

*Something has changed, and the Faustian, Promethean period of production and consumption gives way to the 'proteinic' era of networks, to the narcissistic and protean era of connections, contact, contiguity, feedback and generalised interface that goes with the universe of communication. With the television image – the television being the ultimate and perfect object for this new era – our own body and the whole surrounding universe become a control screen. [Jean Baudrillard, 'The Ecstasy of Communication', in Hal Foster (ed) *Postmodern Culture*, Pluto Press 1990]*

Roy Ascot , in Lucy Lippard's *Six Years: The De-materialisation of the Art Object*, 1973, points out to the link between previous art practices, conceptualism in particular, and contemporary media production. The issue of *dematerialization* and what most currently is described as *immaterialisation* of an art object become a key concern of current critical theory and is most evident in current media art production.

Focusing on a specific example of current digital art practice (or set of practices) discuss the transformation of the concept of the 'art object' in its historical context.

Generative art, as an 'art object' appears to have very little in common with traditional pieces, both physically and conceptually, like many other emerging art practices to be seen within the fields of digital art. For example, where a painting might occupy a physical space and have physical dimensions and be an imitation, albeit a highly skilled and precise one, of another object within reality, the digital art object can be all or none of these things. As a form constructed from rules and algorithms, which can in theory never be the same in one moment of time from the next, and where the concept is often paramount above the aesthetic itself, it is difficult to see how and why the 'art object' has come this far.

To some extent it is possible to assume that the vast increases in technology in the latter half of the 20<sup>th</sup> century and the clear tendency for old media forms to be absorbed or replaced by new digital media have attributed to a natural replacement of old art forms with digital counterparts. However, the changes to the concept of the 'art object' are not just as superficial as this. Brand new forms have been encouraged, that don't exist simply because the method with which they are produced has been provided with the advent of new media and the digital computer. In the broader terms of digital art as a whole, it is true to say that generative art, like similar practices under the same category, now explores the unique characteristics of the digital medium that can obviously only be achieved within that specific framework. However, many of the concepts to be found in digital art have been inherited from much older practices, and the transformation of the 'art object' to the digital art stage has been an ongoing process since long before appearance in the digital context.

For a greater understanding as to what is meant by the term 'Generative Art', Phillip Galanter describes it as 'any art practice where the artist uses a system ... contributing to or resulting in a completed work of art' (2003: 4), and certainly not necessarily a system in the sense of code being executed by a digital computer. Generative art may also take the form of rules in natural language being followed or some other mechanical automaton, and therefore hasn't been restricted to only the digital era.

This effect can be seen in the close digital counterparts to generative art, of Artificial Life and Artificial Intelligence systems, where systems adopted by them have often been developed long before their realised application within a digital computer system. In AI, attempts to create rule based intelligent systems have been well underway centuries before

the silicon chip, for example in the 13<sup>th</sup> century, Ramon Llull, 'a Catalan mystic and poet, built a set of wheels, called the *Ars Magna* (Great Art)' (Nilsson 1998: 8) in order to create an automated form of intelligence that could answer all questions. This type of device could also quite easily fit the concept of being generative art. And of course this is reflected in the fact that those systems developed for a-life and AI are adopted by or perhaps the same for, generative art.

Even further apart from 'digital' art, generative art will often be a study of rules, or possibly even take the forms found in nature, such as DNA and natural selection. The process of the creation of the *victimless leather* piece can be considered in such a way that it is seen as generative art, the iterative process of cell reproduction resulting in the final product of a miniature, living, jacket. It is also very similar in the way it seeks to raise issue with existing conventional views of clothing and fashion by 'confront[ing] people with the moral implications of wearing parts of dead animals for protective and aesthetic reasons' (tca.uwa.edu.au (No date): 1), much like the way post modernist movements such as Dada and Conceptual art challenged the traditional 'art object'.

Selection is an important theme for a-life and consequently generative art, where whatever the objects might be, cycle an iterative loop and are slowly transformed by mutations that are selected for their usefulness. Ant nests and bee hives should also be considered as a point of study. Within AI their behaviour has often been replicated as agents, and their pheromone rule based behaviour simulated by writing rules in program language.

