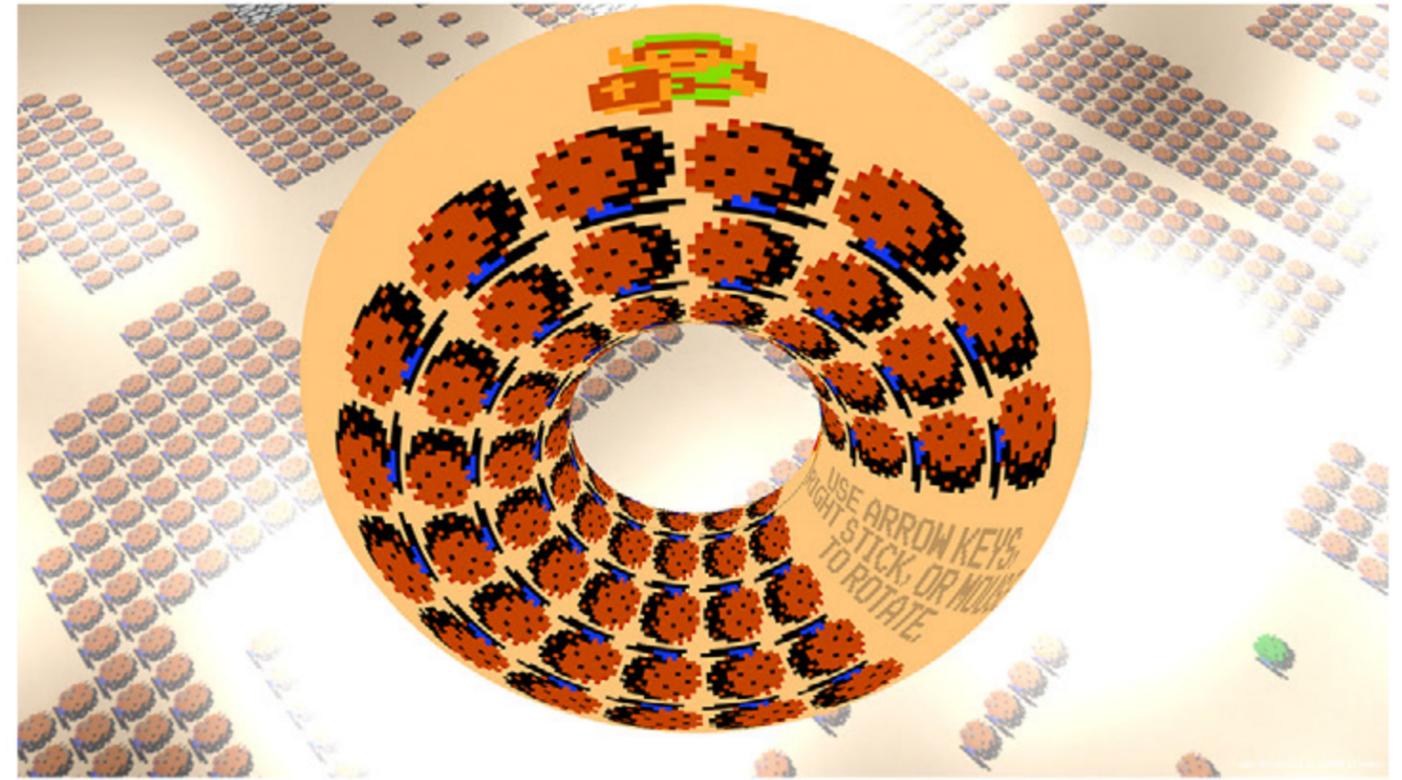
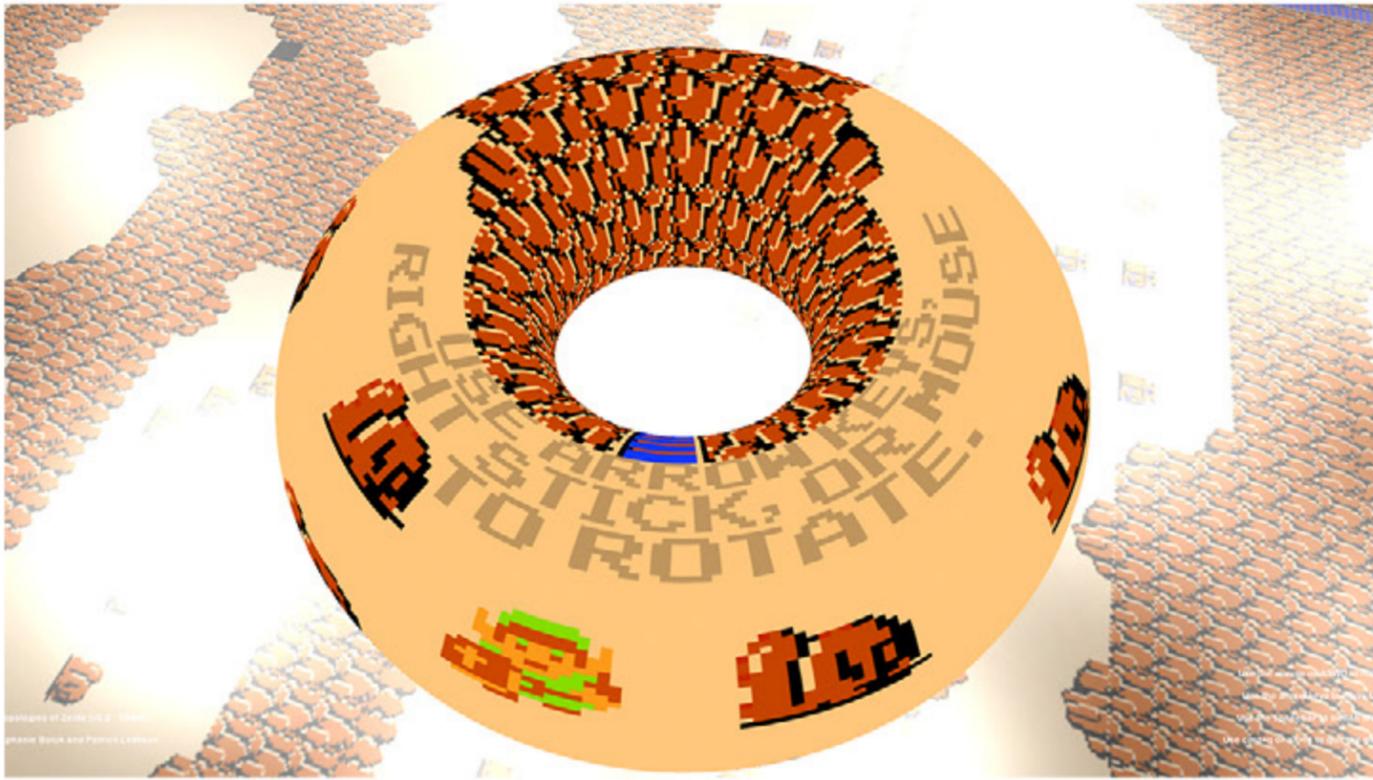
Triforce

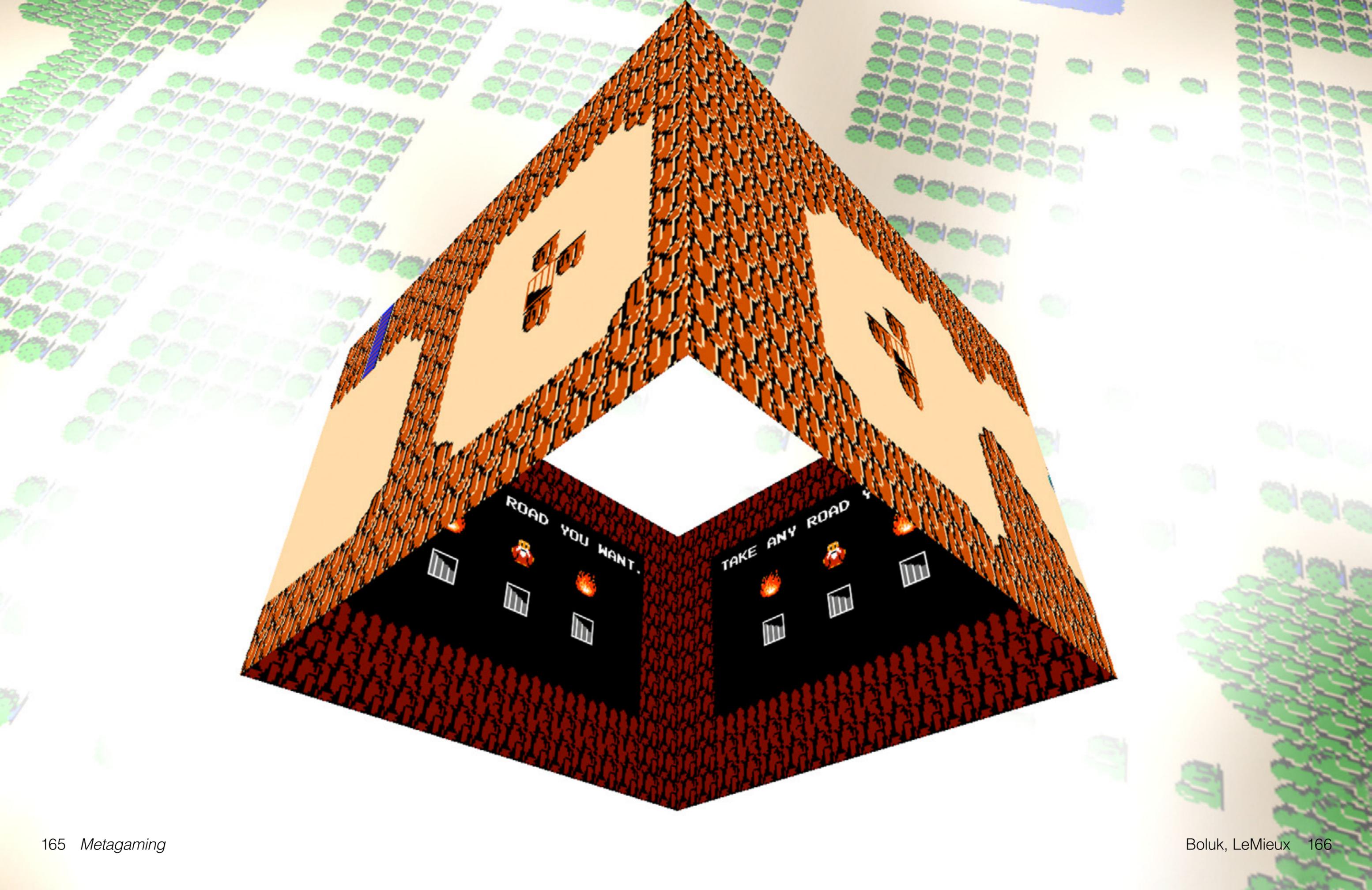
Dimensions variable

Unity game for Windows, Macintosh, and Linux

Currently in development, forthcoming 2015

In *The Legend of Zelda* (1986), there are two locations that explicitly defy the logic of the cartesian grid: The Lost Woods and The Lost Hills. When traveling through these single-screen mazes, Link finds himself endlessly looping, temporarily arrested by a classic gaming trope. Like *Asteroids* (1979) and *Pac-Man* (1980), if the player's avatar exits the edge of the screen, it appears immediately on the opposite side as if teleported instantly from one side of the level to the other—a counter rolls over from 255 to 0. The mathematical certainty and programmatic simplicity of The Lost Woods and The Lost Hills generates complex and sometimes paradoxical topologies. Whether the player realizes it or not, each looping space maps not to the flattened grid on which the rest of Hyrule is organized, but instead to the three-dimensional topology of a torus. *Triforce* explores the topology of *The Legend of Zelda* by visualizing the 8-bit game in three dimensions.







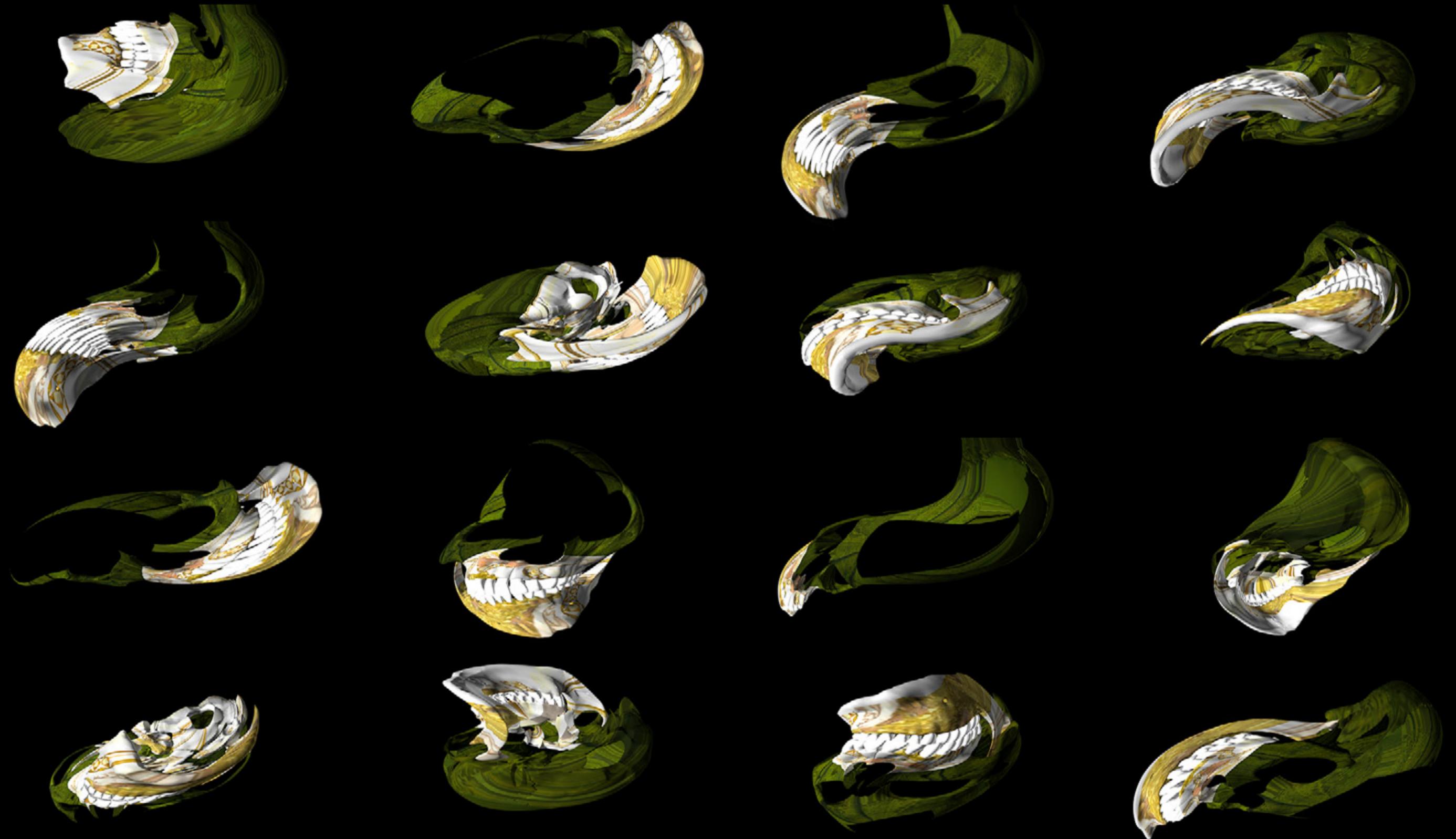
Memento Mortem Mortis

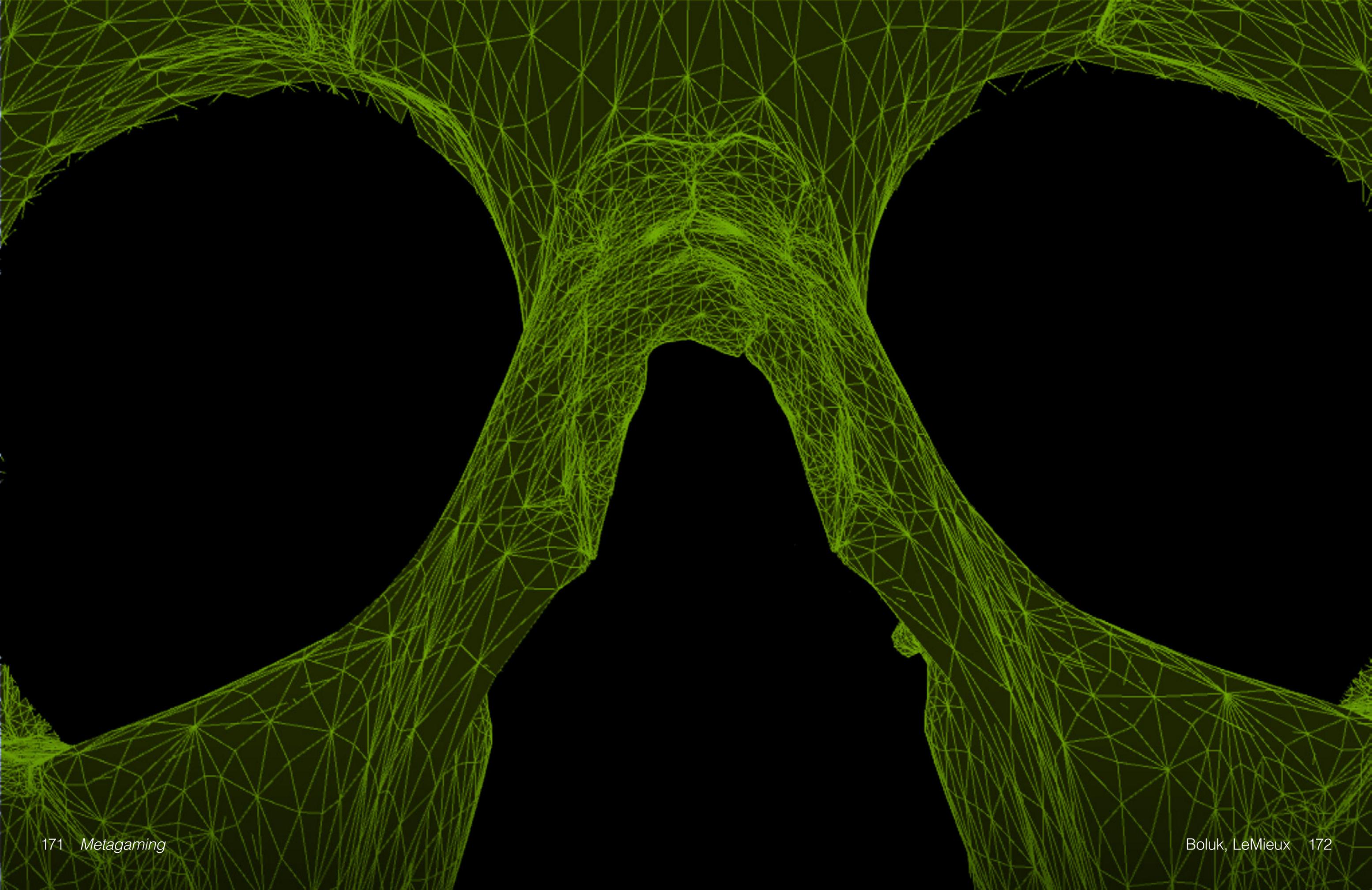
Dimensions variable

Unity game for Windows, Macintosh, and Linux

Currently in development, forthcoming 2015

Memento Mortem Mortis simulates the stretched skull from Hans Holbein's *The Ambassadors* (1533). Whereas Robert Lazzarini's *skulls* (2001) feature a variety of non-perspectival topological transformations applied to 3D geometry, *Memento Mortem Mortis* conflates the displaced picture plane from traditional anamorphic projection with the polygonal planes of a human skull through a graphic technique called texture mapping. Although the anamorphic effects of puzzle games like *Portal* (2007), *Echochrome* (2008), *levelHead* (2008), *Fez* (2012), *Perspective* (2012), and *Miegakure* (forthcoming) often revolve around a predetermined solution, in *Memento Mortem Mortis* each skull simply reveals a new level of anamorphic distortion. From a randomly-generated maze to the multiple levels of digital distortion, the puzzle may have a solution, but it is not for us. It is picture planes all the way down.







