

**Utilities of Fiction:  
Inside and Outside of the Brain in 'The Flocking Party'**

by

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Thesis Submitted in Partial Fulfillment of the Requirements of the Degree of  
Master of Fine Arts  
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Ann Arbor, Michigan  
April 26th, 2006

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Dedicated to my loving life partner, Andrea Gaydos Landau, and to our future children

Special thanks to Heidi Kumao, Nick Tobier, Sheila Murphy, and Malcolm McCullough

Thanks also to Timothy Day, Andrea Gaydos Landau, Frank Landa, Jamie Cope, John Siegel, Sadie Wilcox, Zack Denfeld, Gabriel Harp, Alison Byrnes, Brad Smith, Phoebe Gloeckner, Andy Kirshner, Brent Fogt, Toby Millman, Bobby Campbell, Ben Van Dyke, Anna Perricci, Carrie Morris, Kat Hartman, Rich Pell, Michael Rodemer, Hannah Smotrich, Jim Cogswell, Robert Gero, Holly Hughes, Amy Harris, Janet Hinshaw, John Gaydos, Kenton Sem, Jacob Richman, Jason Yoh, Sreshta Premnath



from page 7 of "The Flocking Party"

"The Flocking Party" was largely completed before these chapters were written, it would be helpful to experience the story before reading on:  
[THE FLOCKING PARTY](#) see CD ROM

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**ABSTRACT:** "Utilities of Fiction" discusses the science fiction project, "The Flocking Party", an online, multimedia story that is set in the future. "The Flocking Party" is a creative research project that activates the fertile territory between cognitive evolution, media theory, creative research, and science fiction. The four distinct chapters or "fictions" presented here provide diverse interpretations of the project. This network of interpretation is traced with biological and environmental metaphors for understanding how representation functions in and outside of the brain. A tour of neural structures is correlated to the effectiveness of stories and new media for building new perceptions. Concluding the tour is a proposal for mind-like media that produce more useful representations. The four chapters, *Convenient Fiction*, *Environmental Fiction*, *Science Fiction*, and *Perceptual Fiction* elucidate the motivation, conception, process, and distribution of "The Flocking Party". Combined, these chapters form a set of associations and intersections that provide a map for exploring the project's creative utilities.

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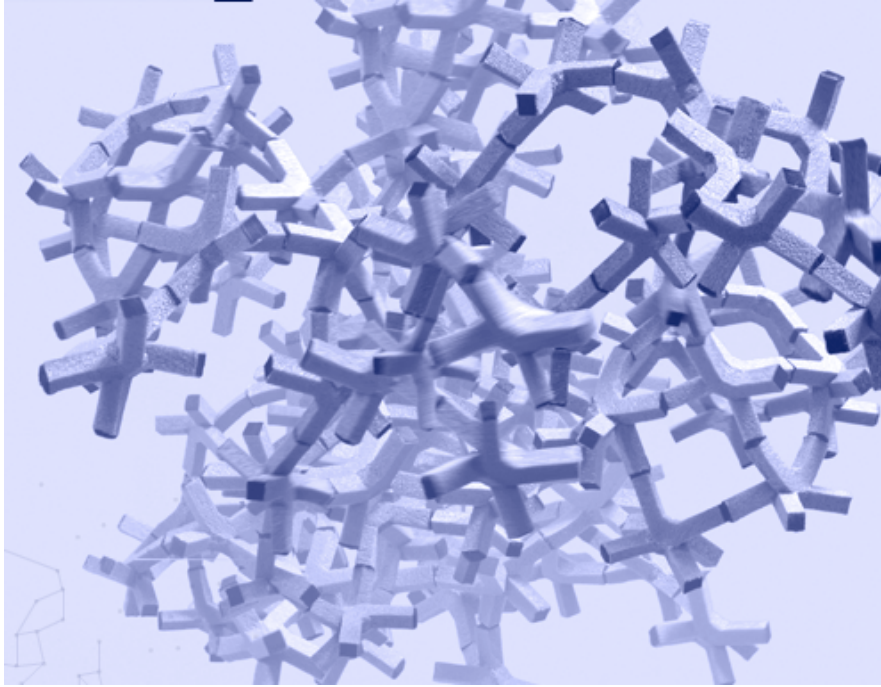
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## Chapter 1

### Convenient Fiction: Useful Truths

- The Flocking Party
- Getting there
- Internal Representations
- Connected Flocks

## The Flocking Party



from page 28 of "The Flocking Party"

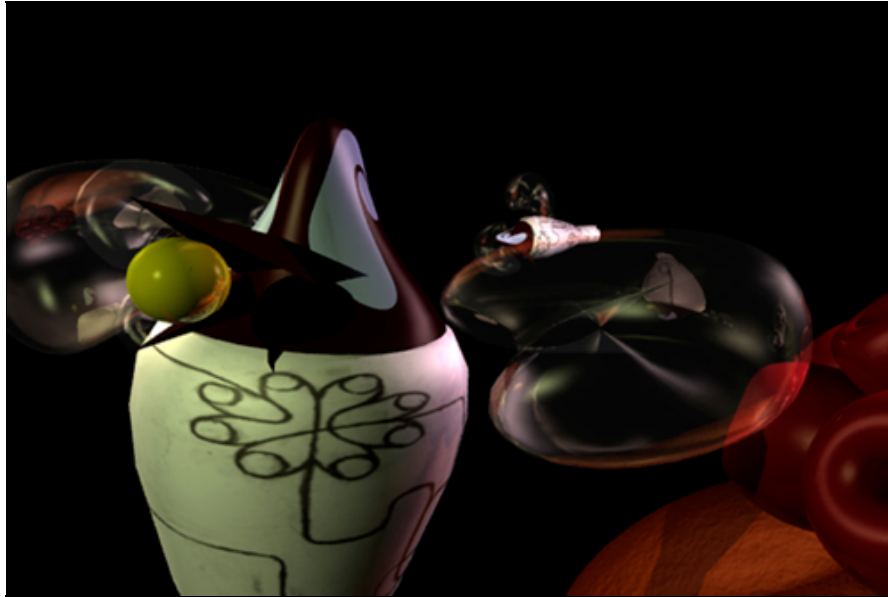


from page 8 of "The Flocking Party"

The online narrative, "The Flocking Party" (Landau), creates a breeding ground where a flock of diverse perspectives converge. Set in the future, the science fiction story rearranges our familiar perceptions of politics, science, environment, and relationships. It weaves together conflicting viewpoints, specifically those of a protagonist researcher and a future political party. More specifically, "The Flocking Party" investigates analytic scientific research through a subjective and poetic interweaving of voices. The simultaneous voices entice the reader to reconcile opposing concerns throughout the story. Readers aren't provided with exact answers. Instead, they are entrusted with problems that a global culture might face: conflicting ideologies, renegade technologies, and invasive species. Each reader, for example, interprets the role of invasive species in their own way. To some they seem sinister, to others, like a fearlessly evolving system.

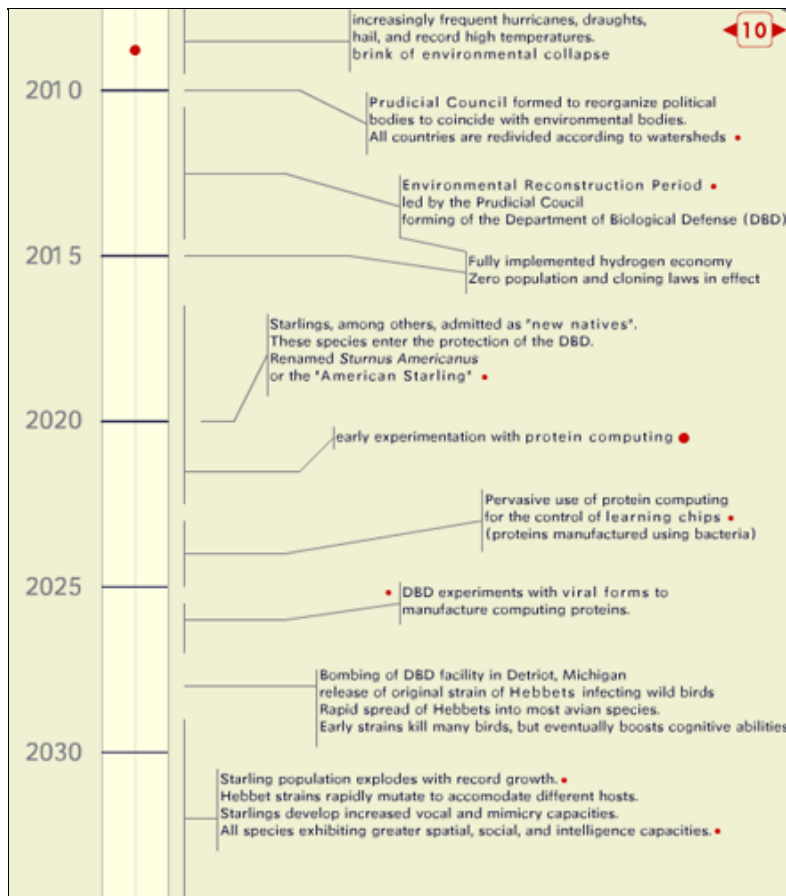
"The Flocking Party" most often utilizes this concept of invasive species as a metaphor. Invasive species, by definition, inhabit territories where they don't belong, but they are also like pioneers, the foreign elements that stimulate the evolution of an invaded territory. "The Flocking Party" explores this theme in several forms. Humans, birds, viruses, and ideas cross thresholds into new continental and mental territories, respectively transforming their landscapes and producing openings for more invaders/pioneers. This is not unlike the way that the story was created. Each conceptual layer of the project built upon the others to create an interwoven configuration.

## Getting there



still from animation, "EMPTY", by Chris Landau, 2001

In my earlier visual work, "Metacology", I also explored the idea of evolving systems. "Metacology" was a kind of mythological ecosystem, set in an immeasurably distant future. This project was an odd duck, simultaneously fine art, science fiction, and mythology, which utilized surreal sorts of symbolism. But none of my peers could understand what my symbols meant. I did not even understand parts of it myself, because I was constantly reinventing it. Through my work on "Metacology" I realized that paradigms that help society to survive and to flourish, are ones that need to constantly evolve or adapt. Rather than making a living world fit into a universal mold, a paradigm of life would change with the landscape, constantly adjusting to avoid becoming obsolete. It would make room for invasive species, and even rely upon them. I thought that by creating a visual mythology that I could help develop this sort of paradigm, but the change occurred mostly in myself. My constant reinvention of the surreal species' relationships and symbolism shaped my way of thinking about the world, but I had trouble sharing this change.

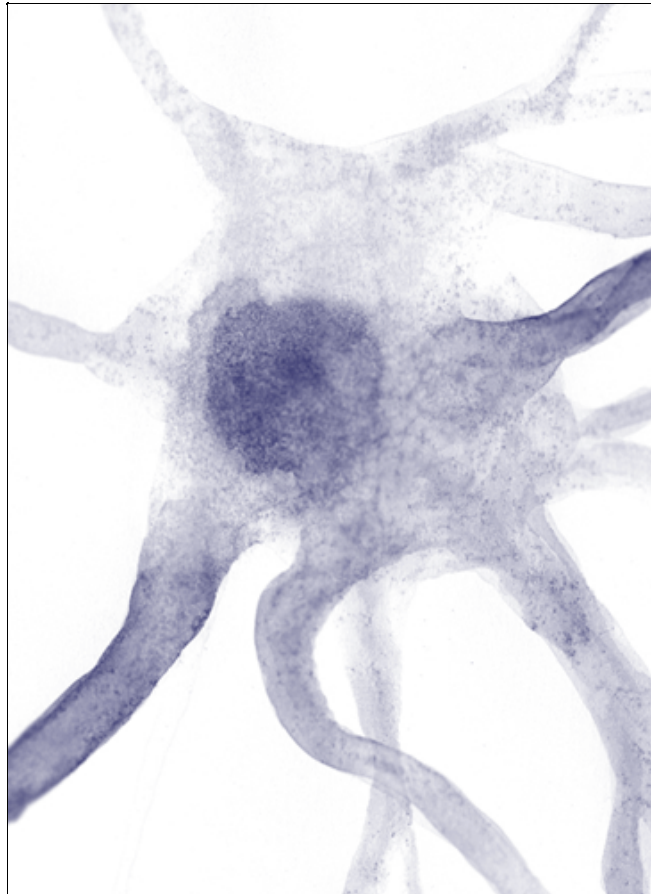


A few years ago, after scrapping “Metacology”, my wife checked out a book for me called, “A Thousand Years of Nonlinear History” by the eloquent Manuel DeLanda (DeLanda). I was immediately engaged by the ideas and bought a copy of the book for myself. He retells the last thousands years of human history three times through the lenses of geography, biology, and culture. I soon found that DeLanda was decoding ideas from “A Thousand Plateaus”, a book by Gilles Deleuze and Felix Guattari (Deleuze). Needless to say, I promptly purchased their book as well, and DeLanda's interpretations catalyzed my digestion of Deleuze and Guattari's protein-rich musings. DeLanda constructed a portable model, much easier to use than their sprawling and rhizomatic “body-without-organs” (Deleuze 149). DeLanda is an expert navigator of their landscape of ideas. He developed a succinct and useful way of interpreting the many different aspects of their work, a map of the territory that he carried around in his head. He grounded their ideas in the current science of complexity and systems theories. But it was the portability of his model that struck me most (Kaplan, *Cognition* 181). I wondered how I might create such a vivid and accessible model. This was the first step towards conceiving “The Flocking Party”.

## Internal Representations

*Take them with you.*

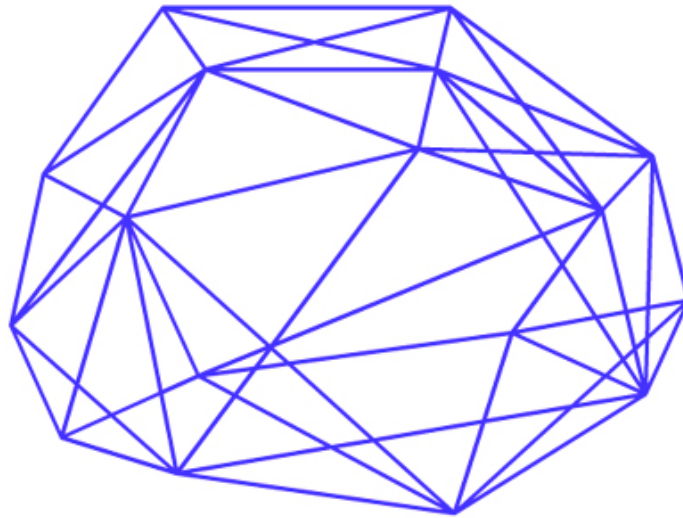
More recently, I encountered a similar model that clearly explained the value of portability. This model has had a great amount of influence on my project. It was the cognitive psychologist, Steven Kaplan, who introduced me to a portable model of human cognition in his course, "Neural Models: Mechanisms of Learning" (Kaplan *Neural*). His model of human learning is neuropsychological. He proposes many rich explanations about our neural circuitry and its general behavior, which is all based on how an information-reliant organism might evolve. Kaplan explained, for example, why humans have preferences for particular environments. We seem to be attracted to legible, mysterious, coherent, and complex scenes (Kaplan, "Preference" 587). He explains that these preferences reflect the environment's potential to provide our genetic ancestors with new information. Consequently, we too tend to seek fresh information, because we need to know about our inhabited domain's friends, foes, predators, or resources. Although, gaining this information could be treacherous. Straying too far from what's familiar to us might mean that we find ourselves without a map. (Kaplan, "Preference" 590)



from page 15 of "The Flocking Party"

Evolution has developed the human mind into a kind of tethered information-seeking device. Fear of the unknown pulls it inwards toward familiar territory, but this eventually gets boring to our inquisitive minds, bouncing us back away from the familiar. So we move in the direction of unknown terrain to explore and gain new knowledge, only to be pulled back "home" to lessen our confusion. This cycle of familiarity, boredom, exploration, and returning home with new knowledge demonstrates how we've evolved to live and learn in complex environments. This is how the human mind builds updated convenient fictions or "cognitive maps" that help us to navigate our landscape. It is no coincidence that "The Flocking Party" became a sort of narrative environment, where, unlike a book, the reader chooses their own path and, unlike most movies, they can go through at a comfortable pace. It is a cross between a book and a movie. It is a narrative structure that is flexible to its reader. It would be misleading, though, to say that the reader is not directed in any way. I paid close attention to the balance of coherence, mystery, legibility, and complexity, Kaplan's keys to environmental preference.



