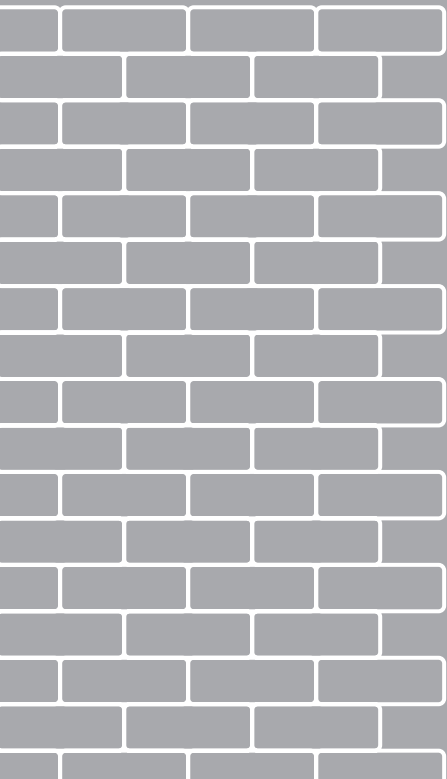




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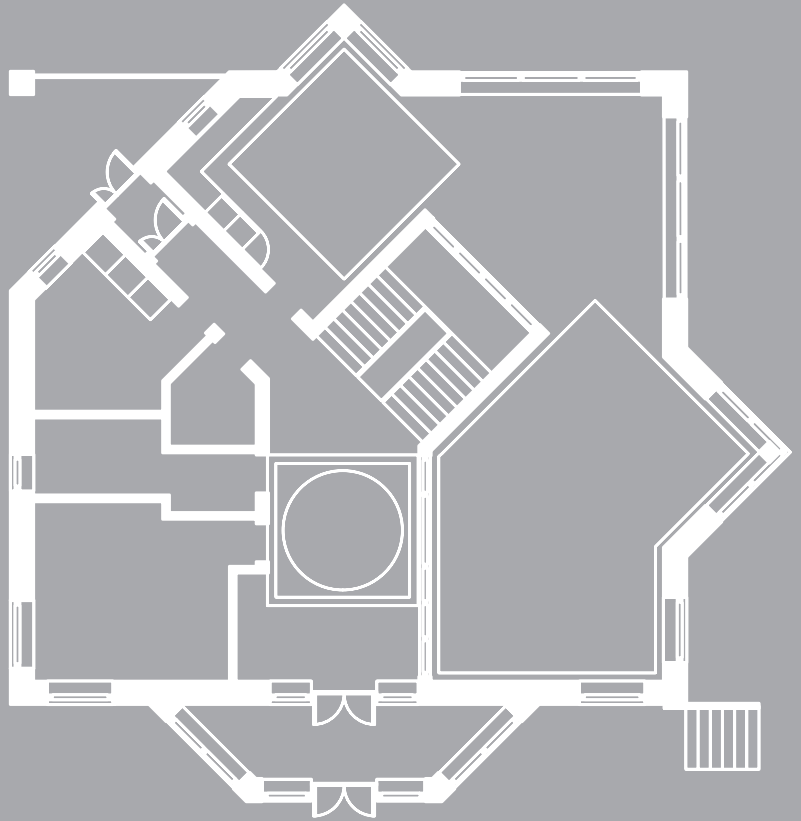
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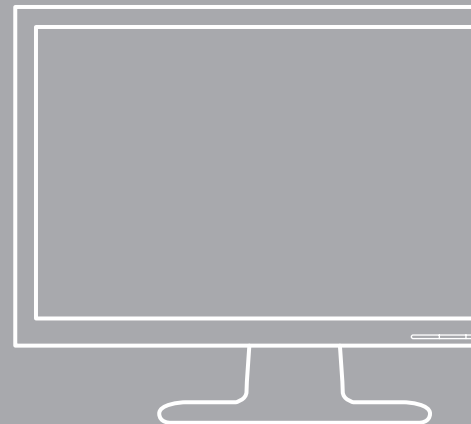
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EDITORS **ÖZDEN ŞAHİN**, **JONATHAN MUNRO** AND **CATHERINE M. WEIR**

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



NOT THERE



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LEA PUBLISHING & SUBSCRIPTION INFORMATION

Editor in Chief

Lanfranco Aceti lanfranco.aceti@lealmanac.org

Co-Editor

Özden Şahin ozden.sahin@lealmanac.org

Managing Editor

John Francescutti john.francescutti@lealmanac.org

Art Director

Deniz Cem Öndüğü deniz.onduygu@lealmanac.org

Editorial Board

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Editorial Address

Leonardo Electronic Almanac

Sabancı University, Orhanlı - Tuzla, 34956

Istanbul, Turkey

Email

info@lealmanac.org

Web

- » www.lealmanac.org
- » www.twitter.com/LEA_twitts
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LEONARDO ELECTRONIC ALMANAC, VOLUME 19 ISSUE 1

Not Here Not There

VOLUME EDITORS

LANFRANCO ACETI AND RICHARD RINEHART

EDITORS

ÖZDEN ŞAHİN, JONATHAN MUNRO AND CATHERINE M. WEIR

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Lanfranco Aceti

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



Site, Non-site, and Website

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

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

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

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

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

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

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

Richard Rinehart

Director, Samek Art Gallery, Bucknell University

Leonardo Electronic Almanac
Volume 19 Issue 1

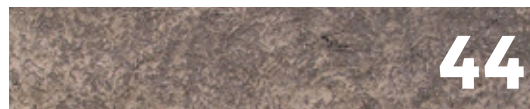
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The Variable Museum: Off-Topic Art

