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LEONARDO ELECTRONIC ALMANAC

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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

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Leonardo Electronic Almanac
Volume 19 Issue 3

8 EDITORIAL Lanfranco Aceti

12 REVISITING CINEMA: EXPLORING THE EXHIBITIVE MERITS OF CINEMA FROM NICKELODEON THEATRE TO IMMERSIVE ARENAS OF TOMORROW Brian Herczog

22 THE FUTURE OF CINEMA: FINDING NEW MEANING THROUGH LIVE INTERACTION Dominic Smith

30 A FLEXIBLE APPROACH FOR SYNCHRONIZING VIDEO WITH LIVE MUSIC Don Ritter



46 AVATAR ACTORS Elif Ayiter

64 MULTI-PROJECTION FILMS, ALMOST-CINEMAS AND VJ REMIXES: SPATIAL ARRANGEMENTS OF MOVING IMAGE PRESENCE Gabriel Menotti

78 MACHINES OF THE AUDIOVISUAL: THE DEVELOPMENT OF "SYNTHETIC AUDIOVISUAL INTERFACES" IN THE AVANT-GARDE ART SINCE THE 1970S Jihoon Kim

88 NEW PHOTOGRAPHY: A PERVERSE CONFUSION BETWEEN THE LIVE AND THE REAL Kirk Woolford



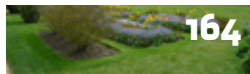
108 TEXT-MODE AND THE LIVE PETSCII ANIMATIONS OF RAQUEL MEYERS: FINDING NEW MEANING THROUGH LIVE INTERACTION Leonard J. Paul

124 OUTSOURCING THE VJ: COLLABORATIVE VISUALS USING THE AUDIENCE'S SMARTPHONES Tyler Freeman

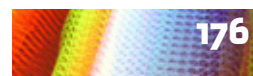


134 AVVX: A VECTOR GRAPHICS TOOL FOR AUDIOVISUAL PERFORMANCES Nuno N. Correia

148 ARCHITECTURAL PROJECTIONS: CHANGING THE PERCEPTION OF ARCHITECTURE WITH LIGHT Lukas Treyer, Stefan Müller Arisona & Gerhard Schmitt



164 IN DARWIN'S GARDEN: TEMPORALITY AND SENSE OF PLACE Vince Dziekan, Chris Meigh-Andrews, Rowan Blaik & Alan Summers



176 BACK TO THE CROSS-MODAL OBJECT: A LOOK BACK AT EARLY AUDIOVISUAL PERFORMANCE THROUGH THE LENS OF OBJECTHOOD Atau Tanaka



190 STRUCTURED SPONTANEITY: RESPONSIVE ART MEETS CLASSICAL MUSIC IN A COLLABORATIVE PERFORMANCE OF ANTONIO VIVALDI'S FOUR SEASONS Yana (Ioanna) Sakellion & Yan Da

202 INTERACTIVE ANIMATION TECHNIQUES IN THE GENERATION AND DOCUMENTATION OF SYSTEMS ART Paul Goodfellow



214 SIMULATING SYNESTHESIA IN SPATIALLY-BASED REAL-TIME AUDIO-VISUAL PERFORMANCE Steve Gibson

230 A 'REAL TIME IMAGE CONDUCTOR' OR A KIND OF CINEMA?: TOWARDS LIVE VISUAL EFFECTS Peter Richardson

240 LIVE AUDIO-VISUAL ART + FIRST NATIONS CULTURE Jackson 2bears



256 OF MINIMAL MATERIALITIES AND MAXIMAL AMPLITUDES: A PROVISIONAL MANUAL OF STROBOSCOPIC NOISE PERFORMANCE Jamie Allen

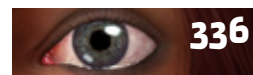
272 VISUALIZATION TECHNOLOGIES FOR MUSIC, DANCE, AND STAGING IN OPERAS Guerino Mazzola, David Walsh, Lauren Butler, Aleksey Polukeyev

284 HOW AN AUDIO-VISUAL INSTRUMENT CAN FOSTER THE SONIC EXPERIENCE Adriana Sa



306 GATHERING AUDIENCE FEEDBACK ON AN AUDIOVISUAL PERFORMANCE Léon McCarthy

322 CHOREOTOPOLOGY: COMPLEX SPACE IN CHOREOGRAPHY WITH REAL-TIME VIDEO Kate Sicchio



336 CINEMATICS AND NARRATIVES: MOVIE AUTHORING & DESIGN FOCUSED INTERACTION Mark Chavez & Yun-Ke Chang

352 IMPROVISING SYNESTHESIA: COMPROVISATION OF GENERATIVE GRAPHICS AND MUSIC Joshua B. Mailman

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.



Figure 1. *Self-portrait*, Raquel Meyers, 2012. Commodore 64/A PETSCII. © Raquel Meyers, 2012. Used with permission.

Text-Mode and the Live PETSCII Animations of Raquel Meyers

Finding New Meaning through Live Interaction

by

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OVERVIEW

With a generational shift for computers that were made over 25 years ago, we are seeing the current 'internet generation' take a liking to computers that existed from the 'golden age' of computing when things were simpler and more tangible. This essay examines the use of antique video game hardware used to make modern visual art through the work of Raquel Meyers. The scope of this discussion will be limited to Raquel's use of the Commodore 64 (C64) as she works in many different mediums that also include photography and video. Her live work *The Ferret Show* is examined and compared with her work *Vank* that utilizes pre-recorded material. Due to the technical dexterity required when utilizing old com-

puter systems, it has a direct impact on the sphere of possibilities when working within a live context. This is much akin to the difference between hearing music live and what is possible once it is taken into the studio and manipulated. This allows a discussion of how live visuals are indeed their own form of artistic production and examines how it changes the aesthetics of the final work.

