

GENERATIVE ACTIVITY IN ART AND LITERATURE

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My research centers on the creation of narrative forms that use dynamic information sources as part of their material structure. These narratives, which have taken a variety of forms including telephone menu systems, generative online video software, printed books, location-based software delivered through public Wi-Fi networks, and custom algorithms, are ongoing and perpetual, and work with text in a fragmentary, non-linear way.

In this essay I will discuss some of these works, including *Grafik Dynamo* (2005), a net art work that loads dynamic images from the internet into a live action comic strip; *Path: A Generative Bookwork in 12 Volumes* (2008), a 12 volume text generated by the physical movement of an anonymous individual living in the city of Montreal between 2005- 2007; *Space Video* (2012), a generative system that mixes an original non-linear narrative on the subject of disparate cultural and scientific phenomena including guided meditation, undersea and outer space exploration by NASA, motivational speaking, PowerPoint backgrounds, science fiction, psychedelic drug culture, and guided meditation with YouTube videos on these subjects as they are uploaded in real time; and *Medium* (2011), a print book which revisits Marshall McLuhan and Quentin Fiore's 1967 book *The Medium is the Massage* by algorithmically matching images from the original book with compositionally similar images from the internet.

The goal of this research is to investigate the function of dynamic activity in literary or text-based systems and to test different ways to implement recombination as a compositional strategy in literary networked art. This is done in order to produce knowledge about how the artistic use of technology can create new literary forms.

For the purposes of this chapter I will outline three different ways in which I have experimented with dynamic activity as a material element in text-based artworks, and connect these methods with some of the works I have made in the process of exploring them.

1. One strategy has been to build narrative works online that have, as an integral part, a dynamic feed.
2. Another has been to connect the real-world activity of human movement to a text work so that the physical movement of a person or a group of people introduces a dynamic recombination of the text.
3. The third has been to work on the level of the network to create a text responsively and in partnership with networked algorithmic processes that

source images from the mass of collectively created information that resides online and can be found in a search engine.

1 DYNAMIC FEEDS

In my work, I make narrative forms that use dynamic information sources as part of their material structure. By material structure, I mean that the works are designed, as written forms, to pull in information from another source that does not originate with me but that reflects another aspect of life, data or activity, and that these information sources are integral to the concept and function of the work.

For example, *Grafik Dynamo* (2005) loads live images from the internet into a live action comic strip.⁷⁰ The work takes the form of three panels, which display three different images that are perpetually reloaded. Inside the panels are speech and thought bubbles as well as explanatory text boxes that reload in an ongoing way with fragments of an original narrative that references mid-century comic books and spy novels.

From the time of its launch in 2005 to the end of 2008, the work used a live feed from social networking site LiveJournal. The work is still running and is currently using a feed from Flickr. Animating the comic strip using dynamic web content opens up the genre in a new way: Together, the images and narrative create a dislocated notion of sense and expectation in the reader, as they are sometimes at odds with each other, sometimes perfectly in sync, and always moving and changing. The work takes an experimental approach to open ended narrative, positing a hybrid between the flow of data animating the work and the formal parameter that comprises its structure.

Because the images that flow into *Grafik Dynamo* are live, there is an aspect to the work that is temporal. The outside world, and whatever is happening in it that is being captured by photographs taken by a random, self-selecting group of people, becomes part of the work. As a result, *Grafik Dynamo* has a different feel to it on Valentine's Day than it does at Christmas, and was different in 2005 than it is in 2015. Images bubble into and out of the work, causing thematic changes that blend with or push against the meaning of the texts. I think of this aspect of liveness and the role that this dynamic information plays inside the work as a kind of subject matter, because content, context, history, meaning and accident flow into the work through the participation and ongoing activities of people through this live feed. The aspects of life that are reflected in the work through the inclusion of images from photo sharing sites become not only part of the work itself, but also can be adjusted in order to shape the conceptual framework of the piece.

⁷⁰ *Grafik Dynamo* is a collaboration with Michael Tippett that was commissioned by New Radio and Performing Arts, Inc. for Turbulence.org with funds from the Andy Warhol Foundation.

Grafik Dynamo

We are tired of stunts!

My next impression was of coldness: I was witnessing the triumph of madmen.

The culture has a history of brutality.

Beware the essential!

Suddenly, from the control room...

No one remembers Villanova here.

Go! Wait for me at the frontier!

After eating the sandwiches the dog began to pant heavily and to glow from within.

Evangelical students clogged the crosstown arterial.

After *Grafik Dynamo* I began to think about how this could be developed further, in order to explore the outside subject as not only a dynamic element but as a literary element. By literary element I mean an element that is inherently constitutive of the work. And further, that there is something to note about this element being both literary (and constitutive of the work) and visual or data-driven (as opposed to prior forms of literary elements including plot, theme, or tone). For example, that a stream of images marked "city" can be brought into a literary work that is engaged with the subject of the city, and that by doing this, another layer of meaning about the city can enter the world of the text, informing it and being informed by it.