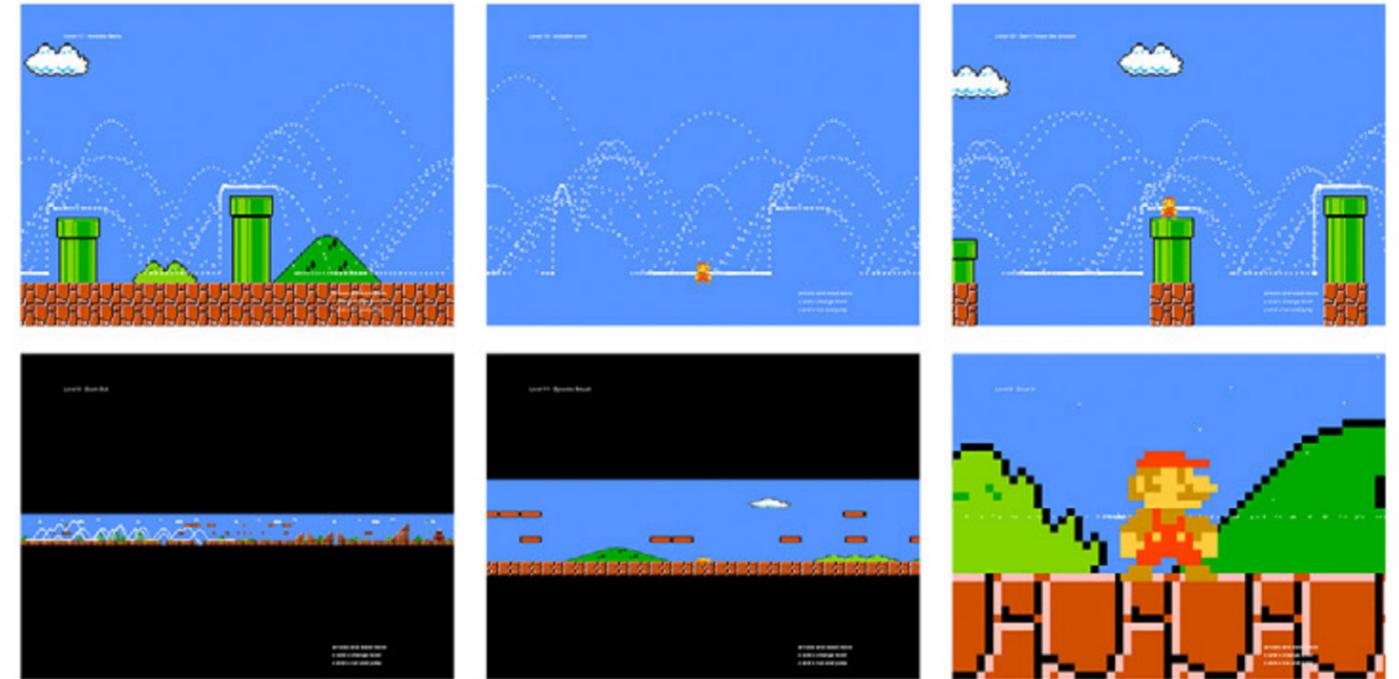
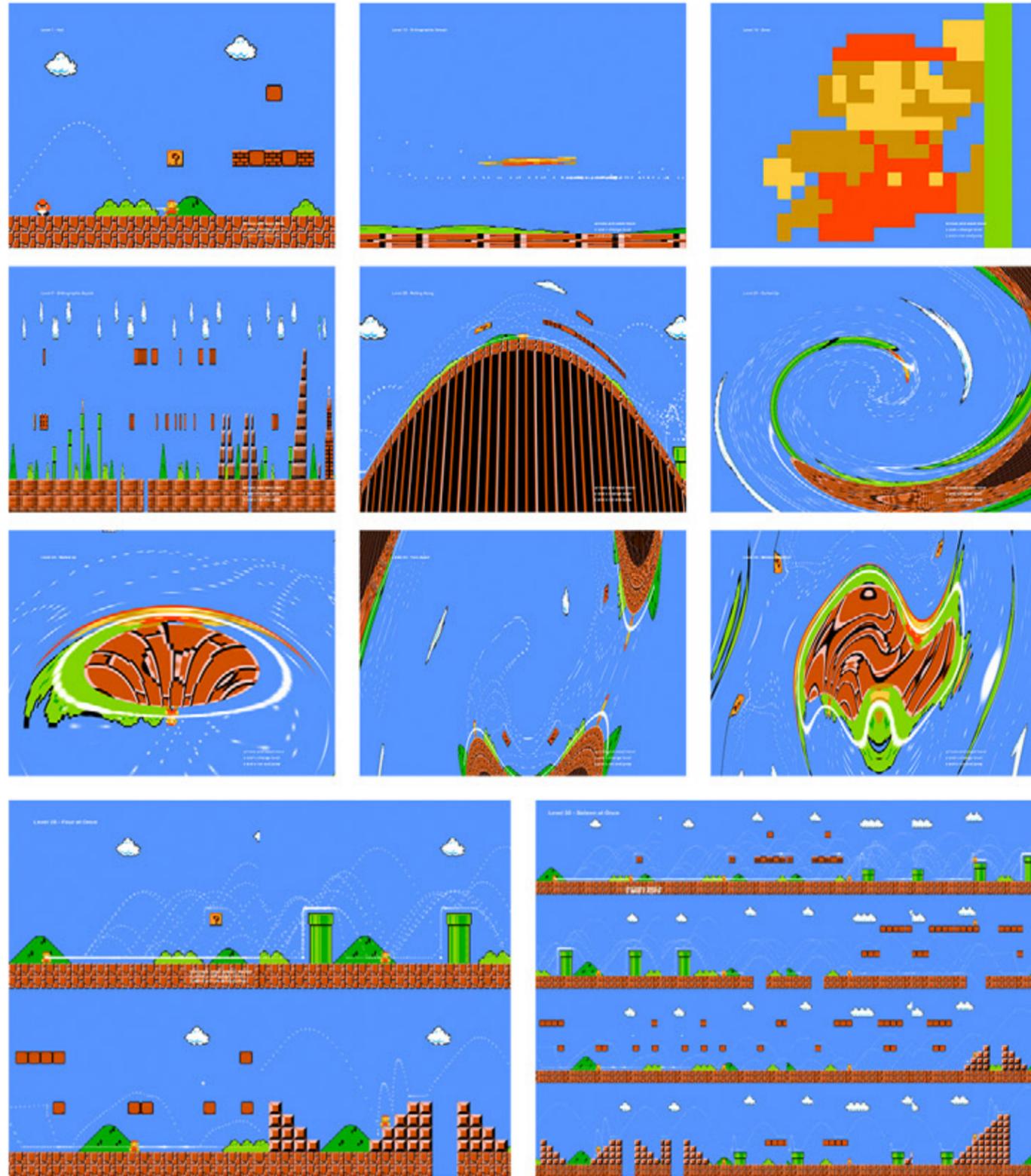
99 Exercises in Play

Dimensions variable

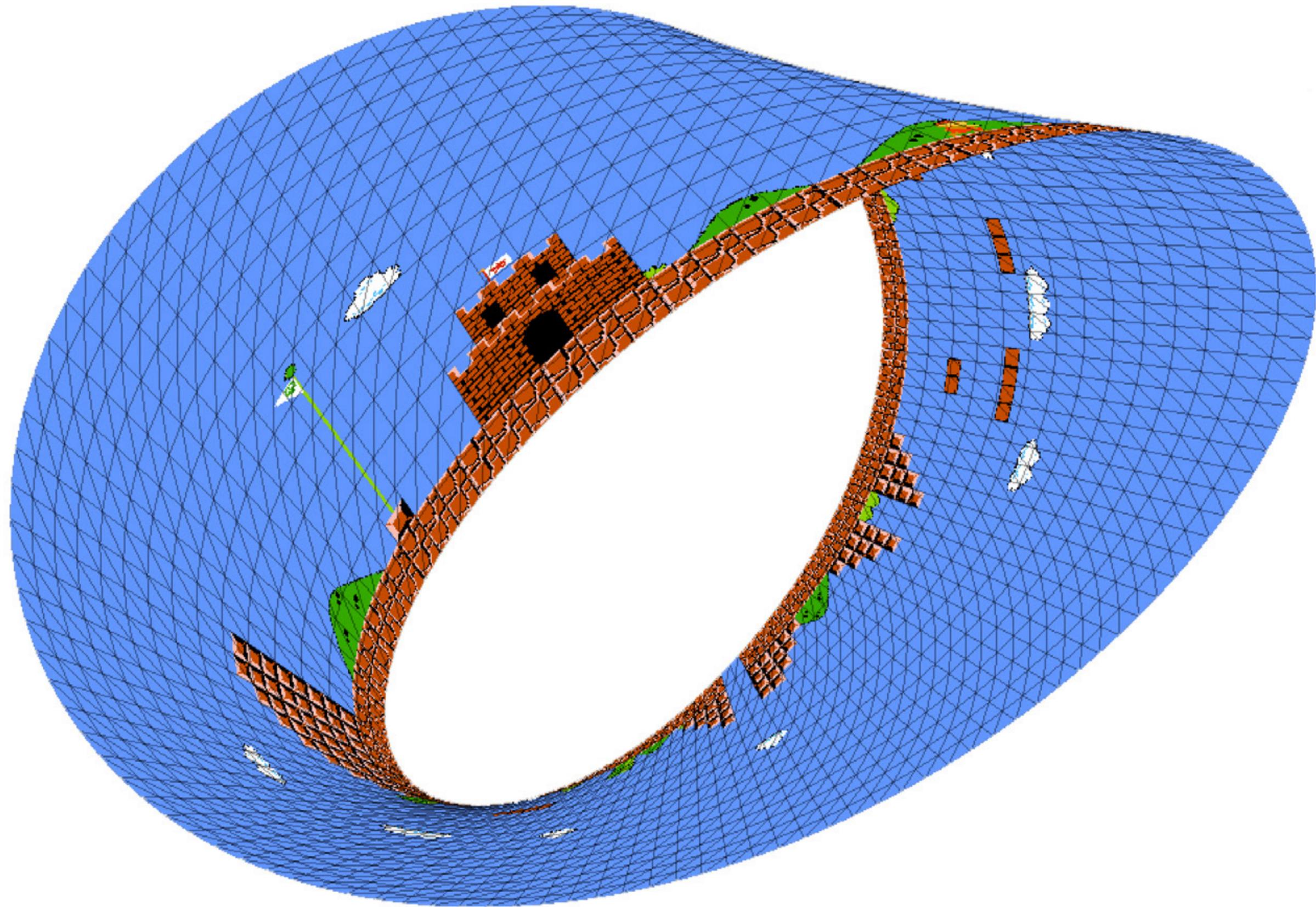
Unity game for Windows, Macintosh, and Linux

Currently in development, forthcoming 2015

Based on the constrained writing of the Ouvroir de littérature potentielle (Oulipo) and specifically Raymond Queneau's *Exercices de style* (1947) as well as the serial experiments of Lars von Trier and Jørgen Leth's *Five Obstructions* (2003) and Matt Madden's *99 Ways to Tell a Story* (2005), *99 Exercises in Play* features World 1-1 from the original *Super Mario Bros.* (1985) as a constraint for producing ninety-nine different metagames. An "Oujeupo" project that engages the serial history of a single level, in *99 Exercises in Play*, Mario finds himself stretched, squashed, duplicated, displaced, slowed down, sped up, zoomed in, or zoomed out in order to reveal the kinds of metagames that constantly occur outside any individual's experience of the Mushroom Kingdom.



1. Null
2. Camera Rotation 90°
3. Camera Rotation 180°
4. Camera Rotation 270°
5. Camera Rotation, discrete progression
6. Camera Rotation, smooth rotation
7. Camera Rotation, randomly changing
8. Camera Rotation based on running
9. Camera Rotation based on jumping
10. Camera Rotation based on progress
11. Camera Translation Up, (in the sky)
12. Camera Translation Down, (underground)
13. Camera Translation Left, (foresight)
14. Camera Translation Right, (hindsight)
15. Camera Translation, based on running
16. Camera Translation, based on jumping
17. Camera Translation, based on progress
18. Camera Zoom Out, showing the entire level
19. Camera Zoom In, showing none of the level
20. Camera Zoom, based on running
21. Camera Zoom, based on jumping
22. Camera Zoom, based on progress
23. Camera Perspective Stretch Horizontal
24. Camera Perspective Stretch Vertical
25. Camera Perspective Smush Horizontal
26. Camera Perspective Smush Vertical
27. Camera Perspective, based on running
28. Camera Perspective, based on jumping
29. Camera Perspective, based on progress
30. Temporal Scale, slow down
31. Temporal Scale, speed up
32. Temporal Scale, based on running
33. Temporal Scale, based on jumping
34. Temporal Scale, based on progress
35. Temporal Displacement, halves, second then first
36. Temporal Displacement, fourths, 4th, 1st, 3rd, 2nd
37. Temporal Displacement, random eighths
38. Temporal Displacement, random sixteenths
39. Temporal Displacement, based on jumping
40. Perceptual Distortion, no refresh
41. Perceptual Distortion, motion blur
42. Perceptual Distortion, pixelated
43. Perceptual Distortion, noise
44. Perceptual Distortion, twisted
45. Perceptual Distortion, mirrored
46. Perceptual Distortion, polar coordinates
47. Sonic Distortion, mismatched clips
48. Sonic Distortion, everything plays backwards
49. Sonic Distortion, visual delay
50. Sonic Distortion, reverb based on progress
51. Sonic Distortion, Mario as Instrument
52. Withheld Information, Invisible Level
53. Withheld Information, Invisible Enemies
54. Withheld Information, Invisible Mario
55. Withheld Information, based on jumping
56. Withheld Information, based on running
57. Withheld Information, only sonic representation
58. Withheld Information, only textual representation
59. Pathfinding, guided by new obstacles
60. Pathfinding, drawing or writing
61. Pathfinding, follow the leader
62. Pathfinding, forge brand new path
63. Pathfinding, don't cross old paths
64. Networked, influenced by other players
65. Networked, influencing other players
66. Networked, collage of all player histories
67. Networked, data visualizations
68. Enemies, additional enemies
69. Enemies, large enemies
70. Enemies, enhanced artificial intelligence
71. Enemies, unexpected enemies
72. Collecting, coins
73. Collecting, powerups
74. Collecting, enemies
75. Collecting, paths
76. Collecting, statistics
77. Speed, fastest possible
78. Speed, slowest possible
79. Rhythm, player jump to the beat
80. Rhythm, auto jump to the beat
81. Rhythm, player walk to the beat
82. Rhythm, auto walk to the beat
83. Game Idioms, Mario as Pong
84. Game Idioms, Mario as Pac-Man
85. Game Idioms, Mario as Role Playing Game
86. Game Idioms, Mario as Text Adventure
87. Game Idioms, Mario as FPS
88. Zero's paradox
89. Reverse Playthrough
90. Multi-game, play multiple instances
91. Multi-game, multiple instances offset by a delay
92. Multi-game, play two games simultaneously
93. Multi-game, play other game only
94. Controller, disable run button
95. Controller, disable back button
96. Controller, constantly run forward
97. Controller, constantly jump
98. Playback All Previous Paths
99. Null



01:18:41 - More code and countries and dust and caverns and sand and processes...

01:18:45 - Another mortgage. How many paces east must you progress? 27? 28? 29?

01:18:50 - At first this was like a electricity but after 28 footsteps east, you're not sure.

01:18:54 - 29 paces east! You continue to descend.

01:18:58 - More mortgages and tunnels and electricity and algorithms and circuitry and stones...

01:18:61 - More stones and steps and caves and electricity and tunnels and processes...

01:18:65 - At first this was like a electricity but after 32 steps east, you're not sure.

01:18:69 - Oh god, that salted sense as you wander east.

01:19:29 - Another mortgage. How many footsteps east must you progress? 34? 35? 36?

01:19:33 - During ascending under the unconcious parser...

01:19:37 - You ascend alongside the deepening pebbles...

01:19:41 - Another process. How many footsteps east must you travel? 37? 38? 39?

01:20:00 - 38 paces east . . . You continue to travel.

01:20:04 - You descend through the unconcious caves...

01:20:08 - 40, 41, 42, 43, 44, 45, 46, 47, 48...

01:20:11 - The exhausted processes traveling underfoot as you climb...

Pat continued. We couldn't hear her in the cave. Karen was in the house, looking after the kids. Our kids were back at home. I'm not sure they knew about the cave. It was so dark. The wall occluded the woman. There was a crack but I couldn't fit. That's why she had to go alone. The plotter printed line after line. It was only later that I was able to make this game.

