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Author:
Garrett Lynch
garrett [at] asquare.org

Url:
http://www.asquare.org/networkresearch/

Net.art; beyond the browser to a world of things

Since the early nineties Net.art has developed from an obscure to a much-hyped art form, gained acceptance in recognised international art institutions and has been absorbed into popular culture. Its name, a by-product of a garbled email (Shulgin, 1997), suggests through its domain / file type appearance (the concatenation of net and art with a dot) that it is not simply art on the net [1], but art specifically created for the net amongst the technologies, protocols, plugins, markup and programming languages that help to create and propagate it. Just as a website may be a .com, part of the commercial domain name space or a page / file on that website may be a .html file type, here in net.art we have a net that is .art.

Net.art reflects and continues an already established culture of computers, cyber-punks, hackers and activists. The reasons as to why it has become associated with the web [2] and not an over arching idea of networks [3] in general is evident in the phenomenal rise of the web and Net.arts use of it. The advantages the web embodies as an arena to conceive, create and present art means it is for artists all at once their message, medium and [web]site. Art with the ability to allow artists to break away from perceived constraints within more traditional art, to achieve a new level of separation of art as idea from art as object, is the culmination of almost a hundred years of artistic practice, which reaches back to Duchamp's Readymades. Net.art allows this break and reflects our digital information age. Time-based, virtual and distributed, artists are able to rid themselves of the need for artistic institutions, their structures and closed elitist circles. The rapid adoption and integration of the web into all aspects of society allows artists to disseminate art as never before making it free and globally accessible within a public domain.

The problems

Less than a decade and a half after its inception however Net.art now faces problems, which threaten its position and continued development as innovative art. As part of what has become most commonly known as New Media Art, art created with digital media and technologies, it is along with the rest of New Media Art part of latter day Postmodernist Art, and as such falls foul of much of the criticism leveled at both. When art is conceived, can't it really only ever be modern? Isn't Postmodernism simply reactionary ideas to Modernism? How can there be and what does it mean to be Postmodern? How do we move beyond Postmodernism? These questions commonly posed of Postmodernism combined with the criticism of 'newness' as an desirable quality of New Media Art (the relevance and importance of the newness of art above all else), while initially may have been appropriate; indicative of a growing consumer culture in a massivly mediatised world, now simply illustrate a culture that has become obsessed with trends. While the art it produces, which has managed to successfully traverse the popular / intellectual divide, has fallen victim to these trends only to arrive at an intellectual impasse.

The close association between Net.art and the web, which as already mentioned was in many ways responsible for Net.arts successes, now starts to limit its possibilities. The browser, a framing mechanism (Baumgärtel, 2001), which like its predecessors, the screen, the picture frame, and the art they frame, places its art firmly within visual, two-dimensional art. Yet this frame can contain a diversity of media forms and can itself be moved, changed, reshaped, multiplied or even made to disappear. It is as maleable as the work it contains and so provides more than a simple vantage point, the window on a world created by other frames.

Browser-based technologies are now starting to stabilise and we near the end of the unstable web prone to incompatibilities, the threat of viruses and crashes. We usher in a 'new' web, what has popularily become known as Web 2.0, where the web is dependable and the Net.art audience, its users, have become so accustomised to the always on[line] virtual topology that it merges with already known topologies and is a "new reality layer" (Heim, 2000, p.38), part of our everyday lives. This is good isn't it? What web technology has strived towards, a high-bandwidth delivery media where access is easier and more freely available making it more democratic. However while web media gains from this stability and the elimination of a user learning curve, Net.art loses the aspects of instability and the very real shock of the new or unknown. We now see the dissappearance in Net.art of viral pop-ups, poorly encoded or corrupted content, the mixture of real and simulated errors, much of what early Net.art employed, as these cease to work or become impossible to use. These 'bugs' from a design perspective, which were subsumed as formalistic features, characteristics of the

work of Jodi, Jimpunk and Mez to name a few, are now being eliminated, debugged, and the web is becoming a tabbed user experience, more controlled, safer and this is of course problemtic. As with all mass media communication forms (only one aspect of the web) employed by artists as part of a subversive strategy, once the form becomes integrated into society, accepted, it loses the ability to subvert or even question the form itself and as such loses much of its impact.

