L E A

LEONARDO ELECTRONIC ALMANAC

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

LEONARDO ELECTRONIC ALMANAC, VOLUME 19 ISSUE 3

Live Visuals

VOLUME EDITORS
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When Moving Images Become Alive!

"Look! It's moving. It's alive. It's alive... It's alive, it's mov-
ing, 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 hap-
pened 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 lim-
ited 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 expecta-
tions 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 tra-
ditional 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 infor-
mation. But live visuals relay more than images, they
are also linked to sound and the analysis of this link-
age 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 radi-
cal change in the way reality is experienced, captured,
uploaded and shared. These processes allow reality
to be experienced with multiple added layers, allow-
ing 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 lay-
ering 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 sur-
faces the digitized image, in a culture profoundly visual,
has extended its dominion through 'disruptive forms'
of sharing and 'illegal' consumption. The reproducibili-
ty 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 reproduc-
ibility of the image when analyzed from a Marxist point
of view possesses a community and social component
for egalitarian participation within the richness of con-
temporary 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 en-
gagements. 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 participa-
tory 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 interpre-
tations 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 behav-
iors 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 ulti-
mately 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 previ-
ously expressed likes and dislikes.

In this context of multiple object and environmental
experiences it is also possible to forge multiple individ-
ualized 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. [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.'

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.

My gratitude to Steve Gibson and Stefan Müller Arisona, without them this volume would not have been possible. I also have to thank the authors for their patience in complying with the guidelines and editorial demands that made this issue one that I am particularly proud of, both for its visuals and for its content.

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.

OF MINIMAL MATERIALITIES AND MAXIMAL AMPLITUDES

A Provisional Manual of Stroboscopic Noise Performance

by

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INTRODUCTION

To be radical is to grasp the root of the matter.
— Karl Marx [1]

The various techniques available to contemporary multimedia performers congeal, on occasion, into a set of related tools, techniques, and apparent motivations that one might characterize as a genre or scene. More often than not, in technologized audio-visual performance, these differentiable aesthetics and styles emerge with the introduction of a particular new media technology capability (see 'electronic music' and 'computer music' as examples of this). New tools beget new aesthetics and timbres, and software and hardware advances allow for more bits-per-second, more particles-per-frame, and more computing-power-per-square-centimeter. Likewise and mean-

while, although more exceptionally, performance tools and styles also arise that are somewhat resistant to these vectors of technological progress.

These oppositional practices, implicitly or otherwise, attempt to deconstruct the technologies, contexts and relations of performance technologies. Such forms presuppose an orientation that is not content simply to 'use' frameworks for computer-based and electronic performance, but instead intend to provide a kind of performative exegesis of technologies in the context of their 'use.' A differentiation is made between artists who employ technological platforms, devices and softwares 'as they are,' and those who grasp at, and grapple with, approaching the root-cause of technologically articulated interactions and representations. Recent work in DIY-electronics, experimental and improvised circuit-based performance, as well as related circuit-bending (hardware) and glitch (hardware/software) orientations are encouraging examples of these more exegetic forms.

In what follows, a provisional performance manual is illustrated through the work of a set of artists engaged in variations of stroboscopic light and experimental noise performance. These are the tactics and tendencies of performers concerned with minimal materialities, and maximal amplitudes. 'Minimal materialities' pointing toward the opening up, the exposition and agency of signals presented in performance: a dissecting, deconstruction or direct experience of electronic audio-visuality. 'Maximal amplitudes' directing our attention to the ways that audio-visual signals in performance contexts can act as a kind of probe (or *instrument* in the strictest sense) for assessing, testing and defining the boundaries and limits of a technology, physical environment and audience/body. What can we come to know about a given situation via the introduction of a simple audio-visual impulse?

The artists and performances described in what follows aggregate to define a style of work that is materially and (art) historically rooted, but contemporary in its analytical-synthetical methods. The author's work in this area (*Circuit Music*, 2005–2013), along with the performance practices of Optron (JP), Jo Kazuhiro (JP), Loud Objects (US), Phillip Stearns (US), Yao Chung-Han (TW) and Ryan Jordan (UK) are joined through a set of personal encounters, interviews, joint-residencies and public concerts organized as part of an ongoing research project into comparable and related artistic practices. [2] Each performer brings unique conceptual derivations, and geographic origins, but with a more latitudinal glance through first-hand accounts and encounters of tools and performance practices, common motifs and discourses emerge. Beneath a more self-evident aesthetics of noise-based, stroboscopic performance, such practices serve to example a form of essential, artistic research of and through media technologies.