It Is Pitch Black

Dimensions variable

Unity game for Windows, Macintosh, and Linux

Currently in development, forthcoming 2015

Inspired by Will Crowther's inaugural text-based adventure game, *Colossal Cave Adventure* (1975), Nintendo's graphical action-adventure, *The Legend of Zelda* (1986), and Mark Z. Danielewski's transmedial novel, *House of Leaves* (2000), *It Is Pitch Black* is a "text-based action-adventure" game combining the text parsers of interactive fiction with the polygonal collision of 3D navigable space. *It Is Pitch Black* features a non-visual environment illuminated not by lamp, but by the quickly scrolling debugger log of recombinant poetry. The speed and scale of output is directly proportional to the speed of the computer running the game and, as such, indexes each of the game's states while representing the stream of consciousness of two women: Patricia Wilcox, an avid caver married to Will Crowther in the 1970s, and Karen Green, Will Navidson's long suffering partner in *House of Leaves*. In *It Is Pitch Black*, both Patricia and Karen's journey through the dark is narrated through the footnotes of "Will," the conflated author-figure.


```

else if (type == "WallNoun1")
  lexicon = ["progress", "process", "change", "time", "motion",
            "difference", "data", "relations", "exchange", "meaning"];

else if (type == "WallNoun2")
  lexicon = ["stones", "granite walls", "sedimentations", "mineralizations",
            "blockages", "stoppages", "impasses", "walls", "dead ends"];

else if (type == "WallAdjective")
  lexicon = ["invisible", "blind", "inky", "monolithic", "withdrawn",
            "ice cold", "unfamiliar", "coarse", "wet", "smooth"];

else if (type == "WallVerbPresent")
  lexicon = ["pushing", "pressing", "grinding", "halting", "stopping"];

else if (type == "WallVerbPast")
  lexicon = ["blocked", "trapped", "stuck", "stopped", "halted"];

// Step Lexicon

else if (type == "StepPhenom")
  lexicon = ["sound", "feeling", "sense", "sensation", "rhythm",
            "crunch", "crackle", "scent", "vision", "vibration",
            "tendency", "immersion", "image", "apprehension", "prehension"];

else if (type == "StepAdjective")
  lexicon = ["sharp", "uneasy", "anxious", "raw", "abstract",
            "noticable", "faint", "promising", "familiar", "sober",

else if (type == "StepObject")
  lexicon = ["pebble", "earth", "dust", "stone", "path",
            "gravel", "sand", "rock", "darkness", "tunnel",

            "code", "parser", "processes", "procedure", "algorithm",
            "text", "game", "computer", "circuitry", "electricity",

            "marriage", "family", "life", "future", "plan",
            "mortgage", "portfolio", "house", "country", "film",

            "step", "event", "action", "process", "procedure",
            "twist", "path", "cave", "cavern", "tunnel"];

else if (type == "StepObjects")
  lexicon = ["pebbles", "earth", "dust", "stones", "paths",
            "gravel", "sand", "rocks", "darkness", "tunnels",

            "code", "parser", "processes", "procedures", "algorithms",
            "texts", "games", "computers", "circuitry", "electricity",

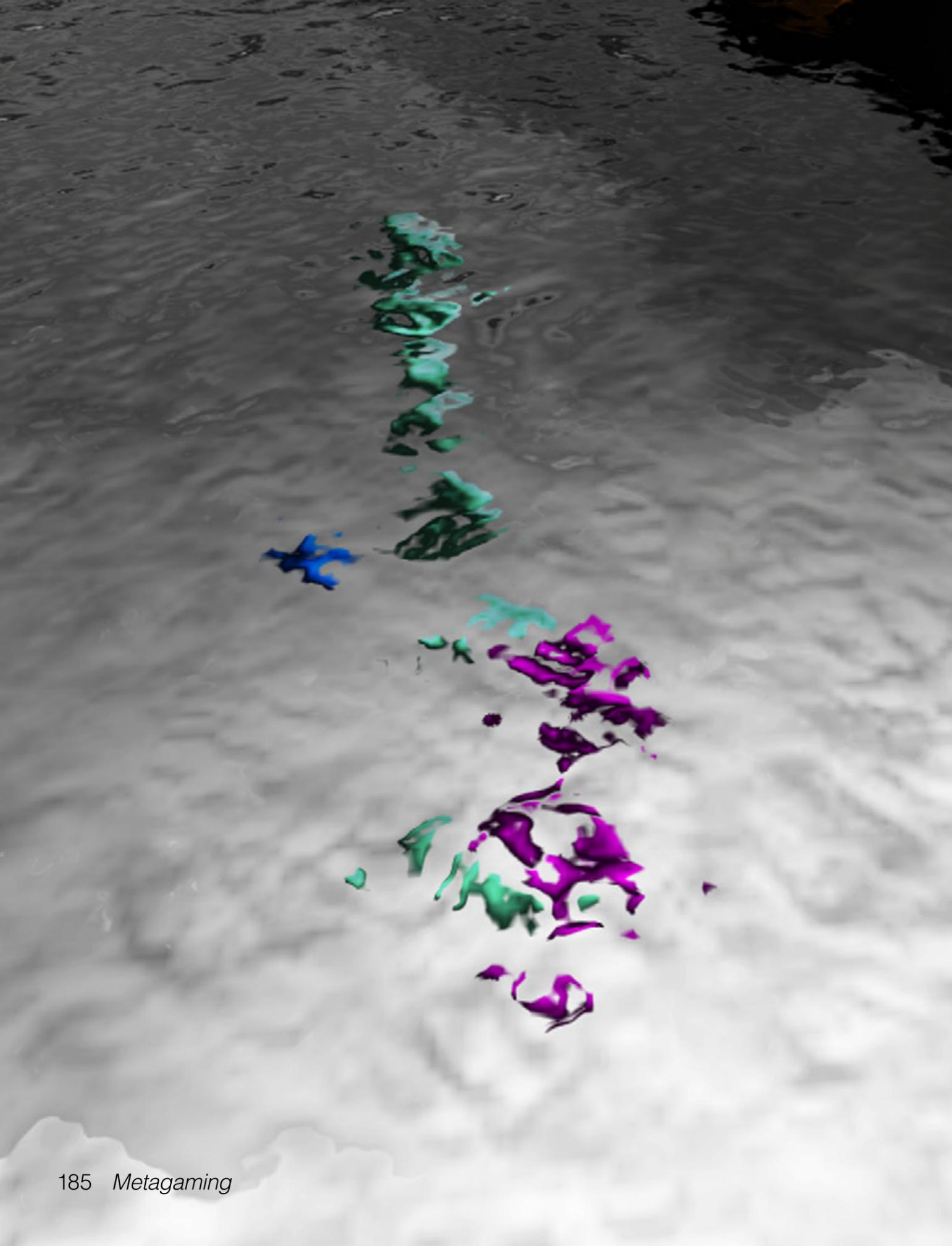
            "marriages", "families", "lives", "futures", "plans",
            "mortgages", "portfolios", "houses", "countries", "films",

            "steps", "events", "actions", "processes", "procedures",
            "twists", "paths", "caves", "caverns", "tunnels"];

else if (type == "StepSynonym")
  lexicon = ["step", "pace", "footstep"];

else if (type == "Step")
  grammar = [
    "That " + Word("StepAdjective") + " " + Word("StepPhenom") + ", the " + Word("StepPhenom") + " of " + Word("StepAdjective") + " " + Word("StepObjects") + " " + Word("StepPrepositionFoot") + " as you " + Word("StepVerb") + " another " + Word("StepSynonym") + " " + cardinalDir + ".",
    "Oh god, that " + Word("StepAdjective") + " " + Word("StepPhenom") + " as you " + Word("StepVerb") + " " + cardinalDir + ".",
    "It " + Word("StepVerbPast") + " like a " + Word("StepObject") + " but after " + tempPaceCount + " " + Word("StepSynonym") + " " + cardinalDir + ", you're not sure.",
    "More " + Word("StepObjects") + " and " + Word("StepObjects") + "...",
    "What was that " + Word("StepPhenom") + "? How many " + Word("StepSynonym") + " " + cardinalDir + " have you " + Word("StepVerb") + "ed? " + tempPaceCount + "?",
    "Another " + Word("StepObject") + Word("Punctuation") + " How many " + Word("StepSynonym") + " " + cardinalDir + " must you " + Word("StepVerb") + " " + tempPaceCount + "? " + (tempPaceCount+1) + "? " + (tempPaceCount+2) + "?",
    tempPaceCount + " " + Word("StepSynonym") + " " + cardinalDir + Word("Punctuation") + " You continue to " + Word("StepVerb") + " " + cardinalDir + " " + Word("StepSynonym") + " " + cardinalDir + ", you're not sure.",
    "At first this " + Word("StepVerbPast") + " like a " + Word("StepObject") + " but after " + tempPaceCount + " " + Word("StepSynonym") + " " + cardinalDir + ", you're not sure.",
    Word("StepPrepositionTime") + " " + Word("StepVerb") + "ing " + Word("StepPrepositionSpace") + " the " + Word("StepAdjective") + " " + Word("StepObjects") + "...",
    "You " + Word("StepVerb") + " " + Word("StepPrepositionSpace") + " the " + Word("StepAdjective") + " " + Word("StepObjects") + "...",
    "The " + Word("StepAdjective") + " " + Word("StepObjects") + " " + Word("StepVerb") + "ing " + Word("StepPrepositionFoot") + " as you " + Word("StepVerb") + "...",
    tempPaceCount + ", " + (tempPaceCount+1) + ", " + (tempPaceCount+2) + ", " + (tempPaceCount+3) + ", " + (tempPaceCount+4) + ", " + (tempPaceCount+5) + ", " + (tempPaceCount+6) + ", " + (tempPaceCount+7) + ", " + (tempPaceCount+8) + "...";
  ];

```



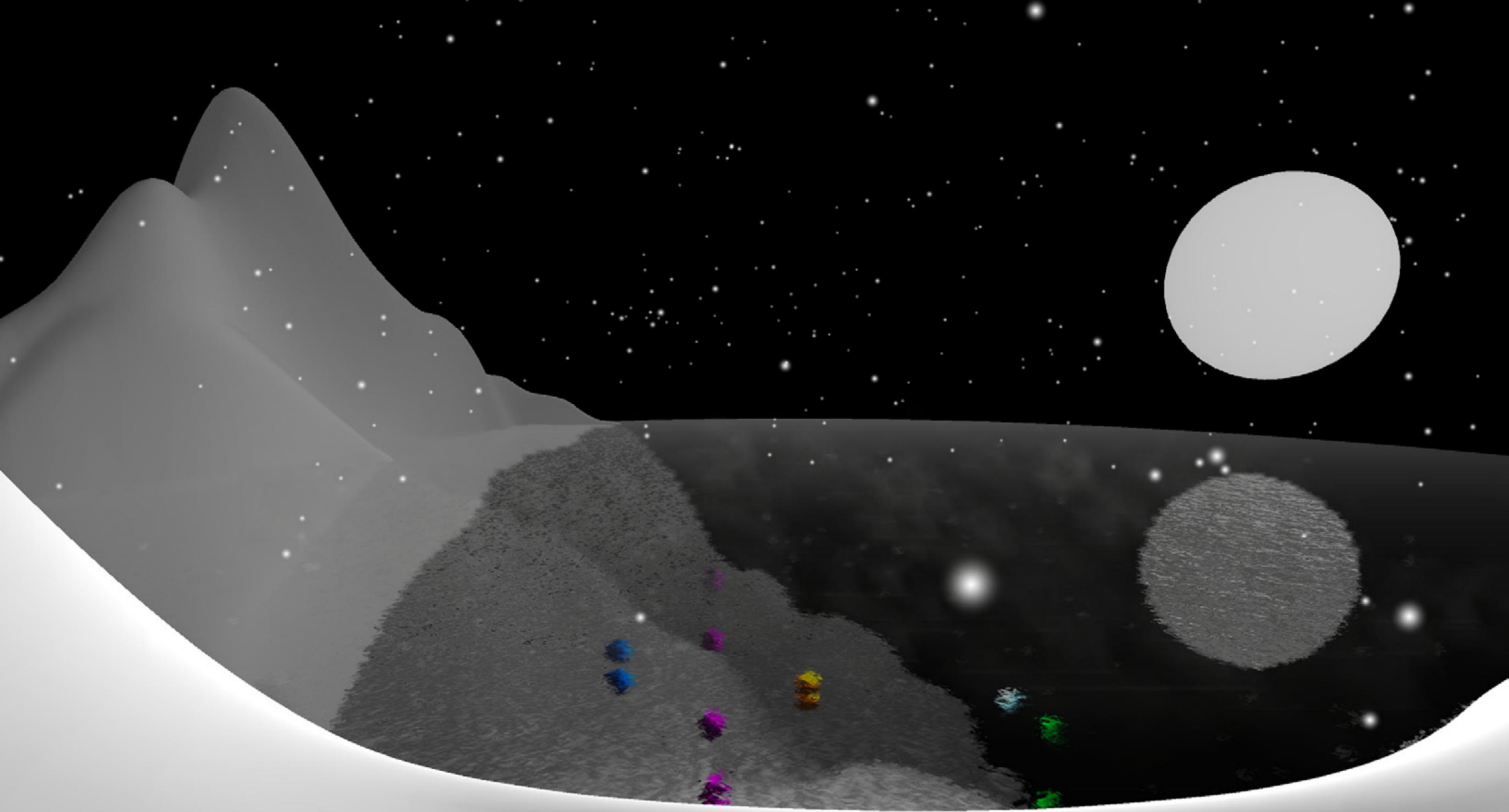
Tide Hunter

Dimensions variable

Unity game for Windows, Macintosh, and Linux

Currently in development, forthcoming 2015

Tide Hunter is a data visualization application designed to process statistical output from Bruno “Statsman” Carlucci’s *Dota 2* (2013) replay parser. To produce *Tide Hunter*, data was collected during “The Turn of the Tide,” a 17-second upset that has since been regarded as the most important play in the history of *Dota 2*. Within the visualization this information is repurposed to drive alternative representations of e-sports and dive beneath the spectacular surface of Valve’s software. Set within an aqueous landscape in which the eponymous Tidehunter’s abilities were famously turned against him in just 17 seconds, the game offers players a navigable interface for exploring the microtemporal operations that took place during the match between Natus Vincere and Invictus gaming at The International in 2012.





tilt/SHIFT
2014

SHIFT

tilt/SHIFT is an exhibition that renders the culture of selection visible by appropriating its aesthetic—from a giant shift key to tilt-shift photography, and from shifted and tilted gallery furniture to the shifts and tilts of arcade play.

Made with **Stephanie Boluk** and **Daniel Tankersley** during a ten day residency at the Dan and Gail Cannon Gallery of Art at Western Oregon University in **2014**.

SHIFT

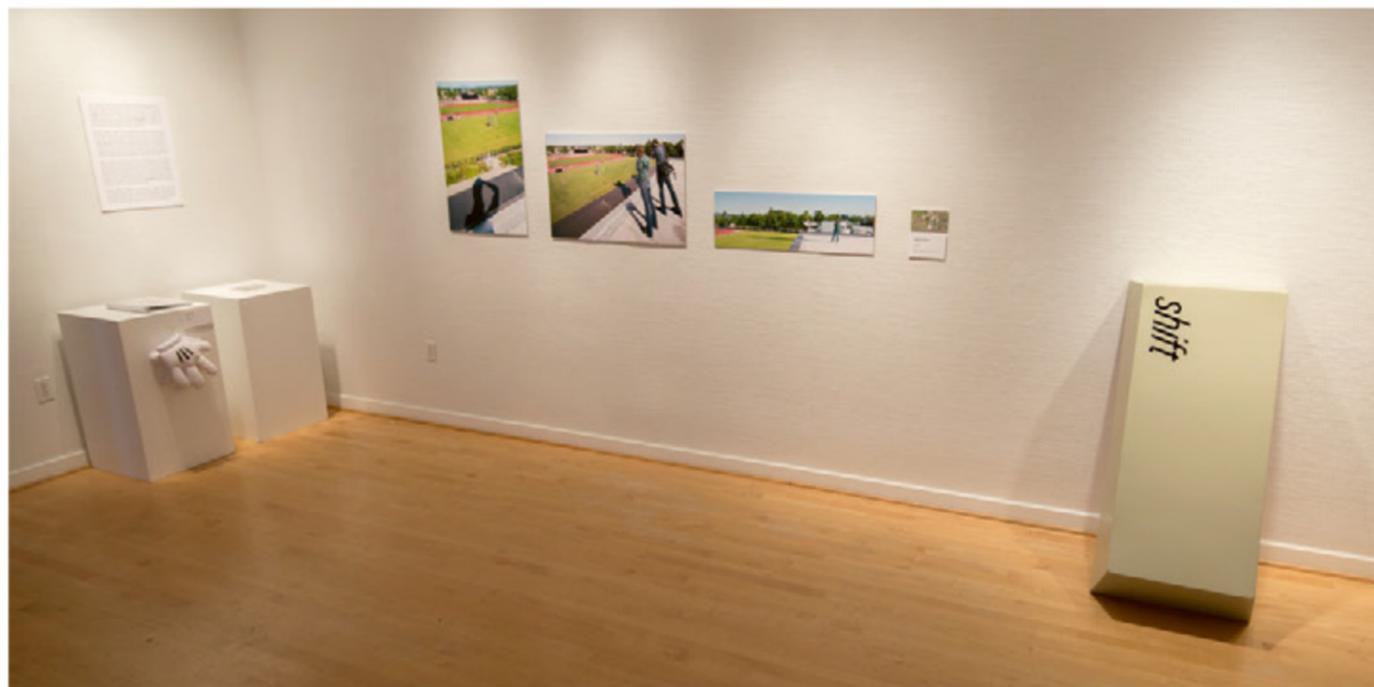
In the summer of 2014, the Cannon Gallery of Art invited me to undertake a collaborative residency with Stephanie Boluk, a scholar and media theorist from Pratt Institute, and Daniel Tankersley, an artist on faculty at Western Oregon University. From July 7 to 17, we engaged the gallery, the campus, and the state of Oregon to produce *tilt/SHIFT*, an exhibition of a dozen new artworks focusing on a network of photographic images, graphic user interfaces, media archeology, and site-specific art.

The term "tilt-shift" refers to a photographic technique in which the angle (tilt) and position (shift) of a lens are skewed in relation to the film or digital sensor. This can be used to produce a hyperselective focus, blurring all but a thin, sharp plane within an image—an effect that results in a miniaturized or toylike appearances. The same narrowing of visual attention is enacted by a “manicule,” the miniature, pointing hand that first appeared in medieval manuscripts and is commonly used to represent the mouse cursor in the graphic user interfaces of computer operating systems. Click, drag, tilt, shift: both tilt-shift photography and the manicule icon function according to an aesthetic of selection.

Paper or plastic? Coke or Pepsi? iPhone or Android? In the 21st century, selection expands from the conscious choice of individuals to a collective nonconscious—a cultural ideology structuring attention and desire. Upvote, like, heart, favorite: ubiquitous media platforms like Google and Facebook aggregate billions of individual selections into an invisible economy of clicks, flowing through The Dalles like the waters of the Columbia River. From a giant shift key to tilt-shift photography, and from shifted and tilted gallery furniture to the shifts and tilts of arcade play, *tilt/SHIFT* renders the culture of selection visible by appropriating its aesthetic.



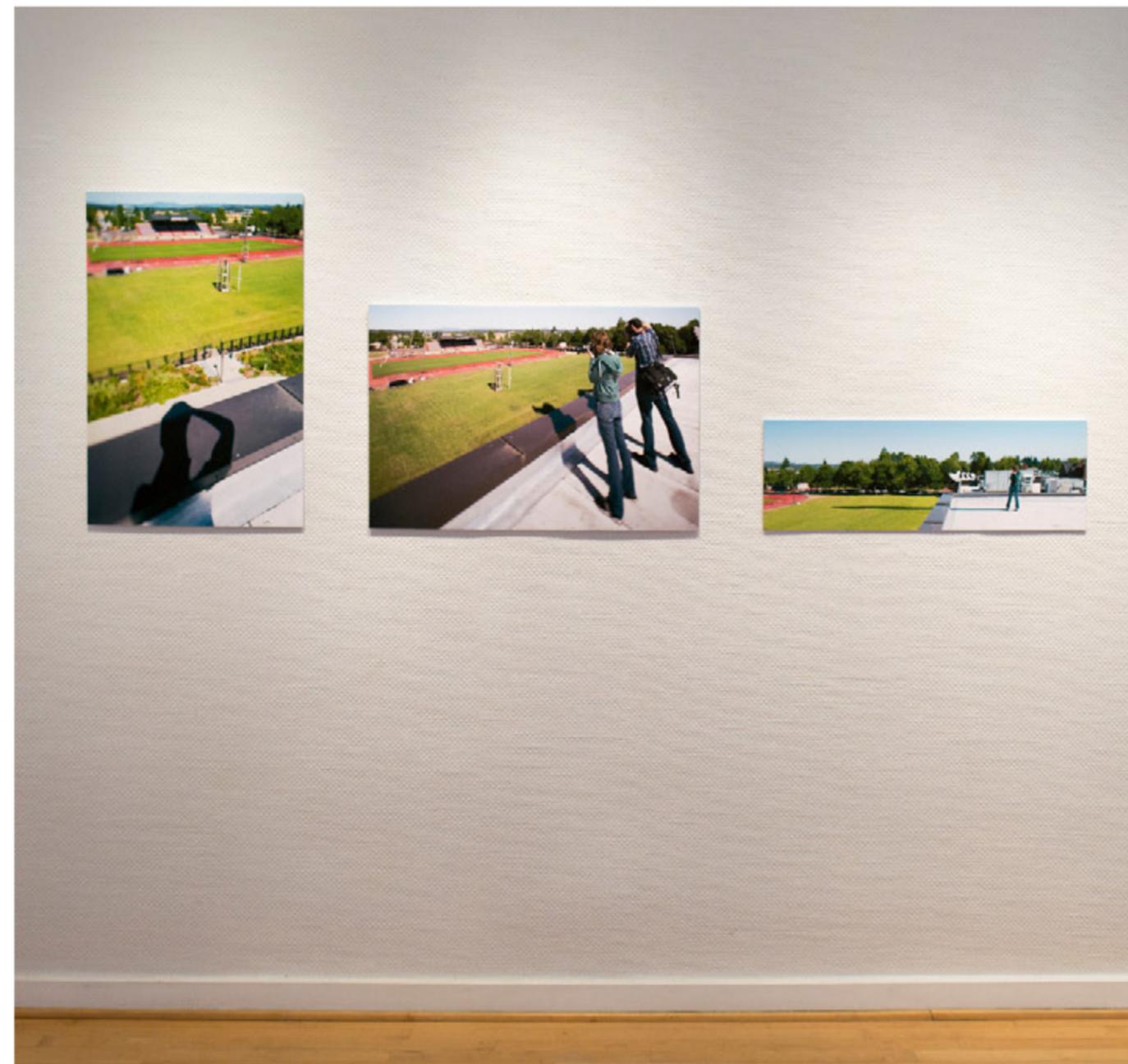




Read Me

Dimensions variable
 Mickey Mitts, binder, plinth, hook
 July 2014

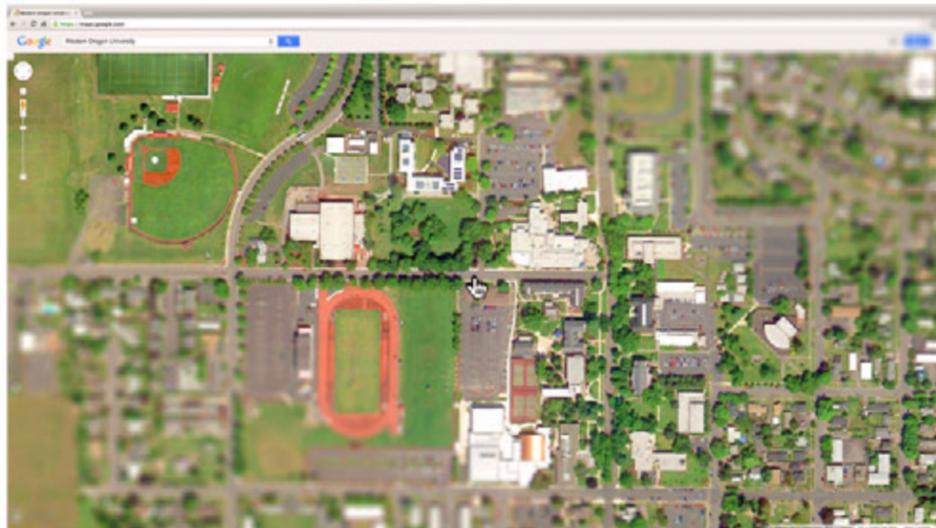
Please wear the gloves to inspect the book of tilted and shifted professional information.



