

## Process vs. Product: Data Visualization Makes Me Bored

As is often the case with new forms of media, contemporary digital art seems to be rather fixed within a self-reflexive feedback loop. One needs only to look as far as the recent digital showing at the Whitney Biennial () or at this-year's winners at Ars Electronica () to see evidence of the current fascination and fetishization of data-visualization and software art. Within this paper, I would like to conceptually explore the connections that exist between the current proclivity of the digital art world and past artistic movements, which, in my assertion, locate themselves within similar if not redundant conceptual frameworks. Although valid forms of digital art, I feel that the current fan-fare surrounding data visualization may be somewhat undeserved and repetitive when viewed within the larger context of art history. To elucidate my assertion, I would like to discuss the relationship between data-visualization and ideologies already explored in the procedural art movement of the late 1960's. This will lead to a discussion concerning the current status of the digital arts and how, as a medium, they relate to the larger system of critical art production.

Process art, as defined by the Guggenheim, "emphasizes the 'process' of making art (rather than any predetermined composition or plan) and the concepts of change and transience."<sup>1</sup> Process Art was birthed into critical art culture by such artists as Eva Hess, Joseph Beuys, Robert Morris, and Richard Serra. As a movement, it was officially recognized in shows both at the Whitney in New York and the Kunsthalle in Berlin. Procedural art fundamentally questions the role of the artist as *ex-nihilo* creator and shifts the function of an artist from the creative into the directorial realm. Although the conceptual and formal roots of procedural art can be found within abstract expressionism (Pollock's drip paintings), current theory asserts that procedural art was a "reaction against the stability and structure of Minimalism."<sup>2</sup> In an essay on procedural art from *Art and Culture*, the conceptual formations of this movement are succinctly articulated:

"In the world of Process art, the means justify the end. The artist typically sets an event in motion and watches while it unfolds, thus prioritizing the making of art over the final product (an intended dismissal of the priceless objet d'art). Process artists engage the primacy of organic systems, using perishable, insubstantial, and transitory materials such as dead rabbits, steam, fat, ice, cereal, sawdust, and grass. The materials are often left exposed to natural forces: gravity, time, weather, temperature, etc. The artist might pour liquid on the floor and allow it to seek its own form (Lynda Benglis), or dangle malleable objects from the ceiling so that they eventually succumb to gravitational pull (Eva Hesse), or set up "weather systems" with water and air in Plexiglas boxes (Hans Haacke). Many of these art pieces have, inevitably, processed themselves right out of existence -- but that's all part of the plan."<sup>3</sup>

– *ArtandCulture.com*

By way of a cursory introduction to procedural art, I would like to briefly highlight

three significant procedural artists: Eva Hess, Robert Morris, and Richard Serra. Eva Hess is inextricably connected with the formation of process art in the late 1960's and early 1970's. Although prolific in her production of works of more traditional mediums, she is specifically remembered for her sculptural objects that incorporate the materials of latex, string, rope, and cheesecloth. The impermanence, flexibility, and degradability of these materials lent themselves to the conceptual exploration of the notion of process. These works, which physically transform with each installation, thrive off the impermanence that their mediums embody. They defy the aesthetic of stoic and rigid sculpture and in their place lend themselves to the environmental effects of instability and transformation. In her works, gravity and natural forces have an equally crucial, if not more significant, function than her artistic directorial gesture.

Robert Morris' work explores natural processes, such as gravity, and their effects on non-rigid structures including felt, wire, rope, and other industrial materials. His 1968 essay "Anti-Form" also situated the movement of process art within the conceptual and historical canon of theoretical art discourse. The physical actions that Morris' work employs (cutting, dropping, and hanging) are all dynamic procedures that are illustrative of the conceptual foundation from which process art speaks. The sublimation of the heroic gesture and the questioning of the subjective position of an artist are both illustrated in his work *Untitled, (Pink Felt)* 1970. The color and texture of the felt also allude to possible connections to skin and the visceral influence that an artist maintains over any given artwork and simultaneously deconstructs the projection of the heroic-subjective gesture that the traditional function of an artist embodies.