ONE ARTIST DOES NOT A SCENE MAKE, NOR ONE FINE PERFORMANCE

There are areas of thinking and practice where divisiveness and categorical definition once held sway, in which these strategies seem now strained to sufficiently characterize and describe. From decentralized political movements, to recent online fervor and critical discussions around a decidedly definitionally deficient New Aesthetics 'movement,' the nature and communication of new forms has progressed into loose-amalgams, resonant-relations and object-networks. Artistic movements are never more than impermanent tendencies; periods and genres only ever situated by the expressive and communicative technical media available at a given point in time. (See as a further example Katherine Hayles' advocacy of 'comparative media studies,' an essential progression

for media studies in a transnational, globalized society). [3] We need fewer *manifestos*, and more descriptive *manuals* for this technological conditioning of artistic practice (here paraphrasing Amsterdam-based media technologist and artist Jeromil.) [4]

It is against this background that the present activity of summarizing and enfolding the activity an acquainted set of artists and practices takes its shape. What hopefully emerges is similar to Nick Collins' description of David Tudor's formation of a "loosely collective ensemble called Composers Inside Electronics," that served as "laboratory for artist-designed circuitry and experimental electronic performance... as well as performances of works by individual members of the ensemble." [5] Instead of trying to pin down or homogenize heterogeneous artists and events, matters of concern are revealed through performance. Strands of media specificities outline live performance practices using large-bandwidth audio-visual signals: white light and noise.

A GATHERING OF PERFORMANCE PRACTICE–RESEARCH

In the autumn of 2010, a group of invited artists gathered together at the STEIM (Studio for Electro-Instrumental Music) in Amsterdam. An invitation was extended for a group residency, spanning just over a week, during which public discussions, performance and in-studio recordings and technique sharing would take place. The broad structure of this meet-up was developed in order to create a context for sharing artistic practice and conceptual motivations *in parallel*, a style of engagement not explicitly or often offered by other events in which live performers have the chance to meet (e.g.: Festivals, gigs, conferences). The artists invited to the gathering all used a variable constellation of the following elements:

» An emphasis on sound and light *as signal*, or what could be termed a 'signal-aesthetics.'
» Tactile, direct and visceral interaction with electronic hardware.
» Monochromatic, flickering and stroboscopic white lights.
» Self-built noise and sound generators and filters.
» Domestic and workaday technologies, industrial and institutional hardware such as commonly available incandescent and fluorescent light bulbs, overhead projectors, and lab-bench signal generators.

The gathering and discussions at STEIM were followed by a set of group performances at various venues in Europe and the U.S. from 2010 until the present. Line-ups are variable for each of the performances, and since the initial performances, the project network has expanded to included and reference other related works and practitioners. A vinyl record release of audio recordings from select performances has been produced, and ongoing documentation, technical and artistic creation-research is tracked on the project website. [6] The artists involved in the initial gatherings and now subsequent related discussions and events are: Atsuhiro Ito (JP), Jo Kazuhiro (JP), Loud Objects (US), Phillip Stearns (US), Yao Chung-Han (TW), Jamie Allen (CA) and Ryan Jordan (UK). A description of these individuals and their work follows, below.

Figure 1. Optrum studio recording session, 2012. © Atsuhiro Ito, 2012. Used with permission.

Atsuhiro Ito (JP)
Atsuhiro Ito is a Japanese sound performer and artist, as well as host of the *OFFSITE* series of performances in Yoyogi, Japan from 2000 to 2005. In the late 1990s he developed a technique for picking up and amplifying the noise from the bulb and transformer of commercially available fluorescent light tubes. The crackles and buzzes of fluorescents were first heard turning these lights on and off while listening to the radio. Ito has subsequently developed the performance and sound processing into both solo drone and rhythmic (dance music inspired) music production, as well as a duo performance project with drummer Yoichiro Shin called *Optrum*. The fluorescent tube interface, which Ito calls the *Optron* is evocative visually and gesturally of the performer playing the fluorescent tube "like a guitar," a reading further supported by Ito's use of guitar effect pedals to process the sound. The erratic flicker and flash of the tube is most often performed in completely blacked-out performance venues.

Jo Kazuhiro (JP)
Kazuhiro Jo is a researcher and artist, currently working at the Institute of Advanced Media Arts and Sciences (IAMAS). Jo is a founding member of The SINE WAVE ORCHESTRA, as well as an organizer of Dorkbot, Tokyo in the early 2000's. His interests span personal technologies for performance practice, media art exhibition work, and recent media-archeological studies through practice-based research. In his performance work, Kazuhiro subtly shifts and filters sine tones and noise emissions, sourced from a set of electronic laboratory signal generators. He has developed handheld light-detecting and luminescent orbs, that allow for a feedback loop to develop between two of these devices and a stationary incandescent light source. The performance is subtle and delicate, Kazuhiro gesturing only with slight movements of his hands – resulting in muted, meditative feedback of understated gesture and movement.

