## ABSURD NATURALISM: FIELD BIOLOGY ON THE CRUST OF THE EARTH

By

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Table of Contentsii
Abstractiii
List of Imagesv
Acknowledgmentsvi
Introduction – Biosphere Three1
Installation 1 – Lithosphere7
Installation 2– Stones Shaped By Chance22
Installation 3 – Chelonioidea34
Conclusion – A Cleansing Storm46
Appendix A –Annotated Bibliography: Assisted Reproductive Technology50
Works Cited

#### Abstract

This project examines the growth and accumulation of collections, and the political implications of categorization in three installations: Lithosphere, Stones Shaped by Chance, and Chelonioidea. These installations invent worlds in a parallel universe; with their own biologies and genetics. They are influenced by scientific initiatives such as The Human Genome Project and Biosphere 2, which provide a conceptual framework for artworks that examine systems for life cycles and analysis. Using taxonomy, horror vacui, encyclopedias, and cabinets of curiosities as references, I accumulate my own collections with an awareness of the idiosyncrasies inherent to any collection. I use the term Absurd Naturalism to describe the impossibility of maintaining a neutral and omniscient standpoint as the creator of a collection. In this way, it also describes the field I am working in – problems and solutions circle one another until they are indistinguishable, and the work comes out of the center of this spiral.

My installations take form by interpreting ecological systems, using handmade, crafted, and found materials. Repetition, mutation, and reproduction are central in both the content and the methodology. Drawing is the source of all mutations. Here, the aesthetics of DIY, childhood craft, queer spaces, and underground punk are used to question the authority of information and the meaning of scientific facts. While artists such as Albertus Seba and Luigi Serafini provide a conceptual basis for my work, collectives such as Paper Rad and Wham City serve as both my contemporaries, and my audience. Growth and

iii

categorization oscillate between the personal and the political in this project. The research questions move under my own skin and back into the studio. I am interested in genetics as the basis for familial relation and sameness, genetic mutation as a marker for change, and how genetics functions in redefining the category of biological life.

#### List of Images

Image 1.0 – Allison (Sunny) Karow, Biosphere Two, digital image, 2013 Image 1.1 – Allison (Sunny) Karow, The Eaters, sketch from the Beaty Biodiversity Museum at UBC, 2012

Image 2.0 – Allison (Sunny) Karow, Lithosphere, artist's book: cover, installation view, color page #2, 2012

Image 2.1 – Colin Chillag, I'm An Evolutionary Biologist and An Erroneous Model (detail), paintings, 2008

Image 2.2 – Allison (Sunny) Karow, Grazers, Autotrophs, Predators, Parasites, Decomposers, drawing, 2011

Image 2.3 – Allison (Sunny) Karow, Eaters, drawing, 2011

- Image 2.4 Allison (Sunny) Karow, Impossible Shapes, Building Blocks, detail from The Last Summer, drawing, 2011
- Image 2.5 Allison (Sunny) Karow, The Last Summer, detail, drawing, 2011

Image 2.6 – Allison (Sunny) Karow, Cone Worms with detail, assemblage, 2012

- Image 2.7 Allison (Sunny) Karow, In Petrified Forest After Cleansing St orm, collage, 2012
- Image 2.8 Allison (Sunny) Karow, The Last Summer, drawing, 2011
- Image 2.9 Luigi Serafini, pages 2 and M from Codex Seraphinianus , 1976
- Image 3.0 Allison (Sunny) Karow, Shape #1 Waterfall, installation, 2012

Image 3.1 – Allison (Sunny) Karow, Shape #1 – Waterfall, details, installation, 2012

Image 3.2 – Allison (Sunny) Karow, Shape #2 – Shrine, installation, 2012

Image 3.3 – Allison (Sunny) Karow, Shape #2 – Shrine, details (text on the right reads "trying to

measure a certain distance / in an imaginary dome"), installation, 2012

Image 3.4 – Allison (Sunny) Karow, Necker cube and blivet (top), impossible shape #1(bottom), drawing, 2013

Image 3.5 – Allison (Sunny) Karow, Shape #3 – Leaky Horseshoe, installation, 2012

٧

- Image 3.6 Allison (Sunny) Karow, Shape #3 Leaky Horseshoe, details, installation, 2012
- Image 3.7 Albertus Seba, Stones Shaped by Chance, pg. 399 of Cabinet of Natural Curiosities
- Image 3.8 Allison (Sunny) Karow, Cone Worms in progress, sculptural elements, 2011
- Image 3.9 Allison (Sunny) Karow, Glow Worms in progress, sculptural elements, 2012
- Image 3.10 Allison (Sunny) Karow, Shape #4 Bend, installation, 2012
- Image 3.11 Allison (Sunny) Karow, Shape #4 Bend, details, installation, 2012
- Image 4.0 Allison (Sunny) Karow, Chelonioidea, animation stills, 2012
- Image 4.1 Allison (Sunny) Karow, E-mail Correspondence, 2012
- Image 4.2 Allison (Sunny) Karow, Worms in progress, sculptural elements, 2012
- Image 4.2 Allison (Sunny) Karow, Mutant Hybrids Reprodu cing, installation, 2012
- Image 4.3 Allison (Sunny) Karow, Tree Fall, sculpture, 2012
- Image 4.4 Allison (Sunny) Karow, Assemblage #1, with detail, assemblage, 2012
- Image 4.5 Allison (Sunny) Karow, Cone Ring Worm #2, with detail, sculpture, 2012
- Image 4.6 Allison (Sunny) Karow, Uninstalling Tree Fall, 2012
- Image 4.7 Allison (Sunny) Karow, Fast Like A Dart / In the Petrified Forest After A Cleansing Storm, with detail, installation, 2012
- Image 5.00 Final Installation and Final Exhibition, 2013
- Image 5.0 Derek Woodward, Cashtub, digital image, 2012
- Image 5.1 Derek Woodward, Art In the Age of Mechanical Reproduction, digital image, 2012

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#### Introduction – Biosphere Three

Biosphere Two is an architectural / scientific / new age project housed in a giant glass temple in Arizona's Sonoran desert, north of Tucson. It is sealed off from the world ('Biosphere One'), by a stainless steel plate on the bottom and a framework of glass and steel that reaches up into the surrounding desert. Approaching the structure is a surreal moment; inside, beads of water drip against a pane, lush plants push up against the glass, and look out at the thirsty desert completely separated from it. Walking through the structures on a scripted guided tour takes you through five biomes.<sup>1</sup> These manufactured environments are big enough to experience as a facsimile of the natural, but small enough to study as closed systems.

This science experiment is made up of rainforest, ocean, savannah, plants, animals, and people. It is a failed utopia that is now a tourist attraction and a research facility. The project managers collected examples of major types of biological life – a scientific version of Noah's Ark. They used this to create a mini-earth, which might reveal something about ecological relationships and human survival. Their most famous experiment was sealing a team of people inside for two years to observe whether life as we understand it could be sustained in a sealed environment. This experiment failed, but the space is now used to conduct different kinds of research.

<sup>&</sup>lt;sup>1</sup> a large, naturally occurring community of flora and fauna occupying a major habitat, e.g. forest or tundra (Oxford Dictionary.)

