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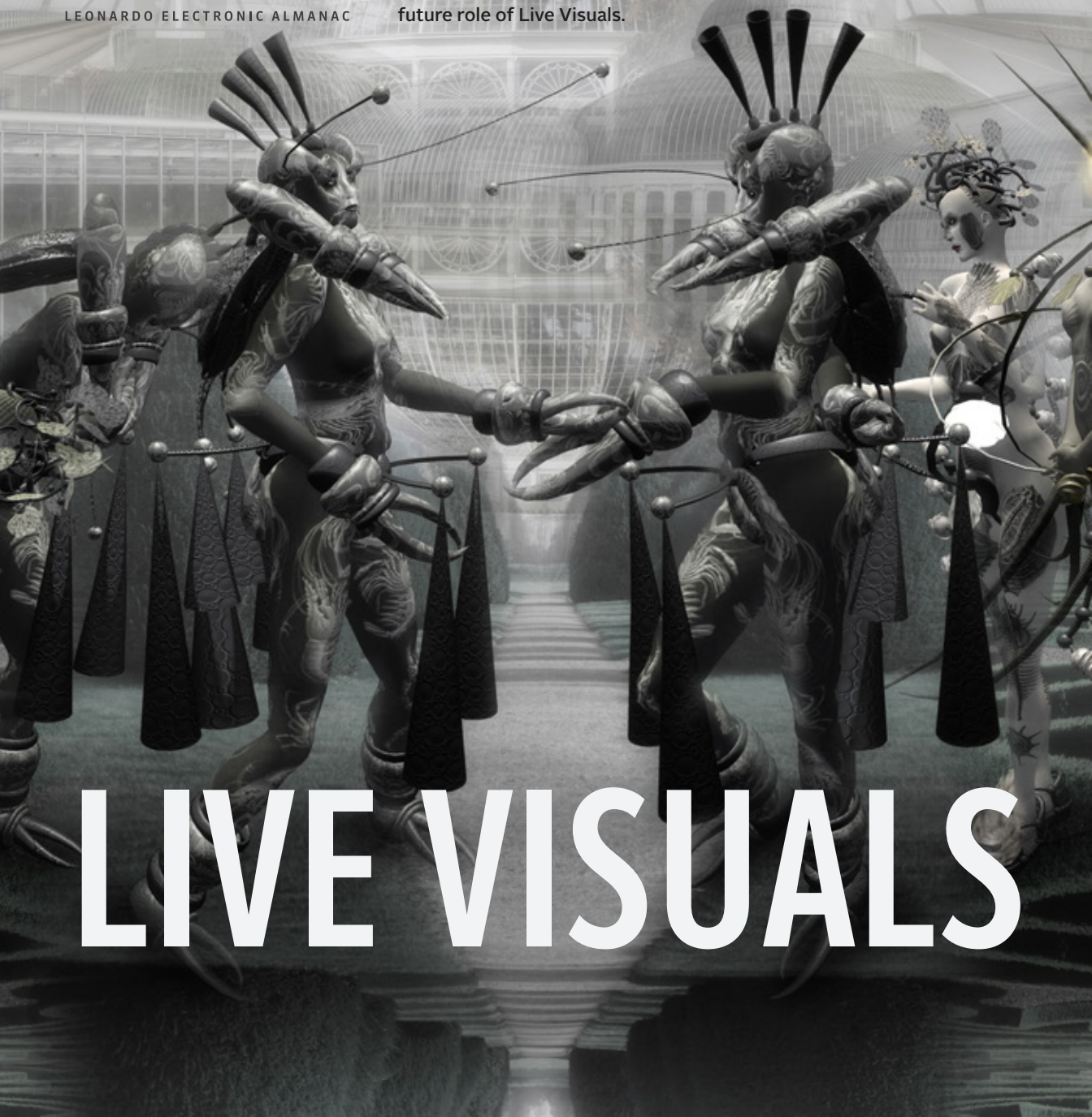
VOL 19 NO 3 VOLUME EDITORS **LANFRANCO ACETI, STEVE GIBSON & STEFAN MÜLLER ARISONA** EDITOR **ÖZDEN ŞAHİN**

Live visuals have become a pervasive component of our contemporary lives; either as visible interfaces that re-connect citizens and buildings overlaying new contextual meaning or as invisible ubiquitous narratives that are discovered through interactive actions and mediating screens. The contemporary re-design of the environment we live in is in terms of visuals and visualizations, software interfaces and new modes of engagement and consumption. This LEA volume presents a series of seminal papers in the field, offering the reader a new perspective on the future role of Live Visuals.