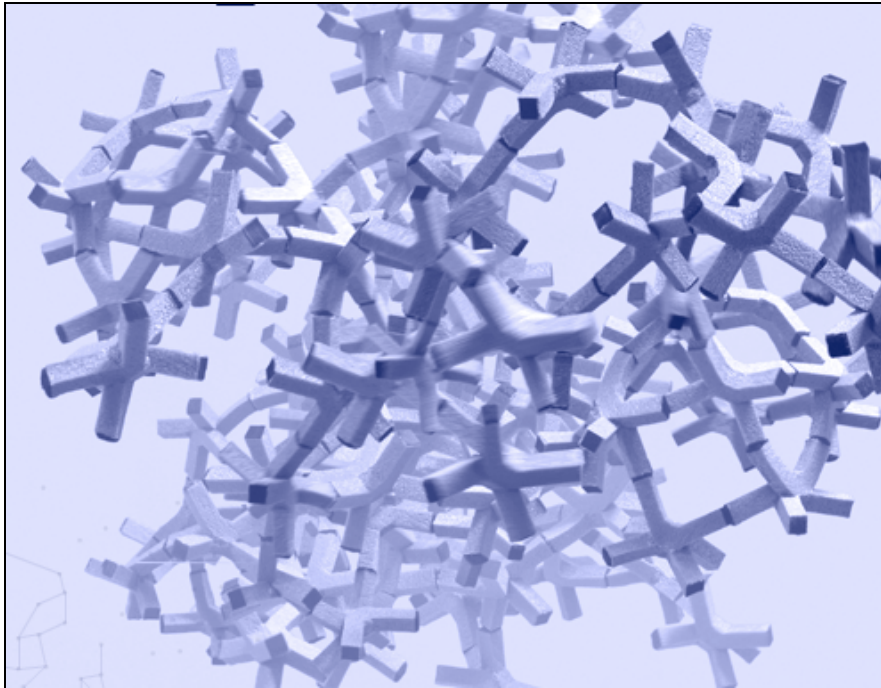


interpretation of Hebb's cell assembly

The neurological basis for Kaplan's theories stems from the founder of neuropsychology, Donald Hebb. Hebb believed that changes in neural structures occur when any kind of learning happens, be it perceptual learning (like tasting the difference between two wines) or learning as we commonly think of it (reading, writing, arithmetic) (Hebb 17). The strength and order of connections between neurons shapes our cognitive structures, which affects how the neurons will fire the next time. Neurons are always causing other neurons to fire through long chain reactions. Hebb would have referred to a circuit of these connections as a cell assembly (Hebb 69). These circuits are representations, stand-ins, receptors of things and ideas that are built from experiences. When a cell assembly is activated, its participating neurons activate one another in a kind of syncoated succession, reverberating as a networked loop. I was very attracted to the idea of a structure that was like a network and a spinning top. The activity that goes around and round spins outward to stimulate other connected cell assemblies, giving the structure a "felt" presence in the mind.

Both perception and cognition are built on this basic unit of the cell assembly. When a cell assembly has enough stimulation from the senses or from other cell assemblies, it "perceives" them, by turning on. In this model, unlike many models of artificial intelligence, information does not move around from place to place in the brain. Rather, representations are activated within set architectures, and activity is passed along from structure to structure. Kaplan also calls groupings of these cell assemblies "internal representations" (Kaplan, *Cognition* 38). They are like recall devices for things in the world that turn on, if there is the right stimulation. And they are all located in your head, which is hard to lose. These useful and portable models are used for perception and cognition. Since their activation is based on statistics, your perception of an event or situation is reliant on how the connections are previously structured. "You" don't have much control of where the activity will spread. An idea may creep up on you. Leaving home, you suddenly remember that your keys are on the dining room table.

## Connected Flocks



from page 24 of "The Flocking Party"

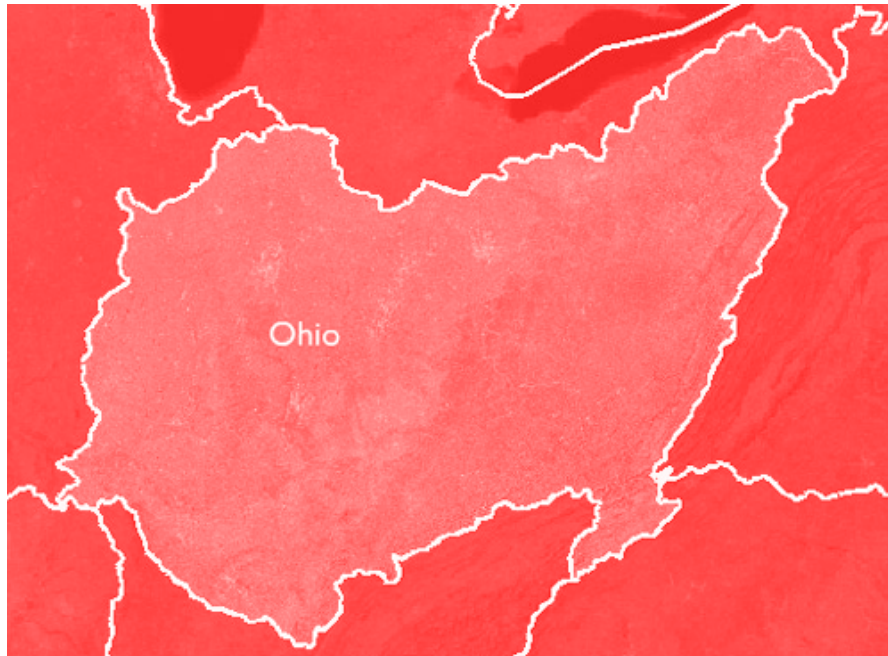


from page 19 of "The Flocking Party"

Most of the neurological examples in “The Flocking Party” are inspired by the visions that Kaplan’s theories conjured in my own brain. It is why I chose the bird’s brain as the main subject of my story. Their brain serves as a conceptual arena for the formation of different kinds of representational structures. Both conceptually and through drawing I examined what the representational structures might look like. These representations connect to internal representations in two ways; they create new internal representations in the viewer’s mind and also make conscious their existence.

One such representation is “Hebbets”, a synthetic virus that infects the birds’ brains. It is named in honor of Donald Hebb (Landau 2). Producing proteins that expand the number of connections amongst neuron cells, it increases the intelligence of the birds and subsequently the flocks. The virus does not destroy the cells that it infects, but their structure and function is changed. They can make more connections. The ability to make more connections has a positive affects on the survival of the flock. A second example of Kaplan and Hebb’s influence is the “maya loop”, which is a fictitious example of Kaplan’s cell assembly (Landau 19). “Maya loops” were a way of succinctly introducing the ideas of the internal representation and the convenient fiction without a great deal of explanation. Unlike the tour that we’ve just taken of the cell assembly and the internal representation, the reader of the story is given clues, which invite them to explore these definitions. Some of the clues are in the protagonist’s notes about them and some are given in their name, “maya loops”. “Loops” conveys the image of a cyclical, neuron circuit, and maya is the Hindu notion of reality as if it were only a dream.

“The Flocking Party” brings varying images and concepts of neurobiology and aesthetics together, making new neurological connections between them. It is a work of fiction that reconfigures the connections between these internal representations of the world. In order to do so, it starts with examples that are familiar, activating well-learned representations. One of Steven Kaplan’s mantras for conveying knowledge is “*starting where they’re at*” (Kaplan, *Cognition* 184) Unlike my creative work before it, “The Flocking Party” earnestly seeks to do this by using recognizable examples that activate people’s consciousness of their own internal representations.



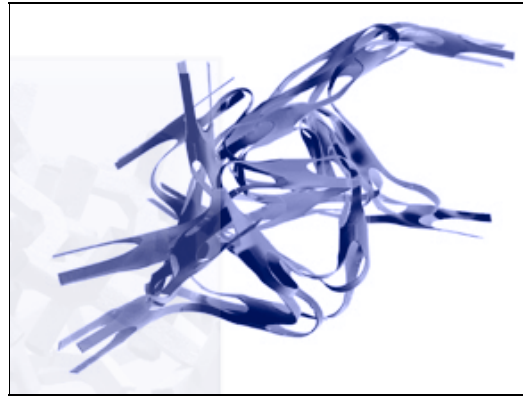
## Chapter 2

### Environmental Fiction: Stories and Cognitive Maps

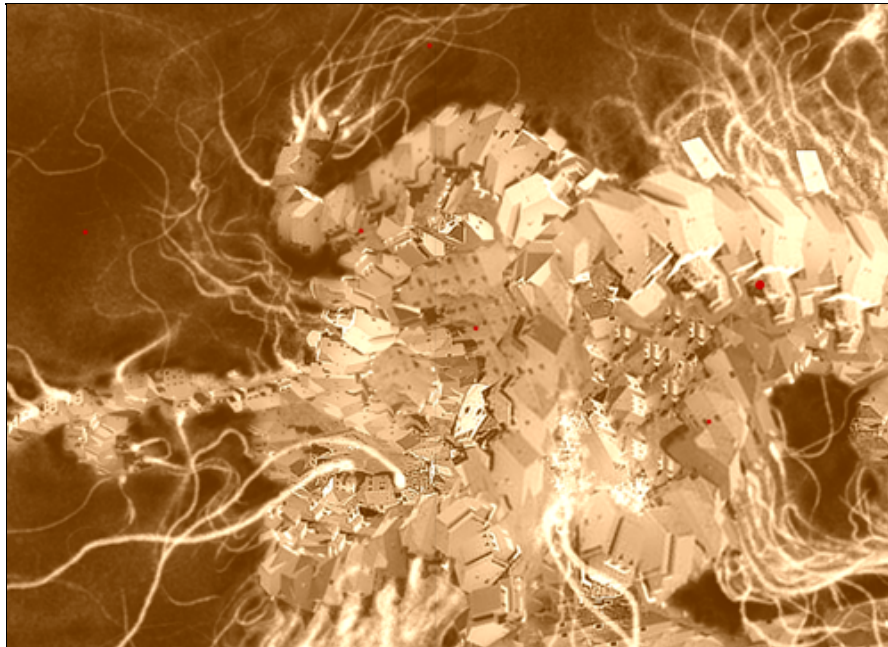
- Theories of Everything and Beyond
- Mona Lisa and West Virginia
- Building maps using analogy
- Gaia beats Nature
- Emergence and Evolution
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- Invasive species
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- Novelty Regurgitated
- The Media Ecology



## Theories of Everything and Beyond



from page 24 of "The Flocking Party"



from page 31 of "The Flocking Party"

*When you get to exit 40, you'll go north on Sparrow Road. There will be two gas stations. Turn left at the Exxon station. There are a couple of hills you'll go over, but when you see the red barn, you'll want to make a left on Hebbets Lane. My house is the second one on the right with the bird feeders in the yard.*

Narrative representations can be very helpful, especially when you are visiting unknown territories. Directions, mythologies, and fictions are commonly helpful in this way. These stories explain larger environments and how we might work with them as partners. They make complex environments and processes into simple, portable models. In Greek mythology, for example, Demeter, the goddess of agriculture, was a personality that people could associate to the immensity of the land and seasons. When Hades kidnapped her daughter, Persephone, the land grew desolate from Demeter's anxiety creating Winter (Leeming 102).

Mythology did very well at these sorts of environmental explanations until a particularly exacting discipline came along called science. Science helps us to understand details of the environment, but it often falls short at synthesizing them in the coherent way that mythologies and fictions do. The wealth of meaningful details makes it difficult to choose which ones to exclude when telling stories that represent broad domains, leaving us with unwieldy maps of complex territories. Today, perhaps, fiction returns a needed synthesis to our understanding of the environment, whether it is through B-movie genres, epic thrillers, popular literature, or pure science fiction.

I often feel that I am trying to find theories of everything, big sweeping views. I continuously attempt to make creative work that addresses complex systems, but always end up with visual representations that are too visually abstract, lacking clear communication. From this experience I have built an understanding of biological systems, but I also want to share these experiences with people. I've begun to realize that the use of stories with familiar examples can do this effectively. Stories have connections to the way we understand complex territories, because they reflect our sequential movement through a landscape. This is why myths are so good at representing environments, even if the terrain reaches beyond our view. My recent story, "The Flocking Party" uses the examples of birds and biotechnology to convey a tale about the larger systems of nature and technology (Landau).

## Mona Lisa and West Virginia



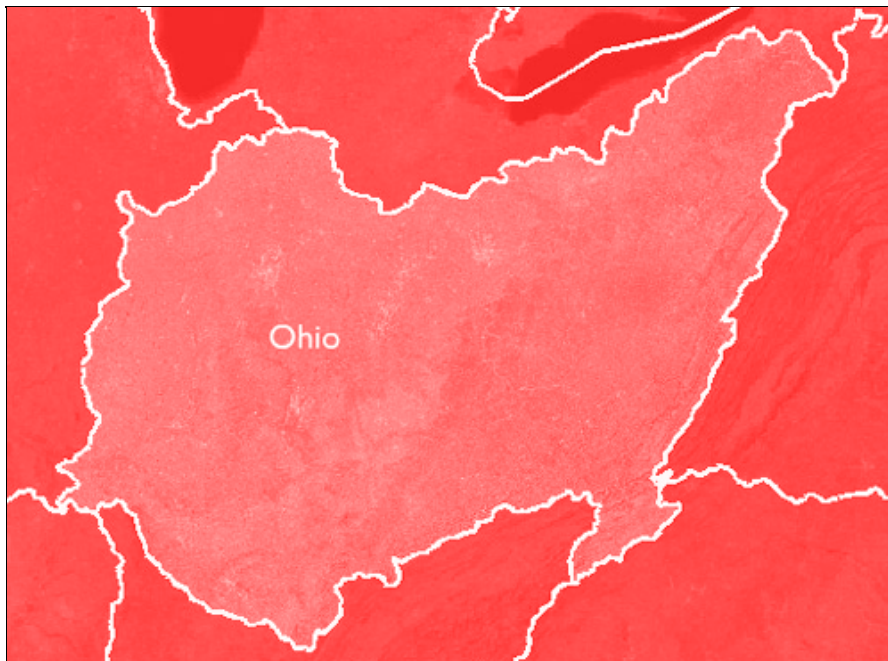
from page 26 of "The Flocking Party"

Why have stories remained such a strong part of culture? Stories are sequential representations, which help us to build internal representations (Kaplan, *Cognition* 38) of our possible movements through complex jungles. It is a fast way of learning. These narrative walk-throughs build connections between the different stuff along the way. If we happened to be dropped-off anywhere along some familiar path, we would easily remember how to get back to our home base by following these associations. As psychologist Steven Kaplan states, "...if one thing tends to follow another closely in time, the two will tend to become associated." (Kaplan, *Cognition* 42). When multiple representations are active at the same time, they form neurological connections, building sequences of connected representations that you can be toured through again.

It is one thing to be inside of this jungle with a practiced path, but a map can open up possibilities for taking shortcuts or imagining the overall lay of the land. Zoomed-out pictorial representations like maps give us a different kind of synthesis, and so do pictures. What exactly are the advantages that the map or picture has over the sequence? Here is where visual art tells a story.

*Leonardo, paint, smile, enigmatic, atmosphere, sfumatto, Mona Lisa*

Suddenly, a picture just seemed to pop into your head. You may have thought of various things to begin with, *Mona Lisa's* smile, eyes, or hands. Or perhaps you saw an overall, zoomed-out view of the picture (Leonardo). Maybe you are an art historian, who studies every detail of the thing, and the whole picture did flash into your mind all at once (we'll address this phenomena a bit further along). Regardless of your entry point, you probably scanned through the painting for a moment, moving from her hair net to the serene Italian landscape. Or maybe the art historian roamed from the luscious painting onto aspects of the context in which it was created, making bigger imaginative strides than the average person in this terrain.



from page 11 of "The Flocking Party"



from page 27 of "The Flocking Party"

It should be quite clear at this point what I'm hinting at. Your brain has a map of the *Mona Lisa*, each of us possessing different details. The expert (Mr. Art Historian) has a very detailed map, which extends into other territories and lands beyond. All of whose details are connected to one another in a tight meshwork of associations. This allows him to activate them in succession or to roam through them in any order, so long as they're connected. Perhaps, internal representations for larger territories are similar in structure. These meshwork representations are built of simpler internal representations. Steven Kaplan calls these kinds of meshwork representations, cognitive maps (Kaplan, *Cognition* 5).

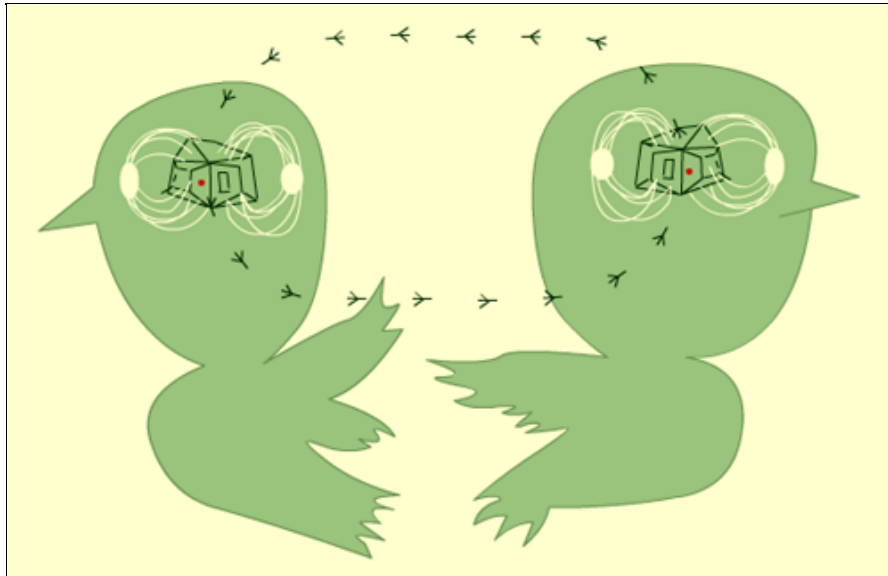
Cognitive maps are a different kind of internal representation in an important way; we can't submerge our selves or our senses in some systems like we do in the *Mona Lisa*. We must build cognitive maps of these more distributed systems differently. We would have some difficulty, for example, "taking-in" the state of West Virginia all at once like we did with the *Mona Lisa*. Without a map (a laminated one), it would take a long time to traverse that territory, becoming familiar with it and building our own cognitive map of it. We would have to spend years to understand the ins and outs of West Virginia, and we would probably need to understand something about its surrounding territories and history as well.

