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STEFAN MÜLLER ARISONA EDITOR ÖZDEN ŞAHİN

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



LIVE VISUALS

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LEONARDO ELECTRONIC ALMANAC, VOLUME 19 ISSUE 3

Live Visuals

VOLUME EDITORS

LANFRANCO ACETI, STEVE GIBSON & STEFAN MÜLLER ARISONA

EDITOR

ÖZDEN ŞAHİN

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When Moving Images Become Alive!

“Look! It's moving. It's alive. It's alive... It's alive, it's moving, it's alive, it's alive, it's alive, it's alive, IT'S ALIVE!”

Frankenstein (1931)

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

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

Images are projected onto buildings – not as the traditional trompe l'oeil placed to disguise and trick the eye – but as an architectural element of the building itself; so much so that there are arguments, including mine, that we should substitute walls with projected information data, which should also have and be perceived as having material properties (see in this

volume “Architectural Projections” by Lukas Treyer, Stefan Müller Arisona & Gerhard Schmitt).

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

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

experience that digital and live visuals are rendering increasingly visible.

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

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

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

Live visuals projected on public buildings and private areas do not escape this conflict, but present interpretations and forms of engagements that are reflections

of social ideals. The conflict is, therefore, not solely in the elitist or participatory forms of consumption but also in the ideologies that surround the cultural behaviors of visual consumption.

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

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

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

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

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.

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 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 (accessed October 30, 2013).
4. Paul Virilio, *Open Sky*, trans. Julie Rose (London: Verso, 1997), 97.

severs the heads
of the proud grain

STRUCTURED SPONTANEITY

Responsive Art meets Classical Music in a Collaborative
Performance of Antonio Vivaldi's *Four Seasons*

by

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& Yan Da

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Above; Ingrid Matthews leading Bach Sinfonia in a
third movement of Summer concerto during the
Multimedia Vivaldi's Four Seasons performance.

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ABSTRACT

Classical music concerts are not usually associated with interactive media, yet such daring unions provide fresh experimental opportunities for the artistic expression and the audience experiences alike. In the spring of 2011 The Cultural Arts Center at Montgomery College in Silver Spring, MD hosted an unlikely event – a Baroque performance of Antonio Vivaldi's *Four Seasons* featuring reactive video projections. The real-time generative graphics and particle typography seen in this event are designed to illustrate the original sonnets accompanying the work, and possibly authored by Vivaldi himself. In this paper we discuss our process and influences resulting in a hybrid system solution, which automatically responds to live sound while allowing for simultaneous manual adjustments. We also share the findings gained from the conceptual planning, technical development, rehearsal and performance of the *Multimedia Vivaldi* collaboration.

INTRODUCTION: BUILD IT AND WE WILL COME

It is not often that visual artists get a chance to work with and be supported by a talented group of classical musicians. When Daniel Abraham, artistic director and conductor of Washington DC-based Bach Sinfonia first approached us and shared his vision for a collaborative audio-visual event, we immediately recognized it as a unique and exciting opportunity. Bach Sinfonia is a baroque music orchestra with a refreshing mission of promoting classical performances as enlightening experiences. ¹ As a part of their 2011 spring season, Sinfonia was planning to highlight the popular *Four Seasons* concertos by Antonio Vivaldi. Here was a perfect opportunity to address an unexpected layer to the well-known piece of music – the original sonnets accompanying the *Four Seasons*, possibly authored by Vivaldi himself.

The plan to showcase these poems in their original context was also inspired by the perspective venue. This concert was to take place at The Cultural Arts Center at Montgomery College in Silver Spring, Maryland, USA. A fairly new, well-equipped space filled with



Concert hall at the Cultural Arts Center at Silver Spring, Montgomery College, USA. © Yana (Ioanna) Sakellion and Yan Da. Used with permission.

opportunities and all the appropriate latest technology. ² Among the many wonderful features of this center one stood out as particularly enticing for multimedia experiments; a large retracting screen in the back of the stage, paired with a high definition projector. In the warmth of the wooden paneling, inviting soft upholstery and cozy, almost intimate stage, it seemed larger than life. Dan Abraham has performed in this

Spring

bar	timing	section	action
1	0'00"	A	Spring has arrived and merrily
13	0'23"	B	the birds hail her with happy song
21	1'17"	C	and, meanwhile, at the breath of the Zephyrs, the streams flow with a sweet murmur:
44	1'49"	D	thunder and lightning, chosen to proclaim her, come covering the sky with a black mantle,
59	2'25"	E	and then, when these fall silent, the little birds return once more to their melodious incantation:
63	2'35"		
.....			
1	0'00"	F	and so, on the pleasant, flowery meadow, to the welcome murmuring of fronds and trees, the goatherd sleeps with his trusty dog beside him.
2	0'03"		
.....			
1	0'00"	G	To the festive sounds of a shepherd's bagpipe, nymphs and shepherds dance beneath the beloved roof at the joyful appearance of spring.