ABSTRACT

Augmented reality provides the opportunity to find a balance point between personalized digital content and the shared context of a group of people in a physical room. Taking advantage of the opportunity requires navigating some significant obstacles though, including the aura associated with traditional art spaces and objects. The Variable Museum provides individuals, in a group, with varying limited experiences of an artwork and asks them to discover what the complete work is by comparing their perspective with the others. The resulting discussion creates a new work specific to the group that participates in it and replaces the illusion of personalization with discourse and social construction.

by

JOHN BELL

Assistant Professor, Innovative Communication Design
The University of Maine
426 Chadbourne Hall
Orono, ME 04469-5713
john.p.bell@maine.edu
<http://www.johnpbell.com/>

There are not many hard and fast rules on the Internet, but one thing I have found to be a remarkably consistent truth since the dawn of the web is that the most fascinating part of any forum is its off-topic area. Websites that put a lot of effort into creating focused, topical content to draw people together who like politics, or coding, or 'lolcats' quickly learned that politics, coding, and lolcats were not all their visitors wanted to discuss. Thus was born the off-topic forum, a place for people with a common interest to talk about all the things they do not have in common. On many sites, an off-topic forum fosters a feeling of

MYTH AND AURA

community that mirrors the offline world more closely than purely topical discussions. They are the digital equivalent of town hall dinners or downtown coffee shops, the places where humans – constrained by geography instead of shared interests – get together and talk about the rest of their lives. Sometimes the talks are friendlier than others, but the result is a conversation where everybody learns how they are similar to and different from the people around them. Here, borders are exposed, and new ideas can form from the collisions of old ones.

Creating these liminal spaces between perspectives is one of the goals of my artistic practice. While it is possible to suggest them using traditional media, augmented reality brings a powerful new technique to the table: the ability to personalize and tailor an artwork to different viewers' specificities while still maintaining the viewers' relationships to each other and to the space as a whole. As in the off-topic forum, viewers are brought together by a common aspect – physical proximity – have their own unique perspectives – personalized AR (Augmented Reality) imagery – to smash together and see what they can create. This is the space I tried to create in my installation *The Variable Museum*.

Creating an opportunity for discussion is not enough for many viewers, particularly when they are in the unique state of consciousness that is brought on by entering the art world. In this world, where the inviolability of objects is reinforced by glass cases and security guards, additional prompting is often needed to move visitors from being passive viewers to active creators. AR can remove the physical barriers easily. The cultural barriers, through – the aura of the art object – are more difficult to be overcome, but also provide some unique opportunities for new understandings.

In Walter Benjamin's 1935 essay, *The Work of Art in the Age of Mechanical Reproduction*, he describes the 'aura' as the sense of authenticity that is conferred upon an original work by "the essence of all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which it has experienced."¹

Colin Lang sums up several characteristics of aura by saying it is not "a singular concept, but rather [a] shifting code for several crucial terms within Benjamin's investigation. In particular, aura stands in for concepts such as tradition, myth, singularity or uniqueness, and beauty, which crop up throughout Benjamin's writings."² With the arguable exception of beauty, the common point between each of those characteristics is their reliance on a rhizomatic network of ideas that are external to the artwork itself. Aura can be conceived of as the extrinsic properties of an artwork that give to the artwork itself – to use Benjamin's word – "authority." Given this definition, it seems reasonable to add other similar factors like economic value and referential prestige into the mix of auratic characteristics that Lang supplies.

One key effect of aura is that, upon entering the art world – a museum, gallery, or other space defined as a container of art – a viewer who accepts the aura of the piece believes it to be recondite. The relationship between work and viewer changes putting the viewer into a state of curiosity and receptivity that is not associated with everyday creative acts. Artists who wish to do so may use this mode for any number of interventions that would not be possible in a different context. Roy Ascott describes this state of curiosity and receptivity in his article, *Towards a Field Theory for Post-Modernist Art*. He defines this space as a locus "in which the viewer is actively involved, not in an act of closure, in the sense of completing a discrete

message from the artists, (a passive process) but by interrogating and interacting with the system 'artwork' to generate meaning." ³

BREAKING AURA DOWN

While the aura can be used as an advantage, it is more often damaging to the relationship between artwork and viewer. Benjamin puts forth a strong argument describing the drawbacks of the aura in his original essay on the subject, explaining a process where the aura forces viewers to change how they approach a work of art so that they cannot judge the work on its own merits, beauty, or ideas.

The aura can also have a negative influence on the artwork itself, not just the way in which it is interpreted. When a work is treated as a cult fetish object, it becomes stagnant, with those who are in charge of maintaining it hesitating even to preserve it against natural decay, and totally adverse to make any change to it. As predicted by Benjamin, today's art and artists are becoming more involved in temporal concerns than in the past. When art is anchored in the moment, after that moment passes the art is forced to change from being based upon and having an impact to merely being an interesting product. AR may seem like a way to break down the aura and get around the process of stagnation as virtual objects are harder to fetishize than physical objects. AR occupies a hybrid space that may be closer to an ephemeral work than a painting, but even ephemera can suffer damage from stagnation. One illustrative case is the history of event scores in the Fluxus movement. Designed as a set of open prompts, the aura created around the initial realization of those prompts has turned some of them into effectively fixed performances. For example, when Ben Patterson performed George Brecht's Drip Music in 2002 he noted that Brecht's original instructions allowed for either a single source or multiple sources of dripping water – contrary to his memory and the traditional interpretation of the score. ⁴

The notion that there are "traditional interpretations of these works" undermines the premise of a flexible, ever-changing score to be interpreted by the perform-

er, even if Patterson did choose to go back and look at the source for this particular performance. In this case, the aura of the original work has been conflated with the aura of an instance of the work to such a degree that Patterson did not even know the true parameters of the work he intended to perform. The original work has been hidden by its own legacy because the minds of its interpreters are seeking a repeatable, predictable performance; they are trying to make an ephemeral work persist, helping to preserve its aura by attempting to keep the work as close to a static object as is possible.