Richard Serra's work from 1968-1970 was also instrumental in the theoretical development of procedural art. Although not clearly challenging the heroic gesture, his *Splash* series (in which he threw molten lead into architectural spaces) did emphasize the procedural role that an artist plays in the act of creation. Reminiscent of Pollock's drip paintings, *Splash* emphasizes the arbitrary position of the artist within the process over the actual product of art itself. The artist is connected to the conceptual aspects of the piece far more than being tied to any subjective aesthetic concerns or mitigations. The ego is removed and the process revealed, and role of artist is sublimated into a directorial mode in which the subjective is relegated to the objective, the ego is replaced by the sub-conscious, and the process becomes paramount.

I must confess that the term of *product art*, upon which this text rests, is a brainchild of my own musing. But nevertheless I feel that the use of this term can be beneficial in understanding the dialogue between process and artifact. This distinction may only be apparent when scrutinized within this dialectic space, but is nevertheless an important discernment as we approach contemporary digital practice. Answering the clichéd question of "where does the art reside" reveals the differentiation. In product-based art, for instance the *David* by Michelangelo, or *Hamlet*, by Shakespeare, the art would embody the finished product, the statue, the painting, or the text (Persons in support of reader response theory would argue differently, but for the sake of simplicity, I shall narrow my vision to this acknowledged simplification). No one would say that the art, in a general sense,

resides within the gestural process of Michelangelo carving stone, but in the finished product itself. Time, energy, and yes, artistic talent were expended, but the finished work is not about the process, it is occupied with the product or artifact itself and the viewer's perceptive, conceptual response to said object.

This reflection is exemplified within the ideals and values of Renaissance art. This time of intellectual and artistic rebirth focused on the production of "masterpieces." The very notion of a "masterpiece" can be problematic, yet the term inhabits interesting ideological spaces that our deconstructive tendencies may be inclined to ignore. A Renaissance artist would spend a lifetime apprenticing, practicing, and honing a skill in the hopes of producing one work of art worthy of being labeled a masterpiece. The concept of "mastery" is a romantic ideal that has in contemporary art been replaced by conceptual adroitness. The contemporary artist is no longer a master of materials or technical skills, but instead is called to master the realm of the conceptual. Shakespeare was a master of words, Michelangelo of paint and stone. They were masters of medium. They dedicated their lives to exploring specific media in the hopes of creating works of art that stand independent of any conceptual critique. This is the realm of the product.

I fear that in our contemporary setting, particularly within the digital world, the notion of mastery has been subsumed by the impetus of the gimmick. The objective of being clever, or witty, or inventive has replaced the ideal of an artist being inextricably tied to her medium as a mode of expression and commentary. This has happened with good reason as a reaction to modern propensity of self-reflexivity and self-referentiality. Artists and critics alike saw that technical proficiency was not an excuse for banal ideas, and artists wanted to challenge the notions of representation as a model within artistic production. My ideas presented are not a soapbox plea for a return to representational art, but at the same time I feel that the conceptual masturbation and self-referentiality (as will be explicated in the next section) of contemporary digital art must be held in check.

First, I must express my distaste for the conventional usage of the term "New Media." How is this term to survive canonization if it is inherently tied to a temporal framework? At the turn of the century (the earlier one) film and photography were "New Media." In the 1960's and 1970's, video appropriated the term, and now, we can see computer art and its relatives re-appropriating the term once again. This would not be problematic if when used the term New Media was referring to this dynamic and temporally defined progression, but it becomes problematic when it is implicitly used to define media which can be much more accurately and descriptively defined. With that said, I will continue, but with the foresight to call what was formerly referred to as "New Media" as "Digital Media," for it more accurately defines and contextualizes the media itself.