Walking through B2 is anti-climatic at best, from a scientific point of view. The project is a delightfully absurd money pit, with cracked windowpanes safeguarding the perimeter and questionably functional airlocks that prevent contamination from the outside world. I pulled a candy bar out of my pocket in a basement tunnel where cockroaches lined concrete tanks, labeled obscurely. Nobody noticed or maybe it didn't matter. I suspended my disbelief and pretended I was trapped in Jurassic Park. I ate my candy bar and spilled crumbs everywhere. I ignored the tour guide and made a sound recording of the echoes inside the "West Lung" while an explanation of air regulation droned on in the background. I was in another place, a location more historical than spatial – a cave or a tunnel as a site for introspection<sup>2</sup>.



Image 1.0 - Biosphere Two, digital image, 2013

<sup>&</sup>lt;sup>2</sup> The experience of enclosed domes is an example of being in a space that is emotionally and spiritually charged. Like the corners and nests in Gaston Bachelard's The Poetics of Space, the domes and tunnels of Biosphere 2, and the spaces created in the installations in t his thesis, are carefully structured to create an atmosphere for inquiry and close inspection / introspection.

Biosphere Two was created as a 3D encyclopedia, a catalogue of all life on earth. This flawed project failed by attempting to create a facsimile of life on earth based on appearance alone. For example, insects from different bioregions were combined to create the 'rainforest,' fog and rain were created artificially, and distances between biomes were vastly scaled down. I use this model, a combination of utopic pseudoscience and encyclopedic collecting, as a starting point for my own project.

Biosphere Three is a label I use to envision the universe that I create via sculpture and installation. It is outside / inside Biosphere One, and more cynical / playful than Biosphere Two. Creatures morph and blend and grow, not in a replication of what we are used to, but rather in a parallel universe. Like a filmmaker, I ask viewers to enter a prepared space and suspend disbelief.

eatures pass by one another in this space – humans, insects, birds, more humans. Creating and destroying hierarchies in a constantly changing, but closely monitored environment. The creatures in my project are sometimes part of the installation, sometimes the people who experience it. Lines and string guide eyes around a space but don't point to an exit, or answer to how things are connected.

"No mapping is possible when a party is moving at fast speed such as when pursued or pursuing. Light might be avail able to make or read a map. Infravision is not suitable in such circumstances. Marks, dropped objects, or a trailing string

3

or line are typically useless devices in dungeons, as they will be obliterated moved or destroyed by passing creatures. <sup>3</sup>"

This thesis project is a series of three installations that grew out of drawings. The process is a part of the installation, and is visibly expressed as an obsessive collection. My studio turns inside-out to expose the discoveries that grow out of book forms; drawings that leak onto the floor and reach for one another; shoots of mold made of string, sporing along an electrical cord to find a substrate that is the same hue or shape or type. Piles combine and separate, mirroring the overlapping aesthetics of field guides, encyclopedias, and other collections that I curate.

The categorizing of life and nature guide my process, but are not always visible. The pile, the spillage, a dense mat of urban forest creeps through the gallery and leaks out of what were once paintings and drawings – these forms define the aesthetic of a universe "whose center is everywhere and whose circumference is nowhere."<sup>4</sup> Dense, brightly colored assemblages blur the rigid boundaries between plant, animal, mineral, and other categories. The work alternately takes the form of small, separate biomes (i.e. drawings, sculptures, books) and larger unified landscapes (installations).

<sup>&</sup>lt;sup>3</sup> From E. Gary Gygax's Advanced Dungeons & Dragons Players Handbook.

<sup>&</sup>lt;sup>4</sup> From Borges' The Aleph, a story about a single point that contains the en tire universe. The Aleph can only be viewed while meditating in the dark, underneath one of the character's basement stairs.

This project is a self-organizing system <sup>5</sup>, a cabinet of curiosity, a shrine, and an encyclopedia.

- carrier shails



THE EATERS

tusk shell

GRAZERS AUTOTROPHS PREDATORS PARASITES DECOMPOSERS

Image 1.1- The Eaters, sketch from the Beaty Biodiversity Museum at UBC, 2012

<sup>&</sup>lt;sup>5</sup> I am referring to Chilean biologists Humberto Maturana and Francisco Varela's term autopoiesis here. Autopoiesis describes a system that can replicate itself, specifically the biological cell. I appropriate this term in my studio to approximate the idea of a system in which all the parts work together as an active machine.

The research here comes from my interest in the biological project of collecting, categorizing, and describing everything. This manifests in concepts like taxonomy and horror vacui.

It also translates to a political scale through the institution of science. The political practice of categorizing into sets and subsets is at stake in these projects. Legislation and hierarchical organization within society are the consequences of assigning traits based on category. I use the separation of things into the categories of life and non-life as an example of how this works, and explore it from many angles throughout this thesis.

"[C]ategories express not only the forms but also the conditions of exis tence. Just as one does not judge a man's value according to the conception he has of himself, one cannot judge - or admire - this specific society by taking the discourse it addresses to itself as necessarily true." <sup>6</sup>

<sup>&</sup>lt;sup>6</sup> From Guy Debord's Society of the Spectacle.

### Installation 1 – Lithosphere



Image 2.0 – Lithosphere, artist's book: cover, installation view, color page #2, 2012 "each day that passes / you become less of a person / and more of an idea / or a

set of ideas / like a book"7

Lithosphere is an installation and a body of work that includes an artist's book, drawings, animation, and sculpture. The installation brings together many works, which focus on Absurd Naturalism and are the building blocks from which the rest of my thesis work grows. I use the word lithosphere, literally "crust of the earth," to refer to the project of naming the collection – the accumulation of the things on earth, or the part that humans are primarily concerned with. The crust is where we are, and where all of our primary concerns live. It is the most important thing for us, but it is also absurdly insignificant – an orange peel compared to the rest of space.

I appropriate Michel Foucault's term, heterotopia<sup>8</sup>, to convey a sense of the neutrality towards embracing a future that is neither utopian nor dystopian –

<sup>&</sup>lt;sup>7</sup> From My Most Favorite Book, by Richie Gimbel. From the dedication page of the artist's book, Lithosphere.

an other place. The first time I heard this word, I thought it meant something else – an alternative to utopia or dystopia, a way of thinking about the future without attaching a value to it. Here, I mutate the word heterotopia to mean an other place, in the sense that it can offer a variety of alternative ways to think about both theoretical and actual places. Juxtaposed with Foucault's other space, my heterotopia becomes an experimental playground, where a drawing creates growth unmediated by the constraints of the physical world. As I reassign the meaning of heterotopia, I am also twisting the ideas of ecology, biosphere, lithosphere, and scientific exploration in my research so that they can be experienced as other spaces.



Image 2.1 – Colin Chillag, I'm An Evolutionary Biologist and An Erroneous Model (detail), 2008<sup>9</sup>

<sup>&</sup>lt;sup>8</sup> A term coined by Michel Foucault for a speech delivered at an architectural conference in 1967 to describe the conceptual separation of certain spaces from t he rest of society, specifically those used for activities outside of daily life (honeymoons, cemeteries, boarding schools, etc.) <sup>9</sup> Colin Chillag is an artist who uses the form of biological documentation to play with the creation of facts and systems. Evolutionary biologists also use the idea of a "book of life" in the form of a "tree of life", in order to show networks of relatedness amongst organisms. Expanding beyond this, Manuel Lima visualizes and theorizes the complex networks, in his book Visualizing Complexity, that unite data across fields, resulting in maps that pose alternative to the "tree of life" model.