A small fraction of people have a near perfect cognitive map of West Virginia. But many have at least taken a drive through it a few times. Let's say you did. You encounter rest stops, gas stations, and diners. But your favorite stop happens to be *Jimmy's Family Dining* near the intersection of I-77 and I-79 in Charleston. Three weeks ago, you passed through on I-77 and got some of their famous chili and the in-house raspberry ice cream for desert. It was so good, that while you were driving by on I-79 months later, you had to stop at *Jimmy's* again. Aside from being full, you've begun building a cognitive map to go with your laminated one.

A cognitive map is a series of internal representations that are connected to one another at shared landmarks or internal representations of these landmarks. I-77 and I-79 happen to make a big X at the shared landmark of *Jimmy's* in Charleston. The two sequences do not have two separate internal representations of *Jimmy's* or you would have never remembered how important it was to stop. The shared representation of *Jimmy's* connects the two sequences in the brain. The use of these shared landmarks in cognitive maps help us to retrieve relevant knowledge through meaningful associations along new combinations of sequences. Just imagine, now, how many connections you have in your cognitive map of the *Mona Lisa*.



## Building maps using analogy



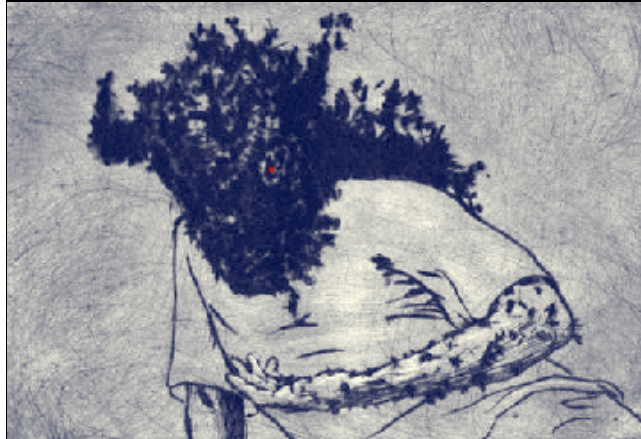
from page 30 of "The Flocking Party"

We also build cognitive maps by using other cognitive maps. Much in the way you use the laminated map to help with understanding a territory, we map unseen systems onto ones that we can see and examine. There are many examples of this that extend beyond the road atlas. In Stephen Jay Gould's book "Leonardo's Mountain of Clams and the Diet of Worms", he reveals a rarely discussed feature of Renaissance thinking, that there was a cosmic corollary between the systems of the human body and those of Earth (Gould 30). Renaissance thinkers sought analogies between the two, such as the circulatory and respiratory systems. Perhaps this was such an attractive idea, because it was easier to map and examine the human body, than to map the larger system of the Earth. The human body could be used as their analogy for the Earth. They only needed to search for signs that the two were similar to confirm their theory. Gould thinks that they believed in a metaphysical corollary between the two systems, that it wasn't simply mere analogy (Gould 30). But it was a case of mapping, nonetheless.

In my own work, I have been interested in how I can generate maps of unfamiliar systems by using maps of familiar ones. I believe that we need to examine manmade systems through a biological lens, where the study of technology and culture are remapped using our models of biology. How does culture reproduce? Mutate? Is there a kind of natural selection process for it? Does human consciousness affect this? How doesn't it? If culture is like a program that is passed from one person to the next, what degree of perceptual control could we really have? Perhaps biology can answer some of these questions. Even if the metaphor isn't exactly correct, it can still have enormous value. Metaphor is an instance of passing along perceptual tools from person to person.

Another way that we build cognitive maps is by sharing stories. You may wonder how a sequential representation could make an impression like the cognitive map, so lateral and networked. I have stated that in cognitive maps, the sharing of landmarks connects sequences. Stories also retrace their steps by reintroducing characters, props, and locations. These elements function as landmarks that reappear in plot sequences. These reiterations of plot elements or landmarks help to plot a path that winds and crosses itself, generating a cognitive map. A classic example of the way that stories do this is in mythology. The interplay between the gods and their domains built meshes of metaphor for connecting seen and unseen realms.

## Gaia beats Nature



from page 20 of "The Flocking Party"

Why do we call ancient stories about the cosmos “myths”? Perhaps their inferior status is due to their lack of use. They were once useful to us because of their simplicity, at least until we created more convenient fictions. Science seems to be the latest convenient fiction. But one thousand years from now, it’s likely that we’ll view today’s scientific theories as myths that have lost their use, only to be repurposed in new contexts. Bruno Latour, for example, has been brave enough to question one of our most beloved contemporary fictions, “nature”.

*“No, if we have to give up nature, it is neither because of its reality nor its unity. It is solely because of the short-circuits that it authorizes when it is used to bring about this unity once and for all, without due process, with no discussion, outside of political arenas, and when something then intervenes from the outside to interrupt-in the name of nature- the task of gradually composing the world.”(Latour 91)*



from page 36 of "The Flocking Party"

Latour casts “nature” as a myth, a convenient fiction utilized by science, the arts, and politics, which also keeps us at an arm’s length from nonhuman processes. Perhaps Latour wishes for us to build cognitive maps that do not create artificial boundaries between human and nonhuman domains. He wishes to do away with the term “nature” all together (Latour 9). It seems unsettling to scrap an idea as familiar as nature. But the conceptual separation it defines leads humans to do stupid things in the rest of the system. By separating ourselves any longer from the “gradual composing” formerly known as nature, humans will fail to take into account our connections to nonhuman systems.

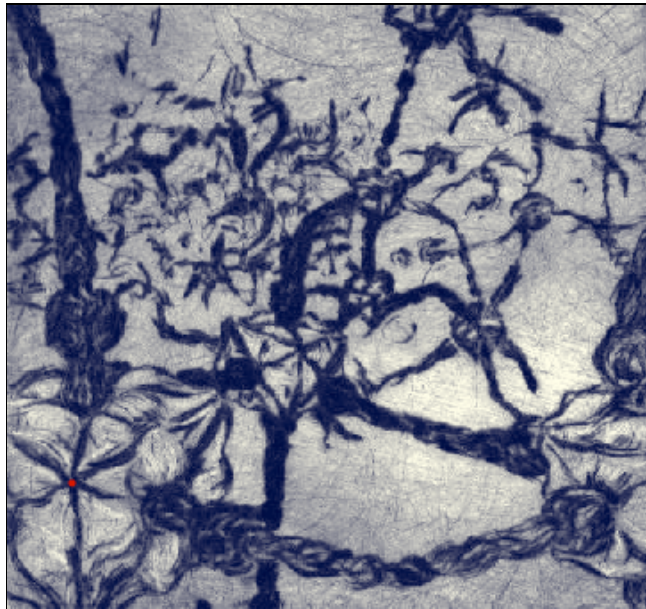
But mythology doesn't just represent a pile of disused stories from the past. The metaphors that they convey often find new uses. A character from Greek mythology that has been recently repurposed in the service of scientific explanation is Gaia. In 1971, James Lovelock and Lynn Margulis proposed a theory they called the Gaia Hypothesis (Lovelock). Gaia was appropriate to their theory, because she was the goddess of Earth. Lovelock and Margulis's theory proposed that Earth was like an organism, a united system, that had emergent, self-regulating properties including all organisms, plate tectonics, the salinity of the oceans, weather, and human activity (Lovelock 579). Needless to say, their idea sounded too much like mythology to the scientific community of the time (Capra 106). They perceived the theory as too teleological, or consciously driven by an outside source. I attribute this misunderstanding as a lack of understanding for emergent, generative processes, which this community still seemed to attribute to humans alone. The reason I introduce the Gaia Hypothesis is not to argue for its scientific validity, but for its scientific kinship to the mythological character of Gaia. It is a useful idea that is easy to understand and to take with you. And it has a greater resonance with hard science than with Creationism, for example. It sets emergence and evolution as the primary shapers of our world.



## Emergence and Evolution



from page 14 of "The Flocking Party"



from page 20 of "The Flocking Party"

The Gaia Hypothesis requires the understanding of emergence and evolution, which I will briefly touch upon. Stephen Johnson presents a wonderful explanation of one of these principles in his book by the same name, "Emergence". The most memorable example he provides is ants (Johnson, 78). A colony of ants exhibits stunning complexity, but the parts of the system are very simple. One ant has only a few, simple behaviors. But, when connected by pheromones that trace their movements and affect their behaviors, ants can form a larger system that has a behavior and intelligence all its own. The pheromone trails are the ant's cognitive map, lain directly on the territory. Each ant moves along the interconnected pheromone paths, reacting to a small number of pheromones with only a few simple behaviors. All the while, each ant deposits its own pheromones, affecting the system by a small amounts (Johnson 74).

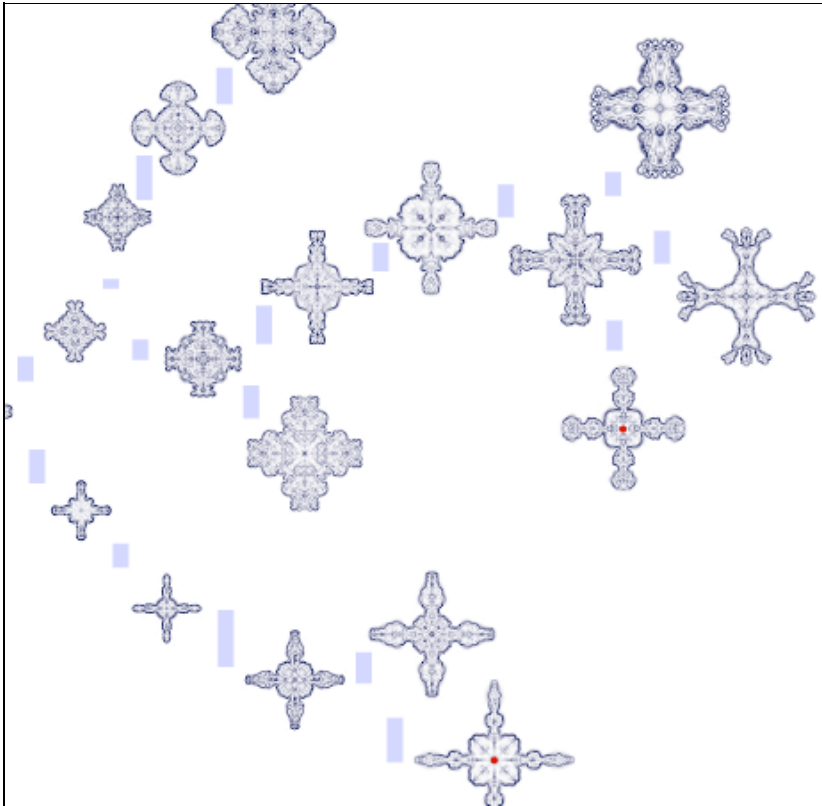
I like to think that the activity of ants on a pheromone trail is very similar to the activity passed along between internal representations in cognitive maps. In each system (the brain and the colony) micro activities contribute to the construction and maintenance of the macro whole. Both are ways of learning that exhibit their own kind of self-criticality. Intuitively, this building process makes sense, but how do such interesting systems like ant colonies and brains come into existence? An example of chemical emergence provides us with our answer: evolution.

Evolution is composed of layers of emergent processes, whose foundation is chemical. One of my early misconceptions of evolution was that it is all random. But its most distinguishing feature is how it retains processes that promote survival from generation to generation, while generating chemical diversity that it co-opts later on (Kauffman 82). Simple kinds of emergence layered upon the surface of a heftier, layered landscape, depositing new chemicals at each level. These layers are processes that have accumulated over time. Global Gaia, too, is composed of such a landscape of emergent processes, built upon and intersecting with one another. Returning to Latour's redefinition of nature, these layers also include human processes like culture and technology. We can think of Gaia as an inclusive system. Our participation in this system is only a recently added layer that mimics and reacts to the lower layers. I focused on this idea to try to understand my own emergent processes as I created "The Flocking Party", through its layering of different metaphors and media. These layers added up to something I could not have predicted.

## Biotech

A year ago, I was part of a trip, which included MFA students and a few daring faculty going to Montreal for a conference on art and biotechnology (*Art & Biotechnology*). The weekend's sessions explored emergent systems, DNA, social engineering, tissue culturing, swarms of robots, and other topics. We were completely absorbed by these ideas, but Roy Ascott's lecture on nanotechnology was the most jarring to us. His presentation of "biophotonics", light in living bodies, seemed more like fantasy than science. The questions that his lecture raised about the promises of future technologies told me that nanotechnology would introduce some very interesting questions. What would designing from the atom on upwards do to our perception of technology? How would this atomic building technology affect the landscape of Gaia? There was a story somewhere in all of this.

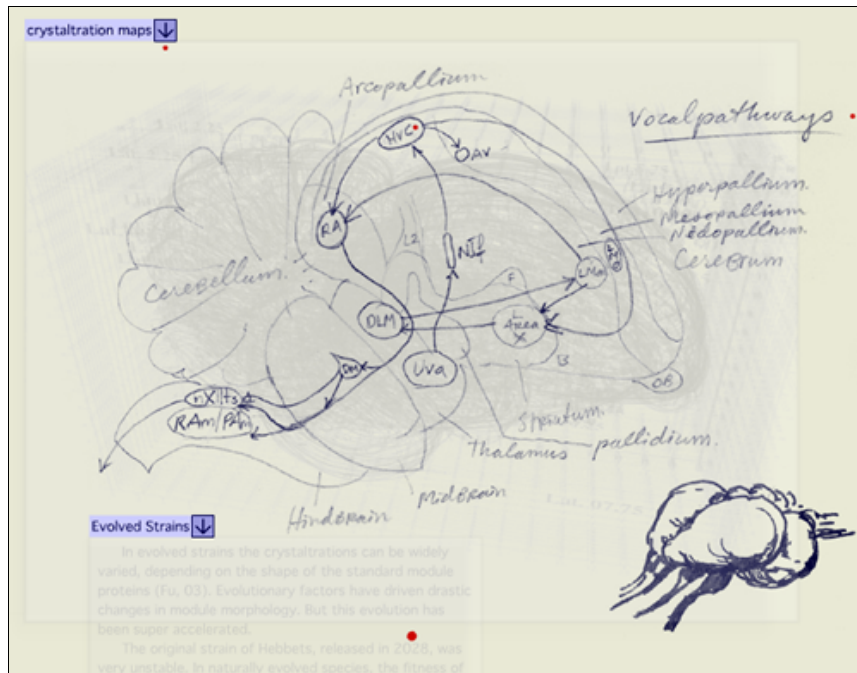
During our long drive home, we reflected on the challenges that biotech topics presented to artists. Our definition of "nature" really seemed to be crumbling. How would we create representations of this? My mind wandered, and I dreamt about bio-architectures permeated with communication infrastructures, the environment as organism and the organism as environment. Looking out the window, I contemplated the semantic boundaries of organisms. My dreams were interrupted by the pitching of our van on a windy day. I noticed clouds of black dots hovering over the road and the horizon that defied the strong gusts of wind. They were airborne schools of fish, they were swarms of organic robots, no, they were flocks of birds. I had found an example of one of Gaia's emergent processes whose boundaries were hard to define. The organism of the flock was a shifting architecture of smaller organisms. The simple behavior of each bird contributes to the overall shape and movement of the flock, which exhibits its own behavior. In my story, I would accentuate this view of the flock as organism.



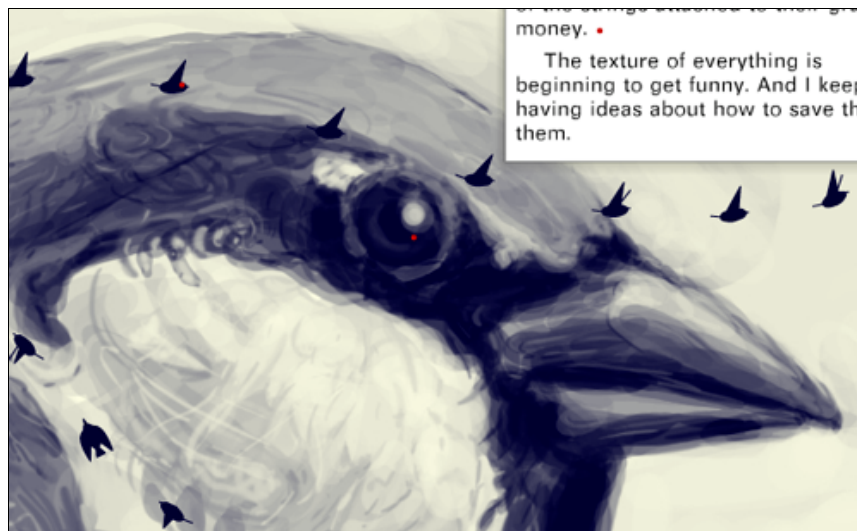
from page 17 of "The Flocking Party"



## The Birds



from page 16 of "The Flocking Party"

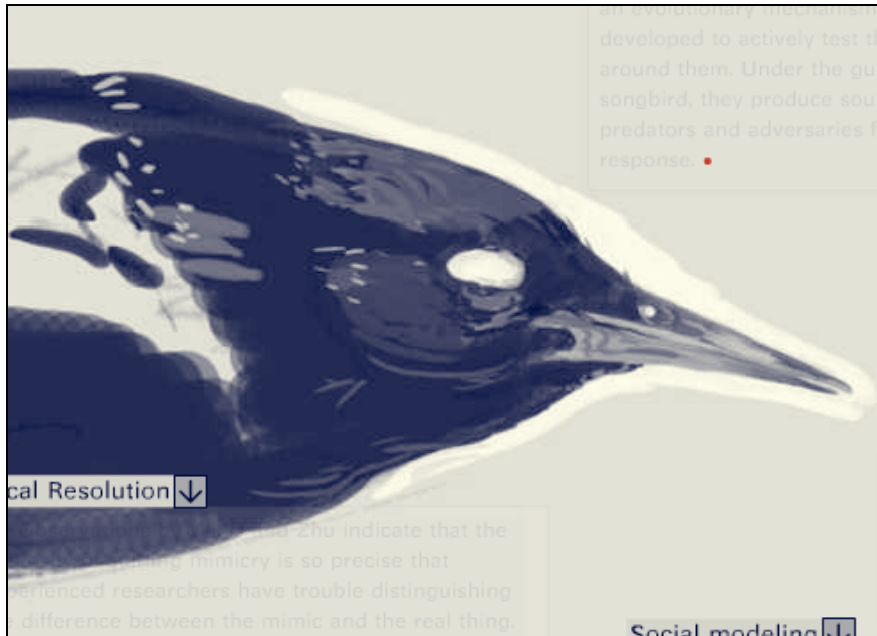


from page 37 of "The Flocking Party"

When I returned home from Montreal, I reevaluated this idea of using of flocks and birds as an example. Then I remembered Jennifer Price's book, "Flight Maps", an exploration of the ways that Americans view nature (Price). Through the course of her book, she uses birds as a way to track our cultural relationship to landscaping, television, dining, and fashion. From the extinction of the passenger pigeon to "nature at the mall", Price deftly analyzes our conception of nature as "a place apart" (Price 160). The chapters of her book serve as in-depth case studies that connect these big philosophical questions directly to American life. Like De Landa's "A Thousand Years of Nonlinear History" her book provides portable models for concepts that are quite abstract. In "The Flocking Party" I would use birds as an analogy for both human culture and Gaia's emergent properties in the form of a fictitious story.

