

Is there an Object in the Telematic Embrace? An Examination of the Artist's Toolkit in Systems-based Practices

Dane Worrallo

<http://www.daneworrallo.com>

Abstract: One of the key aims of the Experiments in Art and Technology group (Klüver, Whitman et. al) was to foster a relationship between artists and engineers, and to open up each field of discourse/learning to the other. A similar approach was developed by Roy Ascott at the same time through what he termed as "Telematics". Both sought to give the artist a range of materials (or tools) by which artistic practices could be realised. The paper will address two issues that have now arisen within which these varied and radical ways of working have been ill-defined and categorized under terms such as "digital art" or "new media" which may allow discussion and similarities about artworks and technologies, but fall short of establishing a more thorough experimentation and rigour with the new materials and tools which technology provides. Similarly a move from the speculative realist (Object-oriented) movement re-centres the work of art as "object". This paper will critique these methods of understanding the artwork, and develop an alternative that furthers artistic, scientific and technological discourses through which the work of art as a "telematic system" (Burnham, Ascott) has a communicability and materiality that can be experimented and developed across disciplines.

Introduction

There has been a consistent move throughout the past century in art to wrestle with technology and its exponential reconfiguring of the world. Though movements such as constructivism, futurism etc. attempted to render the rapid movement of modern life into traditional media, it was during the 1960's that the first real intersections between contemporary art and technology began to take place, with artists using technology in their work through a collaborate venture between themselves

and engineers. Combining this with the counter-culture movements of the time within which a number of these artists were invested, there was a need for radical change in the way the work of art exists: to be more specific, disrupting the value of art as a commodity or as a collectors item, and that, in many respects, meant a severing of the art from any singular object. Technology provided an accomplice for this disposition (willing or otherwise), and allowed the work of art to begin to break down borders between disciplines, nations and ideologies. Following successive revolutions from radio, TV, satellite communications, the web and augmented reality that have constituted various iterations of the networked society in which we live, what is now the status of any art “object” in what cybernetic theorist Roy Ascott calls the “telematic embrace”? Can there even be a singular object in an era of 3D printed reproduction and socially networked dissemination?

1960s: E.A.T. & The Dematerialisation of the Art Object

Though many artists throughout the twentieth century sought to capture the ever-increasing speed of lifestyles, industry and war brought about by the integration of technology into all modes of life, it is in the 1960s where we find art practices for the first time really making significant gains in breaking free of merely *representing* technological change. Instead, they actively *contributed* to it in ways that disrupt an otherwise linear progression in parallel with establishment interests. One of the most important organisations that attempted this was, of course, *Experiments in Art and Technology* (E.A.T.).¹ The *9 Evenings: Theatre and Engineering* event that sparked the initial founding of the organization is one of the first major collaborations between artists and engineers and allowing each discipline to inform the other.² These opportunities allowed the artist to expand their toolkit, and

¹ The purpose of this paper is not to give an autobiographical account of the organization, but to re-examine the premises on which it was built and the possibilities it opened up (along with others) for further intertwining of art and technology. For further details regarding the organization, see Billy Klüver, “Experiments in Art and Technology: A Brief History and Summary of Major projects 1966 – 1998” <http://www.vasulka.org/archive/Writings/EAT.pdf> Accessed January 27, 2015.

² *9 Evenings* was, however, not the first event to be staged with the purpose of breaking down traditional artist categories: The 1965 exhibition “Art Today – Optic and Kinetic” at the Albright-Knox Museum, Buffalo, NY

also giving engineers the opportunity to escape what co-founder Robert Rauschenberg called the “economic life” and the demand from this particular regime on engineers to develop products and technology itself in a very specific direction.³ Instead, E.A.T. proposed a completely different relation between the two in their second newsletter:

The collaboration between artists and engineers should produce more than merely adding technology to art. The possibility of a work being created that was the preconception of neither the artist nor the engineer alone is the *raison d'être* of the organization. The engineer must come out of the rigid world that makes his work the antithesis of his life and the artist must be given the alternative of leaving the peculiar historic bubble known as the art world. The social implications of E.A.T. have less to do with bringing art and technology closer together than with exploring the possibilities of human interaction.⁴

With the goal of carving out whole new dimensions of practice instead of bringing the one side over to the other, we find E.A.T.'s mission of breaking down barriers and severing both disciplines from a teleology, to instead enabling elements of risk and new materialisations to make contributions in a new territory. Returning to the *9 Evenings* event, we find collaborations between artists and engineers to create a mixture of artworks and performances, but perhaps the most bizarre aspect of this event is that nowhere is there any art object that has been created. There are performers, there is equipment, and there are technological systems in place, but nowhere do they resolve themselves in the totality of an *objet d'art* or technological product.⁵ Instead, these different elements form part of a system of technology and performance operating in real-time, which take advantage of both

focused on both kinetic sculpture and sound art, including contributions from Robert Rauschenberg and John Cage, who also contributed to *9 Evenings*. Critic's reviews of this event seem to echo their bemused response to *9 Evenings* too. For more details see Renée Levine Packer, *The Life of Sounds: Evenings for New Music in Buffalo* (Oxford: Oxford University Press, 2010).