LIVE VISUALS

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The Encounter, Elif Ayiter, 2010, Screenshot of Cinematic Play Session in Second Life. © Elif Ayiter. Used with Permission.

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Live Visuals

VOLUME EDITORS
LANFRANCO ACETI, STEVE GIBSON & STEFAN MÜLLER ARISONA

EDITOR
ÖZDEN ŞAHİN

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When Moving Images Become Alive!

"Look! It's moving. It's alive. It's alive... It's alive, it's moving, it's alive, it's alive, it's alive, it's alive, IT'S ALIVE!"
Frankenstein (1931)

Those who still see – and there are many in this camp – visuals as simple 'decorations' are living in a late 19th century understanding of media, with no realization that an immense cultural shift has happened in the late 20th century when big data, sensors, algorithms and visuals merged in order to create 21st century constantly mediated social-visual culture.

Although the visuals are not actually alive, one cannot fail to grasp the fascination or evolution that visuals and visual data have embarked upon. It is no longer possible to see the relationship of the visual as limited to the space of the traditional screens in the film theater or at home in the living room with the TV. The mobility of contemporary visuals and contemporary screens has pushed boundaries – so much so that 'embeddedness' of visuals onto and into things is a daily practice. The viewers have acquired expectations that it is possible, or that it should be possible, to recall the image of an object and to be able to have that same object appear at home at will. The process of downloading should not be limited to 'immaterial' digital data, but should be transferred to 3D physical objects. [1]

Images are projected onto buildings – not as the traditional trompe l'oeil placed to disguise and trick the eye – but as an architectural element of the building itself; so much so that there are arguments, including mine, that we should substitute walls with projected information data, which should also have and be perceived as having material properties (see in this volume "Architectural Projections" by Lukas Treyer, Stefan Müller Arisona & Gerhard Schmitt).

Images appear over the architecture of the buildings as another structural layer, one made of information data that relays more to the viewer either directly or through screens able to read augmented reality information. But live visuals relay more than images, they are also linked to sound and the analysis of this linkage provides us with the opportunity "to think about the different ways in which linkages between vision and audition can be established, and how audio-visual objects can be composed from the specific attributes of auditory and visual perception" (see "Back to the Cross-modal Object" by Atau Tanaka).

iPads and iPhones – followed by a generation of smarter and smarter devices – have brought a radical change in the way reality is experienced, captured, uploaded and shared. These processes allow reality to be experienced with multiple added layers, allowing viewers to re-capture, re-upload and re-share, creating yet further layers over the previous layers that were already placed upon the 'original.' This layering process, this thickening of meanings, adding of interpretations, references and even errors, may be considered as the physical process that leads to the manifestation of the 'aura' as a metaphysical concept. The materiality of the virtual, layered upon the 'real,' becomes an indication of the compositing of the aura, in Walter Benjamin's terms, as a metaphysical experience of the object/image but nevertheless an experience that digital and live visuals are rendering increasingly visible.

"Everything I said on the subject [the nature of aura] was directed polemically against the theosophists, whose inexperience and ignorance I find highly repugnant. . . . First, genuine aura appears in all things, not just in certain kinds of things, as people imagine." [2]

The importance of digital media is undeniably evident. Within this media context of multiple screens and surfaces the digitized image, in a culture profoundly visual, has extended its dominion through 'disruptive forms' of sharing and 'illegal' consumption. The reproducibility of the image (or the live visuals) – pushed to its very limit – has an anarchistic and revolutionary element when considered from the neocapitalistic perspective imbued in corporative and hierarchical forms of the construction of values. On the contrary, the reproducibility of the image when analyzed from a Marxist point of view possesses a community and social component for egalitarian participation within the richness of contemporary and historical cultural forms.

