Autonomous Systems

Karolis Kosas
Virginia Commonwealth University
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Steven L Hoskins
Primary Advisor.
Associate Professor, Department of Graphic Design

Roy D McKelvey
Secondary Advisor.
Associate Professor, Department of Graphic Design

Tarynn M Witten, PhD
Reader.
Associate Professor, Center for the Study of Biological Complexity

John DeMao
Director of Graduate Studies, Design: Visual Communications

David Shields
Chair, Department of Graphic Design

Dr. James Frazier
Associate Dean of Graduate Studies and Faculty Affairs, School of the Arts

Dr. F. Douglas Boudinot
Dean of the Graduate School, Virginia Commonwealth University

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The ubiquity of digital media provides an unprecedented possibility to redefine the process and methods of design. Through experience from a series of creative projects, I investigate how certain aspects of the web allow for design to attain a degree of autonomy, thus producing results that go beyond anticipation and expertise of the author. Utilizing an unlimited capacity to store the content and retrieve immediate feedback, the designer’s role can be shifted to that of an initiator defining rules and boundaries, from which the process can evolve independently based on the input of users and data. The design output in such conditions is the development of schemes in which the author remains, but is marginalized as a producer – consciously restraining his level of control.

Rather then struggling to add something singular to the bottomless pit of information, the designer is relegated in the role of medium: collecting and recombining the bits of fragmented data into the structures conveying meaning.
Visual communication is a self-sufficient organism capable of adapting and evolving based on the input of multiple sources. Acting in such context, the designer is an initiator, establishing methods and boundaries for the system to establish itself as an independent entity.
As a part of a generation born in the advent of the Internet, I was able to witness how it expanded from a peculiar phenomena to a ubiquitous presence. In just a few decades, a world driven by analog data was gradually redefined by its digital counterpart. Growing up alongside this change, I was aware of two coexisting domains: a virtual and a physical reality—referred to as a “meatspace” by William Gibson in his 1984 novel, Neuromancer. For me both were equally significant and real.

Unsurprisingly, this has spurred my professional interest towards exploring the differences between those two. The Internet, having a seemingly unlimited capacity, is an antipode to physical media, where existence of content must be justified by certain criteria of quality or economic value. The web has become a greenhouse, where the most bizarre, absurd and revolutionary cultural material is evolving. Finding myself in such a seemingly endless frame of reference, I began searching for my identity. Starting from the role of hoarder – stockpiling collections of visual material to infuse my work with the up-to-date trends – I arrived at the realization that “my work” is nothing but a compound of endless influences. I discovered it is the act of compounding that is the most singular part of my process. Moving, grouping and recombining information that translates data – the material – into something that conveys meaning.
In 1969 American conceptual artist Douglas Huebler wrote “The world is full of objects, more or less interesting; I do not wish to add any more.”1 The more recent explosion of content in the information space exposes the statement in a new light. Networked media has a seemingly unlimited capacity to store and disseminate any kind of material. Faced with the unprecedented amount of data, our challenge is not to create more of it but instead “we must learn to negotiate the vast quantity that exists.”2 In this context, a designer is imparted with a new set of objectives. Rather then struggling to add something singular to the bottomless pit of information, the designer should strive to create more value in utilizing and transforming the content that is already out there. Methods of information sorting and processing, traditionally considered beyond the scope of creative disciplines, allows for the recycling of commonplace digital content into a new form of creative material.

In his book, Uncreative Writing, Kevin Golsmith introduces a framework for dealing with language in the context of the digital media. Writing that today “words very well might not only be written to be read, but rather to be shared, moved, and manipulated sometimes by humans, more often by machines,”3 Goldsmith recognizes the extraordinary opportunity for us

1,2 Golsmith, Uncreative Writing, 1. 3 Golsmith, Uncreative Writing, 3.
to reconsider how we approach language. “While traditional notions of writing are primarily concerned with ‘originality’ and ‘creativity,’ the digital environment fosters new soil sets that include ‘manipulation’ and ‘management’ of the heaps of already existent and ever-increasing language.”