Raquel Meyers comes from a photography background and the geometric density in her work hints at the Arabesque designs she experienced as a youth in southern Spain. She has performed as a visualist at many live chiptune performances around the world such as the Blip and Transmediale Festivals. She did not grow up using the C64 but watched her brother use computers while she pursued her artistic interests in photography. Thus, the C64 does not hold nostalgia for her but is her medium of choice due to its immediacy and freedom from corporate interests which allow her to focus on her artwork. ¹ The C64 is an obsolete system that does not have its software or use mitigated by the whims of a multinational corporation such as the modern Apple computer that she also uses in her work. With her move to Sweden and her close collaboration with C64 musician and composer Anders Carlson (aka Goto80), she joined the demo

group Hack 'n Trade and became a member of the demoscene community. This particular group is focused on the C64 and creates art which continue to breathe new life into a computer that many consider a dead medium. Her associates help create new code to enable her to create her animations which accompany the code and music under the name AcidT*rrorcast.

Rather than focus on bitmap graphics that utilize the 320x200 high resolution (hi-res) pixel mode of the C64, Meyers has concentrated her efforts on the character semi-graphics of the PETSCII that is unique to early Commodore computers. Text-mode has been obsolete by modern computer hardware as its original purpose was to allow for graphics to be constructed in a piecemeal fashion by mapping small reusable graphic patterns in the computer's ROM to save costly RAM required for bitmap graphics. In this way, instead of having a character reference an alphanumeric font graphic it could reference a graphic such as a heart symbol or a section of a vertical line. PETSCII was designed for the Commodore PET computer before hi-res mode was easier to implement. PETSCII continued to be used on the C64 and since it is unique to the system it produces a very recognizable result within the limitations of the graphics which are available due to the type of graphics which were represented. Creating PETSCII graphics is very immediate for Meyers as it is easy to see on the computer keys themselves what graphic is being created when in entering PETSCII. She has developed a fascination and research interest in other forms of art which have a similar text-mode aesthetic on her blog on text-mode. ²



Figure 2. A photo of the Commodore 64c keyboard showing the layout of PETSCII graphics on the keyboard keys. © Raquel Meyers, 2012. Used with permission.

THE LIVE VISUALIZATIONS OF 'THE FERRET SHOW'

In her live performance of *Uwe Schenk trifft.. Goto8o und Raquel Meyers* at Stuttgart on October 27th, 2012 at Theater Rampe she collaborated with Goto8o and a live jazz band of bass, saxophone, harpsichord (spinnet) and drums.³ From the opening of the performance we see Goto8o's custom C64 composition program DefMon.⁴ There are five songs entitled: *Ponky Fonky Ferret*, *Cable Swingin' Ferret*, *Decibel Dektif*, *Thriller Iller* and *Volsing Ferretismico*.

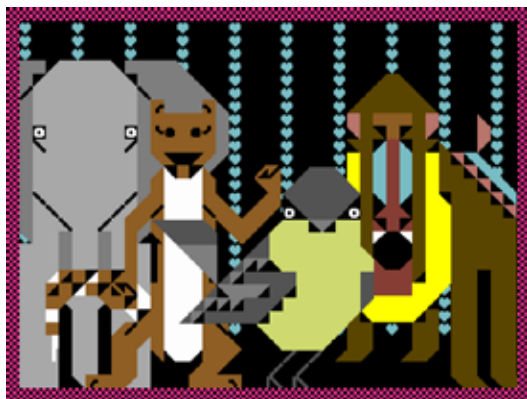


Figure 3. All the ferret's friends dance at the conclusion of *The Ferret Show*. *The Ferret Show*, Raquel Meyers, 2012, PETSCII. © Raquel Meyers, 2012. Used with permission.

The songs are based on DefMon that uses a similar visual format to module trackers originally created for the Commodore Amiga which was released after the C64.⁵ The raster lines at the side of DefMon show the amount of processing that the system is performing at any given instant and so it oscillates to increase in size when notes are struck. Goto8o quickly shifts from the pattern view into an instrument editing view and begins changing parameters for the current instrument. Raquel begins to overlay her PETSCII graphics of female ferret who emerges from her home and the narrative commences. After a while the live musicians join in to improvise with the help of Goto8o's jazz charts.

The second song opens with a jazzy feel and the ferret begins moving around the floor and walls of a small room. She seems bored as she removes her head and larger sprite question marks fly around and begin to fall from the ceiling (a 'sprite' is a bitmap graphic element which could move independently from the rest

of the display on the C64)⁶ The trapped ferret saunters around as her head flies around from time to time and we are instilled with a sense of cabin fever. Heart symbols begin to fall and the ferret begins a dance with animated smiles.

The third piece begins with a funky harpsichord pattern and sounds from the C64 that are reminiscent of old European demoscene melodies from the 90's. The ferret begins to feel more trapped as she throws herself repeatedly against the walls.

The fourth song signals a major shift and we appear to be moving through an imagined interior landscape of the ferret who walks while apparitions fly past. We see a vision of a voodoo witch as the ferret sleeps.



Figure 4. The ferret flings herself against the walls. *The Ferret Show*, Raquel Meyers, 2012, PETSCII. © Raquel Meyers, 2012. Used with permission.



Figure 5. The ferret's nightmare. *The Ferret Show*, Raquel Meyers, 2012, PETSCII. © Raquel Meyers, 2012. Used with permission.