The digital live visuals – with their continuous potential of integration within the blurring boundaries of public and private environments – will continue to be the conflicting territory of divergent interests and cultural assumptions that will shape the future of societal engagements. Reproducibility will increasingly become the territory of control generating conflicts between *original* and *copy*, and between the layering of *copy* and *copies*, in the attempt to contain ideal participatory models of democracy. The elitist interpretation of the aura will continue to be juxtaposed with models of Marxist participation and appropriation. [3]

Live visuals projected on public buildings and private areas do not escape this conflict, but present interpretations and forms of engagements that are reflections of social ideals. The conflict is, therefore, not solely in the elitist or participatory forms of consumption but also in the ideologies that surround the cultural behaviors of visual consumption.

Object in themselves, not just buildings, can and may soon carry live visuals. There is the expectation that one no longer has to read a label – but the object can and should project the label and its textured images to the viewer. People increasingly expect the object to engage with their needs by providing the necessary information that would convince them to look into it, play with it, engage with it, talk to it, like it and ultimately buy it.

Ultimately there will be no need to engage in this process but the environment will have objects that, by reading previous experiences of likes and dislikes, present a personalized visual texture of reality.

Live visuals will provide an environment within which purchasing does not mean to solely acquire an object but rather to 'buy' into an idea, a history, an ideology or a socio-political lifestyle. It is a process of increased visualization of large data (Big Data) that defines and re-defines one's experience of the real based on previously expressed likes and dislikes.

In this context of multiple object and environmental experiences it is also possible to forge multiple individualized experiences of the real; as much as there are multiple personalized experiences of the internet and social media through multiple avatar identities (see "Avatar Actors" by Elif Ayter). The 'real' will become a visual timeline of what the algorithm has decided should be offered based on individualized settings of likes and dislikes. This approach raises an infinite set of possibilities but of problems as well.

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The life of our representation and of our visuals is our 'real' life – disjointed and increasingly distant from what we continue to perceive as the 'real real,' delusively hanging on to outdated but comfortable modes of perception.

The cinematic visions of live visuals from the 19th century have become true and have re-designed society unexpectedly, altering dramatically the social structures and speeding up the pace of our physical existence that constantly tries to catch up and play up to the visual virtual realities that we spend time constructing.

If we still hold to this dualistic and dichotomist approach of real versus virtual (although the virtual has been real for some time and has become one of the multiple facets of the 'real' experience), then the real is increasingly slowing down while the virtual representation of visuals is accelerating the creation of a world of instantaneous connectivity, desires and aspirations. A visuality of hyper-mediated images that, as pollution, pervades and conditions our vision without giving the option of switching off increasingly 'alive' live visuals. [4]

The lack of 'real' in Jean Baudrillard's understanding is speeding up the disappearance of the 'real' self in favor of multiple personal existential narratives that are embedded in a series of multiple possible worlds. It is not just the map that is disappearing in the precession of simulacra – but the body as well – as the body is conceived in terms of visual representation: as a map. These multiple worlds of representations contribute to create reality as the 'fantasy' we really wish to experience, reshaping in turn the 'real' identity that continuously attempts to live up to its 'virtual and fantastic' expectations. Stephen Gibson presents the reader with a description of one of these worlds with live audio-visual simulations that create a synesthetic experience (see "Simulating Synesthesia in Spatially-Based Real-time Audio-Visual Performance" by Stephen Gibson).

If this fantasy of the images of society is considered an illusion – or the reality of the simulacrum, which is a textual oxymoron at prima facie – it will be determined through the experience of the *live visuals becoming alive.*

Nevertheless, stating that people have illusory perceptions of themselves in relation to a 'real' self and to the 'real' perception of them that others have only reinforces the idea that Live Visuals will allow people to manifest their multiple perceptions, as simulated and/or real will no long matter. These multiple perceptions will create multiple ever-changing personae that will be further layered through the engagements with the multiple visual environments and the people/avatars that populate those environments, both real and virtual.

In the end, these fantasies of identities and of worlds, manifested through illusory identities and worlds within virtual contexts, are part of the reality with which people engage. Although fantastic and illusory, these worlds are a reflection of a partial reality of the identity of the creators and users. It is impossible for these worlds and identities to exist outside of the 'real.' This concept of real is made of negotiated and negotiable frameworks of engagement that are in a constant process of evolution and change.

The end of post-modernity and relativism may lead to the virtuality of truism: the representation of ourselves in as many multiple versions – already we have multiple and concurrent digital lives – within the world/s – ideological or corporate – that we will decide or be forced to 'buy into.'