The generative artist Stanza also displays many examples of pieces interested in DNA, whether that be using his own to redisplay a webpage, the result of which will be drastically be different to the original, or his genomixer where 'DNA data is used for [the] sound mappings, and generative sequencing processes' (Stanza (No date): 1) in order to create the final visual and audible experience we get to see.

Similarly Stanza's other coded generative projects of *Virusa* and *RNA*, while not being based upon real life forms, take a form that resembles 'agents' of an artificial life system. Described as a piece that seeks to capture 'time and movement, offset against the lack of texture and natural light' (Stanza 2003-2004: 1), its behaviour uses incredibly similar rules.

It is due to this rule based nature of generative art and the varying degrees by which the artist gives control of the final piece to the generative system, that the idea of authorship is called into question. Regardless of whether this is a deliberate attempt to further the dematerialisation of the art object by the artist, or simply an unintentional but convenient effect of such system generated work, it certainly poses as a major transformation from the traditional concept of an 'art object'. With a traditional art piece, such as a painting or sculpture, there is no question or doubt as to whether the creator of the piece is the sole author. Perhaps it is possible to say that the suppliers of the artist's materials are also equally eligible for authorship of the piece, but such an idea seems a bit preposterous. For generative art however the clear boundary between artist and materials are a not as easily defined. Often the system with which the piece is created will be the only element in direct contact with the 'material' of the final piece, and the artist has little or no contact at all.

Also to be noted here, is that the same can be applied to other forms of more traditional art that have been converted to a digital medium. For example when a photographer takes a photo with a digital camera, they surely must have as much contact with the final medium as an artist that writes a generative program and leaves it to draw the final result, the program being a parallel for whatever part of the camera sequences visible light into a bitmap and runs a JPEG compression filter on it. On the other hand, the intention of the camera, unlike a generative piece, is to create an accurate as possible copy of reality, much like traditional art. Or perhaps it is the same when an artist who is drawing directly with a graphics tablet and then using software to modify or otherwise change well beyond the scope of their ability that the programmers of the software are equally authors of the final piece. But again maybe this is the same as the previous idea that perhaps the suppliers of an artist's materials are.

Questioning the concept of the author of ultimately the 'art object' is not a new area of thought however. Long before digital art really came into existence, other movements within the post modernism era introduced the question with pieces that require far more interactivity than was demanded from a painting or sculpture. For example Joseph Beuys, Douglas Davis, and Nam June Paik, members of The Fluxus Group, an important group within Conceptual Art, organised a satellite based discussion in 1974 named "A

*Conversation*”, about ‘the potential for artists’ use of satellite technology’ (cristine.org (No date): 1) as an evolving technology for their medium. By 1979 a number more ‘interactive’ satellite telecommunication pieces had been done, later involving audiences, including the introduction of two-way slow-scan video links.

Where traditional art objects may only have existed as one individual object, a digital piece due to its medium can be precisely duplicated, to the extent that there are no flaws or difference to what is perceived as the original. In a similar fashion to the way that the author may become disconnected from the final art piece, the piece’s connection with reality and the material world can also be severed. The boundary of art being a simulation or interpretation or replica of something from the real world has been broken down so far that the art can only be considered as itself and in likeness to nothing else and nothing more. Hence the art object does not have to be a physical object occupying reality either, however nor is it confined to existing detached from reality. Instead digital arts can occupy what John Baudrillard describes as a hyper-reality, ‘sheltered from the imaginary, and from any distinction between the real and the imaginary’ (Baudrillard 1995: 3).

While previous mediums have only been able to detach themselves so far from the artist and physical world, digital ‘art objects’ can exist in any imaginable dimension or reality. This might be as a blending of the edges of between reality and that of virtual reality. Previous movements have attempted to shift the concept of the ‘art object’ away from the materiality of traditional art in response to market and profit driven artwork, and the importance of precise aesthetic control. Using again stanza’s amorphoscapes piece as a generative art example, he states in a seemingly tongue-in-cheek manner that his art ‘take[s] a nod at modernist painterly aesthetics’ (2003-2004: 1) while really is firmly within the generative arts bounds.