Replacing “language” with a more general term “content,” Goldsmith’s ideas can be utilized to understand the shifting role of visual communication in the context of networked media. An ingenious example of “content management” as a creative device is *The Untitled*, a series of photographs by American artist Matt Siber. The author manipulates commonplace city street photographs by removing language from the image and placing it onto an adjacent blank space next to the photograph. The viewer is made aware of the surrounding environment as a structure of multiple interwoven media: an architectural space and language.

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The insubstantial nature of information space yields an environment where content is in a constant flux – flowing from one repository to another, changing its form and appearance. To a large extent, the dynamics of this circulation is dictated by the contribution of its users. Since the crowd is given a power to create, spread and judge the value of the content, the conventional role of designer seems to be shifting: partial control over the process must be relinquished to the audience. Inevitably, a designer undergoes a gradual process of transformation from a role of authority - supervising all parts of the process - to an initiator, defining rules and boundaries from which the process can evolve independently.

Systems based on the collaboration of multiple participants require immense technical resources. The majority of such platforms have been developed outside of academia or the art world. Amazon’s Mechanical Turk (MTurk), a system for harnessing the power of distributed human intelligence, is a perfect example of such a development. “Intended for corporate use, MTurk is based upon the notion that certain tasks are simple for people and difficult for computers.”5 Within the framework of MTurk, people are utilized as computers: an initiator prompts the participants to execute a simple task, usually not requiring any particular skill or knowledge. Output from multiple participants is consequently combined to accomplish a bigger task. The need for such a framework was dictated by the nature of Amazon’s operations: “Amazon was already using the system for cataloging where

5 Koblin, The Sheep Market: Two Cents Worth, 18
barcode information was damaged or unreadable. They had realized that it was often easy for people to recognize the name and artist of a compact disc despite the task being very difficult for computers which have less means to decode the stylized typography and placement. The practical applications of this sort of system were immediately apparent and the progression of technology and business made the creation of such a system seem like the next logical implementation of post-industrialized labor management in the globalized economy.”6

Aaron Koblin was one of the foremost artists to realize the potential of crowdsourcing as a creative strategy. In his piece, *The Sheep Market*, he challenges MTurk’s approach to humans as computers. Rewarding individuals with a payment of 2 cents, he prompted them to draw a sheep that would later be included in the database. The final outcome is comprised from 10,000 images of sheep being drawn simultaneously in one display. Providing both the overlooking perspective of the virtual herd and the recorded process of a single sheep being drawn by an anonymous MTurk worker, Koblin questions whether there is a place for creativity and individuality within the crowdsourcing system. Perhaps it is the whole, rather than the work of an individual matters most.

While a collaborative model of design disregards the significance of a single ultimate solution based on individual expertise, it offers in return a singular collective perspective. In this new paradigm, quality and authority are secondary to quantity and plurality, which maximize a scope of potentially feasible choices. The right to define the “ultimate solution” is given to the audience, thus eliminating the dichotomy between the author and the viewer.
In my own work, collecting and visualizing ambient data from both personal and public sources prompted the initial development of thesis argumentation. Information management has become a pivotal part of my design process.

Putting myself under video surveillance for the period of a week, I recorded footage of my face looking at a computer screen while doing routine tasks: checking e-mail, reading news, etc. The video data was then cropped in regards to the regions of my face – eyes, nose, hair, lips, ears – and sorted by the time of recording. Videos playing in a constant loop were arranged on a grid, reconstructing the exact anatomy of my face. Viewers of the piece are given an opportunity to alter the portrait by choosing the time of recording in the particular area of the portrait.
Through an interactive interface at MeMeMeMe.org, I have constructed an identity as a collection of choices diverging from a set of data provided by the initiator of the system. Instead of giving a finite solution, the interface provides footage and a framework for the user to become a participant.
Identity, in the bureaucratic context, is a rather rigid concept, framed by regulations and law. A visa, for example, is a ubiquitous document declaring permission to its bearer to enter or leave a territory. It relies on a 1" × 1 3/8" portrait photograph to define the visual identity of its holder. A set of rules defining how this photograph should be taken, is dictated by the majority of countries around the world. While originally conceived as a mere instruction of what is and what is not a correct representation of the individual’s face, the directives amount to the materialization of a particular by-product.