Net.art has fallen victim to some unfortunate categorisations. It is losing its subversive, shock quality. It has become too heavily reliant on its mechanism of delivery, its support and the techniques through which it is created and is rapidly becoming a movement, style or school of art as identified by historians and curators eager to write it into art history and move on. All this in less than fifteen years!

The premise

What if Net.art isn't a movement or a style however? If we presume for the moment that Net.art is a new art form, not simply a new technology based art indicative of the rapid adoption and rise of the internets use but an art form equally as important as painting or sculpture. An art form that is centred on a much larger issue concerning the identification and importance of networks in all aspects of society, the most important of which is within the sciences and the knock on effect they have in the arts. Is there potential for this form to move beyond the browser?

The sciences and arts have always had a close relationship and this has grown steadily since the renaissance to finally snowball in the last century with the arrival of mass production and computerisation in the sciences and the explosion of visual culture in the arts. We now regularily see the use of the tools, techniques and ideas from the sciences within an artistic context. The use of audio-visual equipment, broadcast media, computers, robotics, even surgery, chemistry, biology and genetics are just a few being employed. All are heavily reliant on process and precise systems implemented by the artist. They build on a century of art exploring ideas of systems and performance, e.g. Minimalism, Happenings, Conceptual Art and Video Art, the idea, implementation or act of art which all remain firmly within the control of the artist. [S]he creates the work and then allows an audience to view the work, maintaining traditional relationships between the artist and their audience through an artwork, which functions as always as the carrier or channel of a message (Shannon and Weaver, 1949). While art may have broken down associations of art as object to become art as idea, it is still art as message and as such no different from traditional arts uni-directional modes of delivery.

Interactivity changes this transmission communication model (Shannon and Weaver, 1949). It allows intervention by the audience on the message through the carrier or channel, which in art is the work itself. As such interactivity in art, already changes the artist / audience relationship, they are involved and implicated in the art. This is usually ether individual intervention, self-serving and focused on their desire as demonstrated in early art CD-ROMS, or group negotiated intervention, collective democratic style collaboration, as in many interactive installations.

Net.art through its use of networks, regardless of whether it has button-clicking interaction or not, to conceive, create and present itself explodes the transmission communication model by allowing individual intervention on a mass, potentially global, collaborative scale. Process based new media art forms, in both their creation and delivery, allow their audience to act on or react to the art, creating a connection, link or what Roy Ascott calls as early as 1964 a matrix between artist and audience:

> "The work of art occupies a pivatol point between two sets of behaviours, the artist's and the spectator's. It is essentially a matrix, the substance between." (Ascott, 2003, p.100 / 101)

For Ascott the art work is the matrix, the network between artist and audience. As such it catalyses the connection between the two and while it enables bi-directional messages their context is still to some extent pre-defined by the artist. When we view a work of interactive Net.art online the art does function as a network between artist and audience however this network can be changed or (depending on the art work) completely broken down by the users intervention. The network is as Ascott identifies the "substance between" (Ascott, 2003, p.101), however that substance is not solely the art but also an intangible inbetweeness where artist, audience and artwork are all equally important and active participants. Ascotts matrix is a step towards a networked communication model yet there is no technology based network here, no internet as it had yet to be born, and most importantly he starts to deconstruct the idea of uni-directional transmission of a message from artist to audience.

The definition of audience changes as a result of their actions on the art, they become users bound up in an art form that is a system of behaviour. A behavioural art form (Ascott, 2003) which implicates them in the action needed to bring the work to life, to invest it with meaning because its meaning is to be acted on, linked to, connected, distributed, copied and so on while its message, heavily imbued with the users desire for reaction, is the return on those actions, those behaviours performed.