Figure 2. Jo Kazuhiro studio recording session. STEIM, Amsterdam, NOVEMBER 18TH 2010. Photo © Michael J. Horan, 2010. Used with Permission.
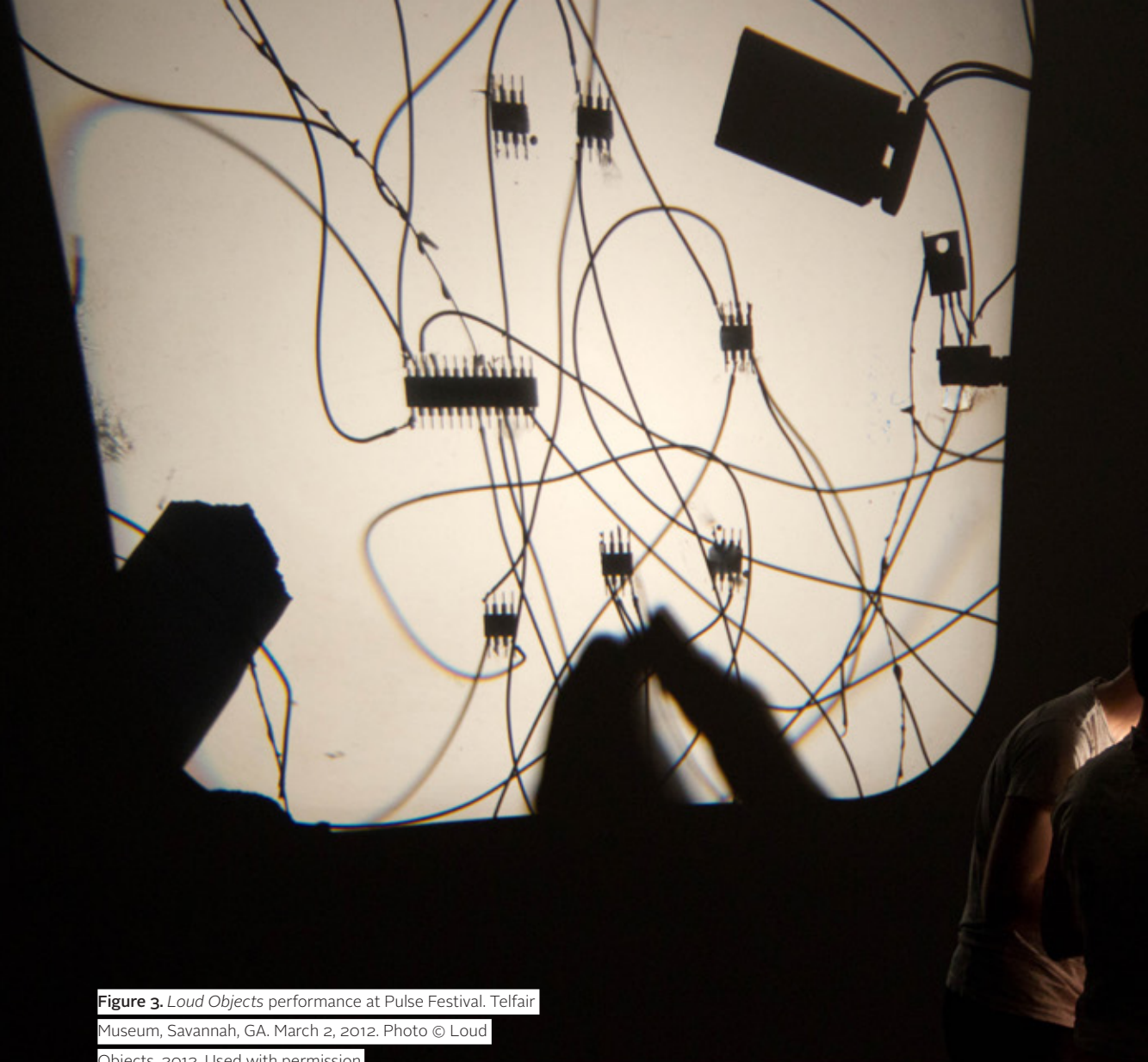
Figure 3. *Loud Objects* performance at Pulse Festival. Telfair Museum, Savannah, GA. March 2, 2012. Photo © Loud Objects, 2012. Used with permission.

Phillip Stearns (US)

Phillip Stearns, is an artist and performer based in New York City who works with sound, light, electronics, found objects and biological systems. His work often evokes a cybernetic interest as complex artificial living systems are fused with or model complex electronic and computation beings. Stearns has a noteworthy understanding and intimacy with chip-level analog and digital synthesis and processing, which at times is quite literal: Stearns' performances often involve wiring his own body to the audio-visual circuitry, allowing muscle and skin resistances and capacitances to galvanise the performer and signal before it hits the speakers and lightbulbs. This systems-understanding and an interest in architectures is also apparent in Stearns' work, as the amplitude, quality and placement of the lighting elements he employs are important preoccupations, resulting in performances that highlight the performance space through brilliant eruptions of white light and shadow.

Loud Objects (US)

Loud Objects are a New York City based performance group composed of artist-composer-musicians Tristan Perich, Kunal Gupta and Katie Shima. The group formed in 2005 while at college in the U.S., and their performance style grew partially out of the "semi-intellectual pursuit of exposing the transparency of electronics and educating the audience a little bit," as well as a characteristic frustration with behind-the-laptop performance approaches. [7] A typical Loud Objects performance starts in complete and somewhat awkward silence, as the performers glue electronic chips to the surface of an overhead projector, soldering them together and to the PA system, live on stage.

The concentration of the performers is centered on their brightly-lit work-surface, often placed atop a chest-high monolith constructed of vertically mounted fluorescent light tubes. The simple square-wave tones and rhythms, programmed into the micro-controller chips, are connected together live to develop something approaching song-structures, but with none of the smooth transitions or histrionics more commonly used to camouflage the straightforward nature of what most electronic musicians do in performance: adding, removing and mixing pre-prepared sounds and signal elements.