On one hand, visa photographs are purely functional, void of any artistic or emotional value. On the other, they utilize artistic methods to create a plausible illusion of real life: images that illustrate the rules of visa photographs imitate amateur photographers’ common mistakes (e.g. “red eyes, oversaturation”) and use actors and scenography to create an illusion of the real. The pictures could be considered as a separate genre of International Bureaucratic Photography – deprived of artistic objectives, yet utilizing recognizable aesthetic and recurring pictorial tropes (e.g. “the muslim woman”).

Instances of “Muslim Women” from 3 different Visa photography regulations
Mining data from an immigration section of governmental websites, I have curated a selection of more than 1000 examples of visa photography. To further emphasize the singular quality of the genre, I have removed the photographs from their original context and rearranged them in a time-based narrative with a monotonous transition. The soundtrack that accompanies the video was recorded from the voice message that repeatedly plays while a customer waits for a connection with the utility company's operator.

The resulting video piece is comprised of content which I did not create, nor sufficiently modify so as to claim authorship. My sole role as designer was that of a curator, collecting and exhibiting content freely available on the web.
Search Query

With the rise of the Internet, a web search query has become a ubiquitous medium bridging user’s intent and result in an instantaneous manner. A single line text-input box – a language-based input device – demands a fragmentation of language into a structure of keywords. This process omits everything that is not necessary to access the desired data. Beyond its original intent of simply retrieving filtered results, language based search devices have been utilized in various artistic contexts. Among numerous precedents *Google Poetics*, a submission-driven online platform that publishes automated *Google Search* suggestions as poems, is perhaps the most compelling example of human-algorithm collaboration aimed towards generation of artistic output. This very model spurred my focus towards the affordances of recombining a keyword query with the corresponding visual data. *Google Image Search* is the perfect medium for this work acting as a narrative construction device.
Self-publishing

A *fanzine* is one of the most prevalent forms of self-publishing. It provides a vehicle for sharing its producer’s personal interests and passions about a particular subject, such as a film or a music genre. The underground fanzine culture manifested itself in the pre-internet era and has embraced a number of principles inherent to digital media:

1. Content is published free of charge or for the nominal cost to support the production.
2. Publications are created by amateurs.
3. Information can be borrowed and reused without much concern about copyright or ownership.

Yet, the physicality of a zine implies a fundamental difference: the process of making and disseminating content in the digital media is effortless compared to what is required in traditional publishing. Employing the principles of self-publishing as a starting point, I developed *Anonymous-Press* (A–Π\(^7\)), a platform capable of streamlining the process of making and distributing fanzines by means of search query and digital archive.

**Function**

Consistent with its mission “to organize the world’s information and make it universally accessible and useful”\(^8\) Google provides a number of outlets, or APIs (Application Programming Interfaces), that allow access to the vast amount of data and sorting devices owned by Google. *Anonymous-Press* utilizes the *Google Image Search* API to transform user’s language-based input into a physical publication. To begin the process, a user supplies a set of keywords that define the topic of the publication. The first eight images

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\(^7\) A–Π - acronym and logo representing Anonymous-Press.com.

\(^8\) Google, *Company Overview*, http://www.google.com/about/company/.
returned from the search become the content of a zine. Upon extraction from the web, the images are placed in the randomly selected positions of the publication’s grid. Additional random modifications of size and position are used to output a unique composition every time a book is generated. Consequently, a publication is added to an online library, where it is accessible for a general audience to view and if desired, order physical copies. Any publication can be translated from a digital to an analogue form upon its purchase. A printed book is mailed to a designated addressee.