Efforts to create a "book of life" are ubiquitous in Western culture. For example, the encyclopedia attempts to catalog "everything" from an objective outside perspective and The Human Genome Project<sup>10</sup> is perceived as an encyclopedia for life itself. Such collections of information are constructed with a bias towards the author, and point to a tradition that is used to conduct formal scientific research. Instead, I work within a system that recognizes the researcher as part of the research. As a studio artist, I don't know what I'm doing in advance of doing it, but I know that I start from the framework of a field that must recognize the artist as part of the artwork. This results in a type of field biology, which I call Absurd Naturalism<sup>11</sup>.

Absurd Naturalism is a semi-permeable, overlapping gray area of art and science, with central principles of exploration, imagination, collecting and organizing. This takes elements from the scientific method, (question, research, hypothesize, experiment, analyze results, report results, ask a new question) and adds the freedom to break any of the rules, to use humor, and to be playful with the meaning of information and the authority of the fact.

<sup>&</sup>lt;sup>10</sup> The Human Genome Project was initiated in 1990 and completed in 2003. Its main goal was to identify all of the genes that make up human DNA , and to store this information in databases for future use in both the public and private sectors. In her book, The Poetics of DNA, Judith Roof reveals the circular nature of culture and science in which cultural biases are revealed in scientific facts. This allows for a pop science atmosphere in which the metaphor of genes as words, DNA as sentences, and the genome as a book conjures images of tiny protagonists functioning within hierarchies inside our bodies. This leads to a pseudoscience that reinforces the notion that a person's identity is housed in their genes.

<sup>&</sup>lt;sup>11</sup> My understanding of the absurd is as a philosophy in which meaning in life cannot be ascertained or derived from a rational search, but that the struggle itself to search for types of meaning is revealing of deep truths. I use this, and the direct link between Dada and Theatre of the Absurd, to situate myself politically. Martin Esslin, critic and author of The Theatre of the Absurd, describes how this type of theater expresses the absurd as a disharmony between people and their purpose in content, and also in form. The stylistic form of the plays and writing embodies a kind of discord that makes a serious joke of embracing futility and reinforces irrationality by being irrational.

Absurd Naturalism is a pseudoscience, and is the theoretical precursor to Absurd Evolution – a methodology that implies that mistakes in drawing are similar to mutations in DNA copying. Absurd Evolution is the part of my methodology that describes how I use drawing as a tool. As a drawing is repeated, changes and accidents occur as I translate the original subject into the first drawing. The spaces between the drawing and the subject, and the moments where mutations occur, become the starting points for the next set of drawings. Then, a second kind of mutation occurs as subsequent drawings are made from the original one. Using this process I build a typology specific to my work, like characters in the story of an encyclopedia. For example, the Eaters (below) are characters that metabolize other life forms as they move through a landscape. They are part of a lineage that evolved over hundreds of drawings.



Image 2.2 - Grazers, Autotrophs, Predators, Parasites, Decomposers, 2011



Image 2.3 - Eaters, 2011



Image 2.4 – Impossible Shapes, Building Blocks, detail from The Last Summer, 2011



Image 2.5 – The Last Summer, detail, 2011

I use low-tech and recently obsolete materials, for example office supplies.<sup>12</sup> The photocopier is a special example, because it mutates the image with each duplicate, opening up an opportunity for transformation. I compare the photocopier to organic systems of proteins copying DNA. Both are visualized as machines that replicate with a certain amount of precision and accuracy. Built machines approximate life, but the line between the two is not always clear. How does this approximation through scientific technology function differently? How can the mechanical inaccuracy that creates glitches be compared to the biological inaccuracy that leads to mutation? This question addresses a facet of reproduction in art and biology that I continue to research.



Image 2.6 – Cone Worms with detail, 2012

<sup>&</sup>lt;sup>12</sup> My materials are from the Anthropocene, the geological era since humans have inhabited the Lithosphere. This latest layer, or crust, of the earth, is populated by things that exist in a variety of relationships with humans.

Throughout this project, the book is used as a metaphor to reference a complete collection, and to represent the way we perceive DNA as the collected genetic material of life. My work utilizes books ranging from visual dictionaries and encyclopedias, to zines and artist's books. This reflects on the gathering, organization, and absorption of knowledge.

Every encyclopedia has evidence of its maker – they are conceptually circular. The history of encyclopedias starts more than 1400 years before the printing press. Texts could be alphabetical or topical, but not both. For example, Chinese, Arabic, and Egyptian encyclopedias were arranged topically, not alphabetically<sup>13</sup>. Before the Internet, the linear format of the book dictated the way we could visualize categories and the connections between them using text. Cabinets of curiosity are a three dimensional, environmental (installation) version of this concept, wherein categories are often displayed topically.

Cabinets of curiosities are an historical marker in my research - during the Age of Exploration there was no hierarchy between natural, fabricated, and modified objects<sup>14</sup>. They were housed in rooms or pieces of furniture that acted, historically, as pre-cursors to the public museum in the 18<sup>th</sup> century and the herbarium (plant archive). Cabinets of curiosities were collections of exotic objects, which were combined without regard for hierarchical categories.

<sup>&</sup>lt;sup>13</sup> from pg 57 of James Gleick's The Information: A History, a Theory, a Flood.

<sup>&</sup>lt;sup>14</sup> In Europe during the Renaissance cabinets of curiosity functioned like encyclopedias – collectors would showcase objects together in a room to show examples of common and exotic objects alike. They represented a microcosm of the world. I look to Mark Dion's methodology, in which he unpacks the aesthetic of the cabinet of curiosities by showing the entire process that leads to them. Unlike Mark Dion, who literally re -presents the inside of a museum and/or university as a cabinet of curiosities, I use the aesthetic of the cabinet to show the absurdity of the collection, but I show remnants of the process on the same plane instead of in a linear progression. (Refer to Cabinet of Curiosities: Mark Dion and the Universi ty as Installation.)

Historian Lorraine Daston also uses cabinets of curiosities in this way to discuss a return in the current history of science to having "more emphasis on novelty and discontinuity," rather than on a single grand narrative or a few overarching paradigms<sup>15</sup>. The taxonomic boundaries imposed on objects today appear rigid but they each have a history that can be taken apart and re-zoned, changing the boundaries of what counts as a novelty or curiosity. For example, over-sized physical models of biological samples were once necessary to imagine what we can see now with computer imaging. These models, repurposed through sculptures, transcend the boundaries from science object, to useless object, to art object. This work critiques the separation of art and science by playing with elements from both fields.

Similarly, I critique the binary of natural vs. fabricated by integrating the two to create hybrids that question the definition of natural. In order to reposition how we think of nature, philosopher Timothy Morton makes an investigation into the definitions of nature, environment, ecology, and ambience. His theory of dark ecology is a vantage from which to embrace the lack of a theoretical neutral ground and make it impossible to get "outside" of nature. Dark ecology, as a response to deep ecology and eco-critical writing, theorizes that discussing

<sup>&</sup>lt;sup>15</sup> From the podcast How to Think about Science, featuring David Cayley and Lorraine Daston in conversation. They discuss the history of objectivity from the 18 <sup>th</sup> c. to the present, including the shifts in how the perception of curiosity in science changed from the 12 <sup>th</sup> century onward. Novelty, in this context, refers to flood of new objects brought to Europeans in the 16 <sup>th</sup> and 17<sup>th</sup> centuries due to exploration of the Far East and the West, and the subsequent "overwhelming experience of the world suddenly crowded with new things," as well as the shifts in perception towards wonder, curiosity, and awe, as positive traits. The historical scope of my project ranges between the early collecting efforts of 18 <sup>th</sup> century and the ongoing consequen ces of the completion of the Human Genome Project at the turn of the 21 <sup>st</sup> century.

ecology in the first place requires a view of nature as "other." This is what I intend to capture when I call my encyclopedias examples of "Absurd Naturalism."