New Media works and artifacts seem to be processed by popular culture in evolutionary stages. The first stage would be the resistance of the medium by critical and popular culture. The second stage would be its polar opposite of fetishization, and the third would be generalized acceptance. Resistance describes the period in which people fear or exhibit aversion to the New Media, such as when photography became popular; many traditional painters feared it

because they naively felt that photography would render painting unnecessary. But instead we have seen the opposite: photography has purified and distilled painting into that which makes the medium unique, and beneficially removed it from its impetus as a strictly representational medium. The subsequent stage is fetishization. In contrast to its predecessor, this stage fully embraces and elevates the medium to an idealic status. The work no longer needs to rest on content, since the form of the medium becomes enough to supplant meaning within the minds of critics. It is my postulation that we exist now in this stage of the fetishization of the digital medium. I do not understand how current digital art could be explained except by a hyperbolic-utopian enthusiasm over its possibilities. I also feel (granted, this is a subjective personal aesthetic and conceptual choice) that the best art of any new-media form occurs in the later stages of fetishization and the early stages of its later phase of acceptance.

As I have attempted to define process art, the terms of data-visualization and software art also need to be explained. Data-visualization is used in contemporary art criticism to label digital works of arts that attempt to conceptually and literally illustrate network or digital phenomena. The majority of significant visual descriptions of cyberspace are continually found within popular culture (science fiction films, cyberpunk literature, web design) and outside the rarity (Marcus Novak et al) few “high artists” have significantly contributed to this endeavor. It is for this reason that floods of data-visualization projects have been clogging the digital art circuits. This speaks to the current state of hyper-reflexivity that will be discussed in the next section. Software art is the close-cousin of data-visualization and is more closely aligned with procedural art in that software is constructed and deployed upon the framework of the procedural. Algorithmic and procedural programming are a commonly used terms within the commercial world of software production. These terms reemphasize the fundamental paradigm that the import rests within the procedural aspects of a given piece of software. Whether this is used to create a spreadsheet or a conceptual piece of digital art has minimal impact on its fundamental characteristics; this is the territory that the software artist attempts to exploit. By nature, software art is anti-artifact. The subversive attributes of software art lie more within the medium itself rather than the conceptual impregnation of a meaning within the medium.

As I survey current trends in digital art, there seems to be a position of hyper-reflexivity emerging that conceptually resembles the notion of hyper-modernity. Data visualization as a mere term intimates that these new works are inherently consumed in self-description or more accurately, self-visualization. Very few “New Media Forms” have been so quick to critique its own medium outside of this newly formed avenue of digital arts. Granted, the advent of photography challenged notions of the art making process, and eventually did enter a state of self-reflexivity, but this occurred years after the “newness” of the medium had already worn off. In the perspective of some, digital and computer arts seem to be built upon this hypercritical awareness of the form itself. I agree in some part with McLuhan that the medium is indeed the message, but the current trend in digital art is screaming this from the rooftops, and the message seems to be becoming cliché and repetitive at an exponential rate.

So what exactly are these supposed connections between the process art of the late 1960's and current trends in software art / data visualization? Primarily, there is a superlative concern for the process. The finished "artwork" of procedural art is sublimated within the conceptual process. This is repeated within software art: the product of software is not the art, neither is the materiality (in this case binary impulses operating within a computer). The art lies within the process. Whether the process is dripping molten lead to form some physical object or if it is the process of computing digital information, the significance remains similar. The process is the conceptual, and within computer arts virtual, workings-out of the idea. The art is not the code itself (physicality), nor is it the perceived product (output of the process), but instead lies within the conceptual space of the process. Both procedural art and software art / data visualization purposefully question the notion of the heroic gesture and the romantic symbol of the artist. The directorial, and now programmatic, role of the "artist" is now heightened as the function of artistic progenitor is challenged. The question now becomes clear: if process art and data visualization are begging the same question, then of what value is it to question the media itself (hyper-reflexivity of the digital medium)? Is there any conceptual value to rehash the notions of process art within a digital framework? And ultimately, to what extent can digital arts in general speak beyond the medium itself, or is it doomed to a conceptually cyclical death in the self-entrenched grave of new-medias past?

