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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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# Live Visuals

VOLUME EDITORS

**LANFRANCO ACETI, STEVE GIBSON & STEFAN MÜLLER ARISONA**

EDITOR

**ÖZDEN ŞAHİN**

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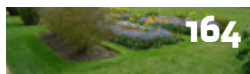
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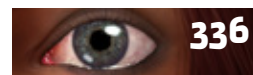
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# When Moving Images Become Alive!

“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. <sup>1</sup>

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.” <sup>2</sup>

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. <sup>3</sup>

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.

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. 

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 longer 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.'

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.

My thanks to Prof. Robert Rowe, Professor of Music and Music Education; Associate Dean of Research and Doctoral Studies at NYU, for his work in establishing this collaboration with LEA.

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My special thanks go to Deniz Cem Öndüğü 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/mooreg\\_1.html](http://www.uta.edu/huma/agger/fastcapitalism/9_1/mooreg_1.html) (accessed October 30, 2013).
4. Paul Virilio, *Open Sky*, trans. Julie Rose (London: Verso, 1997), 97.

# A 'REAL TIME IMAGE CONDUCTOR' OR A KIND OF CINEMA?

*Towards Live Visual Effects*

Sir Peter Maxwell Davies's *Miss Donnithorne's Maggot* performed live by Alison Wells (mezzo soprano), Gemini (8

piece ensemble), Matt Cameron (visual effects) and Peter Richardson (film maker). Screened and performed at the St Magnus Festival in June 2012.

© Peter Richardson, 2012. Used with permission.

by

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## ABSTRACT

*In this paper I describe a project that investigated methods for the incorporation of filmic visual effects (VFX) into artworks and performed environments. VFX are the computer-generated processes used in the film industry for manipulating live action and animated elements.*

*Traditionally moving image visuals in a performative / gallery / club context have been experienced as playback mediums, in which material is fixed in time and played from beginning to end. Real-time visuals require the intervention of a performer or a user to 'cut up' images live.*

*Since 2005 a number of film makers have moved away from narrative cinema towards 'live cinema': remixing their films for audiences as a live performed experience. This raises interesting possibilities to extend the genre within a performative art based approach.*

*Few filmmakers or VJs have incorporated 'live' visual effects as part of this cinematic experience. It is the tension between remixing and creating images and live visual effects that I identify as a key area for debate. Using the live cinema works of Peter Greenaway and Mike Figgis I investigate how 'live' this cinema really is or could ever hope to be. To further contextualize the possibilities for live visual effects I describe and analyze: Miss Donnithorne's Maggot: A performance / interactive film of Sir Peter Maxwell Davis's work of music theatre.*

## CINEMATOGRAPHIC LINEARITY

**Since the early 20<sup>th</sup> century filmmakers have employed linear, 'novelistic' methods to tell complex stories to audiences seated in film theatres.** Early technical developments in film, notably those of the Lumiere Brothers, who created immersive spectacles<sup>1</sup> and Georges Melies, who took a more narrative led approach to the new medium, occurred in Europe in the mid 1890s. By the early 1900s a nascent European studio system emerged in Denmark with the company Nordisk (1906) at its epicenter. The onset of the second world War (1914) saw the focus of this young industry move to the wealthier and as yet non-combatant United States of America. It was here that the recognized mainstream 'system' of making films emerged. The Hollywood method of making structural

narrative (novelistic) films then prevailed. From the late fifties 'experimental' filmmakers have sought to break out of traditional narrative structures and have proposed and demonstrated alternative cinematic methods, often siting their work in the gallery as opposed to the cinema. In his 1970 book *Expanded Cinema*<sup>2</sup> Gene Youngblood studied the tropes of film and television and described their forms as elements of a 'closed system.' Youngblood went on to study emergent experimental genres and the methods of artists who use video and film as their primary medium using the lens of TV and cinema. The form has since become generally termed 'media art.' It is the term 'media art' that I use as the point of departure for this paper. The works and methods examined here should

be considered as expanded cinematic practice and not media art. Notions of expanded practices in film, it may be argued, made little impact on mainstream audiences appealing more to 'art house' cinema-goers initially and then finding their audiences in the gallery rather than the cinema. From the early 1970s filmmakers such as Malcolm Le Grice (UK) and Paul Jeffrey Sharits (U.S.A) took their work out of the cinema and into the gallery.