OFF-TOPIC ART

The dual-edged blade of aura – its necessity in creating Ascott's field and its simultaneous ability to block that field – is a central conundrum for any artist who wants to intervene in the traditional art/viewer relationship and one that I tried to design around *The Variable Museum*. Given the centrality of aura to the modern conception of fine art, it is clear that I could not eliminate aura and still maintain the label of art for my creative output. Instead, I could only seek to minimize its negative effects on the work I produce.

As aura's natural tendency is to cluster around closed, fixed systems, one strategy is to create work that emphasizes the open aspects of art. Umberto Eco describes how art consists of open and closed sides:

A work of art, therefore, is a complete and closed form in its uniqueness as a balanced organic whole, while at the same time constituting an open product on account of its susceptibility to countless different interpretations which do not impinge on its unalterable specificity. Hence, every reception of a work of art is both an interpretation and a performance of it, because in every reception the work takes on a fresh perspective for itself. ⁵

In some ways the clause "which do not impinge on its unalterable specificity" seems to indicate that creating an open work is simply a matter of not creating a closed work or a work that is so regimented as to preclude "countless different interpretations." Ben Patterson's story about Drip Music would seem to indicate that this is not all that is required. There are multiple versions of the Drip Music score, but the simplest version is no more than a single word: "Dripping." ⁶ If such a vague work is still subject to aura restriction then the answer must be more than simply leaving a work open to interpretation. In order for an off-topic forum to exist, there must be an on-topic forum to ground it.

LEARNING FROM SOFTWARE

Since Eco's constant acts of interpretation and performance are made manifest in many interactive works that cannot function without the user's active involvement, examining them to discover how they are constructed may shed some light on reusable processes that encourage those acts. One key structure is what Lev Manovich refers to as database-narrative opposition. Manovich ascribes to the database the semiological characteristics of paradigm, while narrative takes the role of syntagm. In static works, he finds that the paradigm is implicit while the syntagm is explicit. Interactive works reverse that relationship: "Database (the paradigm) is given material existence, while the narrative (the syntagm) is de-materialised. Paradigm is privileged, syntagm is downplayed." ⁷

Using the interactive relationship between paradigm and syntagm is not trivial in a non-interactive work. Following Manovich's path of privileged database/paradigm even further leads to the realm of artificial intelligence (AI). One approach to AI in particular, pursued by a group Warren Sack calls the Neo-Encyclo-

pediaists, is concerned with trying to build intelligent AI by collecting a giant database of "common sense." ⁸ This database powers an intelligent system by leveraging massive paradigmatic knowledge to produce syntagmatic knowledge. Importantly, however, once the syntagmatic knowledge exists, any one instance of the paradigmatic knowledge can be substituted for another instance within its same paradigmatic set. Translating this process back into the world of art production, I created *The Variable Museum* – a work made up of paradigmatic components held together in a syntagmatic rule set. The individual sees only one component of each set, not enough to define the rule set alone. The rule set can only be defined by discovering other components and reverse engineering the syntagm, forcing Ascott's field to include not just the artist, viewer, and artwork, but the other viewers as well. The expanded field functions as the "off-topic forum" for the artwork, a place where people have been brought together by physical proximity and given explicit license to throw ideas together with the intention to actualize those ideas.

CREATING THE FIELD

The Variable Museum creates a system that attempts to change the relationship between artwork, curator, and viewer. No physical artifacts exist in *The Variable Museum*; it relies on augmented reality to present digital artifacts to members of its audience. Since these artifacts are presented to an individual viewer instead of an entire group – as would be required in a physical museum – AR fulfills the goal of crafting an exhibition that is tailored to the individual without impinging upon communication within a group.

Such an exhibition operates on a fundamentally different principle than the traditional museum, which is heavily invested in singular objects, performances, or

moments in time. *The Variable Museum* replaces a focus on singular objects with a focus on a paradigmatic group of artifacts that are individually fungible. Selection of these artifact groups is the job of a curator-artist whose artwork is the creation of an intangible set of rules.

An active museum visitor's role is also transformed under this system as they seek to discover the invisible thread the curator has produced. Since each visitor has only one piece of the paradigmatic set, the only way to uncover the common thread is to talk to other visitors and discover what they are experiencing. In this way, the true artwork that the artist has created is brought into being by social exchange between visitors whose individual experiences are little different from in a physical museum.

CREATED PARADIGMS AND INVOKED SYNTAGMS

While it might be difficult to imagine how *The Variable Museum's* system works when applied to artwork, applying it to simpler artifacts demonstrates how it transmits a different impression of an artwork than a traditional museum would do. Consider the example of the playing card in figure 1.

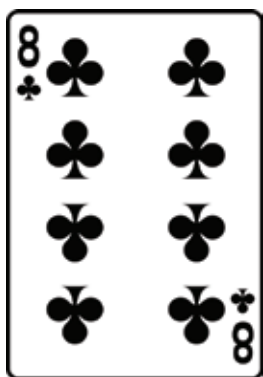


Figure 1. The eight of clubs. Lesser GNU Public License By Brandon Ardient based on svg-cards by David Bellot.

If asked to identify this card, most likely people would say that it is the eight of clubs. Adding a second card forces the viewer to change their perception of the set:

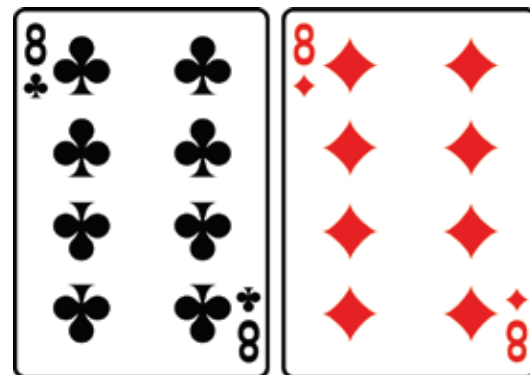


Figure 2. A group identified as "eights." Lesser GNU Public License By Brandon Ardient based on svg-cards by David Bellot.