³ Quoted from *9 Evenings: Theatre and Engineering* (dir. Alfons Schilling), 20-minute documentary featuring recordings of the performances and the artists. Available at <http://www.fondation-langlois.org/html/e/page.php?NumPage=1842> accessed January 29, 2015

⁴ Billy Klüver, Robert Rauschenberg, *E.A.T. News*, vol. 1 no. 2, June 1, 1967. Scan available at <http://www.vasulka.org/archive/Institutions1/EATnews.pdf> accessed January 29, 2015

⁵ The closest resemblance to an art object would perhaps be the parallelepipeds made by minimalist artist Carl Andre for Yvonne Rainer's performance, but here they will fall into the category of equipment.

artistic diversity and technological innovation to do something entirely different, freeing up both sides from their limitations and creating something which could not feasibly have been achieved in their traditional disciplinary siloes of knowledge.⁶ Critics and reviews were largely bemused or dismissive of the event; mainly citing the problems with the technology not working.⁷ Robert Smithson, a well-known artist of the time, also offered a damning verdict on the whole proceedings:

Art's latest derangement at the 25th Armory seemed like The Funeral of Technology. Everything electrical and mechanical was buried under various esthetic mutations. The energy of technology was smothered and dimmed. Noise and static opened up the negative dimensions [...] This was at least a victory for art.⁸

Smithson was not alone in his condemnation, and his proclamation of a victory for art in its apparent subjugation and revealing of the uselessness of technology can be framed in an industrial sense, but perhaps what *9 Evenings* should be credited mostly for is (as mentioned earlier), the shift away from object-based artwork, and also a paradigmatic shift from technology as being singularly industrial. Earlier, in 1961, Klüver wrote on his experience working with Jean Tinguely and his auto-destructive machine:

In the same way a scientific experiment can never fail, this experiment in art could never fail. The machine was not a functional object and never treated like one. The spectacle can therefore not be judged in terms of whether this or that thing did or did not work.⁹

This mission statement fits well with Klüver's response to the critics of *9 Evenings* too; "The artist has already left their canvas behind" he continues, and his interest in Tinguely was not simply the

⁶ In his book *Information Arts: Intersections in Art, Science and Technology*, Stephen Wilson remarks that post-E.A.T., there was still no substance to how the artist could also be a researcher. See Stephen Wilson, *Information Arts: Intersections of Art, Science and Technology* (Cambridge: MIT Press, 2002), 36

⁷ For a typical example, see Erica Abeel, "Armory '66: Not Quite What We Had in Mind", *Arts Magazine*, December 1966 – January 1967, 23-24

⁸ Robert Smithson, "The Aesthetics of Disappointment" in *The Collected Writings of Robert Smithson*, ed. Nancy Holt (New York: New York University Press, 1979), 334-335

⁹ Billy Klüver, "From "The Garden Party"" in *The New Media Reader*, ed. Noah Wardrip-Fruin and Nick Montfort (Cambridge/London: MIT Press, 2003), 213

destruction of the machine or object, but that technology that disappears and destroys itself brings us closer to a reality that is ephemeral and disappears with the passage of time as with our own finitude, rather than the persisting object (canvas or otherwise) that exists in a museum outside of time.¹⁰ The title of Tinguely's work "A Homage to New York" alludes to the city (which was then) at the centre of the commercial art world and subsequently what it is missing: Reality without an object, the fleeting moment of destruction in a commoditised world which must have its objects to be bought, sold and ultimately controlled. What better place in the world could there be to overturn traditional identities of art and technology than from inside its institutional capital?

1966, the year of *9 Evenings*, is also the same year that Lucy Lippard commences her documentation of Conceptual art (emphasis on Capital 'C'), and the artists involved in making it under that banner (such as Carl Andre, Douglas Heubler and Sol LeWitt) in her book *Six Years: The Dematerialization of the Art Object*. She highlights the 1960s as the decade of the counter-culture movement (Feminism, civil rights, anti-Vietnam protests etc.), and how she and the artists around her at the time were actively involved in these struggles to break down boundaries.¹¹ Lippard argues that because these artists were "Unfettered by object status, Conceptual artists were free to let their imaginations run rampant."¹² Emphasising *ideas* as art rather than objects is done through this "dematerialization" of art, which does not mean that an artwork lacks physical matter or materiality, but that said material

¹⁰ Billy Klüver, "From "The Garden Party""", 213

¹¹ The boundary between art and technology is not a specific one she mentions; she is instead concerned more so with artist being actively engaged, rather than remaining at some form of critical distance.

