

University of Arkansas, Fayetteville

**ScholarWorks@UARK**

---

Graduate Theses and Dissertations

---

5-2018

## Milk

Lindsey Heiden

*University of Arkansas, Fayetteville*

Follow this and additional works at: <https://scholarworks.uark.edu/etd>



Part of the [Interactive Arts Commons](#), and the [Interdisciplinary Arts and Media Commons](#)

---

### Citation

Heiden, L. (2018). Milk. *Graduate Theses and Dissertations* Retrieved from <https://scholarworks.uark.edu/etd/2704>

This Thesis is brought to you for free and open access by ScholarWorks@UARK. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of ScholarWorks@UARK. For more information, please contact [scholar@uark.edu](mailto:scholar@uark.edu).

Milk

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Fine Arts in Art

by

Lindsey Heiden  
Western Illinois University  
Bachelor of Fine Arts in Art, 2007

May 2018  
University of Arkansas

This thesis is approved for recommendation to the Graduate Council.

---

Jeannie Hulen, M.F.A.  
Thesis Chair

---

Lynn Jacobs, Ph.D.  
Committee Member

---

Kristin Musnug, M.F.A.  
Committee Member

---

Adam Posnak, M.F.A.  
Committee Member

## **Abstract**

My work is a composition of contemporary fairy tales of visual, written and oral forms. I examined the historical evolution of formula, from animal milk, to powder formula and now to a combination of animal milk, human milk and powder. The current scientific research being done with formula and animals, coupled with a fairy tale is the inspiration behind my current tale. The importance of women both in regards to the historical development of keeping a cultural tradition alive through oral tale-telling and the much larger role of keeping humankind alive through reproduction and birth, further build the base that my tale stems from. Milk has strong cultural relevance, one example being its use in fairy tales as a liquid that gives strength. In fairy tales boundaries in regards to milk are continually crossed, male giants nurse humans, animals nurse humans, and there are animals that nurse other species. The fairy tale that I tell is accompanied by physical objects that I produce, in order to help traverse the muddy waters of reality and make believe, and to show how the future intertwines in both realms. With this in mind, the idea of living in a world where cross-species seem fantastical but inevitable, is a reality.

The tale, “The Milking Mouse” draws upon my personal experiences of childbirth, nursing, and my interest in oral tale-telling; but also includes my research into the scientific advances being made in genetics, and the cultural significance of fairy tales. I use these sources as the foundation of a tale that is told both orally and visually through my body of work.

© 2018 by Lindsey A. Heiden  
All Rights Reserved

## **Dedication**

This is for my family who has always believed in me. For my husband, Kenyon, who has stood by me and my solo move to Arkansas and encouraged me through the hardest of times during the past three years. My son, Wilder, who sparked the tale that my thesis has become and last, but not least, my cat Fleetwood Tuesday, who has now seen me graduate twice.

## **Table of Contents**

<b>Introduction.....</b>	<b>1</b>
<b>Scientific Origins of Formula.....</b>	<b>2</b>
<b>Tale Tellers: Oral and Written.....</b>	<b>6</b>
<b>Tale Tellers: Visual.....</b>	<b>9</b>
<b>My Modifications of the Past.....</b>	<b>11</b>
<b>Development of Past Tales.....</b>	<b>13</b>
<b>The Science Behind the Milking Mouse.....</b>	<b>14</b>
<b>Versions and Iterations.....</b>	<b>15</b>
<b>Antagonist: Villain the Politician.....</b>	<b>17</b>
<b>The Tiny Pump.....</b>	<b>17</b>
<b>The Presentation: Domestic Space.....</b>	<b>20</b>
<b>Happily Ever After.....</b>	<b>21</b>
<b>Figures.....</b>	<b>23</b>
<b>Bibliography.....</b>	<b>30</b>

## **Milk**

### **Introduction**

Storytelling has been a rich source for subject matter in art since antiquity. The versatility and evolutionary fluidity of fairy tales in oral, written, and visual form allows for constant variation to develop from the original telling. Initially, my exploration of storytelling using the structure that fairy tales are molded in, was rooted in my uncertainty about how to explain the field of transgenics to my child, a new science that is fast tracking evolution and creating new fantastical beings. When reading the Grimm Brother's fairy tales, I realized how closely the characters took on characteristics of other animals, humans, and objects and thus reflected the hybridization and genetic modifications of today's scientific advancements. I employ the fairy tale tradition and pair it with genetic modification, while drawing upon the dualities of the two by developing and visually juxtaposing fairy tales with real life occurrences in a contemporary context. The gray area that lays between fairy tales and genetics creates a catalyst for the development of tales. I follow modern scientific research, including advances being made with human breast, milk as the genesis of my visual narratives.

In one particular experiment, proteins were placed within the DNA of mice, resulting in mice that possessed the ability to produce a hybrid human-like milk. This has become an iconic example that resonates throughout my work, and has led to the tale of "The Milking Mouse," around which my thesis work revolves. Navigating between the ironies of fairy tales and science, is a significant aspect of my work, both in making and research. I question the future, and the human interactions with the creatures being made and the everyday norms in society. I hope that by depicting this complicated science in a more easily digestible fashion, through fairy tales, I can personally better understand these seemingly farfetched ideas, which are in fact

reality. The following written thesis will interweave my tale “The Milking Mouse” throughout it, along with touching on my past work, the evolution of the present body of work, and the concepts which underlie my artmaking. This ground work of the first part of the thesis paper lays down the foundation for the second half which consists of an in-depth examination of my thesis show titled, *Milk*.