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It is this control of the environment around us and us within that environment that will increasingly define the role that live visuals will play in negotiating real and virtual experiences. The conflict will arise from the blurred lines of the definition of self and other; whether the 'other' will be another individual or a corporation.

The potential problems of this state of the live visuals within a real/virtual conflict will be discovered as time moves on. In the end this is a giant behavioral experiment, where media and their influences are not analyzed for their social impact *ex ante facto*; this is something that happens *ex post facto*.

Nevertheless, in this ex post facto society there are some scholars that try to understand and eviscerate the problems related to the process of visuals becoming alive. This issue collects the analyses of some of these scholars and embeds them in a larger societal debate, hinting at future developments and problems that society and images will have to face as the live visuals become more and more alive.

The contemporary concerns and practices of live visuals are crystallized in this volume, providing an insight into current developments and practices in the field of live visuals.

This issue features a new logo on its cover, that of New York University, Steinhardt School of Culture, Education, and Human Development.

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My special thanks go to Deniz Cem Önduygu who has shown commitment to the LEA project beyond what could be expected.

Özden Şahin has, as always, continued to provide valuable editorial support to ensure that LEA could achieve another landmark.

Lanfranco Aceti
Editor in Chief, Leonardo Electronic Almanac
Director, Kasa Gallery

1. 3D printing the new phenomenon will soon collide with a new extreme perception of consumer culture where the object seen can be bought and automatically printed at home or in the office. Matt Ratto and Robert Ree, "Materializing Information: 3D Printing and Social Change," *First Monday* 17, no. 7 (July 2, 2012), http://firstmonday.org/ojs/index.php/fm/article/view/3968/3273 (accessed October 20, 2013).
2. Walter Benjamin, "Protocols of Drug Experiments," in On Hashish, ed. Howard Eiland (Cambridge, MA: Harvard University Press, 2006), 58.
3. " The point here is not to issue a verdict in the debate between Adorno and Benjamin, but rather to understand the debate between them as representing two sides of an ongoing dialectical contradiction." Ryan Moore, "Digital Reproducibility and the Culture Industry: Popular Music and the Adorno-Benjamin Debate," Fast Capitalism 9, no. 1 (2012), http://www.uta.edu/huma/agger/fastcapitalism/9_1/moore9_1.html (accessed October 30, 2013).
4. Paul Virilio, *Open Sky*, trans. Julie Rose (London: Verso, 1997), 97.

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THE FUTURE OF CINEMA

Finding New Meaning through Live Interaction

by

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A B S T R A C T

This article seeks to articulate the growing role of the cinema as a place for live media, identifying key practices and placing them within the broader context of new media. Against this synopsis there will be an examination of the role of the arts in defining the cinema space as a place for new interactions with media. Cinema is in its final transition from chemically processed media to fully digital, yet our interactions with this media still carry assumptions based upon its previous incarnation. As Marshall McLuhan described (1964) artists can act as a "Distant Early warning system." [1] This article argues the essential role of artists in contextualising and appropriating the attributes of new media into a live spectacle in order to help us find new meaning in the cinema space.

Cinema auditoriums have been in a state of transition for the last ten years, finally moving from reliance upon chemically processed, discrete media in the form of 35mm film to continuous digital media. High-resolution digital video projectors are now replacing 35mm film projectors in the majority of commercial and large specialist cinemas. Artists have been present throughout, experimenting, redefining and finding new meaning during this period of fundamental change. The cinema auditorium has undergone a radical transformation in terms of what it can deliver; yet its programmers and its audiences are generally behaving like nothing has changed. This article seeks to explore the role that the arts can play in defining the cinema as a space for live interaction. As I will discuss, these interactions relate historically to earlier experiments with expanded cinema and new media arts practice. These new interactions present us with a range of new contexts through which to engage meaningfully with the future of the cinema space.