We understand that Net.art clearly takes the next step in being art as idea. It is online, distributed and there can potentially be infinite copies, all of which are indistinguishable from each other. Not alone does it move beyond art as object but it leaps beyond mass production making the idea of the multiple in art look ridicously ill conceived and flawed. However it now also becomes clear that Net.art fundamentally changes art and its modes of delivery beyond transmission models employed in traditional arts. It embodies the concept of networks in a variety of different ways both within and beyond the browser. Users are an integral active part of the network created by such art. As in tradtional arts they do not simply:

> "play a role in understanding and appreciating certain formal or semantic patterns; the audience also functions as part of the code" (Sapier, 2001, p.5)

They are part of its enactment. Their intervention invests it with meaning and transforms what could otherwise be a visual, two-dimensional transmitted art to an art form that can combine visual, performative and sculptural elements. Net.art as an art form, what we should now rightly call Network or Networked Art to identify the importance of networks as idea above just one of those implementations of the idea, the internet, needs to have its position within New Media Art readdressed. Is it simply a part of New Media Art, what seems as if it will be a transitory obsession with the emergence of some new technologies, or perhaps since it defines many of the key components of what is truly new in New Media Art, its means of creation, delivery and so its very conception, can it survive the technologies it has become so closely associated with and the threat of it being classed as a movement or style as these evolve, change or even disappear?

The changes

The 'new' web, Web 2.0, has become the umbrella under which we now see the majority of web based changes and innovation which will affect Net.art, possibly negativly, as a primarily browser based art form. Our newly revised Networked Art form on the other hand may be enabled to move "above and beyond artistic projects that focus on the internet" (Baumgärtel, 2001, p.13) as their means of conception, creation and presentation. Incorrectly labelled as a new version, a new release of the web as if it were simply software to be updated and restarted, Web 2.0 is not a new innovative technology but a rethinking of the use and implementation of the web which has as its motivation the goal of complete participation and collaboration for its users.

Rather than push certain technologies and the idea that everybody needs to claim their own space online, Web 2.0 pushes the web itself as a medium of connecting. It encourages its users to collaborate in a variety of ways to both benefit themselves and collectively help build a better web. Not only this but it also identifies software and protocols extending outside of the http domain, the browser, which play an important role and, depending on the Web 2.0 manifesto that you read, even emerging technologies that will enable the use of networks beyond the computer as discrete object (yet another technological frame), we use today enabling an Internet of Things (Ashton, 2002). This would cause a dramatic shift away from the idea of the web as a seperate media form or platform. Instead all media could potentially become networked, converge, and in this scenario it becomes more relevant to talk of a World 2.0 (Microsoft Live Labs, 2006) rather than a Web 2.0.

The Internet of Things will no longer be solely concerned with online networks such as the web, the media spaces they create as intermediary places and how this collapses physical spaces, the time and distance between them. Focus will shift from what has until now been centred on getting people online to getting everything online so that not alone will we be an always online society but everything in that society will also be online. Things will start to acquire a double identity and share characteristics of current digital media. Apart from these things being tangible physical objects they will become encoded, digital and networked virtual entities. No longer just passive things, reliant on a user to activate them, they will become continously active participants of the network where everything will become connected in a very real sense. Julian Bleecker states in A Manifesto for Networked Objects - Cohabiting with Pigeons, Arphids and Aibos in the Internet of Things (or simply Why Things Matter) that:

> "We are now in an era of pervasive networks and are thus more properly 'in', not 'on' the network" (Bleecker, 2006, p.12 / 13)

Both Bleeker and Bruce Sterling identify R.F.I.D., or Arphids (Sterling, 2005) as one of the key technologies enabling the Internet of Things. Along with other N.F.C. (Near Field Communication) technologies, Wi-Fi, 3G (third-generation) mobile technology, Bluetooth, Data Matrix symbols, G.P.R.S. (General Packet Radio Service), G.P.S. (Global Positioning System) etc. they will ensure that networks will surround and pervade society more than the web ever has. Networks in this new world will no longer be reliant on fixed structures, the telephone and cable networks, passive devices, our desktop computers, and the service providers that allow us as users to connect to each other. They will instead be created ad hoc using their preferred protocol. If the thing to be connected to does not support the protocol the device connecting will use an alternative and suggest to the device that it is now connected with to upgrade itself, which it will do promptly and automatically. These things, what Sterling

calls Spimes, existing in space and time, “material instantiations of an immaterial system” (Sterling, 2005, p.11) will through their activity, collaboration, participation and intervention on each other ultimately become self-aware. But this is all in the future.