Figure 4. *Fluorescene* performance, Phillip Stearns, 2012. Live sound and light performance using analog mixer feedback, CFLs, light sensors, and coil transducers. Taiwan Artist Village – Taipei, Taiwan, 2012. Photo © Taiwan Artist Village, 2012. Used with permission.

Figure 5. *LLSP* performance, Yao Chung-Han, 2009. Fukuoka Asian Art Museum, Fukuoka, 2009. Photo © Chenwei Chiang, 2009. Used with permission.

Figure 7. *Channelling Interference* performance, Ryan Jordan, 2011. Strobes, TV, circuits, light sensors, biofeedback, incense, paint. BEAM Festival, Brunel University, UK, 2011. © Ryan Jordan, 2011. Used with permission. [9]

Yao Chung-Han (TW)

An active member of a new generation of sound artists in Taiwan, YAO Chung-Han works with installation and performance. He is also an organizer of Taipei's regular sound art and experimental performance series, the ongoing Lacking Sound Festival. Chung-Han's most well-known performance project is title *LLSP*, an acronym that stands, simply and descriptively for *Laser, Lamps, Sound Performance.* The performance involves a single laser-line and distance measurement, focused across the front of the stage. The performer moves along the laser borderline, interrupting the laser with body and gesture (including, at certain moments, using his eyeglasses to deflect and diffract the sharp green laser light). Yao's interaction with the laser light sets off synchronous sound and fluorescent lamp elements. The tiny noises emitted from a set of stationary fluorescent lamps are manipulated and re-amplified. The sound and performance elements resemble a kind of audio-visual trip-wire, with unexpected expressiveness and dynamic range. Sudden and abrupt bursts of filtered noise erupt into the performance space, flaring into dense layers of glistening, metastable vibrations and hums – presented simultaneously as both light and sound.

Jamie Allen (CA)

Born in Canada, and working primarily between New York, the UK and now Copenhagen, Jamie Allen is the initiator of the artist grouping described here, attempting to characterize stroboscopic noise performance practice. He is a researcher, artist and performer concerned with realism and materialism in performance and media art and technologies. His initial intention with his performance project *Circuit Music* (started in 2005) was to develop strategies for completely bypassing the interface in electronic and computer music practice. *Circuit Music* as a project and performance attempts this un-mediation of electronic sounds in a number of ways, including employing a set of open-circuit electrical component-based oscillators on reconfigurable breadboards (a
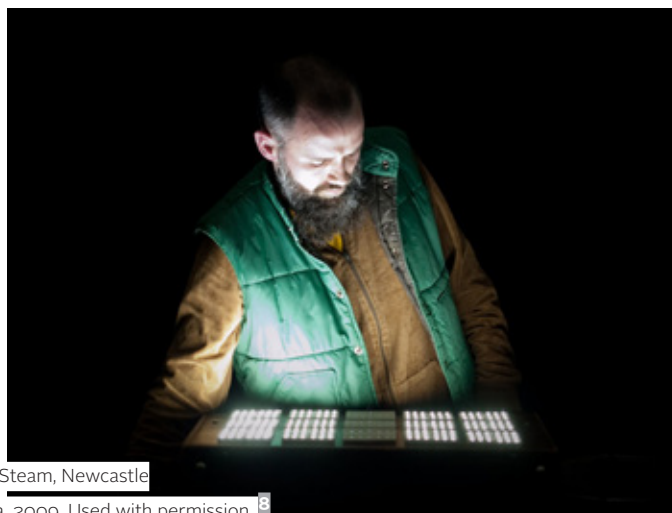
Figure 6. *Circuit Music* performance, Jamie Allen, 2009. Head of Steam, Newcastle Upon Tyne, UK, November 12, 2009. Photo © Alessandro Altavilla, 2009. Used with permission. [8]

non-committal and impermanent prototyping technique for electronic circuits). The intent is always to develop performance strategies where the audience and the performer are largely and continuously aware of the processes being undertaken – towards a radical honesty of the performance interface, or perhaps the suggested and evocative impossibility of an 'unterface.' In practice the piece has evolved into a set of simple on-off switches which activate five simple breadboard oscillator circuits, each of which is linked to a set of LED lights. The act of adding or subtracting a signal is made obvious and apparent to the audience through these high-brightness LED grids, powerful enough to serve as the only illumination in dimly lit, small and mid-sized performance venues.
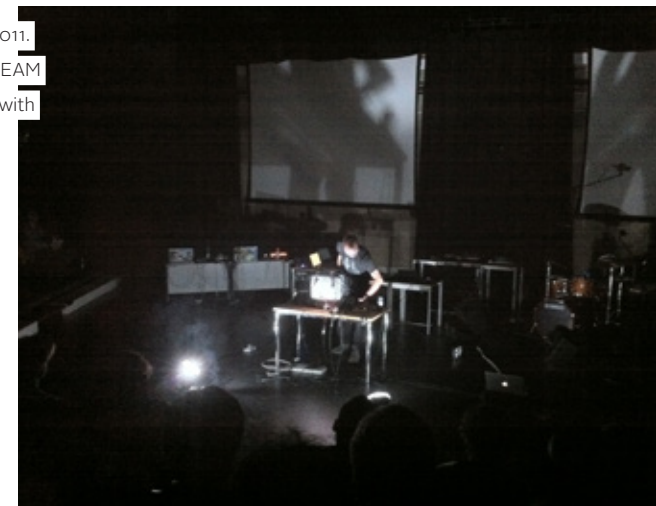
Ryan Jordan (UK)