As the eight of clubs has now been joined by the eight of diamonds, the paradigmatic description of the cards becomes just "eights." Additional information has forced a definition of the set that includes more cards – four, including two not shown, instead of just one – and also discards the part of the previous definition that no longer fits – "of clubs." A slightly different second card produces not just a different definition, but a new piece of information:

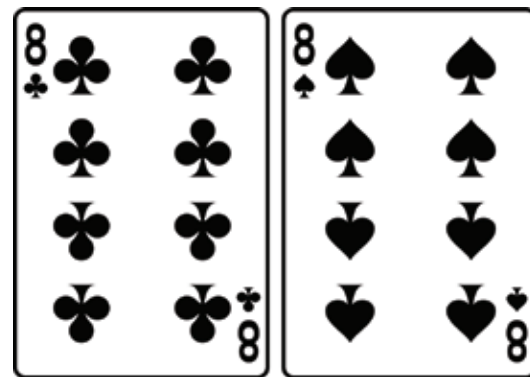


Figure 3. A group identified as "black eights." Lesser GNU Public License By Brandon Ardient based on svg-cards by David Bellot.

A likely description of the eights of clubs and spades would be "black eights." While these cards fit the definition of the last set because they are both eights, there is also a new similarity between the two that allows us to narrow the definition to fit only these two

cards. Importantly, it is also a piece of information that did not explicitly exist in the definition of the original single-card set. The eight of clubs may be black, but if asked to name the card it is not usually labeled as black without a point of contrast or similarity that forces the viewer to include it as a parameter for describing the card – in this case provided by a second black eight. In fact, if we want to create a paradigm that is just "black," we would likely have to remove all other points of similarity between the two cards:

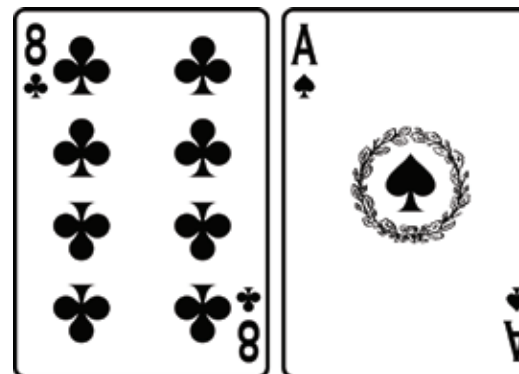


Figure 4. A group identified as "black cards." Lesser GNU Public License By Brandon Ardient based on svg-cards by David Bellot.

The parameter of "black" is usually a secondary characteristic of the parameter "suit" so the only way to force its primacy is to invalidate a single suit as the descriptor while maintaining the blackness of both cards, as shown here with the eight of clubs and the ace of spades. Of course, "black" is an extremely general characteristic, applying to half the deck. The last example could have been the eight of spades and the ace of clubs without changing the resulting definition.

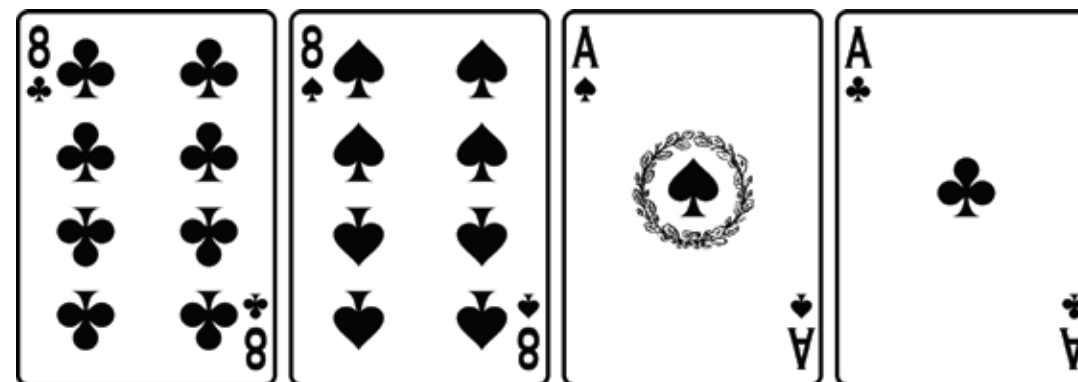


Figure 5. A group identified as a "dead man's hand." Lesser GNU Public License By Brandon Ardient based on svg-cards by David Bellot.

However, including all four cards triggers a new result for anybody who happens to have the right knowledge base (figure 5).

For somebody who knows a bit of gambling lore, two black eights and two black aces will prompt a new definition of the set: been the cards in the famous "dead-man's hand," named supposedly because it is the hand that Wild Bill Hickok was holding when he was shot while playing poker (though other, less famous, accounts suggest a different origin). Though the previous paradigmatic definitions of the set still apply to these cards, it has now been overridden by a new name. "Dead man's hand" is a syntagmatic description, invoked by the internal relationships between the displayed cards and an external narrative. This description does not explicitly include any data intrinsic to the shown cards at all, relying instead on an extrinsic cultural reference that may not be known to all and may change over time.

With this example, we can see a few of the ways that manipulating the given elements of a set can change that set's definition, adding or removing specificity or even completely changing the label a viewer might apply to it. The single eight of clubs is indeed a black eight that is part of a dead-man's hand, so any of the subsequent set definitions could have been used to describe that single card from the very beginning. However, without the additional artifacts the viewer has no way to know what specific characteristic of

that card to describe, defaulting to simply stating the most obvious data available: it is the eight of clubs.

COLLABORATIVE CONTEXTUALIZATION

Manipulating the identification of a set is a common feature of art. Recontextualization is, after all, taking an object and putting it in a new setting. If one thinks of setting as just another potential member of the set, on par with the artifact itself, then contextualization defines the identification of the entire set of the artwork.