In imagining a cinema of remixed visual effects with rich, authored content, I want to examine the works of two filmmakers who emerged not from media art but from the cinematic narrative linear tradition and have now developed practices that could be considered as 'expanded.' Additionally both have gone some way towards deploying visual effects sequences in a live context, especially within the works: *Timecode Remixed* by Mike Figgis and *The Tulse Luper VJ Tour* by Peter Greenaway. Greenaway and Figgis represent versions of the same paradigm; both are known primarily for their feature length films, both have sought to break out of traditional notions of cinema, both directors were early adopters of new digital cinematic technologies – *A TV Dante* (Greenaway), *Ten Minutes Older The Cello* (Figgis) – and both have made experimental films aimed at cinema audiences, notably *Timecode* (Figgis) and *The Tulse Luper Suitcases* (Greenaway). Both filmmakers have gone on to perform these works as live VJ sets. It is worth mentioning that both directors emerged not from the film school tradition but from Art School in Greenaway's case and from music performance and theatre in Figgis' case. This may go some way to explaining both directors' urges to break out of traditional modes of address. Importantly for this paper both directors saw opportunities to develop new audiences for their work by adopting and adapting new technologies / methods at an early stage in the technologies' development. The use of hand held digital image making technologies such as

mini-DV and 'prosumer' HD by both directors has led to innovative projects and outcomes that have broken the traditional boundaries between mainstream cinema, art house and the avant garde. Both have and continue to 'perform' live versions of their works in the form of a VJ set: *Tulse Luper* (Greenaway) and *Timecode Live Remix* (Figgis). These performances follow the traditional concept of the VJ performance: an operator (Video Jockey) using real time generative performance software playing back edited (often appropriated) video clips. Importantly in Figgis' and Greenaway's performances the VJs are themselves the authors of the footage they are playing back and remixing. They have (often) written the script, developed the project and directed the cinematic narrative sequences that form the original film versions. The films have been edited, composited and mixed for cinema distribution. The final films have been released as traditional narrative films and have found their audience through distribution to movie theatres. The cinematic experience is therefore fundamentally traditional. In the performative iteration the directors are deconstructing, decomposing and unmixing their works live, which allows new meanings and contexts to emerge. The live show frees the directors from the confines of linearity but requires a great deal of complex unpicking before the remix versions can be effectively performed. Figgis talks of the freedom this gives him as being: "something which I've always wanted to do – and in straight cinema I've never been able to do it – which is actually interact with the audience."<sup>4</sup>

#### HOW LIVE?

On June 17th 2005 at Club 11 Amsterdam, Peter Greenaway played his first VJ performance as part of the NoTV CNCDNC visual art club evening. Accompanied by music created by DJ Serge Dodwell (aka Radar), Greenaway used for his set a bespoke

VJ system consisting of a large plasma touchscreen, developed by technical partner BeamSystems. Utilizing this system, Greenaway projected the 92 Tulse Luper stories on to 12 screens at Club 11 mixing the images 'live.' Greenaway then took the live performance on an international tour *NoTV Peter Greenaway Tulse Luper VJ World Tour*. The four-year tour took in 14 countries including: Australia, Belgium, Brazil, France, Germany, Italy, Mexico, Netherlands, Poland, Portugal, Russia, Spain, Switzerland and the UK. Film, video, music and crossover festivals hosted the 33 performances in classic and modern theatres, open squares, industrial spaces, concert-halls, opera houses and museums. The mainstream cinematic version of the *Tulse Luper Suitcase* may be seen as one of the most ambitious and challenging of all Greenaway's works. Talking to Salon.com in 1997 and before principle photography on Tulse Luper had begun Greenaway discussed the complexity of the film, its non traditional format and the proposed CD Rom and internet versions. "Is there an audience out there that go to the movies, watch TV, buy CD-Roms and are plugged into the Internet? It's not as though we're using the same information. Ultimately, (Tulse Luper Suitcase) will be one big global encyclopedia about this phenomenon of there's no such thing as history."<sup>5</sup>