Ryan Jordan is a UK-based electronic artist who works in self-made instruments for live interactive performance. Jordan is also well known for his performative and open-ended workshop formats, where knowledge of electronics hardware (e.g.: hydrophone construction) is offered up in tandem with other material practices (e.g.: canoe building) as a kind of empowering, enabling and holistic, materialist systems-art. [10] Ryan's performance work of interest here is the project *Possession Trance* in which he uses chip-based synths with light sensors attached to extremely bright strobe lights. The performances are explicit attempts at brain-entrainment, to induce 'out of body, out of mind' experience that are hypnotic and highly immersive.

SIGNAL-AESTHETICS & PERFORMED MATERIALS

Writer and philosopher Timothy Morton provides an extension of Hegelian aesthetics which gives a framework for situating here a notion of 'signal-aesthetics.' Hegel originally posited a kind of historical progression from the Symbolic, to the Classical, toward the Romantic era in which he lived. Morton suggests a decidedly materialist, speculative and realist fourth phase of aesthetics, which he terms the Asymmetric Phase, to describe an "asymmetrical confrontation between the human and the nonhuman." [11] In the Asymmetric Phase, "nonhumans have finally infiltrated human social, psychic and philosophical space, with varying degrees of success." Media, electronic and communications technologies are of course highly successful nonhuman agents in this regard. Art in the asymmetric phase has a number of properties, according to Morton, one of which is a "collaboration between humans and nonhumans." What kind of performance practices would an electronic artist enact in the Asymmetric Phase?

The audio-visual performance practices just described, form the outline of what could be termed a signal-aesthetics of live audiovisual performance. Each of these practices shows a sensibility toward the way that signals and the energies of a technological system are routed, re-routed, fed-back and released to and through the audience, performer and performance space in the same, shared moment. Each perturbation of the eye or the ear, originating from 'just' one signal. In this, we see and hear a desire to treat the audio-visual as originarily alike in kind and in eventual perceptual reception (as electric neuronal firings). Electric sound and light energy used to directly investigate the material realities, of sound and vision creation and reception, with its own nonhuman-agency and technological inclinations.

The types of performance practices described above evoke a kind of material reverie in and of the electrical

signal itself, as it passes through the hardware artists have devised for its creation, propagation, mixture and delivery. In these performances, the performers are perhaps less concerned with their own moment-to-moment intentions, as artists, as performers, as composers, but also conscious in a sense of 'what the signal wants,' or what we might allow it to do. In this sense the works point not only to our own heightened awareness of the signal and its character, but to its effects on, and affect of, the performance situation as a whole. The term signal-aesthetics also suggests a respect or knowledge of the tendencies and proclivities of the engineered electrical and digital systems with which we collaborate as performers. Such tendencies become more apparent when layers of abstraction, linear control and interface metaphor are variously stripped away.

There are many other cinematic, theatrical, representational and referential histories, conceptualizations and practices of live visual and technological performance. With signal-aesthetics approaches, we sidestep the notion that there are 'tools,' systems, entirely 'out there,' in our service, toward creation of some wholly other illusion or illustration: for example the sonic as illustration of the visual, or vice versa. What is at stake in treating the electrical signal as evocative of its own aesthetic, singularly responsible for all one sees and hears in any given moment, is this: An inclination toward realism (beyond the interface) in performance, and a concern for and encounter with the nonhuman reality and dynamics of decidedly material (if technological) systems. So much of our interface culture comes from a desire to trick our senses, reduce our understanding of what's really happening, or diminish our role as sensing and experiencing beings. Most digital electronic interfaces are either convoluted or cheap substitutes for what is actually going on beneath the plastic shell, developed through questionably applicable desirable functionalities (e.g.:

industry, military or office applications). Could we resist this supposed progress with a kind of simple signal-aesthetics? While the idea of an *un-mediated* experience through an electronic media arts is oxymoronic, we move ever-towards the ideal of an honest interface, and conflate with musical and performative goals the ambitions of deep understanding and transparency of process. The honest interface would be a point of interaction for a system or media, that gives as much indication of what is actually going on behind the interface, in lieu of obscuring or re-referencing toward a further abstraction or metaphor.

Consider the association between artistic and interface design practices and questions of intended veracity or *proximity to the real of things* (even as they recede from scrutiny) raised by Vilem Flusser:

> ... *all culture is trickery, that we are tricksters tricked, and that any involvement with culture is the same thing as self-deception. True once the barrier of art and technology had been broken down, a new perspective opened up within which one could create more and more perfect designs, escape one's circumstances more and more, live more and more artistically (beautifully). But the price we pay for this is the loss of truth and authenticity.*

> — Flusser, The Shape of Things [12]

So regarded, an interface is also a lie. The way a human entity seeks to understand the technological material they use is not in this case only the familiar argument for tactile engagement, or a further call for the opening of the infamous and much maligned 'black-box' of hardware or software (Although this unfolding is certainly present in, for example, Loud Objects' 'semi-intellectual pursuit'). It is also a turn of attention toward the agency of electrical signals and what they might in themselves wish to do. How can

we help route and guide them to show their inherent aesthetics, their energetic and revelatory signal-ness: The flickering contamination of audio signal by high powered lighting signal; the sensuous over spilling of electrical signals into other things, organic or otherwise; the flood-gates of wide bandwidth signals jarringly present or absent, on-and-off. Signal-aesthetics correspondingly example an epistemic performance paradigm, at once rendering present the entire system of performance (including electric power, audience, performer and architecture), and applying pressure toward what is really there, humans and nonhuman alike.