The overall operation of the system can be framed into a simple set of rules:

1. A–Π is a self-sufficient publishing platform.
2. Every publication by A–Π is a collaboration of an individual and a database, i.e. Google Image Search.
3. A human author defines the topic, but the content and the form is generated from the most relevant images, defined by Google’s algorithm.
4. Each publication is added to a public library.
5. Items in the library can be printed on-demand and are available to everyone for a small fee covering shipping and production costs.
6. Publications are presented to public in chronological order.
7. A–Π does not own, nor is responsible for the content generated by its users.
The mechanics of A–Π can similarly be split into four major stages:

1. Retrieval of images based on user’s search query.
2. Automation of the design process.
3. Storage and access to the archive of publications.
4. Transformation from a digital to an analogue publication.

Working within these rules, the platform is capable of generating an infinite number of publications, based on the input of its users. The designer, in this case, facilitates the function of the system, without altering or otherwise influencing the meaning of its output. In addition, he is removed from the design process, as soon as the system starts running.

Questions

Prior to the launch of the system I was interested in the possibility of removing the designer from the design process and what value it might create. Even more, I was eager to define the threshold of autonomy. What are the indications of a self-sufficient system? Can such a system move beyond its original intent?
Observation
Within four months of operation, A–Π has facilitated the generation of more than 11,000 publications. As of this writing, a total of 20,849 words have been used in the book titles, 8,816 out of which have been unique.
Unsurprisingly, keywords related to sexuality are among the top 10 words used to generate books. Supporting the prevalent notion of Internet as an ideal environment to spread illicit material, it also suggests that the anonymity provided by the system allows for otherwise restrained curiosity to be contented.
Yet, a more complex phenomenon is revealed by looking at a publication as a combination of users’ intent and the outcome generated by the algorithm. Looking at the results of the project this way reveals a taxonomy based on a qualitative rather than a quantitative observation. The whole of the publications can be categorized into five common types.

I. Definitions
Publications intended to illustrate an object or a definition based on one or more keywords – usually commonplace nouns such as “Banana” or “Rectangle” – they encompass an object’s visual representation on the web.
II. Narratives
Generated by a statement that implies a story, e.g. “Robbery Turns Into Orgy,” “How I Met Jesus.” Due to the narrative qualities of the title, a set of images generated by an algorithm is viewed as a linear sequence.
III. Statements

For example “We Demand to Be Taken Seriously” or “No Is Shorter Than Yes.” In this particular case visual content plays a secondary role, acting as a banner that supports or fills in the ambiguous points in the statement.
No Is Shorter Then
Yes

Now Will Not Be With
Us Forever
IV. Concrete Poetry
Using Unicode symbols (e.g. ♫, ☺) or creating abstract compositions from basic glyphs (e.g. space, (, l, /) users use language as a drawing device. While the majority of such queries fail to return any image results, they remain saved as attempts without result.

V. Predatory User Behavior.
Instances of predatory user behavior manifested through attempts to hack the system by inserting a malicious code in place of the title. If read aloud, the code – originally intended to destroy or override – could be perceived as a poem containing singular rhythmical structure.

Godany Stattgeschichten;
If (l=1) Waitfor Delay ‘00:00:01’--
On All Select 0x31303235343830303536,
0x31303235343830303536--

Godany Stattgeschichten Union All
Select Null,null,null,null,null,null,null
null,null,null,null,null,null,null
null,null,null,null,null,null,null
l,null,null,null,null,null,null--

Examples of code, aimed at overriding A-Π
The preceding instances typify a range of possibilities for the users to utilize the algorithm as a creative device. Since the rules of the system merely define its mechanics not its goals, it is solely the users who outlined the boundaries and expanded taxonomy of books. Having little control over the visual side of the publication, the users are forced to utilize language as their only design tool. The process, thus moves into the realm of literature, where a narrator tells a story and leaves its visual representation to evolve independently in the imagination of his reader.

The extent to which narrative qualities can emerge in the publication directly correlates with the user’s effort to create them. In a common scenario a user would approach the system with a simple, single-word query to become acquainted with its general mechanics. From there he can gradually increase the complexity of the input until a desired result is achieved. A narrative can not emerge independently or by accident.

