

"Uncanny Objects: the Art of Moving and Looking Human"

Khanh Van Ngoc Vo

Lancaster, Pennsylvania

B.S.E in Social Studies, Millersville University, 2009

B.A. in History, Millersville University, 2009

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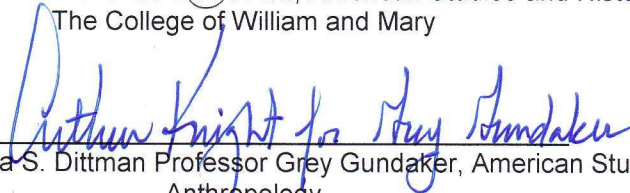
Khanh Van Ngoc Vo

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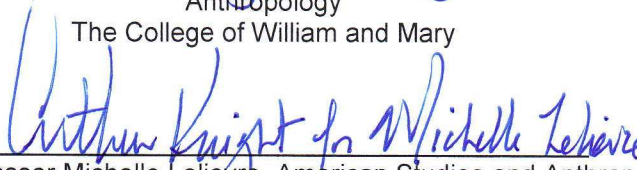
Committee Chair

Associate Professor Charles McGovern, American Studies and History
The College of William and Mary



Duane A. and Virginia S. Dittman Professor Grey Gundaker, American Studies and
Anthropology

The College of William and Mary



Assistant Professor Michelle Lelievre, American Studies and Anthropology
The College of William and Mary

ABSTRACT

Automata ("self-moving" machines) and reborn dolls (hyperrealistic baby dolls) individually conjure up questions of dynamic and aesthetic realism-- external components of the human form as realistically represented or reproduced. As simulacra of humans in movement and appearance, they serve as sites of the uncanny exemplifying the idea in which as varying forms of the cyborg imbue them with troubling yet fantastical qualities that raises questions about our own humanness..

My first essay, "Automaton: Movement and Artificial/Mechanical Life" directly addresses the characteristics that define humanness, principally the Rene Descartes mind-body dichotomy, by tracing the evolution of mechanical life, predicated as much on movement as consciousness, via the construction of automata. "Dis/Playing with Dolls: Stigmatization and the Performance of Reborn Dolls" takes the discussion a step further and examines people's reactions when objects that look human are treated like human. I compare observable behaviors of dolls owners via social mediums like videos posted on YouTube, message boards, blogs, and news sources with responses by observers of this type of doll play, and superimposing a theory of play over this interaction. Whether or not automata and reborn dolls are socially accepted as signifiers of humanness, they already exist within our social space and reality. It is the recognition and acknowledgement of their presences in our everyday life and their agency that puts them squarely in the discourse of life.

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Introduction

Released a week after the film *Ex Machina*, the sci-fi film *Uncanny* (2015) follows a tech journalist, Joy, as she interviews a prodigal scientist, David Kressen, and his robotic creation, Adam. As Joy interacts with the android and develops an intimate relationship with its creator, Adam, as an example of “perfect” artificial intelligence, begins exhibiting behaviors like anger and jealousy that suggests an emerging consciousness. While both films share a similar setup, the interaction between a human and a computer organized around a Turing test, the ending of *Uncanny* reveals that David is, in fact, the android and Adam is the creator.

The film premises the notion of being “more human than human,” a motto of the Tyrell Corporation, makers of replicants—biorobotic androids virtually identical to humans—in Ripley Scott’s *Blade Runner* (1982), adapted from Philip K. Dick’s novel *Do Androids Dream of Electric Sheep?*. A play on the notion of if androids could dream they would be dreaming of electric sheep rather than real ones, the title of the novel, nevertheless, poses to readers the question of humanness. Is the human nervous system not reliant on electric signals to process information? Do human, in essence, not dream of electric sheep? While dreaming is not unique to humans, it is taken to suggest presence of life.

“Do androids dream?”¹ This question posed by Rick Deckard, the protagonist and bounty hunter of the novel and film tasked with euphemistically “retiring” replicants, signals his own uncertainty towards the morality of his work and claim that, though he kills replicants, he has never committed murder. His

¹ Philip K. Dick, *Do Androids Dream of Electric Sheep?* (1st Ballantine Books trade pbk. ed., New York: Ballantine Books, 1996), 184.

growing empathy for the androids through his own experience and interaction with them stand in contrast to the presence of “empathy boxes” which link users to a virtual reality of the communal suffering of one man, Wilbur Mercer; comparable to the augmented realities we experience via our television sets. But even without the advent of television, film, and virtual reality, we already engage in an alternative empathic, albeit human-centric, practice of anthropomorphism.

Anthropomorphism is the tendency to attach human characteristics to objects and things. Whether we accept anthropomorphism as a universal tendency or not,² the question of seeing human qualities in objects intersects with narratives of representation, simulation, and interaction between humans and non-human actors. To anthropomorphize nonhuman agents moves beyond purely behavioral or dispositional inferences. To attach a certain human quality to an object is to isolate and elevate that quality as essential to determining what it means to be “human.” The capacities and characteristics attributed to nonhumans must be regarded as distinctly human in either form or mind. In expressions such as “that chair’s got a mind of its own,” anthropomorphism can also come with privileging thinking over sensation and vice versa.

What, then, are the characteristics that can be considered distinctly human, especially in our attempt to manufacture human life through objects and machines? What happens when machines and things start to move and look human? The usefulness of a machine or object as a tool does not rely on its

² “There is a universal tendency among mankind to conceive all beings like themselves, and to transfer to every object, those qualities, with which they are familiarly acquainted, and of which they are intimately conscious.” David Hume, *The Natural History of Religion*, (Stanford, Calif.: Stanford University Press 1957), 29

faithful mimicry of human characteristics to carry out the same set of tasks, but then why try to make it look and move more like humans? How do we interact with and respond to those objects?

The following two essays employ two examples of objects, the automaton and reborn dolls that, individually, conjure up questions of dynamic and aesthetic realism--external components of the human form as realistically represented or reproduced. I examine automata and reborn dolls as things and as art and, thereby reproducible.³ As simulacra of humans in movement and appearance, they serve as sites of the uncanny. The uncanny (*das unheimliche*) as defined by Ernest Jentsch references the intellectual uncertainty as to “whether an apparently animate object really is alive and, conversely, whether a lifeless object might not perhaps be animated.”⁴ Automata and reborn dolls exemplify this idea. As varying forms of the cyborg, they are imbued with troubling yet fantastical qualities that, whether taken as a means to transcend bodily death or otherwise, raises questions about our own humanness. Jentsch further explicates that successful use of the uncanny, first applied to literary examples, “leaves the reader wonder[ing]....and do[es] so in such a way that his attention is not focused directly on the uncertainty, lest he should be prompted to examine and settle the matter at once.”⁵ Reborn dolls and automata, along with its later

³ Walter Benjamin, “The Work of Art in the Age of Mechanical Reproduction” in *Illuminations*, ed. Hannah Arendt, trans. Harry Zohn, from the 1935 essay, (New York: Schocken Books, 1969).

⁴ Sigmund Freud, David McLintock, and Hugu Haughton, *The Uncanny*, (New York: Penguin Books, 2003), 135.

⁵ Ibid.

incarnation--the android, achieve a degree of realism through its humanoid appearance and movement that can place them squarely within the uncanny.

The two examples also focus on the correlation between materialism and realism. In his examination of materialism in literature, Daniel Tiffany asserts that though “materialism is not inherently realistic”⁶ the two are linked through the bodies of the automaton and reborn dolls. The division of realistic representation into movement and aesthetic qualities is deliberate on my part. The strive towards realism and simulation of the mind expressed most notably with artificial intelligence also fits within the uncanny. However, I resist the inclusion of AI in this discussion because I want to draw attention to other factors that might widen the discourse. Scholars such as Geoffrey Bowker, Susan Leigh Star, Maxine Sheets-Johnstone, Timothy Morton, and Kim Toffoletti have noted the privileging of the mind and technological focus of generating thinking machines at the expense of movement, infrastructure, gendered bodies, and production.⁷ It is important to also consider the material construction of automata and reborn dolls. Situated between a strange edifice of craftsmanship of the pre-industrial workshops and mass production line of industrial factories--the compatibility of robotic and dolls parts to be mass produced yet require highly artistic skills to assemble--the eighteenth century automaton and the twenty-first century reborn

⁶ Daniel Tiffany, *Toy Medium: Materialism and Modern Lyric*, (Berkeley: University of California Press, 2000), 268.

⁷ Kim Toffoletti, *Cyborgs and Barbie Dolls: Feminism, Popular Culture and the Posthuman Body*, (New York: I.B. Tauris, 2007); Maxine Sheets-Johnstone, *The Primacy of Movement*, ed. 2, (Amsterdam/Philadelphia: John Benjamins Pubs., 2011); Geoffrey Bowker and Susan Leigh Star, *Sorting Things Out: Classification and Its Consequences*, (Cambridge, MA: MIT Press, 1999).

doll are also material embodiment *and* representation of the labor and time involved in their production.