In museum settings, the role of providing context is usually given to a curator, likely either working with the artist or with respect to the artist's perceived wishes and intentions. Everything from lighting to positioning, and the other works that share a space, can provide context and shape perception of an artwork. In some cases, context is so powerful that the roles of the artist and curator are forced to merge so that an integrated system describing the work and its context can be created.

Often left out of this process are the ultimate consumers of the work, who are expected, simply, to show up and accept what is placed before them. While there is a common understanding that audiences will apply their own contextual history to a piece, the traditional expectation is that this is either a process internal to individual audience members or a transaction between artist and viewer as in Ascott's Field Theory. Third parties often only become involved when critics and historians write about the work, influencing its perception over time and creating an aura around the work.

The Variable Museum makes third party contextualization an integral part of the work. However, doing so requires tweaking the vocabulary of art and coming up with some new definitions:

- » Artifact – an individual work, what would usually be called an artwork (e.g., a painting, a sculpture, an installation).
- » Set – A collection of multiple artifacts that form a paradigmatic group. For the purposes of *The Variable Museum*, the individual artifacts are fungible.

- » Artwork (or piece) – in *The Variable Museum*, an artwork can be understood to be a physical location in the gallery where a set is placed. The artwork is represented to individual visitors as a single artifact. Construction of the final piece is only possible when multiple visitors combine their experiences of the artifacts they perceive in that location.

The Variable Museum is intended to encourage discussion between visitors and thus the construction of the final piece and in fact may be best defined as the rules that are in place to encourage this discussion:

- » Visitors must pass through *The Variable Museum* in groups, staying together until they leave. Individuals are not allowed to take in the piece alone.
- » Artifacts in sets must be linked in a non-trivial way. Ideally, a balance point should be found where linkages are not so apparent as to be dismissed as obvious and not so obscure as to be easily missed. Defining the paradigm is left to the artist in charge of each instance of *The Variable Museum*.
- » Artifacts in an artwork must occupy the same physical space as one another but must also only be perceived by one individual in a group.
- » Ideally, the AR implementation should not allow visitors to easily share the artifact assigned to them with other members of their group. Visitors have to come up with their own means of describing or discussing their artifact and creating their artwork. Due to practical concerns, this may not always be possible.
- » The AR implementation should not interfere with the ability of the members of a group to communicate with each other. This is a critical point for a work that is trying to promote discussion, and a missing feature from full virtual reality or distributed network-based approaches to digital content.



This set of rules clearly leaves a great deal open to interpretation. Specific means of displaying artifacts, the paradigms and artwork under consideration, and the installation of *The Variable Museum* itself are all left to the artists in charge of each iteration of the piece. Instead, the core of *The Variable Museum* is an idea: when several people in the same space are given partial experiences of an artwork, communication between them will develop a shared connotative meaning that is different from if they were all given the complete experience.

Consider the infrastructure that is necessary to describe an artifact to another person. Herbert Clark calls this process "grounding," describing it as not only the process of description but also the feedback required to be sure that understanding has actually been established between two conversants:

*We assume that the criterion people try to reach in conversation is as follows (Clark and Schaefer, 1989; Clark & Wilkes-Gibbs, 1986): The contributor and his or her partners mutually believe that the partners have understood what the contributor meant to a criterion sufficient for current purposes. This is called the grounding criterion. Technically, then, grounding is the collective process by which participants try to reach this mutual belief.*⁹

The steps necessary to establish grounding vary considerably depending upon the individuals in a group. Strangers have to do more work because they must establish the background and experiences of their partners before they can begin to discuss actual content. Their respective backgrounds will further influence how an artifact is described: two art historians may be able effectively to communicate an image of a painting by simply stating its name. Two people without that shared background would need to describe the intrinsic properties of the painting itself, recreating it from scratch, within the mind of the listener and strongly inflecting the image with the speaker's biases.

THE VARIABLE MUSEUM

The first instantiation of *The Variable Museum* was installed at *Without Borders VIII* in Orono, Maine, in August 2011. This version of the piece was built around three Vuzix AR920 augmented reality headsets running on three MacBook Pros. Installed in a gallery setting, the augmented reality fiducial markers were framed and placed on the walls to establish a space in which virtual artifacts could be placed. Each marker

Figure 6. AR markers used in the *Without Borders VIII* installation of *The Variable Museum*, Orono, ME 2011.

© John Bell.