I continued to find reasons to use birds. For starters, they have long been a symbol of nature: people are fascinated with the mysteries of flight, eggs, feathers, and flocks. This symbolism would allow me to map my ideas about emergence and evolution onto a representation that people are familiar with. Birds are a powerful example of evolution, especially due to their transformation from dinosaurs into aerial acrobats. All of the different bird species that came from this were a perfect example of what evolution is capable of when a landscape of evolutionary possibilities opens up. But there were other openings. The airwaves were littered with stories about bird intelligence; scientists were rethinking their view of the avian brain, even re-charting its brain anatomy to reveal that it has more in common with our own brains than we thought (*Study*). Birds are a rich topic.

As I began writing "The Flocking Party", I realized that I needed my own, more specific, examples of birds. I had seen the power in presenting thorough case studies from Price's book. I wanted people to recognize them in their environment with new perceptions after reading my story. The idea of doing embedded case studies like Price, appealed to me, because of the historical corollaries. History is a great way of mapping one event onto another. So I chose two of the most prominent avian species around us, House Sparrows and European Starlings. I soon realized that these species brought with them another dimension of symbolism. Their prominence was not as natural as it appeared. Despite their ubiquity in North America, they were strangers until 1890 and 1851, respectively, when they were introduced from Europe (Withers). Each species' population exploded into the millions and they owe much of their success to Americans and the changes that we've made in our environment. Starlings love our green lawns. So, I gained an effective twist; my symbol of nature was also an invasive species.



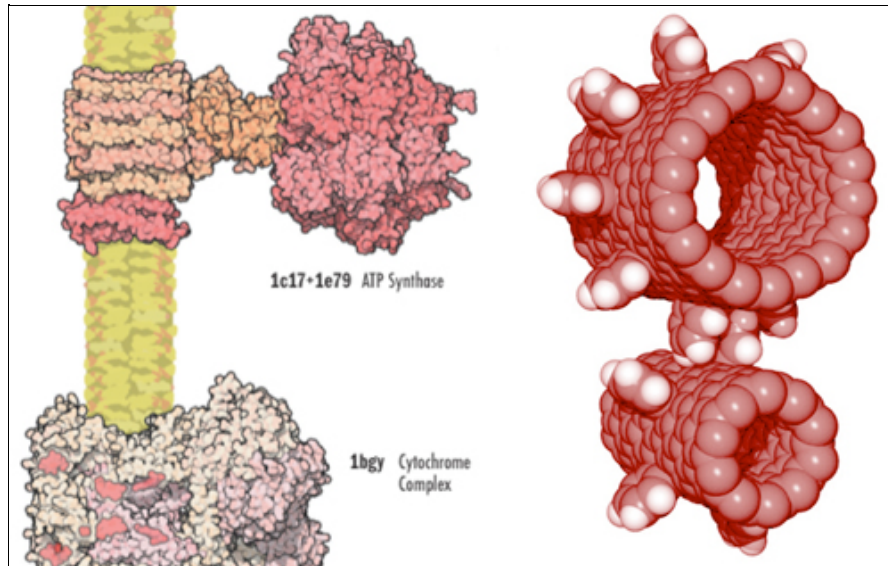
from page 34 of "The Flocking Party"

## Invasive species

Invasive species are a kind of renegade technology. Whether created by evolution or by culture, we can think of invasive species as more than just zebra mussels or Asian carp. Cultures can also have invasive properties, which enter and mutate other cultural and environmental systems. The movement of western culture into the New World is a salient example of the changes that such introductions can create. And if it weren't for the environmental changes that Europeans made to North America, invasive species like sparrows and starlings would not have had grain to eat or green lawns to grub. I wanted to carry this idea full circle, so I introduced an engineered virus, "Hebbets", that infected these birds. In the story "Hebbets" actually improves the success of these invasive bird species, causing even greater potential for massive environmental changes. I think that this sequence of environmental transformation from Europeans, birds, and then Hebbets is a good example of the way that Gaia layers one system on top of another to build her complexity.

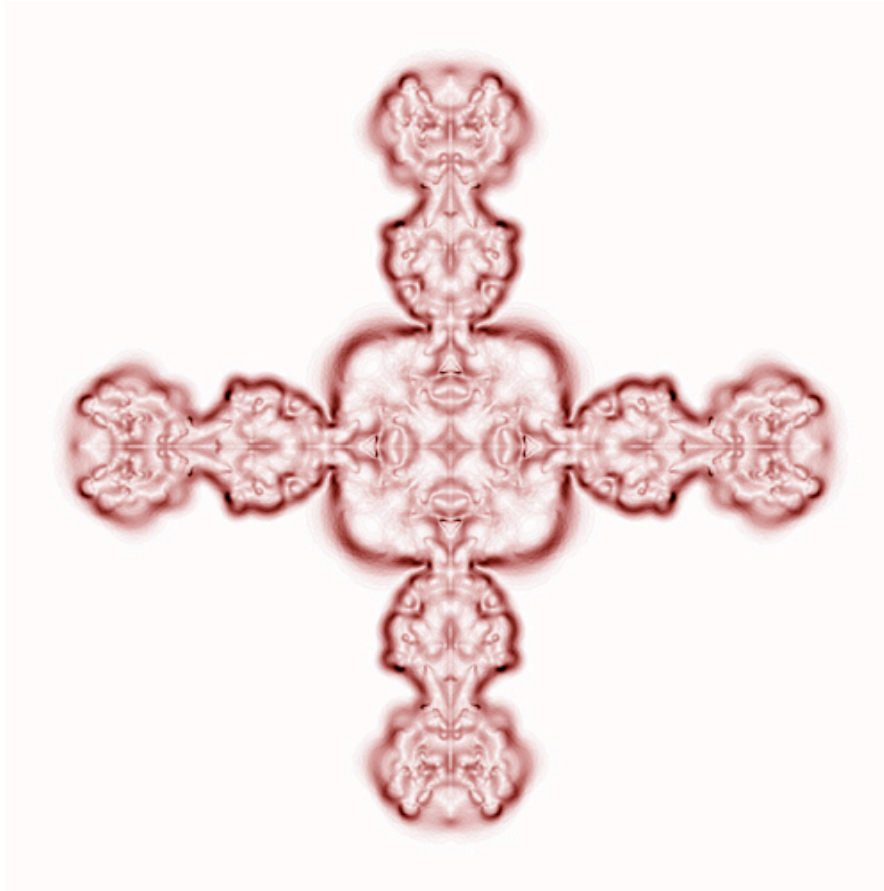
Our technologies are also strange invaders. They could simply be perceived as extensions of human activity, but they also affect our human "nature". Technology's affect on our behavior has created massive environmental changes. Like Johnson's ant colony, each individual person can only comprehend a tiny fraction of what is happening to the whole technological system (Johnson 97). Humans can comprehend more than ants, but that also means that there is that much more behavior in the whole system. In this way, I would say that technology has its own "nature", its own emergence. The system of technology perpetuates itself. And it uses humans to do so. Even if initiated by advertising, human culture increasingly relies on technology for its survival. As individuals we have little control over it. But on a more literal level, we have begun to imagine technologies that would reproduce without the help of humans. Machines and bio-machines will increasingly make copies of themselves the way that the "Hebbets" virus does in my story. The renegade technology of the invasive species comes full circle.

## The Biotech Guru



part of Robert Goodsell's "Molecular Machinery" [poster](#)  
and nano-gears from [Berkeley Nanosciences and Nanoengineering Institute](#)  
see CD ROM

In the winter semester, prior to making "The Flocking Party", I was working on a collaborative project called Organelle View (GROCS). My job was to create the look and feel of a database navigation tool. Since I was showing information about proteins, some of my research brought me to the work of David Goodsell (Goodsell). He makes visually clear images of proteins based on scientific data. When I encountered his work, it was like I was seeing molecular models in a whole new way. Goodsell's colorful representations of proteins and their interactions changed my cognitive map of my own body's biology. "I" was now a walking metropolis of colorful, diverse, active, and organic chemical processes. The strawberry I was eating was the battlefield of intergalactic chemical warfare. Nanotechnology, as we think of it, suddenly looked crude and stupid, a mere subset of biotechnology. Here is where I shifted my focus from nanotechnology to biotechnology. Some would see this as purely semantic, but like the invasive birds, it gave me the twist I needed. Biotech is perceived as high tech, but genes have been doing this stuff for a long time, and they do it very well. Our biotech guru already exists. It's Gaia.



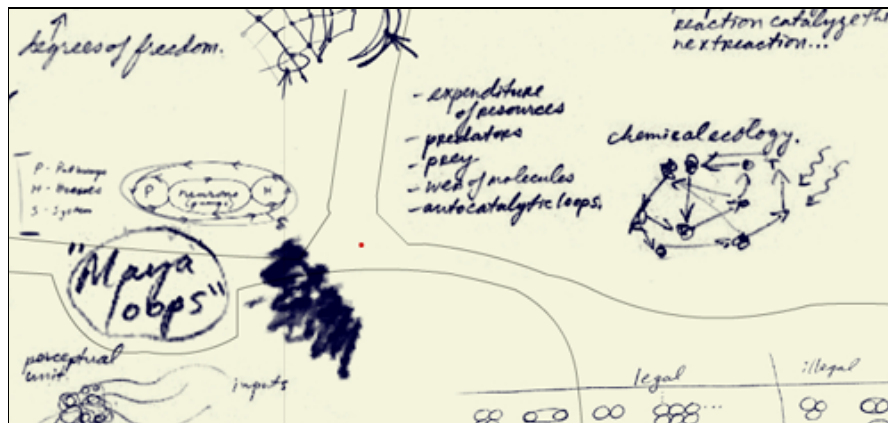
from page 17 of "The Flocking Party"

The conceptual shift to biotechnology was a prompt for me to use a type of biology that already existed. I thought that a virus would convey the idea of the invasive species in a different way. The migration of "Hebbets" in the story is global, but it also invades bodies and minds. The parallel between territories and bodies seemed like an excellent way to compare organisms to environments. The bird and the human (which also gets infected) become environments that must evolve as host territories to these new elements.

The birds and the virus were rich examples to stand-in for the broad and abstract topics that I wanted to communicate. Invasive birds, on the one hand, represented how such simple human activities can greatly affect Gaia, and biotechnology, and on the other, compared the simplicity of human knowledge to the complex technologies of Gaia. One represents nature and the other technology, but the two are conceptually bound together. They are connected by the common ground of invasive species. I decided to amplify this connection by placing the invasive biotechnology in the brains of the Starlings and Sparrows. This engineered virus invades the territory of their brains, only to increase the birds' own success as invasive species. Since, the overarching goal of my project was to map new cognitive territory, this invasion of cognitive structures became a metaphor in itself.



## Novelty Regurgitated



from page 18 of "The Flocking Party"

*In "The Flocking Party" drawing, animation, text, sound, and interactivity crossover to create new media of their own:*

*Animations function as static images.*

*Text responds to the presence of the reader.*

*Links are both visual and textual.*

*Windows scrim and layer like multiple, printed channels.*

*The electronic notebook is an etching plate.*

*Prints transform into browser windows.*

*Perceptions of vellum, light, and atmosphere intermingle.*

*Programs become drawings.*

*Sound cascades as textures.*

*Scribbles crystallize into simulations.*

*Images of laser-cut paper models reconstitute into vector-based diagrams.*

*Illusive animations push the bounds of perceptual capacities, revealing limits of our own internal media.*

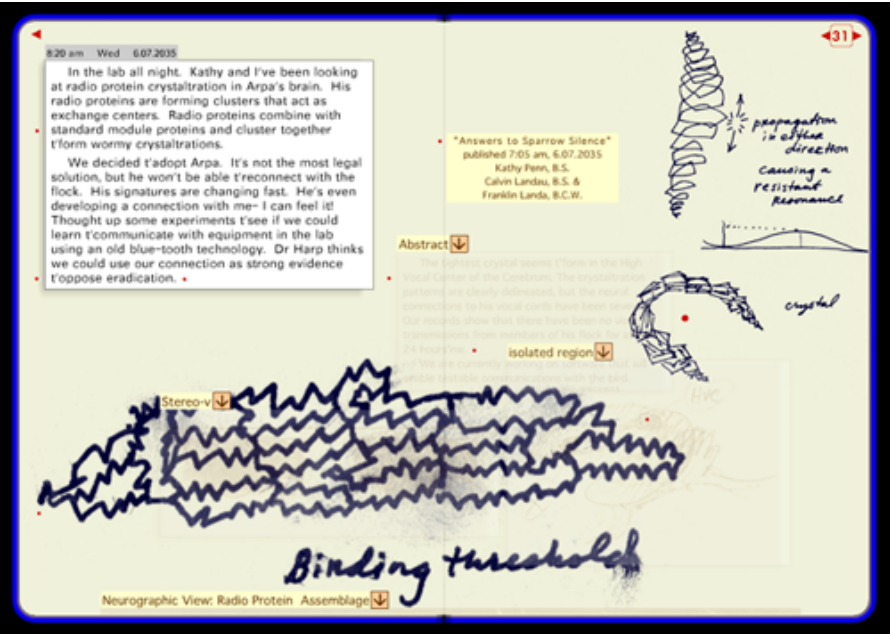
I would like to return to emergence; it served as more than just a subject of my work. It also informed the process. Another difficulty I faced, aside from finding salient examples, was writing a story about these things. I wanted my process, my product, and my distribution to reflect the same ideas that my examples were addressing. The idea of invasive species also seemed appropriate for the distribution, which I will talk about further on. Making the story was the next concern. I needed a process to generate novelty. Biology provided my answer once again.

You may think that biological processes are not capable of creating novelty, but Stuart Kauffman would say otherwise (Kauffman 152). In his book, "Investigations", Kauffman explains how life or Gaia emerged and sustains itself as a network of chemical reactions. These networks perpetuate themselves (Kauffman 47). One chemical catalyzes another's reaction, and the products of that reaction catalyze another. Similar to cognitive maps, sequences of interactions overlap to produce networks of reactions. The chemical intersection would be a particular molecule. If enough of the reaction sequences link together and enough resources are present the network will perpetuate itself for quite a while. Often, certain chemical processes generate new molecules for which these emergent systems eventually find a good use. In Gaia's case, this reaction has lasted billions of years and produced a huge diversity of new molecules and processes.

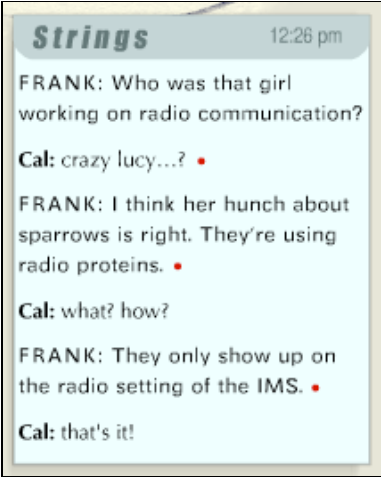
In a way, my process of creating "The Flocking Party" was like a chemical network. The recombinant narrative elements interacted to produce more elements that I could never have suspected would emerge. One such occurrence was "Hebbets", the biotech virus that infects the brains of the birds. It was a strange confluence of a cultural metaphor and an invasive species metaphor. The name of the story itself, "The Flocking Party", comes from the name of a political party that emerges from the changes that "Hebbets" brings. This technology/virus connects minds, producing the potential for a future political party, from the new type of mind it produced.

The narrative elements were not the only pieces, which interacted to produce novel elements. "The Flocking Party"'s media elements were also recombined to produce novelty.