In the quest for artificial life and in determining the categorical definitions of what is uniquely human, perhaps the biggest contributor is the Turing test developed by British computer scientist Alan Turing in 1950. In answer of the questions: can machines think?, a basic setup of the test is a game in which a human player is isolated from two other players—one of whom is a human and the other is a computer. Both must try to convince the player they are human. Known as the imitation game, a series of questions is administered to test a machine's ability to replicate human intelligence to the level that it becomes indistinguishable from its human opponent.

Artificial intelligence have come to dominate portrayals of artificial life in the science fiction genre and media. In the film *Ex Machina* (2015), Nathan, maker of the Ava android, asks the protagonist, Caleb, to administer the Turing test to his latest creation though they sidestep the original design of the test by making Ava's technological infrastructure visible. In doing so, *Ex Machina* does not test whether a machine can think, but whether a machine has consciousness. This raises questions, like *Uncanny*, about the kinds of relationship that can form between human and conscious machines. In wanting to "show you [Caleb] that she's a robot and then see if you still feel she has consciousness," Nathan's intentions cast aside the externalities of the human form while focusing on consciousness as the chief quality that makes us human. Similarly, the Voight-Kampff test in *Blade Runner* includes measurements of empathic body

responses through autonomic signals such as muscle contraction, pupil dilation, and respiration. In a world where replicants are virtually indistinguishable from humans, the primary determinant of humanness are the machinelike reactions of the human body towards virtual scenarios, highlighting the ways in which the human body may reveal things that remain unconscious and uncalculated.

The Turing test, however, does not concern externalities or the physical form. In taking the mind and qualities of rational thought as a uniquely human character (or characteristic that differentiate humans from nonhumans), the ambiguity within the uncanny at any given moment is manufactured in a way that it reduces human and nonhuman characteristics to a checkbox list.

Differentiating a reborn doll from a baby evokes the close resemblance between doll and baby which categorically defines the former as an uncanny object.

Trying to prove that the doll is or is not a “real” baby reduces the doll and, by extension, the baby to its non-human qualities in order to eliminate the ambiguity.

The uncanny lies in the aesthetic familiarity of the doll to the baby so that in moment of ambivalence, indecision, and deliberation, the doll might as well be the baby and vice versa.

The impossibility of attaining any notion of absoluteness in defining humanness—so that in choosing between characteristic A or characteristic B, we make a decision as close to humanness as possible that effectively negates the difference between that and perfect—eliminates the need to set rigid categories and distinction between body/mind, artificial/real, and human/nonhuman.

In my first essay, “Automaton: Movement and Artificial/Mechanical Life” directly addresses the characteristics that define humanness, principally the Rene Descartes mind-body dichotomy, by tracing the evolution of mechanical life, predicated as much on movement as consciousness, via the construction of automata. The progression of automata through the centuries show a transition from machines made to imitate natural behavior to ones that simulate biological processes and, in doing so, mark a shift towards the mind and intelligence as characteristics that exemplifies humanness.

Next, “Dis/Playing with Dolls: Stigmatization and the Performance of Reborn Dolls” takes the discussion a step further and examines people’s reactions when objects that look human are treated like human. This essay relies on the model of lifelike (or hyperrealistic) reborn dolls to examine how the interaction between dolls and their owners is classified within the social space where they exist. By comparing observable behaviors of dolls makers and owners via social mediums like videos posted on YouTube, message boards, blogs, and news sources with responses by observers of this type of doll play, there is a noticeable misalignment between signifiers produced by the doll owners and what the observers interprets. Superimposing a theory of play over this interaction, simply put, when doll owners play with their dolls observers do not necessarily interpret such interaction as play.

Neither essay dives directly into topics of artificial intelligence, consciousness, and inner subjectivity; qualities that are typically used to define humanness. Whether or not automata and reborn dolls are socially accepted as

signifiers of humanness, they already exist within our social space and reality as toys in shops, “babies” in nurseries, robots unloading freight in a shipyard, and androids serving coffee in a Tokyo cafe. It is the recognition and acknowledgement of their presences in our everyday life and their agency that puts them squarely in the discourse of life.

Essay 1

“Automaton: Movement and Artificial/Mechanical Life”

Automaton **1a.** *A moving device having a concealed mechanism, so it appears to operate spontaneously.*

— Oxford English Dictionary

†2. *In literal sense. A being or thing having the power of spontaneous motion or self-movement.*

— Oxford English Dictionary

3c. *Now freq. with plural automatons. A human being resembling an automaton; a person who acts, or appears to act, in an inhuman, mechanical, or unemotional way*

— Oxford English Dictionary

A woman walks into the National Portrait Gallery in London and spots another woman cradling a baby. She gets an uneasy feeling that something is not quite right. The baby, she soon discovers, is not real and is, in fact, a very realistic looking doll. “Phew,” she says, “not ill, just inanimate.”⁸ In our everyday vernacular and conversations, when an object is described as *inanimate* it is considered lifeless. In this regard, is life not defined, at least in part, by its animatedness? If so, why does the mind and intelligence dominate conversations of what makes us human? In the quest to manufacture artificial life through objects, mechanical motion is replaced by artificial intelligence.

Realistic mechanical representation of animal⁹ life in objects involves two major components: aesthetic and dynamic.¹⁰ My focus for this paper will be on

⁸ Zoe Williams, “Reborns: dolls so lifelike you could mistake them for real infants,” *The Guardian*, Nov. 45, 2011, Nov. 16, 2014, retrieved from <http://www.theguardian.com/>

⁹ I use the term “animal” as an extension of living beings, including humans.

dynamic realism, specifically movement, as it is applied to machines. By using automata as a case study, I argue that movement—coordinated patterns within the individual and other moving bodies—should play a more centralized role in the debate of artificial life. Automata are, by definition, “self-moving machines,”¹¹ serving as early incarnations of the modern day robot. It should be noted, however, that I am not attempting to define what should or does constitute life, nor am I interested in exploring the development of artificial intelligence,¹² nor would I try to articulate in depth the motivation driving scientists and engineers’ quests to produce artificial life. While recognizing that consciousness plays a role in bodily movement, in discussions of manufacturing life, this essay seeks to draw attention to the bias focus on creating artificial intelligence as opposed to capturing movement.

Movement, in the discussion of what constitutes life, has been relegated to the sidelines. As I will attempt to illustrate in this paper, by examining the evolving focus on movement placed by scientists and engineers in their designs of automata we can discern their assumptions of the essential components of life along with the limitations of machines. Since the introduction of the mind-body dichotomy, there has been an ideological shift away from movement as essential to life—and the simulation of life. I argue that this should not be the case. The

¹⁰ By aesthetic, I mean qualities of appearance, texture, fragrance, touch sensation; and by dynamic I mean qualities of motion, speech, voice quality, progeny, and contingency (interactability and timing).

¹¹ Jessica Ruskin, “The Defecating Duck, Or, The Ambiguous Origins of Artificial Life,” *Critical Inquiry* 29, no 4 (2003b):601; Minsoo Kang, *Sublime dreams of living machines: The automaton in the European imagination*, (Cambridge, Mass.: Harvard University Press, 2011), 7-8.

¹² Hereafter, referred to as AI.

difference between human movement and the movement of machines is motility, the capacity to move spontaneously and unpredictably. Thus, if we wish to simulate and reproduce life through machinery, movement is an important component to consider. It is through movement that humans discover our potentiality, and it is our potentiality that separates humans from machines.¹³

Objects that possess innate ability or capacity to move with or without the manipulation of an outside force were classified as automata.¹⁴ The earliest record of automata, or moving machines, dates to ancient Greece in the forms of Homer's moving tripods, the animated statues of Daedalus, and the Hero of Alexandria. Automata of these times, then, were defined by their movements. This definition carried on into the Renaissance, made possible by the rediscovery of classic texts in philosophy, mathematics, and natural science. The Renaissance also witnessed new technological advancement in horology that played directly into the construction of a new class of automata. Mechanical clockwork allowed automata to move with precision even as movement became more intricate. Yet, the practicality of such movement stagnated or diminished such that automata transformed into playthings and sources of entertainment. Machines like the Hero of Alexandria were redesigned with more grandeur and

¹³ The relationship between motility (the power or potential of active movement) and artificial intelligence is another important point to consider and a philosophical and/or scientific discussion may be useful to gain a complete understanding of how one might influence the other and vice versa, but that is beyond the scope of this paper.

¹⁴ Kang, *Sublime Dreams of Living Machines*, 14-15.

complexity like, for example, those in the gardens of the Villa D-Este of Tivoli,¹⁵ yet their function as hydraulic organs remained unchanged.