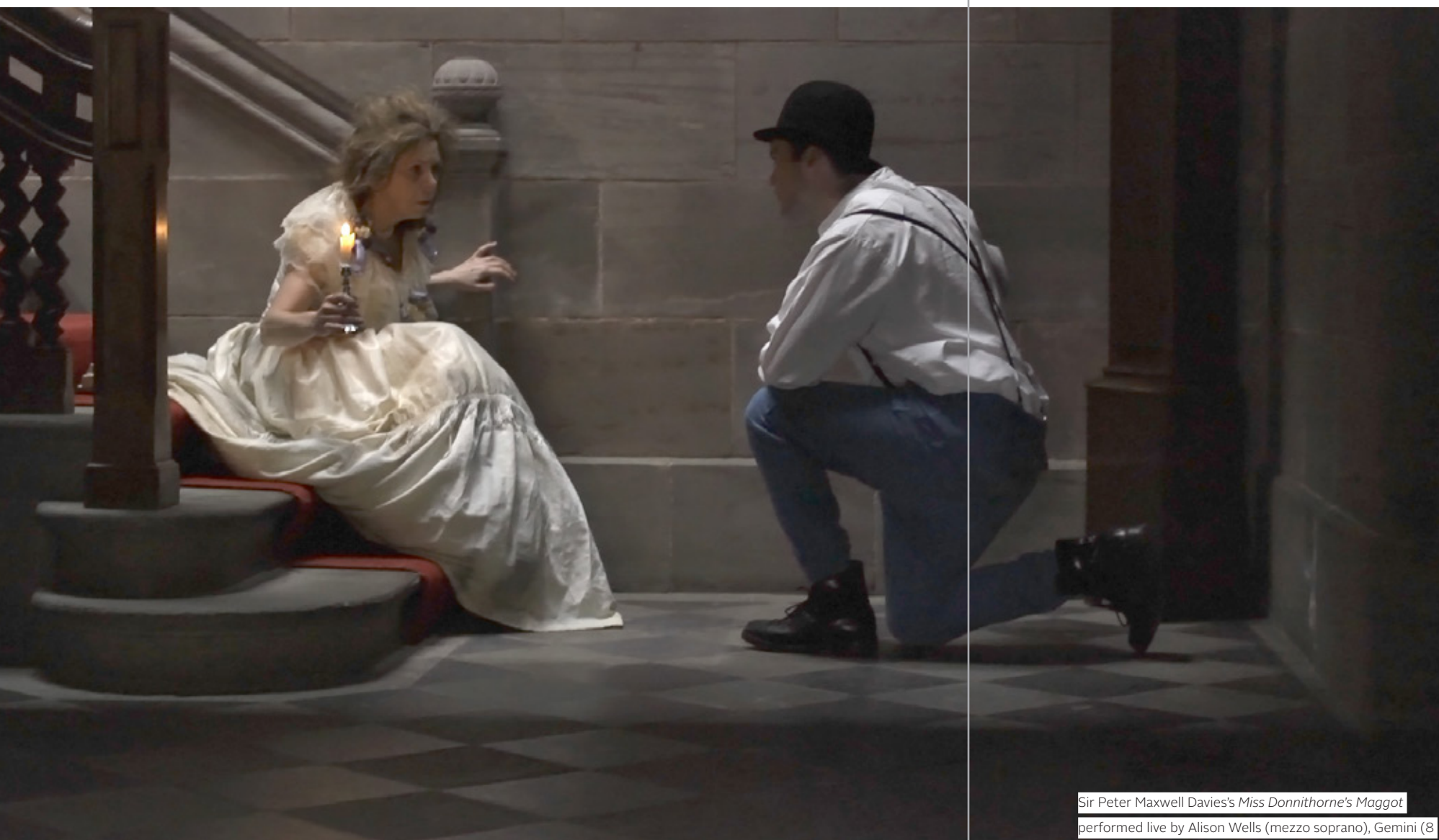
It should be remembered that in 1997 the Internet, whilst being a firmly established part of life, was still unable to stream video to any decently usable standard. By the 2005 launch of YouTube, moving image content over the Internet had become ubiquitous. So Greenaway's aspirations for an extended and expanded version of the Tulse Luper project incorporating the Internet could easily be regarded as forward thinking if not visionary. When talking to Hawthorne, Greenaway had yet to conceive of a live remixed version of Tulse Luper and it would indeed be eight more years before the concept of the VJ world tour would be realized.