¹² Lucy Lippard, *Six Years: The dematerialization of the art object from 1966 to 1972: a cross-reference book of information on some esthetic boundaries: consisting of a bibliography into which are inserted a fragmented text, art works, documents, interviews, and symposia, arranged chronologically and focused on so-called conceptual or information or idea art with mentions of such vaguely designated areas as minimal, anti-form, systems, earth, or process art occurring now in the Americas, Europe, England, Australia and Asia (with occasional political overtones)*, (Berkeley: University of California Press, 1997). It is important to note that Lippard's use of the term "Conceptual art" does not represent a movement per se, but is a name for the multitude of artists and practices of this period that were always fragmented, instantaneous and vanishing almost as quickly as they were made, leaving little or no documentation or trail to follow. The evidence which has been left behind is incomplete, unassuming and is masked in a sense of everyday materials and practices.

is “secondary, lightweight, ephemeral, cheap, unpretentious and/or “dematerialized.””¹³ ¹⁴ This allowed artwork to become much more mobile, and dematerialization allowed a delimitation of the artwork, and unshackled it from specific space-time co-ordinates, allowing it to move across territories and over borders; something that is important in its context of Cold-war era politics and the solidifying of borders between nations and ideas.¹⁵ It is also important to remember (as Lippard reminds us), that these artists in their 20s and 30s at the time were young radicals who were looking to embody a sense of activism in their work, and also striking against the prevailing thought of critics such as Clement Greenberg, whose agenda was insisting that modern art should be kept untainted by politics or activism, and that it was forever chained to the economy of the art collectors.¹⁶ Though this sense of activism within the works of this loose collective has been lost through the decades (as we shall see below), and the technology used now perhaps regarded as kitsch and crude, there is an incredible energy embodied in the artists and their work of this time that art history may tend to overlook. If we are to further consider the impact of the intertwining of technology and art, we should explore how an overall framework for technology that provides new tools and mediums for art, while simultaneously being a medium within which it is active and mobile: for this, we can turn to telematics.

¹³ Lucy Lippard, *Six Years: The dematerialization of the art object from 1966 to 1972...*, p.vii. For further examples of artists working in this way, see *Conception. Conceptual Documents 1968 to 1972*, ed. Catherine Moseley, (Birmingham: ARTicle Press, 2001)

¹⁴ Dematerialization is not an antithesis to materiality in general, but focused more so on making art mobile with an element of activity in it (political or otherwise). In this sense, it is perhaps equivocal to Jacques Derrida’s infamous method of “deconstruction” as not about destroying systems (i.e. destruction), but finding the methods by which they are weaved, and introducing play and movement into a static binary.

¹⁵ Of course it must be noted that Walter Benjamin predicted this mobility of the work of art in his famous 1931 essay. See Walter Benjamin, “The Work of Art in the Age of its technological Reproducibility” in *The Work in Art in the Age of its Technological Reproducibility and Other Writings on Media*, ed. Michael W. Jennings, Brigid Doherty, Thomas Y. Levin, trans. Edmund Jephcott, Harry Zohn (Cambridge: Belknap Press, 2008), 19-55

¹⁶ Although Robert Smithson was no fan of E.A.T.s work in redefining the work of art with a technological toolkit, he was also no avid supporter of Greenberg’s either: He criticises Greenberg for his application of a “...lame formalism to a fuzzy Marxist logic” with regards to his attempt to shed any light on artistic abstraction. See Robert Smithson, “Frederick Law Olmsted and the Dialectical Landscape” in *Robert Smithson: The Collected Writings*, ed. Jack Flam (Berkeley: University of California Press, 1979), 157-171

Telematics

Around the same time of New York's reconfiguration of art and technology, in the U.K. Roy Ascott was running the radical "Groundcourse" at Ealing School of Art, in which he developed a pedagogy of the production of objects, text and artwork through getting his students to act as a self-regulating system of sorts to produce artwork based on interactivity and feedback, which he later brought under the term "telematics".^{17 18} In his 1990 essay "Is There Love in the Telematic Embrace?" Ascott defines telematics as so:

"Telematics" is a term used to designate computer-mediated communications networking involving telephone, cable, and satellite links between geographically dispersed individuals and institutions that are interfaced to data-processing systems, remote sensing devices, and capacious storage banks. It involves the technology of interaction among human beings and between the human mind and artificial systems and perception.¹⁹

What such a theory and practice provides us with is a very early example of thinking about pre-internet networked communication, and many of the points he raises continue to apply as the technology progresses and evolves.²⁰ One of the major ramifications of telematics for Ascott is the convergence of art in this environment with that of consciousness: A self-regulating environment based on feedback and active participation where identities such as artist, viewer, user etc. start to be broken down in the establishment of a global consciousness. As with E.A.T. and the Conceptual

¹⁷ This course ran from 1961-1964, after which Ascott took its ideas to the various other places he taught. Notable students include Stephen Willats and Brian Eno. For further biographical information regarding Roy Ascott see Edward A. Shanken's introduction "From Cybernetics to Telematics: The Art, Pedagogy and Theory of Roy Ascott" in *Telematic Embrace: Visionary Theories of Art, Technology and Consciousness*, ed. Edward A. Shanken (Berkeley: University of California Press, 2003), 1-95.

¹⁸ The term "telematics" itself is not one created by Ascott, but was first used by Simon Nora and Alain Minc in a report to the President of France. See Simon Nora, Alain Minc, *The Computerization of Society* (Cambridge: MIT Press, 1980), 4-5. Ascott, however, was the first to use the term "telematic art".