Cinema and the cinema auditorium are implicitly linked via an audience expectation for shared narrative accessed via a discrete media for a set duration, averaging around two hours. The film and cinema industry produces this material and the cinema auditorium displays it. When discussing *A Short History of Performance*, Ian White questions the documentation of live art asking if "like a film rented from a distributor many years after its premiere, a live work could be performed outside of the socio-historical context that it initially occurred within." [2] White goes on to suggest that in this context "circumstance was meaning." [3] He proposes it is possible to turn the equation of an act and its relic on its head in a way that would "implicate the document as an equally primary act." [4] Via a reference to Hans Richter's essay "The Film As An Original Art Form" [5] White considers "film as a reconfigured space, producing its own set of circumstances." [6]

This leads us to examine the cinema auditorium as creating the social circumstance under which we witness an act of production. When scrutinizing notions of what is old and new media Lev Manovich discusses cinema as new media, "Cinema was from its beginnings based on sampling – the sampling of time. Cinema sampled time twenty-four times a second. So we can say that cinema prepared us for new media." [7] Manovich argues in *The Language of New Media* that through this sampling cinema became a discreet media (via the specific sample value), relating it to digital code and stating "Cinema was thus the original modern 'multimedia.'" [8] Film remains the dominant media in cinema auditoriums. David Tomas helps us elucidate the role that film now plays in our modern society via his essay "Old Rituals for New Space: Rites de Passage and William Gibson's Cultural Model of Cyberspace." Tomas refers to Victor Turner's argument that "for every major social formation there is a dominant mode of public liminality." [9] He adds "Film, in his opinion, is the dominant form of public liminality in electronically advanced societies." [10] However it is important that we consider that these arguments are now historical.

The cinema industry is now to moving away from chemically processed media, largely in the form of 35mm wide, four perforations per frame, negative pulldown film. This film is physical and at 16 frames per foot of film an 80 minute long film occupies a considerable amount of physical space.

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Commercial cinemas began migrating to digital film around 2004, using high-quality video projectors which were coupled with advanced systems for storing and playing digital media largely in the form of Digital Cinema Package format media files. The full implications of this change became apparent not long after I began work at a specialist cinema in 2008. One of the projectors broke. It stopped playing a film half way through although the bulb worked, so a phone call was made to the company who supplied and maintained it. They did not send a mechanic as they might have for a 35mm projector. They sent a Linux expert. It became apparent that the projectors ran a specialist, multi media focused Linux operating system and they could ingest movie files via FTP.

Digital projection has now become common in most large cinemas. This is partly motivated by distributors wishing to reduce print costs. On average an 80 minute 35mm film reel costs a thousand pounds to print and a run of 800 prints will be made of a main title. This change was also motivated to a smaller extent by an attempt by film distributors to introduce '3D' film technologies, which could be better managed via the precision offered by digital projectors. However, one thing that is yet to change is the channel of distribution. 35mm film would arrive at the cinema on the back of a truck, currently digital film is distributed via 1.5tb hard drives that arrive at the cinema via a slightly smaller van, but the mode of distribution is unchanged. There are increasing experiments with online distribution of mainstream film media (most digital cinema projectors can connect to a network and servers via FTP) but it is by no means common practice. Therefore, as we see there is still a traditional relationship between the media provider and the client. This inevitably leads to a continuation of a traditional relationship between the cinema and it's audience.

There is a growing desire amongst some specialist, non-mainstream cinemas in the UK to fully explore the implications of these new technologies in order to gain a better understanding of what the future holds for one of the oldest of new media. Organisations such as FACT in Liverpool and Watershed in Bristol run venues that present both New Media Arts and a Cinema programme. The Tyneside Cinema in Newcastle also runs a creative digital arts programme that exists to explore the implications of new technologies in the cinema. This exploration would seem to confirm McLuhan's suggestion that art can inform an old culture about what is happening to it. [11] Artists are still the best choice for this exploration. Artists and cultural practitioners are found at the vanguard when it comes to fully understanding the implications of technological and cultural developments. Following this pattern we are again looking to artists to help us understand that the circumstance of the cinema auditorium has changed. Artists who are at the critical edge of this have been those who engage with live art, remixing and reconfiguring the cinema space to help us realize new meaning, recovering its position as the granddaddy of new media.

To refer back to Turner's point about cinema, this was written in 1977, cinema is no longer our dominant liminal space: we have constructed a new space via the stories we tell each other every day over computer networks. We are providing the narrative for continuous media made possible by the rise of ubiquitous computing via portable, networked multimedia devices. Many of us now have phones with built in cameras that are location aware and have a permanent connection to the Internet. Familiarity with these devices leads to a general understanding that it is possible to interact with a screen.