I began to work in a more mindful way with the origin of the images that were entering my texts in this way so I began to experiment with keywords. The idea became to write a text in which keywords would parse the imagery that flowed into the work. *Why Some Dolls Are Bad* (2007) was an experiment using this idea. The work, which addresses ethics, fashion, artifice, and the self, was parsed with a list of terms "city, tunic, fashion, doll" and was written "with and against" these words in terms of the text itself, which became a construction of associative references, materials and ideas including Venus Flytraps (*Dionaea muscipula*), Perspex cabinetry, Vogue Magazine, Jenny Churchill, and Henri Bergson.

One observation I can make having used this approach has been that keywords—here defined technically as words that have been given specific meaning within the computer program that is parsing the images by subject matter, and rarely considered in the frame of programming to possess a literary aspect—can nonetheless function well in the context of the associative, fragmented text, and can be viewed as another form of writing that both defines and actively creates layers of meaning within the written work.

Why are people so amazed by what I do?
I'd stolen the painkillers from the charity where I'd been working.
I have experienced the pleasures of work outside the home.
Gosh, that's a real smart trick!
Rebellion for me is trying to be honest about what I see.
But, we share a brother, perhaps more!
Soon the dress will be broken into useful squares.
Can it be stifled by a depraved revolt?
The fabric had been knit from stainless steel and paper.
The Fall collection was inspired by discord.
The contagion of this idea left everyone in awe.
The jury had hoped for consensus, but they'd gotten appetite.
She looked forward to her wedding, and to the effortless short dresses that
were bound to follow.

My work arises in part from the context of electronic literature and in part from media arts. I see media arts as a deeply hybrid field that engages a huge array of investigative and disciplinary modes including locative narrative, text-based installation, conceptual art, video, and photography. But most crucially I think of generative art and the associated tenets and principles of generative activity as applied to art practice that are elucidated by Philip Galanter and others.

Generative art refers to any art practice where the artist uses a system, such as a set of natural language rules, a computer program, a machine, or other procedural invention, which is set into motion with some degree of autonomy contributing to or resulting in a completed work of art. (Galanter)

Following this, I see generative art as art in which the artist creates a process such as a set of rules, and then the process is let to "run." As opposed to the idea of the artist creating a finished work, in generative art the artist creates the rules that cause the work to be created. In the context my own practice I see the process of creating a set of rules as being an inherently literary activity. I begin with a process of thinking through and testing what the framework must be in order to create the kinds of variables I am looking for.

With the idea of perpetual and fragmentary compositional strategies, the work is written in interoperable pieces, pieces that are designed to interoperate perpetually so as to always be a source of new meaning, whether new meaning is conceived as

something emerging from the shifting text combinations or as something emerging from the ongoing juxtaposition of image and text (or both).

I've chosen to work with fragmentary recombination as a method because it allows me to integrate text with the functioning of a system and to have the text be deployed into new combinations driven by the activity of the system. But it also allows me the ability to form the tone and tenor of the text and to retain some control over the writing. For example, a system that would randomize at the level of the word (rather than the level of the short fragment), would create a different effect. I am less interested in this kind of linguistic deployment and more interested in finding the point where a text can retain its style while also being dynamically driven.

In my work I aim for a situation in which the ideas themselves bear a formal relationship to the technology and context in which they take place. Perhaps in the same way that electronic literature practitioners consider the "born digital" aspect of their works to be key, with the digital context being integral to the form of the writing, I don't see how my written projects could take any form other than they form they have taken. Which is to say that my goal is to work in a blended way with form and subject, working through technology to realize forms that invite new combinations of ideas and meaning.

An example: *Pattern Language*, by being situated in physical space and composed by the individual movements of people in the city, becomes on the level of the subject a text that is about behavioural, social, cultural, geographical, visual patterns, so that the text is informed by the conceptual engagement on the formal level of the network. *Space Video* as a work is "about" the shared aesthetic sensibilities of the collective imagination, as evidenced by videos uploaded to Youtube and tagged with a shared (but disparate) set of keywords. A third example: By publishing the printed "path" of a specific individual, the form of *Path* is a direct translation of movement that both exposes and codifies or elides the path of movement that was the direct technical and operational input that caused the text to take that form.