¹⁹ Roy Ascott, "Is There Love in the Telematic Embrace?" in *Telematic Embrace: Visionary Theories of Art, Technology and Consciousness*, ed. Edward A. Shanken (Berkeley: University of California press, 2003), 232.

²⁰ Ascott continues with this definition of telematics throughout his career, only editing it slightly through the decades despite the ever-changing power of technology and its subsequent social, scientific, artistic and ontological implications.

artists, there is a considerable push by Ascott to break down boundaries and traditional identities of what an artist, engineer, software developer, activist etc. should be or do. Another quote from Ascott, this time from his 1984 essay “Art and Telematics: Towards a Network Consciousness” is appropriate here:

To engage in telematic communication is to be at once everywhere and nowhere. In this, it is subversive. It subverts the idea of individual ownership of the works of imagination. It replaces the bricks and mortar of institutions of culture and learning with an invisible college and a floating museum, the reach of which is always expanding to include new possibilities of mind and new intimations of reality.²¹

Ascott’s emphasis on a subversive communication should echo Lippard’s commentary on the need for art to be active and engaged, but also mobile and fleeting. This, for Ascott, is because we are now looking at art as “residing in a cultural communications system rather than in the art object as a fixed semantic configuration...”²² Again, we are looking at a refutation of the artwork as *object* and instead emphasising art as *system*, though perhaps a little differently from how Lippard and E.A.T. are approaching it: Ascott’s emphasis on unifying art, technology and a global consciousness via telematic systems focuses on a harmonious relationship in this global network in which everyone can engage. There is love in this “telematic embrace” for Ascott because love grasps at the “ineffable chaos of becoming, the secret order of disorder.”²³ An object does not embody this chaos and anxiety; it supposes certainty and reason, towards which longing desires and mediated gazes will be forever fixated upon, trying to inhabit a relation but instead caught in a teleological spiral. A systems-based approach however, implies no such objective goal, and meaning is not caught up in the object, but created in a process incorporating emergence, feedback loops and active

²¹ Roy Ascott, “Art and Telematics: Towards a Network Consciousness” in *Telematic Embrace: Visionary Theories of Art, technology and Consciousness*, ed. Edward A. Shanken (Berkeley: University of California Press, 2003), 200

²² Roy Ascott, *Is There Love in the Telematic Embrace?*, 233

²³ Roy Ascott, *Is There Love in the Telematic Embrace?*, 245

participation of the viewer/user/artist into a relation with technology, art, creativity and imagination that can be *embodied*. Ascott's early writing calls for a Cybernetic Art Matrix (CAM), which would provide both an environment to work in and a material to work with (Predicting an internet-like system some decades before it became fully realised). Not quite McLuhan's "The medium is the message", but rather a meeting of identities and users that ends up bringing them together without completely erasing them. Instead, their limits become rough, delineated and blurred without removing the accountability of the artist whereby they don't become one step removed from their message/meaning.²⁴

An example of Ascott's work, confronting issues of language, communication and technology was *La Plissure de Texte*, a work for the "ELECTRA 1983" Exhibition in Paris.²⁵ Using the ARTEX network as a communication device for artists all around the world, Ascott made a call for willing participants to contribute to a "fairy tale", giving each participant a specific character and leaving them to create their own narrative throughout the twelve days that the system was operational. The surviving record is not so much an enclosed narrative or story, but a log of activity that also retains elements of the artistic process, and the system provides a framework within which to establish the timeframes of communications, the "out-of-character" interactions about the system itself, and also imagery constructed through the text (As "ASCII art"). Like other examples of artwork discussed above, we find ourselves without an object or faithful documentation to specifically place this project/performance/event.²⁶ Even the documentations that exist from each participant differs in some way or another in their formatting, ordering or timestamps; again, we find a lack of a singular, or *authentic* documentation of the event, and what could be seen as a "product" of it is littered with

²⁴ This in some regards is where the vision of CAM differs from the actualisation of the Internet, as anonymity online being either positive or negative is a subject that is constantly up for debate.

²⁵ *La Plissure du Texte* ran from December 11 – 23 1983. The title is a reference to linguist Roland Barthes' book *Le Plaisir du Texte*, the change to *plissure* (*pleating*) "...is not intended to replace *pleasure* (*plaisir*), but to enhance it." The pleating of text, like the pleating of fabric, creates ripples and intensities in an otherwise flat surface, making language especially less linear and able to be read in any singular way. See Roy Ascott, "Art and Telematics: Towards a Network Consciousness" in *Telematic Embrace: Visionary Theories of Art, Technology and Consciousness*, 188-191

²⁶ One version of the text, captured by Norman White, participating Toronto-based artist is available online. See: Norman White, *La Plissure du Texte*, www.normill.ca/Text/plissure.txt, accessed 12th February 2015.

unintentional formatting, typographical errors and fragmented breaks in the text that offer a glimpse of the system that *is* the artwork: what is produced as the final result serves to offer a rough slice of the undertakings of the system (Like the iterations of a fractal) without completely closing down its operations into decidable functions. Like Ascott's original teaching on his Groundcourse, there is a need for the participants to come together as a system that creates coherence and sense without becoming trapped into reproducing arbitrary roles.²⁷ Though the participants are also speaking in different languages, the ARTEX system provides a common language through which everyone can communicate, and the need for a language which artists can engage with technology (or vice-versa) is one of the ways Ascott is uniting not only art and technology, but deploying a system that works towards a "global consciousness" without strictly limiting thought and creative acts to a singular voice. *If* there is an object in this telematic embrace, then it is clear that any traditional definition of an object will not suffice.

