Sher Doruff

In the posthuman view…conscious agency has never been "in control". In fact the very illusion of control bespeaks a fundamental ignorance about the nature of the emergent processes through which consciousness, the organism, and the environment are constituted. "Mastery through the exercise of autonomous will is merely the story consciousness tells itself to explain results that actually come about through chaotic dynamics and emergent structures…. emergence replaces teleology; reflexivity replaces objectivism; distributed cognition replaces autonomous will; embodiment replaces a body seen as a support system for the mind; and a dynamic partnership between humans and intelligent machines replaces the liberal humanist subject's manifest destiny to dominate and control nature….the distributed cognition of the emergent human subject correlates with -in Bateson's phrase, becomes a metaphor for,- the distributed cognitive system as a whole, in which "thinking" is done by both human and nonhuman actors." - N. Katherine Hayles, How We Became Posthuman [1]

Collaborative Culture and EmergentC's

A remarkable, if contentious, trend of the past few decades, has been the transdisciplinary current of complex system theory running through and between all fields of research practice, from physics, biology, neurology, the social, computer, political and cognitive sciences, to philosophy and art. Though interpretations and assessments vary, there is an appetite for models and methodologies that reveal elements and conditions of non-linear dynamic interaction in systems; in cells, in brains, in social networks and human/computer convergence. It is a study of the interaction and organization between things in their environment and the processes that emerge from these conditions.

The dynamics, the enigmatic inter-ness – flow, dynamic, movement, process, synapse, circuit, stigma, information – 'between' organisms, nodes, individuals and societies is the stuff of life. Complexity provides a provocative contextual topology from which to approach a discussion of collaborative practice in new media and live arts. The focus here is on practice that extends well beyond the conventions of working relationships in interdisciplinary arts projects and moves towards a synergy that marginalizes individual contribution over the relational dynamics and emergent possibilities of the collective. That same collective that can only flourish from diversity and difference among its group; that looks towards the inter-authorship process as viable artistic expression; that builds and uses media technologies that both reflect upon and engender new types of social interaction and critical discourse.

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[1] N. Katherine Hayles, *How We Became Posthuman*, Chicago, University of Chicago Press, 1999,pg. 288

The implications of emergent social behaviors, communication skills and aesthetics arising from collaborative interplay and its dynamic properties is potentially far-reaching given the cross-cultural breadth of informatics. Much of this discussion in theoretical practice is old news, worn thin from cybernetics to rhizomatics. The vivid plausibility of empowered, emergent networks sits uncomfortably on the utopian/dystopian dialectical fence. Global political trends as a case in point, contribute to the dualism between neo-nineteenth century hierarchical colonialism and the bottom-up revisioning of twentieth century social democracies.

Distributed real-time interaction strategies and negotiations for data sharing and processing are examples of dynamic systems with a high degree of complexity, just as culture itself can be viewed as a highly complex system. I will point to contingencies that appear relevant with respect to issues and phenomena that address emergent behavior and distributed cognition within collectives that are connected and facilitated by malleable media. The unpredictable, elastic modification of this media by multiple users is essential to this discussion.

As the term "Collaborative Culture" suggests, this essay and the masterclass at DEAF03 in March, are an attempt to provoke both critical and playful investigation into tools and techniques that incorporate social networks, live mediation, synchronous co-creation, real-time access to and transformation of databases and living archives. The technology enabling the practical interplay for the class was KeyWorx (Waag Society), the theoretical topology was complexity.

Elements of Complex Systems

The prerequisities of complex systems and their properties are notoriously difficult to define and are often subject to debate and factionalized description. A simple definition from Paul Cilliers in *Complexity and Postmodernism* calls it "The interaction among constituents of a system, and the interaction between the system and its environment, are of such a nature that the system as a whole cannot be fully understood simply by analysing its components. Moreover these relationships are not fixed, but shift and change, often as a result of self-organization. This can result in novel features, usually referred to as emergent properties. The brain, natural language and social systems are complex." [2]

Basic constituent properties of complex systems include:

- Elements (and their number)
- Interactions (and their strength)
- Formation/Operation (and their time scales)
- Diversity/Variability
- Environment (and its demands)

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[2] Paul Cilliers, *Complexity and Postmodernism*, London, Routledge, 1998, pg iix.