Performing the materiality of electronic systems using synchronic audio-visuals of the signal raises peoples' awareness of architecture, creates an experience of a particular kind of visual-acoustic-ecology that has been perturbed. These works, perhaps most particularly *as performance* where we are attentive to the onset of *events*, in a space with others, can act as a kind of probe, or instrument, for assessing, testing and defining the characteristics and limits of a technology, space or audience group or member. What can we come to know about a given situation via the aesthetics and simplicity of a single, confrontational signal impulse? Performances involving these cultural impulse response (IR) techniques are effective as all parties paying witness to the intense experience of a light-and-noise performance make discoveries not only about the performance, but about the space, the architecture and acoustics in which the performance takes place. Here we use the audio-visual to inquire into the material condition of things. As Ed Halter has written on digital materialism, "not so much the experience of the ... thing-itself, but rather the pleasurable need to test and affirm our sense of the obdurate physical realities of technology." [13] An audience member at a group performance in Vienna of the kinds of works described here, expressed this with reference to her physical inability to focus on

the performance front-of-stage: "I had no choice but to look at the room around me, at the other people in the space…" [14] This movement towards a social archaeoacoustics and archaeostroboscopics through electronic performance, generally feels like an interrogation, or a provocation. Here is performed, critical counter-point to market-driven desires to coat all of our lived surfaces with a mirage-layer of ever-higher definition media and representation. Perhaps, further, a reaction to certain other audiovisual practices which are perhaps less interrogative: How far are hardware semiotics of the mega-club techno VJ from those of mass media and advertising?

FLUORESCENT TUBES AND VINTAGE SUITCASES

A further aspect of the performance practices encapsulated here, is that they each employ a set of everyday, commonplace, otherwise unremarkable technologies. While it is true that the performance interfaces, circuitry and hacks employed are distinctive and individualized to each performer, the lighting elements and paraphernalia most readily exposed to audiences and publics are of a pedestrian, ordinary kind. Atsuhiro Ito's *Optron* performances take the mundane object of the fluorescent tube, associated predominantly with institutional cultures and environments, places of work and business, and transforms it into a piece of destabilizing noise-weaponry. The author's *Circuit Music* performances arrive in a modified vintage leather suitcase, alluding to a kind of suburban traveling salesman of noise and light. Yao Chung-Han's *LLSP* project, employs the round fluorescent tube lighting elements manufactured for use in magnifying work lights in laboratories and electronics fabrication. Other performers pick up and develop new languages with domestic incandescent bulbs, high-powered industrial lamps, and overhead projectors.

If there is a folk-sensibility here, concerning the use of the technologically familiar, the ordinary, enfolded in the practicalities of international performance execution. Technologies this commonplace can be replaced when broken, and procured on-site when traveling. The desire to create visual modes from normally familiar, homely technological elements, recognizes development of a technological 'standing reserve' – the great storehouse of probe-able, disposable, re-contextualizable technological background – is characteristic of our present age. In this way, the practices outlined here borrow from, and have much in common with, the motivations of circuit bending, zombie media, hardware hacking and related practices. [15] Garnet Hertz usefully outlines a number of these intertwined grounds for rethinking and repurposing mundane, overlooked technologies:

Figure 8. MLB group performance, Rhiz, Vienna, Austria, November 23, 2010. Photo © Michael J. Horan, 2010. Used with permission.

» *Links to Duchamp's art historical concept of the Readymade and the Assemblage. The Readymade here reiterating the intention of a "straightforward use of the inexpensive and available," as well deflating the "aura of authority and the sanctity of art."* [16]

» *An opposition to commercial, industrial, engineering or market driven technological concealment (against blackboxing). A characterization of that which "traverses through the hidden content inside of a technological system for the joy of entering its concealed underlayer, often breaking apart and reverse engineering without formal expertise, manuals, or defined endpoint."* [16]

» *The tactical reuse of technologies, as an "artistic activism that reuses technologies in a directly political manner" with links to the direct and cultural appropriation techniques of the Situationist détournement and critical design, respectively.* [16]

STROBES, NOISE AND IMMERSION

'Flicker' creates a dazzling multiplicity of images in constantly altering relationships which makes the "collages" and "assemblages" of so-called "modern" art appear utterly ineffectual and slow. Art history as the enumeration of individual images ended with the direct introduction of light as the principal agent in the creation of images which have become infinitely multiple, complex and all-pervading. Art history has come to an end.