Transition into the Enlightenment—the golden age of automaton—coincided with the introduction of the man-machine dichotomy that pervaded the intellectual discourse of the era. This dichotomy owed much to the works of René Descartes. In his *Method of Doubt*, Descartes asserted that the only thing he could be certain of was his own existence—that he existed *because* he thought. “*Cogito ergo sum/I think therefore I am.*”¹⁶ The following sums up the dichotomy known as Cartesian dualism:

This will not seem at all strange to those who know how many kinds of automatons, or moving machines, the skill of man can construct with the use of very few parts, in comparison with the great multitude of bones, muscles, nerves, arteries, veins and all the other parts that are in the body of any animal. For they will regard this body as a machine, which having been made by the hand of God, is incomparably better ordered than any machine that can be devised by man and contains in itself movements more wonderful than those in any machine.¹⁷

This marked the preamble to the decided break between the mind and the body and, by extension, intelligence from movement. Furthermore, “I recognize that if a foot or arm or any other part of the body is cut off, nothing has thereby been taken away from the mind.”¹⁸ By asserting that the mind can function without the body, Descartes separated mind, body, and nature into entities independent from

¹⁵ Ibid, 80-82.

¹⁶ Rene Descartes, *The philosophical writings of Descartes*, (Cambridge [Cambridgeshire] ; New York: Cambridge University Press, 1984), I:120.

¹⁷ Ibid, 139.

¹⁸ Descartes, II:59.

each other. The consequences of Descartes' work are twofold. First, by establishing the man-machine dichotomy with the body as a machine, Descartes influenced scholars and scientists of the next century to view processes of life as mechanistic and, therefore, reproducible. This spurred the intellectual pursuit of automata as "heuristic devices to illustrate the nature of the body, the state, and even the entire universe."¹⁹ Second, the Cartesian mind-body duality has steered the conversation of constructing artificial life away from movement towards creating artificial intelligence: a mind capable of emulating human thought, rationality, logic, emotion, and even the irrationalities and flaws in logic and reasoning.

An famous example is The Turk, a chess-playing automaton. Built in 1770 by Wolfgang von Kempelen, for nearly a century its exhibition throughout Europe and the Americas astounded audiences that a mere machine could repeatedly best a human in a game of chess, calling into question the possibility of clockwork mimicking human reason. Regrettably for champions of artificial intelligence, in 1821 Robert Willis published an article titled "An Attempt to Analyse the Automaton Chess Player of Mr. de Kempelen," in which he decried the Turk as a hoax and offered several theories as to how the chess playing might have been accomplished. In actuality, the dimensions of the cabinet within which Kempelen stored the supposed mechanical parts of the Turk was actually empty and, instead, fitted a human chess player who could observe the game board and guide the mechanical arms of the Turk to execute the moves through

¹⁹ Kang, *Sublime Dreams of Living Machines*, 175.

the manipulation of magnets.²⁰ When the hoax was finally revealed, few were surprised since this confirmed the speculation and explanations on the machine's operations from the outset.

The exposure of the Turk as a hoax also came at a period when the public delighted in what Neil Harris termed the "operational aesthetic," the fascination in seeing hidden processes at work. Harris elaborated on the particular American attitude that valued problem-solving, information seeking, and individual judgements in the midst of intellectual skepticism and scientific advancements of the nineteenth century. The debate surrounding the spectacle, Harris contends, fascinated the public as much as the (un)real thing. "Learning to tell the true from the false, the lie from the truth, learning trust and mistrust, was part of an acculturation process that shows up again and again in nineteenth-century culture, from the 'operational aesthetics' of P.T. Barnum, with its hoaxes and hybrids, to the serious literature of Poe, Melville, and James."²¹ And indeed, even Edger Allen Poe voiced his two cents in his 1836 "Maelzel's Chess Player," one of the more famous attempts to debunk the Turk. Seeking the right answer or debunking a hoax spoke to a need for self-reassurance of one's own intellectual abilities and dominance. If the Turk had not turned out to be a hoax, it would have served as one of the earliest example of artificial intelligence.²² It was not until the creation of the computer Deep Blue by IBM in 1997 that a

²⁰ Ibid, 180; Tom Standage, *The Turk*, (New York: Walker Publishing Co., Inc., 2002), 194-204.

²¹ Miles Orvell, *The Real Thing: Imitation and Authenticity in American Culture, 1880-1940*, (Chapel Hill, North Carolina: University of North Carolina Press, 1989), 58.

²² Klint Flinley, "Did a Computer Bug Help Deep Blue Beat Kasparov?" *Wired*, Sept. 28, 2012, Oct. 11, 2014, retrieved from www.wired.com/

machine was able to beat a chess Grandmaster, Garry Kasparov. More importantly, however, was the shift in the public's fascination from moving machines to thinking machines like the Turk.

The Enlightenment marked the beginning of machines modeled after living creatures, along with a central scientific emphasis on the internal mechanism of the body. How better to accomplish this than to build a machine that not only looked like an animal, but moved like one as well? Maillard's artificial "Swan" (1733) sported a mechanical paddles wheel and gears to navigate through water while turning its head from side to side, reproducing the motion of a swimming duck.²³ While aiming to capture realistic movement, automata still functioned as a source of entertainment and, therefore, sought to imitate rather than simulate life. Julien Offray de La Mettrie's *L'Homme-machine*, published in 1747, proclaimed "the human body is a machine that winds up its own springs: it is a living image of the perpetual motion."²⁴ Fitting with the mechanical philosophy of seventeenth century thinkers, imitation of life expounded on the idea of man as corporeal machine.

²³ Jessica Ruskin, "Eighteenth Century Wetware," *Representations* 83, no.1 (2003a): 100; Ruskin, "The Defecating Duck," 602. Descartes, too, supposedly created an automaton in the image of his deceased daughter. As the story goes, the automaton was subsequently tossed overboard during Descartes's journey to Sweden when sailors, who superstitious and horror at the sight of the automaton's realism, blamed the machine for causing the bad weather they were experiencing.

²⁴ Julien Offray de La Mettrie, *Man a machine*, translated from the French of Mons. de la Mettrie, A celebrated Physician of the Faculty at Paris, and Author of *Penelope, or the Machiavel in Physic* (3rd ed.), (London: printed for G. Smith, near Temple-Bar, 1750), Eighteenth Century Collections Online, Gale, 11.

Mechanical clockwork emerged in the Middle Ages, but its pinnacle, coincided with that of automata around the latter half of the eighteenth century when technological innovation resulted in the miniaturization of mechanical parts. Miniature mechanisms, a precursor to nanotechnology, allowed the designs of automata to become more intricate, increased mobility, and enabled other dynamic components such as the simulation of sound. This contributed to the wider circulation of automata as they became easier to handle and transport. Jacques de Vaucanson's "the Flute Player" (1737-38), did not rely on a hidden musical box, but simulate the actions of a flute player, through bellow lungs, a silver tongue, and mechanical fingers gloved in real skin. From the 2013 BBC documentary *Mechanical Marvels, Clockwork Dreams*, the emphasis on imitating movement in the seventeenth century shifted towards simulating biological processes of nature and animals.²⁵ Riskin defines the term "simulation," in 20th c. usage of the word, as the mechanical reproduction of nature in effort to discover its properties and understand how it works as different from "imitation" which is simply replicating nature.²⁶ In contrast to Maillard's Swan, Vaucanson's Defecating Duck (1739) achieved a greater level of realism by attempting to replicate the physiological digestion of a duck that could eat corn and release excrement, complete with intestinal track and beating heart.²⁷

²⁵ Cosmic Polymath, "Mechanical Marvel: Clockwork Dreams," [video] *YouTube*, May 13, 2015, Sept 5, 2015, retrieved from <https://www.youtube.com/watch?v=MZMeQI1V1Ow>

²⁶ Riskin, "Eighteenth Century Wetware," 98.

²⁷ Riskin, "The Defecating Duck," 606-09. Date of construction unknown, presumably mid to late-1700s. The digestion and excretion of Vaucanson's duck, like the Turk, turned out to be fraudulent. The 'waste' was preloaded into the machine. Yet, each separate component of the duck still retain its

Jacquet-Droz's Lady-musician (ca. 1768-1774) breathed as she played the harpsicord. The focus on simulating physiological action as *organic* and *natural*, such as breathing and defecating, points towards the intellectual belief that these processes are essential to what makes us living beings and if we can replicate it, we can replicate life.²⁸

Automaton makers also sought to simulate speech, as differentiated from sound produced by animals. Mirroring the shift from movement towards intelligence, spoken language encapsulates both the physiological process of human life and human intelligence. Attempts to simulate speech ranged from reconstructing the speech organ to synthesizing sound. However, none of these attempts were successful in truly capturing the spoken word. One failed inventor, Claude Bernard, said of the simulation of speech in 1850, "The larynx is a larynx. . . that is to say ... [its] mechanical or physical conditions are realized nowhere but in the living organism"²⁹

physiological correctness, showing to some extent the possibility of mechanizing life. On the other hand, as such fraudulent cases came to light, it also pointed to the impossibility of mechanically replicating life as equally important to understanding life.