• Activity(ies) (and its[their] objective[s]) [3]

With these properties are four discernable characteristics which include spatial structure, the time of dynamical processes, self-organization and degrees of complexity. Of these elements and characteristics, organization, environment and diversity figure predominently in collaborations whose structure is distributed and synchronous. Additional elements contributing to possibility in open systems, are feedback (positive and negative), degrees of control and cooperation, patterns and randomness. Under certain conditions, these accumulated properties can arrive at a balance point, or "edge of chaos" – the constantly shifting battle zone between stagnation and anarchy, the one place where a complex system can be "spontaneous, adaptive and alive."[4]
When and where and under what conditions is this zone tapped in collaborative media systems and performances?

Distributed systems& Peer-2-Peer Perception

"... when the human is seen as part of a distributed system, the full expression of human capability can be seen precisely to depend on the splice rather than being imperiled by it." [5] *- N. Katherine Hayles*

The philosophical shift from the Cartesian/Enlightened human to the "posthuman" - from the conscious, rational, autonomous being to the distributed cognition of human and non-human autonomous agents - is mirrored in the western sciences through the acknowledgement of myriad decentralized, adaptive, self-organizational systems. The idea that the neural network of the human brain can itself be a model of distributed cultural cognition is not a new one. Cognitive scientist Edwin Hutchins, holding a similar position to Hayles, has said – "Culture is a process and the "things" that appear on list-like definitions of culture are residua of the process. Culture is an adaptive process that accumulates partial solutions to frequently encountered problems. It is unfortunate that cognitive science left culture, context and history to be addressed after the understanding of the individual had matured." [6] However we assess the progress of our interpretation of the individual, it is, we are, situated in a fluctuating collective. Further clues to individual identity may be found in ways the diversity of its members and their environments enhances the creativeness of the group.

An extension of this perspective, which reflexively incorporates the observer (individual) into the unfolding of a self-generating process (culture), is apparent in

[3] Yaneer Bar-Yam , *Dynamics of Complex Systems,* New England Complex Systems Institute

[4] M.Mithchell Waldrop, *Complexity*, New York, Touchstone, 1992, pg.12

[5] N. Katherine Hayles, *How We Became Posthuman*, Chicago, University of Chiacgo press, 1999, pg.

[6] Edwin Hutchins, *Cognition in the Wild*, Cambridge, MIT Press, 1995. pg 354

the motivation of new media work. Many projects are often shells or tools that require pro-active participation from an audience of participants to 'become'. Augmented reality technologies that merge the virtual with physical reality are environment aware and consistent with connectionist cognitive theories that distribute learning through a wider net than the classically symbolic. If the role of the individual is to be viewed as continually refreshed by its subsumption into a collective, cultural process that never sleeps, there are clear indications that principles of 'emergence' in the arts, in technology enabled social networks and software design represents a shift in practice established decades ago in critical theory.

Scholars such as Hayles, have adopted the notion of a distributed cognitive system in which human-human agency seamlessly interweaves with 'intelligent' machine interaction – what could recklessly be called a kind of peer-2-peer proprioception. Since third wave cybernetics as defined by Hayles embraces emergent (informationally open) transformative processes over second wave autopoeitic (informationally closed) feedback loops, there's a clear correlation between a posthuman ecology and more populist interpretations of contemporary social networks. In this picture, information technologies and protocols such as the Internet, p2p and wirelessly enabled "mobile ad hoc social networks" [7] are integral to socio-cultural flow. If we, in the west, are transiting from an "I think therefore I am' to an 'I think therefore we are" sensibility parallel to eastern philosophies, distributed technologies and in particular those developed and utilized in Live Arts practice, have a new agenda and responsibility. Patterns of organization, feedback, control, learning, and the elusive requirement of cooperation are consequent properties of online collaborative environments, augmented and mixed reality environments and participatory Live Arts performance.