To elucidate my postulation and inform the reader about the ubiquity of data-visualization and software art, I will now discuss recent works in the high-digital art world. Lisa Jevbratt's () piece, the Web Infome Imager, is a piece of software that sends out "web crawlers" based on a user's input parameters. These crawlers then seek out web pages and produce navigable images based upon their given paths. In her proposition for the project she writes:

The user sets parameters for the crawler and the visualizations in a Web interface. The software allows the user to manipulate the crawler's behavior in several ways. The user decides where it should begin crawling; it could for example start on a Web page specified by the user, or on a page resulting from an automatic search using a search engine, or on a random Web. Another set of options is determining how the crawler should "move around". i. e. the order in which links are followed; for example it could be following all links on all pages sequentially or "dancing around" in a defined pattern. The crawler can be set to visit a page once or every time it encounters a link to it. The data resulting from many revisits will have repetitions talking about the structure of the sites, revealing its topology, while data resulting from single visits will generate larger amount of different data. The crawler stops when a certain condition is met as determined by the user, for example after a certain amount of time, when a specific site or a specific piece of information is found. When the crawler is done and the visualization is created, the user is automatically notified by e-mail. The crawler could run for several hours.<sup>4</sup>

I find it particularly interesting that within her proposal for this project ([http://www.altx.com/mappingtransitions/jevbratt\\_proposal.html](http://www.altx.com/mappingtransitions/jevbratt_proposal.html)) she comments on the concepts of "beauty" and the "sublime" in reference to Kant. She asserts

that her software takes the sublime (the vastness of information in digitized form being similar to the Grand Canyon) and through a process of aesthetic manipulation, delivers an interface based upon the parameters given by the user. My question is, if the sublime does exist within cyberspace, then do the parameters given by the Web Infome Imager, or any other web browser or data visualization tool, showcase the sublime, or actually attempt to distill an arbitrary aesthetic at the expense of the sublime? The very Kantian definition of the sublime is that it cannot be captured or replicated through artistic simulations or re-contextualizations. This would contradict the essence of the sublime. Therefore if the data is truly sublime, then any attempt to visualize or aestheticize the data would be paradoxical. The next piece of data-visualization art that I would like to discuss is *Starry Night* by Alex Galloway (). *Starry night*, which was first released in 1999, is a prime and lucid example of data-visualization. The program, which was written in Perl and Java, records the hit count of certain texts found within the Rhizome.org database (Rhizome.org is a digital art website and community based out of New York city). The frequency of hits to certain texts within Rhizome.org is correlative to the intensity and size of its corresponding star in the virtual night sky. In very basic terms, this software takes pre-existing information and then creates a visual output based on the original data. Although more complex data-visualizations have been made, the conceptual framework for this piece is essentially the same: information + process = output. To reiterate, the art does not reside in the informational mapping, but in the process itself. The given complexity or visual intricacy of the output cannot continue to carry these works conceptually. No matter how technically complicated or visually stimulating the data-visualization may be, the conceptual framework continues to display its redundancy.

Alex Galloway's most recent piece, *Carnivore* (<http://rhizome.org/carnivore>), that won the Golden Nica for Net Vision at the 2002 Ars Electronica festival, takes these notions of self-reflexivity and conceptual regurgitation to the next level. The summary of the piece by Ars Electronica states:

An interesting project based on the FBI's software for monitoring network traffic, the Carnivore project enables designers and artists to create their own visualizations of data flow on a network. The Carnivore software is available to anyone who wants to experiment with it. Using Flash for the visual design can produce some of the most dynamic and beautiful designs based on real-world, real-time human interaction with computer technology.<sup>5</sup>

*Carnivore* is a software engine that allows other programmers to write software modules that can be coupled to produce data-visualizations of network activity. Although the produced images are intriguing, I feel as if this piece is shooting a dead horse, not once, but twice. I understand the subversive statement about the sublimation of the artist within the procedural aspects of software art, but this is, in my opinion, needlessly reiterated by the secondary impetus for other programmers to develop modules that plug into the mother module to create an image based on network activity. I get the point. I like the point. I just wonder how many more pieces based on data-visualization need to be made before some resolution concerning this activity is distilled.