Ascott's work with the system of telematics resonates with the work of Jack Burnham, whose 1969 book *Beyond Modern Sculpture* distinguishes between art-as-object, and art-as-system: The movement from the former to the latter as the expansion of art not only in conjunction with technology, but also giving it shape and providing new dimensions within which to operate. From the loss of the sculpture's base, its formalist dimensions, and eventually its concrete form; we are, according to Burnham preparing to approximate the very impulse of life via non-biological means.²⁸

Burnham and Ascott both present optimistic views for art and technology, and their subsequent joining together in a harmonious self-regulation. It would be easy for us to conclude that this lofty goal has still not quite reached fruition (if it ever will) for a number of reasons now that the artist's relationship with technology has matured.

²⁷ More recently, researchers at the University of Plymouth attempted a recreation of *La Plissure Du Texte* using the Internet game-environment *Second Life*. See "Roy Ascott's LPTD2," YouTube video, posted by "Mab MacMoragh," September 3, 2010, <http://www.youtube.com/watch?v=kTSaOTh3Hz0>

²⁸ Jack Burnham, *Beyond Modern Sculpture: The Effects of Science and Technology on the Sculpture of This Century* (New York: George Braziller inc., 1969), p.9

The Failed Panacea: The Rematerialisation of the Art Object

A brief overview of the period between the intertwining of art and technology in the 1960s until now will highlight the problems the hybrid practitioner now faces in their work. Burnham foresaw an ever-increasing convergence of art and technology, and a new relationship between art and the sciences, as scientific advances became ever more complex and difficult to “model” or represent in physical terms.²⁹ In 1970, Burnham curated the exhibition *Software* at the Jewish Museum in New York, which promised a new meaning for art thanks to information technology. In this exhibition, the showing artists created work that allowed audiences to interact and participate with the work on show, and removing the separation of the system from the viewer (or “user”).³⁰ The exhibition designer, James A. Mahoney makes a remark about the status of the artwork in the exhibition, which is something that has shown up throughout the cases highlighted in this paper:

The first realization of a unique exhibition design and installation problems came months later with the realization that the work of many artists produces no objects. Equipment there is - but no "objects of art".³¹

Why is it that time and again, this issue of producing no object, no “art for art’s sake” continues to show itself whenever technology is concerned? If there is some form of art in these contexts being produced (or perhaps more accurately; “happening”), then it does so never in one singular, repeatable form; instead it is multiple and accommodating to each individual. Much like the art object, the technological product is something that represents status, and when that art or

²⁹ I have foregone a more thorough analysis of the sciences in art in this essay, but it should be noted that the shift in science to quantum mechanics and complexity theory provides a challenge for both artists and scientists in how to handle this altogether new form of material that does not correspond with any representation of reality or traditional scientific explanation that we usually rely on in everyday life.

³⁰ For further information about the work shown, see the exhibition catalogue: Jack Burnham, *Software* (New York: Jewish Museum, 1970)

³¹ James A. Mahoney in Jack Burnham, *Software*, 15

technology is bound up as a collector's piece, or a symbol of wealth and identity, it becomes very difficult to engage with these objects in any other way. The aim of *Software* was to grant the viewer much more than an object for the visual gaze, but a network of language, happenings and interactivity that produces sense in completely different dimensions, with a reliance on *feedback mechanisms*, rather than a one-dimensional and one way interaction between viewer and traditional art.

Burnham's ambitious vision however, similar to E.A.T.'s *9 Evenings*, was plagued by technical difficulties and reviews were critical of this.³² A decade later, Burnham wrote his conclusive article *Art and Technology – The Panacea that Failed*. Within this, he acknowledged the failure of technology and art to resolve themselves in a universal totality that would create a revolutionary shift for the both of them. One of the main problems he points out is that many of the projects that focused on uniting the two was possible only due to large corporate backing and funding, which predicated specific outcomes, or were seen as serving a few elite artists at the top. Of course, given that a lot of technology at this time was out of the price range of most artists (and the larger public), computer time had to be loaned at high costs that again could not be achieved without the appropriate backing.³³ Finding a common language between corporate backers and artists required concessions that for Burnham put the brakes on any hope of unity between the two, instead producing an uneasy relationship that simply reproduced the Cold-War divisions of the time. A pattern also emerges when we see most of the artwork using technology which made it into museums and exhibitions, was art that was fragile or destroyed its technological components such

³² Jack Burnham, "Art and Technology: The Panacea that Failed" in *Myths of Information* (New York: Routledge, 1980), 200-215. Burnham was heavily suspicious of all of the failures that plagued his exhibition, going so far as to imply the managers of the Jewish Museum had a hand in making sure that *Software* was a failure.