### **Scientific Origins of Formula**

During the past year, this subject matter has become profoundly intertwined with my personal life. The experience of nursing my new baby has been an all-encompassing sensual immersion. Being a mother and having my priorities and way of thinking shift, made me rethink my own views and biases in regards to genetic modification. I no longer sympathize conceptually and vicariously from the sidelines. My views have evolved and become more complex and nuanced. In my research of the origins of baby formula and how it now has evolved into a closer match to human milk, I found that formula was not shielded from the profit-driven intentions of corporations. At times these corporations played on the bond between mother and child as a way to gain profit. By this I am referring to major corporations and their relationships with the scientific establishment.

In the following discussion of the historical origins of baby formula, I illustrate the groundwork for what eventually became the “The Milking Mouse”. The mid-nineteenth century marked the boom moment of the industrial production of baby formula on an international scale, with formula being marketed by numerous companies including “Borden in the USA, Liebig in



Germany, Nestlé in Switzerland, and Mellin in the UK.”<sup>1</sup> Although the companies vary in their structures and strategies, each was invented by a male who also worked with and invented other products that seem strangely distanced from baby formula, such as meat biscuits, meat abstract, and bone meal fertilizer.<sup>2</sup>

The Nestlé Corporation, one of the leading industrial producers of baby formula, was founded by Henri Nestlé, a pharmacist and tradesman who began his career manufacturing bone meal fertilizer, among other products.<sup>3</sup> This eventually led to his invention of infant formula, the production of which he predicted would make him a millionaire.<sup>4</sup> His prediction proved true, and placed value in monetary achievement and commodification over the contribution of a new type of infant formula. Why wasn't the health of the infant and mother Nestlé's primary goal?

The emergence of pediatrics coupled with a mother's need to provide the best for her child led to further scientific research into infant formula during the late 1800's to mid 1900's.<sup>5</sup> Formula has a checkered past in which profit was put ahead of the lives of infants and mothers, as evidenced by the Nestlé company controversy. The selling and distribution in third world countries of this company's product led to the accusations of adverting mothers away from breastfeeding in favor of company profit, especially in third world countries, where there was no access to clean or sanitized water resulting in an increase in infant deaths and illness and the use of saleswomen as 'milk-nurses' to further promote the product.<sup>6</sup>

---

<sup>1</sup> Michael Obladen, "Historic Records on the Commercial Production of Infant Formula," 173-180, *Neonatology* 106, no. 3 (2014): 173. doi:10.1159/000363494.

<sup>2</sup> Ibid., 173-174.

<sup>3</sup> Ibid., 174.

<sup>4</sup> Ibid., 174.

<sup>5</sup> Linda Bryder, "From Breast to Bottle: A History of Modern Infant Feeding," 54-59, *Endeavor* 33, no. 2 (2009): 55. doi:10.1016/j.endeavour.2009.04.008.

<sup>6</sup> Obladen, "Historic Records on the Commercial". 177.

An article in *The Lancet*, a renowned medical journal states that, “In the 1970’s, an international campaign against the food giant Nestlé was responsible for eliciting such collective outrage that it led to one of the biggest public boycotts in corporate history. Subsequent international pressure resulted in the WHO code, which not only covers the marketing of infant formula, but also other commodities if promoted as partial or total breastmilk replacements.”<sup>7</sup> The boycott of the Nestlé Company is still in effect by the Presbyterian Church. This is the best and most prominent example of the past emphasis on commodification of infant formula by this industry, which was rooted in the class struggle and the promotion of formula. The scale of infiltration and quest for profit had ties within the World Health Organization.

The science underlying the creation of formula is fascinating, and designing a formula that is closer to breast milk could save even more young lives. On a personal note, I am by no means anti-formula or anti-science. I was fed formula, as were all my siblings, my parents, all of my aunts, uncles, nephew, and my niece. My son has also had formula, and it eased the stress during an emergency situation. In conversations with my grandmothers, they each mentioned how far formula has come compared to when they used it, especially in terms of the labor that was necessary for the sterilization of bottles and water.

The overall goal of research being done with mice by a team of scientists in Russia is to produce a better formula, one that mimics and aligns more closely with a mother’s milk, containing the lactoferrin protein that fights off bacterial and fungal infections.<sup>8</sup> The scientific team was able to achieve this by “splicing in human genes into the mice genome and thus

---

<sup>7</sup> Rhona MacDonald, “The Continuing Battle Over Baby-Milk Formula,” *The Lancet* 369, no. 9575, (2007):1773. [http://doi.org/10.1016/S0140-6736\(07\)60795-8](http://doi.org/10.1016/S0140-6736(07)60795-8).

<sup>8</sup> James Owen, “Gene Doctors Milk Mice; Yield Human Breast Milk Protein,” *National Geographic News*, (June 2, 2009), <https://news.nationalgeographic.com/news/2009/06/090602-mice-milk-baby-formula.html>.

creating the first genetically modified animal to produce the lactoferrin protein.”<sup>9</sup> This is a remarkable product of technology and will benefit and ensure the healthy development of future infants.

Formula gives women an important and empowering choice, and in some instances is the only option; however, my concern lies in questioning to what extent research will incorporate other species and with what unforeseen effects. This is where the tale of “The Milking Mouse” comes into creation. With this in mind, I pose the following questions: Will the whole notion of formula be redefined? What happens to animals used to create this milk that is so close to a humans? How are these animals bred, would they be infertile, or could a reversal occur where by a cow might now nurse its young with the human milk it produces? The ethics potentially enter a gray area of the humanization of animals. With trepidation, I envision a future in which cows, goats, and even mice are bought, kept, and used in the same manner as a dairy cow, the new primary milk source for infants. Far-fetched as this may sound, it adds further complexity of the tale that I have been creating. John Dobbing, the editor of the book *Infant Feeding Anatomy of a Controversy 1973-1984*, casts a different light on this progressive science that made me reevaluate my thoughts on it, stating “The design of infant formula is still improving, just as much as that of cameras and computers, the product being a cleverly adapted one, sometimes based on the milk of other species, and sometimes containing no animal milk whatever.”<sup>10</sup> The truth behind this statement strikes me as profound, grounds me, and helps to alleviate the path of a dystopian future that is so easily imagined. Thinking of formula in comparison to the

---

<sup>9</sup> Ibid., 1.