Depth of Field

60 x 30 inches
 Inkjet prints
 July 2014

Triptych of tilt-shifted, rooftop photographs of Western Oregon University in Monmouth.





Tilted Shift

48 x 20 x 10 inches
Plywood, latex, zinc
July 2014

A giant shift key, built to scale and tilted against the wall.







This is Not a (Half) Pipe

10 x 8 x 5 feet

Skateboard, plywood wall divider

July 2014

Tilted and shifted away from the upright position, the Cannon Gallery's movable walls undergo a transformation to become sculptural objects in their own right. Referencing the classic caption floating beneath the photorealistic pipe in René Magritte's *The Treachery of Images* (1928-29), this (half) pipe plays with the "magic circle" of significance that both art galleries and skate parks produce. That is not a grinding rail, it's a park bench; that is not a (half) pipe, it's a piece of gallery furniture; and that is not a pipe, it's a painting of a pipe. From Magritte to Super Mario, the magic circle of art and games produce semiotic warp zones for conceptual experimentation, opening thresholds to new worlds or making useful links within familiar territory.



Michael Manicule

Dimensions variable

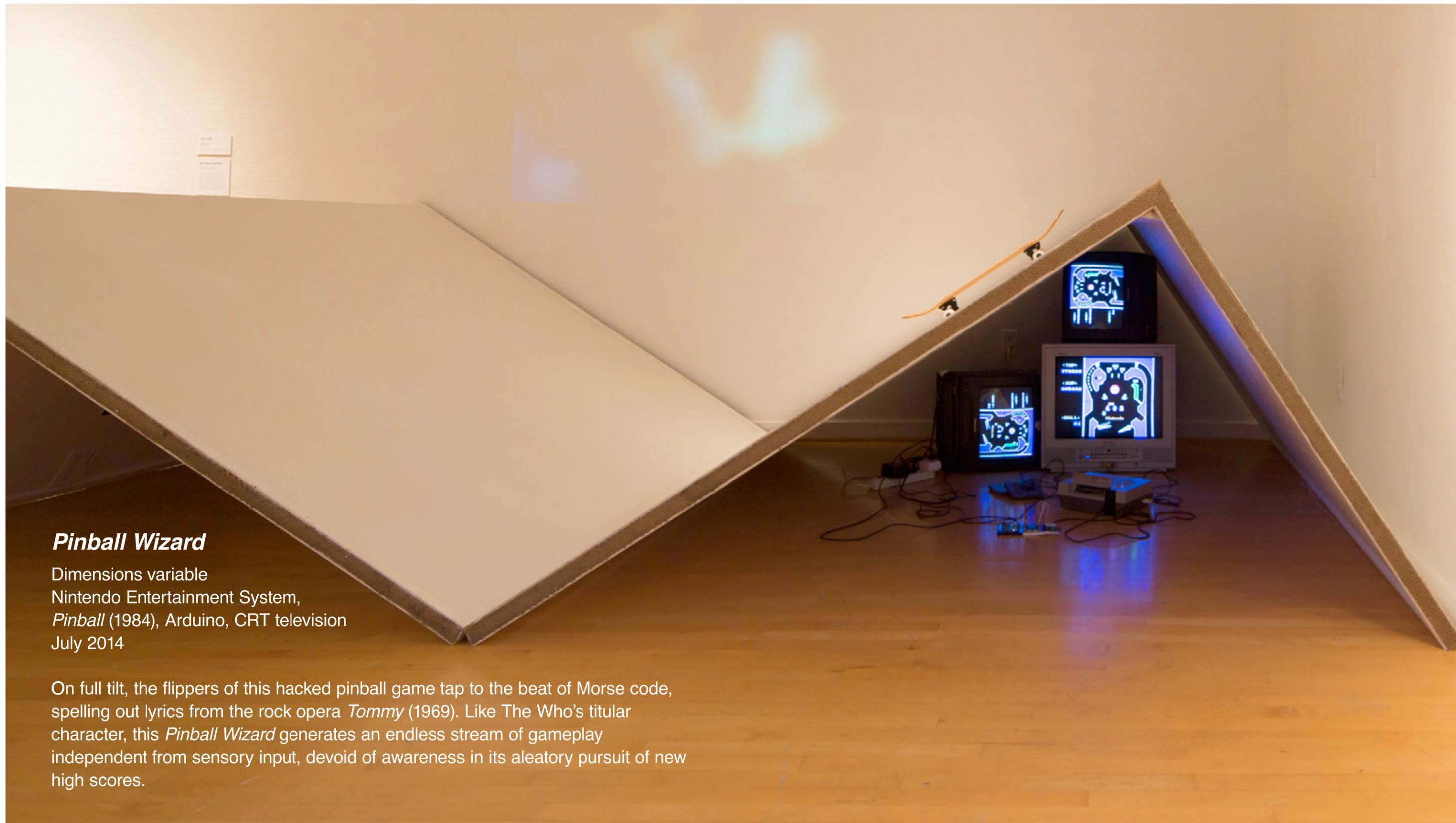
Single channel looping video, stereo sound

July 2014

On March 25, 1983, Michael Jackson made music history by performing the first moonwalk during a performance of “Billie Jean” on Motown 25: Yesterday, Today, Forever. During this performance, Jackson also donned a single, white, sequined glove for the first time. Both the moonwalk and the glove would become iconic, signature images within the pop singer’s repertoire. In this algorithmically edited video of Jackson’s performance, open source data from Evan Roth and Ben Engebret’s *White Glove Tracking* (2007), was used to zoom in on just the glove.

// 490 frames (~16.3 seconds) of data from *White Glove Tracking* (2007) by Evan Roth and Ben Engebretth

571,364,471,28,47; 572,372,468,38,59; 573,380,466,47,67; 574,391,463,50,72; 575,406,461,52,70; 576,424,458,52,70; 577,445,458,52,68; 578,464,458,53,75; 579,483,458,56,80; 580,498,456,57,85;
581,512,454,63,89; 582,519,449,69,91; 583,522,443,83,92; 584,521,433,96,96; 585,514,421,108,101; 586,504,407,112,110; 587,490,392,113,114; 588,476,378,117,122; 589,460,365,122,121;
590,446,351,127,118; 591,427,338,125,115; 592,409,327,121,116; 593,392,319,119,120; 594,382,313,119,118; 595,374,309,121,116; 596,370,307,124,114; 597,369,305,126,110;
598,370,304,126,107; 599,370,303,124,106; 600,371,302,122,107; 601,372,302,122,106; 602,375,301,121,104; 603,377,301,119,104; 604,379,300,119,102; 605,380,300,117,100;
606,382,300,118,100; 607,383,301,118,103; 608,383,302,117,103; 609,383,304,112,101; 610,384,304,109,99; 611,382,303,107,99; 612,380,302,105,101; 613,377,301,105,102; 614,376,302,106,102;
615,375,302,108,102; 616,374,303,106,104; 617,371,303,104,104; 618,367,304,103,104; 619,363,304,103,100; 620,362,305,106,98; 621,361,305,106,93; 622,360,305,107,91; 623,358,305,104,91;
624,356,305,104,94; 625,354,305,103,90; 626,353,306,104,88; 627,351,307,105,87; 628,350,307,107,90; 629,349,308,105,90; 630,347,309,104,90; 631,343,310,102,92; 632,341,311,103,94;
633,340,310,104,97; 634,344,311,105,95; 635,347,313,107,93; 636,352,317,109,91; 637,357,325,113,91; 638,363,339,116,92; 639,368,360,123,97; 640,376,381,124,99; 641,387,408,111,99;
642,400,432,89,94; 643,412,456,65,92; 644,0,0,0,0; 645,0,0,0,0; 646,0,0,0,0; 647,0,0,0,0; 648,0,0,0,0; 649,0,0,0,0; 650,0,0,0,0; 651,0,0,0,0; 652,0,0,0,0; 653,0,0,0,0; 654,0,0,0,0; 655,0,0,0,0;
656,0,0,0,0; 657,0,0,0,0; 658,0,0,0,0; 659,0,0,0,0; 660,0,0,0,0; 661,0,0,0,0; 662,0,0,0,0; 663,0,0,0,0; 664,0,0,0,0; 665,0,0,0,0; 666,0,0,0,0; 667,0,0,0,0; 668,0,0,0,0; 669,0,0,0,0; 670,0,0,0,0;
671,0,0,0,0; 672,0,0,0,0; 673,0,0,0,0; 674,0,0,0,0; 675,0,0,0,0; 676,0,0,0,0; 677,0,0,0,0; 678,0,0,0,0; 679,0,0,0,0; 680,0,0,0,0; 681,0,0,0,0; 682,0,0,0,0; 683,0,0,0,0; 684,0,0,0,0; 685,0,0,0,0;
686,0,0,0,0; 687,0,0,0,0; 688,616,480,69,100; 689,609,465,67,99; 690,607,456,68,95; 691,608,454,71,91; 692,610,452,72,86; 693,611,451,73,82; 694,612,451,77,82; 695,612,451,76,80;
696,612,450,77,80; 697,611,448,68,74; 698,611,448,68,74; 699,610,449,66,72; 700,610,451,69,74; 701,610,452,68,76; 702,610,453,66,76; 703,611,454,64,76; 704,612,455,66,77; 705,611,455,66,79;
706,611,455,65,79; 707,608,454,60,77; 708,609,455,59,72; 709,608,455,59,73; 710,609,456,59,70; 711,608,455,60,73; 712,609,455,62,78; 713,609,456,62,79; 714,609,455,62,78; 715,608,457,64,77;
716,608,456,63,76; 717,608,456,64,77; 718,607,456,62,75; 719,607,458,63,78; 720,607,458,62,76; 721,607,458,59,75; 722,607,456,59,74; 723,609,458,62,78; 724,610,460,66,78; 725,612,461,69,82;
726,611,459,67,82; 727,610,457,64,80; 728,609,457,61,76; 729,609,457,58,74; 730,609,457,61,80; 731,609,457,60,77; 732,609,456,61,76; 733,610,457,58,74; 734,609,457,56,72; 735,609,459,53,75;
736,607,461,50,77; 737,604,463,50,84; 738,597,465,48,91; 739,589,467,53,92; 740,580,470,47,94; 741,575,473,31,92; 742,0,0,0,0; 743,0,0,0,0; 744,0,0,0,0; 745,0,0,0,0; 746,0,0,0,0; 747,0,0,0,0;
748,360,287,20,17; 749,358,286,20,19; 750,357,286,21,22; 751,355,286,21,21; 752,354,286,20,20; 753,352,286,20,18; 754,352,286,20,18; 755,351,285,21,17; 756,350,285,20,17;
757,349,284,21,17; 758,348,283,22,19; 759,347,283,23,19; 760,346,282,23,19; 761,345,282,24,20; 762,344,282,24,20; 763,342,283,24,20; 764,341,284,23,19; 765,340,285,25,21;
766,340,286,25,21; 767,340,288,25,22; 768,340,289,22,19; 769,340,291,20,18; 770,341,292,23,17; 771,342,293,23,17; 772,343,293,25,21; 773,345,293,22,21; 774,348,295,24,21;
775,350,295,24,22; 776,351,294,27,26; 777,352,291,26,27; 778,354,298,25,23; 779,358,314,22,17; 780,357,296,21,19; 781,356,285,23,22; 782,357,283,23,22; 783,358,282,23,22;
784,360,284,21,19; 785,361,283,20,18; 786,361,281,19,18; 787,362,277,18,19; 788,364,275,20,20; 789,367,274,20,20; 790,370,272,20,20; 791,373,270,20,22; 792,377,268,21,24;
793,382,267,23,24; 794,387,267,23,25; 795,392,267,20,24; 796,395,268,17,24; 797,397,269,17,22; 798,398,270,18,21; 799,397,271,19,22; 800,395,271,20,23; 801,392,270,21,24;
802,388,269,20,24; 803,384,268,18,22; 804,379,267,18,22; 805,375,266,17,19; 806,370,266,18,19; 807,359,277,17,18; 808,340,297,20,19; 809,0,0,0,0; 810,0,0,0,0; 811,0,0,0,0;
812,346,297,25,21; 813,342,293,21,19; 814,341,293,21,22; 815,341,292,21,23; 816,344,297,20,22; 817,344,297,20,20; 818,344,299,23,23; 819,344,303,30,30; 820,0,0,0,0; 821,0,0,0,0;
822,0,0,0,0; 823,0,0,0,0; 824,0,0,0,0; 825,0,0,0,0; 826,0,0,0,0; 827,0,0,0,0; 828,0,0,0,0; 829,0,0,0,0; 830,0,0,0,0; 831,0,0,0,0; 832,0,0,0,0; 833,0,0,0,0; 834,0,0,0,0; 835,0,0,0,0; 836,0,0,0,0;
837,0,0,0,0; 838,0,0,0,0; 839,271,303,30,25; 840,270,306,32,28; 841,269,309,33,29; 842,268,310,33,29; 843,268,311,33,27; 844,267,310,33,28; 845,266,310,31,27; 846,265,308,29,29;
847,264,308,30,27; 848,263,307,32,28; 849,263,307,32,28; 850,264,307,31,30; 851,264,307,30,30; 852,264,307,30,30; 853,263,307,29,30; 854,264,308,29,28; 855,264,308,29,27;
856,264,308,29,26; 857,263,308,29,27; 858,263,307,28,28; 859,263,308,28,28; 860,262,308,29,28; 861,262,308,29,28; 862,261,308,28,28; 863,261,308,26,28; 864,261,308,27,28;
865,261,308,27,29; 866,261,307,29,30; 867,260,307,29,29; 868,260,307,29,28; 869,260,307,29,28; 870,260,308,29,28; 871,260,308,28,29; 872,260,308,29,30; 873,260,308,29,29;
874,261,308,30,28; 875,261,308,30,28; 876,261,308,29,28; 877,261,308,29,27; 878,261,308,29,26; 879,261,308,31,29; 880,261,308,32,32; 881,260,308,32,31; 882,260,308,30,30;
883,261,308,29,28; 884,262,308,29,28; 885,262,308,30,28; 886,261,309,29,27; 887,261,308,28,27; 888,261,308,28,28; 889,261,308,28,29; 890,261,308,29,30; 891,261,308,29,29;
892,260,308,30,29; 893,261,308,29,29; 894,261,308,28,28; 895,262,308,27,28; 896,262,308,28,28; 897,261,309,28,28; 898,262,309,29,28; 899,261,309,28,28; 900,262,309,30,28;
901,261,309,30,27; 902,261,308,30,28; 903,261,308,29,28; 904,261,308,29,29; 905,261,309,29,29; 906,261,308,30,30; 907,261,308,31,31; 908,261,308,31,31; 909,261,308,29,30;
910,261,308,28,29; 911,261,308,27,29; 912,261,307,28,28; 913,261,307,27,26; 914,261,307,28,27; 915,261,307,29,29; 916,262,307,30,31; 917,262,307,30,30; 918,262,307,29,28;
919,261,307,28,30; 920,0,0,0,0; 921,0,0,0,0; 922,0,0,0,0; 923,0,0,0,0; 924,0,0,0,0; 925,0,0,0,0; 926,266,309,25,24; 927,268,308,27,22; 928,269,307,27,20; 929,0,0,0,0; 930,0,0,0,0;
931,0,0,0,0; 932,280,296,24,18; 933,281,294,30,30; 934,0,0,0,0; 935,0,0,0,0; 936,0,0,0,0; 937,0,0,0,0; 938,0,0,0,0; 939,0,0,0,0; 940,0,0,0,0; 941,0,0,0,0; 942,0,0,0,0; 943,0,0,0,0;
944,334,270,36,36; 945,335,268,41,40; 946,334,265,44,39; 947,333,260,43,36; 948,330,257,44,32; 949,327,255,43,29; 950,324,255,44,28; 951,322,254,44,28; 952,320,252,43,27;
953,319,250,42,26; 954,320,247,38,23; 955,320,243,37,23; 956,320,241,35,23; 957,319,239,36,24; 958,318,238,34,21; 959,317,236,38,20; 960,317,234,42,22; 961,319,231,47,26;
962,320,227,46,29; 963,321,224,45,29; 964,322,221,40,27; 965,322,220,40,23; 966,323,217,38,22; 967,323,216,38,21; 968,325,213,35,24; 969,327,211,35,22; 970,329,208,34,24;
971,331,205,34,25; 972,333,203,35,26; 973,334,202,36,24; 974,335,202,36,22; 975,336,204,35,21; 976,337,207,32,20; 977,338,208,31,23; 978,339,209,28,22; 979,340,207,29,23;
980,340,206,28,23; 981,341,202,29,24; 982,341,198,29,24; 983,342,193,30,20; 984,0,0,0,0; 985,0,0,0,0; 986,0,0,0,0; 987,0,0,0,0; 988,0,0,0,0; 989,0,0,0,0; 990,0,0,0,0; 991,0,0,0,0;
992,0,0,0,0; 993,0,0,0,0; 994,0,0,0,0; 995,0,0,0,0; 996,0,0,0,0; 997,0,0,0,0; 998,0,0,0,0; 999,0,0,0,0; 1000,0,0,0,0; 1001,0,0,0,0; 1002,0,0,0,0; 1003,0,0,0,0; 1004,0,0,0,0; 1005,0,0,0,0;
1006,0,0,0,0; 1007,0,0,0,0; 1008,0,0,0,0; 1009,0,0,0,0; 1010,0,0,0,0; 1011,0,0,0,0; 1012,0,0,0,0; 1013,0,0,0,0; 1014,0,0,0,0; 1015,0,0,0,0; 1016,0,0,0,0; 1017,0,0,0,0; 1018,0,0,0,0; 1019,0,0,0,0;
1020,0,0,0,0; 1021,0,0,0,0; 1022,0,0,0,0; 1023,0,0,0,0; 1024,0,0,0,0; 1025,0,0,0,0; 1026,331,173,49,40; 1027,333,170,44,30; 1028,333,171,41,22; 1029,333,173,42,19; 1030,333,173,43,17;
1031,334,172,44,20; 1032,335,172,45,24; 1033,0,0,0,0; 1034,0,0,0,0; 1035,0,0,0,0; 1036,0,0,0,0; 1037,0,0,0,0; 1038,0,0,0,0; 1039,0,0,0,0; 1040,0,0,0,0; 1041,0,0,0,0; 1042,0,0,0,0; 1043,0,0,0,0;
1044,0,0,0,0; 1045,0,0,0,0; 1046,0,0,0,0; 1047,0,0,0,0; 1048,0,0,0,0; 1049,0,0,0,0; 1050,0,0,0,0; 1051,0,0,0,0; 1052,0,0,0,0; 1053,0,0,0,0; 1054,0,0,0,0; 1055,0,0,0,0; 1056,0,0,0,0;
1057,0,0,0,0; 1058,0,0,0,0; 1059,0,0,0,0; 1060,0,0,0,0; 1061,0,0,0,0;