→ Sharon Daniel's Need_X-Change Project
Sharon Daniel presented her Projects Substracting the Sky and Need_X_Change on March 3 of the masterclass.

Need_X_Change…is an example of a collaborative system designed to enable individuals and to produce new forms of understanding between communities**.** Need_X_Change is a social and technological interface -- a work of technology assisted community-based public art designed to help the staff and clients of Casa Segura; an HIV prevention and needle exchange clinic in Oakland attain social and political "voice", through self-representation, activism in their local community and participation in the global information culture.
 What aesthetic criteria can be used to evaluate the systems and infrastructures of cultural democracy -- where participant communities become the co-designers of programs created to facilitate their own reclamation, reintegration or sustainability. Is it art or is it social work? "***To understand a project like***

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[7] Howard Rheingold, *Smarts Mobs:The Next Social Revolution*, Cambridge, Perseus Books Group, 2002 pg. 170

Need_X_Change as a work of art one must move from questions of ontology, (what is art?) to questions of pragmatism, (what can art do?). **[note 1]** *The pragmatic position serves as a point of departure for a*"social aesthetics" to emerge. **Social Aesthetics are "style-less." Style, which is an attribute of the personal, is replaced by intervention. Social aesthetics does not operate on the plane of uniqueness but in the realm of community and in terms of audiences to be addressed.[note 2]** Notions of value are derived from the social world of the participating community and focused on process not product. - Sharon Daniel

note 1 - after Jennifer Allen's analysis of Atelier Van Lieshout's A-Portable in "What? A-Portable," 2001. in Biennale Di Venezia 2001, Catalog.

note 2 - based on William Olander's definition from "Social Aesthetics" in the catalogue to Art & Social Change, USA. 1982-83.

Self-organization and Social Networks

Self-organization is the capacity to spontaneously alter internal structures and adapt to environmental change in a non-hierarchical fashion - bottom-up, decentralized and adaptive. It can be experienced in distributed applications from unmoderated email lists and chats, to Slashdot and Amazon's variant forms of collaborative filtering. The infrastructure of the Internet and the WWW is a decentralized network of nodes and the non-linear interaction between them, though hypertext links, for example, are distinctly linear. Network theorists, a focal contingent of complexity research, describe and map the Internet with the same equations as small world social networks. In *Linked*, Albert Barabási, a physicist who mapped the Net with a crawler in 1999 confirmed earlier predictions by Stanley Milgram that the human population is separated by six degrees. "Our society, a network of six billion nodes has a separation of six. The Web, with close to six billion nodes, has a separation of nineteen. The Internet, a network of hundreds of thousands of routers, has a separation of ten."[8] In a small world[9] with any person on earth only six people away from any other person, collaborative methods established in the Live Arts extend beyond the virtual handshake of telepresence towards a dynamic synergy comparable to emergence.

Reed's Law (a successor to Metcalfe's Law of the growth of value in networks that squares the number of connected nodes) claims *exponential* growth in

[8] Albert Lázló Barabási, *Linked*, Cambridge, Perseus Books Group, 2002
[9] From *Nexus* by Mark Buchanan: "As Duncan Watts and steven Strogatz discovered, a few long distance links thrown into an otherwise gridlike network will suffice to make a small world. As Albert Barabási and éka Albert noticed, the simplest of all conceivable patterns of growth – the richest and most popular getting richer and more popular- leads to smallworld networks of a slightly different kind. From these very simple rules follow small worlds of many kinds-this is no coincidence."

networks that provide a means for groups to form beyond linear transactions and for these diverse groups to interconnect. At Waag Society, the An`a*tomic[10] initiative, a weekly gathering of media artists interested in learning and sharing skills and technologies that enable performative connection with other clusters of similarly motivated people, is one practical example of testing an abstract law. The exploration of communication techniques through distributed, real-time agency may lead to exponential growth of the connected community but its proliferation cannot be contrived. That's an essential characteristic.