The arts can play a critical role in this examination of new technologies and their associated behavior in contemporary cinema and its auditoriums. This is not always the artist's intention but new knowledge is often a consequence of an artist's interrogation of a space and its associated technologies. This is increasingly the case with artists who engage with new media: Zach Lieberman reinforced this during an interview, which was conducted in October 2008 while Lieberman was then a fellow at Eyebeam Art and Technology Center. When asked why he preferred not to call himself an artist during an interview, he noted:

> *I find the word artist has a lot of bad meanings. What I have liked about the idea of artists and this is something I say in my talks is that I like the idea of art being the R&D department for humanity. So, doing research for people. Usually I give those talks and say those sorts of things primarily to make a point, which is that functioning as an artist I am performing research. So I say that kind of thing, but I am poking a little bit, I understand that I am making art.* [12]

There have been a number of celebrated live interactions with cinema by artists ranging from those whose practice is firmly rooted in live digital media through to well known directors such as Mike Figgis producing a live edit of *Timecode* (2000) and Peter Greenaway producing bespoke live performances in collaboration with DJ's and musicians.

There is a history of live performances in cinema, particularly amongst specialist cinemas. However this article does not seek to review these events. Rather, there is more to be gained in this brief space by examining key observed practices amongst a sample of contemporary new media artists that define cinema as a place for new interactions with media, rejecting old assumptions and creating a new map for this territory. These practices relate to: software as a means of live production, direct interactions with the projected image, telepresence for audience interaction and derivation.

Software as a means of production can be viewed within the exploratory context of new media and artists' engagement. A good example of this as it relates to artists' practice is the work of Jennifer and Kevin McCoy, [13] beginning by examining their proposal to the Rockefeller Foundation New Media Fellowships. In their abstract they state that they are "Interested in using computer technology to investigate what is called 'film magic' – the propensity of even the most sophisticated viewer to understand and, at the same time, be drawn in by illusionistic cinematic effects." [14] However the key point in this abstract is their belief that "Newer media is often used to understand the cultural conventions of older forms." [15] In their case they were interested in creating a robotic film set which is "Absent of film makers and actors. Creating narrative without human presence." [16] However it is still essentially a live work in which not only the camera but the software itself are a means of production.

As is the case with much of the McCoy's work, they create a physical device that feeds a screen or projector. This feed is manipulated by software in which the interaction between the object, the feed and the screen are managed by an algorithm that is an intrinsic part of the work in terms of its final form but it also interacts with the work over time. This creates a parameter in which the work lives. The rule by which the work is seen restricts the narrative to the artist's concept, presenting it as a set of infinite variations on a theme. Much of the software/hardware tools used in live performance scenarios can also create a set of parameters that the artist must work with, e.g. the VJ's manipulation of moving and still image accessed from their personal media library, a live feed or via generative algorithms. The artist uses hardware controllers to interpolate new, continuous meaning from these assets, e.g. the artist turns a dial which sends a stream of data to software, creating a crossfade from one video clip to the next. This is an over simplification, but to relate this activity back to its possible place in the cinema space we must look back at the earlier experiments with expanded cinema in the 1960s and 1970s. *Man with Mirror* by Guy Sherwin (1976) [17] stands out as an example of an artist's experimental interaction

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with the screen. Lucas Ihlein describes his work in his essay "Pre-digital New Media Art,"

> *In this piece the artist, standing in the beam of a Super 8 projector, holds and tilts a square mirror painted white on the reverse. The mirror/screen reflects back into the room, or catches and reveals the Super 8 footage shot in 1976 showing Sherwin tilting an identical mirror/screen outdoors. As the film is projected, the live performer attempts to 'mirror' his own earlier movements, with confounding results. Which is the real Guy Sherwin, which is the projected image? Each time Sherwin attempts to re-enact his own movements from 1976 the passage of time is further marked by his ageing body.* [18]

In producing this work and performing subsequent iterations, Sherwin created a set of rules for the performance of simple interactions with the projected image. This work relied upon the use of chemical media but the system hinted towards the subsequent use of algorithms and behaviors by artists wishing to produce work in a space dominated by an industry that has contracted the potential of its core medium.