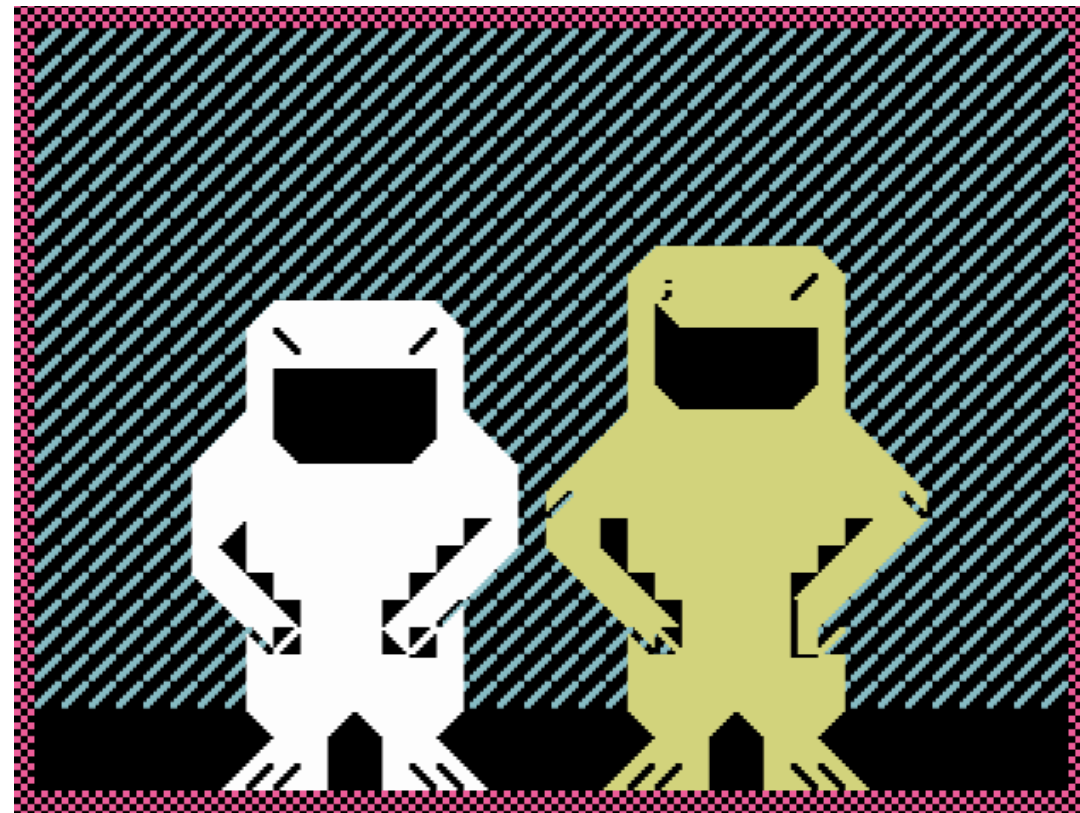


Figure 6. Laughing during Goto8o's *Volsing Ferretismico*'s conclusion. *The Ferret Show*, Raquel Meyers, 2012, PETSCII. © Raquel Meyers, 2012. Used with permission.

Other animals appear and the ferret tries to enter her hole for safety then begins to cry while walking through a forested landscape. She is attacked by a primitive bunny-like people who strike her down with spears. Her visions continue but she is eventually left with a background of falling lines of hearts but she appears unchanged and still unhappy.

The fifth and final movement opens with a light harpsichord riff and when the Commodore's beat kicks in she begins to dance once again. It focused on an updated remix of Goto8o's song *Volsing* complete with laugh track.⁷ Other animals enter to join her dance to lift her spirits. Goto8o and Meyers sing along and a laugh track helps lift the mood as well with the animated animals singing as well.

What can we learn from this collaboration in live visuals? The visuals add a central character upon which a narrative can be derived. Ideas of absurdism and a struggle against confinement and existence itself are central themes which include the subconscious. The

visuals do not simply mimic the audio but help give it structure to draw all the otherwise disparate songs together. The craftsmanship of all involved reframing songs that were created within the context of the demoscene and raising them to introduce them to a high-art audience. The video shows elements of high-art combined with a comfortable technical dexterity which is lacking in many other modern multimedia works born from the demoscene which tend to be more focused on the technical aspects of their production. With the singing conclusion it gains an element of cabaret with a rousing concluding musical number which fits well with the venue and the players. There is even a different organization to the performance when seen from a narrative standpoint and the sections are relabeled as Intro, What's Going On, Trapped and Happy End.⁸ The sound of the harpsichord as an instrument largely obsolete by the piano is an appropriate mirror to the C64. Therefore, in conclusion, we can feel that the ferret has found her home and happiness with friends and we end in a comedy in the closing dance number.

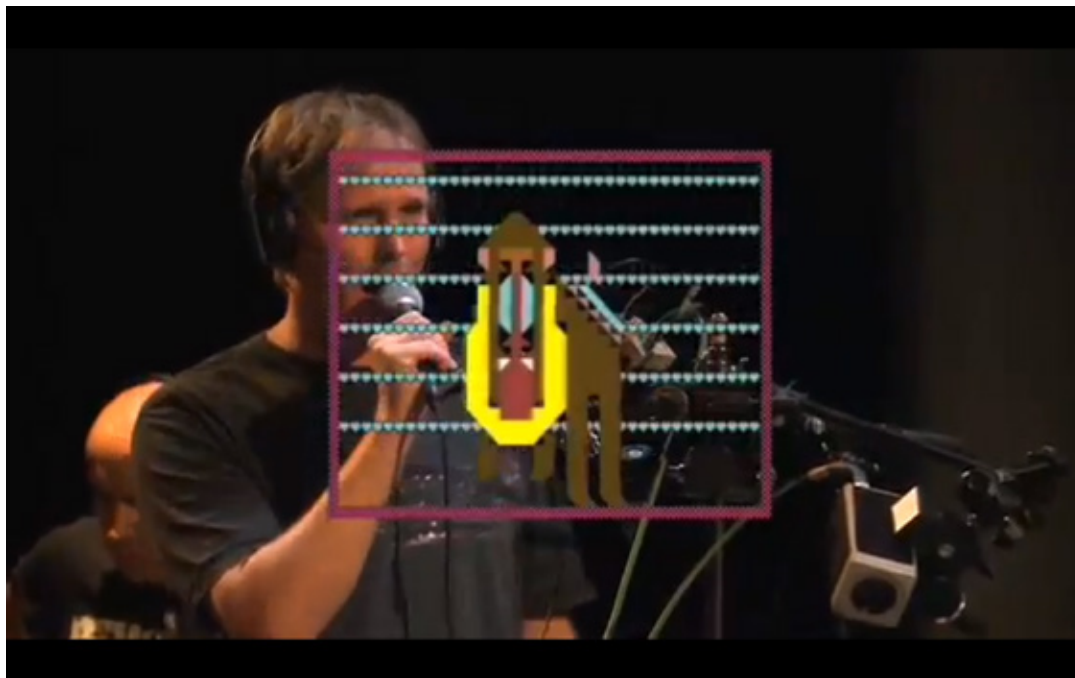


Figure 7. Goto8o sings during *Volksing Ferretismico*. Uwe Kassai, 2012, HD Video. © Uwe Kassai, 2012. Used with permission.