> During my time at ECUAD I lost my friend Richie and my grandfather in the same month. I was reading a lot at the time, and words had started to confuse me. My grandpa was dying, and my friend was already gone. I went to talk with him for what I knew would be the last time. He told me he would wake up and not remember anything about his life. He would have to learn all the words over again by listening to clues from other people – his children or his caretaker. The caretaker, Richie, shared the same name as my friend. He had tattooed a drawing of an angel on his arm to remind him of my grandpa. I couldn't look straight at him so I stared at the drawing on his arm. I thought about my genetic family and my chosen family crossing over in new ways, sharing information unconsciously.

My work pays homage to a previous generation of artists, who also gave priority to a do-it-yourself / do-it-together, interdisciplinary methodology which integrated with a communal lifestyle. Fluxus was an integral part of this movement in the 1960s, using anti-commercial methods of production and low cost materials to circumvent the mainstream market<sup>16</sup>. Now, collectives like Paper Rad, Wham City, Ascetic House<sup>17</sup> and many others foster this work ethic

<sup>&</sup>lt;sup>16</sup> I am interested in Fluxus as a philosophical practice that unites like -minded people across geography and blurs the boundaries between art and life. From Ken Friedman's in troduction to The Fluxus Reader.

<sup>&</sup>lt;sup>17</sup> Paper Rad is an American East Coast collective known for their use of bright colors, zines and comics, video art, and an underground / lo -fi aesthetic. Wham City is a collective from Baltimore that has produced performanc e art, experimental music and visual art. Ascetic House is a collective in Phoenix that is still making art and music underground. I have varying degrees of

in similar environments. Today's cultural underground is more integrated with the art world through the interfaces of the university, global trade, and the Internet, allowing for art centers to be smaller and more numerous<sup>18</sup>. This fosters a global environment for artists, who can form collective living/working situations without leaving their cities of origin. We communicate through both a network of local artists and the Internet. This links venues in different cities.

For example, my house in Phoenix (YOBS) connected with houses/art spaces in dozens of other cities, and shared ideas by hosting weekly events for five years, featuring performers, artists, musicians, etc. It was a cultural desert,<sup>19</sup> within a geographical one. Here, art groups and music labels merge together and distribute/trade material (records, zines, etc.) to grow and share ideas. For me, the collective is like the biome – regionally specific, with individuals cross -pollinating across biomes. The details are different, but the systems are similar. These places become dislodged from the drone of daily life and transport their participants to other spaces.

affiliation/separation with the people in these collectives, and share my work with them when possible.

<sup>&</sup>lt;sup>18</sup> Deleuze and Guattari, A Thousand Plateaus.

<sup>&</sup>lt;sup>19</sup> The desert usually symbolizes a barren wasteland, but to me the desert is a lush, low -lying space that can only be seen with a discerning eye. Radicals and weirdos have to band together in the harsh reality of a huge conservative city and have a dedication to making art and supporting each other that can't be found in safer cities. The air is so polluted that we have some of the most beautiful sunsets on earth.



Image 2.7 – In Petrified Forest After Cleansing Storm, 2012

The Last Summer, a work completed in my Fall 2011 term at ECUAD, connects two main biomes, the desert and the forest, with groups of roaming creatures in the middle. It is the biosphere (a landscape housing many biomes), and the lithosphere (interactions on the earth's crust.) This piece is a triptych consisting of three panels on a substrate of thin craft paper, and is constructed by collaging together drawings of creatures grafting each other, made with ink and colored pencil. The collaged pieces are laminated to the paper with scotchtape. Used in a meticulous and time-consuming way, these inexpensive materials point to a system where value is created without monetary expenditure. Modular forms such as rectangular cubes and cylinders appear throughout the piece, as well as more suggestive ones, such as traffic cones and fruit baskets. These elements are repeated as segments or independent forms that translate as plants, animals or combinations of the two.





This is in part homage to Marcel Dzama's The Last Winter, a piece he made before leaving Winnipeg. This was the first large scale piece I made after leaving Phoenix. I think of it as a personal farewell, and a first major example of Absurd Naturalism. The following elements are integral to Dzama's work and my own: flattening of space; repetition of invented characters; distinct and unifying color palette; use of playful imagery to draw in a viewer (closer inspection reveals sinister elements); and the use of drawing, sketchbook, diorama, sculpture, and film as installation elements.

My methods depart at the point where I am particularly interested in something arbitrary and otherwise unencumbered with meaning, becoming symbolic through repetition. I am also influenced by the movement of artists, such as Dzama, towards outsider art "to articulate a marginal position in relation to the increasingly codified systems of official representation.<sup>20</sup>" In other words, consciousness of a marginalized position allows me to locate myself artistically and politically. Tension between p rofessional and outsider artwork is present in my work, and continues to develop via exploration of modes of distribution and exposure.



Image 2.9 – Sketches – Kiwi, Shapes, Probably No, 2012

The work in Lithosphere was partially inspired by Luigi Serafini's Codex Seraphinianus – a thick encyclopedia as an artifact that catalogs the many artifacts of an otherworldly place. It includes thorough sections on flora, fauna, minerals, architecture, machines, the history of its own language, and cultural customs. The entire book is annotated in an invented language and includes essays, labels, charts and other indecipherable hand-drawn graphics.

<sup>&</sup>lt;sup>20</sup> From pg. 1 of James Patten's essay Grotesque Marginalia.

# Image 2.10 has been removed due to copyright restrictions.

Image 2.10 – pages 2 and M from Codex Seraphinianus , 1976

The Codex uses a number of elements crucial to my practice – taxonomy, hand drawn invented creatures, a psychedelic edge via 1970s utopian architecture, and a bright, high contrast color palette. Serafini uses taxonomy to reveal something about the constructed nature of made things, and their relationship / cross-breeding with one another. I focus on the taxonomies of invented worlds in the Codex. I pay specific attention to imagination, content, and the difference between an imagined world and the real world. The moments where the two overlap are my starting points. The outcome is a series of drawings that have familiar elements but that do not exist on earth; a plant with leaves that look like ladders, or petals that look like the necks of geese. To us they look like hybrids, but perhaps they evolved that way because of a different set of statistical improbabilities – the same kind that resulted in biological life on our world. What if a genetic mutation that eventually led to the wing of a bird, happened on the DNA of a bean sprout instead? This research question is scientific, but as an artist I also ask: what if airplanes looked like flying bean sprouts? This work points to questions about the slippery definition of the natural, as well as the contents of reality. I collect objects obsessively, because I don't like any empty space in my work or my studio. Multiplication, excess, and accumulation are a part of my personality that inevitably is part of the work. As in the First Law of Thermodynamics, matter can neither be created nor destroyed. Therefore, I position myself not as a creator or maker, but rather as a re-arranger, or bricoleur<sup>21</sup>. Decentering the artist in relationship to the art materials, I assume the role of the re-arranger to acknowledge the artist's actions being different but not privileged to the agency of the objects involved.<sup>22</sup>

Horror vacui is an art historical term that relates to part of this process – it translates to 'fear of empty space,' but which I embrace with a positive spin in my work. It has been used to refer to the suffocating atmosphere of the Victorian era<sup>23</sup>, but has also resurfaced in analyses of the art of the mentally unstable, and in contemporary Outsider and lowbrow art<sup>24</sup>. I think of it in terms of mass culture and excess.<sup>25</sup> The stress I feel when I think about the volume objects take up; the biomass of manufactured items, junk sitting in storage units, dusty piles at flea

<sup>&</sup>lt;sup>21</sup> I borrow this term from Claude Levi -Strauss, as he uses it in The Savage Mind. To speak of a bricoleur combines them as both artist and scientist, and refers to the practice of collecting objects based on affinity and availability and us ing them to problem solve. This is an important aspect of my studio practice.