<sup>10</sup> Ed. John Dobbing, “Medical and Scientific Commentary on Charges made against the Infant Food Industry,” in *Infant Feeding Anatomy of a Controversy 1973-1984*, 9-27, (Great Britain: Springer-Verlag Berlin Heidelberg, 1988), 10.

advancements being made in phones and cameras gives me a better understanding, in the same way that fairy tales help to translate genetic engineering.

### **Tale Tellers: Oral and Written**

The Grimm Brothers' original folk and fairy tales that were gathered and put into print in 1812-1815 and recently translated by Jack Zipes, are my main source of inspiration. It is important for me to note that these first editions by the Grimm Brothers', were much darker and violent than the editions that are more notable today. I use the darker format of the first editions in my contemporary tales. The brothers and their informants gathered the stories primarily from women.<sup>11</sup> Further pictorial evidence found in historical collections of fairy tales, include images that show the prominence of women in the tradition of tale-telling. These images of grandmothers, mothers, nursemaids, and governesses, are often depicted sitting by fireplaces, or spinning yarn, and telling tales.<sup>12</sup> From this comes the metaphor in which "spinning of yarn" is equated with the telling of tales.<sup>13</sup> I have used this female tradition to further encode aspects of myself within the tales I tell. Initially, the parallels that would later become evident to me between, my interest in the Brother's Grimm tales and the research being done by the scientific community with genetic engineering that result in the shared abstracted sense of animals taking on other species characteristics. As my work progressed and I dug deeper into the tales crossover between tales and scientific material was not evident to me, referring to the modification of animals taking on other species characteristics and traits that scientists have been able to achieve,

---

<sup>11</sup> Jacob Grimm and Wilhelm, *The Complete First Edition: The Original Folk & Fairy Tales of the Brothers Grimm*, trans. Jack Zipes (New Jersey: Princeton University Press, 2014), xxi-xxxiii.

<sup>12</sup> Ruth B. Bottigheimer, ed. *Fairy Tales and Society: Illusion, Allusion and Paradigm* (Philadelphia: University of Pennsylvania Press, 1986), 65.

<sup>13</sup> *Ibid.*, 65.

but as my work progressed, so did my awareness of this overlap. While reading the first two editions of Brothers Grimm, I found tales that featured cross-species nursing; this helped to the further place my tale “The Milking Mouse”, within the paradigm of early tales. One of these examples entitled *The Young Giant*, tells of a male giant who nurses a human to make him stronger. The passage in the tale reads, “Meanwhile, the giant took the boy and let him suckle at his breast, and Thumbling grew and became big and strong like most giants.”<sup>14</sup> The practice of using breast milk to help with rapid weight gain and to build strength is used today in hospitals for premature babies, much like the giant who let Thumbling suckle to foster his growth. This entangles the web of fairy tales and genetic modification and cross-species nursing, and supports the idea that the one thing that is a primarily female trait, nursing, has been mimicked by males -- in this case altered and placed on the teat of another species.

Taking a more critical look at the history and evolution of oral tale telling alongside the progression of science and development of my ceramic work, I can see a link. This link being the iterations that occur with each telling of the oral tale “The Milking Mouse”, along with each object representing this visual tale. In Susan Stewart’s book, *On Longing*, she explains, “Whereas oral tradition obviously cannot ‘age’ in the same sense that the physical artifact can, legends and tales were considered by antiquarians of the survivals school as examples of earlier stages of civilizations residing amid the discourse of the present. For such a theory of oral traditions to exist, it was necessary that a distinction be made between dialect and standard, between decentralized and centralized languages-what had begun to develop was the abstract language of science and the state.”<sup>15</sup> The telling of a particular tale changes in each culture and

---

<sup>14</sup> Grimm, *The Complete First Edition.*, 291.

<sup>15</sup> Susan Stewart, *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection* (Baltimore, MD: Johns Hopkins University Press, 1993), 142.

language as well as over time. The Grimm Brothers were also aware of the evolution and philological changes that took place in the origins of the tales they gathered, and the significance of oral tale telling.<sup>16</sup> A prime and familiar example is *Little Red Riding Hood*. Among others are versions told from the point of view of the wolf, and Charles Perrault's French version differs from the Brothers Grimm. Perrault approaches the tale more metaphorically, and the wolf is a young man and Little Red Riding Hood is a young innocent and naive woman. My tales are also subject to change and interpretation. The "The Milking Mouse" has evolved over the past six months, and continues to change with each iteration of representational object and telling. Nonetheless, fairy tales have been used to explain the unknown and to instill morals in children, creating creatures to fear or abide.

The oral tale-telling tradition is strong within my family. The "Mr. McGuniess" tales helped to shape my desire for storytelling and expand how I view and experience the world. I have fond memories of nights spent outside around the picnic table and grill, listening to tales that my father would makeup, interjecting familiar fairy tale motifs. Passing time during these summer nights was profoundly influential, and my siblings and cousins still talk about these tales. My mother also added to this tradition, and, in one memorable instance, upon hearing a dog bark in the distance during a walk in the woods, she improvised a tale, an echo of the origins of tale telling on the explanation of the unknown. These traditions are still in play today as I hear the familiar characters of my father's past tales coming to life once again for the next generation.

---

<sup>16</sup> Grimm, *The Complete First Edition*., xxxi.