There is no guarantee, that the self-organizational innovation commons of the Net will continue under the potentially crippling controls of wireless protocols, perhaps dead-ending the future of proliferating communities. The loosely knit, ad hoc collectives that spring up and thrive on spontaneous, creative interaction through communication and new media technologies may be forced to hack alterative routes through densely packed local clusters. Whatever the case, cooperative networking methods, above and underground, will be central to new work. Multi-user environments such as peer-2-peer and hybrid (p2p plus central server) architectures will facilitate not only the sharing of files but the real-time co-creation of regenerative data.

→ Just vd Broecke
Just van den Broecke is a core programmer on the KeyWorx and KidsEye projects at Waag Society, Amsterdam. He presented an overview of multi-user archirectures to the Masterclass on March 5.

"Designing a network architecture/protocols for real-time/synchronous multi-user systems is a daunting task. The issues surrounding these types of systems are often overlooked by novice developers. Some simple examples should illustrate how hidden assumptions on e.g. bandwidth may lead to inconsistencies in state (e.g. a shared whiteboard) shared by users. (see http://www.keyworx.org/slides/deaf03). In particular within applications where users are operating on shared state we have to make trade-offs between consistency of that state and the performance perceived by users. When aiming for a completely consistent shared state we will have to apply some form of distributed transactions. This will result in decreased performance as the system will operate in a lock-step mode, transcending from one consistent state to the other.

The design of a multi-user networking architecture is not in the least driven by the types of application that the system should support. For example, multi-user file-sharing has different characteristics than a shared whiteboard or a chat application.

In the solution space, peer-to-peer (P2P) architectures are often weighed against, and contrasted to centralized client/server solutions. In my opinion no single networking architecture applies. As in many engineering approaches, hybrid solutions that adapt to the requirements of the application are the most promising. For example, some P2P file-

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[10] http://www.waag.org/anatomic

sharing systems combine centralized information access ("who has which files") with user-to-user file transfer. Others apply a concept of "super-nodes". An ideal multi-user networking architecture should encompass both P2P and centralized elements, adapting dynamically to either one or a mixed approach dependent on the application and the quality of service required by the users. "

→ The Datacloud Project from V_2
Anne Nigten, director of the V_2 Lab presented the DataCloud Project on March 5.

DataCloud 2.0 is an information space containing a vast collection of media-objects. Each media-object is of a specific type - image, video, text, 3D model, sound file - and has its own characteristics. These characteristics (meta-data) are used for organizing and querying the information space. Users perceive the entire information space as a 'cloud' through which they can 'fly' and which they can reorganize as desired. After an examination of their meta-data, objects in the cloud can be viewed and added to personal collections and storylines. Authorized users can add, edit and delete objects. This functionality, combined with a newsgroup facility, makes DataCloud 2.0 an effective information tool that can support a community. The technical framework on which DataCloud 2.0 is based will eventually be published as open-source software. It can therefore be used by other organizations and for other purposes. -Anne Nigten
http://datacloud2.v2.nl/
http://lab.v2.nl/projects/datacloud2.html

EmergentC's - Cooperation, Cognition and Control

Cooperation - Trust and cooperation are endemic to any functioning collaborative environment that scales up from the binary, nearest neighbor, on/off rules of cellular automata to engage in a more multi-dimensional interaction. Arguably, artists controlling media parameters in a shared, co-authored environment are more interested in the cooperative "reciprocal altruism" of the moment rather than competitive beauty bashing. Petr Kropotkin's rejection of Darwinian competitive models of survival and insistence on cooperative survival strategies that mutually aid both species and individual is, I believe, a more credible model for distributed media ecologies where the struggle with the environment (in this case the unmoderated virtuality of cyberspace) is commonly shared. [11] Referring back to properties of self-organization, diversity and difference are key to the transformation of collaborative dynamics into something greater than the sum of its parts.