And now?

Now, the period during which these ideas and technologies are starting to take shape, is an opportune moment for our Networked Art form. By embracing this rethinking of networks occuring in the sciences and the diverse technologies that are emerging as a result, it has the possibility to add to its ‘palette’ and dissipate associations with specific mechanisms of delivery, support and techniques through which it is created. It can literally expand beyond the browser, its technologies and framework, to become a Networked Art form that is able to work with a significantly larger set of behavioural configurations. As well as screen based web spaces it can now explore physical spaces, the things that occupy those spaces and the behaviour between them, in new ways outside of the paradigm of computer as discrete object and its role as interface to the art. This will enable our Networked Art form to shed any remaining question of if being solely a visual, two-dimensional art form and allow it to be any combination of a visual, sculptural, performative, time-based and mixed-media art form.

Networks will become truly pervasive. The technology that enables them will be inseperable from the media and art that utilses them and of course over time that technology will as always improve in many ways and become smaller, ultimately achieving invisibility. Users of our Networked Art form will no longer intervene on the art by way of the technology instead it will be directly on the art, no longer seeing or recognising distinct technologies or their associated objects. We can say without doubt that this will happen. We have numerous examples of technologies which have permeated culture to the extent that they have become invisible. The most notable of these within the arts is the technology of perspective, its monocular depiction of the world developed since the Renaissance, which has now become so ingrained in visual culture that it has disappeared and become a new truth about the world shaped by the technology that conceived it. It is also certain that our Networked Art form, a newly conceived / revised interpretation of Net.art, will explore / question / challenge the ideas and technologies that have been discussed here and raise many questions along the way because this is what art does. Whether these ideas and technologies will reshape Net.art and if so how that will occur is impossible and unnecessary to predict so we won’t try to predict but instead suggest how that may occur.

What these ideas and technologies do for Net.art now is give it the possibility of new directions if artists choose to take them. Far from Net.art being a movement

or style, which is drawing to a close, we can recognise that networks are only going to become increasingly influential in society and Net.art as part of that societies culture should have a continuing role in their use and discourse. Currently, indication of this continued role is occurring in converging disciples across art, design and the sciences. These areas are increasingly taking an inter-disciplinary approach to concerns more typical of traditionally separate practice such as architecture, product design, engineering etc. and this is where we begin to see the first examples of prototype art works that can begin to participate within an Internet of Things. These Networked Art works so far seem to have two principle characteristics. On the one hand they display a return to some of the wider pre-web issues of networks explored and discussed by notable artists such as Nam June Paik, Roy Ascott, Douglas Davis and Edwardo Kac. The idealisms of how networks can improve users lives or allow them to perceive the world in new ways and their counterpart cynicisms of how networks become a new means of control resulting in a decentred self and a loss of identity. While simultaneously, these Networked Art works show signs of progression and diversification through exploration of the new emerging technologies allowing them to function as relevant and challenging contemporary art.

What we must bear in mind is that none of these emerging ideas and technologies in any way preclude the continuation and development of Net.art within the browser and they should not be seen as a threat to it. This type of Net.art will of course continue to explore very relevant concerns. Its contribution should in no way be underestimated as that which has got us to this point for "tomorrow composts today" (Sterling, 2005, p.14) and without them we would not be here considering these emerging technologies, exploring these new ideas, reading this discourse and realising a new conception of Net.art as a Networked Art form.

Notes

[1] Use of the word net in the text is an abbriviation of internet and refers specifically to its definition of the network backbone which employes internet protocol addresses (IP address) to connect computers and enable communication and information exchange included the web, email, ftp etc.
[2] Use of the word web in the text refers specifically to the World Wide Web (or WWW) used primarily to distribute websites to users by means of web browsers.
[3] Use of the word networks in the text refers to an over arching concept of networks. As such it implies all types of networks (not just technology dependent networks) including the internet, telephone, television, radio, electric, road, rail, sea, air, social, organic and animal networks (e.g. the food chain) as well as descriptions of what networks are elaborated in the text.

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