So it is a manner of writing "with" and "through" the network, which in my view also means changing the conversation about interactivity. For me some of the commonly held or at least historically foundational precepts about interactivity in fiction have become boring: That a reader would like to choose the direction of a piece; that a journey is created for the reader when navigating through a multimodal, multimedia piece that possesses many layers. I am thinking now that this has come to be a chore and that many times these principles result in an un-designed, densely packed forest of text and image that is rarely fully experienced or appreciated by anyone other than the author. In response to this I have always chosen to recast the role of interactivity so that it happens on a different level. To use a feed of information (data or movement)

as the dynamic aspect that is brought into a text allows the text to engage with outside information and the broader participation of people without forcing the reader to be the primary source of this activity.

In my work this is often happening on the level of the image, where the written (though recombinant) forms are the stable element designed in each work to be deployed in response to ideas, materials, outcomes that come into the project through the work of others (e.g. Flickr feeds, YouTube videos, or the mass of documents on the internet that can be accessed through Google Image Search).

From works like *Grafik Dynamo* I can observe that shifting the interactive burden away from the reader is actually what allows the reader to become actively engaged in terms of forming meaning - working across the different frames and different inputs to form a narrative that is mental; active in a similar way as reading any text would be. And opening the "active" portion of a piece to different configurations of participants (not just the reader, but all of YouTube, or everyone tagging photos in Flickr with the word "city") so that the participation can become not only active but a conceptual part of what is happening in the work. Shifting away from the need for an individual to laboriously click through something actually creates space for form. What a feed is, where it comes from, who is making it, when and why, becomes a formal piece of the structure that has its own meaning, behaviour, history, cultural position, and context, and this works within and against the other written elements.

One of the open questions for me is, from within this frame of generative art as a context for this kind of practice, how can generative text further evolve to where the rules and the outcomes can be further integrated to create a specific aesthetic or set of values. Looking comparatively at generative practices within the sonic and purely visual arts for example, I wonder how we can move ahead to frame out the "book" as a platform and tool, the "book" as instrument, the "book" as field, feedback or loop. I have gotten only a short way to achieving what I think is possible in this area, characterizing these works as in some sense "book-machines," which run forever, always fresh but also stable, and that engage with the outside world inside of a fiction, or a fiction inside the world, and that allow me to engage others in making a world that is also my own.

2 REAL WORLD ACTIVITY

In 2008 I became interested in feeds (Armstrong 2007). At that time the software landscape was shifting into a broader experimentation of what it could mean to stream information through a feed into a totally alterable and contingent interface. Since that time the influence of the feed as a concept and metaphor (and also as a technology) has only grown. We as a culture often express ourselves in terms of updates: we post updates on Facebook; we follow people's feeds on Twitter. These are perpetual, ongoing

modes that lie together across time but are also formed of short, interoperable segments. This is a technological structure that is also a mode of experience that becomes psychological. By now, we understand ourselves in terms of representational, actual, technological, social feeds: Following or producing a feed not only comes to create a concept of the individual but to restructure or normalize the role of the feed, and the stream of information that emanates from an individual is both documentary and surveillance oriented, as well as creative and fictive.

To me this forms linkages between data and the individual, and between technological, mental and physical experience. In this vein I began to experiment with dynamic activity to connect the real world activity of human movement to a literary project so that the movement of people introduces a dynamic recombination of the text. With *Pattern Language*, a narrative⁷¹—also written in fragmentary, interoperable texts—was attached to the login of the free public Wi-Fi network in the City of Montreal.⁷² Each time a person would log in to the Wi-Fi, they would receive a textual passage exploring themes of visual, personal and spatial patterns as reflected in the lives of fictional characters. These fragments were location-specific so that different texts would be triggered at different geographical points in the city. These fragments accumulated over time, being stored in the accounts of the individual using the network, so that every individual would have a different iteration of the "book" that depended on the geographic pattern of their WI-FI usage.

This platform operated for two years. Following the end of that project I built on these ideas with *Path, a Generative Bookwork in 12 Volumes*, which took the text that had been generated by one individual through their use of the Pattern Language platform and published it as a print work, which resulted in twelve 600 page volumes. Accumulating over time, I see these behavioral and technological points of contact as having come to form a fabric of language that both reveals and conceals the pattern of a life lived in the city and that offers another mode of translation between movement and text.

Pattern Language

Café Supreme

8. She thought of the city's underground, ridged concrete geometry and tile in forty year old patterns.

71 I'll discuss *Pattern Language* (2005-2007) in this context, though the first significant work of mine that explored this was *PING* (2003).

72 This project took place in the context of the Mobile Digital Commons Network (MDCN) and was built on the Ile Sans Fils (ISF) Wi-Fi platform.

25. To describe this it would be necessary to show many other things.

Cluny's Art Bar

39. He needed to start something controversial.

3 WORKING WITH THE NETWORK

The third way I've explored dynamic activity has been to work on the level of the network to create a text responsively and in partnership with networked algorithmic processes that source images from the mass of collectively created information that resides online and can be found in a search engine.