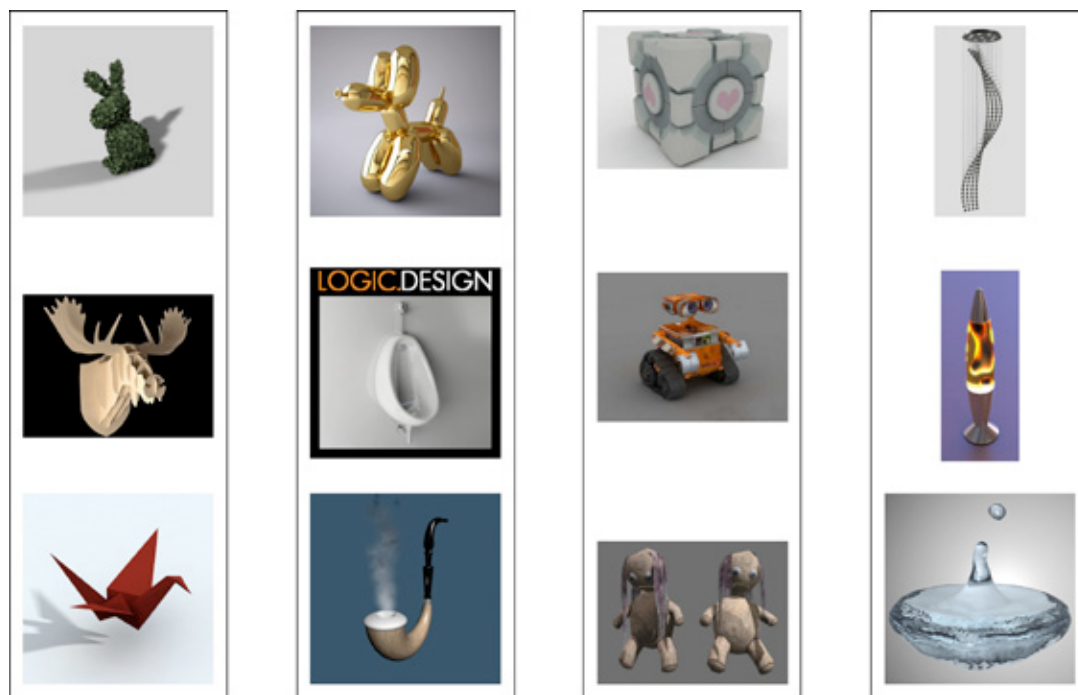


Figure 7. The four artworks in the Without Borders VIII installation of *The Variable Museum*, Orono, ME 2011. Royalty-free licensed images from turbosquid.com.

was modified to add clip art embedded in the images that helped describe the rules of the set at its location.

Each MacBook Pro/AR920 combination presented its wearer with one artifact in each of four artworks as defined previously. To emphasize the fungibility of the individual artifacts clip art was also used for the 3D models. The four artworks each demonstrates different methods of establishing paradigmatic sets that could form the basis of future iterations of *The Variable Museum* including one with a focus on purely auratic properties, one with purely intrinsic aesthetic looks, one that mixes the aesthetic and intellectual, and one with strong extrinsic but non-auratic properties. (The fifth marker was adopted to adapt the installation to the physical space available and did not have an artwork associated with it.)

The second instantiation of *The Variable Museum* was at the Pixelpoint 2011 exhibition in Gorizia, Italy in December 2011. The artworks shown were the same as the first instance, though the physical layout was different and the extra fiducial could be removed. The key difference, though, was that the Pixelpoint version did not use the fully immersive headsets from Without Borders; instead, iPod Touches were used to view artifacts. This adaptation was necessary to handle the larger crowds at Pixelpoint since the AR920s are extremely cumbersome. While the content in both instantiations was identical, it was much easier to show somebody else the screen of an iPod Touch than share the view through a set of AR glasses. This difference led to less crosstalk between viewers and the expansion of Ascott's field was less obvious. Future installations will need to find a better balance point between accessibility and personalization.

PIERCING THE BUBBLE

In 2011, Eli Pariser gave a name to a phenomenon that many media critics had been noticing since the rise of the search engine: The filter bubble.¹⁰ The filter bubble is created by invisible, algorithmic data curation that is customized to individuals and shows them only things in which they are already interested or arguments with which they already agree. It is created when Google, Facebook, or other mediation portals try to be helpful, but as Pariser argues, lack of exposure to alternative viewpoints may be harmful to the discourse necessary to keep a society together. They ensure that the only perspective an individual ever sees is the one they already possess.

Filter bubbles can only exist because they are invisible. As I sit in front of my monitor and see the results of a Google search, the only reason I do not understand it as a bubble is that there is not somebody sitting next to me and getting different results from the same search on their monitor. If the search term is a groundling point, like the fiducials in *The Variable Museum*, then there is nobody there to provide the second perspective necessary for analysis and discourse. There is no off-topic forum because all results are defined as topical.

Personalization, whether in art or informatics, is not inherently destructive to discourse; in fact, it is necessary. The borders of the individual filter bubble is where all the compelling discussions happen. *The Variable Museum* makes filter bubbles explicit, handing the viewer their own perspective and establishing rules that encourage finding ways to merge them together. If a group of people can burst their individual bubbles and creates a new, shared perspective, then the installation is a success. ■

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JOHN BELL

interviewed by

Lanfranco Aceti & Richard Rinehart

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

There is an outside of the art world, but the line of demarcation is not so much a border as a semi-permeable membrane. It selectively allows in only those pieces that are tagged with the label of 'art.' Interventions will inevitably either be assimilated and tagged as 'art' or rejected and cast back out into reality. For the pieces that are accepted, aura begins to accumulate as soon as they are tagged and any claim of being an outsider is rendered moot.

There is a brief window in the time between acceptance and assimilation where work can be done, and that is what intervention should aim for. The only hope is that the assimilation process changes the art world as much as it changes the artwork during this time. Certainly there is precedent for that, and occasionally it can even be said that the change is the intentional result of an intervention. The ratio of interventions causing shifts in the art world to the art world causing shifts in would-be interventionists is not encouraging for those who are after systemic change, and yes, the result often boils down to marketing and branding.

The more successful art interventions take ideas and methodology from art and apply it elsewhere, creating artistic works that do not get through the membrane until somebody inside the art world goes out and

grabs them. These pieces, whether labelled technology, or industry, or craft are what drives art world change and what art interventions seek to emulate. The intervention itself is often an attempt to artificially accelerate this process, since the art world as an institution is slower to see these changes than individual artists.

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

I do not see virtual artworks as being any different than any other kind of artwork for these purposes. What intrinsic property of a virtual artwork would move that line—wherever it may be—compared to a painting, or sculpture, or performance? The artist is still setting a stage, and the viewer is still interrogating it to extract whatever they may find. Both are still contextualizing everything they see with their outside experiences and knowledge. If I push bits instead of paint, it just means that I am manipulating a different set of tools to get ideas, images, and environments out of my head and into some setting where others can take a look.

The break point here is not between intrinsic and extrinsic; it is between different sets of extrinsic properties. Virtual artworks, particularly augmented reality because of its personal relationship to the viewer, make it possible to present varying experiences to

multiple viewers. One person may look at a particular spot on the wall and see a flower, while another may see a gun. The artist has defined this ahead of time, so while there are two separate images they are still manifestations of the same intrinsic property of the work. However, since they are going to prompt very different reactions in the two viewers, there is an opportunity for the externalities to access entirely different rhizomatic networks of ideas and thus change the perception of the piece.