THE EDITED IMPROVISATION OF 'VANK'

In an entirely different context and format we can have a look at an earlier collaboration with Goto8o entitled *Vank*.⁹ The content of the visuals tends to be abstract scenery with surreal creatures placed in them. Similar to the previous live show, we are shown Goto8o's DefMon tool for the C64. From the analogue buzz from the audio we surmise that the audio is coming live from a real C64 instead of from an emulator. From some of the dub-style delays and artificial reverberation we can tell that the audio is being processed by the composer. In conjunction with the minimal improvised score we can see Raquel's PETSCII improvisation occupy the bottom half of the screen. To create the PETSCII animation she recorded her performance in non-realtime in the custom software Letter Noperator while editing the resulting animation to the music by Goto8o.¹⁰

Due to the speed of the cursor movements and the complexity of the content being generated we get a sense of time-compression with her drawing in a non-realtime timescale. This immediately puts it at odds with the improvised music whose density is at a regular timescale and has a very improvised feel to it with a less composed musical structure than the previous

live performance piece. The ostinato bassline gives a feeling of a musical background pattern which has been set to loop under modulations of the synthesis patch parameters. The second layer feels to be an experimental lead voice which receives the main focus of the improviser's attention with live effects and denser modulations. Due to the two DefMon screens we can guess that Goto8o had two copies running at the same time on different C64s. Each C64 has the possibility of three voices of polyphony for a total of six voices. Notes are added and 'dubbed out' into delay lines or reverberation trails to give an additional depth to the interaction.

We can surmise from the video that Meyers has created both layers of the PETSCII animation but the speed of the rendering of the image and the fact that both are updating simultaneously give a feeling of the uncanny. In our case, Meyers has provided both recordings at the same level of agency and is coordinating them both in the post-production edit. Watching the two PETSCII cursors move with their own overlapping agency gives a sense of communication between each layer. Typically the foreground layer is entirely white with a multi-coloured background PETSCII layer that mirror Anders' foreground and background layers.

With the imagery of the PETSCII there are frequent references to anthropomorphic faces and a hint of her pen and ink drawings.¹¹ The foreground tends to be more representative of a landscape with mountains in the distance and creatures in the foreground – possibly in reference to her current residence in pastoral Sweden.¹ The background layer of colours tends towards obscurity and includes actual text elements of nonsense characters that verge towards the abstract.

Both PETSCII layers periodically scroll upwards by a character height which is indicative of older computing systems and gives reference to typewriters and dot-matrix printers. The PETSCII is entirely controlled by the computer keys and adding spaces requires repeated keystrokes. When making PETSCII drawings in a demo party, her collaborators remarked that

it was similar to having someone clacking away at a typewriter when she was making her art at the C64 keyboard.¹² This forceful entry of space is in contrast to the ease in which we glide around with a mouse when using a modern computer. So, even the negative space is intentional and occupies a gesture and force when she is making PETSCII. The PETSCII program is also capable of scrolling elements sideways in chunks similar to the way a text might move when we use the 'delete' key in a word processor. This characteristic word processor gesture gives a sense that the code is being misappropriated for a purpose different than it was constructed for. In an interview, the C64 demo-scene artist Poison describes his hacking of a simple computerized note pad program for the C64: "However, this tool was pretty much forgotten and not used by anyone for decades, and moreover – never in a

Figure 8. Still of small happy white faces and DefMon in *Vank*. *zSLEEP1*, Raquel Meyers, 2011, Commodore 64 and PETSCII.



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creative way like Poison did.”¹⁰ This use of tools for alternate purposes is core to hacker values which supports Raquel’s role as the Acid T*rrorcast in her demo-scene productions with Goto80 in Hack ‘n Trade.¹³

In *Vank* we watch Meyers as she moves the cursor quickly through space in the four cardinal directions which help reinforce the notion of the grid that the PETSCII is confined to. The mouse has a very one-to-one connection to the gesture of the user and watching cursor keys give a layer of disconnect with the hand of the artist since it is somewhat masked. Even gesture is governed by the grid. When forms are revealed such as an animal such as a moose perhaps we are seeing into the mind of the artist who has relocated to Sweden to work with Anders from her warm

hometown of Spain. This animal appears to be defecating out nonsense text of partially digested yet incomprehensible fonts of knowledge, perhaps similar to the artist’s experience of attempting to digest Swedish. In the faces of the creatures we often see smiles which give a sense of levity and cartoon-like nature to the images. However, there is also often very stark eyes which stare without blinking. Near the end we see a main character in white who is surrounded by five heads which seem to have wormlike lines of connection to support the smiling central figure that give a warm sense of community and belonging.