Online multi-user games represent a large community of players experienced in live interaction. Of these, popular civilization games, such as Age of Empires and Everquest cater to Social Darwinian strategies. A different take on the zero-sum (winner-take-all) shooter genre, the goal is ultimately survival, kill or be killed.

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[11] For more on this - a sympathetic article on Kropotkin by Stephen J. Gould.
http://www.marxists.org/subject/science/essays/kropotkin.htm

The influence of gaming industry principles on interaction techniques and processes is considerable. An alternative approach, enabling the possibility of group negotiation that evolves through cooperative interauthorship, is, absurdly, provocative. As a case in point, the American media perspective of their war on Iraq had the look and feel of a video game sports commentary. The self-styled American empire, the US vrs Them mentatlity, has all but eliminated diplomacy from the delicate competitive/cooperative balance. This strategy will inevitably be challenged by another formidable principle of complexity – that every empire will, eventually, surrender to the bottom-up insurgency of dynamic change. But I digress…

The advent of real-time, media rich performative technologies enabling synchronous multi-user creation, counterbalance the "survival of the fittest" competitive edge with a nod towards the cooperative that Kropotkin was so keen on. One such technology, KeyWorx, developed at Waag Society in Amsterdam, used extensively in the masterclass, provides real-time intermedia synthesis similar to Max/MSP, pure data and Image/ine, in a distributed multi-user platform. The performative conditions in such an environment are extremely plastic and supportive of unpredictable outcomes through multi-user intervention. It is the application that I will be referring to most often as it precedes, I believe, further interest and development of collaborative platforms that combine the immersive qualities of online gaming with improvisational techniques of mediated performance. This framework is friendly to the possibility of facilitating emergent aesthetics – a live, ephemeral and fragile processual state of creating something unpredictable and potentially "beautiful" together. This sensitivity to conditions has deep roots in the performing arts, notably in jazz and dance and depends on dynamic inter-ness or collaborative agency.

Cognition – Dynamic media applications like KeyWorx are interesting as hybrid models that combine learning through the iterative pattern-regonition of dense, multi-layered signifiers. Practical questions in determining degrees of collaborative agency in distributed, multi-user platforms center on perceptual learning curves. Although intuitive user interface design might facilitate a plug-and-play comfortability, in general, it takes practice. Developing a sense of personal intention within discontinous group dynamics is a skill known to anyone engaged in online chats. In platforms where all media can be instantiated and commands sent by multiple users to change media properties, a learning curve looms, perhaps not dissimilar from proprioceptive skills acquired by dancers. There are three levels of interaction that require learning:

> 1. Media interaction - perception of intermedia properties and parameters that synthesize and reshape media types through dynamic processing
> 2. Control - perception of human/media interaction
> 3. Cooperation - human/human interaction, intervention and intention

Control - The issue of control is convoluted in artist's softwares. The question of who's driving – the programmer (artist) or the end-user (artist)– is fundamental and sticky. Algorithmic constraints placed by the programmers can dampen the experience of the user, especially if the intended user is an artist. Software applications or projects that fix or predetermine the range of outcome are categorically different from applications that function more like authoring tools. Infrastructure decisions are made early in the development process on the openess of the system – to moderate (and to what extent) or not to moderate.

Performative applications which provide a toolbox of real-time intermedia filters and modifiers address at least two levels of interaction perception. Participant intervention using these control parameters in installations, for example, are often restricted to reactive states in which the range of behavior is constrained. Adding multiple human players creates a new set of variables that could, through repetition and learning, provide transformative conditions between mediums and humans. If we were to view the human as a medium within these "ecologies", with an unknown number of input, output and hidden units (as connectionists map a neural net), the conditions set by Hayles for "distributed cognition in the emergent human subject" would be applicable.