Pinball Wizard

Dimensions variable
Nintendo Entertainment System,
Pinball (1984), Arduino, CRT television
July 2014

On full tilt, the flippers of this hacked pinball game tap to the beat of Morse code, spelling out lyrics from the rock opera *Tommy* (1969). Like The Who's titular character, this *Pinball Wizard* generates an endless stream of gameplay independent from sensory input, devoid of awareness in its aleatory pursuit of new high scores.

```

// Initialize variables
int LEFT = 13; int RIGHT = 12; int START = 11; int time = 120;
void setup() { pinMode(LEFT, OUTPUT); pinMode(RIGHT, OUTPUT); pinMode(START, OUTPUT); Serial.begin(9600); }

// Declare lyrics to "Pinball Wizard" by The Who
char lyrics[1076] =
"EVER SINCE I WAS A YOUNG BOY.IVE PLAYED THE SILVER BALL.FROM SOHO DOWN TO BRIGHTON.I MUST HAVE PLAYED THEM ALL.BUT I AINT SEEN NOTHI
NG LIKE HIM.IN ANY AMUSEMENT HALL.THAT DEAF DUMB AND BLIND KID.SURE PLAYS A MEAN PIN BALL.HE STANDS LIKE A STATUE.BECOMES PART OF THE
MACHINE.FEELING ALL THE BUMPERS.ALWAYS PLAYING CLEAN.HE PLAYS BY INTUITION.THE DIGIT COUNTERS FALL.THAT DEAF DUMB AND BLIND KID.SURE PLAYS
A MEAN PIN BALL.HES A PIN BALL WIZARD.THERE HAS GOT TO BE A TWIST.A PIN BALL WIZARD.SGOT SUCH A SUPPLE WRIST.HOW DO YOU THINK HE DO
ES IT.I DONT KNOW.WHAT MAKES HIM SO GOOD.HE AINT GOT NO DISTRACTIONS.CANT HEAR THOSE BUZZERS AND BELLS.DONT SEE LIGHTS A FLASHIN.PLAYS B
Y SENSE OF SMELL.ALWAYS HAS A REPLAY.N NEVER TILTS AT ALL.THAT DEAF DUMB AND BLIND KID.SURE PLAYS A MEAN PIN BALL.I THOUGHT I WAS.THE
BALLY TABLE KING.BUT I JUST HANDED.MY PIN BALL CROWN TO HIM.EVEN ON MY FAVORITE TABLE.HE CAN BEAT MY BEST.HIS DISCIPLES LEAD HIM IN.AN
D HE JUST DOES THE REST.HES GOT CRAZY FLIPPER FINGERS.NEVER SEEN HIM FALL.THAT DEAF DUMB AND BLIND KIND.SURE PLAYS A MEAN PIN BALL.";

// Parse lyrics; call letter
void loop() {
  for (int i=0; i < 1075; i++) {
    if (lyrics[i] == 'A') { A(); }
    else if (lyrics[i] == 'B') { B(); }
    else if (lyrics[i] == 'C') { C(); }
    else if (lyrics[i] == 'D') { D(); }
    else if (lyrics[i] == 'E') { E(); }
    else if (lyrics[i] == 'F') { FF(); }
    else if (lyrics[i] == 'G') { G(); }
    else if (lyrics[i] == 'H') { H(); }
    else if (lyrics[i] == 'I') { I(); }
    else if (lyrics[i] == 'J') { J(); }
    else if (lyrics[i] == 'K') { K(); }
    else if (lyrics[i] == 'L') { L(); }
    else if (lyrics[i] == 'M') { M(); }
    else if (lyrics[i] == 'N') { N(); }
    else if (lyrics[i] == 'O') { O(); }
    else if (lyrics[i] == 'P') { P(); }
    else if (lyrics[i] == 'Q') { Q(); }
    else if (lyrics[i] == 'R') { R(); }
    else if (lyrics[i] == 'S') { S(); }
    else if (lyrics[i] == 'T') { T(); }
    else if (lyrics[i] == 'U') { U(); }
    else if (lyrics[i] == 'V') { V(); }
    else if (lyrics[i] == 'W') { W(); }
    else if (lyrics[i] == 'X') { X(); }
    else if (lyrics[i] == 'Y') { Y(); }
    else if (lyrics[i] == 'Z') { Z(); }
    else if (lyrics[i] == ' ') { space(); }
    else if (lyrics[i] == '.') { line(); }
  }
}

// Parse letter; call code
void A () { Serial.print('A'); dot(); dash(); wait(); }
void B () { Serial.print('B'); dash(); dot(); dot(); dot(); wait(); }
void C () { Serial.print('C'); dash(); dot(); dash(); dot(); wait(); }
void D () { Serial.print('D'); dash(); dot(); dot(); wait(); }
void E () { Serial.print('E'); dot(); wait(); }
void FF () { Serial.print('F'); dot(); dot(); dash(); dot(); wait(); }
void G () { Serial.print('G'); dash(); dash(); dot(); wait(); }
void H () { Serial.print('H'); dot(); dot(); dot(); dot(); wait(); }
void I () { Serial.print('I'); dot(); dot(); wait(); }
void J () { Serial.print('J'); dot(); dash(); dash(); dash(); wait(); }
void K () { Serial.print('K'); dash(); dot(); dash(); wait(); }
void L () { Serial.print('L'); dot(); dash(); dot(); dot(); wait(); }
void M () { Serial.print('M'); dash(); dash(); wait(); }
void N () { Serial.print('N'); dash(); dot(); wait(); }
void O () { Serial.print('O'); dash(); dash(); dash(); wait(); }
void P () { Serial.print('P'); dot(); dash(); dash(); dot(); wait(); }
void Q () { Serial.print('Q'); dash(); dash(); dot(); dash(); wait(); }
void R () { Serial.print('R'); dot(); dash(); dot(); wait(); }
void S () { Serial.print('S'); dot(); dot(); dot(); wait(); }
void T () { Serial.print("T"); dash(); wait(); }
void U () { Serial.print('U'); dot(); dot(); dash(); wait(); }
void V () { Serial.print('V'); dot(); dot(); dot(); dash(); wait(); }
void W () { Serial.print('W'); dot(); dash(); dash(); wait(); }
void X () { Serial.print('X'); dash(); dot(); dot(); dash(); wait(); }
void Y () { Serial.print('Y'); dash(); dot(); dash(); dash(); wait(); }
void Z () { Serial.print('Z'); dash(); dash(); dot(); dot(); wait(); }

// Parse code; output to NES
void dot () {
  digitalWrite(RIGHT, HIGH);
  delay (time);
  digitalWrite(RIGHT, LOW);
  delay (time); }

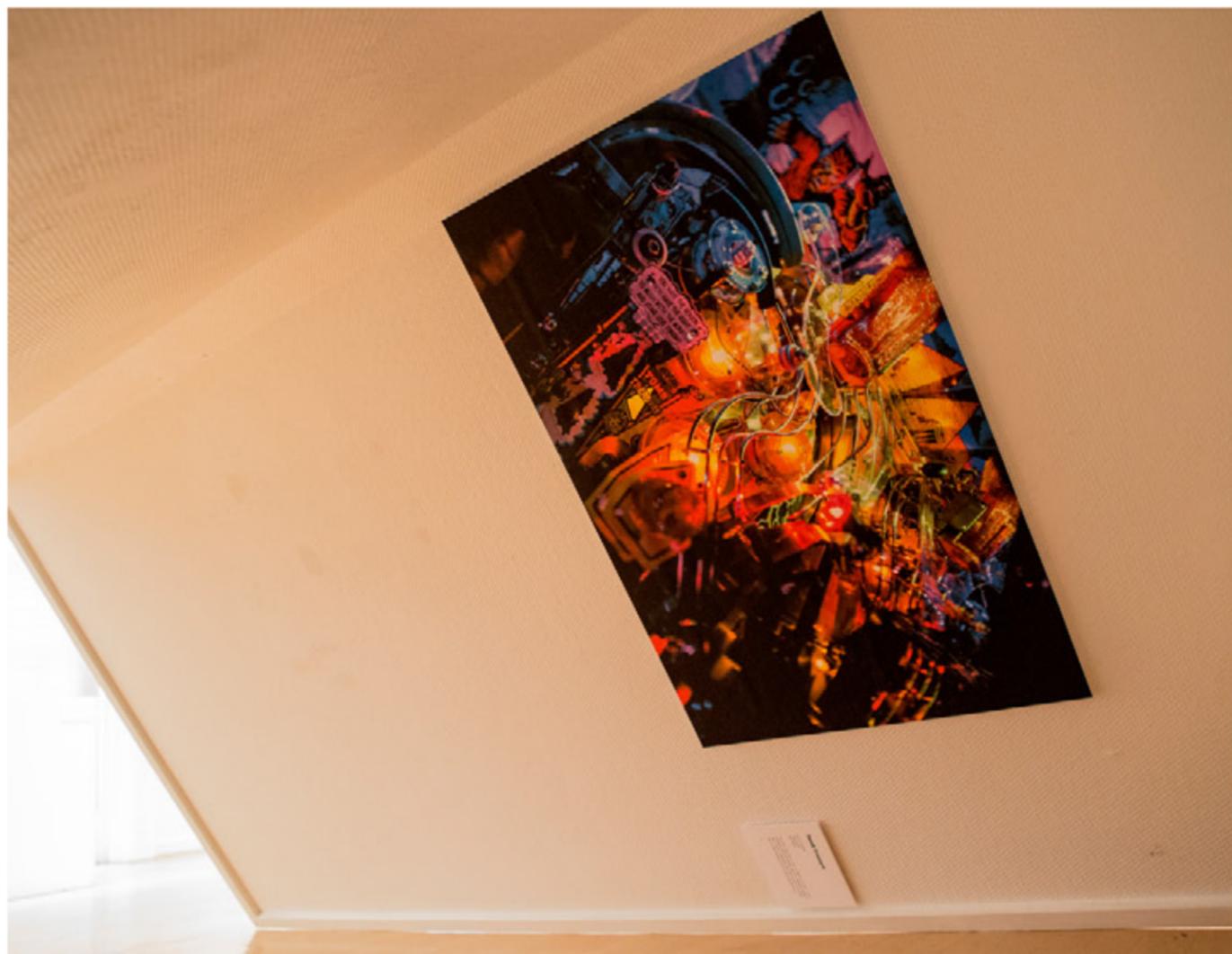
void dash () {
  digitalWrite(LEFT, HIGH);
  delay (time*3);
  digitalWrite(LEFT, LOW);
  delay (time); }

void line () {
  Serial.println();
  digitalWrite(START, HIGH);
  delay(time*3);
  digitalWrite(START, LOW);
  delay(time*3);
  digitalWrite(START, HIGH);
  delay(time*3);
  digitalWrite(START, LOW);
  delay(time); }

void space () {
  Serial.print(" ");
  delay(time*6); }

void wait () {
  delay(time*2); }

```



Tomb Treasure

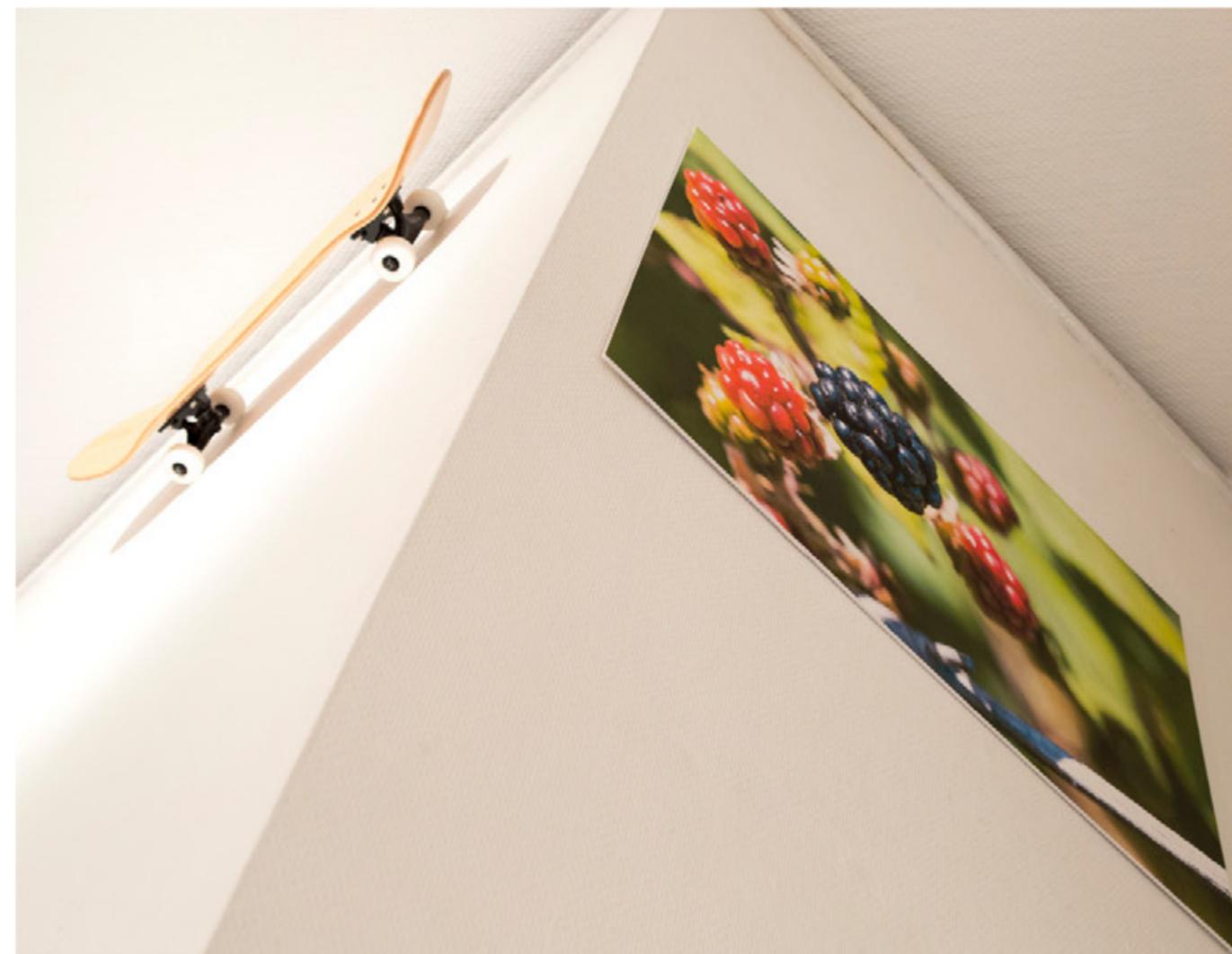
32 x 21 inches

Inkjet print

July 2014

YOU ARE LYING IN A CAVE. A MAZE OF TWISTY LITTLE PASSAGES STRETCHES BEFORE YOU, ALL DIFFERENT. NEARBY ARE A FOREST, FARMLAND, AND VAST FIELDS OF VOLCANIC ASH. A LARGE STREAM OF DATA FLOWS AROUND YOU.

>>



Media Ecology #GoogleBerries

32 x 21 inches

Inkjet print

July 2014

Blackberries grow outside the Google Data Center at The Dalles, enjoying the currents of the Columbia River while Google sucks the juice from nearby hydropower and the neuropower of the billions of clicks and queries. The sweat of users' brows precipitates into the data cloud that drives Google's emergent ecology. Despite community expectations, the company is said to employ only about 150 people in The Dalles. The windowless building built by human hands is not meant for human occupants.



Natural Power

108 x 36 inches

Inkjet print

July 2014

This panoramic view depicts the Google server farm located next to a power station at The Dalles, an ancient and storied nexus for communication among people. The character and composition of the Columbia River has transformed many times in major ways. With the arrival of Google to its bank, the river reflects once more a shift in human activity, energy, and presumption. Camouflaged against the rolling hills of the gorge, the Google server farm joins the viewscape with ground, river and sky nearly seamlessly. The server farm building that has sprouted up and slowly expanded for less than a decade visually blends with basalt flows from fifteen million years ago. Beige concrete and a blue stripe match ambient colors as if Google had always been there, a natural structure within the volcanic and watery terrain.



Server Farm #GoogleBroccs

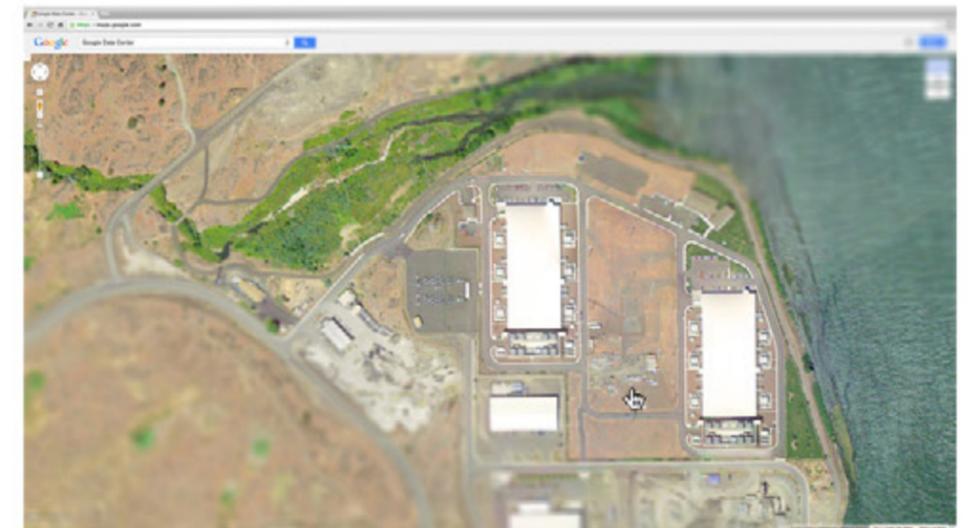
18 x 30 inches

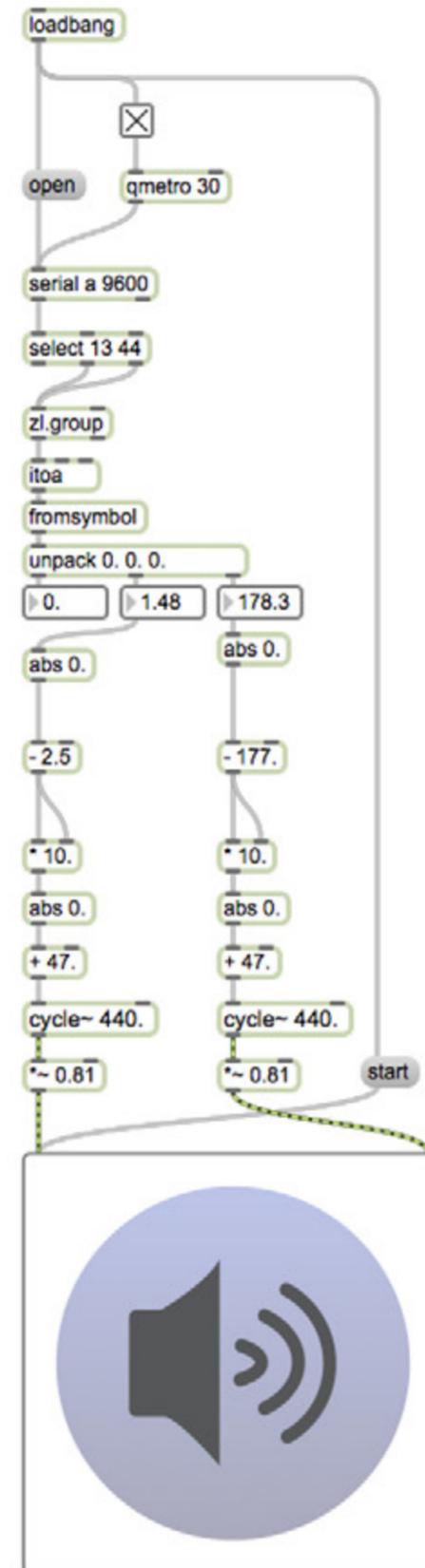
inkjet print

July 2014

Broccoli flourishes in OSU's "Imagination Garden" directly outside Google's windowless building that continuously farms the attention of millions of users. The servers are the material substrate of the data cloud. A product of Google's collection of private information (data captured, stored, and processed at The Dalles), the cloud is a prime example of what Mark Hansen calls "atmospheric media"--ubiquitous and embedded media acting to ideologically structure everyday experience. Meanwhile, on the public nature trail around the data center and from the perspective of the garden, the corporation projects an appearance inviting and generous, nourishing and terrifying, imagic and kinetic, ephemeral and secretive, materially propertied and panoptic.