Unlike the act of drawing or painting which is inherently continuous, the act of live PETSCII drawing is discontinuous due to the framing of each character

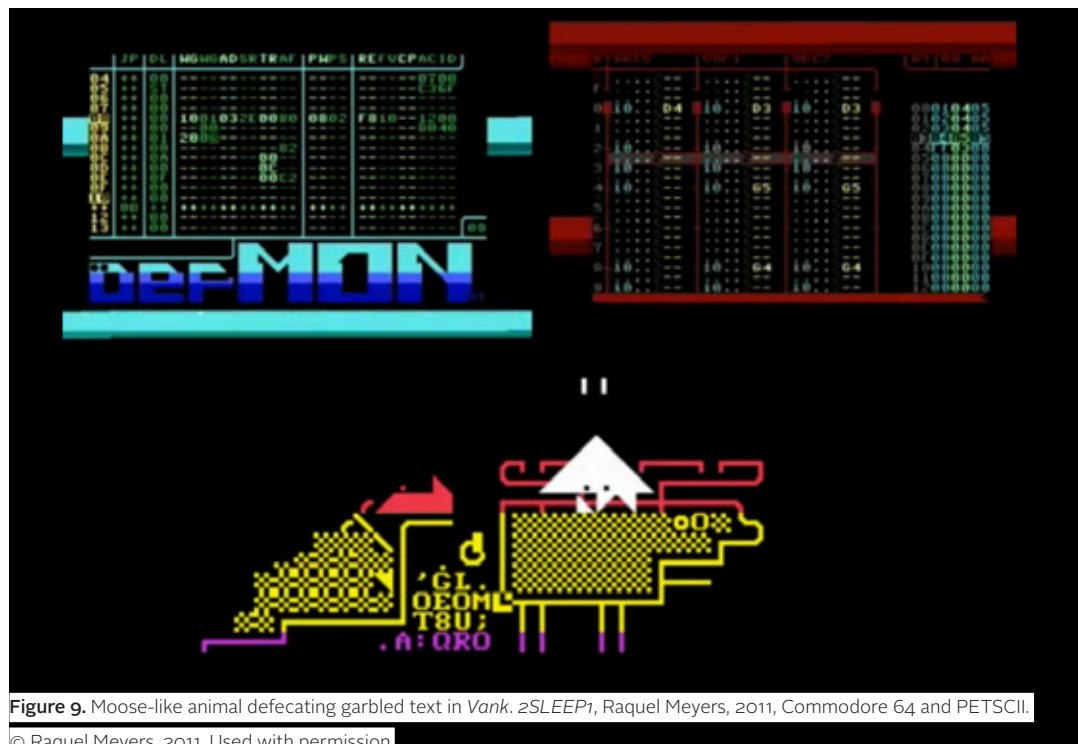


Figure 9. Moose-like animal defecating garbled text in *Vank*. zSLEEP1, Raquel Meyers, 2011, Commodore 64 and PETSCII.

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Figure 10. Smiling figure on a peak in *Vank*. zSLEEP1, Raquel Meyers, 2011, Commodore 64 and PETSCII.

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grid and the movement of the cursor in jumps. Each time the cursor overlaps a character there is an expectation of what existed and what will become – a digital palimpsest. It gives tension to the interaction when one attempts to predict when new PETSCII graphics are stamped down. One can see when Meyers changes a curved smile to a more angular one or when graphics are tweaked until they look ‘right’ – almost like a charcoal artist erasing, drawing and smoothing until the result is satisfactory.

This act of live improvisation gives a very interesting look into the mind of the artist. Similar to paintings which have been painted over and hidden layers removed, we are seeing the same but in hyper real-time. We can see the sped-up cursor fly, as a brush would across a digital canvas, but instead of fine lines we see a stamping process. Sometimes the cursor is hesitant and goes back and forth as a goal is re-evaluated in mid-process. This is an open and real conversation that we are witnessing between the artist and her medium.

Starting at 7:39 we can see how reverse-mode periods are added in neighbouring pairs to begin the construction of a face with two small eyes.¹⁴ The cursor

continues to add pairs of lines in a downward right direction to generate five sets of eyes first. To generate the smiles in the form that she wanted, she wanted to use non-reverse mode so this economy of movement was done to reduce the amount of mode switching an waste of time by doing a pass of reverse-mode first and then a pass of regular mode. By 7:42 she has added two smiling mouths to the top two characters but makes a small error in typing. When watching the live PETSCII drawing we can see some ‘mistakes’ such as this where the ‘J’ and ‘K’ alphanumeric characters were added instead of their PETSCII shifted graphics. When we reference the PETSCII keyboard of the C64 we can indeed see that the ‘J’ and ‘K’ keys correspond to the same PETSCII keys that she settled on in her final image.¹⁵ She goes back to correct and repeats the gesture on the next three faces as well. Starting at 7:45 she goes back a third time to each face and adds different “ears” on the top of each in slightly different configurations to give each a feeling of individuality.

Although DefMon wasn’t controlled by Meyers its inclusion gives a visual presence to the musician. The flickering raster lines give a repeated pulse to the patterns as they pulse on looped commands that cause a differing amount of processing to be used on each

frame update. We can see one screen that shows both the pattern data on the left-hand side and the song pattern sequence data on the right hand side. In the separate screen that shows the branding of DefMon along the bottom we can see the sound chip registers of the Sound Interface Device ('SID') chip being changed in realtime by the musician. We can see how he moves between changing additional patterns to the song under the highlight and how he moves through his interface in the pattern editor to change notes and then restart patterns.

The colour PETSCII screen between the different DefMon windows is echoed in Raquel's PETSCII colour palette. The more muted tone of the DefMon reds beside the PETSCII shows the difference between the PETSCII generated by an emulator and the composite output of the DefMon screen being mixed on an analogue mixer. Raquel's use of colour appears to be quite elementary and primarily serves to divide the foreground layer with the background but there are long sections starting at 5:39 where a large area of red is added as though it were responding to the louder audio signal.

Her use of colour is in stark contrast to the more concrete reality-based colours used by Poison when we compare an example of his work to hers.¹⁶ We can also hear that the music is much more representational in comparison to Goto80's as well. The sparse use of colour helps add to the abstract goal of promoting sleep in *Vank*. It is as though our consciousness had all the colour drained out of it and our subconscious has an abstract vibrant colour associated to it.