In his pre *Timecode* performance talk at Kings Place London<sup>6</sup> Mike Figgis spoke of the difference between experiencing his film *Timecode* (which had been released in 2000) in its cinema version and as a new live performance (performed 10 years later), claiming that dramatic irony could be increased in the re-mixed version by the juxtaposition of score, dialogue and effects. In his review of the Kings Place performance for *Sight and Sound* (on line) Daniel Trilling comments on Figgis' assertions during the talk: "He emphasized this in the live mix by rewinding key sequences and playing them back so we could hear the sounds coming from a different part of the screen. He also tried to show how different sounds coloured our perceptions of the action. A snippet from Mahler's Fifth Symphony, often used as Hollywood shorthand for profound sadness, was played while people milled around aimlessly; the sound of a character chewing gum noisily was faded in during a sex scene."<sup>7</sup> Here then, we see the live performance directly impacting on meaning and context on the original ten year old work. *Timecode*, shot digitally and unedited, told four stories which were projected on cinema screens simultaneously, challenging audiences with its paradoxical complexity and simplicity. Figgis by this time was already well known for his experimental projects and had indeed performed an early version of *Timecode live* at the 2000 edition of the Edinburgh International Film Festival before the film's official theatrical release.

#### MISS DONNITHORNE'S MAGGOTT

Sir Peter Maxwell Davies' *Miss Donnithorne's Maggot* is a challenging work of musical theatre that relates the tragic story of the slow descent into insanity of Eliza Donnithorne, an Australian society figure of the 1880s. Written by Maxwell Davies and first performed with the composer conducting his The Fires of London ensemble at the Town Hall Adelaide, Australia





Sir Peter Maxwell Davies's *Miss Donnithorne's Maggot* performed live by Alison Wells (mezzo soprano), Gemini (8 piece ensemble), Matt Cameron (visual effects) and Peter Richardson (film maker). Screened and performed at the St Magnus Festival in June 2012. © Peter Richardson, 2012. Used with permission.

on the 9<sup>th</sup> March 1974 the work has rarely been performed since. Amidst on-going debate concerning the validity and historical accuracy of the Donnithorne story, publishers Boosey and Hawkes' sleeve notes capture the essence of the piece:

*Miss Donnithorne was an Australian lady, apparently one of the models for Miss Havisham in Dickens' Great Expectations; jilted at the last minute, she became a recluse, and the piece discovers her ranting among the remnants of her wedding cake, which is decorated with instrumentalists. Like Maxwell Davies' mad king, she has eight songs, though*

*the fifth is a nocturne-interlude sung for her by the alto flute. Also as in the earlier work, the solo part is a tour de force of vocal effects, requiring a range of three octaves, though Miss Donnithorne is generally more songful in her madness than George III. The temperature of the ensemble music is also a little lower, more controlled, perhaps more lady-like, if still expecting wildly brilliant execution.* <sup>8</sup>