# The Media Ecology



page 31 of "The Flocking Party"

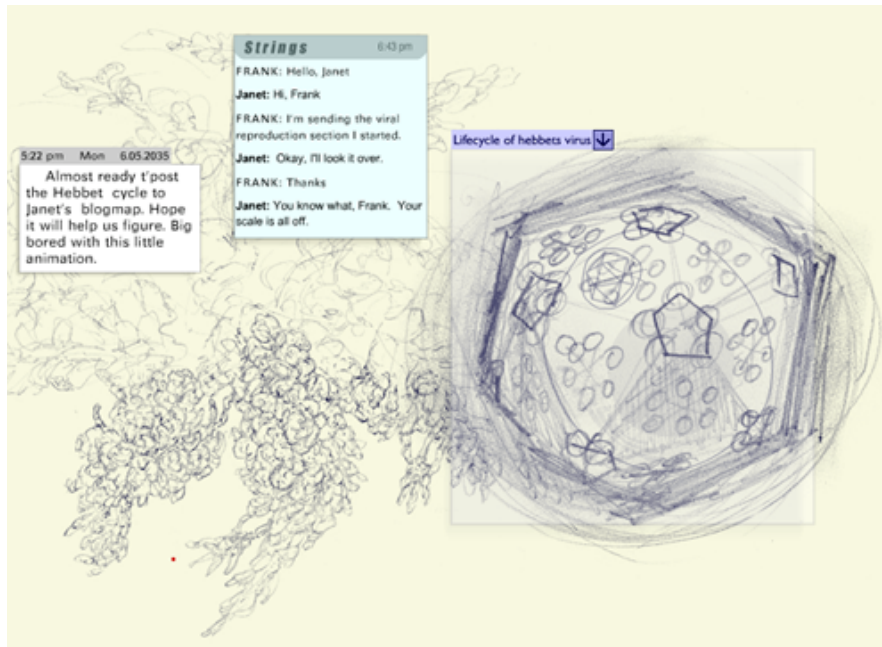


from page 29 of "The Flocking Party"

I wrote the texts, scripts, images, characters, and interactions of "The Flocking Party" in conjunction with one another. The different elements sit on each page in syntax, like creatures in an aquarium. I wanted these species to have a lot of interactions with one another, so they had to be written simultaneously. This way they could interact more like a network, but I needed a medium that allowed this sort of writing. One that served this purpose was Macromedia's Flash. I treated Flash like an aquarium or a micro-media-ecology, acting as facilitator to the interactions. My role in this ecology was not to play God. It was to play-out the interactions and facilitate the evolution of their relationships, finding generative arrangements between them. I was an agent of the interaction process.

The characters in my story also took shape from their interaction. Their personalities and interactions gradually developed through their relationship to one another. These things took on life throughout the construction of the story. One interaction at a time helped me to see new possibilities allowing the story to emerge like a logic puzzle. This emergence was inevitably guided by my preexisting internal representations, affecting the way I recognized relationships between characters and contexts. Simultaneously, the fresh representations changed my map of the story and the connections that their symbols have to bigger, abstract ideas.

In the writing process, I tried to address a lot of the concerns and conflicts that arose between people, animals, technologies, and media. Much like an organism with many opposing pressures, my work was forced to evolve. It produced a strange and unique creature. It's an organism that addresses the problems in unexpected ways. The story provides interacting examples, birds and biotechnology, which rendezvous in the brain. These two main narrative subjects share a whole anatomy with others, such as narration, character, and mediation. Because they are located in a fictional story, the case studies take on speculative characteristics to forge new connections across the conceptual divide of nature and technology.



### Chapter 3

#### Science Fiction: Between Strata

- Dr. Ameisenhaufen and Frank Landa
- The Intelligent Designer
- Stratum Surfing
- External Representations
- Perceptual Technologist
- Sci-Fi Journal

## Dr. Ameisenhaufen and Frank Landa



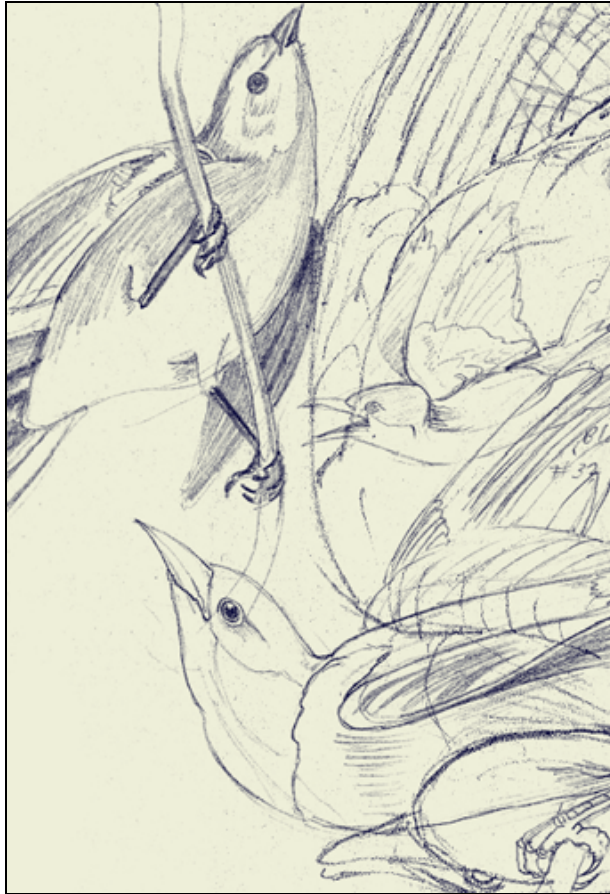
from Joan Fontcuberta's [Fauna](#)

You have probably never heard of Dr. Ameisenhaufen. What is known of him comes to us only in the form of scrappy drawings, badly exposed photographs, articles from his laboratory, and piles of journals and letters. As someone begins to piece together these artifacts, she might wonder why she has never heard of such an important naturalist. The Doctor appears passionate about the classification of new species. He traveled the globe, classifying every species he possibly could. As our reader continues through his notebooks, she soon finds something peculiar. Unfamiliar species begin to emerge. Bifurcated squid, frogs with wings, and monkeys with small horns, all begin to make her scratch her head a bit. She soon forgets these fascinating specimens as the writing in the journal talks more of the Doctor's life. But then, inevitably, she stumbles upon the image of a flying elephant or a two-legged rabbit with a tortoise's head. She thinks this can't be real. And it's not.

Dr. Ameisenhaufen is an invented person. The artist Joan Fontcuberta presents the Doctor's work in lectures, exhibitions, websites, and in his book, *Dr. Ameisenhaufen's Fauna* (Fontcuberta). He fabricated every aspect of the Doctor's life and career, specifically to throw us for a loop. Fontcuberta is a photographer, whose earlier pictures of plants suggested to him that he needed to provide them with a deeper context. The plants were faked as well. He made plant hybrids just like the like the animals, but no one realized that they were fake.

The *Fauna* project seems to have changed the artist's work a great deal from his earlier botanical studies. The manipulation of images and their inclusion of the doctor are a shift from Fontcuberta's earlier works, which are almost always absent of people (REF). The invention of the Doctor seems to have allowed him to examine these forms from more than just a formal perspective. In turn, they become factual materials within a strange narrative system. Considering the degree to which we are fooled before we even realize that it is science fiction, this bizarre approach is quite subversive.





from page 32 of "The Flocking Party"

When science is brought into the arts as a subject, it often becomes some sort of science fiction. Even visualizations of “scientifically valid” subjects have this fictional quality. Someone, after all, must always translate ideas or data into believable images. What results is a sort of convenient science fiction, useful for understanding unseen phenomena. Perhaps the work of Fontcuberta is an attempt to reveal the fictitious and constructed quality of science and nature and what we think of hard facts, despite the degree of scientific rigor. His science fiction makes conscious the visual processes involved in scientific research. Science fiction also represents what happens in the laboratory and in the mind of the researcher.

In Fontcuberta's work Dr. Ameisenhaufen has a very particular character that we often get to assume for ourselves as we read his journal entries and ponder his drawings. I am very intrigued with his work, because of its use of images and connection to a scientific researcher. For my own creative project, “The Flocking Party”, I needed a way to examine the subject of birds that have been infected with a biologically engineered virus. With this alone I already knew that I had entered the taboo territory of science fiction. I was comfortable with this, though, because I have read some very good science fiction. Neal Stevenson's *Snow Crash* and *The Diamond Age* were reason enough to convince me that science fiction wasn't too lowbrow for my fine art project (Stevenson). Cool gadgets aside, Stevenson's works are examples of “social fiction that has aspects of social reality” (McCullough). The social aspect was something that I wanted in my story. The relationship of the researcher to the audience in Fontcuberta's work seemed like the right way to start.

I named my own researcher, Frank Landa, who also kept a research journal. In this chapter I will discuss the spirit of his journal and how it came to be a format for “The Flocking Party”. I will also examine the role that Frank played in the story's creation. Frank is a candid observer, who makes observations of his emotions and family life as well as his scientific work. Although his science is fictional, there are times that we wonder how much of it might really be true. Like Fontcuberta's work it raises questions about the objectivity of Frank's claims and in so doing, all research claims. To contrast Frank's subjective voice, I also added mysterious annotations by another voice, which I will discuss further along.

## The Intelligent Designer

As I walk by the saltwater aquarium at school every week, I stop and wonder how the creatures, rocks, and chemicals packed in there are able to make room for one another. They certainly didn't sign an agreement. Was the creator of this aquarium a benevolent, intelligent designer? And what of life on the rest of the planet? Where's our contract? What guides us? Is it an intelligent designer? Some groups today think so. The theory of intelligent design, for example, states that evolution is guided by a grand designer, because, it argues, molecular and ecological mechanisms found in nature are too complex to have evolved on their own ("Intelligent"). Intelligent design theory has persisted as a theory, which people believe is worth teaching in schools despite its total lack of scientific validity. This is a sure sign that complex systems like evolution are difficult enough to understand and too easily dismissed, precisely because of their complexity. The trouble of communicating how this kind of complexity operates has created a great amount of tension even beyond this debate.

A globalized world is a lot like an aquarium and begs us to change the way that we think about others, including cultures, nations, political parties, media conglomerates, species, and whole ecologies. I believe that by developing more intuitive understandings of how evolution operates, we can produce better answers to the problem of understanding complexity. Creative work happens to be a process that is similar to evolution. So perhaps the arts, which develop more organically, are a model for nurturing intuition about this kind of process.

I was conscious of evolutionary processes in writing my science fiction story, "The Flocking Party". I constructed it much like an aquarium might form it. My undeveloped subjects and media were pooled into a framework. Once immersed, I facilitated these elements to interact. Rather than writing something once, I would rewrite, again and again, slowly mutating the system. I helped the elements make room for one another, but as they did so, they evolved into new forms with new sorts of relationships that I could not have predicted.

My main character, Frank, gives the reader a first hand account of the selection pressures that any one individual faces inside such a dynamic system. He is forced to deal with the emotions that arise from his scientific epiphanies and their political implications or from his own wellbeing, which influences the questions he asks. Frank's surreal dreams are one way that we know he is thinking about the interest of others by projecting himself into the position of other species and organizations. In one dream he is an exterminator, killing birds (As much as it disturbs him)(Landau 14). In another his body is a neuron, infected with the crystalline structures produced by the Hebbets virus (Landau 21).

Throughout my process I empathized most closely with Frank. This sort of role-playing to develop the story gave me a different understanding of an evolutionary process than if I had just read a textbook. I was forced to project myself in between the layers of opposing forces.



from page 36 of "The Flocking Party"

## Stratum Surfing

*Aquariums are small. Oceans are big.*

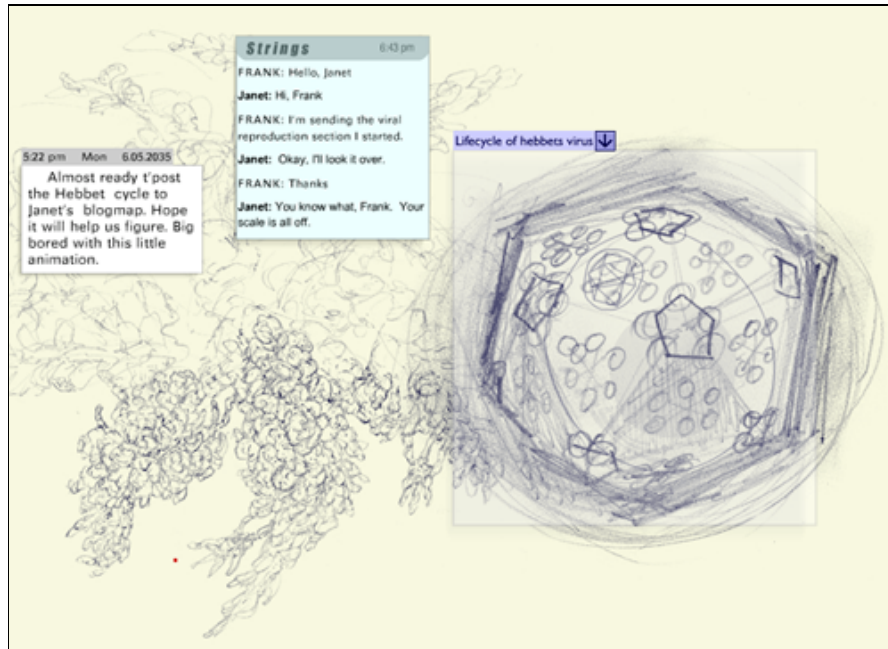
Just imagine, for a moment, the range of species and food chains in the depths and shallows of the ocean. It is mixed up with a rarely visible order. But we know that, somehow, all of these layers, species, processes, and pecking orders are a set of highly organized strata (Deleuze 335). Unlike geological strata, these are layered in a biological way, barely apparent to us. I'm interested in how we might visualize these kinds of biologically organized strata to become more familiar with their interrelated functions. It certainly takes some science to sort out these details, but we also need to include more poetic interpretations. This is why Frank is a hybrid between scientist and artist. He looks at the system in between its layers and from a step outside of it, which gives him a functional understanding of his place in it.



from page 26 of "The Flocking Party"

The acclaimed biologist, E.O. Wilson, had a great desire to connect the sciences and the arts for this very reason. He believed that these systems of knowing were too rich to be separate. "In both the arts and the sciences the programmed brain seeks elegance, which is the parsimonious and evocative description of pattern to make sense out of a confusion of detail." (Wilson 239) If both disciplines are so good at conveying patterns of detail, then the sciences and humanities have a lot to offer as a team. There are too many problems we face without having a communication problem among some of the smartest people in the world. The elegant patterns that emerge from their successful communication can be seen in crossover disciplines like visualization and science fiction, among others. I sought to exemplify these disciplines in "The Flocking Party". Frank's drawings, writing, and images are hybrid means of doing research. His methods share kinships with the text/image approaches of famous naturalists, such as Leonardo Da Vinci or Ernst Haeckel, before art and science were pulled in such different directions. But for the past few centuries, the two subjects retain many connections, particularly the use of text and image. We find that artists today do a lot of writing and that scientists still need images and drawings. Unfortunately, these aspects of their work are less often included in our popular perception of the disciplines.





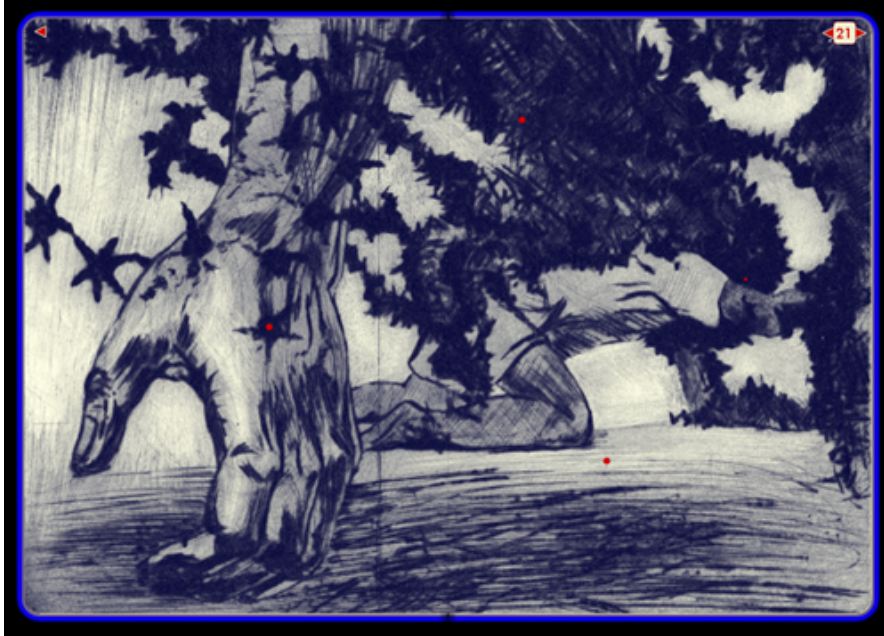
from page 25 of "The Flocking Party"

Echoing Wilson's sentiment, the French philosopher, Bruno Latour proposes a way to further bring art and science together, as well as politics (As if reconciling the arts and the sciences wasn't complicated enough). His solution is surprisingly elegant. It reorders the categories we use to describe human knowledge, often defined as either facts or values. Generally, our facts are given priority over our values. When "facts" are used for manipulation in ways that compromise our "values", we are helpless to stop the powers of "absolute certainty". And experts, who know the "facts", are often pre-selected to define reality in a way that someone more powerful wishes it to be.