## Tale Tellers: Visual

The genesis of my tales are genetically modified species, and I also look at a variety of other sources, including the work of historical and contemporary artists who utilized tale telling to create narratives. Historical references, such as the paintings of alchemical worlds by Hieronymus Bosch, help to bridge the gap between reality, science, and narrative. I look to genetics and the alteration of DNA, much as Bosch looked to alchemy and the transformation of metals. The visual stories that he produced held clues to his modern time and the science which interested him.<sup>17</sup>

I look to contemporary artists such as Kiki Smith and Paula Rego, who are reimagining and reconfiguring the fairy tale form. I additionally look at the work by artists such as Patricia Piccinini, who develops and furthers the narrative through the use of genetic modification, and who explores the future implications of how we will interact and coexist with these invented beings. Piccinini creates work that addresses the future of these beings in coexistence with humans. Her work reflects current science and touches on the fact that, while humans may be able to invent new creatures, they may not be able to control them, or determine or predict their future.<sup>18</sup> The hyper-realistic quality of her work updates the traditional fairy tale imagery and immerses the viewer in a narrative that revolves around what appear to be living organisms. These creatures seem to have human emotions which develop a connection to the viewer, enabling a viewer to empathize with the organism, as well as to question the implications of this “progress” of genetic modification and transgenic advancements. Piccinini inhabits a gray area, a

---

<sup>17</sup> Laurinda S. Dixon. *Alchemical Imagery in Bosch's Garden of Delights*, (Ann Arbor, MI: UMI Research Press, 1981).

<sup>18</sup> Autodesk, Inc, Natural World Museum, and United Nations Environment Programme. “Patricia Piccinini” in *Art in Action: Nature, Creativity and Our Collective Future*, 112-113.

border region between optimism and caution, and does not choose a side in the genetic debate. As for her use of storytelling, she references stories, but does not appropriate them or directly recreate them. In her own words, "...I am using them to tell stories about the world we live in or to try and explain or explore ethical issues that are important to our times."<sup>19</sup> This approach differs from my own and does not heavily rely on a fairy tale or story as mine does; rather her narrative is rooted in the reality of strange factual science. When looking at Piccinini's work and considering the imaginative narrative as a sort of social contemporary prop used to address empathy towards the creatures being made, the piece *The Young Family* (2002) serves as a good example. The authors of the book *Speculative Everything: Design, Fiction and Social Dreaming*, Anthony Dunne and Fiona Raby, succinctly summarize, "When we read a book we build the world alluded to in it in our imagination, but the main purpose is to identify with characters and situations beyond our own lives, to put ourselves in the position of others, for entertainment or reflection."<sup>20</sup> This is what precisely is done with *The Young Family*, in which the mother creature has eyes that express human-like emotions of exhaustion and sadness. This relates to the question I posed in the previous chapter regarding non-human animals feeding their young human milk. At what point do humans become part of the cross species? This, in turn, helps to lay down further ground work for the milking mouse narrative, which develops her humanized characteristics and questions whether she is more human or mouse.

The idea of an animal producing milk for a different species is nothing new. Digging even deeper into the history of cross-species nursing amongst animals, I found tales and myths

---

<sup>19</sup> Nato, Thompson and Massachusetts Museum of Contemporary Art. *Becoming Animal: Contemporary Art in the Animal Kingdom* (Cambridge, MA: MASS.), 40.

<sup>20</sup> Anthony, Dunne and Fiona Raby, "Physicals Fictions: Invitations to Make-Believe," in *Speculative Everything: Design, Fiction, and Social Dreaming*, (Massachusetts: The MIT Press, 2013):89-100, 91.



which date back to Roman and Greek times. A familiar Roman myth is that of Remus and Romulus, twin male humans, who were abandoned and later saved and nursed by a wolf. Another is the Chimera, a female monster from Greek mythology, a fire-breathing hybridization of multiple animals.<sup>21</sup> Contemporaneously, “Chimera” is a term used in reference to transgenic animals. In Greek mythology, the Chimera was used as a warning, an oddly apt notion if one considers the debate generated by genic research and hybridization. This cross connection of myth and fairy tale is important; they support one another as Marie-Louise von Franz, a leading fairy tale scholar explains, “Sometimes when I do not understand a fairy tale I use myths as parallels because the greater closeness to consciousness of the myth material often gives me an idea about the meaning.”<sup>22</sup>

### **My Modifications of the Past**

Just as tales change over time as a result of the oral tradition, my work too has gone through a timely evolution. For example, my use of figurines has fluctuated over time, and through each change, the modifications that I make become more in-depth. Figurines have a strong and rich history and are used to depict scenes from tales on peoples’ shelves in their homes. The process of searching through the shelves of thrift stores with the goal of finding a ceramic figurine and augmenting it with the addition of other animal parts further connects my process with that of genetic modification.

---

<sup>21</sup> James Hall, *Dictionary of Subjects and Symbols in Art* (Boulder, CO: Westview Press, 1979), 44.

<sup>22</sup> Marie-Louis von Franz, *An Introduction to the Interpretation of Fairy Tales* (Dallas, TX: Spring Publications, 1982), 18.

A figurine that, at one time, could have been found in a domestic setting is now transformed into a hybrid animal form, resulting in a dual transformation of material and narrative. The use of figurines as raw material and building blocks for the characters in the tales further echoes and overlaps both with the cross hybridization in fairy tales and the reality of transgenic advances. I begin with a figurine that has been cast off and sent to the thrift store; it has an unknown past which for me holds domestic weight and significance. From the shelves of the thrift stores the characters' stories begin. The missing appendages and glued-on heads are a feature that I work with and these further aid in establishing the Frankenstein-like approach that takes place in the studio.