## ST MAGNUS FESTIVAL

In February 2012 the Artist Recording Company (ARC) commissioned the Visual Effects Research Lab (VERL) to create a simple filmed recording of a new performance of *Miss Donnithorne's Maggot* by Alison Wells and Gemini conducted by Ian Mitchell. The work would be performed over two nights at the 35<sup>th</sup> St Magnus Festival on Orkney, Scotland. On listening to Maxwell Davies' original recording featuring The Fires Of London with Mary Thomas in the role of Donnithorne it was clear that the piece was unusual and challenging; merely filming the live performance seemed to greatly undervalue the work. After more detailed research a concept for staging the piece alongside a companion film (to be screened simultaneously with the performance) emerged. ARC agreed an early concept to use a filmed version of the story as part of a virtual stage set so that the Donnithorne story could be told on two levels. Whilst developing this concept, the notion of 'performing' the film as a live remix began to emerge.

Maxwell Davies' work is arranged as eight songs: 1. Prelude, 2. Miss Donnithorne's Maggot, 3. Recitative, 4. Her Dump, 5. Nocturne, 6. Her Rant, 7. Recitative and 8. Her Reel. This format offered the opportunity to construct a film of eight discreet episodes which would be fixed in time but remixed live and in synch with the stage performance when needed.

The adaptation would attempt to fuse live music theatre, pre-shot structural narrative film and live visual effects into a performed hybrid cinematic experience. Greenaway's description of the act of performing or remixing his films live as being like a: "real time image conductor" <sup>9</sup> became a highly apt simile. The challenge facing the lab was to produce a multi platform performance experience whereby the audience would be offered the opportunity to either follow the work's narrative live on stage or as a 'live' visual remix of the filmed narrative version remixed live on screens hung

across the stage. The screen remix would provide context and help re-position for the audience the work's narrative in a contemporary / historical context.

The Visual Effects Research Lab team identified possibilities for the inclusion of 'live visual effects' elements which could be triggered during the performance. A central theme in the work is the notion of decay. Decay is evident not least in Donnithorne's appearance (she takes to the stage in the torn and decayed remains of her wedding dress) but importantly in the state of long-term neglect and disrepair that her house is allowed to fall into. The wedding banquet is (as the legend has it) left untouched by the guests and subsequently left on the hero's table to decay and rot for the rest of her days: a symbol of her decline into madness. Using the decaying food as a cypher for Miss Donnithorne's condition the team researched methods for filming time lapse sequences of real food decaying which could be sped up or slowed down to dramatic effect during the performance. (Greenaway uses this technique to good effect in his 1986 film *A Zed And Two Noughts*). In order to enhance the decay and, as the possibility of shooting real food decaying over a period of months was not an option for the team, a package of visual effects shots was required. The scene became fundamental to the performance. As the stage set for the live work would include only a wedding cake on a table, the banquet (which is referred to in a number of the eight songs) could play a central role in the film and its subsequent remix.

The film narrative was shot on 4:4:4 colour space over six days on location in Dundee, Scotland. Shot in the traditional cinematic linear method, using actors portraying the various imagined characters to which Donnithorne refers throughout her eight songs, the director (Richardson) interpreted freely on the themes and tropes of the vocal score to produce a film which operates between two worlds: the contemporary urban and the historical suburban Victorian.

The traditional film element opens on a grand Australian Victorian house. We find Miss Donnithorne in a state of excitement on the eve of her marriage. She carefully reviews the wedding preparations taking great care to arrange the food and delicacies and ultimately the wedding cake on the sumptuous table.

Behind the scenes her maids prepare the house for the arrival of a hundred guests post-ceremony. Intercut with images of her groom (a naval officer) setting sail, the audience realizes that no wedding is going to take place. Donnithorne now comes to the same conclusion: with no groom there will be no wedding. We next find her pacing round her house obsessed by the sound of a metronome, which acts as a cypher for her grief and anguish. Unable to console herself she attempts to flee the confines of the house only to find herself transported over a hundred years into a bleak and dank future.