*"It is not surprising that no one has ever understood very well what the expert meant when, in the name of "stubborn facts," he pounded his fist on the table: his gesture could signify perplexity as well as certainty, the disputable as well as the indisputable, the obligation to do more research as well as the obligation to stop doing research!"* (Latour 105)

Experts are those whom we assume can separate between subjectivity and objectivity. As we can tell, though, this separation must be an illusion if the expert feels strongly enough to pound his fist on the table. People feel strongly about their knowledge (Kaplan, *Cognition* 74). This is why it is not always best to view the expert's familiarity as a set of facts. But to avoid excluding the expert altogether, Latour proposes a new description of human knowledge, which includes taking things into account and putting things into order. This separation of power helps to ensure that voices are heard and that it is not just one individual that decides what is best. This encompasses practices in the sciences, the humanities, and politics, and opens up collaborations for taking into account and putting into order between them.

*"Lodge yourself on a stratum, experiment with the opportunities it offers, find an advantageous place on it, find potential movements of deterritorialization, possible lines of flight, experience them, produce flow conjunctions here and there, try out continuums of intensities segment by segment, have a small plot of new land at all times."* (Deleuze 161)



from page 21 of "The Flocking Party"

There is a common ground or a new cultural stratum that is formed, where the sciences, the arts, and politics share similar principles. It's a place of convergence requiring thorough communication and a balance between those involved. In "A Thousand Plateaus", Gilles Deleuze and Felix Guattari suggest an interpretation of how we might deal with this new stratum (Deleuze 161). Surfing on this stratum requires constantly readjusting our view of it; we have to move to the wave of other theories. To survive we must function within its shifting parameters, but we also help to define them. This way of making-due, making-a-living, making-love reminds me of a barnacle that has attached itself to a whale, a business that has found a market, or someone who has found a partner for life. My protagonist/researcher/creature/lover/stratum-surfer, Frank, recounts for us some of his movements and readjustments in "The Flocking Party". He constantly readjusts to balance these different forces that make his life.

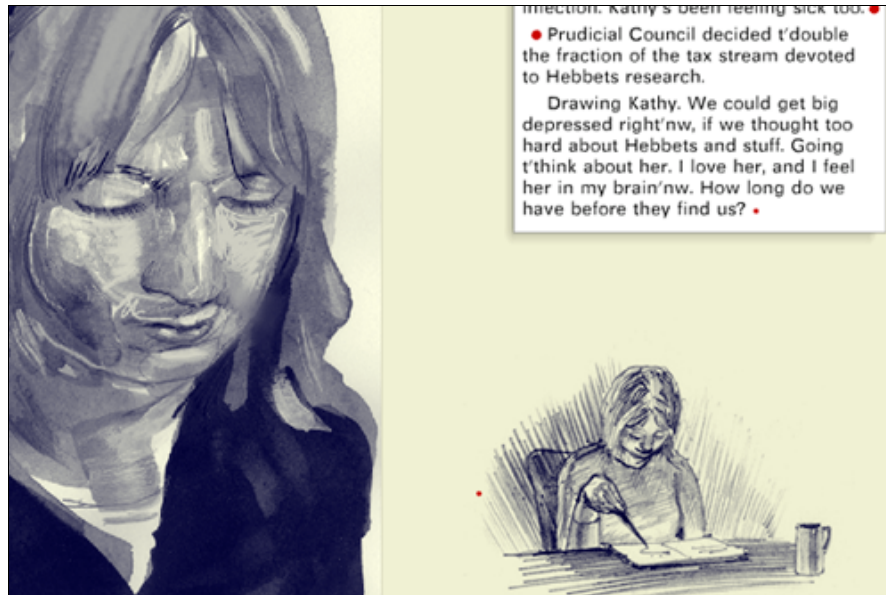
As I began writing for Frank, I realized that his voice would not be able to carry enough of the story and might feel unnatural if it did. I had to fracture it in some way. Frank's voice claims a kind of subjectivity, so I created another voice that laid claim to objectivity. Political parties are infamous for claiming objectivity, despite their gargantuan agendas. So I created a political party (the Flocking Party) that examines Frank's journal through the lens of time, adding their own annotations, a thousand years later. I tried to make both Frank's and the Party's voices distinct. Frank is more emotional and subjective, while the Party serves as a narrator, whose biases periodically surprise us. Here, they comment on his dream of being an infected neuron.

*"This dream, for the second day running, was a definite sign that Frank was infected. We now view this early stage of infection as a rite of passage. Dreams continue to be vivid throughout our life, but we've found that they help us to learn, grow, and adapt."* (Landau 21)

The voices of Frank and the Party provide complementary explanations of the various circumstances. Their own versions of the story lie somewhere between self-analysis and historical analysis. Frank is more often the first-person narrator and the Party the third-person narrator, but each provides a range of subjective and objective representations of the situation. I felt that it was important to give the Party a specific identity, as well as Frank, to support the notion that there is no such thing as an unbiased view. The two voices on this shared stratum are complimentary. They take information into account; rarely do they present information without giving some opinion about it. These opinions must be representations, rather than facts.

## External Representations

$$i=1000w \text{ AND } 1000i=w$$



from page 26 of "The Flocking Party"

The next question I faced was how Frank's ideas were communicated. One of the reasons I created Frank was to examine how one's life is conveyed to others. I tried to keep Frank's psychological experiences consistent with my understanding of how the brain functions. In the last chapters I introduced the idea of the internal representation, which is the principle mechanism of perception and cognition within the brain (Kaplan, *Cognition* 32). From the neuron up these perceptual mechanisms are built by embodied experience and also from exposure to representations like stories or images. The neural assemblies within Frank's brain, let's say, are actual physical structures. Each small bundle of neurons literally represents an object, feature, idea, quality of his senses, or pattern of thought. They serve both as his memories and his perceptual templates. The same internal representations are activated when he perceives and when he imagines something.

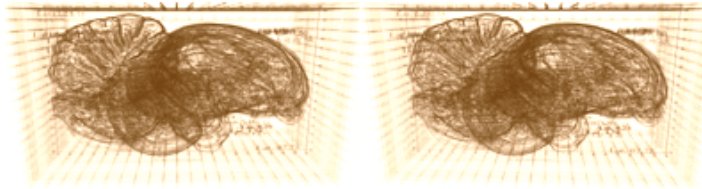
But if these bundles are called "representations", it changes the way "representations" are defined in shared cultures like art and science (ie text and images). The usual definition is called into question with the introduction of the "internal" kind. I will refer to the other kind, then, as external representations. This specification is more inclusive of the idea of internal representations. By saying "representation", I now mean both the internal and external kind. The senses act as the threshold between them. Frank's external representations would be his drawings, messages, or audio he uses to build more detailed internal representations. This clarification between the two helps to make sense of the way that different kinds of representations impress upon one another across the threshold of his senses, from the mind to the page and back.

*A picture is worth a thousand words, but a word is worth a thousand pictures.*

The page is Frank's space for accumulating external representations. But they have a variety of functions within its boundaries. His text and writing, for example, is used to convey information in an economic way. The economy of text helps it to be more communicable, because words activate internal representations that have deeper associations with sensorial details than are not included within a word. Pictures, though, have an inverse affect on symbolic internal representations; one image triggers a wide variety of textual references. Frank's representations stimulate in both textual and pictorial directions, allowing the reader/viewer to test their interpretations of one external representation against the other.

## Perceptual Technologist

External representations have been developed into quite elaborate perceptual technologies. And the ones that are more useful to society as a whole have a knack for being recreated and updated most often. These evolutionary continuums of perceptual technologies often crystallize into whole cultures and disciplines. Science and art, for example, are crystallized representation systems. But the structure and dynamics of each of these two systems are not as different as one might think. There are many analogies between them. The art market draws a strange parallel to funding for research (There are patrons to please.). And creative insight in the lab is analogous to creative development in studio work. Each discipline also has long-standing paradigms that present hoops to jump through, inhibiting the flow of creative work within them. Movement through these crystalline structures is quite often constricting to the human mind. Humans are more curious than that.



from page 31 of "The Flocking Party"

Paradigms and theories are the primary boundaries we must crack in these crystalline systems. They strongly affect the way that we are allowed to perceive (Kuhn 114). Maybe this is what Marshall McLuhan meant by "the medium is the message" (McLuhan, *Causality*, 24) or "experiments designed to confirm the old normally conceal the new" (McLuhan, *Causality*, 10). Our existing internal representations are the frames or hoops that new ideas must always jump through. But when you try to fit a square idea through a round hoop, you lose the interesting corners. How do we loosen these constricting boundaries? Perhaps the best way to get around this is by shaping one's own paradigm for creative work. This, after all, requires an enticing amount of freedom, creativity, and innovation. Inventing our own perceptual technologies will help us reshape the rigid hoops we jump through. Here is where the crystal opens up again into a shifting territory, accommodating the interesting corners.

These new territories of representation must be explored by the outcast, intruder, or pioneer. They ask questions about the limits of existing territories. But questioning the limits of scientific paradigms, for example, needs to be supported as a necessary catalytic activity. An ever-changing province requires these pioneers. It is difficult for me, for example, to claim that I'm indeed a scientist within our specialist culture, but I continually strive to design a diverse array of perceptual technologies to help us to see in new ways. "The Flocking Party" is a set of these perceptual technologies, which range from fiction and metaphor to interactive animation and multilinear narration. They are technologies for catalyzing reactions between the bordering strata of art and science. I am lodged between the two strata, pulling resources from either side to create them.



## Sci-Fi Journal



from page 5 of "The Flocking Party"



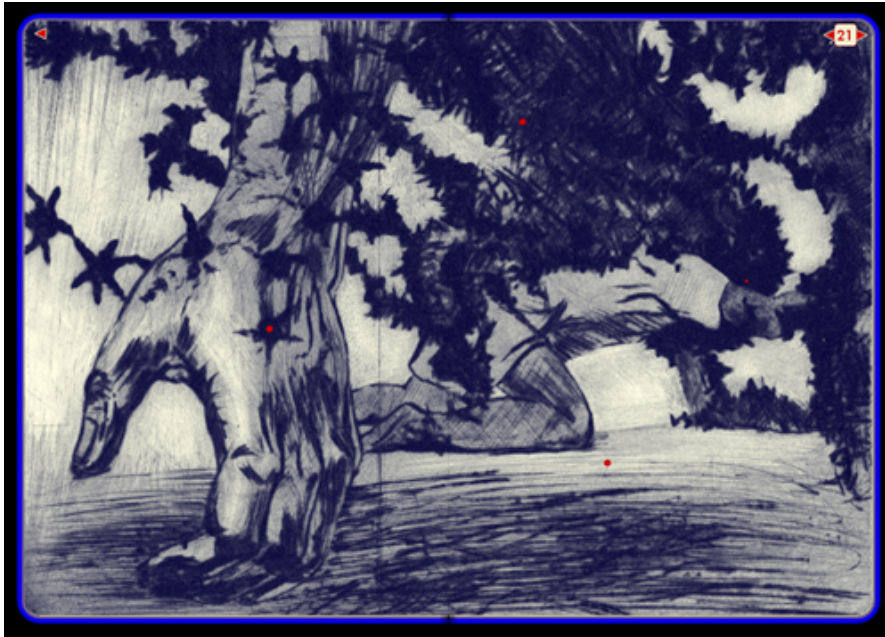
inspiration for Frank's electronic journal: Palm's Zire72, the Moleskine, and Apple's G4 PowerBook

"The Flocking Party" is most simply defined as a scientific journal. I felt that the journal format was a good perceptual technology for catalyzing scientific material. Because it presents the process of scientific research and represents it from a particular point of view. The journal is a firsthand account of Frank's exploration process. He tries to understand the effects of a renegade, biotech virus in 2035 that is infecting bird species. His electronic journal not only records his notes and drawings, but it also holds digital media as well, such as datasets, photos, videos, instant messages, and animations. Both Frank's personal life and research are recorded in the same journal, connecting his more familiar experiences of collaboration, family, and love with the process of scientific examination.

Before I go further, I would like to point out a peculiar example of the external representation that "The Flocking Party" explores, that is the self-portrait. Frank is a self-portrait of myself, but rather than looking into a mirror to create my portrait, I looked across a generation gap. Frank is my fictional son. I tried to imagine what it would be like for me, if I were my son in this dystopic future. Rather than an image of myself, I created an agent, who has behaviors, thoughts, fears, and eccentricities. The purpose for doing this was to create empathy for a future generation, both closing the generation gap and giving reasons to think about the long-term consequences of our decisions.

The self-portrait also represents the perceptual technologies and current events that I come in contact with daily. Frank's electronic journal is a combination of a sketchbook, a handheld organizer, and a laptop. I was curious to see what sort of device I would create out of this combination. Ultimately, the device represented a new way of collecting and transmitting data to the world outside the laboratory, indicating a shift in scientific fieldwork.

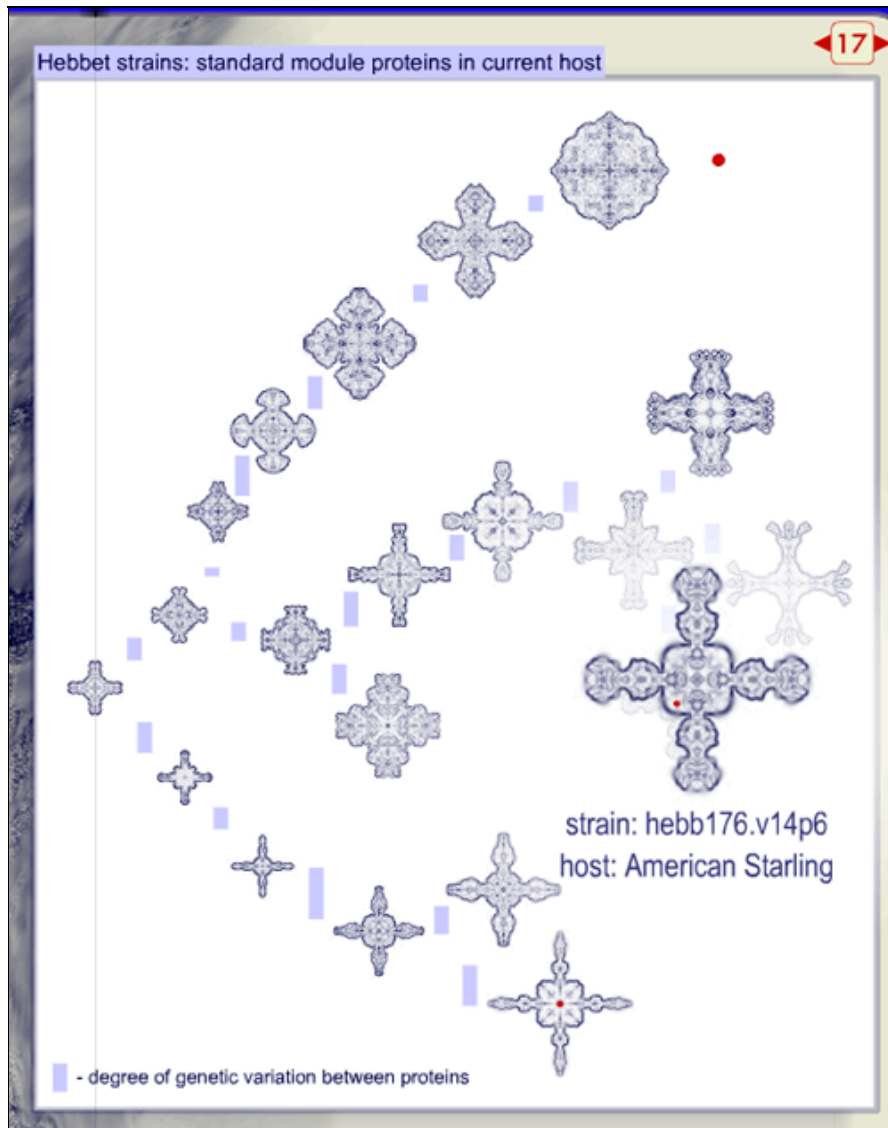




from page 21 of "The Flocking Party"

Another influence for the electronic journal is the copper etching plate used in printmaking. This technology allowed people doing visual research in the 17th Century to take the plate to places where the drawing had previously dominated, "nature", the laboratory, or the home. But the "key-plate" to this new technology was the fact that it could be brought back to a printing press, making widely distributable copies. Despite print's responsibility to disseminate images widely and often for propaganda, the artist has often used it to make more intimate works. I think of Goya, for example. Though he painted for royalty and nobility, his prints gave him a venue to communicate his personal convictions to his country. Frank's electronic notebook does something similar, but more immediately. He has the ability to create an image and send it across the network in an instant. But, perhaps more importantly, his handheld notebook provides a scale that is close to the body and to everyday life, allowing it to enter new territories.