Inverting the issue of lower (code) and higher (user) level control turns up out-of-control, a state reminiscent of chaos in the self-organizing process. A state of potential, of expectation. Steven Johnson, when speaking of the joystick generation says: " … I think they have developed another skill that almost looks like patience: they are more tolerant of being out of control, more tolerant of that exploratory phase where the rules don't all make sense, and where few goals have been clearly defined. In other words, they are uniquely equipped to embrace the more oblique control system of emergent software. The hard work of tomorrow's interactive design will be exploring the tolerance -that suspension of control- in ways that enlighten us…" [12]

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→ The Code Zebra project
Sara Diamond is a television and new media producer/director, video artist, curator, critic, teacher and artistic director who has represented Canada at home and internationally for many years. She was born in New York City and has resided in Western Canada since 1978. She is currently the Executive Producer for Television and New Media and the Artistic Director of Media and Visual Arts at the Banff Centre.

Note: still need to add a quote from sara about the role of moderators in Code Zebra.

Sara Diamond, who initiated and leads the CodeZebra project discussed the project and showed video documentation of events that has led to the current collaboration with V2 and DEAF. CZOS is a web based visual chat that enables conversations between different individuals and groups on the Internet.   CodeZebra employs animal print metaphors and

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[12] Steven Johnson, *Emergence*, New York, Scribner, 2001, pg 177

biological camouflage – a reference to the technological jungle in which human survival is increasingly reliant on communication skills. Its pattern recognition function is a new way to visualize the herds that naturally converge around any prey or subject CZOS helps user/players to link ideas, see and create relationships, and consider the emotional qualities of a discussion. Patterns are meaningful; these show relationships between postings and measure various stylistic dynamics such as speed, word length, and subject relatedness, frequency of posting, corrections. The software provides a series of provocative language toys and games that can shift the dynamics of a conversation. It can be used in conferences, on-line chats, and live performances and as a fashion accessory.

http://www.codezebra.net

sara: "right now we're about to implement the ability of the chat to visualize behaviors as specific patterns. This piece of the chat is the social network and it will be an overlay where you can see who's speaking to whom, who's dominating the conversation or not, what the movements and dynamics of the discussion are so you can always get the social overview of the conversation network…"

"One of the artist strategies with interactivity is that you don't know how it works and you're kind of in it and you don't know what the interactivity is. I wanted to do something where people knew how it worked and be able to really use it as a tool and then create variations on it..it was a design straegy in some ways…"

KeyWorx – a personal view

Since 1997 I've been involved with a software development project at Waag Society that's been painstakingly engaged with building an open framework for distributed, synchronous, multi-channel intermedia synthesis - KeyWorx (formerly KeyStroke).[13] Extending the functionality of real-time media interaction platforms to embrace multi-user "authorship" via the Net was a shot-in-the-dark six years ago. In many respects, it still is. Solving the technical hurdles of dynamically shared environments is one issue, but technical obstacles, with time, support and perseverance, can be solved. Issues that have evolved for me, as a non-programming contributor to the application are more reflexive and question why and how we integrate abstract functionality into our practice.

In the 80's I was fascinated in dissecting media through applications like Dr.Tand Digital Darkroom (predecessor to Photoshop). The 90's brought QuickTime and real-time processing with apps like Max and Image/ine. There was a perceptable shift from conventional interdiscilplinary collaborations necessitated by medium expertise towards the digital "Band in a Box" media mentality that opened the

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[13] The KeyWorx team at Waag Society includes Niels Bogaards, Just van den Broecke, Tom Demeyer, Sher Doruff, Lodewijk Loos, Fokke de Jong, Arjen Keesmaat and Eric Redlinger, Guy van Belle and Floor van Spaendonck.

door for multidisciplinary expertise - musicians creating images, visual artists producing sound, etc. I fell into the category of artists delighted to combine musicianship and visual arts practice. Recombinant real-time processing of media parameters made control itself an identifiable medium.