Summer

bar	timing	section	action
1	0'00"	A	Beneath the harsh season inflamed by the sun, Man languishes, the flock languishes, and the pine tree burns;
31	1'18"	B	the cuckoo unleashes its voice and, as soon as it is heard, the turtle dove sings and the goldfinch too.
59	2'13"	C	
70	2'48"	D	Sweet Zephyrus blows, but Boreas* suddenly opens a dispute with his neighbor;
116	3'46"	E	and the shepherd weeps, for he fears a fierce storm looming — and his destiny;
.....			
1	0'00"	F	the fear of lightning and fierce thunder and the furious swarm of flies and blowflies deprives his weary limbs of repose.
5	0'28"		
8	0'57"		
.....			
1	0'00"	G	Oh alas! his fears are only too true. The sky thunders, flares, and with hailstones severs the heads of the proud grain crops.
6	0'08"		
11	0'15"		

Vivaldi *Four Season* sonnets with corresponding bar position in the score, timing and approximate timing, which varies based on live performance tempo variations. © Yana (Ioanna) Sakellion and Yan Da. Used with permission.

hall before and was very accustomed to its dynamics. He saw a great opportunity in such combination and, having been familiar with Yana Sakellion's interactive narrative and experimental typography work, reached out for collaboration. In turn, Yana invited her former colleague Yan Da, who was exploring the responsive musical performance in his work, to join the initiative. Thus, the *Multimedia Vivaldi Four Seasons* experimental audio-visual collaboration was born.

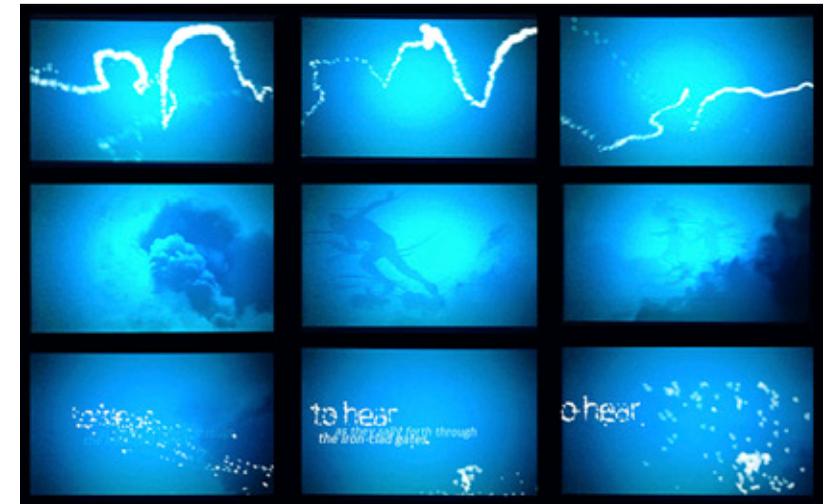
SPRING: THE BIRTH OF THE SYSTEM

We shall illustrate the English translations of the sonnets written for the Vivaldi's famous work *Four Seasons*. Our main goal was clear enough, but the deliverables and methods required extensive consideration. Given all the rich ingredients at our disposal, we immediately excluded any option that could even vaguely resemble subtitles. We were interested in intersections that may already exist on the cusp of the classical music and multimedia. The initial reference research uncovered primarily well-publicized performances that incorporated traditional slides or single channel video projections.

For example, in 2009 the Cleveland Orchestra performed Dvorak's *New World* Symphony, conducted by Bertrand de Billy, as a part of the orchestra's new *Musically Speaking* series. The concert featured a slideshow of archival images relevant to the historical

time period and circumstances of Dvorak's work.³ In the same year, Ars Electronica showcased *2007:3*, the work of Kenneth A. Huff. Time-based projections of beautifully constructed abstract 3-D forms and textures were played in the background of Alan Havhaness' *Lousadzak (Coming of Light)* performance during the music festival in Linz, Austria.⁴ This was a successful merger of the genres that departed from subtitle-slideshow dichotomy. Huff's work was recognized for its original blend of the contemporary time-based art and music, so we asked ourselves if a similar approach may work for us. Could a single channel video accompaniment be the focal point of our exploration? Of course, our circumstances were different, and not the least of them was the length of the piece. Where Alan Havhaness' *Lousadzak* is a just short of eighteen minutes, Vivaldi's work totals nearly forty-one minutes long. Could we construct a full-feature projection that would sustain its relevance to our goal and retain the audience's interest? Shouldn't we be using our native digital medium capabilities for all they have to offer? Our main concern, however, was to ensure that any technical solution we choose supports our particular needs, and doesn't simply engage computational media for its own sake.