³³ For example, Burnham puts the total cost for E.A.T.'s *9 Evenings* at around \$250,000 (including cost of equipment that was donated). However, this does not discredit the artists involved as they were given almost complete liberty with regards to what they produced without any interference from funders.

as in the work of Duchamp, Alexander Calder and Jean Tinguely.³⁴ Perhaps viewers and curators were only interested in artwork that mounted an opposition to technology, and took pleasure in seeing it being annihilated in art, providing a momentary liberation from its overwhelming influence in their lives. What does it take for artists, as well as viewers to regard technology as more than an antithesis to art practices, and simply a military and disciplinary tool fuelled only by the very forces that artists are resisting and critiquing?

By the time Burnham was writing this, the radical conceptual artists had found themselves back in the economy of the art world: The scraps of paper, industrially produced material or readymade assemblages of the artists had now become collectable works of art in their own right, and subsequently the loss of their original radical ideas became part of the price that had to be paid. As Lippard comments in *Six Years*: “The escape was temporary. Art was recaptured and sent back to its white cell” but, as she continues, “parole is always a possibility.”³⁵ It may be the case now, however, that the artist’s confinement is not quite so simply the four white walls of a museum.

“Object-oriented Something”

Looking back at the turbulent relationship between art and technology, we may argue that many of the barriers that separated the two, such as cost and accessibility have dissipated, and the decentralisation of technology from military and industry to an open-source and discursive network, alongside art not relying as much on conventional, large-scale galleries has also played a part.³⁶

³⁴ As mentioned above, Tinguely himself did not see his work as being about anyway destroying technology or liberating us from its grasp, but this seems to have been the dominant reception of his work, and is perhaps why it became so popular.

³⁵ Lucy Lippard, *Six Years: The Dematerialization of the Art Object from 1966 to 1972*, xxiii

³⁶ It would be overly optimistic to say that large, sovereign conglomerates/institutions that dominated all thought and production no longer exist thanks to decentralisation, but their grip on thought and individuals such as the artist, engineer or hacker is far less stable in the networked age, and they are able to sustain a practice that while can enter into a general economy, are able also to influence its direction, all the while retaining a distinctness which keeps them from being solely dependent on any universal currency offered by institutions.

Ascott's "telematic embrace" has become manifest with the proliferation of the world-wide web and networked culture, but whether love as Ascott imagined it is present is a notion dubious at best. Though the web has certainly had an impact in changing and augmenting our senses (as opposed to just extending them), it also provides a territory of conflict or ideological battleground, where collaboration is the last thing people would consider.³⁷ Although art, science, technology, philosophy etc. have had a taste of freedom from representation and sovereign oversight, these absolute singularities still persist as an object (or objective) of certainty and reason to retreat towards when the mass of information and communications data fails to give a consensus, or provide purpose for people or the various forms of artistic or scientific practice.³⁸ Much art that is created using technology in its many forms is usually found under the large umbrella terms of "new media," "digital art," "systems art," and so forth. Such terms have such a large embrace that while is inclusive and wide-ranging, perhaps become very difficult to define and provide any consistent discourse, alongside a constant exponential growth and advancement in technology that is shifting the limits and definitions of said technology much faster than, for example, painting.³⁹

So how does this thing we still refer to as the "object" still present itself within a networked/system-based society? One of the most apparent ways is the operations and functions of computer code, which are mainly structured and activated through the major coding currency of Object-oriented programming (OOP). In short, Object-Oriented Programming is a software language that relies on objects as its foundation, with these objects being generated from classes, which in turn give the

³⁷ For further analysis of this point, see Arthur Kroker, "Religion, Technology and Ideology," in *Critical Digital Studies* ed. Arthur Kroker, Marilouise Kroker (Toronto: Toronto University Press, 2013), 398-407.

³⁸ I have elaborated on this point elsewhere. See Mattia Paganelli and Dane Worrallo, "Eleven Theses for An Initial Degree of Roughness for Transubstantiation, Materiality and Art," *Zētēsis* vol.3, 2015: 120-127

³⁹ As mentioned earlier, it is somewhat erroneous to say technology is the medium for such art. Art is not immersed in technology or vice versa, but each can provide materials (physical, conceptual or otherwise) to expand their toolkit. Terms such as new media (developed under its most prominent champion, Lev Manovich) and digital art cannot exactly be defined as mediums within which artists work, but neither can they be conceived as an artistic movement such as expressionism or abstraction. The origins of new media as a radical new way in which artists could work has become dimmed with time as technology is so very intertwined and graspable that it does not push the boundaries it once did.

objects their definition, characteristics, possibilities etc.⁴⁰ While this method works well in larger computer programs that require cross-platform compatibility, when we come to looking at this from the angle of art practices we may take issue at two ends of a scale. First, in those digital practices that require direct engagement with programs at the level of computer code/programming languages, there arises the problem of having to work with these objects and strict parameters, which can lead to a re-entering an economy of representation by way only having these given objects to work with, and subsequently the development of methods which can then be “applied” to said object as a model. Again, if one is seeking to work as an artist with this language as their material, then concessions have to be made in order for it to “work”. In order to protect the privileged status of object, OOP also places data that is out of reach of the system, thereby pre-dictating an unreachable something, and a non-negotiability where a system cannot go, granting it a strict limit on interaction and access.⁴¹