Tilt Me

18 x 31 x 18 inches
 Tilt sensor, Arduino, Mac Mini,
 Max/MSP, speakers, stereo sound
 July 2014

This responsive plinth emits sine waves at frequencies correlating to the degree tilted. Please tilt the plinth.



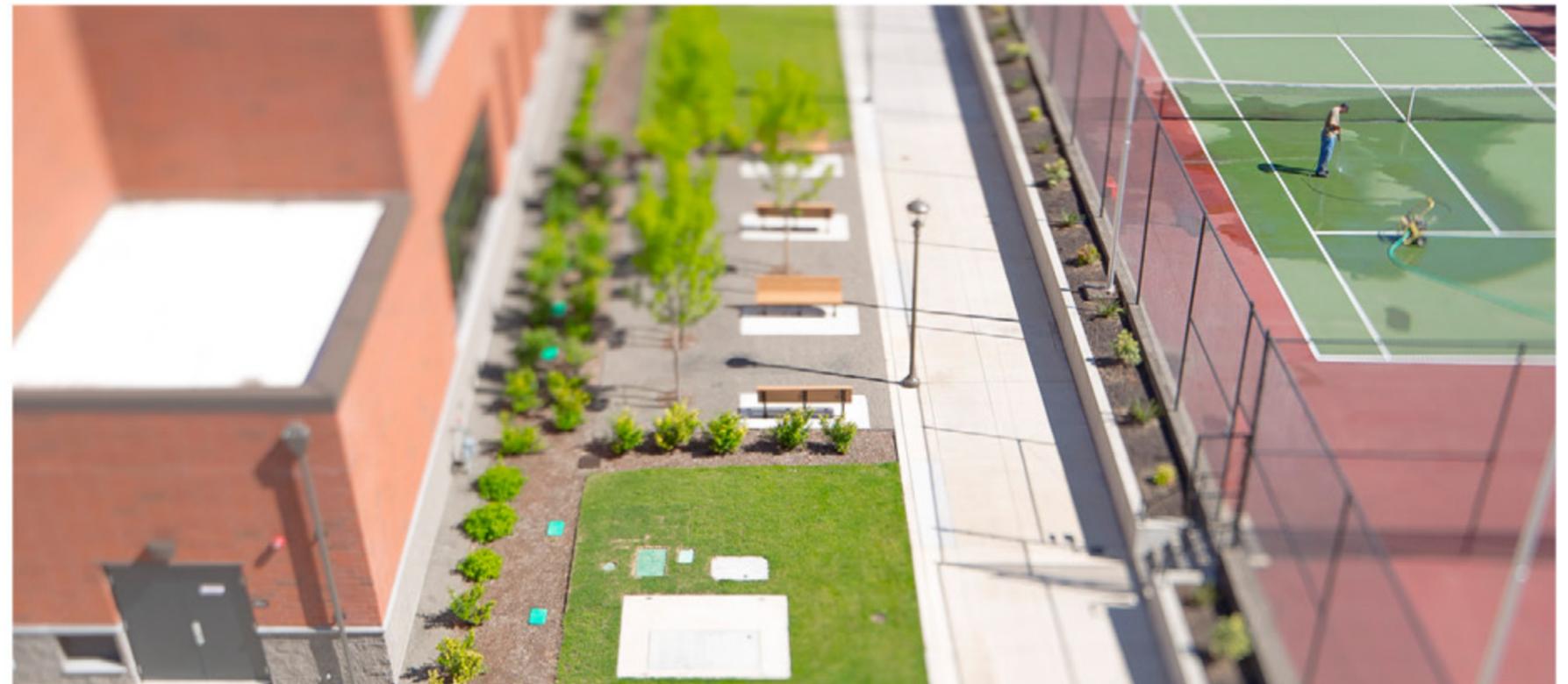
Campus

31 x 32 inches

Inkjet prints

July 2014

Diptych of tilt-shifted photographs from Google Data Center in The Dalles and Western Oregon University in Monmouth. Both corporate and university campuses require a great deal of infrastructure and maintenance. Workers depicted in these photographs labor to enable services: serving a ball for a game of tennis or serving Internet traffic. Whereas the professionals of Western Oregon University's Physical Plant keep working while students are on break, Google transports their construction teams via yellow school buses—a strange inversion of leisure and labor on two very different campuses. Increasingly, tech companies act to shift the character of the workplace away from an office toward an autonomous campus providing food, intellectual resources, recreation, and relatively little reason for employees to leave work.





Paint Me

18 x 31 x 18 inches

CRT television, Super Nintendo Entertainment System, *Mario Paint* (1992)

July 2014

Nintendo's *Mario Paint*, complete with mouse and mousepad, was released for the Super Nintendo Entertainment System in 1992. *Mario Paint*'s title screen is designed to teach the user how to control the mouse, a technology quickly emerging at the time thanks to personal computers like the Macintosh. Once the mouse is mastered, the user can set to work painting images, making music, and playing minigames. Well before the Mickey manicule was adopted within the Macintosh's graphic user interface, Mario's white, darted glove first appeared as a cursor icon in *Mario Paint*. Keeping with Japan's post-war practice of incorporating Disney's aesthetic into its animation, Mario's character design follows that of Mickey Mouse. From the longer history of vaudeville and minstrel shows to funny animal cartoons and Disney's mouse to Japanese videogames starring Super Mario, the long history of the white glove continues in contemporary computer operating systems like Macintosh OSX.

Click Me

18 x 31 x 18 inches

Apple Macintosh SE, *Hypercard 2.0* (1990)

July 2014

In 1984, Apple released the Macintosh, the first personal computer featuring a mouse, a built-in screen, and a graphic user interface. Instead of typing commands into a text prompt, the Macintosh invited users to click and drag a cursor icon across the "desktop," place documents in "files," and even take out the "trash." Shipped alongside this skeuomorphic interface was *Hypercard*, a program used to create "stacks" of slides navigated via hyperlinks—functionality that became the basis for browsing the world wide web. Susan Kare's "clicker" icon, the now ubiquitous white, right hand which appears above a hyperlink, was designed first for *Hypercard* before it was popularized within internet browsers and even Microsoft Windows in the mid 1990s. In 1997, Apple subtly adjusted Kare's original icon, transforming it into a "Mickey Manicule" with three darts and a cuff.



Medieval Manuscripts

A **manicule** (hand with pointing finger) often appears in the margins of medieval texts. Much like the contemporary computer cursor, the chirographic and typographic manicule is used to select and highlight, marking out the important moments of a manuscript. According to Keith Houston, the first recorded use of the manicule (alternately referred to as a fist or index) was in the infamous *Domesday Book* of William the Conqueror. This volume was an ambitious survey of England's land and its apocalyptic title was a reference to the indisputable authority of the text in determining property ownership. The manicule was, in this case, a feature of a text whose function was to digitize space and select owners, converting common land into private property.

Medieval Manuscripts

The manicule became a convention employed by European writers and readers. As William Sherman notes, many eccentricities and idiosyncrasies existed in the application of this non-standardized, hand-drawn punctuation. The elongated pointer of the Venetian nobleman Bernardo Bembo was particularly notorious, and is recreated in this HyperCard stack as the icon on the lower left button of the navigation bar.

Mario Paint

In *Mario Paint*, Disney's mouse and the computer mouse are joined together. Replacing Susan Kare's clicker icon with the darted glove of Mario's hand, *Mario Paint* was the first videogame console to be released with a computer mouse as an included peripheral device. From the four fingers of Mickey Mouse to the five fingers of Mario, the white glove becomes an electronic extension of the player's digits in order to animate, paint, and compose music on this customizable cartridge for the Super Nintendo Entertainment system. Both Mario and the Macintosh's white, right-hand glove not only intentionally signify Mickey Mouse but also (perhaps) unintentionally signal the much longer racial history of cartoons.

Monmouth's Manicules

Today, the manicule remains ubiquitous in the visual language of public space. Signage in the built environment frequently utilizes the pointing hand to direct attention or movement. Of course, most instances have much more in common with the medieval usage of this symbol than with Mickey and Mario's particularly fraught history. Observant onlookers will notice manicule images throughout Oregon in places like U-Park parking lots, Goodwill donation centers, and even the Java Crew coffee shop a few blocks from where you stand right now!

Minstrelsy

Iconic of servant status, white gloves were a signature feature of 19th-century blackface minstrel shows in the United States. Though beginning with white performers portraying racist and stereotyped caricatures of African-Americans, eventually black artists also dressed and performed in blackface. In 1927, a film called *The Jazz Singer* starred Al Jolson dressed in ragged tails, white gloves, exaggerated lips, and greasepaint-black makeup. Disney's animated *Steamboat Willie* followed one year later, introducing Mickey Mouse (who adopted Jolson's gloves and lilted voice). Although Mickey's gloves have been disavowed as merely a contrivance to sidestep the difficulties of depicting articulating fingers in early animation, "funny animal" cartoons like *Bimbo and Betty* (1930), *Oswald and Ortensia* (1927), *Foxy and Foxy* (1931), and *Mickey and Minnie* (1928) can all easily be seen to draw upon racist caricatures inspired by minstrelsy.

Mickey Mouse

Disney's mouse belongs to the "funny animal" tradition of comics and animation in which the addition of ears and tails to black bodies sanitized the genre of comedy inspired by the tradition of blackface and minstrel shows. Phillipa Jones writes, "Recognition of Mickey Mouse's basis in racist characterization serves to make it all the more remarkable that Apple's tiny white-gloved icon, echoing this racist heritage, has not become infamous. Its wide unchallenged acceptance seems to be a simple triumph, in Roland Barthes' terms, of a myth made to seem natural."

Mickey Mouse

In computer programming, the speed and movement of the mouse input device is measured in units called "mickeys." According to Phillipa Jones, the movement, location, and clicking process of the mouse "becomes a sign for a mental model of decision making and even thought itself." If thought is now measured in mickeys, how deep do Disney, Macintosh, Nintendo, and Google go in their capacity to colonize the attention of clicking mouseketeers? What is the implied subject position of the user whose digital extension wears the white gloves inside a graphic interface?

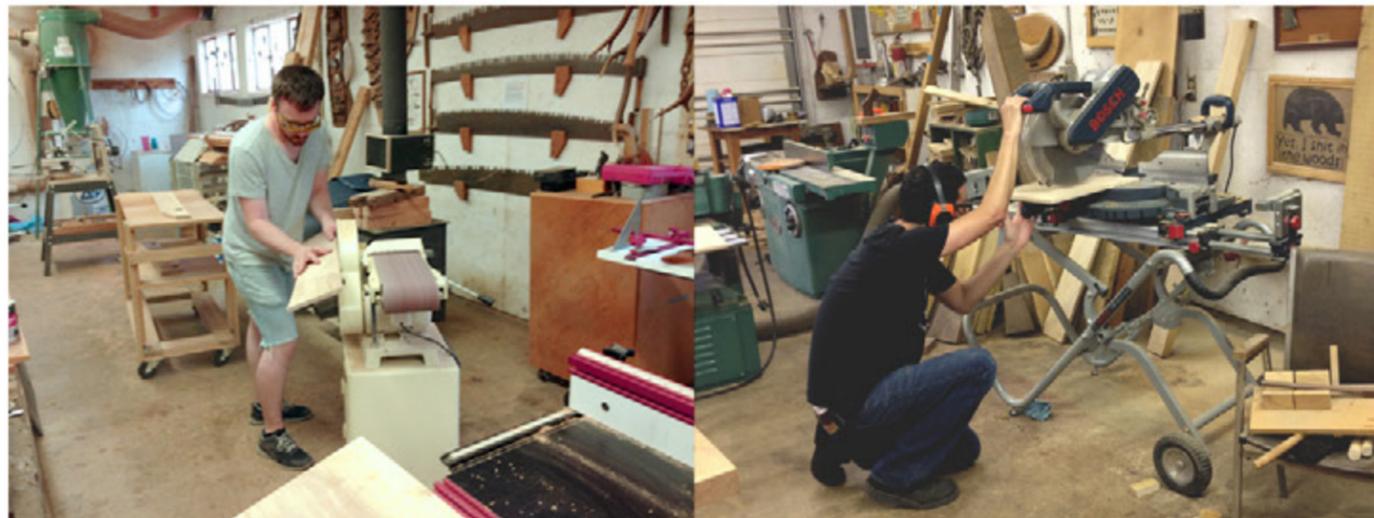
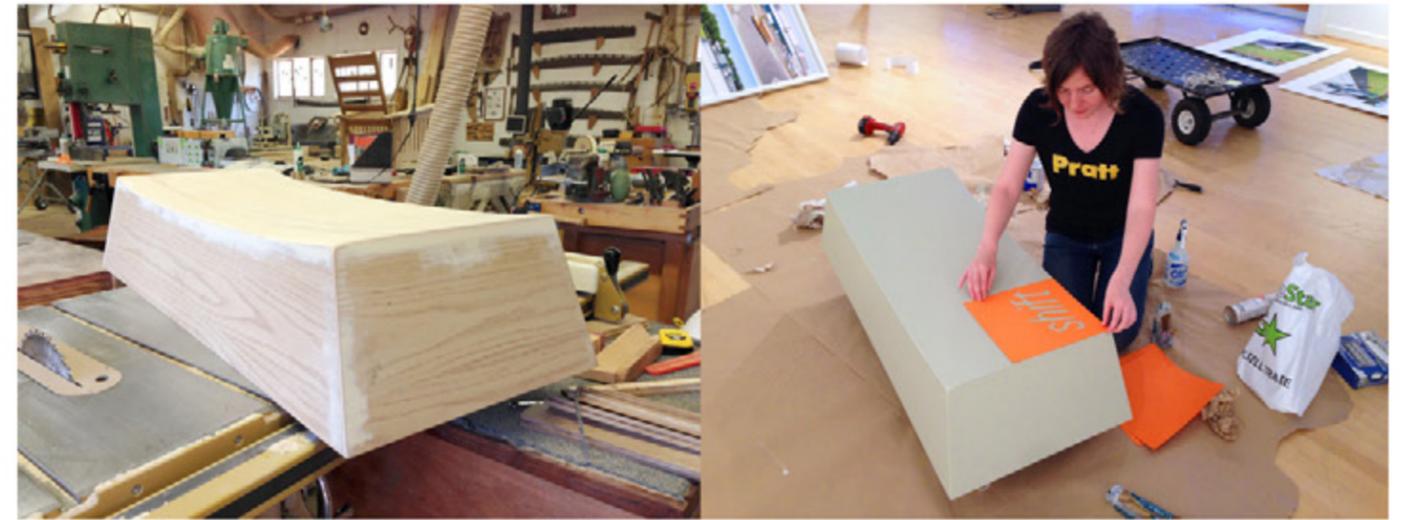
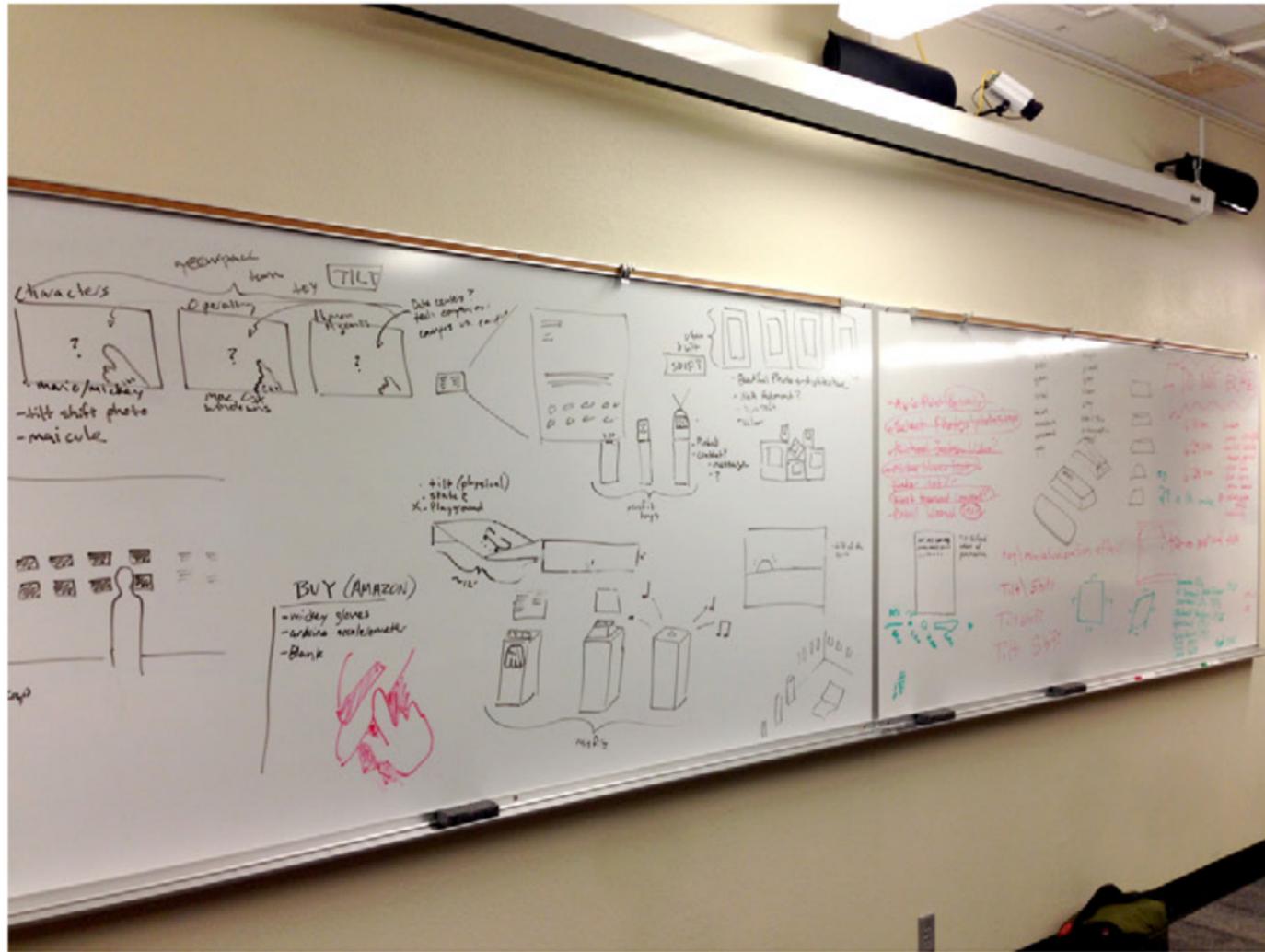
Michael Jackson

It is no coincidence that a man known for virtuosic singing and dancing in controversial performances of race and gender would make the white glove a signature part of his costume. Loaded with a complex racial history that goes back to the 19th-century pop culture of vaudeville and blackface minstrelsy, the King of Pop first wore the signature rhinestone-studded glove during his performance of "Billie Jean" for Motown's 25th anniversary television special in 1983. The branding of Disney and Michael Jackson strongly intertwined throughout the 1980s and beyond, notably exemplified by the *Captain EO* attraction at Disney's theme parks. This 3D sci-fi film stars Jackson himself, who dons white gloves throughout.