The manifestation of a statement in A–Π is impulsive. Most frequently, users declare a position, with little regard towards its visual outcome. Observing the sequence of submissions to the system it seems unlikely that users would change or fine-tune their input for a more appropriate set of images. The main goal in such cases is to utilize the publication’s cover as a platform from which other anonymous users can be reached.
In some cases, a dialogue between the users can emerge. One particularly telling example is an exchange of opinions using book covers as communication devices:

A: *It is a truth universally acknowledged*
A: *ANUS BREATH*
A: *CUNTSFORJESUS*
...
A: *He Raped My Broke Pussy Over And Over*

B: *Why So Vulgar All Time*

A: *Womenarecunts*
A: *Censorship Ruined The Fun Game Of Zines*
A: *I Understand The Temptation But Hell No*

B: *Or Possibly Censorship Saved It*
B: *You Seriuosly Have Nothing Better To Do*

A: *Vulgarity For The Weak Women*
...

Transition to Physical Media
Since the essential condition of transforming the publications into a physical form entails paying for the production, the amount of printed books is minuscule compared to that of their digital counterparts. At the time of writing the ratio is 155 to 11.342.

Chronological list of books printed in A-Π.
Undoubtedly, the required monetary contribution to acquire printed publications suggests that users consider them to be in some way superior to the others. For instance, 34 out of 155 printed books had their author’s names in place of the title. While such figure in the context of *Anonymous-Press* is quite ironic, it also suggests that users perceive the platform as a cheap version of *Blurb, Lulu* or other on-demand printing services that give artists a cheap, no-frills way to publish their work.

Ownership

Acting in an environment substantially different from the traditional forms of publishing, A-Π imposes a new approach towards the concept of ownership. The collaborative nature of the platform establishes the following set of rules:

1. The content in the publications is not owned by their authors, nor by the platform.
2. Although generated by people, the publications ultimately have no authors.
3. Neither the contributors, nor the owners of the original content retrieved by *Google Image Search* benefit from their input.
While “online, we understand that people own platforms, not the content built by their users,” it is inevitable that even the slightest contribution will increase the platform’s value, thus benefiting the owner of the platform, i.e. me. A-Π is thus worth only as much as the contribution of its users. Although output is voluntarily created by the crowd, the users cannot benefit from their input.

To put it in words of one of the users:

“Anonymous is one more steeling device under the cover of pseudo artistic creation.

No signature, ye, all anonymous, ye right, all anonymous, oh ye, just the creator of this scam making sure his name is on top of this ponzi stuff.

Fuck you

Sent from my iPad”


10 Jean-Louis Atlan, e-mail message to author, March 20, 2013. Atlan is a world-renowned artist and photojournalist. According to his biography “in 40 years of photojournalism Jean-Louis Atlan has covered politics, show business, war, disaster and recovery. His photographs document potent moments in some of the most important events of the last half century.”
There are no boundaries to inhibit the content’s rhizomatic flow into the other platforms such as Facebook and Tumblr. Manifesting their authorship through social media, users remove anonymity, thus becoming co-owners of the content created within Α–Π. Undoubtedly, any content released to the web can and will have simultaneous owners. Ownership in digital media is always conditional and perhaps can be best understood as an infinite compound of inputs, which in case of Α–Π consists but is not limited to:

1. Owners of original images.
2. Google. Owners of the image retrieval platform.
3. Owner of Α–Π.
4. Authors of a search query.
5. Users claiming a publication in the social media.
6. Users’ “friends” sharing their publications.

While the fury of users who find their original content published disregarding their interests is absolutely legitimate, it should not be overlooked that they are merely contributing to a part of the overall composite. Being reused is perhaps a fair price to pay for the potential yielded by web-based media.
Context

The capacity of autonomous systems to spread into the other channels on the web is perhaps its most defining feature. In five months of existence A-Π has been accessed by 12,841 unique visitors from 216 different referral sources. It is inevitable for the source to contextualize the user’s approach towards the system. For instance, French/American photography blog *Le Journal De La Photograhie* emphasizes the system’s capacity to create narratives: “It is the concept that makes each edition striking, the way that seemingly random information becomes part of a narrative when organized sequentially, around words of any language, even letters themselves. It is at once liberating and absurd, Dada to its core.” Or *It's Nice That*, a graphic design blog that appreciates the system’s potential in redefining the traditional printed zine: “Think of it as the online photocopier you never had, just waiting for you to churn out fanzines on John Ruskin, inter-dimensional travel or whatever else your niche interests require. And they keep saying print is dead.” Anonymous-Press or any other participatory system can not be viewed independently from its context. This content gives rise to a system’s evolution and adaptation as it emerges into the environment.