The digital art piece by Camille Utterback and Romy Achituv, *Text Rain*, has similarities with the dada ‘cut-up technique’ used to create random poetry. Even though they are both effectively interactive, they use two quite different methods to achieve a similar effect of breaking the fixed and linear quality of prose. The difference being however that *Text Rain* goes beyond the realms of our material reality into an augmented hyper reality.

Video game art, or considering the creation of computer games as an art form, shares much with generative art in the sense that both game programmer and artist use a

highly ordered and structured system in order to produce visual, audible and conceptual results. Again, Phillip Galanter suggests that any process that uses algorithmic designs, whether this be synthesising music or repeating a design for thousands of objects with slight variations such as for architectural designs can be considered as generative art. Within the realms of computer games there is ample opportunity for such systems as part of the design. Bethesda Softworks used an incredible meticulous iterative design process for the production of their game Elder Scrolls: Oblivion, and in particular the development of the vast, single environment that the game exists within. Part of the process described for creating the vast number of trees in Oblivion involved 'using parent/child hierarchies and iterative branch levels comprised of highly modifiable cylinder primitives' (Berry (No date): 2), a generative process, resulting in uncountable numbers of branches that are all slightly unique. Again, it is in this expanding realm of hyper reality, where many games strive for an aesthetic mastery of realism that the edges are blended together and anything can be made possible.

Finally on the subject of hyper reality, artists like Paul Smith show us how the increasing ability for digital media to be manipulated and change our perception of reality can be implemented as an art form. Digital media is subject to any level of modification, but can be done so effectively, that there is no way in which we can perceive what is real and accurate and what is not. Old, traditional art also strived for (within the limitations of canvas and paint of course) such levels of realism that it would be difficult to tell the real from the artwork. But ultimately it is the movement of digital art practices like generative art away from reality and aesthetics that poses the largest shift in the concept of the art object.

A comparable effect can also be seen within the dada movement many years before, where an important concept was the way in which their pieces sought to absolutely lack meaning, and in turn any interpretation of a piece is unique to the individual viewer beholding it. A lot of generative art is strikingly similar in the sense that a viewer's experience of a piece is unique and individual to them and that the piece does not really have much in the way of aesthetic precision or traditional beauty, or at least resembles nothing from reality.

The Dada movement will have contributed a considerable influence towards the 'dematerialisation' of the traditional art object, their very purpose being a rebellion against traditional concepts of art. Dada is important, because while being a modernist movement,

many of its influences can be seen in groups such as Surrealism, the Fluxus Group, Conceptual art and Postmodernism, and consequently furthermore in digital arts movements including the likes of generative art. They sought to show that the concept or title of a piece of work was more important than the actual physical art object itself.

Marcel Duchamp's 'readymade' *Fountain* is probably the most influential of all Dada pieces and appears to be a valuable precursor to the idea of conceptual art. Due to his previous rejection of the painting, *Nude Descending a Staircase (No.2)*, based quite heavily on the literal and precise interpretation of the title, Duchamp moved away from creating paintings and instead produced pieces examining the importance of the title. In his later works it is the use of titles rather than the art object itself to stimulate the viewer. The parallel in conceptual art is of course the attempt to transpose the 'art object' from being a physical piece to rather experiencing the concept behind the piece instead.

Initially, the *Fountain* was rejected by the Society of Independent Artists, again revealing a wealth of hypocrisy within a group that was supposedly meant to stand for avant-garde values, and reinforcing a reconsideration of what art actually is for later movements influenced by Dada.

The *objet trouvé*, or readymade art created by Duchamp, is in itself a placement of all the emphasis on the concept of the piece rather than the physical 'art object'. In particular, it is the contrast between objects that would never have normally been considered art due to their commonplace or utilitarian nature within the gallery circumstances that creates the strongest question as to what should be considered art and what should not. Without this sort of questioning, it would be difficult to see how the alternative forms of art we see today, digital or otherwise, could have come into existence. Theoretically the modern 'art object' would instead just be a literal digital expansion of previous art practices.