Of course, this happens with interpretation of all artwork, so it is a difference of degree, not type. Augmented reality provides a second feature that can be exploited here though: personalization. Personalization is different than customization. In my example of the gun and the flower, that effect could be achieved physically by using lenticular printing so that there are two different "customized" images depending on where the viewer stands. To see the other image all one has to do is shuffle a few feet to the side and look from a different angle, providing the viewer with all the information the artwork has to offer.

Augmented artworks – at least once the technology reaches the point the industry is racing toward, with glasses- or contact lens-based displays – are personalized. One viewer cannot trivially discover what another viewer is seeing. To extract all intrinsic properties from the artwork requires talking to other viewers to discover what their personalized display is showing them, and in the process the viewer is forced to take on the externalities of everybody they talk to. Here, the artist's hand becomes supplemented by the viewers'—though certainly not replaced – and the final impact of the piece is the result of collaboration and negotiation between all the players.

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

I think Fluxus is a good place to start, particularly scores by Dick Higgins, George Brecht, or Ken Friedman, among many others. These are pieces that highlight the collaborative space between artist and viewer (I'd prefer to use the word 'consumer' here since that is less medium-specific, but will stick with 'viewer' because it lacks commercial overtones that I do not intend). My work attempts to get to a similar place, though I try to provide more of a supporting structure and direction than a Fluxus score.

It may sound somewhat strange, but my background as a programmer strongly influences my conceptual framework for art. Programming decisions, particularly object-oriented programming, are often motivated by the idea of separation of concerns – that is, making sure that different parts of a program carry out specific functionality. A program is an assembly of these specific modules of functionality that work together toward a certain goal. My artwork tends to be assembled in a similar way, by first determining what my overall goal is, then constructing the individual pieces necessary to meet it and assembling them into a cohesive whole. This is particularly important for personalized augmented reality interventions where individual viewers only have partial information about the piece. What modules are necessary for everybody? Which ones can I supply as an artist, and what does the viewer have to bring to the table? How can they be compiled into a solution for the problem I'm

trying to solve? These are the same kinds of issues that programmers think about when designing software architecture.

I first started to apply these ideas to the art world with work on the Variable Media Questionnaire, a preservation tool focusing on ways to maintain ephemeral or media-dependent artwork that has a short natural life span. Within those works, I saw the same kind of modules that I see in software: a CRT that takes on the functionality of displaying video, but might have to be replaced with an LCD of similar functionality when the original dies. Augmented reality allows a new way to import these modules and connect them together. I've recently been referring to my work as 'born variable,' designed from the outset to be a field of modules that can be replaced as necessary so long as the overall core remains intact. If there is a slippery slope involved in variable media preservation, 'born variable' creation unapologetically roams at the bottom of the gully to see if there is anything interesting waiting to be brought up.

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

The label of 'art' expands the possibilities of interaction and impact for artists who take advantage of it. Art, particularly contemporary fine art, has a social standing that prompts viewers to look below the surface for deeper insight, meaning, or emotion. Once a viewer believes an artwork to be recondite, the relationship between the two changes and the viewer is put into a state of curiosity and receptivity that is not associated with everyday creative acts. Artists who wish to do so may use this mode for any number of interventions that would not be possible in a different

context. I like Roy Ascott's description of this state in his article *Towards a Field Theory for Post-Modernist Art*:

*Art does not reside in the artwork alone, nor in the activity of the artist alone, but is understood as a field of psychic probability, highly entropic, in which the viewer is actively involved, not in an act of closure in the sense of completing a discrete message from the artists (a passive process) but by interrogating and interacting with the system 'artwork' to generate meaning. This field provides for transactions to take place between the psychic system 'artist' and the psychic system 'viewer' where both are, to use Umberto Eco's phrase, 'gambling on the possibility of semiosis'. Thus the viewer/observer must be a participator and is of operational importance in the total behavior of the system. (Roy Ascott, "Towards a Field Theory for Post-Modernist Art." *Leonardo* 13, no. 1 (1980): 51–52.)*

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

I think the lack of intent or determinacy has been surprising for me. Originally, my artistic practice was all about finding a way to get an idea out of my head, transmit it intact through whatever medium was most useful, and convince the viewer to reconstruct it in their mind. Even when that works it can only happen to a limited extent, and most people do not like to be lectured to by art in any case, so the result was an overall state of disengagement between the viewer and the work.

In trying to get more engagement out of viewers, I started to build interactive hooks into my work. Sometimes these were aggressive – a web site that sends you an email every few minutes comes to mind – and other times it was about giving incentives to the viewer – interact with this artwork and you get a copy for free! But what I eventually ended up doing is creating half of an artwork; pieces and prompts that encourage the viewers to be creative and complete the other half, either physically or mentally. In augmented reality pieces like *The Variable Museum*, I can go even further and just create a space where two viewers supply each other with the missing halves of their own creations. That is incredibly far away from the simple communication model that I started with, but I find watching the results to be fascinating and inspirational. ■

JOHN BELL

statement & artwork

The Variable Museum is an experiment in the relationship between the creators, curators, and consumers of art.

The pictures on the wall are not the artwork: they are augmented reality markers, used to position a head mounted display in space. When looking through the display a visitor sees 3D artifacts inserted into the physical museum space; these, though, are not the artwork either. Visitors are only allowed to use the displays in groups where each member of the group experiences different artifacts occupying the same physical space. While visitors cannot experience each other's artifacts, if they describe the artifacts to each other they will find common threads among each set. The sets of artifacts that groups of visitors experience, along with the descriptions of the individual artifacts that they give each other, is the actual artwork.