Secondly, on a larger scale, OOP in the form of major software programs used to make art run the risk of being used as simply authoring tools that produce an outcome based on the strict conditions of the program, rather than the practice of an artist (although in another way, this may echo Lippard’s “Conceptual artists” methods of producing artwork that is ephemeral and indistinct from an everydayness). Perhaps we might like to go one step further in one direction, and think of apps as a new kind of object: Apps being a closed silo of code used for one very particular utilisation of the

⁴⁰ To give a more detailed account of Object-Oriented Programming would deviate from the aims this paper. As a brief extension to the above though, critics of OOP typically single out its lack of flexibility, and the focus on its objects as instances of a class or properties, establishing a principle of identity that these objects are representing classic divisions or groupings that one is born into without the possibility of radical change or establishing an identity from themselves (particularly problematic if one wants to create art that is simply not representation). In this context, objects are born from the box, into the box, without any chance of separation from the box.

⁴¹ Although this language’s outcome is entirely based on objects and their interaction, there is a difficulty in stating what such an object is, other than an instance of a class. If the only way to define an object as unique, singular and distinct is for it to be a representation of a set of parameters, then this seems to make any notion of uniqueness rather invalid.

web for example. Apps are, by design, used for a very strict use of functions (to browse certain services only etc.), and lack a cross-communicability that can access the network as a whole.⁴²

In a wider context, we find the object-oriented method is not limited to programming. Object oriented aesthetics (OOA), ontology (OOO), feminism (OOF) and performance (OOP again) are all striving to re-think the object in a systems society, and if it does indeed exist, how it operates in relation to the network (but still it is an outsider).⁴³ In the case of art, the object-oriented aesthetic and a re-emergence of a materialism rooted in concrete objects may come at the cost of art becoming inert with regards to its political and social implications, and once again putting art at a distance from those who wish to view or engage with it, as explored in Svenja Bromberg's article "The Anti-political Aesthetics of the World Beyond".⁴⁴

So are there objects in the telematic embrace? It is perhaps understandable to desire an object to embrace or hold onto in a system without certainty or foundation. However, it is not just via the object we can find justification for ourselves or our practices: From the utilisation of technology that first let art creep out of its white-walled box in the 1960s, the two disciplines have been used to break down barriers and mount resistance to the regimes of progress and representation that traditionally use them as symbols of power and status. Specifically, the ability to de-limit borders

⁴² This is not to say that such densely-coded programs and apps are completely closed off. In her essay "Traumas of Code," N. Katherine Hayles makes the argument that computer code in the context of these large programming bodies and augmented reality acts as the unconscious to the conscious natural languages, partly due to the development of these codes and programs being done over thousands of work hours by multiple developers, which keeps the program open due to inadvertent conflicts of different codes, and the possibility of unforeseen functionality in this altogether strange manifestation of mediation at higher levels of functionality. See N. Katherine Hayles, "Traumas of Code" in *Critical Digital Studies*, ed. Arthur Kroker, Marilouise Kroker (Toronto: Toronto University Press, 2013), 39-58

⁴³ Object-Oriented Ontology is usually associated with the contemporary "speculative realism" movement in philosophy, which seeks to deny the anthropocentricity of Kantian philosophy and the idea that there is no way to validate the existence of external 'noumena' beyond our senses.

⁴⁴ Svenja Bromberg, "The Anti-political Aesthetics of the World Beyond," *Mute*, 25 July 2013, accessed 24th February 2015, <http://www.metamute.org/editorial/articles/anti-political-aesthetics-objects-and-worlds-beyond>. The return of an anti-political aesthetic echoes Clement Greenberg's criticisms of the 60's about practising art for art's sake (for the sake of the collector/museum economy). However, whereas Greenberg was developing this in the frame of Kantian aesthetics (aesthetics being another rationalist division of science for Kant in his *Critique of the Power of Judgment*), object-oriented aesthetics/ontology is seeking to enact a similar move while also denying Kant's framework. Re-establishing this "beyond" puts philosophy and art in the dangerous position of once again imposing a metaphysical framework onto art, technology and society as a whole.

and render them permeable and transitory through the telematic embrace of radio, satellite communications, television, the web etc. There is also a need to orient ourselves somehow when our historical-ontological sense of direction proves insufficient in these alternative spaces: If a system, or agents, or algorithms can orient our practices by themselves (alongside the necessary language to augment them), then we must remain aware that any definition of object we use must exclude its possibility of possessing something “beyond” the reach of interaction or sense. Ascott’s telematic embrace must be thought as being not so immaterial and all encompassing, but rather allowing a more radical conception of matter and material, with an open-armed embrace where everything is up for grabs.