²⁸ Riskin, "Eighteenth Century Wetware," 104-05. Another change in the design and construction of automaton during this period was focused on the body. But rather than a reversion to bodily motion, the application was on material composition. As oppose to earlier use of metal, more malleable, soft, and durable materials, such as leather, were used to achieve greater resemblance to the living creatures these machines were modelled after. Ibid, 110-112.

²⁹ Ibid, 106-07; Gaby Wood, *Edison's Eve: A Magical History of the Quest for Mechanical Life*, (London: Anchor, 2003), 148. Quote translated and taken from Riskin, J. Kempelen, Charles Wheatstone, Alexander Graham Bell, Thomas Edison, Joseph Faber are among the few who attempted the mechanical simulation of speech.

By the mid-nineteenth century,³⁰ such attempts at designs of speech were replaced by the devices based on homeostasis. The principle of homeostasis states that internal stability is maintained in response to a changing external environment. Some nineteenth century thinkers applied this principle to define the characteristics of animal life.³¹ In theory, however, because the mechanics of an automaton are protected within the casing of its metal body, its internal components do retain stability to some extent. Short of extreme temperature change and internal combustion, the clockwork mechanisms of the automaton can continue to function regardless of the external environment. Experimenters also revisited the Aristotelian principle of motion, and many used it to assert that what distinguishes animals from machines is the former's propensity for self-motion. Animate beings are self-movers, whereas inanimate objects are not. Yet, to avoid the universalization of all animate beings, there must be an external causality (desire, another being/object, and so on) that impels the being to move.³²

With the advent of the Romantic era, thinkers questioned the divisions previously marked between automata and human beings. Kang notes that the scholars and craftsmen of the eighteenth century had helped to "elevate and celebrate [the automaton] as the central emblem of the mechanistic worldview" because any notion of preternatural and monstrous aspects were stripped away,

³⁰ The automata of the nineteenth century never achieved the same level of recognition, both in terms of artistry and mechanical complexity. This accounts for why most, if not all of my examples, were built in the eighteenth century.

³¹ Ruskin, "Eighteenth Century Wetware," 116.

³² Mary Louise Gill and James G. Lennox, "*Self-Motion*, (New Jersey: Princeton University Press, 2004), 3-7

“turning it into a representation of pure rationality.”³³ As both an idea and object, the Romantic era automaton disrupted the dichotomy of inanimate-animate, living-dead, natural-artificial. The liminality of automata began to trouble observers. Automata were no longer mere machines; their nature was more indeterminate. Works of science fiction such as E. T. A. Hoffmann’s *The Sandman*, Jacques Offenbach’s *The Tales of Hoffmann*, which spoke of humans unknowingly falling in love with automata, and Mary Shelley’s *Frankenstein*,³⁴ pointed to and contributed to the fear of machines replacing humans.³⁵ The realism of automata played a role in facilitating the emergence of the uncanny, first mentioned by Ernest Jentsch in *On the Psychology of the Uncanny* (1906) and expanded by Sigmund Freud’s *The Uncanny* (1919). The “uncanny” aspect of automata suggests they are not simply machines.

In the hands of roboticist Masahiro Mori in 1970, the 'uncanny' was developed into a theory called the Uncanny Valley, that, to this day, has wider applications within the field of robotics and computer animation. The Uncanny Valley postulates that as something not human is given human qualities, our (the

³³ Kang, *Sublime Dreams of Living Machines*, 184.

³⁴ Frankenstein is not a machine, but rather a reanimated re-composited being. Allegedly, Shelley’s viewing of the Scribe, an automaton that wrote, served as one of her inspiration for the creation of the monster.

³⁵ An anecdotal story has that Vaucanson was angered by some millworkers, “De Vaucanson set to work automating the looms of the region, and as a result there was a great upheaval in the silk mills of Lyon. In retaliation against the scorn of the millworkers, he built a loom that could be operated by a donkey—to prove that “a horse, an ox or an ass can make cloth more beautiful and much more perfect than the most able silk workers.” Technological innovations in the field of robotics have increased the numbers of machines capable of accomplishing jobs that were once thought exclusive to humans. Jay Fredenberg and Gordon Silverman, *Cognitive science: An introduction to the Study of Mind*, (Thousand Oaks, Calif.: Sage Publication, 2006), 315.

human observer) familiarity and likeability for it grows because we recognize those shared humanmany human qualities are given, we begin to develop a strong feeling of revulsion and disgust—an “uncanny” feeling—as Mori pinpoints, because we will begin to notice more the unhuman characteristics. Without the ability to reconcile these new qualities with those once familiar, discomfort and uneasiness emanate from questions about our own humanness (i.e. “can that be me?”). Move past this point by making an object indistinguishable from humans and our feeling of familiarity returns.³⁶ Thus, the creation of the “valley” encroaches on humanoid objects that are aesthetically near-humans though not undistinguishable from humans. Movement seems to amplify and accelerate this curve.³⁷

By the end of the nineteenth century, automata no longer held the public imagination as technical marvels. The Industrial Revolution of Great Britain and the United States had rendered them a plaything for the wealthy, without practical function. Technological innovations in engineering further pushed automata into the forms we most recognized today: robots and androids. Moving into the latter half of the twentieth century, sense and sensation became the next focus. Through the advent of the camera, radio, motion sensor and listening devices, robots and androids could see, hear, and touch. No longer bounded

³⁶ Masahiro Mori, “The Uncanny Valley,” *Energy* 7, no. 4: 33-35.

³⁷ Even for some people without fear of objects that move, unnatural movement may also attribute a feeling of uncanny. An empirical study was done to test the effect of motion on the uncanny curve. The results showed that rather than accentuate the curve, motion lessened the effects of uncanny on participants. Lukasz Piwek, Lawrie S. McKay, and Frank E. Pollick, “Empirical Evaluation of the Uncanny Valley Hypothesis Fails to Confirm the Predicted Effect of Motion,” *Cognition* 130, no.3 (2014): 271-277. This is only one study however, with one set of variables. More data are needed confirm or denial the effects of motion.

within a static placement and unresponsive to its changing environment, motion sensors, in particular, gave machines the freedom to react and interact with its environment. This draws into contrast the concept of homeostasis established to differentiate automata from animals in the nineteenth century.³⁸ By the twenty-first century, the quest for artificial life turned increasingly away from the mechanical processes that simulated motion several centuries earlier and towards computational processes of artificial intelligence. The machines of the Industrial Revolution—the steam engine, the spinning jennies, the cotton gin—mimicked human muscular motion so successfully as to replicate and replace human labor by tens and hundreds fold. Within a capitalist economy that sought maximum output for minimum expenditure, the type of labor that once relied on muscle memory could now be performed by machines. Overcoming the limitations of our muscles had freed up our body and mind for other tasks. If the era industrial development in the nineteenth century is understood as expanding, increasing the power of the body, it logically follows that the next stage of technological development is to increase the capacity of the mind and overcome its limitations. Roboticists, in transition into the twentieth and twenty-first century, are seemingly obsessed with creating thinking, reasoning machines and the possibilities of AI whether in the form of an android or computer.³⁹

The progression in automata design from imitation to simulation highlights characteristics deemed to be essential elements of human life at varying stages

³⁸ Time Furnish, "Motion Sensor" *Illumin* 9, no.4 (Fall 2008), Nov. 11, 2014, retrieved from <http://illumin.usc.edu/>

³⁹ Rory Cellan-Jones, "Stephen Hawking Warns artificial intelligence could end mankind," *BBC News, Technology*, Dec. 2, 2014, Dec. 4, 2014, retrieved from <http://www.bbc.com/news/technology-30290540>

of scientific development. Although, over time, the quest for life-likeness gradually shifted away from movement and towards AI, it is movement that attracts us and makes an object it seem real.⁴⁰ According to Sheets-Johnstone, “With no prior tutoring whatsoever, we take what is living to be that which moves itself and to apprehend what is not moving and has never moved to be precisely inanimate.”⁴¹ When there is an expectation of a thing as living, we expect movement. So, if automata are, by definition, “self-moving machines,” how can we understand the physical status of automata?