The Milking Mouse figure begins with either an Angel or a teddy bear, each of which may be commonly found in thrift stores. Though both are symbols of innocence, the Angel holds greater historical significance, especially considering its religious context. Each of these base characters are introduced to children as a way to ease fears and build companionship. The Angel is a symbol of protection and innocence.

I use Angel and teddy bear figurines as placeholders for the Milking Mouse much the same way a chicken embryo is used in genetic research during the process of bringing back extinct or endangered species, which involves the insertion of other oviparous DNA into the embryo and placing it within the chicken whose offspring will be a hybrid of that species. This specific research was the inspiration for my character Ms. Labrador Duck who first appeared in a previous tale "Mr. Spider Goat the Town Tailor." Ms. Labrador Duck began as a common duck figurine, and through my applied modification takes on features of the now extinct Labrador duck which met its demise at the hands of early settlers during the colonialization of the United

States. I specifically choose the extinct Labrador duck to highlight the possibilities that genetic research holds in being able to trace back DNA and revive animals that are currently extinct.

### **Development of Past Tales**

The underlying theme of “Milk” originated with a character I invented for the story, “Mr. Spider Goat, the Town Tailor.” To build this story, I used common components of fairy tales, including magical numbers and an elderly character who represents the embodiment of wisdom. Seven is a symbolic and magical number and one of its most famous usages in a fairy tale is in *Snow White and the Seven Dwarfs*. This number is seen as a perfect prime number that is reflected in nature within the four seasons and twenty-eight days that occur in the lunar cycle. Dividing the twenty-eight days in a month by four results in the number seven. Seven also is represented by the duration of a week as well as, being a holy number. An example of seven being a holy number, is represented by the multitude of times in Judaism and Christianity. The most notable representing the belief of Creation. The number seven even appears in the middle ages during the development of the seven liberal arts of secular learning.<sup>23</sup> My use of this number recounts seven iterations and generations within the story, in the quest for the perfect spider goat. Mr. Spider Goat was conceived through my investigation into genetic science, especially the placement of the silk protein from an orb weaver spider into the embryo of a goat, eventually resulting in a goat whose milk contains this protein, which can be extracted and turned into silk. These real-life goats are unassuming, normal looking livestock and the special milk they produce is no different.

---

<sup>23</sup> Hall, *Dictionary of Subjects.*, 278.

The inspiration for the wall pieces, which illustrated the iterations and generations of Mr. Spider Goat are old family photo frames that I would see at my Great Aunt's home. Paired with this visual cue of form from the photo frames, my physical appearance started to change during pregnancy and the objects I created began to mirror the process of my growth. This was the first direct link between self and work, though it was not a conscious decision during the making process. My current body of work further reflects my everyday existence; and the line between mundane reality and my studio practice has begun to blur, creating a world of make believe in which I see glimpses of myself being inserted into the tale that I am composing. My emotions and way of thinking further evolve the tale, creating new iterations as time passes.

### **The Science Behind The Milking Mouse**

My original tale titled, "The Milking Mouse" -- in which the main character, the heroine, is a mouse who feeds other animal species -- takes place in the near future and begins with,

The tiny, tiny, tiniest of hope came in the form of a milking mouse.  
In a suburb outside the city that had been forgotten about long ago,  
at the end of the cul-de-sac was a house and at the end of a path  
around the house was a shed. The shed is where this tale starts.

With the rapid advancements of CRISPR (which stands for, Clustered Regularly Interspaced Short Palindromic Repeats) and gene editing, the possibility of a garage lab is not farfetched. Jennifer A. Doudna and Samuel H. Sternberg explain in, *A Crack in Creation: Gene Editing and The Unthinkable Power to Control Evolution*, "Some experts have suggested that, with today's tools, anyone can set up a CRISPR lab for just \$2,000. Others predict a rise in do-it yourself biohackers, eager tech enthusiasts hoping to dabble in CRISPR-based gene editing in their own homes. CRISPR was even the star of a crowdfunded venture that raised well over fifty thousand dollars to

generate and distribute DIY gene-editing kits. For \$130, donors received ‘everything you need to make precision genome edits in bacteria at home’.”<sup>24</sup> Meanwhile, in the Milking Mouse tale:

In that shed was an old wire cage. This is where the heroine lived. She is not what one would expect, small in stature, all grey and instinctually maternal to another species, human. Little did the Scientist know that when the sun began to set, the Milking Mouse would open the squeaky door of the old wire cage and hop out to start her work.

This tale is translated through objects that mimic the idea of a cabinet of curiosity, a bizarre collection of items within a domestic space. In the past, my tales were told through a visual evolution of the characters. At present, I am taking a step back further and starting with the origin of the tale, the science that sparked it, together with the idea of oral evolution that occurs in tale telling.

## Versions and Iterations

In a handful of works, wire is used in reference to a cage that would contain lab mice. The piece titled, *Cracks in the Cage* (fig. 1), is mounted on the wall. This piece originated with a found metal shelf to which an extension of woven wire in the form of a dome cage is attached. Inside this cage sits the Milking Mouse, who looks out towards the viewer, with long whiskers that nearly extend out of her enclosure. This feature of the whiskers reiterates the sense of confinement.

As soon as it was dark and the scientist left for the night, the Milking Mouse was able to slip through her cage. She glanced back over her shoulder to get one final glimpse of the clock as she headed out onto the sidewalk along the shed. As she ran along the sidewalk she took

---

<sup>24</sup> Jennifer A. Doudna and Samuel H. Sternberg, *A Crack in Creation: Gene Editing and the Unthinkable Power to Control Evolution* (Boston: Houghton Mifflin Harcourt, 2017), 113.

note of the time and wondered when the day would come when she was not tied to the hands of the clock.