In 2011 I published *Medium*, a print book which revisits Marshall McLuhan and Quentin Fiore's 1967 book *The Medium is the Massage*.⁷³ I flattened the original book and matched it with compositionally similar images from the internet. Each page was matched multiple times, keeping the pages in order, so that the new version of the book is three times the size of the original and is comprised of loose, impressionistic human or corporate documents like powerpoint graphs or photographs of refrigerators.

This is the most recent thread of investigation and underpins my continued interest in internet aesthetics, and my wish to delve deeper into processes of production that involve the internet as a repository of images and that look to address the network and conditions of networked culture. It is also another mode that for me seeks to expand thought around what "interactivity" should or can look like, and to broaden interactions with the network to include processes that are mindfully blasting open architectures that lie between page and screen, or that problematize or explore world interfaces.

Another example of this is *Space Video* (2012), which is an online project that addresses ideas of exploration in relation to inner and outer space.⁷⁴ Having noticed that there are shared aesthetic qualities of video imagery that accompany disparate cultural and scientific phenomena including guided meditation, hypnosis, undersea and space exploration by NASA, motivational speaking, powerpoint backgrounds, science fiction, psychedelic drug culture, electronic music, popular spirituality, and computer effects, I built a generative system that mixes an original non-linear narrative with YouTube videos on these subjects as they are uploaded in real time. These videos often attempt to portray what are ultimately non-visual spaces, producing images that are at

⁷³ Originally commissioned for *Medium_Massage 2.0*, a YZO production curated by Michael Alstad.

⁷⁴ *Space Video* is a collaboration with Michael Tippett commissioned by New Radio and Performing Arts, Inc. for Turbulence.org with funds from the National Endowment for the Arts.

once placeholders, images of the transcendental, trippy intergalactic stereotypes, and fields for persuasion. The videos are interspersed with text fragments that explore and blend these themes.

Space Video

We can teach you to solve your problems in whatever
 You have got to be able to pick up this device right here and talk to strangers
 Baby animals are the young offspring of grown up animals
 As we speak people everywhere are erecting piles of stones along the coastline
 Soon you will see shapes emerging from the International Klein Blue
 Witness my civilization
 I channel power to the paramecia that glow and support me

Space Video is in some ways similar to *Grafik Dynamo* and *Why Some Dolls are Bad* in the sense that dynamic information enters an online space as a living thread. But in *Space Video*, there is an additional aspect which bears a relationship with the third principle as well, which is to say that the form of engagement that the work has with the online material is database oriented, and that the inquiry itself, on the level of subject matter, engages with the idea of what commonly held or collective impressions are about a set of subjects (meditation, self-help, hypnosis, science fiction). The work engages on the level of collectivity and the social in terms of asking what the shared aesthetic values are in culture across these phenomena or effects. So there is a tie here with *Medium* and the process of "writing with and against" the network as well as an aspect of working in "partnership" with the algorithms to examine the effects of broadly held ideas as expressed in and through the network, whether or not these are ultimately sensical.

Going forward I see fascinating opportunities for working with dynamic and generative narrative in the framework of the changing internet, including the internet of things. With the number of networked objects and devices projected to jump from 1.9 billion to 9 billion by 2018, the amount of data is exploding and the kind of data continues to evolve into new frames, which for me continue to collide with literary possibilities (Hoelzel and Ballve, 2015). The amount and the kind of data affects how we use it and therefore what we use it for. The importance of "voice" in software is one avenue that introduces further possibilities for development in the context of the written and literary form. But it is also a matter of the boundless possibilities for recombinant literary strategies in a world where things can combine with other things in ways that were previously impossible. What avenues for stylistic experimentation, expression, and literary forms emerge when humans can not only communicate with each other

in new ways but can enter a web of expressive communication with their data and their objects? What literary possibilities are introduced when toasters and refrigerators begin to speak to each other? The modes of these intersections are numeric and code-based but they are also linguistic and will ultimately become philosophical particularly as the interfaces, influences and balances change. It is the current norm to frame these questions in the context of Human Computer Interaction (HCI) but I think this will turn out to be a shallow reading: interfaces between machines and humans have always taken place within a culture that is engaged with text and literature. To conceive contexts that involve technology without paying attention to style and function on the level of text and literature will be a missed opportunity.

WORKS CITED

- Armstrong, Kate. "RSS Poetics: Feeds and Streams." *The Capilano Review*. 2007
- Galanter, Philip." What is Generative Art? Complexity Theory as a Context for Art Theory." http://www.philipgalanter.com/downloads/ga2003_paper.pdf
- Hoelzel, Mark and Marcelo Ballve. "The Programmatic-Advertising Report: Mobile, video, and real-time bidding drive growth in programmatic." *BI Intelligence*. March 26, 2015.