With KeyWorx[14], the issue of control is central to it's design in contradictory ways. It provides an object oriented programming platform similar to Max with all the bells and whistles of logic, analysis and DSP modulation so users can build complex interactive environments with all types of extensible media. It also jeopardizes and challenges the entire notion of design by placing these patches and programs in a dynamic, vulnerable commons – the multi-user platform. Design and control must be continually negotiated within a shifting landscape of mixed metaphors. There is, when entering this domain, a sense of leaving preconceived artistic preciousness behind. As content is accessed through a file transfer process to all users in a shared session, individual control of media is both compromised and enhanced by mutual control. It is a complex dialogical process of interpretation and response through multi-layered readings of intention, gesture, language, symbol, representation, identity and situatedness.

I've spent considerable time in the past year observing people work in this platform and am interested in why certain artists choose this particular genre. Though it has many similarities to improvisation techniques and methodologies in other arts, and is often narrowly referred to as a vj-dj platform, there is something provocatively unique about it – about the distance between players, about the symbiotic dependence on symbol and pattern recognition, about variant levels of expertise in a shared session that both frustrate and illuminate. It's easy to claim that connecting technologies will change our patterns of working, creating and engaging; it seems an inevitable trajectory. How we artists, designers, programmers and producers involved in the development of collaborative applications interpret propertes of complex systems (feedback, control, pattern/randomness, organization, emergence) and the contingent issues of trust, cooperation and accessability cannot be understated.

→ Michelle Teran
Michelle Teran is an artist and workshop facilitator whose practice involves live performance/installations using technologies that address issues such as social networks, presence and the interplay between (media) spaces. Her work covers live installations, online performances, telepresence, live art, video, networked collaboration, lab spaces, art and social play. These works have been presented in local and international public spaces, conferences, festivals, galleries, clubs and theatre spaces. She is currently artist-in-residence at Waag Society for Old and New Media.

Excerpts of a transcript from her presentation during the masterclass March 5, 2003. She is describing her preparation process (with artist Isabelle Jenniches in New York) for the

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[14] For more information: http://www.keyworx.org, http://www.waag.org

Interfacing/Radiotopia/KeyWorx performance at DEAF2003 on March 1. This performance paired three artists in Rotterdam (Michelle, Lodewijk Loos and Arjen Keesmaat with three artists in New York, Isabelle, Eric Redlinger and Daniel Vatsky.

The original intention of the performance was to have one physical room filled with sound created by Radiotopia, and one room where performers using KeyWorx would create a visualization of the sound. Radiotopia is an online multi-authored radio project where contributors from around the world upload audio files onto a website which are then downloaded and mixed together live in a physical performance space.

When I was approached to work on this project, it was suggested that I and another performer in Rotterdam would be translocally linked with two others in New York. We would create together a live media mix of images, text, graphics and video.

I extended the number to three performers within each space for a total of six. Each artist in Rotterdam would be paired together with an artist in New York City, three simultaneous and connected performances.

In an effort to understand how to work with the Radiotopia material and with ourselves, we had to first ask the following questions.

1. What is the nature of the exchange between the two performers connected together over a network.?
2. How is each physical space networked? What is the relationship between the three performers in each space?
3. How can the audience enter into this environment?
4. How can the audio and visual environments be connected in a meaningful way?

In considering ways of connecting the audio and visual environments, there are several possibilities.

1. You can do an analysis of the different properties of audio and make a visualization of it.
2. You can create a composition of images based on how you are responding to the audio. Like a vjam.
3. You can use the audio as a controller.

Our only access to the Radiotopia output was a QuickTime audio stream which does not have enough interesting properties for analysis or for use as a controller. Therefore we started to think about tapping into the audio content. We didn't know what the answer was in the very beginning. We worked slowly piecing together a performance network, not necessary a rigid and inflexible structure, but also not a free form, chaotic jam. This process began first with Isabelle and I asking ourselves how we could work together, why connect. Eventually the system we developed was proposed to and then accepted by the other four KeyWorx performers.