Back at the drawing board, fueled by our enthusiasm and the powerful Bach Sinfonia mission, the search continued. Once again, we looked at a copy of Antonio Vivaldi sheet music, a reproduction based on the 1725 Amsterdam edition.⁵ Initially written in Italian



Time-laps screenshots of the Vivaldi reactive system. Winter. From top to bottom: *Notes*, *Sets* and *Phrases*. © Yana (Ioanna) Sakellion and Yan Da. Used with permission.

and since translated into English, the sonnets seem to highlight a particular musical phrasing as well as provide a narrative context to the common themes of concertos. Because a precise timing seemed to be crucially important to the original intent, we continued to look for the ways in which to preserve such relationship. One possible option was to work with the imagery directly responsive to sound, and not just in post-production but also during the performance itself.

We found strong influence and inspiration in *Messa di Voce*, the work by Golan Levin and Zachary Lieberman with Jaap Blonk and Joan La Barbara.⁶ In this performance a master vocalist comes on stage and begins to sing. It's not a singing in a traditional sense, but rather a collection of sounds and pauses, breaths and murmurs that somehow begins to flow into one compelling melody. As soon as the sounds escapes the artist, the projection behind shows the geometrical form taking shape as it flows off the performer's lips. As if he breathed it into existence. After a while, these shapes accumulate on the screen and begin to display behavior seemingly linked to the quality of sound. Sometimes they bounce, other times they fall. This approach of visualizing the sound in real-time highly appealed to us for its transcendence of mere illustration and claiming its own medium.

Finally, we focused exactly on what we hoped to achieve with this piece. Our primary goal was to cre-

ate a holistic experience between the visuals, typography and sound within the classical music context, and with consideration for the gestalt of contemporary electronic audio-visual performances. Our secondary goal was to engage the demographic which otherwise may not be exposed to New and Interactive Media. We didn't want to create a 'music video'; neither did we want our work to become a mere subtitle backdrop to the musicians on the stage. Rather, we aimed to become the visual performers ourselves, and asked Dan Abraham to serve as our conductor.

SUMMER: BLOSSOMING WITH SOLUTIONS

We designed a visual instrument, which allows us to orchestrate and animate the foreground images (notes), background pictures (sets) and the texts (phrases) in real time. The notes automatically react to the live sound, while the sets and phrases are manually triggered. All three are in constant motion across the screen, communicating the passage of time and the cyclical nature of the seasons. The notes and the key words in phrases appear to assemble from multiple small graphics, commonly referred to as particles, giving form to the many nuances of the auditory musical experience.

The visual design of the *Multimedia Vivaldi* evolved to reflect project's functional requirements. We began by creating mood-boards to define the overall look



Initial Multimedia Vivaldi sonnet mood-boards. © Yana (Ioanna) Sakellion and Yan Da. Used with permission.

Time-lapse screenshots from the finished reactive system. From top to bottom: Spring, Summer, Fall and Winter.