Given that the overall artist statement is “..designed to make you fall asleep..” the sonic landscape gives a feeling of space and comfort of a simulated outer space environment and solace and introspection. This style of analogue effects has been in popular use since

the film *Forbidden Planet* and continued with the dub experiments of King Tubby and others. With a slower tempo and minimal amount of analogue synthesized material the music does give hints of inducing sleep in the audience.

By watching the process of disjointed creation in both the visuals and the audio it gives a sense of imbalance and suspense in the viewer. For someone versed in trackers and chiptunes of the C64, it is possible to read the display of the DefMon outputs and learn that the music display is not in synchronization with the visual output. There are points of correspondence between the visuals and audio so it can be surmised that Raquel is creating a synchronization between the two by triggering the prerecorded video segments and updating the visual effects.

With *Vank* we feel a correspondence between the audio and visual even though they were not only not produced at the same time but also created on a different time speed. In the editing process Meyers has brought the two together such that her multiple animated PETSCII improvisations fuse with Ander's improvised score. There is a difficulty to create PETSCII quickly enough in a live setting but the freshness of the improvisation helps relax the viewer, possibly into a state of sleep.

THE NOTION OF TIME

In a several hour conversation with Meyers about her PETSCII work there are many themes which come to light. Immediacy is key with the C64 and conversely, fast food short cuts produce a superficial output which she finds common to many contemporary digital artworks. Things that are too easy are arbitrary and not as worthy as things which take time and thought.¹²

With the Commodore she feels liberated that there isn't a multinational corporation forcing her interactions with the machine in an attempt to make money. It is not only free but liberating. The community has grown around the Commodore by choice. The C64 is just a simple machine, no fan, just the buzz from the screen. The C64 was made by only a few people in comparison to modern computers and so the 'hand of the artist' is more present than in newer technology. It helps to reverse some of our assumptions of our current consumer culture where newer and more is always 'better.' Quality should require thought and time which we rarely leave ourselves. The C64 forces you to slow down in certain ways and during the performance during *The Ferret Show* we can see her taking the time to swap out the floppy disks to load in new information. This interaction can almost be seen as quaint as it is a gesture which is largely eliminated with modern networked computers with large hard drives of information that never require physical interaction to update their reach.

Although we take cut-and-paste for granted, Meyers revealed that all of her animations required redrawing each frame, which adds to weight of the artist's intent when creating repeated images.¹¹ The tool is very similar to traditional cell animation and using Johan Kotlinski's custom PETSCII animation program (of LSDJ fame): she is similarly able to flip back and forth through successive frames. Although digital mediums commonly allow for an ease of repetition, here we see the opposite.

The notion of time and immediacy are central to Meyers's work with PETSCII. She enjoys refining her collaboration when working with a musician rather than just getting thrown in at the last minute for a live show. For her, collaboration creates a conversation where each medium inspires and communicates with the other. Collaborating in person using technology is

also an interesting interaction for her. There was one particular instance that she related where she was jarred back to reality when repetitively clacking away at the keyboard to produce some PETSCII while at a demoscene party when she was told that the sound was annoying. When working alone the repeated sound of hitting the space bar on the C64 doesn't annoy anyone but in public it can definitely annoy. However, after a while her collaborators got used to the sound and it eventually became a sound in the background similar to the clacking of knitting needles. This is in direct reference to her interest in Slöyd, which is a Swedish word for handicraft-based artwork, such as knitting. Slöyd requires patience, focus and is centered around using one's hands which she applies directly to her work with PETSCII. She is very patient in her approach to PETSCII. When looking to do more PETSCII work in the future she has been doing C64 computer programming tutorials to gain the possibility of changing her own tools without the need to wait for the help of others.

WRITTEN INTERVIEW WITH RAQUEL MEYERS

You have worked with 8-bit visuals for several years. What attracts you to working with 8-bit visuals instead of using the entire set of possibilities for VJs on a modern computer?

The brutalism of the grid and the frame by frame animation technique. 8-bit visuals are perfect for that. Also, I don't think that there are necessary 'less' possibilities with 8-bit visuals. They are different. There are things that are not possible to do with modern computers. It makes me take me time and work in a different way, I think.

Why have you chosen to work primarily with the visuals of the Commodore 64?

For three reasons: immediacy, PETSCII and slöjd

(‘sloyd’). Immediacy: I can turn on the C64 and start to draw directly. There is no waiting time loading software with lot of features and heavy sizes. Making art in PETSCII is a direct process. The C64 character set is very special for me: I found the perfect way to create all my images in text mode. The graphics and animations are built in text. There is no pixels. Slöjd: Slöjd is the Swedish word for handicraft-based artwork. The process of drawing with PETSCII is quite similar to the handicrafts, it requires time and patience. I just sit down and type in front of a blank screen.

Describe what you find inspiring about your collaboration with 8-bit musicians such as Goto80, Stu and others? Do you enjoy creating works that can exist without a live audience or do you prefer your collaborations to be realized with a live audience? Sound and motion come together, 50% each. Without sound everything looks static, but it becomes

alive when you put all together. That’s the reason I like to work with musicians, they bring me the other half I need. They improve my images with sound. An example is the last performance I made with Goto80 and Uwe Schenk for the project *Uwe Schenk trifft...* in Stuttgart at Theater Rampe. The project started with Goto80 songs that were adapted by Uwe Schenk to perform live with a band (drums, bass, saxophone and spinet) and C64. I created a character, a ferret, which was interacting live with the musicians and the atmosphere of the songs. All together become a PETSCII musical live show. ¹⁵

Without live audience you are always in control, even if it’s the result of an improvisation and real time process, like for example the project *zSLEEP1*. The audience is watching only a compiled and edited version. I think it is important to have projects that involve both sides. A live performance is always open for surprises, good

Figure 11. Video still from *The Ferret Show* when Raquel is switching floppies.
Uwe Kassai, 2012, HD Video. © Uwe Kassai, 2012. Used with permission.