<sup>&</sup>lt;sup>22</sup> Nicolas Bourriaud's re-mix influences this position by affirming the project of rearranging found art and materials and still acknowledging the authorship of the artist. From pg. 36 of Postproduction.

<sup>&</sup>lt;sup>23</sup> Horror vacui can be located throughout many cultures and time periods, such as the Medieval era and ancient Greece, but I use it here to address the sheer amount of goods that are part of the system of consumerism.

<sup>&</sup>lt;sup>24</sup> In physics, the term refers to the absence of nothingness and voids in the material universe.
<sup>25</sup> For example, Julian Stallabrass in Gargantua: Manufactured Mass Culture, pg. 122: "The mass production of standardized cars, road signs and traffic cones encourages us to see each element on the road as merely one of a type, composing a complex but somehow standard situation."

markets; flotsam orbiting the planet; or trying to pick out a brand of toothpaste. These are examples of phenomena that inspire the anxiety, which I can only work out in my studio. It is my task to temporarily re-purpose some of these items, and to play with the tension between low brow and high art by mixing found objects with traditional art supplies.<sup>26</sup> I re-use objects from my collections until they are exhausted. Then I send them back into an alleyway or a thrift store, where they will begin another part of their life cycle.



Image 3.0 - Shape #1 - Waterfall, 2012

<sup>&</sup>lt;sup>26</sup> Rather than pretending I can escape the culture of consumerism entirely, I apply the role of the re-arranger to the process of acquiring and discar ding objects. In a patchwork process that is as much about attraction to a shiny object as it is directly related to how recently I got a paycheck, I collect things out of the trash, find them on the street, spend money on them in a store, ask strangers to buy them for me online, or hoard boxes of things from friends who are moving.



Image 3.1 – Shape #1 – Waterfall, details, 2012

Moving through a jungle at a steady pace makes a deep groove in

my brain. Now it's called post-traumatic but the same thing happens when anything is that intense. Patterns of leaves and enormous flying beetles and glowing bugs of every color will play back over in my head for years. I will come to understand the way that paths are carved in brain matter like termite trails in wood. Thoughts leading down familiar paths, hacking selectively with a machete, assigning value to objects in a web of memories. The jungle as a memory palace, a place I will go later for safety and to redirect events into manageable compartments. We process objects through the actions we submit them to, that connect to whatever is happening in our brains at the time. In this way, we change them and they change us, we carry each other's texture. I stared at an enormous stick nestled perfectly in the crease of a teninch long leaf, and then made eye contact as it lifted onto its legs and got ready to move on.

A new manufactured item, a natural object, and something I fabricated or re-arranged in my studio, all have individual vitalities and qualities that give them personality. Since objects are affected by their own ecologies and biomes, they exist as more than the sum of their parts. A plastic fruit basket is more than a cube and more than the color green. It is the history of the factory it was made in, the mold that mirrors its shape, the fruit it carried, the hands that carried it, the other foods it sat in a bag next to. New materialism, in the words of Jane Bennett, is a way of imagining the system that incorporates all of these things into the assessment of a system that decenters people and acknowledges the agency of objects.<sup>27</sup>

This agency is implied by Animism, a belief in the spiritual lives of non -humans. Animism is also a concern of Strauss' bricoleur, who understands the context of flora and fauna in terms of their complex relationship to one another. This is based on his contact, as an anthropologist, with indigenous knowledge / memory, and his understanding of mythical thought as a kind of bricolage. In this application, bricolage is the method for combining – myth and science are the things being combined.<sup>28</sup> Philosopher Timothy Morton describes this idea of understanding in terms of the life cycle of an environment: "[p]lace is indeed a questioning, a 'what happened here?' Animism thus turns out to have a lot in common with an ecology to come (Morton 180).

Since Animism is not a part of Western culture, it conflates (for me) with other ideas that seem magical, but are in fact important in understanding

<sup>&</sup>lt;sup>27</sup> In Chapter 1 of Vibrant Matter, called the force of things, she discusses a found assemblage of objects in the street and describes how they are all connected.

<sup>&</sup>lt;sup>28</sup> From page 17 of The Savage Mind, in which Strauss understands the way that people taxonomize based on appearance and use value as a path to relatedness amongst species. In his version of taxonomy, he arrives at similar results but without an understanding of the mythological.

ecology. Animism and magic realism hold hands in this way. Magic realism creates an environment where the magical and the real exist together in the same plane. It is a way into Animism through art and literature, and then back into the physical world. I use elements from this genre to blur the boundaries between real and imagined worlds. A type of magic realism happens when new materialism gives life to objects and they can be imagined as having an Animistic presence. For example, insect mimicry looks magical, but is real, and also shows agency in non-humans, with aesthetic results.

"Insect mimicry is thus tantalizingly described by Caillois as a 'temptat ion by space,' an assimilation to the surrounding environment that results from a desire for fusion between animate and inanimate. As with the human experience of dark space, argues Caillois, the mimetic insect is decentered: it no longer feels itself to be the origin of spatial co -ordinates, and its awareness of being an entity distinct from its external surroundings begins to disintegrate." <sup>29</sup>

I represent this by locating similar shapes in disparate objects, matching colors on unrelated subjects, or copying patterns onto surprising substrates.

This results in a specific type of grafting that is less about a mash-up of parts, and more about a subtle exchange of qualities between objects and things that are near each other. The hybrid is an important idea in science fiction, because it represents technology and the human desire to have control. But I am trying to imply a universe where actants influence each other whether or not humans intervene. In my studio, I spend a lot of time listening to the things around me to see what they want to exchange with each other.

<sup>&</sup>lt;sup>29</sup> From pg. 84 of Claire Bishop's Installation Art: A Critical History.



Image 3.2 - Shape #2 - Shrine, 2012



Image 3.3 – Shape #2 – Shrine, details (text on the right reads "trying to measure a certain distance / in an imaginary dome")

Like hybrids, impossible shapes offer another way to see magic realism in drawing. These shapes can be imagined in the 2<sup>nd</sup> dimension (i.e. drawing) but not constructed in the 3<sup>rd</sup> dimension (i.e. sculpture.) The blivet (image 3.4) is an example. The necker cube is a shape I use for its simplicity as a modular building block. Although it is not an impossible shape, it is conceivable from multiple points of view, of which only one can be possible in space. I perceive both as hybrids between theoretical shapes and real objects.



Image 3.4 – Necker cube and blivet (top), impossible shape #1(bottom), 2013



Image 3.5 – Shape #3 – Leaky Horseshoe, 2012



Image 3.6 – Shape #3 – Leaky Horseshoe, details, 2012

Stones Shaped by Chance is named after a monograph<sup>30</sup> in Albertus Seba's Cabinet of Natural Curiosities. It references the imaginative categorizing of objects that were collected for personal reasons (wonder, curiosity, pride), and fitted into a taxonomic framework. In Cabinet, Seba draws monographs based on items in his own collection that seem to correspond to familiar categories: snakes, birds, starfish, etc. It occasionally includes subjects that are not as natural as the book's title suggests. Drawings etched into the mother-of-pearl plates of Nautilus and Stones shaped by chance are two examples.