The tall cylindrical shapes also recall a bell jar -- as in the piece the *Venus Mouse* -- holding and protecting something precious. The *Venus Mouse* (fig. 2) figure began from an angel figurine. She looks out through the wire, holding a blackbird in her hand. Two additional blackbirds fly overhead, but are unable to escape their enclosure. This particular version/iteration of the Milking Mouse includes wings, representing the potential of uncontrolled procreation of animals. If there were even a minor oversight, these animals would fly free, escaping back into a world where they would forever change the path of evolution. This would make it hard to distinguish the modified from the original species. As translated in the “The Milking Mouse”:

The Milking Mouse knew that if the Scientist were to find the cage empty, the cracks that she slipped through would be fixed. So, the Milking Mouse struck up a deal with her neighbor, Shed Mouse, who lived in the walls. In return for the Shed Mouse pretending to play the role as Milking Mouse. Milking Mouse shared her daily food ration.

This piece represents the delicate uncontainable nature of genetically modified animals, and the ability for them to reproduce in nature and pass down their altered genes. The glimpse of freedom for the Milking Mouse looks like this:

Every night at the same time she continued her routine, and she felt true freedom. By the end of the night, with her good deeds done, her heart was full. But as the nights of her adventures passed, her heart began to sink a little more with each run along the path back to the shed, through the gap in the wire cage.

## **Antagonist: Villain the Politician**

As with every good fairy tale there is a villain. The antagonist in this tale is the Politician with his gaggle and bevy, in tow. At this point in the tale he shouts:

“More, more, more”, shouted the Politician to the gaggle and bevy. He stood at the podium that was high above the rest, with empty baby bottles behind him and milk dripping from his beak. The gaggles quacked back loudly and dispersed to find more. Now the Politician was as rotten as they come, stealing milk from babies, all for personal gain, so that he could become even more handsome with fine feathers and golden colored hair.

The *Politician* (fig. 3) begins with a duck figurine. He has a large head made out of earthenware and feathers protruding violently from his breast, tail and, scalp, juxtaposed against golden colored and shimmering doll hair. The hard clay with the soft hair flowing from it helps to further accentuate the symbolic significance of hair within a fairy tale as a manifestation of magic power. An example of this in a familiar tale is Rapunzel, who is locked away in a tower and saved by lowering her hair to her rescuer. The golden color of the hair is a nod to alchemy and Bosch, as well as the value placed on monetary means throughout history. In *The Speech* (fig.4), the politician stands on a podium. This character begins with a duck figurine that is then modified. He stands higher than his followers. His followers are represented by geese and swan figurines who live by the motto “what’s good for the goose is good for the gander,” unaware of the truth that the Politician is actually a duck.

## **The Tiny Pump**

My personal experience of being a nursing mother has translated and influenced my current work both directly and indirectly. My thesis research has coincided with my personal life, resulting

in a better understanding of the different benefits that both breast milk and formula contain. While researching the advancements being done with breast milk and formula, in regards to the mice, I was struck by the image of the scientists milking the tiny mouse with a specially crafted miniature pump.

The milking mouse was created by the Scientist, as a way to help fight against the Politician. Unlike the Scientist's method of collecting milk, which included the tiniest of tiny pumps. The milking mouse found that she was able to feed far more children on her own during her late night missions. Her way also afforded her a bit more stealth, as it was a silent act of resistance because the Politician and his gaggle and bevy could not hear her. The Scientists' pump was far too loud, with sounds that resembled huffing and puffing.

The title of the thesis *Milk*, alone holds weight. This word in the Western culture produces an image of an opaque white liquid substance that comes from a cow, almond, or soy bean. All three of those images are digestible, but the thought of ingesting mouse milk raises an alarm and an instant aversion to the thought of consuming it. Consuming mouse milk is transgressive in light of people's negative associations with mice. These creatures are small, dirty, and scurry around the home, unwanted. More often than not, the indication that mice are present in a home come in the form of its droppings.

In *Reclining Position* (fig.5), the milking mouse lays on a soft pillow looking out at the viewer. The bottle that is labeled .5 Oz Human and .5 Oz Mouse is on a pedestal that sits above her. The mixed media used is a reflection of the mixed DNA of mouse and human that results in the hybridization of milk that is produced. The bottle is elevated above the actual animal that produces the milk; elevating science above all else.

By including signifiers, such as a rocking chair, in the installation piece, *Recorded Feedings* (fig. 6), I am able to use this object as a reference to the iconic image of a mother rocking



her child. I use the rocking chair as an object that separates human feeding their young from other animal species. The rocking chair sits on a raised platform constructed from tile. This platform shares similarities with the modified figurines. The tile comes from thrift stores and in some cases hold actual remnants of its past life, such as glue and grout. Modification of the tiles happens through the translating of recorded times, taken from my notes, as well as the Milking Mouse tale, and transcribed on the tiles (fig. 7). These faded numbers and collections of words document the first three months of feeding my son. This installation piece feels inherently human, and the times become a feeding code that other caregivers can decipher. A rocking chair is also used as a place to sit and tell stories. Whether these stories take the form of fairy tales or family history, when someone is sitting in a rocking chair a transformation happens, turning it into a stage.

The piece titled *Table of Components* (fig. 8), is installed near the work, *Recorded Feedings*. The table that serves as the base, is a modified metal stand, with large clay tiles as tops, accompanied by plush pillow forms that join the hard surface of tiles, in juxtaposition two one another. Bell jars that have been modified contain the components that have been placed on the table (fig. 9). These jars enclose, the components that make up the fairy tale. The components are, mice with their ten visible teats and human breast forms, both a reference to milk and the transgenic research being done. Lab mice made out of clay, with bright yellow ear tags attached to them, look out through the glass with their paws raised. They are situated next to breasts made out of clay, which are contained within the modified ball jars. This piece visually ties together my following of research in the advancements of transgenic science with the development of the contemporary fairy tale “The Milking Mouse.”