Macintosh OS

Susan Kare's "clicker" icon first appeared in Apple's *HyperCard* software in 1987. This 32x32 pixel art has remained remarkably consistent in the three decades since the first commercialized graphic user interface emerged, with a few exceptional transformations. Most notably, three lines were added to the hand beginning with Mac OS 10.8 in 2012. The simple addition of the three darts reinforces the connection to Mickey Mouse, Mario, and minstrelsy. As the manicule transforms from a mimetic white hand to a blackface minstrel glove evacuated of its cultural significance, the darted glove allegorizes the ways in which interface design erases the racial history of computation. The ideological desire for an immediate, transparent interface--what Apple calls "magic"--attempts to render invisible the material and historical substrate of computation to construct the seamless immersivity of technical mastery--what Heidegger would call "ready-to-hand."



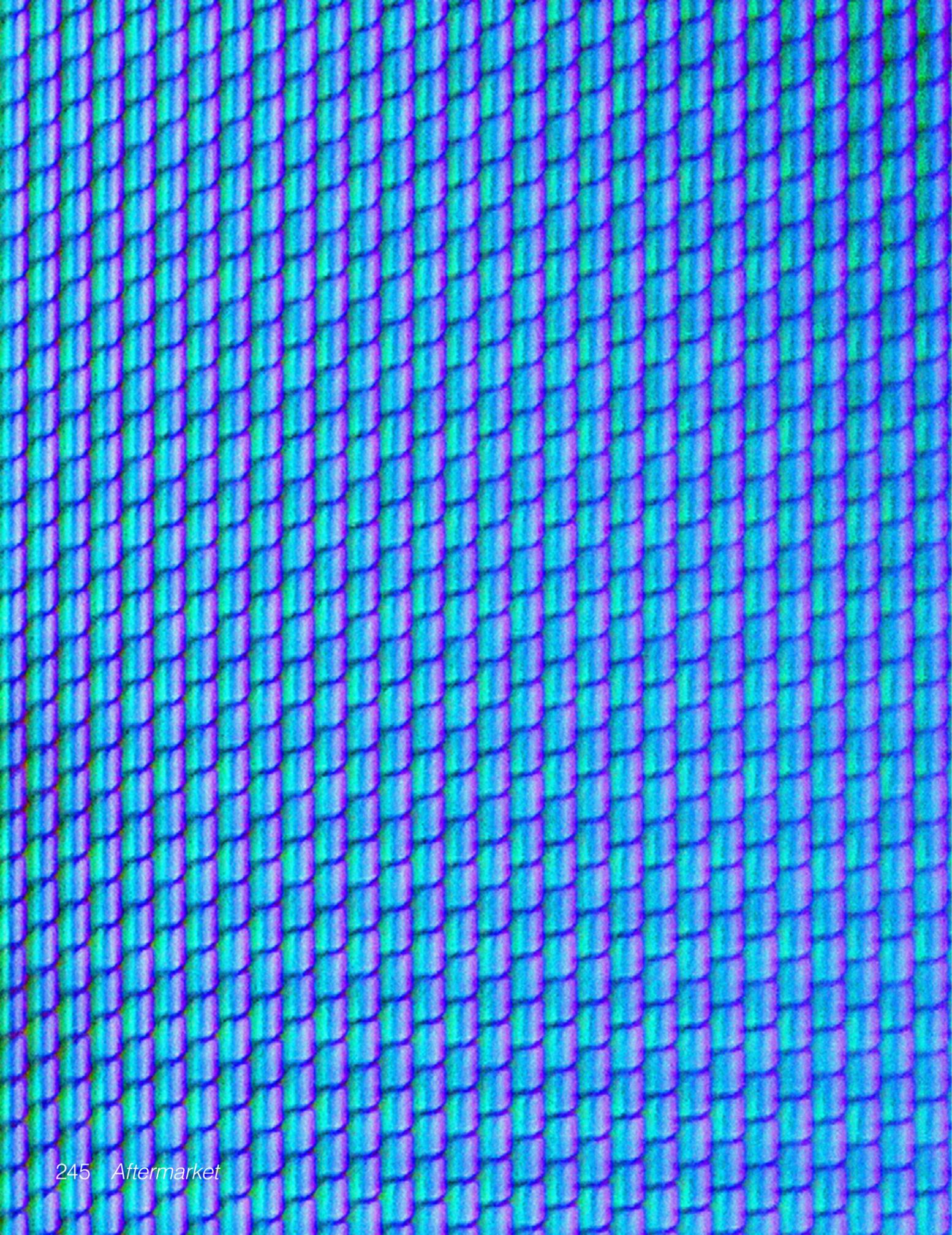




ART

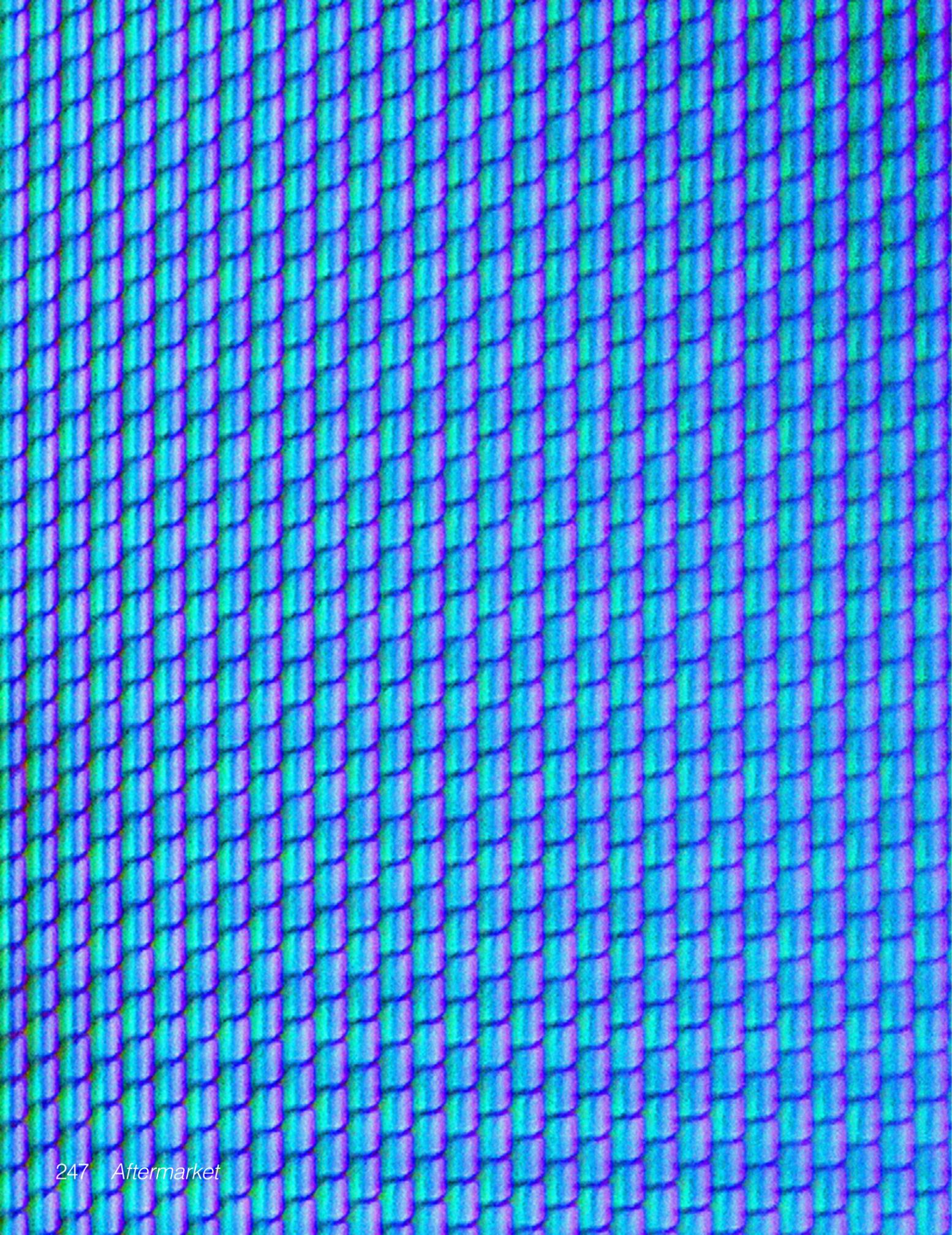
MARKET

Aftermarket
2014–2015



Aftermarket is a platform study and game design philosophy engaging the community histories and experimental practices of speedrunning, romhacking, and repro'ing that play in the aftermarket of videogame consoles.

Produced as part of a dissertation for the Media Arts + Sciences Program in the Department of Art, Art History, and Visual Studies at Duke University in **2015**.



My dissertation, *Aftermarket: A Game Design Philosophy*, documents the history and practice of four communities of players who, over the last decade, have transformed videogames from packaged and protected products into open platforms for critical making. From real-time attacks and tool-assisted speedruns to software modification and hardware reproduction, I examine how play in the aftermarket becomes a form of game design located between human experience and the speeds and scales of digital media.



4:57

Size variable

Single channel color video, stereo sound

2013

The number 4:57 represents one horizon of possibility for human play within *Super Mario Bros.* (1985) and the ultimate goal of a speedrunner named Andrew Gardikis—what he calls his “gaming masterpiece.” Published by the Speed Demos Archive and competitively raced live at Speed Runs Live, speedrunners are “expected to use every method at their disposal, including glitches, to minimize time.” One of the first and most famous games to speedrun is Nintendo’s *Super Mario Bros.* and Andrew Gardikis has held the world record in this game for the last six years.

In this short documentary video, hundreds of Gardikis’ attempts leading up to his latest world record are collaged on top of one another and played simultaneously. At any given frame, the barely blurred cloud of Marios in the middle of the screen is evidence of both Gardikis’ precision and the the temporal and spacial registrations undergirding all digital media. At the end of the video, Gardikis shouts “oh my gosh, I don’t even know!” Human knowledge is foreclosed as the granularity of this form of statistical play operates outside of human perception. *Super Mario Bros.* has ceased to function in terms of strategy, skill, agency, or intentionality.

Only after thirty minutes of decoding video and counting frames was this world record discovered in retrospect. Gardikis’ uncertainty articulates a kind of play occurring outside the register of human consciousness and signals an unknown history of *Super Mario Bros.* in which thousands of thumbs have millions of Marios over goombas and green pipes.

How to Lose “Super Mario Bros.”

Size variable

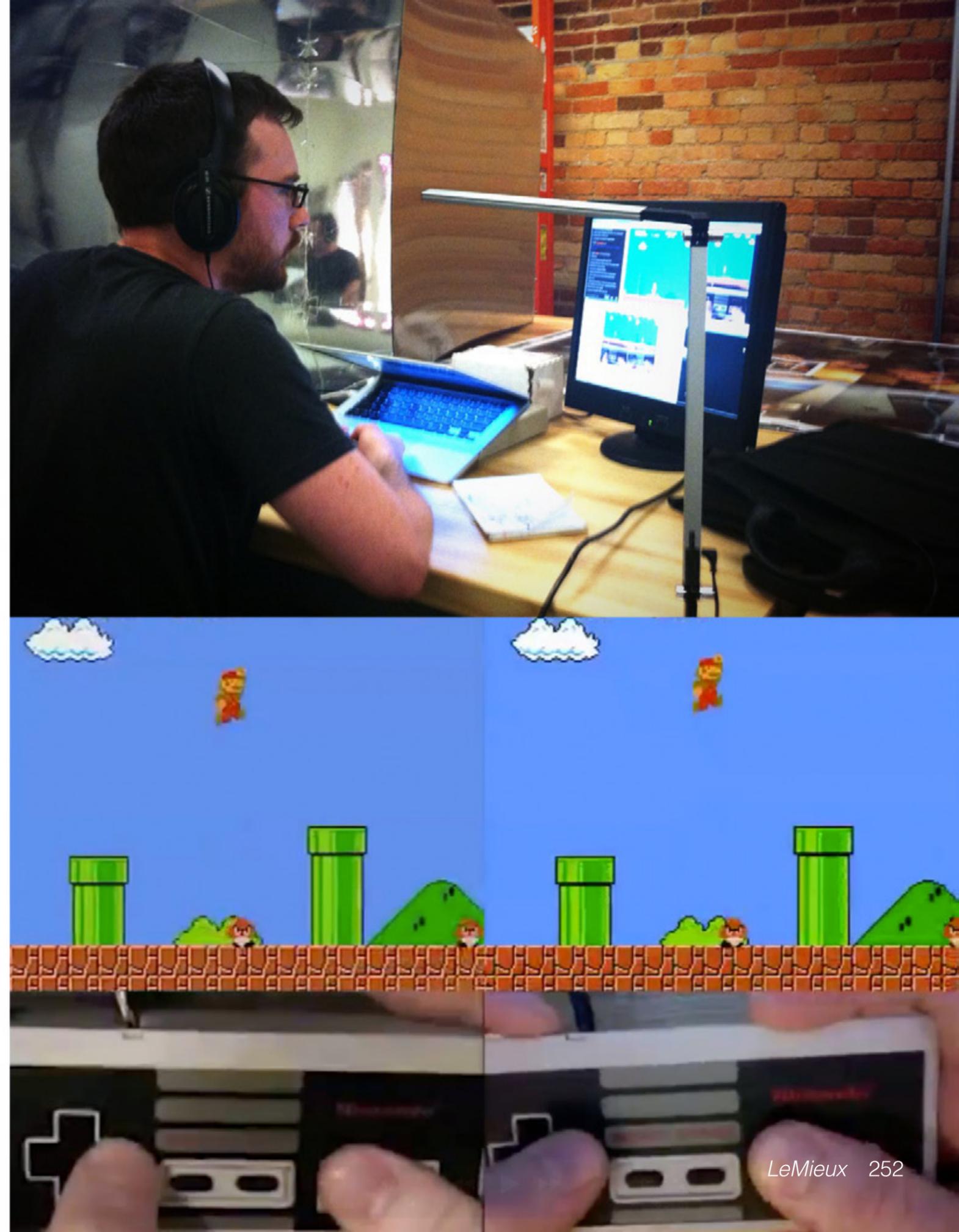
Single channel color video, stereo sound

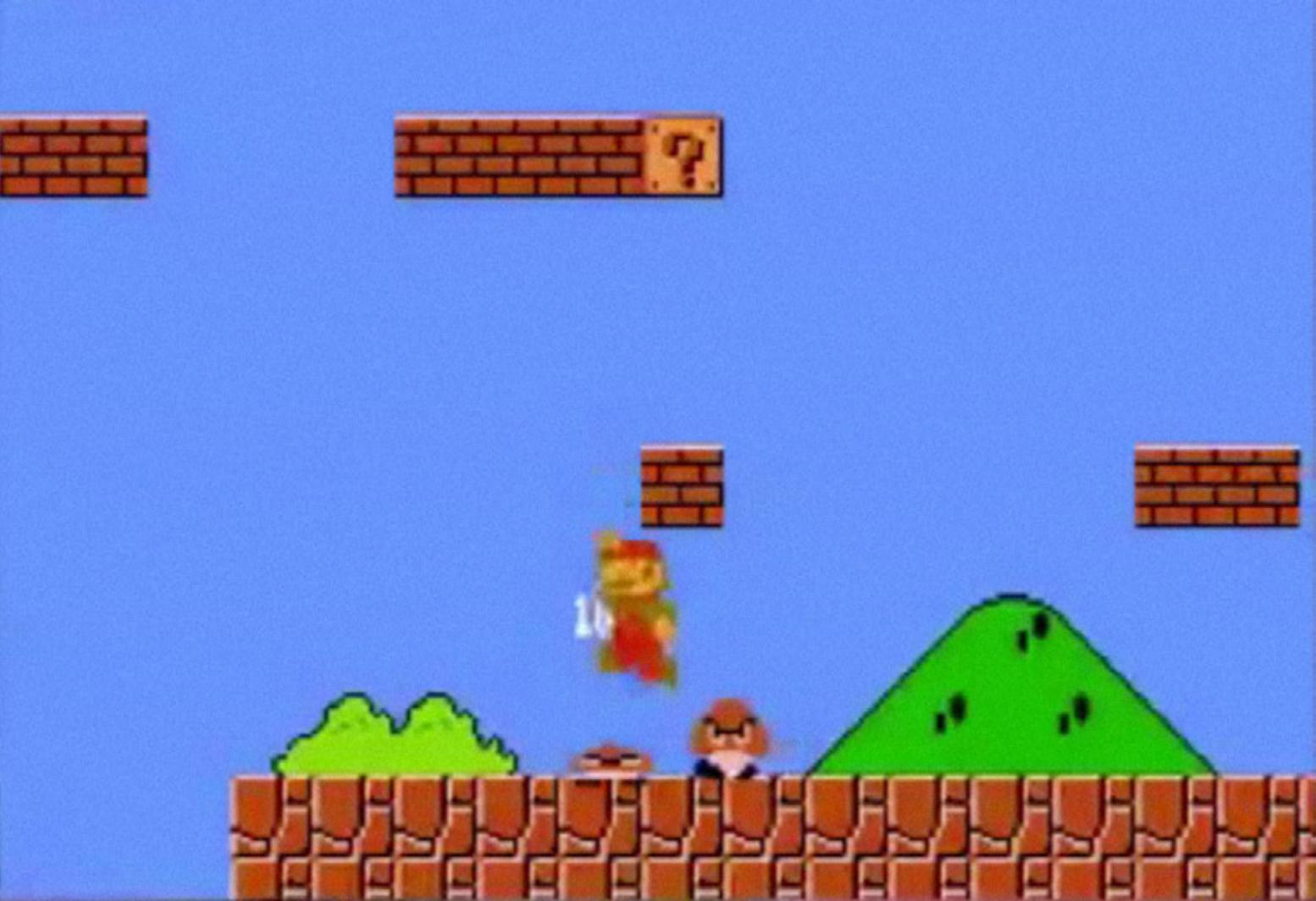
2013

In 2003, Alex Galloway produced a digital record of a full playthrough of *Super Mario Bros.* (1985). Galloway began by simply playing through the game while recording a video of his hands and digitally sampling controller input. The frame-wise input was formatted as guitar tablature and hosted alongside these “tutorial” videos at Radical Software Group and Rhizome. Titled *How to Win “Super Mario Bros.”* (2003) or *RSG-SMB-TAB*, Galloway’s piece operates as a conceptual artwork in which control is reduced to linear patterns of input and then recast as a guide for novice players alongside video demonstration. Galloway’s ASCII satire of the typical Game FAQ walkthrough deploys a conceptual aesthetic in which textual instructions take the place of the art object.

To begin learning *How to Win*, excess parts of the tablature were edited out and an original java applet was written to convert Galloway’s input to a standard, tool-assisted speedrun format for playback on an emulator. Because Galloway recorded his input at around 180 frames per second, there was some necessary translation to get his gameplay to synchronize with the 60 frames that the Nintendo Entertainment System processes per second. With these kind of digital forensics made sensible, Galloway’s lesson could be enacted in a new performance titled *How to Lose “Super Mario Bros.”*

How to Lose does not operate in terms of mastery but functions precisely because Galloway’s challenge will never be beaten and cannot be wholly consumed. Performed live on Twitch.tv, *How to Lose* documents a series of attempts to follow Galloway’s impossible guide. Even with the exact record of frame-by-frame input, the speed and the scale of Galloway’s play obscures understanding. Play is located in the gap between the conscious, narrative experience of the game and the digital mechanisms and computational processes constitutive of that experience. In order to learn *How to Win*, Mario must be “lost” within this exercise in failure.