<sup>&</sup>lt;sup>30</sup> In biology, a monograph refers to the documenting of all of the members of a group, such as species within a family.
## Image 3.7 has been removed due to copyright restrictions.

Image 3.7 – Stones Shaped by Chance, pg. 399 of Cabinet of Natural Curiosities Items I collect combine with ones that are laboriously handmade to stress production - a meditative, solitary assembly line. I imagine an assembly line in a huge factory, making massive amounts of items with no commercial value, mixed together with the sludge and run-off from the same process<sup>31</sup>. I have to do this alone, because new ideas are born out of the mutations inherent to this personal

Image 3.8 has been removed due to copyright restrictions.

Image 3.8 – Nicole Andrijevic & Tanya Schultz, Three Minutes Happiness, 2009

process. Old drawings recycle into new ones as hybrids through mistakes and mutation, based on massive repetition of modular forms to mimic genetic copying and embody meaning. For example, tube shapes symbolize ambiguity in gender, growth, and reproduction. Cone shapes reference direction, time and segmentation.



Image 3.9 - Cone Worms in progress, 2011



Image 3.10 – Glow Worms in progress, 2012



Image 3.11 – Shape #4 – Bend, 2012



Image 3.12 – Shape #4 – Bend, details, 2012

## Installation 3 – Chelonioidea



Image 4.0 - Chelonioidea, animation stills, 2012

I got down onto the ground. I wore my regular clothes, but they fit differently because my ovaries were the size of oranges and not the usual almond-size. In this moment, I wanted to embody the sea turtle, creatures that return to their birthplace by the shore to lay eggs and then leave again. I was at the clinic, walking distance from the place where my mom was born - Manhattan, by the water. I got down onto the ground. I moved my flippers across the concrete and waited. Some joggers went by. There wasn't a tennis court there when my mom was a kid. The windows had all been replaced with nicer windows.

A few months later the NYU medical center would be evacuated when all of lower Manhattan flooded in a hurricane. The clinic where my eggs were. Melty soup when the power went out, or growing in a womb...I have no way of knowing. A story in the news about a woman giving birth in the hospital, and how she had to get carried down all the flights of stairs with a cell phone for a light. She would make it out with her genetic legacy intact.

The tension between containing a collection and being contained by one is at the core of my studio practice. This act of circular discovery is meaningful in many ways. Here, the process of making and arranging is absurd - eventually what the collection reveals is the collector. This is true whether the nature of the collection is personal (as in consumption of purchased items), genetic material and circumstance that makes a family (identity), found biological samples (as in taxonomy), or terms and definitions (like encyclopedias). The collection is a temporary structure that self-identifies as permanent, an unfinished portrait that declares itself complete. My DNA is sometimes my book, and sometimes my author.

My collections are a combination of taxonomy and bricolage, which creates an absurd field biology that can be applied to objects or humans, and their pseudo- or accepted-scientific genetic linkages to one another. My interest is this meeting point between scientific and artistic taxonomy, and where the potential overlap lies. Claude Levi-Strauss talks about bricolage from the perspective of structural anthropology. He uses native plant taxonomy as an example of how organizing visually, has a metaphorical and tangible purchase on genetic relatedness. He also advocates for a simultaneity of acquiring knowledge: "Both science and magic [...] require the same sort of mental operations and they differ not so much in kind as in the different types of phenomena to which they are applied."<sup>32</sup> This structure is a kind of anthropological bricolage, using both magical and scientific methods to arrive at overlapping conclusions.

<sup>&</sup>lt;sup>32</sup> From The Savage Mind.

	allison karow <bluefews@gmail.com></bluefews@gmail.com>	Nov 6 🕁	*	*
	to jewishbaby1 💌			
	hi jane i was looking at pictures of the block where i had my retrieval, pictures of the hospital underwater in NYC and thought of you, hope everyone is alright, especially thinking of my recipient family at this time.			
*	jewishbaby1	Nov 7	*	-
	to me 💌			
	The set of the how you have \$ when the end of the how the base type has been detected in a set of the construction of the c			
	Hugs,			
	Jana			
	The information contained in this email is confidential information intended only for the use of the individual or entity named above. If you			
	have received this email in error, please discard, do not disseminate or copy and notify me by telephone at transmission of the sessage			
	is transmitted over the Internet, A Jewish Blessing, LLC cannot assure that the messages are secure.			
	If you are uncomfortable with such risks, you may decide not to use email to communicate with A Jewish Ble	ssing, LLC. You must a	also be	



Bricolage is important here, both in its physical manifestation, as well as in theory. I collect pieces of available material, and use those as the conceptual and physical parameters to create a visual work. This process influences work's form, which often sits within the framework of installation but also references Dada collage, Robert Rauschenberg's combines and Joseph Cornell's assemblages<sup>33</sup>. The work also contains it's own meta-bricolage in the form of run-off. I define run -off as the typically discarded bits of drawing, collecting and other research. It is obsessively included in the work to reflect the process. I believe run-off is an important and central part of art and science, which is disregarded as being "behind the scenes," in paradigms that are focused on expected outcomes. There cannot be room for social change in new areas of study without

<sup>&</sup>lt;sup>33</sup> These artists were also collectors and arrangers, hoarders of trash or bric -a-brac and often outcasts.

models for including mutations, mistakes, and a conception for things that lie outside of prescribed categories (such as the unnatural, queer, or maladjusted). I filter these interests through my own absurdist methodologies to distill meaning out of scientific models for change and translate them across fields.

The problem of defining the natural has existed at least since Antiquity. Major changes occurred in the 17<sup>th</sup> and 18<sup>th</sup> centuries, when taxonomists began the classification of knowledge accumulated during the Renaissance.<sup>34</sup> These classifications persist today and although they reflect a spirit of curiosity in the development of knowledge, they also serve as pillars for what is normal, defining things by what category they fit into. Deconstructing this problem through the lens of posthumanism, Timothy Morton explains in his book Ecology Without Nature,

"saying that something is unnatural is saying that it does not conform to a norm, so 'normal' that it is built into the very fabric of things as they are. So 'nature' occupies at least three places in symbolic language. First, it is a mere empty placeholder for a host of other concepts. Second, it has the force of law, a norm against which deviation is measured. Third, 'nature' is a Pandora's box, a word that encapsulates a potentially infinite series of disparate fantasy objects." <sup>35</sup>

reproduction, observing a compromised gene pool in my family history and a marginalized queer space in my chosen family. I use the imagery of small creatures and other images that multiply and change.

<sup>&</sup>lt;sup>34</sup> From pg. 123 of Eric Nordenskiolo's The History of Biology.

<sup>&</sup>lt;sup>35</sup> From pg. 14.



Image 4.2 – Worms in progress, sculptural elements, 2012

In

Chelonioidea, the concept is the same as in Lithosphere and Stones Shaped By Chance; repeating elements that create growth. But in Chelonioidea, the concept is also the content; a collection of objects and memories and interpretations of a biological morphing, a personal manipulation of changing my genetic body parts to translate a change into the real world.

> If you break apart all your DNA nucleotides (C-A-T-G) into alphabet soup and stir it up, you're looking at the same sludge that makes some person you've never met a human. A total stranger can be made of the same coded letters in the same order as yours. When I arrived at the clinic, there were special precautions to make sure the transaction would remain anonymous. We couldn't accidentally

take the same elevator. I walked down a service hallway past some trash bags and went up the freight elevator to change into my hospital gown.