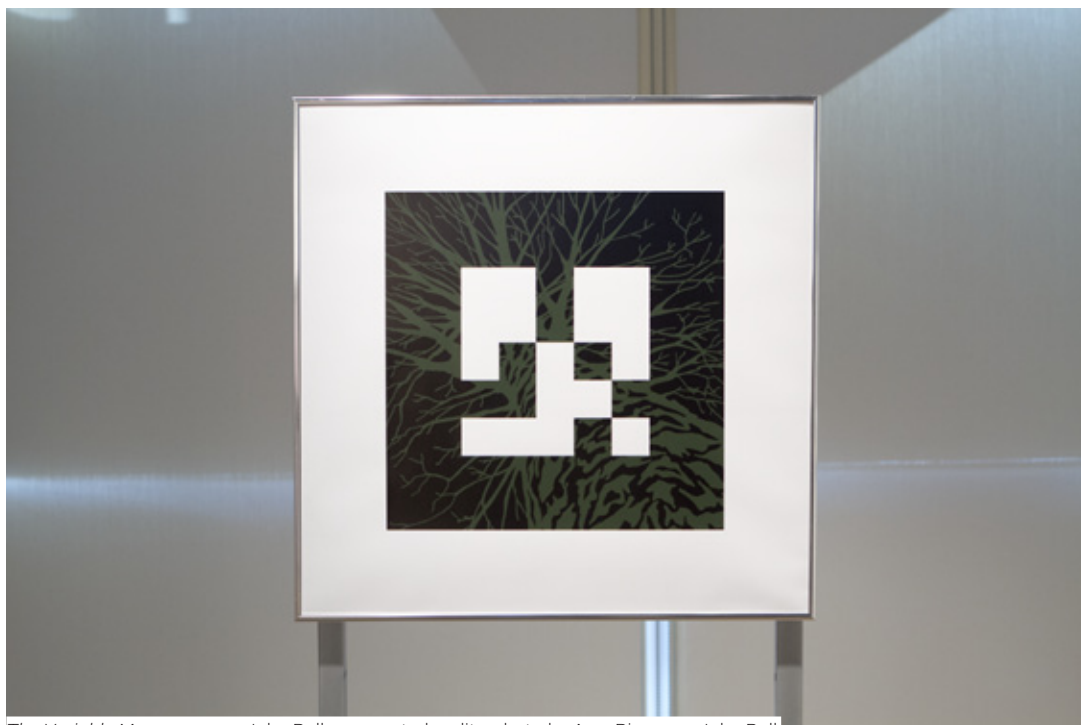
One of my major goals for my work is that everything I make should be valid across multiple disciplines, with the only difference between them being the perspective taken by the work's consumer. If a project I create is shown in a gallery or museum it can be art; if it is discussed in writing it might be concept or theory; if it is used to accomplish a task it is an application. While one perspective may be the primary one for a given work, in order to be complete my work must balance conceptual, perceptual, and technical aspects to produce a whole that is greater than the sum of its parts. ■



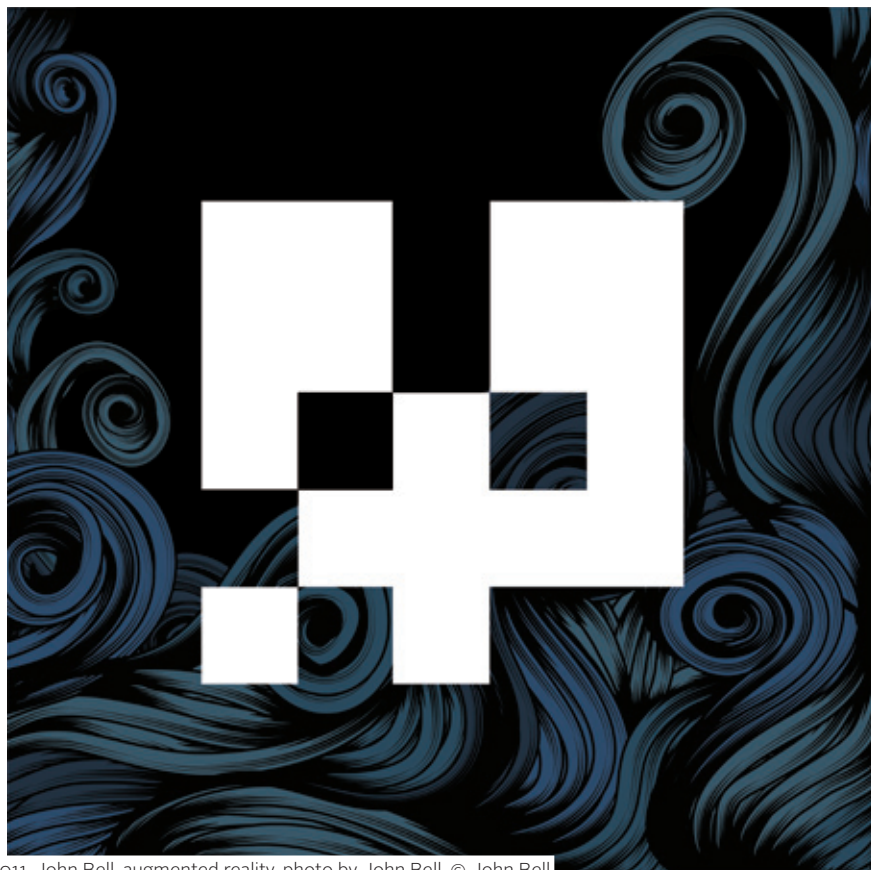
The Variable Museum, 2011, John Bell, augmented reality, photo by Amy Pierce. © John Bell.



The Variable Museum, 2011, John Bell, augmented reality, photo by Jon Ippolito. © John Bell.



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Deadly Cuts To The Arts

A New International Initiative of
the Museum of Contemporary Cuts in collaboration with
Operational and Curatorial Research

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Operational &
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