— Brian Gysin [17]

Intermittent, intense, photic stimulation of human subjects, and the sensational and emotional and potentially hallucinatory effects known to develop from

it, has a long and variously charted history. The Czech anatomist Jan Evangelista Purkinje noted, "crosses, stars and spirals, when waving his hand between his eyes and a gaslight," in 1819. There are alike, if necessarily more apocryphal, popular stories involving Nostradamus (1503–1566) and St. Augustine (354–430), as well. Much more recently, neurophysiologists and cyberneticist W. Grey Walter, performing stroboscopic electroencephalography experiments in the 1950s, wrote of his surprise at the number visual hallucinations reported. Eventually, Walter's book, *The Living Brain* [18] found its way into the hands of poet William S. Burroughs, artist Brion Gisyn, and engineer Ian Sommerville. Their attempts at developing a 'Dream Machine' based on Walter's ideas included years of hardware development and the (largely unsuccessful) solicitation of sponsorship and commercialization deals from the likes of Phillips and Columbia Records. The Dream Machine was to be a household stroboscopic device, to be used by all to develop what Allen Ginsberg called "homemade optic movies." [19] They imagined the device as an introspective and individualized alternative for the television or radio; self-reflexive and generative media tools, in opposition to the mass-media messaging and model of cultural production. (Interestingly, in 2012 a company started manufacturing and selling Dream Machines based on the original designs – www.dreamachine.ca – signaling something of a renewed interest in these approaches.)

In the pages of Leonardo, artists Frank J. Malina, Robert Baldwin and Dr. David Rosenboom, have highlighted their artistic practices employing stroboscopic light. [20] [21] [22] Much of the relevant practice and technological knowhow for using intense stroboscopic light developed in the later 1950's and throughout the 60's, when greater attention was being paid to the altered states of consciousness available through other, more pharmacological technologies. But the intent of many such strobe-based works, and both

implicitly and explicitly of the contemporary performance practices outlined here, is not dissimilar. As an example, Ryan Jordan's work "draws inspiration from a personal out of body, out of mind experience from a Doomcore Rave where the area was flooded with thick smoke, multiple flashing strobe lights, and loud music. This created a feeling of hypnosis, mild panic and complete immersion into the moment, which is what I wanted to recreate." [23] The trajectory being charted here, is of an art or performance practice that intends a highly-personalized material engagement with objects and environments, that seem to drive most of us into introspection and self-reflection on what it is to perceive, or even be. The hippy drug culture of the 1960s, and the avant-garde technological arts of this same era are never very far apart; representing related points along a spectrum of techniques and technologies of the self. From the externality of the strobe light, to the internality of an ingested drug, what seems to be sought is a kind of material communion, where we are distracted from the production of our own selfhood:

There is no difference in principle between sharpening perception with an external instrument, such as a microscope, and sharpening it with an internal instrument, such as one of these... drugs. If they are an affront to the dignity of the mind, the microscope is an affront to the dignity of the eye and the telephone to the dignity of the ear.

— Alan Watts [24]

 The particulars of these technique are not what concern us here (1–25 cycles per second of a powerful strobe induce visually interesting effects, as well as alpha-wave entrainment, for most people.) [25] Rather more of interest is the intent and motivation some artists show in the performance of high-amplitude noise and bright-lights, somewhat paradoxically, toward a

private and idiosyncratic experience of performance. On one hand, harsh illumination and noise permeates the entire space, calling attention not only to the performer and stage, but to the entire performance space. On the other, each person in the space (often at times with eyes closed) experiences the individualized sensational advance, particular to his or her physical and psychic orientation. Between these two poles of environment and viewer, space and subject, is the 'scopic all-over tension' that characterizes the immersive, complete and connective appeal of these extreme experiences. [26] A similar tension exists in thinking the end of art history that Brian Gysin suggests at the opening of this section (Gysin suggesting that an end of art history arrives with the end of out-there-in-the-world art, replaced by the subjective individualized visuals provided by his flickering Dream Machine.) At the other end we have Joseph Nechvatal's thinking of a historical 'noise consciousness,' the open suggestion of an ageless, timeless link back from current preoccupations with a saturating, totalizing multi-sensory signal, to very early art historical moments that much prize the overwhelming over the subtle. "The harsh sonic onslaught of Masami Akita (a.k.a. Merzbow), is, under this analysis, not so far from colossal denseness of the churches of the High Baroque (Nechvatal visits the Rosario Chapel in Santo Domingo Church, Puebla, Mexico)." [27] Whether an affront to art and performance histories, or a link up with more enduring and immutable noise consciousnesses, these are productive tensions, which ensure variegation in live visual performance practice.

LIVE AND DIRECT

In her review of the book *Liveness,* Jannie Klein puts the central question of Auslander's writings as follows: "Does performance really stand apart ontologically and ideologically from other forms of representation in today's culture of simulacra and media representation?" [28] Auslander's answer to this question, it would seem, is a thoughtful and nuanced 'no.' His writings help outline the phenomenon of liveness in performance outside of its standard characterizations in opposition to mediated, electronic or digital presences. Technologically media now help to constitute the supposed immediacy of 'more live' forms of performance, in the service of an approach and demand for something not 'live,' but 'real,' with all the ethical and moral implications this terminological shift conjures up. Read in this way, the live visual tendencies of mainstream live visual culture (VJs, gaming and on-screen interfaces) with its video frame-buffers, human-interface-device latencies and pixelated canvases is in reality no less 'live' than less complex, but it is much less 'real,' as a practice of performance or experience by audience and performer.