The following ongoing creative projects delineate a range of possibilities to further explore and utilize the concept of autonomy in my future design practice.
CAPTCHA\textsuperscript{13}, a challenge-response test invented at Carnegie Mellon University is a reverse version of a \textit{Turing test}, allowing for a computer to identify if its user is human. While there exist multiple variations of CAPTCHA, a common one challenges the user to identify a randomly distorted word or a group of characters. If the recognition is successful, the algorithm confirms the user is human by permitting access to the online resource. Originally designed to protect websites from automated spam bot attacks, CAPTCHA exploits computers’ limited ability to decipher distorted text and has spurred multiple investigations drawing on the capabilities of human and artificial intelligence.

One particularly interesting application is \textit{reCAPTCHA}, a crowd sourcing system by Google. reCAPTCHA expands the function of CAPTCHA employing user’s input for the digitalization of scanned books. Rather than providing a random word, the algorithm picks a random pair of words from the collection of scanned publications. While one of the words has already been identified by previous users, the other one is unknown. Upon a regular sign-up procedure a user is challenged to identify both. If the user’s input matches the meaning of the

\textsuperscript{13} CAPTCHA stands for Completely Automated Public Turing Test To Tell Computers and Humans Apart.
known word, the system confirms that the unknown is identified correctly as well. Conducting a seemingly effortless procedure, myriads of unaware users contribute to the expansion of Google Books library. Drawing on ingenuity of reCAPTCHA, I decided to invert the process.

While digitalization of books allows for an effortless distribution and access, it also alters the way we perceive its content. Looking from a structural point of view, a digital book is closer to a hyper-text document than its material analog. The transformation from physical to digital allows for the information within the book to be searched and parsed, thus augmenting the conventional, somewhat linear process of reading with a keyword-based search, bookmarking, sharing, etc. In Books for Humans, an ongoing publishing experiment, I utilize the text manipulation algorithm originating in CAPTCHA to distort the contents of the whole book, so that the linearity of reading could be preserved. Making printed editions of books comprehensible exclusively to people, Books for Humans is a luddite initiative proposing an alternative perspective in the euphoric world of Kindles and iPads. While the process of digitalization is inevitable, I believe there is a value in preserving a book as a cold medium, where information is to be uncovered in a snail-paced way.

The sky above the port was the color of television, tuned to a dead channel. "It is not like I'm using," Case heard someone say, as he shouldered his way through the crowd around the door.
The immediate retrieval of data afforded by high-bandwidth Internet connection has become a ubiquitous standard. Yet, merely a few decades ago, it involved a lot more waiting, a process also known as Loading. A common model of loading image data involves a systematic retrieval of pixels in a reading-like pattern, from the top-left to the bottom-right corner of the image. While hardly noticeable in a high-bandwidth connection, the process of gradual unveiling can significantly change the perception of the image. A particularly interesting transformation takes place when the loading process avails itself to modify pornographic imagery.
Pornography, one of the major industries on the web, utilizes photography in a quite straightforward manner: exposing nudity or sexual acts. The industry simply assumes that its audience hardly cares about any narrative beyond that. Yet, when a web browser’s image retrieval process is delayed, a user, waiting for the appearance of actual pornographic content, unwillingly notices secondary details: interiors, furniture, models’ facial features, haircuts, etc. Employing the limitation of technology, I manifest a secondary layer of information in a curated album of pornographic images entitled, *Loading*. Saving porn imagery in the process of loading, the retrieving sequence defines how much of the image will be revealed and how much will be concealed under a grey surface of unloaded pixels. The act of saving in this context is an equivalent of photographing; a collaboration between the user – the photographer – and his image capturing device – camera or a browser – to organize the pixel forms in the image. While initially intended to seduce and allure, the alteration of the images removes any obvious hint to the original nature of the photos. Instead, *Loading* showcases accidental details, including, but not limited to: chef’s hat, American flag, persian carpets, kitchen cabinets, ski mask, high school lockers, christmas tree and beach towels.
The two years of creative exploration in the Design / Visual Communication MFA program have primarily served as a segue for my understanding of what design is. Starting with the idea of design as a finite solution, I have gradually moved towards a generative approach. While they may appear polar opposites—the former being based on a subjective individual expertise and the latter supported by a multiplicity of feasible solutions; in network-based media they are interwined parts of a single process. Any algorithm or rules-based system is as valuable as its users intend it to be. Therefore, the biggest creative potential in networked media lies in utilizing arbitrary user choices as the systems’ input. Distancing myself from taking decisions that directly influence formal or conceptual aspects of design outcome, I have put myself in the role of mediator between the users and the systems.