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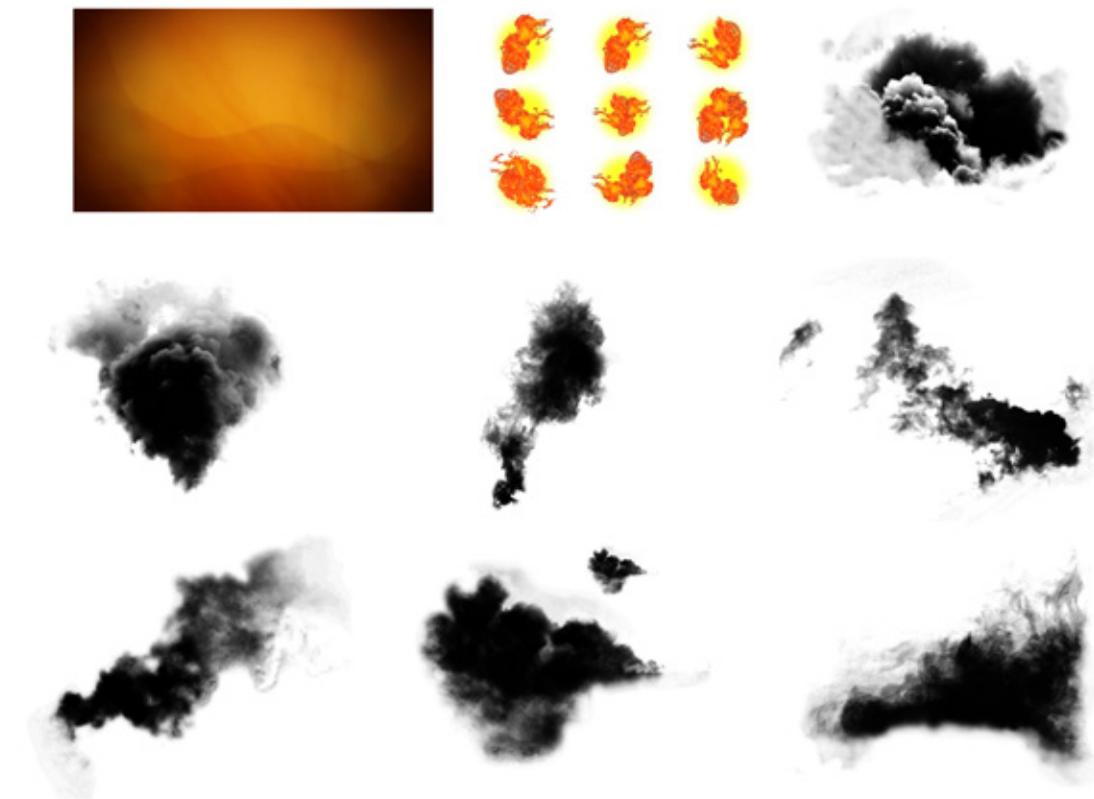


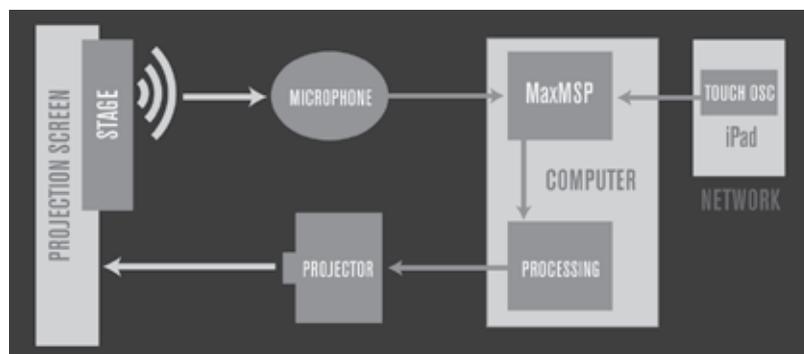
and feel of the seasons. Because our project was as much influenced by its technical development as it was by the content of the sonnets, it was essential to establish certain design guidelines while remaining flexible. In many cases, the number of visual variations for each graphic is influenced by how much real-time information our system can handle at one time. Ultimately, each of the movements in the four seasons follows a theme. Graphics used to compose the text required special treatment in order to be legible, yet expressive. The imagery stemmed from traditional

sketches and storyboards and evolved into a more flexible system of modular designs. They follow the narrative of the sonnets, but do not reflect the text literally. Instead they set the mood and provide a playground for the imagination.

Dynamic behavior and controls are handled by the two-part reactive computational system. It can animate visual elements directly to sound, and yet provides the ability to change graphics and effects manually during the concert. The first part (made

Examples of modular graphics used in final performance. © Yana (Ioanna) Sakellion and Yan Da. Used with permission.





System schematic plan.
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with MaxMSP software, commonly used in contemporary electronic music performances) captures the live sound and automatically translates the pitch and amplitude to manageable visual properties such as position, scale and opacity. Additionally, it contains the controls for all real-time visual modifications. The second part (made with Processing, and open source programming language) is responsible for dynamically mapping those properties to the projections during the performance.

Because it was so important to us that the sonnets appear at the exact times noted on the original score, we decided to trigger them by hand in order to perfectly match the proper queue points. We designed an iPad interface allowing our conductor to simply hit 'in' and 'out' buttons to operate the sonnets. ⁷ The iPad receives a data feed directly from MaxMSP sound capture (via the network) and transmits the signal to *Processing* software which then displayed the composite sonnets text. While the sonnets' entry and exit points

are accessed from the iPad interface, their complex animated transitions are pre-programmed according to the score.