The strobing, immersive style of light-and-noise performances, here very loosely knit together as a kind of genre or form, serve as both descriptive examples, and as critical artistic-research; embodied investigations into live visual performance practices, their reception and larger significances. These are works of emergent signal-aesthetics, presentation of media materiality, and play in the tension between environment and individual experience. These works are at once destabilizing and affirmative, the radical possibility of live visual performance. ∎

REFERENCES AND NOTES

1. K. Marx, "Contribution to the Critique of Hegel's Philosophy of Right (1843)," in *Marx: Early Political Writings* (Cambridge: Cambridge University Press, 1994), 64.
2. MLB website, http://mlbmlbmlb.com/ (accessed November 30, 2012).
3. K. Hayles, *How We Think: Digital Media and Contemporary Technogenesis* (Chicago, IL: University Of Chicago Press, 2012), 7.
4. Jeromil. Second-hand account through Twitter.com. https://twitter.com/jamieallen/status/267637374501154816 (accessed November 11, 2012).
5. N. Collins, "Composers inside Electronics: Music after David Tudor," in *Leonardo Music Journal* 14 (2004): introduction.
6. MLB website, http://mlbmlbmlb.com/ (accessed November 30, 2012).
7. Motherboard, "Loud Objects Make Music with Dirty Projectors, Circuits and Chainsaws," http://motherboard.vice.com/2010/5/7/q-a-loud-objects-make-music-with-dirty-projectors-circuits-and-chainsaws (accessed November 18, 2012).
8. "Family portrait in Taranto," Flickr, http://www.flickr.com/photos/v2onlondon/ (accessed November 30, 2012).
9. Photo credit, http://sync24.wordpress.com/ (accessed November 30, 2012).
10. John Richards, "Loud Objects Make Music with Dirty Projectors, Circuits and Chainsaws," *The Wire*, March 2012, http://www.thewire.co.uk/in-writing/essays/collateral-damage_john-richards (accessed November 18, 2012).
11. T. Morton, "Art in the Age of Asymmetry: Hegel, Objects, Aesthetics," in *Evental Aesthetics 1*, no. 1 (2012): 121-142.
12. V. Flusser, *The Shape of Things: A Philosophy of Design* (London: Reaktion Books, 1999), 20.
13. Ed Halter, "The Matter of Electronics," *Vague Terrain*, February 3, 2010, http://vagueterrain.net/content/2010/02/matter-electronics (accessed November 30, 2012).
14. Discussion between the author and performance attendee, Wednesday, November 23, 2010.
15. G. Hertz and J. Parikka, "Zombie Media: Circuit Bending Media Archaeology into an Art Method," *Leonardo* 45, no. 5 (2012): 424-430.
16. G. Hertz, "Methodologies of Reuse in the Media Arts: Exploring Black Boxes, Tactics and Archaeologies," in *Proceedings of the Digital Arts and Culture Conference, 2009*, http://www.escholarship.org/uc/item/5r8842r6 (accessed November 30, 2012).
17. J. Geiger, *Chapel of Extreme Experience: A Short History of the Dream Machine* (CreateSpace Independent Publishing Platform, 2003), 63.
18. W. Grey Walter, *The Living Brain* (London: G. Duckworth, 1953), 216.
19. T. Leary, *High Priest: Second Edition* (Berkeley, CA: Ronin Publishing, 1995), 347.
20. F. J. Malina, "Kinetic Painting: The Lumidyne System," *Leonardo* 1 (1968): 25-33.
21. R. Baldwin, "Kinetic art: On the use of subliminal stimulation of visual perception," *Leonardo* 7, no. 1 (1974): 147-149.
22. D. Rosenboom, "Method for Producing Sounds or Light Flashes with Alpha Brain Waves for Artistic Purposes," *Leonardo* 5, no. 2 (1972): 141-145; also reprinted in F. J. Malina, ed., *Kinetic Art* (New York: Dover, 1974).
23. R. Jordan, "Live Performance," http://ryanjordan.org/liveperformance.html (accessed November 18, 2012).
24. A. Watts, *Joyous Cosmology* (New York: Vintage, 1962).
25. J. A. Kinney, C. McKay, A. Mensch, and S. Luria, "Visual Evoked Responses Elicited by Rapid Stimulation," *Encephalography and Clinical Neurophysiology* 34 (1973): 7-13.
26. J. Nechvatal, *Immersion Into Noise* (Ann Arbor, MI: MPublishing, University of Michigan Library, 2011); also available at http://openhumanitiespress.org/immersion-into-noise.html (accessed November 18, 2012).
27. J. Allen, "Cum on Feel the Noise," in *continent* 2.1 (2012): 56–58; also available at http://continentcontinent.cc/index.php/continent/article/viewArticle/76 (accessed November 18, 2012).
28. J. Klein, "Reviewed Works: Liveness: Performance in a Mediatized Culture by Philip Auslander," *PAJ: A Journal of Performance and Art* 22, no. 1 (2000): 130-133.

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