On the other hand, Modernism was noted for the idea that it sought to bring about a change within what was viewed as the outdated concepts of older, traditional forms of artwork and the art object. Broadly speaking it was a movement away from the absolutely classical forms of previous art movements, encouraging the acceptance of that which was new in the 19<sup>th</sup> and early 20<sup>th</sup> century. Within modernism there was of course Futurism, the style on which Duchamp loosely based his *Nude Descending a Staircase (No.2)* piece.

Conceptual art came about as a complete rejection of modernism and more traditional art forms, much like Duchamp's and Dada's previous experience with the avant-garde. It was against the profit driven market for visual, 'traditional' art and art that could be valued in monetary terms. Instead conceptual art is as the name suggests, almost entirely about the concept behind the piece which arguably cannot be owned or materially valued. This makes Conceptual art more difficult to understand as an art form and since it 'does not take a traditional form it demands a more active response from the viewer' (Godfrey, T. 1998: 4). It came about in a time of both political and artistic upheaval, and traditions and establishments were called into question in the late 1950s and 1960s. Despite on one hand Conceptualism being against pieces that are 'collectable and saleable' and the monetary valuation of artwork, it is noticeable that a number of conceptual artists actually sold their conceptual work, often for large sums of money. Perhaps in doing so hoped to raise the issue further about other forms of art, strengthening the message about what art is or should be, when the physical aspect of the piece that is in theory considered worthless sells for the same amount a skilled and time consuming painting has. Also, the effect of using objects that anyone might be able to produce, and calling it art, forms a very effective attack upon the elitist establishment of traditional art and galleries.

Conceptual art and digital art are closely related since from the 60s onwards artists started considered the implications of the newly emerging digital media, at the same time that Conceptual art was truly rising. Digital arts have inherited many of the ways of thinking behind conceptual art, and in particular you can see a similarity between the way generative art places more emphasis on the process behind the artwork rather than the visible result itself and conceptualism places more emphasis on the concept above the physical object.

For example, with Stanza's generative amorphoscapes pieces, the final result cannot be predicted visually or otherwise but instead it is the process behind the actively drawing pieces that the artist takes care to produce. In particular there are interactive pieces where the artist has absolutely no control over the outcome and it is left to the viewers to

experiment. Therefore, the finished result cannot be the primary interest of the artist, but rather the process and its reaction to the integration of the unknown, in the form of users potentially randomly changing the dynamics of the piece. Similarly, conceptual artists have absolutely no interest in the final visual result of a piece but rather the way it will be interacted with and the random outcomes or reactions this will produce. Digital art in general however tends to prefer being aesthetically beautiful, far from the utilitarian readymade style or the conceptual non-existence. As a medium it lends itself back to visual perfection, as 'art objects' within digital art can be as precise as an artist wants.

So on one hand the art object has been transformed by digital media, and on the other its changes were already underway long before the new media revolution. But in many senses the 'art object' or its concept has not changed at all. As a means for communicating a message from the author to the masses, the visual image, music and the written word have always been, and probably always will be the underlying structure to the 'art object'. A piece with no material quality will still need a form through which to communicate itself and a piece existing in a virtual reality will always be represented in a form through which we can understand. Generative pieces tend to have either a very visual or audible result, as if to show us that the code or algorithm really is there even though we cannot see it being processed. Their only concern, like Conceptual pieces or Duchamp's readymades, is whether they should be considered as artwork. With the visual beauty of many generative pieces, it is obvious they have deliberately been given the charm and appeal of perfect, aesthetic paintings, simply created in a different time and space yet somehow don't lose the idea that they have been generated by a program or algorithm. Even the *Fountain* uses its visual, physical self as a visual contrast to the art gallery it is in, so as to spark the conceptual meaning it has. So perhaps all that has changed in the concept of the 'art object' is the message that the artist wishes to convey. Yes the mediums are vastly different throughout time, but the concept that art is an artist's means of an expression has never changed.

Words: 3421

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