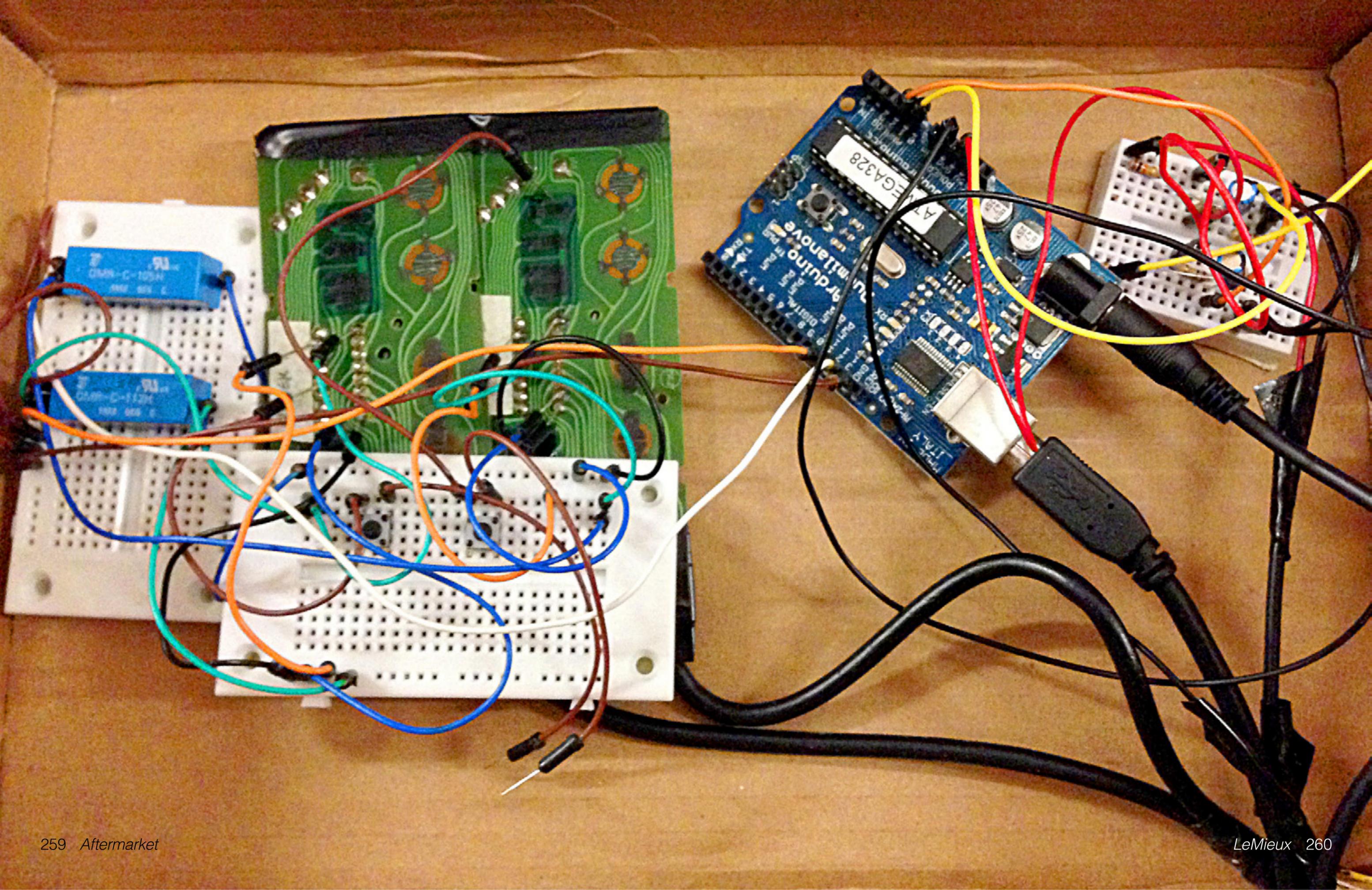
Brothers

Size variable

Hacked ROMs, custom cartridges, modified NESs, CRT televisions, Arduino
2013

Brothers is an electrical installation that stages an encounter between two networked Nintendo Entertainment Systems. When one brother dies, the other one jumps. Asymmetry in the two systems—whether electrical, material, or durational—produces emergent patterns as each plumber leapfrogs according to

the thanatopic assistance of the other. The slowly oscillating death drive of two suicidal automata recast Conway's *Game of Life* (1970) as a *Game of Death*. Without the player, there is still play and without life, there is still a game. The rhythm, dynamics, and materiality of the platform produce forms of nonhuman play.





Coin Heaven

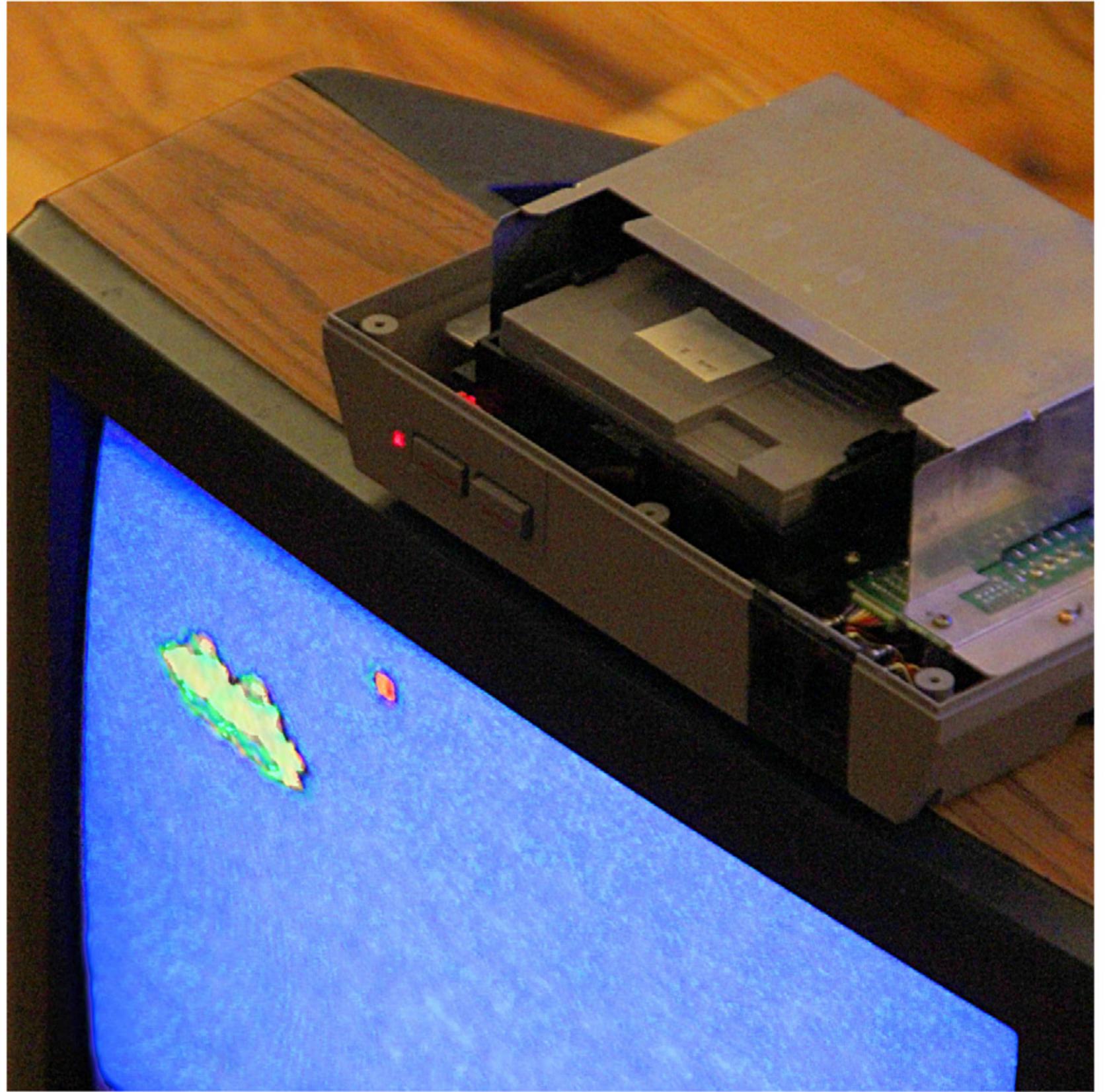
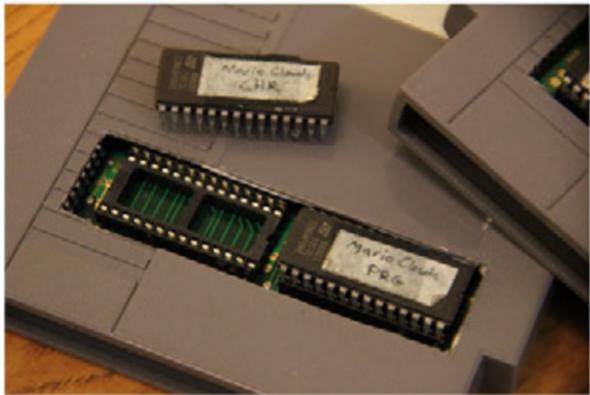
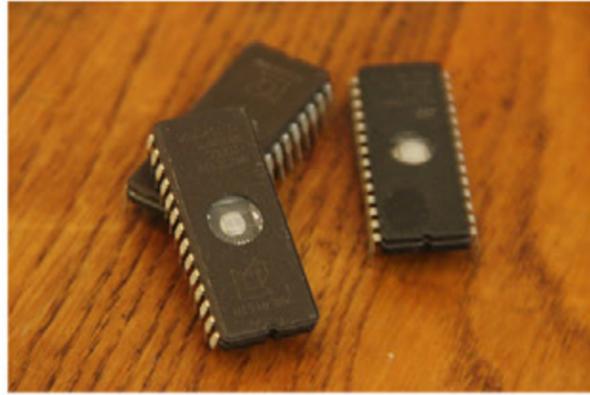
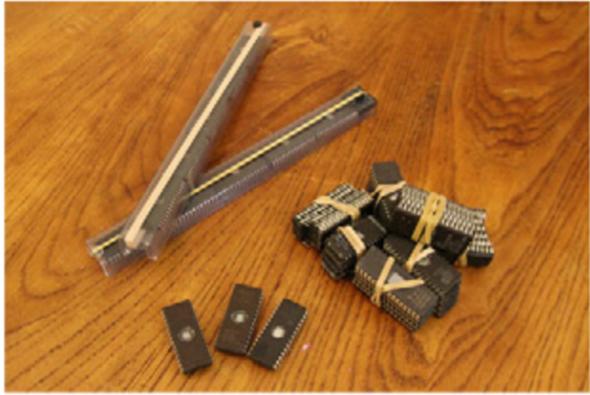
Size variable

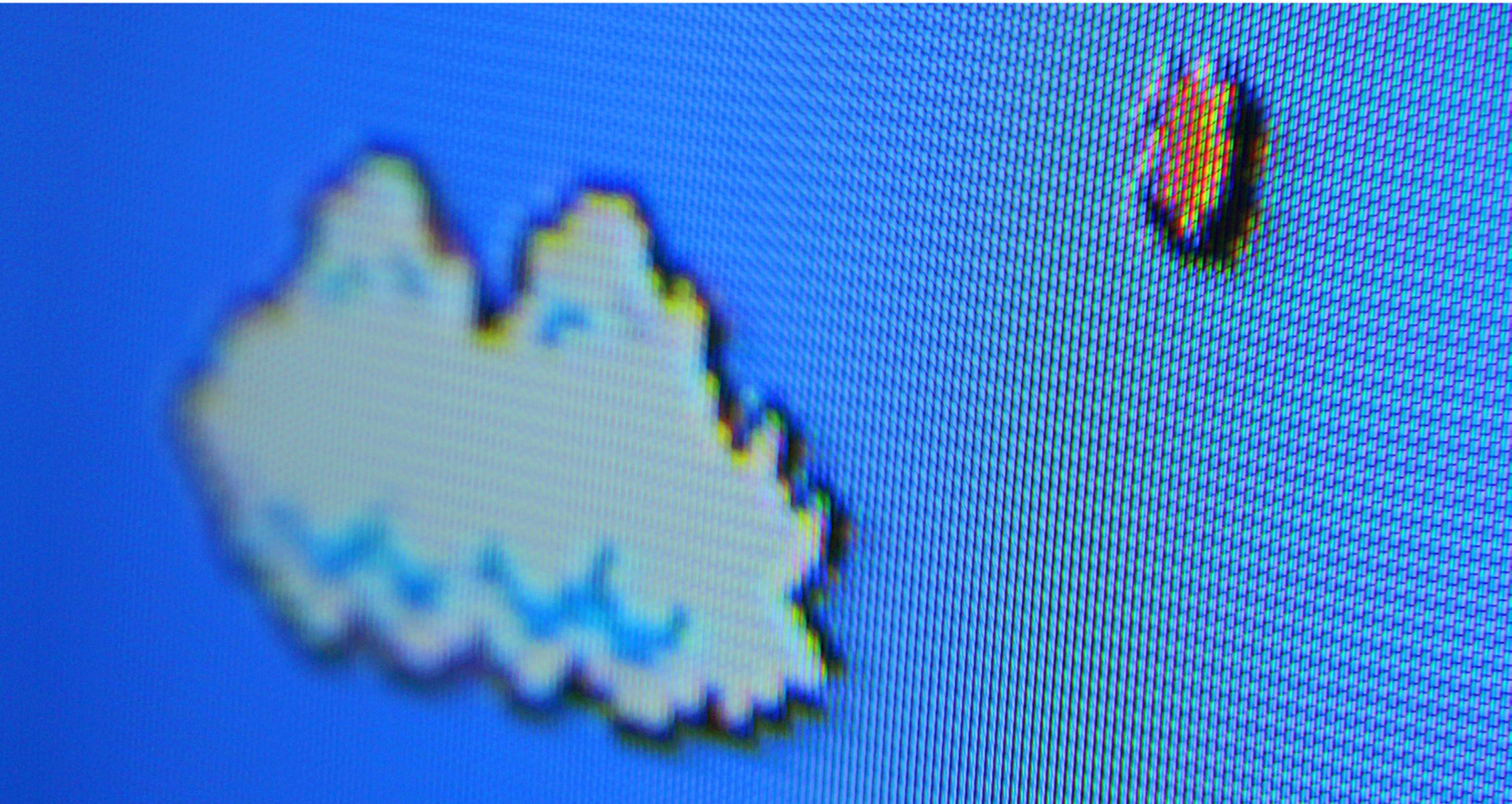
Hacked ROM, custom cartridge, modified NES, CRT television
2013

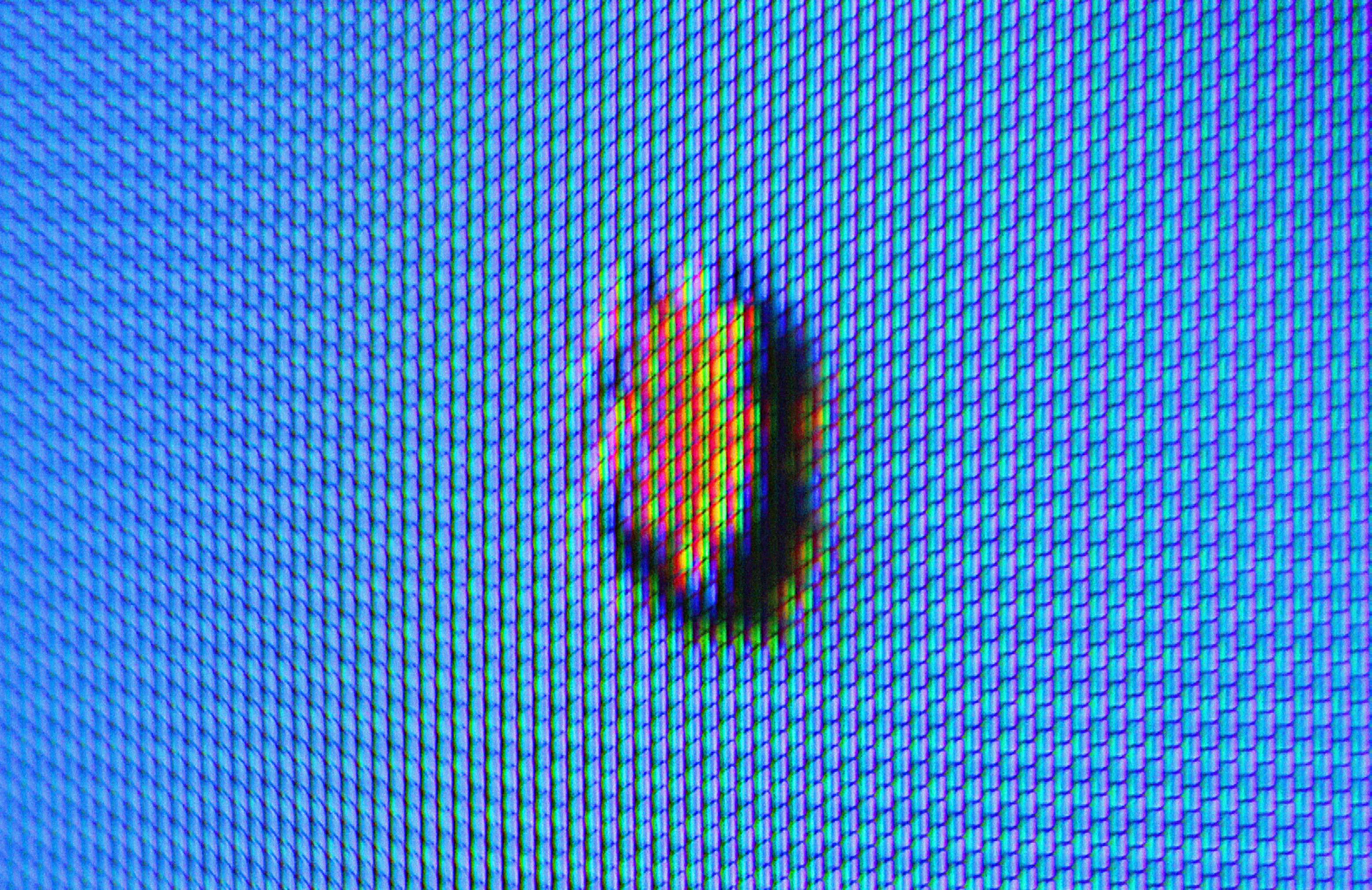
One of the most famous ROM hacks is Cory Arcangel's *Super Mario Clouds* (2003, 2009). Exhibited at the Whitney in 2004, Arcangel claims "*Super Mario Clouds* is an old Mario Brothers cartridge which I modified to erase everything but the clouds." Arcangel embraces the hacker ethos and has open sourced much of his artwork, advertising exactly how to "erase" *Super Mario Bros*. However, I discovered that if you attempt to follow his steps, an entirely different game is produced.

In *Coin Heaven* an invisible Mario walks on invisible ground, looping endlessly in a cloudscape where a cinematic sequence once took place between World 1-1 and World 1-2 of the original *Super Mario Bros*. Beyond the speed, shape, color, and pattern of the slowly passing clouds something is very different. A lone coin remains blinking in the menu. To the chagrin of many ROM hackers, this tiny, blinking coin is also what is known as "Sprite 0," the first sprite in the Picture Processing Unit or PPU's memory and the only sprite that includes a hard-coded "hit flag" responsible for triggering scrolling in *Super Mario Bros*.

Time does not move without money and making Sprite 0 invisible freezes the game. Apparently all that is solid does not melt into air as Sprite 0 symbolizes not the formal autonomy of games, art, and capital—but the desire for a type of utopia in which these practices operate without material base. The blinking coin, then, only appears to offer the player a "coin heaven"—the name of three specific bonus zones in *Super Mario Bros*. devoid of enemies and filled with money. While Arcangel's piece is famous for its erasure of the gameplay from *Super Mario Bros*., it also effects an erasure of the game's medium specificity, depicting *Super Mario Clouds* as a utopian autonomous zone that renders invisible the game's history of money and materiality. By contrast, *Coin Heaven* refuses this portrayal, demonstrating the deep history that is hard coded into the game's electrical circuits.









Patrick LeMieux is an artist, game designer and Ph.D. candidate in the Department of Art, Art History, and Visual Studies at Duke University.

(919) 886-8781
patrick.lemieux@duke.edu
<http://patrick-lemieux.com>