Of my creative projects conceived or initiated within the MFA program, Anonymous-Press most comprehensively manifests removal of designer from the design process. While A-Π is bound by a set of rigid rules, it is impossible to fully anticipate its possible uses before the system starts running. The nature of the “publication” as the design
outcome - has departed from a fanzine to a Dadaesque narrative and ended up as a medium of communication and a piece of concrete poetry. The restraints seem to facilitate subjectivity, putting a user’s focus on a simple task: determining the title of the book. Acting within such narrow conditions users’ personalities become manifest simply by finding a way around the system. The resulting interactions blend objective rationality of the rules and subjective intentions of individuals. The role of designer here is one of archivist, who utilizes an algorithm to bind subjective and corresponding objective data into a uniform entity - a book. By taking a passive stance, the designer allows for the archive to evolve independently, thus generating outcomes that could not be subtracted from its initial code. It seems challenging to consider a design process operating autonomously of its originator and its initial goals as a legitimate, applied practice beyond artistic experimentation. This is essentially because the designer is traditionally expected to produce concrete output aimed at a defined audience. On the web, however, it is not uncommon for content to exceed the boundaries of its original context “gaining a large non-art-related audience en route to online virality. These audiences share images and videos initially conceived as artworks without any concern for authorship, context, or property – without any particular awareness that they are engaging with ‘art’ at all.”

Acting in the realm of networked media, the designer is often dealing with an “accidental audience” that

occupies positions of “viewer and creator simultaneously.”

Removing oneself from the design process, the designer becomes unaccountable for the output of his system. Since output produced by user-system interactions is beyond the control of the designer, it might be argued that such process provides a comfortable pretext to avoid stating a direct position. Indeed, looking from a historical perspective, most influential pieces of art and design are inseparable from the principles and the values of the author. Yet, in the modern context, design output exists in a rhizome of information space. Its importance and value is defined by fluctuating relationships and connections with the context. In this paradigm, static visual messages can hardly compete for users’ attention with the interactive experiences. While the traditional design object is supposed to transfer meaning in a concentrated visual form, an autonomous system is more of a container carrying a potentiality to be filled with meaning. The designer’s responsibility is to establish circumstances under which this reaction is likely to occur. Thus, looking at the produced outcomes of such processes can provide only a limited understanding of the system and its potential. To fully evaluate the significance of an autonomous system one must consider its underlying mechanics, the existing outcomes as well as its capacity to evolve, as interwoven parts of a single whole.

Finally, a significant challenge involves teaching such processes in the academic environment. The prevalent model of design education based on a rational problem solving process, is irrelevant in the context where problem and solution are dynamic variables. A possible methodology

might be developed from the series of experimental workshops by Dutch group Conditional Design. In their method of Human Programming, designers define the rules and consequently execute them in a series of sessions. For instance, The Beach, one of the group’s workshops, utilizes participation to simulate a naturally occurring form of self-organization: “entering the beach on a sunny day you will look for an empty place and position yourself right in the middle.”