I am interested in genetic mutation as a marker for change, and how it functions within the undertaking of redefining the concepts of human, living matter, and the natural. Cultural theorist R. L. Rutsky looks at mutation as it relates to the changing definition of human:

"[Mutation] cannot be seen as external randomness that imposes itself upon the biological or material world – nor, for that matter, on the realm of culture. Rather, mutation names that randomness which is always already immanent in the processes by which both material bodies and cultural patterns replicate themselves."<sup>36</sup>

Rather than seeing mutation as an outside, destructive force, and its byproducts as mutants, it is a part of change and growth. What are the relationships between the overlapping elements of natural and fabricated worlds, what do their mutations look like, and how can they be represented visually to address the changing definitions of life and nature?

<sup>&</sup>lt;sup>36</sup> From pg. 110-11 of the article "Mutation, History and Fantasy in the Posthuman."



Image 4.3 – Mutant Hybrids Reproducing , 2012

This project addresses the evolution of living species and the cybernetic organism by addressing the boundaries between these categories (person vs. machine, animal vs. plant, etc.) In order to explore the space and/or overlap between natural and fabricated elements, I use source material and create imagery based on forms that fall outside of traditional taxonomic efforts. Examples include lichens (a combination of algae and fungus<sup>37</sup>), slime molds (colonies whose members differentiate into body parts), and creatures found in

<sup>&</sup>lt;sup>37</sup> Lichens are organisms that are classified as combinations of two or more symbiotic partners, usually an algae and a fungus. "In general lichens exist as discrete thalli [plant bodies] and are implicitly treated as individuals in many studies, even though they may be a symbiotic entity involving three kingdoms! From a genetic and evolutionary perspective lichens can certainly not be regarded as individuals and this fact has major implications for r many areas of investigation, such as developmental and reproductive studies." From Thomas H. Nash III's Lichen Biology.

the Burgess Shale (extinct pre-cursors to arthropods<sup>38</sup>). I also use geometric forms and non-living objects to pose natural and fabricated subjects in a dialectics with the concept of natural.

Donna Haraway constructs the myth of the cyborg/monster to represent marginalized people in late capitalism as having fractured identities. Post -modernism and multinationalism are mutually dependent factors in creating these new identities - "Monsters have always defined the limits of community in Western imaginations."<sup>39</sup> Cyborg politics is however, not about repairing these fractures, but rather about adopting these traits as a strategy for fighting back, making noise/pollution and defying categories. "Cyborg writing is about the power to survive, not on the basis of original innocence, but on the basis of seizing the tools to mark the world that marked them as other."<sup>40</sup>

Chilean biologists, Humberto Maturana and Francisco Varela, struggled to define life based on the smallest unit of measurable self-replicative ability – the cell. I am interested in how the problem of the closed system (represented by the cell), can be represented with visual language. Breaking down life into its smallest unit is absorbed into information theory: "Now even biology has become an information science, a subject of messages, instructions, and code. [...] Life spreads by networking. The body itself is an information processor.<sup>41</sup>" The body is no longer necessarily considered a living organism that is separate from language and machines – all three share the problem of coding. Donna Haraway

<sup>&</sup>lt;sup>38</sup> From Wonderful Life by Stephen Jay Gould.

<sup>&</sup>lt;sup>39</sup> From pg. 37 of A Manifesto for Cyborgs by Donna Haraway.

<sup>&</sup>lt;sup>40</sup> Ibid pg 33.

<sup>&</sup>lt;sup>41</sup> From pg. 8 of The Information by James Gleick.

points out the political implications of this view:

"communication science and modern biologies are constructed by a common move – the translation of the world into a problem of coding , a search for a common language in which all resistance to instrumental control disappears and all heterogeneity can be submitted to disassembly, reassembly, investment, a nd exchange."<sup>42</sup>

Life is a mutated code that shares elements with non-life. The parts can be interchangeable.



Image 4.4 – Tree Fall, sculpture, 2012

<sup>&</sup>lt;sup>42</sup> From pg. 23 of A Manifesto for Cyborgs.



Image 4.5 – Assemblage #1, with detail 2012



Image 4.6 – Cone Ring Worm #2, with detail, 2012

Using symbols as a code in an artwork is similar to imagining DNA as a code for understanding life forms. When the Human Genome Project was

completed, science and medicine dreamed of progressing infinitely. This fell apart. Translating life into a code didn't necessarily provide instructions for how to create the perfect cure or the best human. When I use repeating symbols I reveal a process, rather than an answer.

Like Stephen Jay Gould, I reject the positivist notion that time moving forward indicates progress. In his book Wonderful Life, he describes how the story of the Burgess Shale illustrates "[t]he history of life [as] a story of massive removal followed by differentiation within a few surviving stocks, not the conventional tale of steadily increasing excellence, complexity, and diversity."<sup>43</sup>

The image of evolution as a ladder climbing upward or a widening cone are misleading and created a possible worldview wherein time is equated with progress, rather than a shifting set of relationships with no end goal in mind.

<sup>&</sup>lt;sup>43</sup> From pg. 25.





I'm dealing with things morphing and multiplying and becoming, but

they all started from a place. There is a connector that makes everything similar. It's not about repopulating the world. It's not a direct response to the Holocaust, but there is a response to the response to the Holocaust in a way. A decentering of an entire group of people being separated. They morphed and multiplied in another way that was not by chance but by choice (the choice of someone else deciding their genetic trajectory.) These choices were marked by drawings – triangles, geometric shapes. They were numbered and equated to objects and intangibles. The psychological undercurrent that was passed on to me and is still present and alive. Instead of going to Israel to make up for a past I never had or make my culture alive in that way, I'm actually making it alive in another way – to regenerate life through knowledge, but also through actual regeneration.<sup>44</sup>

This is the moment when the idea of using repetitive drawing to imply a biological process, became concept and content. I embodied a type of mechanical reproduction when I became an egg donor, while documenting and interpreting it through my studio practice.

Assisted Reproductive Technology (ART) is a developing field that includes In Vitro Fertilization, Egg and Sperm Donation, and other processes by which fertilization occurs without intercourse. By embodying this technology, and observing the process and outcomes through my studio methodology, I enter the conversation around it from multiple research angles. Cultural, political, socio economic and scientific implications of ART on a global and philosophical scale are areas for consideration here. The central ethical questions around ART include political and medical regulatory agencies, religious perspectives, and bioethics in terms of the long-term health and financial concerns for participants. Health outcomes for parties who participate in ART (families, agencies, doctors, clinics, etc.) and the changing definitions of life and family are both primary concerns for me. The prevalence of this technology in North America is such that it affects the way we think about the body, family, and reproduction on a personal level. One complexity of this technology is that it is perceived as non-traditional, but is used to create what appears as a traditional family unit. (See Appendix – text/ annotated bibliography from my internship)

<sup>&</sup>lt;sup>44</sup> Notes from a conversation with Felicia E. Gail.

This process is interpreted in fragments of sketches, drawings and other minutia and observations of detail that become parts of a larger work.



Image 4.8 – Fast Like A Dart / In the Petrified Forest After A Cleansing Storm , with detail, 2012

The outcome of this project culminates in a series of assemblages, drawings, installation and performance that can mutate and re-form each other and whose parts were interchanged many times. The outcomes shown here are the iterations that I believe best illustrate Chelonioidea right now, but will never be the final resting place for each segment.

Chelonioidea is a genealogical name, the group of sea turtles that return to the sea to lay their eggs. It is a sub-set of biological taxonomy called the family.