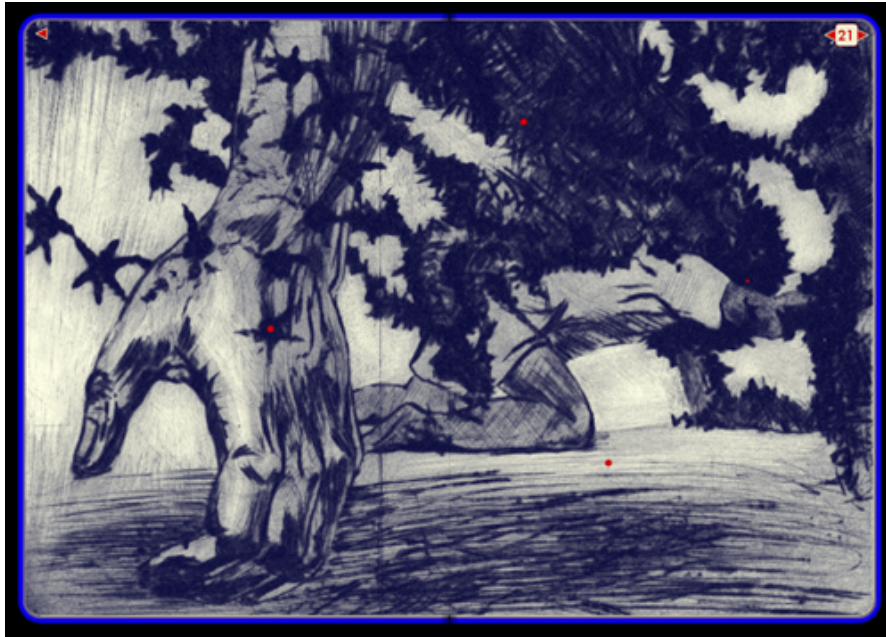
Some of the drawings by Frank are scans of etchings that I created specifically for the story. I used the technique of drypoint, where one scribes directly into the surface of the copper rather than etching the lines with an acid. The resulting print produces deeply moody blacks and holds ink in a looser and more atmospheric way on the plate than an etching. Rembrandt is revered for his drypoints, because they have such intimate and emotional qualities. His lines are delicate in one gesture and bold in the next. This medium seemed the most appropriate for Frank's three dreams. It is an old drawing technology that served the purpose of conveying the strong emotions that he feels in his dreams.



The way that Frank's drawings and images are crafted, unavoidably, comes from my own background as an artist. I have been in art school for ten years. My hard-earned skills as a thinker, draftsman, printmaker, animator, writer, and programmer are communicated through Frank. His research takes on the form of these highly descriptive and poetic technologies. Dipping these artistic methodologies into the ultramarine context of scientific research sends bubbles to the top of the aquarium, releasing some of the gaseous mystery bound in their art historical cores. These artistic methods then do things that they wouldn't in the usually bone-dry white cube. They take on an indigo depth of meaning from their connections to one another, the story, and the science.

But I struggle here in this dark aquarium to describe how the science changes the visual. I can say that the artistic methods are forced to change shape, when mimicking scientific aesthetics. Perhaps this shift alone gives the artistic vocabularies a greater flexibility. The genetic tree on page 17, for example, turns my interpretive digital images and drawing into a historic ordering of genetic history and molecular evolution (Landau 17). Drawn in a random order, the forms were later sorted out according to a lineage of shapes, giving the overall composition a flow it would not have taken otherwise.

This use of one disciplinary paradigm to change another carries throughout my process. My use of the researcher to convey my story is primarily a genre choice. Science fiction situates paradigms within contexts. Like Fontcuberta's use of Doctor Ameisenhaufen, Frank provides me with a way of stepping outside of myself, just enough to examine the psychology of my own research. By framing his subjectivity, I open the possibilities for examining my own presumptions in a more objective way.



## Chapter 4

### Perceptual Fiction: Mind-like Media

- Intermediate Technologies
- Cyberspaces
- Mind-like media
- Multilinear Narrative
- Code
- Commons
- Diverse Broadcasting
- Alternative Tactics
- Problem Solving



## Intermediate Technologies

The 'Book of Sand' by Jorge Luis Borges, talks of a book, which has an infinite number of pages, and each can only ever be visited once. The inability to ever return to them causes its reader great anxiety. Borges often invents strange and frustrating devices like this within his short fictions (Borges). These devices are a kind of narrative media within his stories, and by media I speak broadly, including metaphor as well as architecture. A common example of this Borgesian media is the labyrinth, which appears in 'The Garden of Forking Paths'. The garden in the story serves both as a maze and a narrative structure, where “forking” happens in “*time*, rather than in space” (Borges 125). Movement through this structure produces a unique story that the characters cannot predict.

Even though they are frustratingly complex, I believe these kinds of media have untapped properties. What if the wealth of such complex structures were recreated as a real narrative structure? Perhaps the Internet is one example. But I have been interested in wrestling with my own version of this. One of the challenges I undertook while creating my story, “The Flocking Party”, was to grapple with the issue of media arrangement. I ended up making a map-like structure that enables the reader to explore in directions of his or her own choosing. Its narrative connections are made through interactive links, but the integrity of the narrative does not evaporate into chaos. The result is a Borgesian structure that makes understanding the story an act of navigation, but is not meant to frustrate like the ones within Borges stories.

Frustration is a common characteristic of contemporary society. Perception of unseen dimensions is always mediated. To see a cell, you need a microscope. To experience world news, you need a newspaper or a television. We must always look through a haze of technological instruments, slanted narratives, and imposing agendas to build our own internal representations of the world (i.e. mental models). Making sense of it all is often a piecemeal process and quite demanding for contemporary life. So much so that moderating the torrent of information becomes an act of representation in and of itself. The structure of “The Flocking Party” is a case study in connecting narrative information of the unseen dimensions. The story's information is crafted to retain meaningful narrative connections, abating frustration.

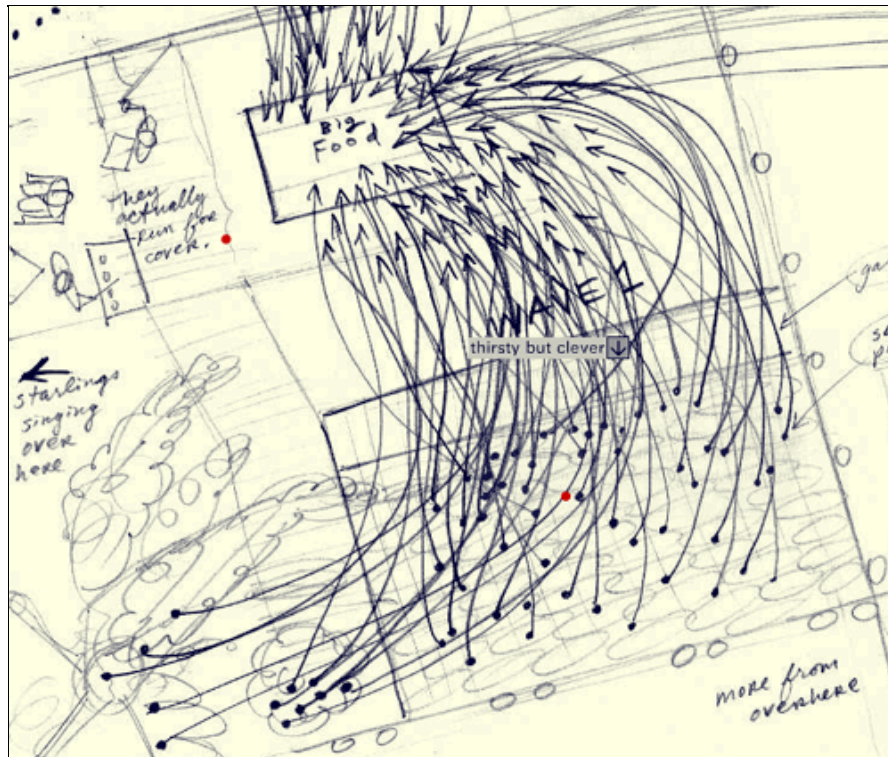


the page history of "The Flocking Party"



from page 21 of "The Flocking Party"





from page 6 of "The Flocking Party"

It's very tricky to design a way that information is delivered without boring people to death. In perception there are many neurological steps between the sense organs and consciousness. Because they are located within the body, there is little that can be done with them yet but try to understand how they work. Media, on the other hand, lie within our grasp to change and manipulate. These external representations (i.e. media) mediate between the environment and the senses. They act as perceptual technologies, both helping to perceive the world but also to define a view of it. In this way, media reorder the senses but in some cases they go so far as to become environments.

As information-reliant organisms, humans have cognitively evolved to deal with the complexity and demands of subtle and treacherous environments. Humans are connoisseurs of complexity. They do very well at exploring through environments, associating the elements within. Borges' stories examine the psychology behind such exploration. Perhaps the media arrangements that are more like environments are the best way to utilize this built-in knack for navigating.

"The Flocking Party" is just this sort of narrative environment. The reader does not read from the beginning to the end. They are not carried through the territory along one path; they must walk through. By following the links within, they move from one piece of information to the next. Gradually, a "plot" begins to emerge and the maze of connections becomes an engaging space to explore. The reader begins to wonder what they don't know yet about the story, and the missing pieces drive them forward. They aren't trying to make it to the end; they are trying to digest information at a pace that suits them. Because the story is located online, it is like a public park that they can visit as often as they wish to further explore the territory. This relieves the incessant temporal pressure normally placed on them by media like television, for example.

## Cyberspaces



composite from pages 5 and 21 of "The Flocking Party"

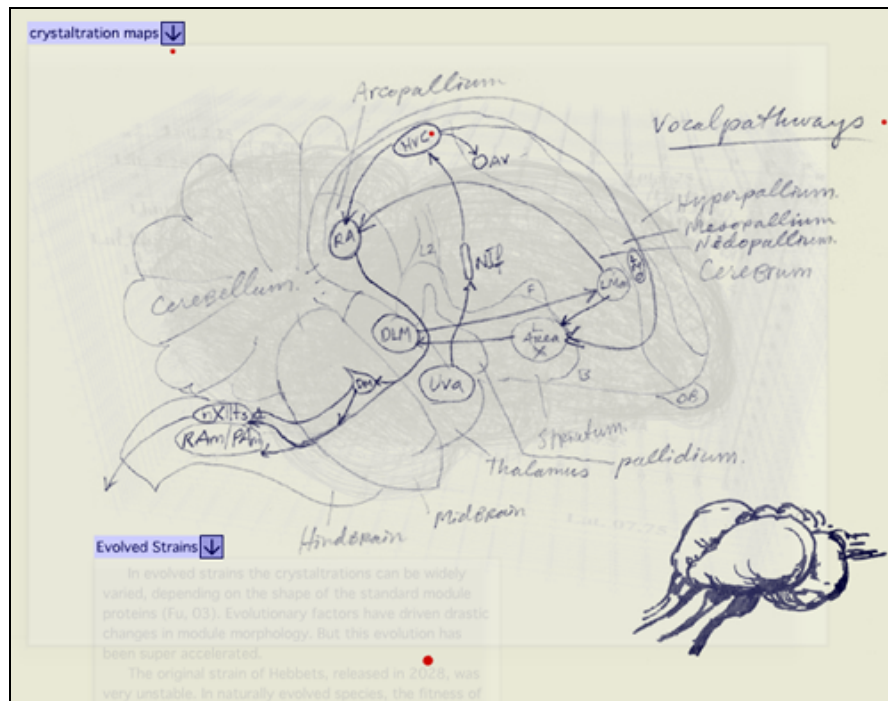
What does “cyberspace” or “online” mean today? What is your googlability (“googlability”)? (“Googlability” is the ease with which information is located on the Internet, often through the search engine Google.). How much information about you is accessible in the network? Despite cyber-utopian dreams, such as Ray Kurzweil's, you have not yet fully digitized and immortalized yourself (Kurzweil). But society is moving pretty quickly in this direction. Not only does digital information about the physical world grow at exponential rates, but everyday space also intersects more and more with digital information. Objects that are embedded with their own information, that Bruce Sterling calls “spimes”, will soon suck much of this digital information back into the physical world like a sponge (Sterling 76). Whichever direction digital information is flowing, it grows more pervasive.

Our arrangements of media also move closer to our senses. It is a shift from environmental arrangements to more sensory arrangements. Not that humans haven't already buried their senses. Television, for example, does quite a good job of saturating headspace, even if you don't have a Phillips, widescreen TV with ambient lighting and digital surround-sound. There are many examples of media that engulf our access to the world, and they are even moving steadily into the body, turning us into cyborgs. Increasingly, medical devices like pacemakers and robotic prosthetics replace the mechanics of the nervous system (Haraway 153). I bring these changes to your attention, not to frighten, but to consider their relevance to our understanding of the mind.

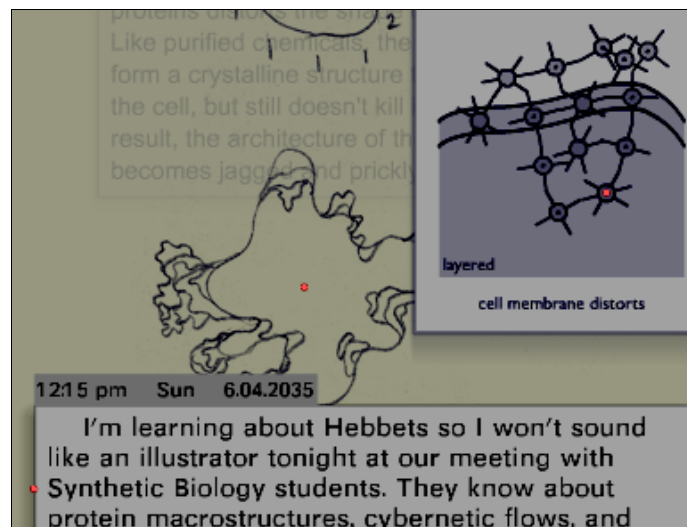
It may appear that humans know more and more (i.e. progress), but what if media and culture are simply creating an equally stifling buffer to the evolutionary system that shaped the mind? Media can be seen as reality delivery systems that define perception in a neurological kind of way. The more this becomes part of everyday life the more we need to be conscious of the arrangement of media. More open and flexible media arrangements leave room for interpretation and exploration, which humans have evolved to do so well. Understandings of how the mind functions will provide the best clues to designing these media arrangements.

In “The Flocking Party” I create just such an arrangement. I do this in a few ways. One, already discussed, is the narrative structure of the story. It is a narrative environment, which does not pump data into the mind. It allows them to consume this data in ways that make it meaningful, useful, and engaging to them. In another way, I refer to the mind as a subject of the story. The narration continues to return focus back on the mind and how it changes when the engineered virus, “Hebbets”, is introduced. It increases the associative capacity of the mind. “Hebbets” is one prop that is used to stimulate consciousness of the arrangement between neurology and media. It stimulates both fear and excitement about the plausibility of such a technology.

## Mind-like media



from page 16 of "The Flocking Party"



red dots on page 15 of "The Flocking Party"

I do not consider myself a Luddite; I would not be very good at raising sheep. On the other hand, it is unlikely that I can do anything to stop cognitive evolution. Indeed, I am excited about the evolution of culture, technology, and the human being, yet it is equally frightening to me. Frightening enough that I want to be part of this cognitive evolution process. And I want to create self-conscious media arrangements that help other people to be more conscious of this cognitive evolution.

In Chapter 2, *Environmental Fiction*, I presented the cognitive map, a network of associations in the brain. One of the major benefits of the cognitive map is its potential for innovation. This is where my ideas for creating a networked narrative originated. Because the cognitive map's sequences intersect, it has the ability to activate the discrete units of internal representations in sequences that it never did before. The new sequences are likely to still be relevant, because their associations were built through actual experience. My networked narrative is an analog of this idea. Only this external representation is arranged and networked outside of the mind. By connecting representations in meaningful, overlapping sequences, the resulting structure potentially has the same sort of capacity for problem solving as the cognitive map. Using a sort of hypertextual linking, the reader can move through "The Flocking Party" in sequences that I might never have expected, producing a greater number of meaningful sequences.

The links in the story are small red dots that act as both image elements and textual elements. On each page the dots are located in and amongst the text and images. The destination of their link is revealed when the reader rolls over them. The destination is also meaningfully correlated to the location of the dot. Reading is a process of connecting the dots.

Another way the narrative is more like an environment that may not be obvious at first is the overall design of each page. The mixing of text and images encourages the viewer to take in the page as if they would a scene in the park. Some of the windows and links even reveal new information when the reader rolls over them. When something seems of interest they head in that particular direction, examining images, reading text, or linking to other pages. The movement, even on each page, is contingent upon the particular reader's interests and tendencies. These fields of entry points on each page or node provide enough variation from reader to reader to de-stratify their uni-linear reading tendencies. Every time I read the story myself, I navigate along trajectories that I've never followed before.

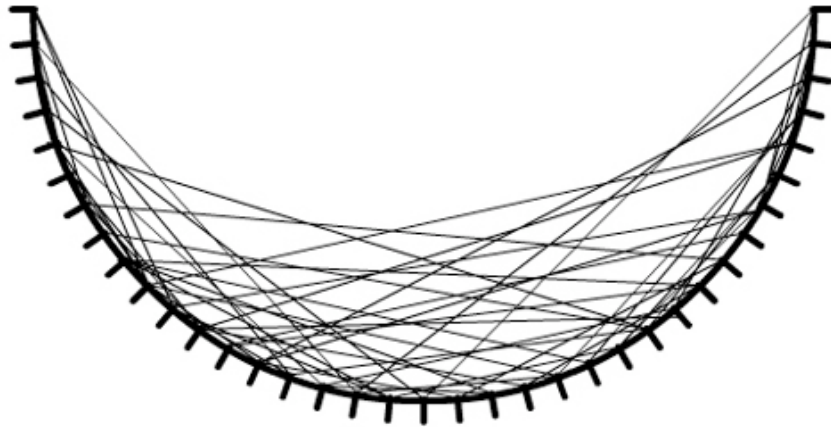


## Multilinear Narrative

Narration has a two-headed personality that rarely agrees with itself. On one side is the stern countenance of the linear story, on the other, the impish face of the nonlinear game. But their miscommunications are counter productive. If narration is thought of in terms of engagement or exploration rather than active versus passive, the two heads communicate more readily. Rather than thinking about a game as “nonlinear”, which almost sounds demeaning, we could regard the structure as a territory that prompts exploration. Nonlinear usually means multiple pathways through an interconnected structure. But linearity has not been negated here. It simply becomes a stream on a shallow plain that more easily shifts its course. So I think it would be better to think of these structures as multilinear. This definition resonates more with the cognitive map and will help us to think about narrative media in a new way rather than a negated way, finally giving the game-face of the two-headed monster some respect.