In the name of dialectical fairness, I should attempt a contrary positioning to my assertions that data-visualization and software art at best carry regurgitated conceptual ideologies. I would like to do this by exploring the differences between physical procedural art and digital art. The hyperbolic nature of digital systems is intriguing in that the notion of “process” is exponentially illustrated within digital space. The idea that my choice to look at a certain website provides the information for some data-visualization project (which I may or may not even be aware of) carries a significant challenge to our egocentric notions of the art making process. This has been questioned within the physical process art of the late 1960’s, but the newly birthed digital realm opens these ideas to illustration with previously unavailable scope and magnitude. Data-visualization also provokes discussion on the topic of the commodification of the art practice. How does one sell an object that exists everywhere and nowhere, and also that is created by a network of individuals who may or may not be cognizant of their contribution to an artistic work? These are just two interesting questions that I find digital practice in general to be raising that may not have been fully explored within earlier procedural art.

Although improbable, it would be beneficial to distill the conceptual ideologies of procedural art in order to elucidate whether or not its goals were achieved. A primary concern of procedural art is to sublimate the notion of the artist in general. Software art follows suit except in one major difference: we are no longer trying to locate the artist within the dialogue, but the art itself. There is no object to reference. The multiplicity and non-commodity of the artwork stand in staunch contrast to the movement’s conceptual birth within procedural art. In one sense, digital art and specifically software art, enters the new space of the hyper-procedural. The artist has not just evolved to director, but upon completion of the parameters that control the process (coding), actually dissolves to allow other users to create art through the pre-programmed procedure. The literal syntax of the word “program” is clarifying as to the new role the artist occupies within the digital landscape.

The ecclesiastical proverb states, “There is nothing new under the sun,” and within the conceptual framework of digital art, I would be inclined to agree. I do feel that an artwork must be self-aware and be able to critically comment on the structure upon which it is created. But if I may be frank, this strikes me as a bit boring if this is the extent of the art’s commentary. I would not suggest that each “New Media” must go through the evolutionary process in similar fashion to its predecessors, but I do find it problematic to delve into the conceptual space of self-referentiality before there is any canonized-self to reference. Perhaps artistic production, specifically as it relates to digital culture, has entered the feedback loop of media invention and integration, but that should not stop artists from creating significant works within that loop. The notion that a hyper-awareness of the medium will subvert the loop is naive and worse, detrimentally restricts the artist to the realm of the referential. The medium has been exploited, deconstructed, and subverted before it ever became specifically located within artistic and popular culture. Perhaps we stand on the edge of a romanticizing of the medium, which although cliché, would in my view, be a refreshing and

welcomed foray.

My views within this text are not intended to undermine nor subvert the significant works of art that have fallen under the category of data-visualization or software art. My intention is merely to bring to the surface some significant issues that I feel have been minimized in light of current “trends” in digital art practice. I feel that the multiplicity of digital art frameworks and modes of production have ample room for creative and experimental endeavors. The detrimental effects of any fad or trend within any specific practice should always be challenged so that new modes of digital expression can be facilitated and observed.

## NOTES

1 "Process Art" Guggenheim Collection – Glossary – Process Art, 2002. Online. 23 Nov 2002. <<http://www.guggenheimcollection.org/site>>

2 “Process Art” Art and Culture Movement: Process Art, 2002. Online. 23 Nov 2002 <<http://www.artandculture.com>>

3 “Process Art” Art and Culture Movement: Process Art, 2002. Online. 23 Nov 2002 <<http://www.artandculture.com>>

4 “Lisa Jevbratt, The Web Infome Imager” Mapping Transitions, 2002. Online. 23 Nov 2002 <<http://www.altx.com/mappingtransitions/jevbratt.html>>

5 “Prix Ars Electronica” Winner, 2002. Online. 23 Nov 2002 < <http://prixars.aec.at/2002>>

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