## Conclusion – A Cleansing Storm



Image 5.00 Images from Final Installation and Final Exhibition

I was born in the biggest city in the United States, at a time when

growth and upward mobility were endless expectations. This morning I looked at La Guardia underwater. I saw the security camera screen still, water rushing out of a flooded Port Authority station elevator shaft. The Shining but with more ghosts.

If you draw a map connecting the spots where everyone in my family was born, it fits right inside the map of the Con Edison blackout during the hurricane. It darkened all of my most important parts of the city in one brilliant explosion.

The absurdity of trying to collect and catalog everything that makes us whole is an embrace with futility. We want moments of illumination, connections within chaos, glimpses of other creatures passing in the dark. Letting go is an important skill for transitioning from one way of thinking to another. Mutation is unpredictable, it is an essence that cannot be controlled. When I installed this final exhibition, it took twenty-seven hours of sitting in the space, listening to the architecture and the materials, responding to the forms in space and the emotional content of each object. The morphing of science fiction and personal fiction (in writing and in visual formations) to create an alternate reality is only one example of controlling the illusion of making facts out of information. In these projects I think of science fiction as a model for imagining the future and the format for creating a piece of artwork.

When we don't know something yet, in science, we can build a theory and then wait for enough facts to support it that it becomes common knowledge. In science fiction, we can act out intuitively, what we know to be true about the future, and illustrate it with our imaginations. Then we wait for science to catch up.

Whether through the use of modular units / building blocks to create forms in my installations, or the manipulation of genetic codes to create alternative families, I am creating a mutated pattern that acts as a Petri dish for a new kind of life. Through this process I intend to open the way for re-thinking political structures on a larger scale.



Image 5. 0 - Derek Woodward, Cashtub, digital image, 2012<sup>45</sup>



Image 5.1 - Derek Woodward, Art In the Age of Mechanical Reproduction, digital image, 2012<sup>46</sup>

 <sup>&</sup>lt;sup>45</sup> Image used with permission from the artist.
<sup>46</sup> Image used with permission from the artist. Taken at the Best W estern in Long Island City, New York City, in June of 2012.

Appendix A – ART Project: Annotated Bibliography

1. Assisted Human Reproduction Act. Department of Justice. Canada, 2004. <a href="http://laws-lois.justice.gc.ca/eng/acts/A13.4/FullText.html">http://laws-lois.justice.gc.ca/eng/acts/A13.4/FullText.html</a>

This document is the full text of the Canadian Act that prohibits various activities related to Assisted Reproduction. This text also contains useful definitions of various related terms. It establishes a regulatory body, The Assisted Human Reproduction Agency of Canada, whose duty is to protect the human rights of those involved in various aspects of Assisted Reproductive Technology. This Act also addresses other factors that are relevant to my research on mutations and hybrids, such as: "no person shall create a chimera, or transplant a chimera into either a human being or a non-human life form."

Arizona House Bill 2036, Senate Engrossed House Bill, State of Arizona,
House of Representatives, Fiftieth Legislature, Second Regular Session, 2012.
PDF.

The Arizona House Bill passed in 2012 that states "'[g]estational age' means the age of the unborn child as calculated from the first day of the last menstrual period of the pregnant woman." This means that when a pregnant woman is receiving medical care, the amount of time that she has been pregnant for is different than the amount of time that has elapsed since conception.

Effectively this law prohibits women from terminating a pregnancy past a certain date, but it also is an attempt to redefine life by deciding when it begins and when it ends. Laws like this show what is at stake in the biological project of defining life - being able to communicate well outside the scientific community is crucial for this project. Bodies of knowledge in this field should be used to prevent harmful legislation.

3. Critical Art Ensemble<u>The Molecular Invasion.</u> "Transgenic Production and Cultural Resistance: A Seven-Point Plan." 2002.

The Critical Art Ensemble, a collective of artists/writers working as activists in the fields of science and technology, produced this text as a critique of government intervention and/or endorsement of transgenic technologies. This pertains specifically to Genetically Modified Organisms and the food supply chain, and related ecological concerns. However, their main concern is opening up the discussion between "experts" and "amateurs" so that multiple voices can contribute to the public discussion on sensitive and timely scientific issues.

Gleick, James The Information. United States of America: Pantheon Books, 2011.

The bridges between the history of information theory and contemporary biology are crossed back and forth in this book. "Now even biology has become

an information science, a subject of messages, instructions, and code." The tenth chapter, "Life's Own Code – The Organism Is Written in the Egg" is especially instructive in connecting the two.

4. Haraway, Donna. "A Manifesto For Cyborgs."<u>The Haraway Reader</u>. New York: Routledge, 2004.

This text helps me connect some of the seemingly disparate parts of my research: transgressive science fiction, gender equality/post-feminism, and political/manifesto writing. I am interested in Haraway as someone who has a background in the history of science but is also concerned with feminism, hybrids, and defining nature.

5. Lewontin, R.C.<u>Biology As Ideology.</u> "A Reasonable Skepticism." Toronto: House of Anansi Press, 1991.

This essay takes a critical look at what biology means, and how it is used to process and present information. It exposes the problems of time, money and society having influence within the scientific process and thus affecting the outcomes. Science can never be outside of / governing society because it is part of society. Science as an institution claims to be "objective and nonpolitical" – this essay explains that this cannot be possible and we must remember that when using scientific facts or information. This essay also tracks the historical

intellectual shift from seeing individuals as resulting from society, to seeing society as resulting from individuals. The accompanying shift to the importance of tiny discrete particles such as molecules, genes, etc. is an important part of my research.

6. Reilly, Philip R<u>The Molecular Gaze; Art In The Genetic Age.</u> "A New Eugenics?" New York: Cold Spring Harbor Laboratory Press, 2004.

This article assesses contemporary artists working with concepts around biological reproduction through the lens of Assisted Reproductive Technology. Frida Kahlo, Kiki Smith, Laurie Anderson and many others are described as having exposed important questions about genetic relatedness. "The inability to bear a biologically related child appears in popular culture as a devastating loss of the genetic bond." One question I am asking is: what IS the genetic bond? Where do we draw the line? If a donor or surrogate has contributed to the birth of a child, what is their relationship to that child? Why is it so important to maintain the standard of the nuclear family?

7. Reference re. Assisted Human Reproduction Act, 2010. Supreme Court of Canada. December 22, 2010. http://scc.lexum.org/en/2010/2010scc61/2010scc61.html

This document is a judgment from the Supreme Court of Canada summarizing the passage of the Assisted Human Reproduction Act in 2004. Its main concerns are to prevent, on a federal level, "human cloning, the commercialization of human reproductive material and the reproductive functions of women and men, and the use of in vitro embryos without consent." The court cites as its main guiding principle, the parliament's concern with "the fundamental importance ascribed to human autonomy." The document also outlines the constitutionality of ruling on the subject of Assisted Reproductive Technology, while leaving room for provincial laws to grow in support of the positive aspects of ART.

8. Roof, Judith<u>The Poetics of DNA.</u> Minneapolis, MN: University of Minnesota Press, 2007.

Roof's discussion on DNA and the gene points to a translation of scientific concepts into the cultural fabric, using cinema and the arts as examples. She discusses the impact of Enlightment-era scientific thought on today's pop science atmosphere, straddling the concepts of art and science. She also presents ideas of genetic reproduction as having influence on how we think about artistic reproduction. This is important in my studio methods, which often combine recently or nearly obsolete technologies for image reproduction with imagery reflecting concerns in biological reproduction.

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