Bibliography

Abeel, Erica. "Armory '66: Not Quite What We Had in Mind", *Arts Magazine*, December 1966 – January 1967: 23-24

Ascott, Roy. "Is There Love in the Telematic Embrace?" in *Telematic Embrace: Visionary Theories of Art, Technology and Consciousness*, edited by Edward A. Shanken. Berkley: University of California press, 2003: 232-246

_____. "Art and Telematics: Towards a Network Consciousness" in *Telematic Embrace: Visionary Theories of Art, technology and Consciousness*, edited by Edward A. Shanken. Berkley: University of California Press, 2003: 185-200

Benjamin, Walter. "The Work of Art in the Age of its technological Reproducibility" in *The Work in Art in the Age of its Technological Reproducibility and Other Writngs on Media*, edited by Michael W. Jennings, Brigid Doherty, Thomas Y. Levin, translated by Edmund Jephcott and Harry Zohn
Cambridge: Belknap Press, 2008: 19-55

¹ Bremborg, Svenja. "The Anti-political Aesthetics of the World Beyond," *Mute*, 25 July 2013, <http://www.metamute.org/editorial/articles/anti-political-aesthetics-objects-and-worlds-beyond>
accessed 24th February 2015.

Burnham, Jack. "Art and Technology: The Panacea that Failed" in *Myths of Information*. New York: Routledge, 1980: 200-215

_____. *Beyond Modern Sculpture: The Effects of Science and Technology on the Sculpture of This Century*. New York: George Braziller inc., 1969

_____. *Software*. New York: Jewish Museum, 1970

Hayles, N. Katherine. "Traumas of Code" in *Critical Digital Studies*, edited by Arthur Kroker and Marilouise Kroker. Toronto: Toronto University Press, 2013: 39-58

Klüver, Billy. "Experiments in Art and Technology: A Brief History and Summary of Major projects 1966 – 1998" <http://www.vasulka.org/archive/Writings/EAT.pdf> Accessed January 27, 2015.

Klüver, Billy. "From "The Garden Party"" in *The New Media Reader*, edited by Noah Wardrip-Fruin and Nick Montfort. Cambridge/London: MIT Press, 2003: 213-222

Klüver, Billy, Robert Rauschenberg. *E.A.T. News*, vol. 1 no. 2, June 1, 1967.

<http://www.vasulka.org/archive/Institutions1/EATnews.pdf> accessed January 29, 2015.

Kroker, Arthur. "Religion, Technology and Ideology," in *Critical Digital Studies*, edited by Arthur Kroker and Marilouise Kroker. Toronto: Toronto University Press, 2013: 398-407

Lippard, Lucy. *Six Years: The dematerialization of the art object from 1966 to 1972: a cross-reference book of information on some esthetic boundaries: consisting of a bibliography into which are inserted a fragmented text, art works, documents, interviews, and symposia, arranged chronologically and focused on so-called conceptual or information or idea art with mentions of such vaguely designated areas as minimal, anti-form, systems, earth, or process art occurring now in the Americas, Europe, England, Australia and Asia (with occasional political overtones)*. Berkley: University of California Press, 1997

Mahoney, James A. "An installation design that minimizes 'museum atmosphere'" in Jack Burnham, *Software*. New York: Jewish Museum 1970: 15

Moseley, Catherine. *Conception. Conceptual Documents 1968 to 1972*. Birmingham: ARTicle Press, 2001

Nora, Simon. Alain Minc. *The Computerization of Society*. Cambridge: MIT Press, 1980

Packer, Renée Levine. *The Life of Sounds: Evenings for New Music in Buffalo*. Oxford: Oxford University Press, 2010

Paganelli, Mattia, Dane Worrallo, "Eleven Theses for An Initial Degree of Roughness for Transubstantiation, Materiality and Art," *Zētēsis* vol. 2 no. 1, 2015: 120-127

Rauschenberg, Robert. *9 Evenings: Theatre and Engineering*, directed by Alfons Schilling.

<http://www.fondation-langlois.org/html/e/page.php?NumPage=1842> accessed January 29, 2015.

"Roy Ascott's LPTD2," YouTube video, posted by "Mab MacMoragh," September 3, 2010,

<http://www.youtube.com/watch?v=kTSaOTh3Hz0>

Shanken. Edward A. "From Cybernetics to Telematics: The Art, Pedagogy and Theory of Roy Ascott" in *Telematic Embrace: Visionary Theories of Art, Technology and Consciousness*, edited by Edward A.

Shanken. Berkley: University of California Press, 2003: 1-95

Smithson, Robert. "The Aesthetics of Disappointment" in *The Collected Writings of Robert Smithson*, edited by Nancy Holt. New York: New York University Press, 1979: 334-335

_____. "Frederick Law Olmsted and the Dialectical Landscape" in *Robert Smithson: The Collected Writings*, edited Jack Flam. Berkley: University of California Press, 1979: 157-171

White, Norman. *La Plissure du Texte*. www.normill.ca/Text/plissure.txt accessed 12th February 2015.

Wilson, Stephen. *Information Arts: Intersections of Art, Science and Technology*. Cambridge: MIT Press, 2002