Drawing from philosopher Edmund Husserl, Sheets-Johnstone asserts that cognition derives from movement. Knowledge is first self-knowledge and is acquired through learning to move oneself.⁴² Yet, are automata—and by extension modern robotics—really self-moving? If they are, should they be classified as animate or inanimate? Primacy of movement (theories which privilege movement over thought) provide an alternative to Cartesian dualism and help to address these questions. By the exact definition of Aristotle’s principle of motion, automata can be considered animate beings. They become self-moving (moving automatically by their mechanism) after influence from an

⁴⁰ An additional explanation for this, beyond primacy of movement, can be found in social behaviors of primates. As cohabiting creates, primates have been known to develop burial rituals as a mechanism for distinguishing the dead from the living. This separation of the living from the dead, animate from inanimate may be one reason why people would find human-like responses (dynamic realism) more important than appearance (aesthetic realism in machines). Mahdi Muhammad Moosa and S.M. Minhaz Ud-Dean, “Danger Avoidance: An Evolutionary Explanation of Uncanny Valley,” *Biological Theory* 5, no.1 (2010): 12.

⁴¹ Maxine Sheets-Johnstone, *The Primacy of Movement* (Expanded 2nd ed.), (Amsterdam; Philadelphia: John Benjamins Pub., 2011), 135.

⁴² Taken from Eugen Fink’s term of “constructive phenomenology.” Ibid, 133.

external force (i.e. a person to wind up the box or a charge of electricity). On the other hand, according to Newton's First Law of Motion—an object will stay in its state of motion until acted upon by another force⁴³—movement is created by another force, thus inanimate objects cannot and do not have self-movement. Automata exist perpetually within two states: moving and resting. Without the ability to imitate its own movement, unlike animals, it will stay at rest until an external force removes the impediment to its motion (i.e. needing something to wind it up). In an idealized state, discounting other external forces like gravity and friction that has its own exertion on the object, once in motion it will stay in motion. The removal of the impediment, therefore, defines its motion. Automata, in this interpretation, are inanimate.⁴⁴ These two opposing definitions necessarily complicate things.

The key to automaton motion is the cam; discs that translate circular motion into horizontal and vertical motion.⁴⁵ Each cam controls a particular motion and each motion can exist independently of the next. It is the combination of these motions that creates a complete action. Thus, motion is broken down into precise mathematical measurements. In *Lines: A Brief History*, Ingold contends that “although the resulting lines are continuous, these lines are connectors and, as such, devoid of movement. They are lines of locomotion, not

⁴³ Isaac Newton, I. Bernard Cohen, and Anne Miller Whitman, *The Principia: Mathematical principles of natural philosophy*, (Berkeley, Calif.: University of California Press, 1999) 22.

⁴⁴ Gill and Lennox, *Self-Motion*, 305-316.

⁴⁵ An undulating disk that converts a circular motion into vertical and/or horizontal motion and vice versa. Each motion can be cut into the side of a cam and the possibility and complexity of motion is, thereby, only limited to the maker's skills.

of movement.”⁴⁶ The motion of automata, according to Ingold, is not movement. Rather, it is a series of interconnected lines providing locomotion. If we can accept Ingold’s argument, can the same not be said for human movement as well? For example, a dance can be broken down into steps in much the same way as cams. As a series of steps, it can be stitched together into a movement sequence.⁴⁷ Just as the fluidity of the dance depends on the practice and skill of the performers, so the fluidity of an automaton’s movement depends on the artistry and skill of its maker. Take for example the description of John Joseph Merlin’s “Silver Swan:”

I watched a silver swan, which had a living grace about his movements, and a living intelligence in his eyes—watched him swimming about as comfortably and as unconcernedly as if he had been born in a morass instead of a jeweler’s shop—watched him seize a silver fish from under the water and hold up his head and go through all the motions of swallowing it.⁴⁸ (Twain, 1905, p. 171)⁴⁹

With equal attention paid to their movement and inferred intelligence, automata can often be described as if they were alive. What then differentiates human movement from the movement of an automaton? Relying on Ingold’s logically reasoning to compare human movement to automata is problematic because as

⁴⁶ Tim Ingold, *Lines: A brief history*, (London; New York: Routledge, 2007), 93.

⁴⁷ Amy LaViers and Magnus Egerstedt, “The ballet automaton: A formal model for human motion,” In: IEEE American Control Conference (ACC’ 2011), 3837.

⁴⁸ Mark Twaine, *Innocence Abroad*, vol. 1, (New York: Harper & Brothers Publishers, 1905), 171.

⁴⁹ Date of construction of the Swan unknown, but it is kept on display at the Bowes Museum in England, which is where Twain likely saw it in 1867. Touted as one of the most artistically advanced automata, the particularly striking beauty of the Silver Swan is the perfect reflection of rushing water achieved by cylindrical glass rods. “John-Joseph Merlin’s Silver Swan automaton.” Retrieved from <https://www.youtube.com/watch?v=GN7WFr-anqY>

much as a dancer's movement can be broken down, the dancer has motility. I argue that it is our potentiality for movement stemming from our motility of movement that differentiates us from moving machines.

An automaton can move, but its motility and qualities of motion (spatial and temporal) are restricted. One of the most famous and complex automata ever built is Jacquet-Droz's "the Scribe,"⁵⁰ a curly hair, barefoot little boy (1770). With nearly 6,000 miniaturized mechanisms and capable of writing text up to forty characters long, the automaton simulates human fine motor skill. Handwriting, particularly the signature, is an indexical sign of the writer's hand and a symbolic sign of his/her individuality.⁵¹ If the script produced by the Scribe is an accepted sign of its individuality (as an immeasurable quality) then that individuality is constrained within a forty letters variation. Even within those variations, its legibility remains constant. An automaton can raise its hand, but only for the same purpose and only at the same height and speed. An automaton can be made to eat, breath, sing, dance, play, and even defecate —performing tasks previously thought reserved for only living beings, but its maker always dictate its tasks. Even now, when mechanical motion has become more expansive, a robot or android cannot perform a task or function except what it has been programmed to do. For industrial robots without a preprogramed system, like Baxter

⁵⁰ The components of his letter wheels, include the letters, are removable and interchangeable, making the Scribe can be said to be one of the first truly programmable machine and a predecessor to the modern day computer.

⁵¹ Robin Veder, *The Living Line: Modern Art and the Economy of Energy*, (Hanover, New Hampshire: Dartmouth College Press, 2015), 187. Veder employs Charles Peirce's usage of "index" to "differentiate signs that point to a phsyical sources from 'icons.' Which resemble what they stand for, and from 'symbols,' which do not resemble what they stand for." Ibid.

developed by the Rethink Robotics, the motions of a simple task such as picking up a highlighter require hours of practice. Yet, the information from its “learned experience” is configured as numbers. Once the robot develops recognition for the object it will employ the same motion from its matrix to carry out the task.⁵²

Technological innovations in movement such as motion capture, motion sensors, and image metrics still only allow the machine to mimic its human creators.⁵³

When a human raises her hand, the purpose for which her hand is raised (to scratch an itch, to ask for permission, to fly a kite, et cetera) can differ each time, and the subsequent quality of her movement may also differ depending on her purpose. It is this motility that distinguishes human movement and living beings which exists within a semiotic system from mechanical motion and machines which exist within a more limited system.

Descartes’ separation of the mind, body, and nature (environment) treats each as separate entities to be studied independently. Cartesian assumptions have had researchers biased. One example is the misinterpretation of the reflex arc in early twentieth century psychology which sequenced and partitioned sensory stimulus and motor response into a linear organization that implied

⁵² Joe Palca, “How Can Robots Learn New Tasks? Practice, Practice, Practice,” *NPR Podcast*, Nov. 11, 2015, Nov. 11, 2015, retrieved from <http://www.npr.org/sections/alltechconsidered/2015/11/11/455507215/how-can-robots-learn-new-tasks-practice-practice-practice>

⁵³ Richard Ingham and Pascale Mollard, “Experts Are Divided on Stephen Hawking’s Claim that Artificial Intelligence Could End Humanity,” *Business Insider*, Dec. 6, 2014, Dec. 12, 2014, retrieved from <http://www.businessinsider.com/afp-artificial-intelligence-hawkings-fears-stir-debate-2014-12>. As mentioned in the introduction, I am not taking artificial intelligence into account. The current technology in AI has yet to match up with dynamic realism. That is, realistic looking and moving androids still need a human at the controls to monitor movement and responses while robots capable of reasoning (AI) lack a great degree of realism.

separation of stimulus from its response. John Dewey critiqued this interpretation in "The Reflex Arc Concept in Psychology," as "not a comprehensive, or organic unity, but a patchwork of disjointed parts, a mechanical conjunction of unallied processes."⁵⁴ Instead, Dewey argues, "we begin not with a sensory stimulus but with a sensory-motor coordination, the optical-ocular, and that in a certain sense it is the movement which is primary, and the sensation which is secondary, the movement of body, head and eye muscles determining the quality of what is experienced."⁵⁵ Dewey employs a circuit model to illustrate that the mind, sensory, and motor serves its function in a perpetual coordination,⁵⁶ a unity of coordinated action. In the same way that movement joins humans and animals to the natural world, how the automaton moves and how the audience reacts to its movement constitutes the holistic experience.