Using a single rule: “Each turn, find the most empty space on the paper and place a dot in the middle of it,” participants are capable of generating an infinite amount of unique visual outputs.

In a subsequent step the rules could be modified to allow a certain degree of freedom in the participants’ behavior. Comparison of restrained and open systems could provide a significant precedent to understanding how rules and users’ choices could be employed as powerful devices determining the process of design.


In their paper Enrique Estelles and Fernando Gonzalez provide so far one of the most cohesive definitions of crowdsourcing. According the authors it can be defined by the following characteristics:
1. There is a clearly defined crowd.
2. There exists a task with a clear goal.
3. The recompense received by the crowd is clear.
4. The crowdsourcer is clearly identified.
5. The compensation to be received by the crowdsourcer is clearly defined.
6. It uses an open call of variable extent.
7. It uses the Internet.
This particular paper has been highly benefi cial in understanding fundamental mechanics and taxonomy of systems based on users participation.


Drawing on examples and techniques of contemporary writing Kevin Goldsmith provides a manifesto for dealing with language in the digital media. Among his many ideas, the notion of content management as a creative device has been particularly signifi cant to my research and creative practice. Suggesting that organization and recycling of content is as legitimate effort as is struggle for originality, Goldsmith has informed and supported my notion of designer as a medium between the system and its input of its users.


This online commentary deals with the issue of ownership and authenticity in networked media. In his essay Paddy asks “now that we can reproduce and remix virtually any picture, is there any point in trying to trace those images to a source?” Turning to recent Net Art aesthetic’s move towards the main stream audience author argues that the only way to ensure that your aesthetic is not going to become used by others is to never share it with anyone. If you allow your presence to be seen, it can and will be consumed.


Johnson, one of the most prominent evangelizers of emergence theory, establishes a multi-faceted outlook on how it functions on micro and macro scales. His book pin-points the common patterns of self-organization prevalent everywhere from slime mold to urban planning and financial markets. Johnson also elucidates a simple truth: emergent patterns are rarely inferable from the original rules. Therefore, the same rules each time will amount into a different result.

In his MFA thesis document Aaron Koblin, one of the most prominent contemporary data artists, introduces the rationale behind his crowdsourcing experiment *The Sheep Market*. Koblin's inquiry is primarily concerned with the role of individuality in the whole of automated system. Drawing parallels between modern day crowdsourcing systems and assembly line-driven manufactories of the Industrial Revolution, Koblin shares insights on how the crowd can be utilized and motivated to be a part of the bigger plan of designer - the initiator.


Among a series of generative design experiments, Dutch design group Conditional Design is exceptionally significant in providing a theoretic framework explaining and supporting their design process. Instead of creating the final outcome, Conditional Design uses “logic to design the conditions through which the process can take place.” The resulting “formations” blend objective rationality of rules and subjective intentions of individuals. The methodology suggested by Conditional Design might be the very first attempt to understand and utilize principles of emergence in the practice of graphic design.


In his book James Surowiecki lays out three essential conditions “that are necessary for the crowd to be wise (cognition, coordination, and a particular kind of decentralization).” Moreover, the book is important in defining the singular qualities afforded by crowdsourcing systems: a crowd can never generate one ultimate answer. Yet it can generate pieces, that, when averaged, might be much more accurate that an answer of an expert.


Troemel, an Internet artist and curator, is mainly concerned with the Internet as an environment for producing and dispersing art. Among his many ideas, the most pertinent has been Troemel's notion of decontextualized art. Contrary to a conventional gallery or museum setting, art in the networked media is capable of going beyond its intended context, thus simultaneously being both art and non-art object.


In this essay Brad Troemel analyses *The Jogging* (thejogging.tumblr.com), a submission based online art platform, as a precedent of a rising new paradigm in the consumption of art. He suggests that online audiences “share images and videos initially conceived as artworks without any concern for authorship, context, or property – without any particular awareness that they are engaging with ‘art’ at all.” In his essay Troemel defines random recipients as an “accidental audience” that occupies both positions of viewer and creator simultaneously.