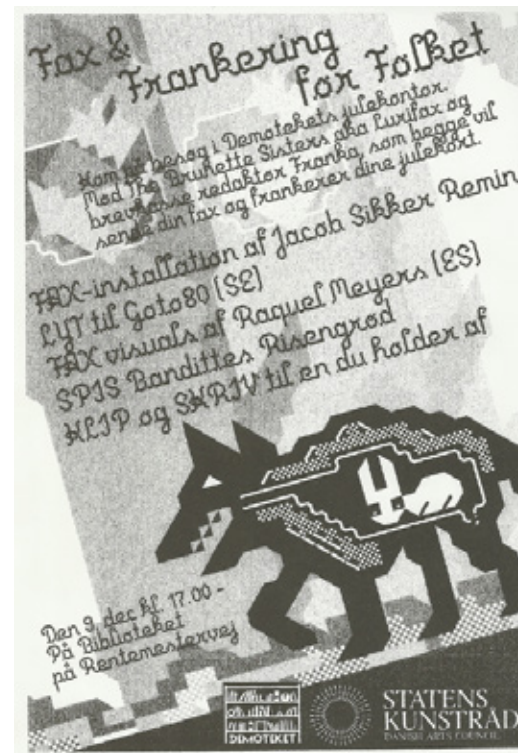


Figure 12. Poster for *Fax & Frankering for Folket*, Raquel Meyers, 2011, Fax/ PETSCII/ Graphic Editor. © Raquel Meyers, 2011. Used with permission.

from chipflip.org/o2 as a reference)? Do your programs communicate with each other?

I just sit down in front of a blank screen and type characters in the C64. I use unreleased software made by members of *Hack n' Trade*, the demoscene group I'm part of. Johan Kotlinski created a C64 PETSCII animator software for me. The software doesn't have a user interface in the traditional sense; it's a blank screen that you operate with the keyboard. He has customized it for my needs. An example is the demo for C64 Oso. ¹⁷

The other custom software I am using is made by Philip Linde, in Processing to draw with PETSCII using the mouse as a brush. It is for new platforms such as Windows and Mac OS instead of using programs run-

and bad ones. There is always something to learn from that. A non live project is always safe, static and under control. Both processes are important.

How would you contrast working with live visuals in comparison to working with your fax projects or with graphic design for CD covers and other projects? What can you express with your live visuals that are difficult to represent with static images?

It's nice to work with different formats: it's a good way to not get stuck and challenge yourself with something that you are not used to. The fax performance is a good example, I used fax machines and paper to create 'visuals'; but not in a screen, only in long paper faxes sheets. It's really nice to have an object (paper) instead of an ephemeral image that disappears when you switch off the screen. And what I do live I guess has a different energy than what I do if I edit something together. It's a bit more rough, non-perfect and alive. It's hard to mimic those kinds of 'living' things when you work at home.

Describe how you create your PETSCII graphics in detail. How do you work live with collaborating with Goto 80 with your system (perhaps using VANK

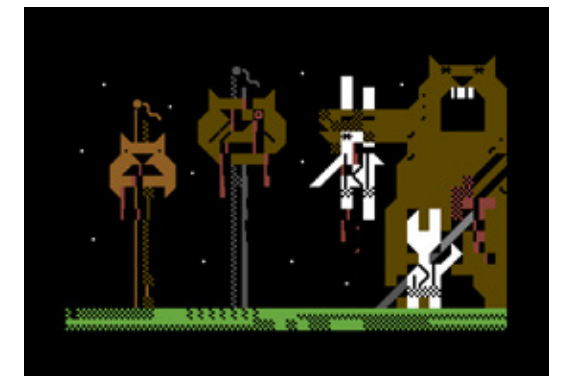


Figure 13. The bear and buddy people in *Oso*. Oso, Raquel Meyers, 2012, Commodore 64 and PETSCII. © Raquel Meyers, 2012. Used with permission.

ning on the C64. The file you get is a C64 format. It's a nice mix between C64 and new ones. An example to this is the C64 demo *In the Name of the Sword*. ¹⁸

I also use the software for C64 *Letter Noperator*, ¹⁹ Posion used it for make the *Notemaker Demo II*. ²⁰ The software records your typing in the keyboard. It's a typewriter animation mode. Everything is recorded.

It's a challenge to make a full animation work without mistakes, but that's the great thing about it.

Vank was made with *Letter Noperator*. It began as a live improvisation together with Goto80, both were sitting down and typing sounds and characters as far as we can. Live typewriter PETSCII mode! We recorded that and edited it together into the video that is in *2SLEEP1*. The software programs don't communicate with each other. We usually do synchronization manually, or do it in post-production. Even if we use laptops for performances, we don't use any automatic synchronization – not even between two music machines.

How would you evaluate working with *dr-w-ngs* on paper  in contrast to working with drawing with PETSCII? Do you design your PETSCII images first on paper or do you enjoy improvising with the PETSCII itself and if so, why?

Dr-w-ngs is a collection of the drawings I make when I'm traveling, especially of trains and airports. I like to draw with just paper and pen when I'm sitting in the train or waiting to board. Using *Letter Noperator* in the C64 is like drawing in paper. I just draw, without erase or going back (Ctrl+Z) to clean the mistakes because there is not an option for that; everything is recorded or stuck on the paper. It's also similar to use an analog photographic camera instead of a digital one. You don't see what you did until you develop the film.

My background is analog B&W photography, I spent a lot of time developing film and making copies in paper when I was a teenager. It was a mix between magic and chemicals. The drawings and the C64 keep the feeling alive.

You work appears to explore themes of fantasy, horror, sexuality, food, playfulness and animals. What draws you to these themes and what do you feel binds them together from an artistic standpoint?