## **The Presentation: Domestic Space**

The overall thesis work is compiled of scenes and iterations, telling the tale over and over again in different forms. Scenes change and evolve with each telling and also evolve through the written documentation. Reusing, and in some cases modifying already existing furniture that would be found in a home promotes a universal child-like imagination, and draws a further connection to domesticity, and to the important contributions of women to tale telling. My hope is that a sense of play is initiated, and that the figurines, and the story that they tell come alive. I treat the furniture that is used for displaying the work in the same fashion as the figurines, approaching them as found objects of raw material which become part of the story, and, in a way, become their own characters. The piece titled *Dinner Bells* (fig. 10), contains all of the elements that make up the thesis exhibition “Milk”. I used three identical domestic, wooden shelves that are easily found in thrift stores, with those shelves as the base I made decorative clay components, which resemble the outline of lace and sit on the top of the wood. Each one of these shelves hold a porcelain bell that was found at a thrift store. Furthermore, each bell is different, one being a teddy bear, another an Angel, and the last a traditional bell. Both the teddy bear bell and the Angel bell are place holders for the Milking Mouse. Through the use of earthenware clay, I modified the bells to further take on the characteristics of the Milking Mouse. The third bell retained its traditional bell shape, but was modified in the same way as the other two, with the addition of earthenware to further emphasis the form.

The decision to show this body of work in an old house, which has been converted into a gallery space adds another layer of depth and modification to the overall ambiance of the tale, “The Milking Mouse.” This body of work would take on a different overall tone, if shown in a more traditional gallery setting, as my past work has been. By recreating a domestic sphere, within

the realm of a gallery that already exists in a domestic space, I enable the viewer to draw upon their previous experiences and further apply them into the tale. This fosters a more intimate and familiar experience for the viewer. The work is displayed in two rooms, that each have a theme. The first room, as seen in the installation image (fig. 11), contains the works *Recorded Feedings* and *Table of Components*, consists of work that represents the genesis of the “The Milking Mouse” and tale telling. Through a doorway into the next room, which can also be seen in the installation image (fig. 12), the tale begins. “The Milking Mouse,” is played out among the pedestals, mantel piece, and wall.

I embrace the domestic sphere and the atmosphere that comes along with it. This is done by highlighting the features that are inherent to the home. Through the use of features, such as window sills and mantels pieces, I further embed my work within the space. The piece *Tied to the Clock* (fig. 13), is displayed on the mantel. The base of this piece is a found porcelain clock that underwent further modification with the addition of earthenware clay, slip, glazes, underglazes and burn outs of fake flowers. The shell consisting of slip, was all that was left of the polyester fabric that made up the flowers after they were burned out in the firing process. Much like the way that I constructed, modified and reused furniture to further tie the work to the home, I use the already existing feature, the mantel, as a pedestal, which further blurs the line of gallery space and domestic space, reality and fairy tale.

### **Happily Ever After**

I find validation of my role of fairy tale composer/teller in the simple fact that I am a female and mother. Historically, women were seen as truth-tellers and “...both male and female, validate

the authenticity of their folk stories by claiming to have heard them from young girls, nurses, gossips, townswomen, old crones, and wise women.”<sup>25</sup> By taking this approach and inserting truth within the tales, I am able to pose questions that exist in a gray and uncomfortable space. This approach of using actual scientific studies, lends itself to my interpretation, through translation of the scientific research that is being done in the field of transgenic advancements. I am doing more than creating a body of art work; I am continuing a rich tradition that shapes, explains, and embeds itself in the culture in which we live.

---

<sup>25</sup> Bottigheimer, *Fairy Tales and Society*., 62.

## Figures



Figure 1: Lindsey Heiden, *Cracks in the Cage*, Dimensions 14.5" x 10" x 7", Found Objects, Found Figurine, Earthenware, Porcelain, Cat Whiskers, Yarn, Flocking, Glaze, Wire, 2018 (Image by Kristoffer Johnson)



Figure 2: Lindsey Heiden, *Venus Mouse* (Detail), Dimensions 36" x 20" x 14.5", Found Objects, Found Figurine, Earthenware, Human Hair, Yarn, Glaze, Kanthal Wire, Lace, Tile, Wood, Found Table, Watercolor Paper, Acrylic Paint, 2017, (Image by Kristoffer Johnson)



Figure 3: Lindsey Heiden, *The Politician* (Detail), Dimensions 36" x 11.5" x 11.5", Found Objects, Earthenware, Slip, Doll Hair, Glaze, Wood, Found Table, Cork, 2018, (Image by Kristoffer Johnson)

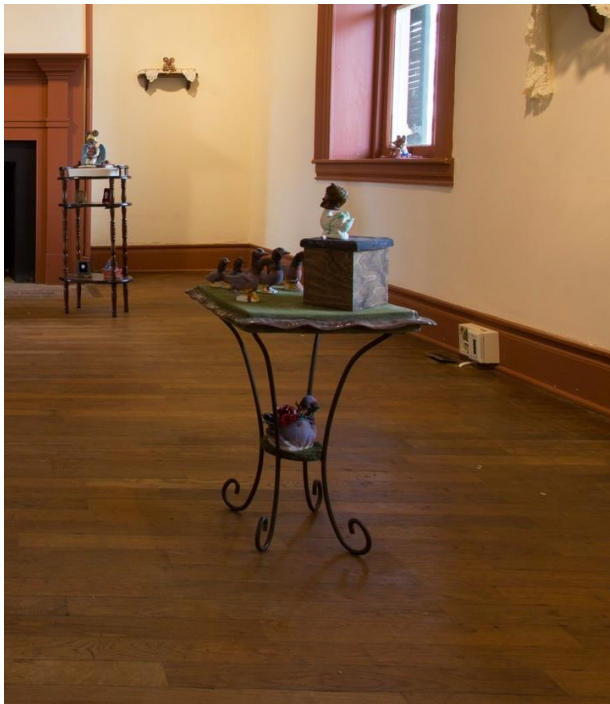


Figure 4: Lindsey Heiden, *The Speech* (Installation), Dimensions 30" x 14.5" x 14.5", Found Objects, Found Figurines, Earthenware, Yarn, Glaze, Wood, Found Table, Polyester Fiber, 2018, (Image by Kristoffer Johnson)