WINTER COMES EARLY: ENDURING THE UNEXPECTED

Perhaps one of the more important lessons of this collaboration is one in understanding the differences between our own artistic process and that of the typical classical musician. Given the many elements at play, our direct dependency on the sound itself, and the fact that this was our very first exposure to working within the context of the traditional classical concert at large scale, we were in an uncharted territory without a clear map. Only three rehearsals were planned, and just one of them held on site at the Performing Center. It seemed like a great challenge, and it was. As we have learned, this schedule is rather typical for the musicians. They follow a strict regiment and work on

perfect their part long before joining the orchestra in rehearsal. Since any individual part has a very prescribed relationship to the whole, once players come together it's the question of financing subtleties, not fine-tuning the framework. During our rehearsals the musicians fit together like a neat puzzle, and we clearly stood out as a single odd piece.

Here we were, trying to join in as a part of the established workflow, yet our own instrument was still being defined. While we were quite aware of the differences in the medium and the corresponding methodologies, the reality of it seemed jarring. We were comfortable with uncertainty and experimentation, ready to make small and large adjustments fairly late in the process. Indeed, our approach must have seemed unfamiliar and quite unsteady to a classical musician. Daniel Abraham's trust and his respect for our process, especially in the light of such differences, was truly remarkable.

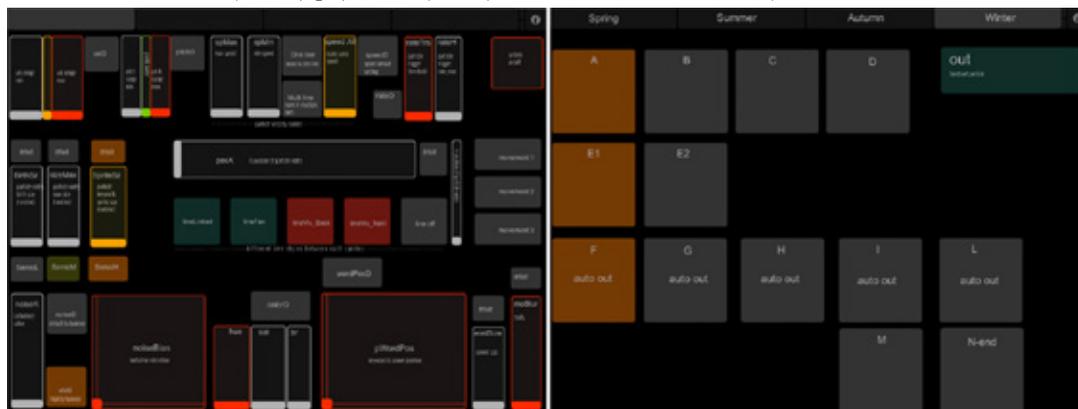
Early on, Daniel suggested we adopt a recording of Vivaldi's *Four Seasons* by Il Giardino Armonico ensemble, as it most closely resembles the spirit of Bach Sinfonia performance. ⁸ We studied the record carefully, and made sure to build our reactive system around it. We also observed the Sinfonia in action during their earlier concert season and got familiar with their sound. Still, no amount of preparation would eliminate the need for unexpected changes. Despite our best efforts, further modifications to the responsive animations and the graphics themselves were required. Once we gained access to the stage, it became apparent that even with the high definition projection we were had to make further accommodations for the overhead lights used by musicians. This

was also the first time we saw the actual arrangement of the players on stage. Even though we were prepared for their placement and knew the dimensions of the instruments, we discovered that the height of the each performer made a difference to where we could be projecting higher contrast graphics so that they do not interfere with the musician's eyesight. Further, the feedback we received from the musicians indicated a curious difficulty. The glimpses of the images in motion affected their peripheral vision, raising their curiosity and breaking the concentration. Since we didn't have enough time to de-sensitize their sight, we proceeded to illuminate smaller details in the images, and transform the contrast of projections. At the end, we were able to learn from all the growing pains and pave the road to future iterations of the project.