Through the motility of our movement, the "I do," we recognize our potential for action that becomes the "I can." The mind, Sheets-Johnstone asserts, does not supersede our potential for movement. Parallel to Dewey's pragmatic approach, thinking about our potentiality of movement (i.e. "Can I move my hand?") does not necessarily answer the question of whether or not the action can be performed. Potentiality is not action. The answer or truth arrives as the motion is being completed. We move first, then reason later. In this

⁵⁴ John Dewey, "The Reflex Arc Concept in Psychology." *Psychological Review* 3(1896): 358.

⁵⁵ Ibid.

⁵⁶ Ibid, 360.

sense, movement and knowledge are simultaneously constructed and experienced.⁵⁷

As Ingold argues, the motion of automaton does not lead to growth, spontaneity, potentiality, or knowledge acquired in the motion of an automaton. What an automaton accomplishes is a bodily motion, not a bodily movement.⁵⁸ Similarly, Sheets-Johnstone contests the mechanization of humanity by classifying an automaton as an animate being. She grounds her assertion in Morgan's canon whereby anything that can be explained in terms of lower function should not be explained in higher terms because the evolution of lower functions came first. This, she reasons, that "whatever can be explained in terms of animate form should not be explained in terms of mechanical form not only because animate forms, having evolved before human-spawned mechanical ones, are therefore more commonly distributed, but also because only such forms, being animate, can explain what it is to be a mind and what it is to be a body."⁵⁹

Automata, objects and representations of ideas, transcend our normal dichotomy of inanimate-animate, living-dead, and natural-artificial. Returning briefly to Jacquet-Droz's the Scribe, the automaton has been observed writing, most famously, "*I think there for I am.*" Yet, on rare occasions, "*I do not think ... do I therefore not exist?*" Whether or not an automaton philosophically exists

⁵⁷ Sheets-Johnstone, *The Primacy of Movement*, 133-150; Paul Souriau and Manon Souriau (trans.), *The Aesthetics of Movement*, (Amherst, Massachusetts: the University of Massachusetts Press, 1983), 33.

⁵⁸ Ernest J. Lowe, *Subjects of Experience*, (Cambridge: Cambridge University Press, 1996), 140-46.

⁵⁹ Sheets-Johnstone, *The Primacy of Movement*, 385-6.

speaks to the lopsidedness of the debate of artificial life as a discussion about the mind. People come to see automata or, more precisely, to see them move. Roboticists and engineers today, undoubtedly, work just as hard to perfect mechanical motion as they do developing AI programs, but news reports, academic papers, stories on the progress of creating artificial life advancements made in motion and dynamic technology are reduced to mathematical equations and computations. In the philosophical debate of what it is to be human, movement takes a backseat to discussions of intelligence and consciousness. It becomes accompaniment, taken as a given or reduced to visual gestures. Yet, motions of automata are often described in the most realistic terms.

The changing construction of an automaton gives great insight into evolution of not just its purpose and function in society, but also illuminates its influences on our perception of what constitutes essential processes of life. The transition away from using movement as a tool in theoretical and philosophical debates is evident. The definition of automaton has also undergone a change that mimics this transition. This essay begins with three Oxford English dictionary definitions of “automaton.” The first and second represents the common and literal usage of the word, respectively. The third definition is the most recent and is most frequently used to refer to people. To be called an automaton, is to behave in a mechanical, unemotional manner. It connotes a person lacking thought and/or independent will through a lack of higher consciousness. As Kang notes of the contradictions of the third definition with the first two definitions, one set denotes “a machine *capable* of independent

motion” as opposed to “a person *incapable* of independent action or thought.”⁶⁰

Despite this contradiction, what it further illustrates is that there is a gradual evolution of the ideal automaton from perfecting movement to perfecting thought and the mind.

Nevertheless, it should be possible to postulate the identity and status of an automaton and determine its relation within the human-machine dichotomy through the use of movement. I am not advocating for the elimination of developing AI. After all, the decline in the demand for physical labor has pushed some to specialize in computer programming and engineering mechanical minds. Technological innovations have certainly brought us closer to achieving this goal of creating an independently thinking machine. But this line of thinking has potential consequences. Just as the mechanical reproduction of our muscles has created less demand for human physical labor, the mechanical reproduction of our mind will lessen the demand for human mental labor. In a neoliberal system, any product of intellectual labor that can be rendered digitally or electronically will be. On the one hand, the ability to replicate the powers of our brain will free us up to invest in other things. But on the other hand, what those other things might be and what the next stage of investment will be once we break out of the mind-body dichotomy cannot be easily answered. It does not and should not, however, negate everything else we have accomplished. Automata were first designed to move. Simply put, adding movement back into the debate of what makes us human, what differentiates us from machines, at the very least, will add another layer to the discussion. After all, movement “is at

⁶⁰ Kang, *Sublime Dreams of Living Machines*, 8.

the core of every creature's engagement with the world because it is in and through movement that the life of every creature ... acquires reality."⁶¹

⁶¹ Sheets-Johnstone, *The Primacy of Movement*, 135.

Essay 2

“Dis/Playing with Dolls: Stigmatization and the Performance of Reborn Dolls”

“What cultures are found to have in common is a uniform system of categories, not a fund of identical elements.”

— George P. Murdock, “The Common Denominator of Cultures,” in *The Science of Man in the World Crisis*, 1969: 324.

Reborn dolls are dolls remade to look aesthetically lifelike—realistic representations of a new born baby. In a 2011 article in *The Guardian*, columnist, Zoe Williams, recounted a story of photographer Rebecca Martinez and her reborn doll. Martinez had two interactions with police involving the dolls. On the first occasion in San Francisco, the police officer arrived after Martinez’s car had been broken into, though nothing was stolen. Speculating that the reborn dolls may have scared off the robber,⁶² the police officer then proceeded to ask to have a picture taken with the reborn doll. He suggested to be pictured pointing a gun at the doll’s head. In New York several months later, Martinez was given the same suggestion by another police officer. Martinez was most struck at how two people 3,000 miles apart would have the same idea. Williams concluded her piece noting that “the Reborn-as-art is provocative, and you feel as if you should meet the provocation, that otherwise you’re not up to its subversive standards.”⁶³

⁶² The dolls were stored in the trunk of the car. The robber may have mistaken them for real dead babies and ran at the assumption that he or she may have just stumbled upon a horrific scenario.

⁶³ Zoe Williams, “Reborns: dolls so lifelike you could mistake them for real infants,” *The Guardian*, November 25, 2014, retrieved from November 24, 1014 from <http://www.theguardian.com/lifeandstyle/2011/nov/25/reborns-lifelike-baby-dolls>

Suggestions that the reborn dolls are subversive and that they provoke subversive behavior appear regularly in the reporting of these dolls.⁶⁴ General opinion holds that because reborn dolls are so lifelike, owners and artists have a tendency to treat them as living babies and that this behavior is unnatural for adults. Aesthetic realism (how the dolls are remade to physically resemble babies) undoubtedly plays a part and fosters deep immersion into “doll play,” to borrow a phrase from Miriam Formanek-Brunell. One episode in the seventh season of National Geographic’s *Taboo* documentary series featured people who engage in fantasy lives. Depicted in one segment of the show were mature women playing with these realistic looking reborn dolls. Their actions and behaviors are classified and documented as taboo, as deviant behavior. From one perspective, the dolls’ uncanny resemblance to infants exerts some force that draws women to play with them. As lifelike as they might appear, however, once reborn dolls are recognized as dolls and not as babies, they lose much of their ambiguity that would cause observers to question their state of being as artificial dolls or real babies.

In this paper, I first examine the aesthetic realism of reborn dolls. This realism borders on the uncanny which attributes to the unsettling feelings and shock some experience with reborn dolls. The shock stems as much from the dolls as from the behavior or performance of doll producers and consumers as interpreted by outsiders. In *The Archive and the Repertoire*, Diana Taylor notes that while an exact definition is still debatable, “performance also constitutes the

⁶⁴ The reborn doll phenomena, though still a niche within the doll industry as a whole, has sparked its own niche community of “unborn dolls,” reborn dolls the resemble vampires and zombies or shown with gory details.

methodological lens that enables scholars to analyze events *as performances*.”⁶⁵

Performance is an enactment of an embodied behavior within a given space and time. However, not all embodied behaviors are performances. Performance usually implies an audience. The women who engage in doll play within public social spaces (e.g. restaurants, parks, shops) and digital space (online) are performing. By approaching this set of behavior as performances, I argue aesthetic realism and the uncanny alone are insufficient to explain the derision reborn artists and owners encounter. The performance of producers’ work to transform dolls into babies emphasizes realness (a human-likeness quality that would cause a doll to be mistaken for a baby); yet, the performances of the consumers are what we recognize as doll play. The play dispels the delusion attached to adult women interacting with dolls, but from an outsider’s perspective, it is the ambiguity or “deviance” many see in reborn dolls. There are layers of contradiction and misinterpretation between these two types of performances. The misalignment of meta-signals (indirect cues) or signifiers put out by doll makers contradicts with signifiers put out by the buyers who play with their dolls. By applying Gregory Bateson’s *Theory of Play* to examine the contradiction between these two performances, I argue that it is this contradiction that makes “playing with dolls” possible. At the same time, when doll owners play with their dolls they produce meta-signals that are open to misinterpretations by observers which create another layer of confusion—when doll play is no longer interpreted as play. Furthermore, as this niche community grows, these

⁶⁵ Diana Taylor, *The Archive and the Repertoire* (Durham: Duke University Press, 2003), 3.

performances have the potential to become ritualistic as new media and innovations develop to aid them in this production and consumption.