In a decaying modernist tower block the same preparations are being made for a far more meager celebration. The story has been transposed to the early 2000s where we find Donnithorne living amongst the detritus of a decaying city on the 12<sup>th</sup> floor of a tower block. Again she prepares the wedding breakfast only to find that her intended does not appear. Now lost in her own madness the story cuts between Donnithorne's two existences, drawing contrasting portraits of a sad decline into madness. Tormented by memories of her lost groom and terrorized by a gang of local youths Miss Donnithorne becomes a prisoner in her own home(s). Intercut with the story are images of the wedding banquet. Long tracking shots reveal the splendor of the food: glazed chickens, game birds, fish in aspic, breads, cold meats, glistening potatoes and various deserts. At the head of the table Miss Donnithorne's tastefully decorated wedding cake adds the finishing touch. As the horror of Donnithorne's situation unfolds the same shots are repeated, only this time the food is deteriorating before our eyes: the fish dissolve into maggot infested slime, the chicken and game birds decompose to dust and the cold meats shrivel and disintegrate. As the camera reaches the top of the cake we see the bride and groom figures transform from models into the real Miss Donnithorne and her groom. Donnithorne falls to her knees and at-

tempts to smash her way through the icing. In a series of close up shots we witness the total destruction of the cake and as the camera pulls away we share in Donnithorne's frustration and despair.

### DOES SHE SING?

The role of Miss Donnithorne was portrayed on camera and live on the St Magnus stage by Alison Wells (Mezzo Soprano) whose acting experience is in opera and music theatre. Wells would be singing the part of Donnithorne for the St Magnus Festival performances but would not be singing 'on camera' for the filmed and remixed versions, instead she would be acting the role on camera as interpreted and re-imagined by the director (in a similar manner to the silent films of the early twentieth century). This led to an interesting experiential complexity: Wells would be performing (singing) and performing (acting) live, whilst the audience in the theatre would be able to select their viewpoint by choosing to follow the performance (singing and acting) live on stage or the performance (acting) as live remixed narrative visual projected onto the screens whilst listening to the (live / sung) performance.

### THE REMIX

115 minutes of footage was generated during the shoot and edited using Final Cut Pro into a 33-minute film split into eight sections (songs). With the final outcome anticipated as somewhere between a VJ set accompanying a recital and a moving stage set, care had to be taken to not to distract the audience from the performance by over re-mixing the filmed material. Whilst the technical set up for the performance is not the main thrust of this paper it would be worth discussing the options and choices made at this stage in development by the live team.

### LIVE TECHNICAL CONSIDERATIONS

The venue for the two performances was The Picka-quoy Centre, Kirkwall: a multi-use venue that was transformed for the St Magnus Festival 2012 into a theatre seating 250. Throughout the development phase the VERL team considered various playback and mixing options for the live elements of the performance. Initially a traditional VJ set-up emerged as the most viable. As a basic requirement to perform and manipulate images the VJ would require source material (i.e. the un-edited sequences from the Donnithorne film) playing back, through a Video Synthesizer, the existing video stream from disk or other storage media. Mixing hardware and VJ software such as Modul8 would then allow the combining of multiple streams of video and the visual effects stream, which is then outputted to a screen or projector (a HD projector and an on stage single screen in this case). The large file sizes of the additional visual effects sequences which were to be keyed live meant that options for meaningful live remixing were becoming severely limited. The traditional set up would not be suitable for the live Donnithorne performance.