AUTUMN: A TIME TO HARVEST

The classical recital itself is mediated by its very nature. Only a few are able to interpret the sheet music directly off the page, much like you would read a book, and hear the arrangements simply by looking at the score (presumably exactly as the author intended). However, even such purist approach is not exempt from the audience's expectations, training, knowledge and perceptual differences. As Emilie Crapoulet points out in her 2008 article "From Intermedial Music to Interactive Multimedia Event: the Performance of Ravel's *Miroirs*": "... if we dispense with the performer, we cannot hear the music, but if we wish to hear the music, we need the performer. However, one usually speaks of a 'good' performance as one which is not only true to the composer's intentions... but still brings the music to life, makes it speak so that it

Effects control panel (left). iPad interface controlling queue points of sonnet animation by season and movement.
Manual controls and auto options, (right). © Yana (Ioanna) Sakellion and Yan Da. Used with permission.





Placement of performers Yan Da and Yana Sakellion together with Dan Abrahams, the conductor, in relationship to the stage and the audience. © Yana (Ioanna) Sakellion and Yan Da. Used with permission.

makes sense to us, and ultimately, makes us listen. As such, the *performance* of music is inscribed within a contemporary cultural context, even though the music itself may belong to a different cultural context.” Consequently, *Multimedia Vivaldi* aims to bridge the modern cinematic sensibilities evoked by the large screen, animation and computational graphics format on the one hand, and the classical performer paradigm on the other.

Spatially and procedurally we positioned ourselves among the audience while remaining distinct autonomy. Because of the traditionally limited visual destructions during the classical concert experience, we understood our viewers’ inclination to study the musicians’ gestures, body language and even facial expressions. To allow continuity between the on-stage, and the off-stage performances we decided to make ourselves observable. Accordingly, the computer equipment was set up in a wide row between the front

and the back orchestra seating sections, providing the spectators with the opportunity to observe us during the concert. Therefore, the conductor and the two visual artists were positioned facing the stage, concurrently becoming a special and a spectator. Given the nature of electronic tools used in *Multimedia Vivaldi* our own performative gestures were relatively small and intimate. Although our hands were moving in limited range dictated by the computer and iPad interface, we were convinced that seeing the delicate interaction with these tools, and more importantly with each other, was integral.

In addition to the visible connection between the stage and the visual control center, the specifics of new media exposed an unexpected dynamic. Any live event runs the risk of the unexpected interruption. With the new media tools, the chances of technical failure grow exponentially. Technology is guaranteed to eventually malfunction, and the questions of reli-

ability and conservation of multimedia systems in the arts are still being actively debated. Our personal response to this condition was to install *Multimedia Vivaldi* system on duplicate laptop stations, each fully engaged during the performance. By interfacing both machines to the projector and running them in sync during the live event, we ensured that at any moment the projection could be switched from the active computer to its identical twin minimizing any possible interruption. In the pauses between the concertos we were able to perform quick verifications and tune-ups. Curiously, this necessity established a closer non-verbal communication with the on-stage performers, as we relied on their accommodation for adequate timing.

Although not a part of the performance itself, the resulting interaction with the audience (during the intermission and post-concert) turned out to be one of the most rewarding outcomes of our work.

Audience is getting to know the visual performance space during the intermission.

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AFTER THE SEASONS: CLOSING REMARKS

Through this project we were hoping to not only address the collaborative modalities of experience design, but also to open an essential interdisciplinary dialogue. A lot has been made of this notion in recent years, yet we find ourselves wandering how these interdisciplinary collaborations fit within the cultural discourse outside their immediate context. The audience embraced us, yet the classical music critics remained cautious, if not altogether unreceptive. On the other hand, the design and the arts communities offer the most informed and inclusive insights. In 2012 *Multimedia Vivaldi* won How Magazine Interactive Award for its innovation and merit. We seek to promote experimental collaboration awareness, and educate the audiences on the ever-changing nature of our field. We prescribe to the concept of an artist as designer, and a designer as artist: the one who is aware of the

communication that occurs between the work and the viewer, and hones his crafts with such consideration. Perhaps best summarized in the following words of Bruno Munari, "The designer is therefore the artist of today, not because he is a genius but because he works in such a way as to reestablish contact between art and the public, because he has the humility and ability to respond to whatever demand is made of him by the society in which he leaves... And finally because he responds to the human needs of his time..." 10 ■

Multimedia Vivaldi performance in progress and additional screenshots.

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PERFORMANCE CREDITS

March 7, 2011
Cultural Arts Center at Silver Spring
Montgomery College, USA

Antonio Vivaldi, *Le Quattro Stagioni (The Four Seasons)*
Yan Da & Yana Sakellion, design and reactive media
The Bach Sinfonia, musical performance
Daniel Abraham, conductor & artistic director
Ingrid Matthews, solo violin

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