Isabelle and I started with meeting and working together online every one or two days for several hours at a time. Because of the six hour time difference, we would start working together at 17.00 Amsterdam time. I worked from the media lab at Waag Society and from home. Isabelle worked from a Manhattan public library, an Apple Store in Soho and the basement of Location 1 gallery in New York City. We started off completely segregated. We decided to start with a basic relationship with word and image, based on a simple word game. Isabelle would respond to a word that I typed in, by adding another word which would bring up related images from Google. She worked on the right side of the screen, and I worked on the left. Within a week, it started to get more frenetic, more merged. As we progressed, and the flow of words started to increase, the patch we were working on started to converge to such an extent that I couldn't make a change on one small part of my patch, or what i considered my part of the patch without affecting hers.

Any kind of modifications that I would make affecting the qualities within the images and my text would also affect her as well. Our dynamic process was fused. I started to realize that these current patches would not exist without the input of either one of us. Saving a patch was futile, since it was never the same the next day.

So, while we were going through this process of discovery we started thinking more about why we were starting with text and how it could be used to network all three performances. The Radiotopia project talks about how with every sound, every piece of audio there is a word, or there is an idea, or there is meaning. This started us thinking that one way of translating the audio into our space was to look at the meaning within the audio. If we could take words from the audio and drop them into all three KeyWorx performances simultaneously, you would have a very live and connected situation... – Michelle Teran

http://www.ubermatic.org/interfacing

Emergent Aesthetics and a defiance of taxonomy

Ubiquitous themes from dynamic databases to public interfaces that encompass issues surrounding privacy/surveillance, the digital commons/proprietary ownership, the digital divide and collaborative environments, all underpin how we conceive, design, hack and interact with hard/software technologies that are both tools and artifacts.

Focus on processual interaction over the end-product or art object has implications for definitions of aesthetics and classification of media content; a contemporary twist on the Conceptualist stance. Dynamic potential within media ecologies (expression through all available mediums, where the mediums themselves are changed by the expression) whose raison d'etre relies on live processing between mediums and between humans contradicts attempts at classifying symbol or dissecting meaning from layered, evolving sound and image.

Sharon Daniel describes this well in her paper on Database Aesthetics: " A "conception" of the "beauty" of a database is not located in the viewer's interpretation of a static form but in the dynamics of how a user inflects the database through interaction with its field or frame. A database incorporates contradiction; it is simultaneously recombinant and indexical, precise and scaleable, immersive and emergent, homogeneous and heterogeneous. It is a field of coherence and contradiction. The aesthetic dimensions of the database arise when the user traverses this field of unresolved contradictions. The database is comprised of nested subfields, which are activated, and given ontological status, by the user's trajectory through its field. Continuously emergent ontological states resolve as new subfields from each interaction and are integrated into the field - changing and transforming the content and structure of that field and constituting the "art object" as a continuously evolving and fluid system. These are the conditions of possibility of a "database aesthetics."[15]

One could reach further and claim that this process not only belies taxonomy but defies it through its insistence on transience as content. There are interesting parallels here with connectionist views of learning that minimalize procedural symbolic representation over iterative pattern awareness. This pattern recognition, achieved through the dynamic structures of a neural network could be seen as a model for interaction in collaborative nets as well. Though, as mentioned earlier, in distributed media rich platforms such as KeyWorx, there is a striking co-dependence on iterative pattern awareness through layered symbol and discontinuous syntax.

In conclusion then, there is only the reflexive generation of more questions. From a scientific standpoint, can human agency, far more complex than simple multiple components generally referred to in complex systems, produce emergent behaviors or emergent aesthetics in conditions of self organized structures? If we could agree to a simple yes, the next questions might be: Does the preponderance of information "in the air", in search of a medium, generate an urgency to invent new mediums? Will these new mediums emerge from the distributed process of sharing the information itself? Does the non-object, inter-authored, fluid and flux artwork resonate a collective consciousness? An emergent aesthetic? How does individual identity function within the group that acknowledges it's claim to the collective? Are ideologies of collaborative, distributed practice vulnerable portals to a new world order of hierarchical control or will bottom-up prevail?

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[15] Sharon Daniel, "Database Aesthetics: Issues of Organization and Category in Online Art", http://time.arts.ucla.edu/AI_Society/daniel.html