The cinema industry is increasingly using the auditorium as a space for live-streamed media. Organisations that specialize in film distribution are now making use of streaming technologies to provide live screenings of performances and events: Picture House, a UK based distributor, have been expertly streaming performances from the Met Opera, the National Theatre, The Bolshoi Ballet and the Royal Opera House into cinema auditoriums for a number of years now via robust satellite streaming technologies. Cinema audiences attend these events and act as they would if they were at the actual event, dressed in formal clothing and booking drinks at the bar for the intervals. This emulated behavior serves to briefly illustrate that there is already a potential contraction of cinemas new potential via continuous media.

Artists have made use of network technologies to produce works that explore the idea of telepresence in playful ways such as Eduardo Kac's *Rara Avis* (1996), which as described by Claudia Giannetti

> *Is a large cage filled with approximately 30 real birds and a telerobot in the form of a rare bird (rara avis), inside whose head are installed two CCD (Charge-Coupled Device) cameras in place of eyes. Wearing the data helmet, in front of the cage, allows viewers to experience the surroundings from the rare bird's perspective; thus placing people inside the cage, where they can observe themselves from the telerobot's perspective. In addition, the helmet-wearing viewer's head movements trigger those of the rare bird.* [19]

More recently Lucy Pawlak created *Headmount* (2012) [20] which took place in a cinema, taking advantage of the various screens, auditoriums and internal IP network to create a live narrative in which an actor took the part of an avatar who had relinquished autonomy and gave free reign to the cinema audience to direct his actions as he encountered a series of problems and puzzling situations. This work drew obvious parallels with contemporary computer games and made a brave attempt at addressing the challenges faced when introducing open ended, game style narrative into the cinema auditorium. There was a notable difference from a computer gaming experience. Usually, when playing a game on a computer the user experience is mediated by the user interface and standard input devices i.e. mouse, keyboard and possibly a bespoke gamepad device. These devices limit input to a small number of gamers present per screen. In the case of *Headmount* (2012) a host mediated the user experience. The host encouraged, selected and relayed the participant's input to the actors in the game. This enabled an effective feedback system to thrive as the host took note of social cues from an audience who were presented with a live video and audio feed of the spatial and behavioral control they had over the avatar. Through this live feedback mechanism the audience had a far greater sense of presence within the constructs of the work than they would have as the audience of a streamed event such as a concert or performance which rely upon high definition and circumstance to produce an enhanced sense of presence at the actual event. Pawlak made use of the symmetrical nature of the cinemas network technologies to further expand upon a phenomenon described by Karl Horvath and Matthew Lombard in which "Our actual physical surroundings drop away from consciousness and we mentally enter the world of settings, people and events we are watching." [21]

These examples describe artists' defining new interactions with media, illustrating the necessary role artists can play in resisting any contraction of the potential offered by digital, networked technologies in the cinema auditorium. Their role is crucial as we attempt to fully understand cinema's current transition from discrete to continuous media. Any sense of finality we feel at the end of a film in the cinema auditorium is now entirely brought about by narrative. The cinema technology is now capable of presenting work of finite durations. It is no longer restricted by the space limitations imposed by chemical media. The projection booth is no longer filled with reels of 35mm film. Christian Marclays' *Clock* (2010) serves as a good example of work that uses digital storage to hugely extend the duration of film. Artists have made use of computers to create durational work with multiple permutations for some time now as can be seen in Stan Douglas' *Win, Place or Show* (1998) [22] which does not repeat the same combination of shots for two years. This disruption of the expected timeline is also present in the aforementioned live edits of Figgis and Greenaway as well as artists whose practice has a stronger context within live and visual arts whilst drawing from cinema's rich history in work such as Christoph Girardet and Matthias Müller's *Phoenix Tapes* (1999) as well as Vicki Bennett and Ergo Phizmizs' *The Keystone Cut Ups* (2010). [23] In making work that stretches the boundaries of what would have been possible via both editing and presentation of chemical media, artists are constantly challenging our assumptions about how cinema and the cinema auditorium should behave as it transitions towards its digital, networked state.