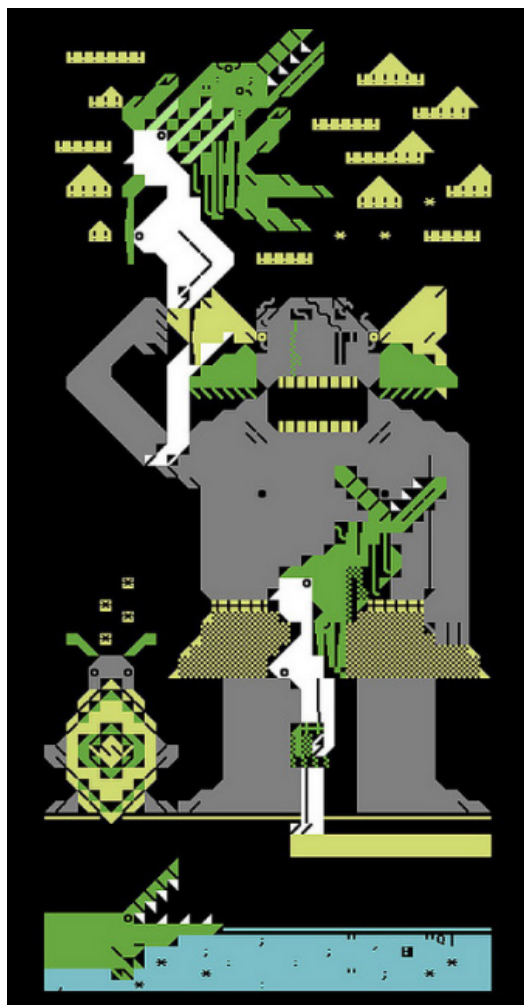


Figure 14. *Cocodrilo*, Raquel Meyers, 2012, Commodore 64 and PETSCII. © Raquel Meyers, 2012. Used with permission.



After so many years working with visuals on modern computer, I started to use the C64 and it made visuals fun again. I have the C64 to thank for that.



Sometimes music builds the imaginary, other times the binds are related with what is happening around you, as catharsis that make you go through darker times. Nowadays living in the countryside, nature and animals are the main themes in my work. My mornings start with coffee and rabbits in the garden. But I grew up in more rough environments, where horror and grindcore were a bigger part of me. That sort of darkness is still important to me.

What do you find attractive about working directly with the hardware of the Commodore 64? Are there advantages that you miss about working with a more conventional modern VJ system? What is your opinion of emulators and what things do you find good about using them? Do you believe that the CRT or other forms of analogue methods are an important element in the realization of lo-bit visuals?

As I said before, immediacy. A screen and a C64 give me all that I need.

One of the nicest things about the hardware is the C64 has the characters set print in the keyboard that make it very easy to draw with. I don't have the same feeling of immediacy with an emulator. Maybe for coding it is faster; but not for drawing with text. The feeling of typing in the C64 is great, I enjoy it a lot.

Modern systems allow you to do a lot with nothing, with little graphics you can get lost in effects and conversions provided by VJ software and mixers. It's a bit soulless, somehow. The true zombie media! Sometimes that makes the visuals like wallpapers or decorations. Superficial... I don't like that. People put so much importance on technology. Even when I use modern computers to make visuals, I guess my methods are a bit strange. I care about the content; not the technology. I used the C64 because I like it. After so many years working with visuals on modern computer, I started to use the C64 and it made visuals fun again. I have the

C64 to thank for that. For the new kind of content that I make, it's a great machine.

I think the time for pixel graphics is over; it's time to move on. I'm not making pixel graphics anymore; I'm in text-mode. The software I'm using nowadays did not exist in the 1980s where teletext and C64 were not old at all. Nowadays they are incredible tools to use, and it doesn't feel old, retro, melancholic or limited. I feel more restrained with platforms like Mac or Windows because of issues with license, copyrights, etc. The software is full on, too much for nothing. It's like fast food. No time is needed to make your work at all; just easy short cuts. You got the effects but not the feeling. It is superficial and throttle, because everything looks the same. The company who invented the C64 doesn't really exist anymore. There is no one behind it, just the users who still develop software that can we use because it's all shared. It is hobby culture at its best. Without all the fancy words about politics and free and open and all that. In these small subcultures these new softwares just happen automatically. You only have to worry about what you want to do and go for it!

Do you code and produce your own visualization systems? If so, what do you find attractive about coding? In your collaboration of making a live performance with the musician how do you decide how the technical elements inform the aesthetic artistic choices?

Unfortunately I'm not a coder. I've been using Flash as the main software to control manually visuals for live performance. The app was a compiler where the graphics were loaded manually using the keyboard (the code was very simple Actionscript 2.0). Actually

I'm working in a new set with C64 and real time Teletext signal. For the C64 I have the help of friends like Philip Linde and Johan Kotlinski for the software. And for the Teletext I'm working with the Teletext engineer Peter Kwan to develop hardware and software.

Most of the time, you don't really get informed about the music as a VJ. You have to improvise with whatever they do. I got pretty tired of that. But since I started to work more with Goto80, we've been able to merge the music and the visuals a lot more. Especially since we both work in textmode. We made a performance at this literature festival called Textival, where the idea was to make text animations from books. So then the stories of the books were first translated into text graphics, and some of the words were 'baked into' the graphics too. From that, Goto80 adapted some of his songs to fit well with these animations. Unfortunately he destroyed my computer just before the show, so we had to do something else instead!

Overall, how do you feel using technology of the past helps inform your own future as an artist?

Since there is some kind of collective obsession with technologies these days, it's easy to get pointed at for using something that people consider to be obsolete, old, less good, etc. It's as if it's generally accepted to be a bad idea. And that probably affects my future as an artist. Also, these technologies teach me to take my time in doing things. Fight. Do the best with what you have. Do not find the right medium for whatever idea you have, but instead adapt your idea to what's there. I think that's something quite healthy in a consumer culture. Perhaps also I will go back to photography in the future. I've been making some experiments with stop-motion, puppets and text. It is not very digital at all; but it still has some kind of 'text mode' style to it somehow. ■

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