Realism and Doll designs

When a child plays with a doll, it is not uncommon to remake and retouch the dolls in an effort to make them look more realistic. Advertisement and the business of selling dolls also emphasize this realism because realism aids in the immersion in doll play. The historical progression of design and subsequent marketing of dolls in the doll industry points towards this direction as well.⁶⁶ In 1887, William W. Jacques and Lowell Briggs, co-founders of the Edison Phonograph Toy Manufacturing Company, approached Thomas Edison with a proposal for a talking doll using a miniaturized version of Edison's phonograph. By April 1890, after Edison had booted both Jacques and Briggs from their own company, the first mass produced talking dolls entered stores at a staggering \$10 — an extra \$15 for the fancy dress.⁶⁷ In a more recent attempt to capture realism, in 1998 the Barbie doll received a makeover and redesign of her figure— breast reduction, wider hips, flatter feet—to more closely resemble the

⁶⁶ Miriam Formanek-Brunell, *Made to Play House*, (New Haven: Yale University Press, 1993), 35-89.

⁶⁷ Minsoo Kang, *Sublime Dreams of Living Machines*. (Cambridge: Harvard University Press, 2011), 243; Neda Ulaby, "Edison's Talking Dolls Can Now Provide The Soundtrack To Your Nightmares," *NPR.org*, May 5, 2015, retrieved from <http://www.npr.org/blogs/thetwo-way/2015/05/05/404445211/edisons-talking-dolls-can-now-provide-the-soundtrack-to-your-nightmares>; Christina Rubin, "The Reading Room: Mr. Edison and the Talking Doll," *The Antique Toy Collectors of America, Inc.*, n.d., retrieved from <http://atca-club.org/article06.php>

body image of “real” women.⁶⁸ The latest lineup in the Barbie design is “Hello Barbie.” Restored back to her former disproportionate figure, she now uses speech recognition and wi-fi access to record and store conversations in the iCloud. The more you converse with Barbie, the more she learns about you and makes informed responses.⁶⁹ Similarly, the books accompanying the American Girl dolls give each doll a family, personal history, and personality. Felicity, the first of the American Girl dolls, even received her own vacation package and tea party in Colonial Williamsburg, so visitors can tour the site through her eyes.⁷⁰ Within the past three decades, the mechanical development of realistic-looking dolls by major companies such as Mattel, Zapf Creation, Tyco, and Playmates Toys have resulted in dolls that could cry, eat, burp, listen, give birth, and even defecate.⁷¹ Realistic-looking suggests looking human-like although most doll producers will use the term “lifelike.” Lifelike dolls not only look human-like, but appear as if they *could* be alive. Through these mechanizations and designs,

⁶⁸ Laura B. Randolph, “Living Dolls,” *EBONY* 53, no. 3 (Jan. 1998): 22; Gloria Borger, “Barbie’s Newest Values,” *U.S. News & World Report* 123, no. 21 (Dec. 1, 1997): 40.

⁶⁹ Katie Lobosco, “Talking Barbie is too ‘creepy’ for some parents,” *CNNMoney*, March 12, 2015, retrieved March 8, 2015 from <http://money.cnn.com/2015/03/11/news/companies/creepy-hello-barbie/index.html>; James Vlahos, “Barbie Wants to Get to Know Your Child,” *The New York Times Magazine*, September 16, 2015, retrieved September 18, 2015 from http://www.nytimes.com/2015/09/20/magazine/barbie-wants-to-get-to-know-your-child.html?mwrs=Email&_r=0

⁷⁰ Christopher Geist, “Colonial Williamsburg: An Artifact of Popular Culture,” *Colonial Williamsburg Journal*, Summer 2006, retrieved from <http://www.history.org/Foundation/journal/Summer06/pop.cfm>

⁷¹ My Size Barbie, Baby All Gone, Telephone Tammy, Mommy’s Having A Baby, Water Babies, and the predecessor to reborn dolls: Baby Born dolls and other collections manufactured by Zapf Creation.

dolls were made to embody life, albeit an artificial life.⁷² In *Falling in Love with Statues*, George Hersey's exploration of the human tendency to fall in love with inanimate objects leads him to propose that "One can define any visual art that represents living things, such as human beings, as a form of artificial life. Such works simulate biological organisms, do they not?"⁷³

Although no outwardly strong religious connotations are attached to reborn dolls in the same way that someone is a born again Christian, for something or someone to be "reborn" implies that it already exists. "Reborning," the process of transforming a vinyl sculpture into a lifelike doll, appeared in the American vernacular sometime within the last three decades. Artists who carry out this task are known as "reborners."⁷⁴ Similarly, owners of reborn dolls, the majority of whom are women, are often referred to as "reborn mothers." As one reborn artist frankly puts it, "Reborning means that you're bring a doll to life. You're making it into a baby. It's a baby that's reborn from a doll."⁷⁵ The "reborn" name of these dolls and subculture stems from the remaking of a Berenguer doll, the product of a Spanish manufacturer who specialized in realistic dolls at the end of WWII. The original process involved disassembling a Berenguer doll, stripping it of its details and old parts (eyes and paints), retouching it (through repainting and baking), then reassembling—the dolls are 'reborn' as a more

⁷² In the context of this paper, I use the term artificial life with the assumption that its general meaning is understood. I am not attempting to define artificial life simply because there is no perfect definition and no short way of working out all of the contradictions that plague this term.

⁷³ George L. Hersey, *Falling in Love with Statues*, (Chicago: University of Chicago Press, 2009), 3.

⁷⁴ I will not be using 'reborners,' but will use, instead, 'producers' and 'artists' interchangeably to refer to makers of reborn dolls.

⁷⁵ BBC, *My Fake Baby*.

realistic human replicas. On the market today, however, Berenguer dolls are less used as artists opt for kits that come with a head and four unpainted limbs. This is evident in the ubiquitous reborn doll kits available in shops and venues that also sell reborn dolls from mainstream shops such as Amazon and eBay to privately owned online businesses like Dolls by Sandie and Still Moments Nursery. This shift has given rise to reborn sculptors who hand-make molds that become specially named and sought after models such like Coco Malu or a replica of Prince George.

A reborn doll starts from a sculpted vinyl or silicone head and limbs layered with paint and baked to mimic the skin of a newborn baby—with hand painted milk spots, veins, and all.⁷⁶ Details such as hair, eyes, eyelashes, and fingernails are then meticulously added before limbs are attached to a body weighted down to achieve the same tactility as holding a newborn. With new technological innovations, heat or warming packs can be inserted to mimic the warmth of human body; small machines can simulate breathing; a voice box can

⁷⁶ Because this essay focuses on the aesthetic realism of reborn dolls in conjunction to theories of play and the uncanny, I deliberately avoided a larger discussion of race and gender as my research, at the moment, does not allow a deeper examination. The dominance of women within this niche community naturally gives rise to questions of motherhood and gender roles. From my research, though inconclusively, men appear to take on roles in the production side. Another yet unexplored aspect is the unisex nature of reborn dolls. From a mold, reborn dolls can be made either male or female. Naming of sculpted molds and renaming of dolls also appear to follow a conventional gender practice. The same apply to race. While different color vinyl are produced to accommodate artists who want to make African American dolls or dolls of other ethnicity, the majority of unpainted vinyl molds are variations of the white skin tone. How different or difficult is the process to paint and make an African American reborn doll in comparison to a white or Asian doll? Do designs sculpted specifically for ethnic dolls conform to physiological racial stereotypes? Such questions on race and gender form the next logical stage of inquiry in this research topic.

produce babies' sounds; and synthetic umbilical cords can be clipped on for a full birthing experience.⁷⁷ All this is done in an effort to create a doll that looks and feels as lifelike as possible. As one reborn doll artist states, "You strive to reach the ultimate in realism. That's what it's all about. You're trying to create a baby."⁷⁸ For an outsider, the presentation of a lifelike doll as a living, breathing baby tricks them believing it is the real thing—a living baby. The discovery of the trick temporarily disrupts their system of categories which discriminate the real from the artificial. This disruption is the uncanny.