As you have guessed, “The Flocking Party” is an example of multilinearity. Multilinearity has a wide range of potential structures. I decided on a fairly basic structure. Overall, its arrangement is linear, but there is a lot of space in the middle for multilinear navigation. It is like a fat worm, where a network is squished into a linear form, but the connections inside still won't allow it to stay flat.

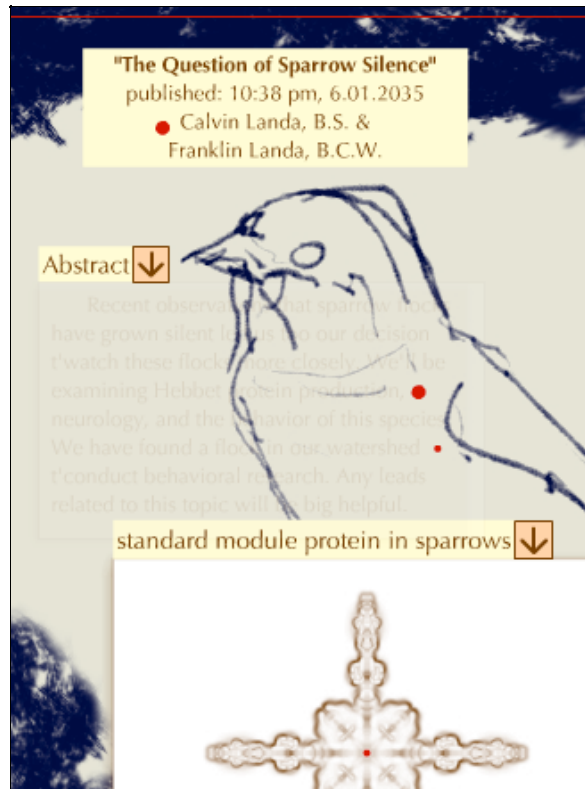
One reason for making a simpler multilinear form is the roadblocks that pop up when introducing something that no one knows how to use yet. People are most familiar with narratives in a linear form, because of books, movies, and television. Even most games go from beginning to end. Some writers and directors have begun to challenge this structure. American books like David Mitchell's *Cloud Atlas* and Neal Stevenson's *Cryptonomicon* or movies like Christopher Nolan's *Memento*, Quentin Tarantino's *Pulp Fiction*, and Richard Linklater's *Waking Life* have brought the form of multilinearity into the popular gaze. Although, these examples are labeled nonlinear, they exhibit characteristics of multilinearity. For example, they are more interesting to experience two and three times, because of the connections that are hidden in the first exploration. There are also many examples of this in literature, particularly from South American authors, like Borges. But even the authors, who provide cues for jumping from page to page, are faced with a book's architectural limitations. They still do not provide the freedom of movement that can happen on the web.



the multilinear structure of "The Flocking Party"







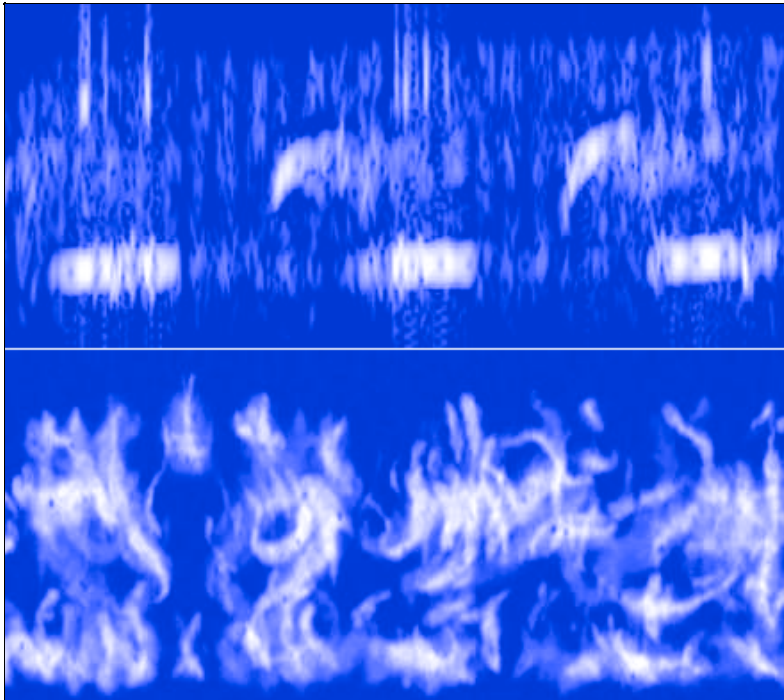
from page 2 of "The Flocking Party"

Another way that code affected the images was through their digitization. Drawings and photos alike all had to go through Adobe Photoshop before they reached Macromedia's Flash. The manipulation and collaging that happened in Photoshop gave the images a feeling that they were constructed from parts, undermining any claims to truth. The illusion of Photoshop only ever fools the reader for a moment, before they notice and remember that it is fiction.

Even the sound of the piece exhibited a multilinear design, which was a collaboration between myself and Timothy Day, a sound artist/engineer from Detroit. He generated and manipulated sounds by writing a program on a platform called KYMA. This program could learn sounds in successive stages, generating clips that sounded like a starling learning to mimic other sounds. The starling-like sounds associated well with their appearance in the story. Tim sent me these clips and I used random number generators and probability constraints to create sound textures. These textures are always a bit different every time a page is visited, like grass blowing in the wind. Because the readers revisit pages, I wanted to provide a bit of variation each time they visited. Like the animations, the sound had life-like qualities, helping the reader to feel that they were inside of a living context.

Connections between content were also made through a visual kind of coding. Because I was designing a virtual environment, I made an attempt to make each page have a particular feeling, like unique places do. When I reuse elements, I do so to create a connection between one page and another. You can see this in the color-coding of the windows and in the sound clips that are recombined. But the pages have specific feelings so that you will not feel like you have been 'here' before unless you really have.

## Commons



from page 23 of "The Flocking Party"

"The Flocking Party" also faced the problem of reaching an audience who would be receptive to this new media monster. As I constructed the piece, I slowly decided that the best place to distribute it was online. This affected the sort of file sizes that I could use. It also forced me to rearrange the overall architecture of the Flash files several times. I wanted to make it as accessible as possible, and I wasn't sure who might be engaged by the structure of the story.

The Internet provides a useful kind of external nervous system for connecting humans at a global scale. Global community forums are emerging. This is not to say that local communities should be ignored (as if the tragedy of the commons wasn't bad enough (Hardin)). Perhaps this is optimistic, but I believe that our taste for the local commons could be rejuvenated by our participation in the global commons of the Internet (Lessig 49). But online, the habits of help and participation have their limits and constrictions. Behind a glowing screen we cannot lend a hand, paint a living room, enjoy homemade punch, carry groceries, dig a ditch, or smell the trees (not yet anyway). Getting out from behind the glow becomes very important for creatures that evolved under much different environmental and social conditions.

## Diverse Broadcasting

# THE FLOCKING PARTY

THE HEBBETS VIRUS OF 2035 SHARES A STRIKING RESEMBLANCE TO THE PRESENT BIRD FLU EPIDEMIC. LET'S EXPLORE SOME OF THESE AND OTHER CONNECTIONS TO OUR TIME.

SATURDAY, FEBRUARY 11, 2006

## Portrait of Arpa

A portrait of Arpa that Frank drew. His infection was very deveoped at this point, so the drawing has some strange qualities.



Portrait of Arpa  
Originally uploaded by flockingparty.

POSTED BY CHRISLANDAU AT 10:10 PM 0 COMMENTS

## Avian Brain

A model of an infected avian brain. This brain is from a pigeon infected with Hebbets.



www.flickr.com



what is this?

LINKS

"THE FLOCKING PARTY"

**ABOUT ME**

**CHRIS LANDAU**  
ANN ARBOR,  
MICHIGAN, UNITED  
STATES

I'm currently working on my MFA at the University of Michigan in Ann Arbor. Soon, I will be migrating to Philadelphia to reunite with the love of my life.

[VIEW MY COMPLETE PROFILE](#)

As I continued considering the distribution of the project, I realized that there were social variables missing from my equation. One thing that I have discussed in this article is searching through narrative spaces. So far, I have focused on the way that a singular reader navigates this space. In a story like “The Flocking Party” it is quite difficult to have multiple, simultaneous readers, because the pacing that different readers establish would produce a lot of distracting interference. I am interested, though, in possibilities for more social readings of the work. A medium that handles this very well is the [blog](#). I included 'blogmaps' in my story (a way of collecting and communicating research in the future) as a way of referencing this format. Unfortunately, I was not able to fully recreate the actual sort of flocking that blogs encourage within the architecture of the narrative. But I did create a blog to help to create a 'buzz' for the website. This was one of the online ways that I promoted the project.

The Flocking Party [blog](#)  
see CD ROM




[Web](#) [Images](#) [Groups](#) [News](#)

The Flocking Party

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**Web**

Did you mean: [The Filling Party](#)

**[The Flocking Party](#)**  
 Saturated with flocks of intelligent birds, Earth struggles through as big as the introduction of human civilization. The year is 20  
[www.theflockingparty.com/](http://www.theflockingparty.com/) - 7k - Jan 20, 2006 - [Cached](#) - [Similar pages](#)

**[Flocking Party Patterns on Flickr - Photo Sharing!](#)**  
 Flickr is almost certainly the best online photo management and sharing website in the world. Show off your favorite photos to the world, secure  
[www.flickr.com/photos/14423101@N00/86190648/](http://www.flickr.com/photos/14423101@N00/86190648/) - 24k - [Cached](#)

**[the flocking party](#)**  
 the **flocking party**. In 2035 Franklin Landa struggles to understand the behavior of birds. Exploration of the **flocking party** ... The **Flocking Party** is an online narrative by  
[theflockingparty.blogspot.com/](http://theflockingparty.blogspot.com/) - 71k - [Cached](#) - [Similar pages](#)

**[the flocking party: Flocking Party Patterns](#)**  
 the **flocking party**. In 2035 Franklin Landa struggles to understand the behavior of birds. Exploration of the **flocking party** ...  
[theflockingparty.blogspot.com/ 2006/01/flocking-party](http://theflockingparty.blogspot.com/2006/01/flocking-party)

**[chrislandau.net](#)**  
 Watch for The **Flocking Party** February 1st. (view the beta version) A lot has happened to the **Flocking Party** in the last seven days.  
[www-personal.umich.edu/~cmlandau/updates.html](http://www-personal.umich.edu/~cmlandau/updates.html) - 14k - [Cached](#)

"The Flocking Party" increases its 'googlability'

I also sent emails, I sent a lot of emails, and I sent emails to listserves that sent yet more emails. I can only hope that the recipients of these emails send more emails. But the world can't revolve around email, so I tried to participate a bit more in blogging to get the word out. First, I started my own, homemade blog to talk about my process, eventually moving to a blog service (blogger.com) where people could leave comments. Then, I strategically left my own comments on other blogs related to my project such as "The Bird Flu Blog" ("THE BIRD FLU BLOG") or media theory blogs. I didn't spam them, though; I tried to leave comments that were relevant to the topic under discussion with my name as a link to my site. Spamming these sites would have just made people angry. But when someone makes an interesting comment, people wonder about what makes that person tick and they tend to want to know more about them. When they tried to find out more about me by clicking on my name, it sent them to my site. This early PR activity is still sending people to my site.

My blog quickly turned into a photo gallery of images from "The Flocking Party", when I began using Flickr.com, a sort of photo-blogging site. I tried to write short, narrative captions for these images that would encourage people to want to know more about the story. Through Flickr.com, I posted them on my blog, comments and all. Just prior to the official release of the website, I used the blog to quote some of "The Flocking Party"'s annotations. After that, I added photos again. My next intention is to post pieces of "Utilities of Fiction" as it comes together. By the time you read this, though, it will be old news, unless you are currently reading my blog's archive

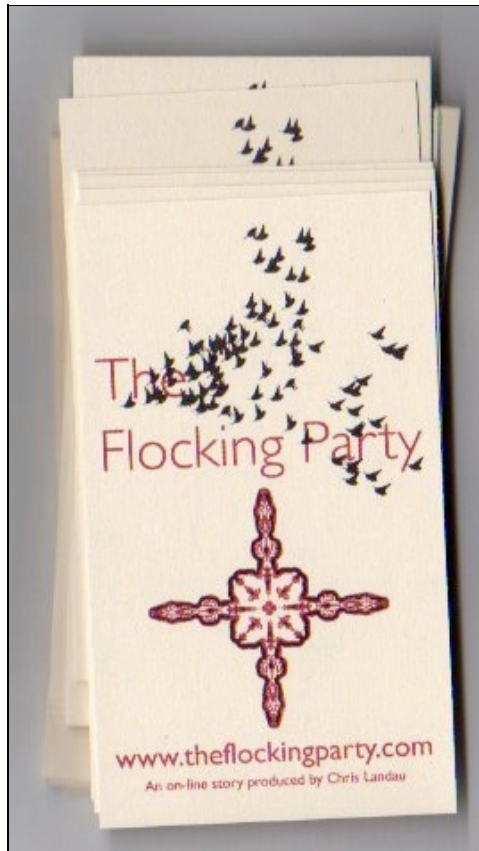


birdseed stencil eaten by deer

## Alternative Tactics

Admittedly, “The Flocking Party” requires its reader to stare at a screen for a few extra hours of their life, not to mention the countless hours I spent there to create it. This is somewhat regrettable to me. It makes me wish that I had a journal like my protagonist, Frank to get out there as easily. Within the story there is this focus on the movement of media and computing into meaningfully situated spaces. For example, Frank’s journal enables him to get outside. And the images he creates display his passionate observations of outside creatures and spaces.

After months in front of a screen I had a great desire to get outside whenever possible. So I also promoted the website in ways that engendered interaction with people and the outside environment. While my website served as my online agent, I played in the snow, literally distributing the seeds of the project. I did this a few ways. I created a large stencil of my web address and stenciled birdseed onto snowy hillsides. This was done a few times, but some factors stood in my way. First, the snow was very unreliable this year. Second, my stencil was very big, 40 ft long, in fact. It was made out of pink insulation paneling, which folds down like an accordion book into a 1 by 2 by 4 foot foam block. When opened-up, it didn’t behave very well on a windy, winter day. I have managed to stencil a few times, once by my studio, and once on campus. The second time I stenciled, a herd of deer ate the seeds before anyone saw them. I may do more, since I discovered that the seeds are still quite visible on the bare ground.



business cards

I also did what I'm calling the "Business Card Plague". I left business cards adorned with the website's url and with a bold image of the "Hebbets" virus in places that people would run into them. I liked this, because people discovered them in their everyday, on-the-run activities, like riding the bus or buying coffee. The rule I made for myself was that the cards were like a virus. So they could only be left in places that I went in my everyday life. Among the places I left them included: grocery stores, gas stations, buses, bus stops, computer terminals, bathrooms, book drops, movie theaters, lecture halls, cashier counters, ledges by doors, the mall, etc. I didn't want to post them on community billboards or leave stacks of them at every café, because I wanted to keep the encounter with this information virus an intimate one. Like the blog comments, I wanted people's interest to be stimulated. A stack of cards on a counter, might look too much like advertising. I've since realized that more people are likely to be curious enough to pick up a card from a stack, and have less reservations about setting out stacks in more common venues.

My final and ongoing publicity is an invented social phenomenon. It is one possible way of viewing "The Flocking Party" or any multilinear narrative in a more social arrangement. I call these arrangements 'flocking parties'. A group of people sits around a digital projection of the piece. The 'leader' has control of the mouse, but it is their job to follow the cumulative command of the 'flock'. With laser pointers and conversation, the 'flock' prompts the leader to rollover and click on the content of their choosing. Simple rules needed to be developed to structure the movement of the flock a bit more, like clustering into no more than two groups. I think that by intersecting digital space with real space the social interaction takes on a new dimension.

## Problem Solving



performing "The Flocking Party" at SYNC'06

"The Flocking Party" averaged 500 hits per day in the second month it was up. I am still receiving emails and comments about it and it continues to perpetuate discussion. I am heartened to hear that people can relate to the subject matter and the aesthetics of the design. This has been a great accomplishment for me. I don't think that any of my work has ever quite communicated ideas as effectively as "The Flocking Party". But the component I think has the greatest potential for scientific and creative culture is the form of the multilinear narrative, which emerged from my process of creating the story.

As a mind-like medium, multilinear narrative holds the potential to generate a diverse range of relevant questions and answers. A network of meaningfully connected content serves as a problem space that is engaging to explore. As different people explore, they each find their own way through the content. Although, this produces a huge range of interpretations, those familiar with the territory gain a common ground to discuss a new problem space. "The Flocking Party" is a test run of this idea. By distributing "The Flocking Party" to members of a large audience, it holds great potential for discussion. The complimentary interpretations it generates serve as narrative ground for conversation about cognition, media, and environment.



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