### VISUAL EFFECTS (LIVE?)

Having shot and edited the film the VERL team concentrated efforts on perfecting the visual effects sequences whilst researching methods for mixing the effects live. The tracking shots of the wedding banquet in its un-decayed state were filmed on location at a stately home in East Scotland. The Art Director had researched traditional Victorian wedding foods and prepared the 'prop' food to be as historically accurate as possible. The sequence was filmed in slow motion and camera data was recorded as the same moves would be replicated some weeks later for the visual effects decay sequence. Empty background plates <sup>10</sup> were also shot for the forthcoming green screen replication shoot. On completion of principle photog-

raphy the food was stored for a month and allowed to rot. The wedding banquet including the table was then reassembled in the green screen studio using the camera data and Art Director's on-set photographs to accurately position the food in relation to the camera. The scene was re-filmed against green this time with the decayed food replacing the pristine version of the previous month. In post-production the VERL team used a mixture of Autodesk Maya (animation) and Nuke (compositing) to replace the background replicate the camera moves and key, as if time lapse, the decayed food. These techniques are standard methods for visual effects sequences. A reconnaissance trip to the Orkneys gave the VERL team the opportunity to liaise with the Pickaquoy Centre producer, stage crew, the Artist Recording Company producer and engineer. The venue's length and height meant that the HD projector would be giving an image height of two meters (the film was shot 16:9 aspect ratio) and thus the audience would be able to fully appreciate the high resolution film from the furthest parts of the auditorium. The on-stage performance would be captured on four cameras and it was envisaged that live footage would be also be mixed within the VJ element of the performance.

Attempts to test the standard VJ set up the team had selected for the performance proved that the size and run time of the near un-compressed rendered visual effects sequences would be beyond its capabilities. Whilst the rendered effects amounted to a small proportion of the entire performance the team felt that the juxtaposition of the live performance with visual effects embedded within the film remix was a vital element of the piece. The decision was taken to pre-render the decaying food sequence before the performance and play the renders into the remix via final cut pro files live during the appropriate song sequence. Richardson worked with Wells on the Pickaquoy stage during rehearsals to block her performance and agree

the various cues of Davies's eight songs with the live team who were set up on a balcony opposite the stage. The performance duration was circa 35 minutes with the film remix / visual effects elements accounting for a screen time of circa 30 minutes the VJ team had scope to manipulate the timings of the visuals so that they were synchronous with the performance whilst adhering to the ethos of the remix performances of Greenaway and Figgis.

### CONCLUSIONS

This paper charts the progress of the Donnithorne project which began with aspirations towards a new form of performed visual effects played and effected live and ended with a far more traditional synthesis of live performance and accompanying film remix. It will be some time before technology and in particular processing and render time can deliver a games engine like software for VJs. I have attempted to show that there is a future for a visual effects rich live cinema and that the VERL team's efforts to incorporate visual effects sequences live in the Miss Donnithorne's Maggot St Magnus Festival performance have provided a 'proof of concept' in the spirit of Figgis and Greenaway's pioneering works. Looking to the future more research and development is required into the core technologies which enable live video mixing. It was never the team's intention to focus on adapting or developing new technology, instead our focus was on producing a large-scale live cinematic experience with a high proportion of visual effects. If this were achieved would it go some way towards altering audiences' perceptions of how music theatre could be staged and in particular bring new meaning and context to Maxwell Davies' post-modern work of 1974? The performance was indeed immersive, the remixing of the pre-shot sequences meshed well with the on-stage performance adding the intended meaning and

context to a particularly challenging work of music theatre. The audience on both evenings gave mixed responses to their experience anecdotally. Opera and music theatre aficionados appeared to both hate and love the experience, however it is undeniable that the St Magnus Festival audience had witnessed an innovative staging of *Miss Donnithorne's Maggot*. Filmmakers such as Greenaway, Figgis and others have made many attempts to create a new, more expanded or immersive version of the cinematic experience and their works have been well received by audiences across the globe. In attempting to appropriate and (re) expand their methodologies the VERL team sought to produce a visual effects rich cinematic and immersive audience experience taking the VJ / club experience to a new audience at an internationally renowned classical music and arts festival on a stunning Island off Scotland's East coast.

### ACKNOWLEDGEMENTS

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10. A plate is a term used to describe a shot of a background, which will be used to replace a green screen background in post production.
11. The Visual Effects Research Lab is funded by a grant from the North Sea Intereg Programme of the European Union.



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