Figure 5: Lindsey Heiden, *Reclining Position*, Dimensions 13.5" x 16" x 8", Found Objects, Found Figurine, Earthenware, Human Hair, Yarn, Glaze, Lace, Fabric, Wood, Found Shelf, Cat Fur, Polyester Fiber, Thread, 2017, (Image by Kristoffer Johnson)



Figure 6: Lindsey Heiden, *Recorded Feedings*, Dimensions 35" x 44" x 44", Rocking Chair, Found Tiles, Red Iron Oxide, 2017, (Image by Kristoffer Johnson)



Figure 7: Lindsey Heiden, *Recorded Feedings* (Detail), Dimensions 35" x 44" x 44", Rocking Chair, Found Tiles, Red Iron Oxide, 2017, (Image by Kristoffer Johnson)



Figure 8: Lindsey Heiden, *Table of Components*, Dimensions 47.5" x 36" x 13", Found Table, Found Objects, Earthenware, Porcelain, Glass, Glue, Yarn, Fabric, Polyester Fiber, Kanthal Wire, Calcium Carbonate, Acrylic Paint, Glaze, 2018, (Image by Kristoffer Johnson)





Figure 9: Lindsey Heiden, *Table of Components* (Detail), Dimensions 47.5" x 36" x 13", Found Table, Found Objects, Earthenware, Porcelain, Glass, Glue, Yarn, Fabric, Polyester Fiber, Kanthal Wire, Calcium Carbonate, Acrylic Paint, Glaze, 2018, (Image by Kristoffer Johnson)



Figure 10: Lindsey Heiden, *Dinner Bells*, Dimensions Variable, Found Porcelain Bells, Earthenware, Found Wooden Shelves, Gesso, Glue, Glaze, String, 2018, (Image by Kristoffer Johnson)



Figure 11: Lindsey Heiden, *Milk* (Installation of Room One), 2018, (Image by Kristoffer Johnson)



Figure 12: Lindsey Heiden, *Milk* (Installation of Room Two), 2018, (Image by Kristoffer Johnson)



Figure 13: Lindsey Heiden, *Tied to the Clock*, Dimensions 10.5" x 9" x 5", Found Porcelain Clock, Earthenware, Glaze, Glue, 2018, (Image by Kristoffer Johnson)

## Bibliography

*Art in Action: Nature, Creativity and Our Collective Future*. "Patricia Piccinini." 112-113. San Rafael, CA: Earth Aware Editions, 2007.

Bottigheimer, Ruth B. *Fairy Tales and Society: Illusion, Allusion and Paradigm*. Philadelphia: Univ. of Pennsylvania, 1989.

Bryder, Linda. "From Breast to Bottle: A History of Modern Infant Feeding." *Endeavor* 33, no. 2 (2009): 54-59. doi:10.1016/j.endeavour.2009.04.008.

Dixon, Laurinda. S. *Alchemical Imagery in Bosch's Garden of Delights*. Ann Arbor, MI: UMI Research Press, 1981.

Dobbing, John. "Medical and Scientific Commentary on Charges made against the Infant Food Industry." In *Infant Feeding: Anatomy of a Controversy, 1973-1984*. 9-27. Great Britain: Springer-Verlag, 1988.

Doudna, Jennifer A., and Sternberg, Samuel. H. *A Crack in Creation: Gene Editing and the Unthinkable Power to Control Evolution*. Boston: Houghton Mifflin Harcourt, 2017.

Dunne, Anthony, & Raby, Fiona. "Physicals Fictions: Invitations to Make-Believe." In *Speculative Everything: Design, Fiction, and Social Dreaming*. 89-100. Cambridge, MA: The MIT Press, 2013.

Grimm, Jacob and Wilhelm. *The Complete First Edition: The Original Folk & Fairy Tales of the Brothers Grimm*. Translated by Jack Zipes. New Jersey: Princeton University Press, 2014.

Hall, James. *Dictionary of Subjects and Symbols in Art*. Boulder, CO: Westview Press, 1979.

MacDonald, Rhona. "The Continuing Battle Over Baby-Milk Formula". *The Lancet* 369, no. 9575 (2007):1773. [http://doi.org/10.1016/S0140-6736\(07\)60795-8](http://doi.org/10.1016/S0140-6736(07)60795-8).

Obladen, Michael. Historic Records on the Commercial Production of Infant Formula. *Neonatology* 106, no. 3 (2014): 173-180, doi:10.1159/000363494

Owen, James. "Gene Doctors Milk Mice; Yield Human Breast Milk Protein." *National Geographic News*, (June 2, 2009) Retrieved February 1, 2018, from <https://news.nationalgeographic.com/news/2009/06/090602-mice-milk-baby-formula.html>.

Stewart, Susan. *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection*. Durham, N.C: Duke Univ. Press, 1993.

Thompson, Nato. *Becoming Animal: Contemporary Art in the Animal Kingdom*. North Adams, MA: MASS MoCA, 2005.

Von Franz, Marie-Louis. *An Introduction to the Interpretation of Fairy Tales*. Dallas, TX: Spring Publications, 1982.