There is a growing role for the cinema auditorium as a space for live media encompassing a growing number of live practices that are beginning to engage with its context and circumstance. These range from highly commercial streamed performances through to critical interrogation of live media and cinema. Cinema has historically prepared us for new media and its modes of liminality. As we are now in the final stages of our current transition from chemical to digital media cinema is revealing new potential and challenging our assumptions. Digital projectors via their network connectivity and massive storage capabilities are already shaping the next wave of artist's interactions with cinema. We are witnessing a continued desire amongst creative practitioners to engage with cinema as it moves from discrete to continuous media. Artists are helping us chart new ground at this crucial moment through inspired interventions, finding new meaning as they redefine the possibilities for real time interaction in the cinema space. ■

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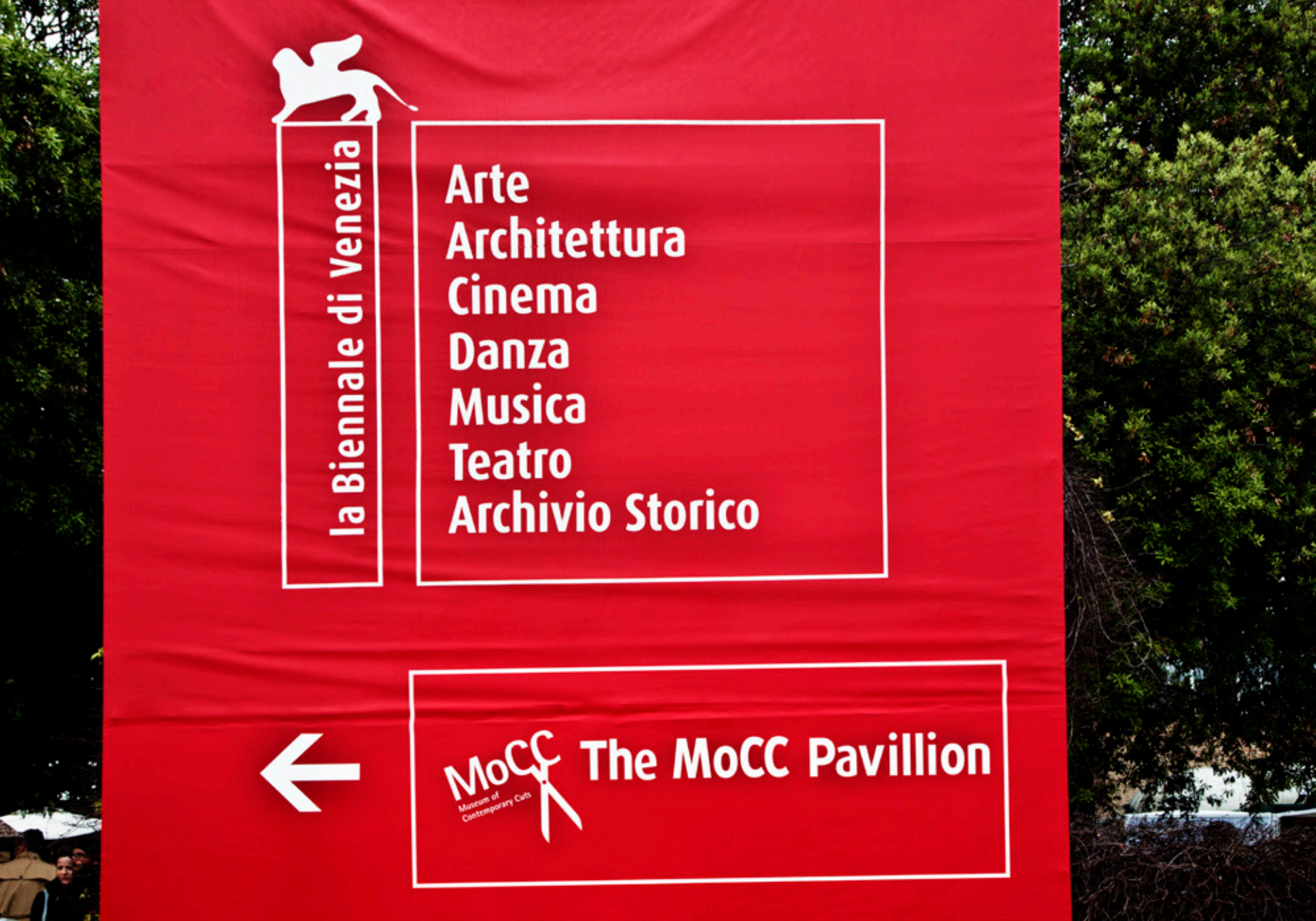
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