The Uncanny Valley

The 'uncanny' as a psychological state appeared first in the writings of German psychiatrist, Ernst Jentsch in 1906, *Zur Psychologie des Umheimlichen* (*The Psychology of the Uncanny*), and was later expanded by Sigmund Freud. The feeling of the uncanny, as Freud explained, "is that species of the frightening that goes back to what was once well known and had long been familiar."⁷⁹ In other words, the uncanny comes from the cognitive dissonance we experience when we perceive, for example, a dead body both as human and not quite human. The inconsistency of experiencing something that is simultaneously familiar and unfamiliar, fascinating and repulsive naturally creates discomfort. We are forced to reject such moments.

This connection between the frightening and familiar is pivotal to the understanding of the Uncanny Valley. In the hands of roboticists Masahiro Mori

⁷⁷ Michele Barrow-Bélisle, *Beautiful Babies: The ART of Reborn Doll Making* (Pristine Condition Like New edition, 2007), n.p.

⁷⁸ Quote from Jamie Eaton. BBC, *My Fake Baby*.

⁷⁹ Sigmund Freud, *The Uncanny*, (New York: Penguin Books, 2003), 124.

in 1970, the uncanny was transformed into a theory: the Uncanny Valley.⁸⁰

Today, the Uncanny Valley more often has wider applications within the field of robotics and computer animation where engineers, roboticists, and game designers are constantly striving to capture and render more realistic android and character animation, both aesthetically and in movement, without evoking the eeriness that observers may develop. The simultaneous feelings of fascination and disgust that the uncanny provokes apply to reborn dolls and attest to their seductive and disgusting qualities. Some who encounter the dolls become avid collectors while others refuse to engage or even touch the doll.⁸¹ I should note at this point that hatred takes no part in the public reaction towards reborn dolls. Certainly some find them frightening, but the feeling stems more from shock, and most feel discomforted rather than any strong hatred for the dolls.

The shock arises from the ambiguity or the uncertainty. Observers are made to double guess themselves. Aesthetically, the dolls look like real babies. In this sense, reborn dolls are simulacra, faithful representations of something or someone whether or not the original still exists. Given that the production of reborn dolls in its current stage is a cottage industry, the handwork allows for and encourages customization. Some collectors purchase these dolls as a

⁸⁰ The Uncanny Valley postulates that as something not human is given human qualities, our (the human observer) familiarity and likeability for it grows because we recognize those shared human characteristics. That feeling of familiarity continues up until a certain point when, if too much human qualities are given, we begin to develop a strong feeling of revulsion and disgust—an “uncanny” feeling—because we will begin to notice more the unhuman characteristics. Move past this point by making an object indistinguishable from humans and our feeling of familiarity returns. Mori, Masahiro, *The Uncanny Valley*. *Energy* 7, no 4 (1970): 33–35.

⁸¹ BBC Four, *My Fake Baby*

replacement for lost or miscarried children, while others order dolls custom-made in the likeness of a child who has either died or grown up.⁸²

There are multiple layers of meaning to the dolls as objects. First, because reborn dolls act as simulacra, what do they represent that makes them so ambiguous? Whether for collectors or owners who play with these dolls or not, simply put, reborn dolls look and feel like living babies; they are meant to represent living babies. However, real babies move. Real babies can interact with their environment. Therefore, reborn dolls, more accurately, represent dead babies. One does not play with dead babies. Logically, life and death are intertwining as neither can exist without the other. Social, religious, and linguistic practices, however, separate the two and attach regulated behaviors deemed appropriate to each concept. At the same time, the disconnection is made continuous through ambiguities—often taboo behaviors—which carry characteristics of both categories. The ambiguity, the crossing of boundaries, the matter out of place comes from the behavior and the interaction between owners and their dolls. Second, in addition to representation, objects already carry within themselves meaning that communicates to us, oftentimes subconsciously such as the association of dolls with childhood. This association is, at times, taken for granted since we can pass by a child playing with a doll without giving a second thought whereas the sight of an adult playing with a doll will guarantee a second look. For example, in a collection entitled “Sue and Winnie,” artist Vera Saltzman

⁸² BBC Four, *My Fake Baby*; Gutierrez, *Richmond Times Dispatch*.

photographs women past forty with a doll from their childhood.⁸³ From Raggedy Andy to porcelain dolls to French plastic *poupée* (doll), these women chose to hold onto their childhood dolls through the decades. Particular photographs can be unsettling and uncanny, but it is entirely dependent on the viewer to infer what type of meaning is exchanged between the women and their dolls and that inference is informed by their own values and experience.

If the uncanny is a tool to construct a spatial and temporal boundary, it becomes easy to see how doll play among mature women would be looked upon as unnatural. Consider the following excerpt of Freud's analysis of *the Sand-man*.⁸⁴

"[The uncanny is often aroused] if intellectual uncertainty ... as to whether something is animate or inanimate, and whether the lifeless bears an excessive likeness to the living. With dolls, of course, we are not far from the world of childhood. We recall that children, in their early games, make no sharp distinction between the animate and the inanimate, and that they are especially fond of treating their dolls as if they were alive."⁸⁵

Reborn dolls, and dolls in general, are what A.F. Robertson refer to as "transitional object," meant to help its owners transition through stages of development.⁸⁶ Toys, and dolls included, are designed, in part, to foster a child's imagination and creativity. The immersion of children in doll play, creating their own fantasy world and characters, is even encouraged by parents. In adulthood, there seems to be a need for individuals to be able to distinguish between reality

⁸³ Aline Smithson, "Vera Salzman: Sue and Winnie," *Len Scratch*, February 18, 2013, retrieved from <http://lenscratch.com/2013/02/vera-saltzman/>

⁸⁴ A German short story written in 1816 by E. T. A. Hoffmann, involving a man falling in love with an automaton.

⁸⁵ Freud, *The Uncanny*, 141.

⁸⁶ A.F. Roberson, *Life Like Dolls*, (New York: Routledge, 2004), 190.

and fantasy. But to follow only this interpretation is to bind dolls to childhood rather than make it a subject that can transition into adulthood.

The Business of Reborning

Consider this scenario. Jamie Eaton, a mother of four, makes her weekly trip to the local supermarket with her newborn cradled securely in her arms. On this particularly overcast day, she wheels her shopping cart up to an elderly woman, taps her on the shoulder and says, “Excuse me. Would you like to buy a baby?” The woman gives an adoring coo at the sight of the infant and gives Jamie an I’m-in-on-the-joke sort of smile even when Jamie insists she is serious. Only on touching the newborn does the woman discover that it is a doll. For the remainder of this segment which opens the BBC documentary on reborn dolls, *My Fake Baby*, the older woman politely refuses to engage with the doll even while her husband embraces it with fascination and protests that it must be a real baby.

Within this supermarket, the divide between “work” and “life” collapses, both in space and time. Paid work and household obligations conflate into one in a very public performance. A doll seller moves about the market shopping for her family’s meals while simultaneously passing out business cards to those who take interest in her doll which she has perched atop her cart. In this scenario, Jamie Eaton embodies both producer and consumer. As a producer, she is selling not just the dolls, but an image, an aesthetic of authenticity and professionalism. Such marketing may be the most performative act of the reborn doll business.

Highlighted above, the markers' direct interaction with the consumer, taking dolls out in public and entreating people to ask questions, is one method of marketing. More common are marketplaces in online venues such as eBay, Amazon, Etsy, and individually owned websites. The internet offers no traditional means by which a buyer can "physically touching and emotionally feeling [the reborn dolls],"⁸⁷ and, thereby, develop an emotional attachment to the dolls, which chief are qualities for making a sale. Given that nothing can be physically touched, held, or felt through the internet, the selling point for reborn dolls through this medium becomes the selling of affect, the emotional attachment and connection made between shoppers and reborn dolls, not unlike a feeling of "love at first sight." There are various accounts of women who upon stumbling across reborn dolls on site like Ebay, felt an instant connection and "just had to have it."⁸⁸ To achieve this effect, reborners aim to reproduce the sensation of touch and emotion attachment through linguistic and expressive messages. By doing so, reborn artists are, intentionally or unwittingly, imbuing artificial life into the dolls.

This process, as with the performance by doll owners, can potentially become ritualistic. To perform a ritual is to organize behaviors into recognized

⁸⁷ White, *Political Emotions*, 66.

⁸⁸ BBC Four, *My Fake Baby*, directed by Victoria Silver, 2008, retrieved December 15, 2014 from www.youtube.com/watch?v=xyr7yjDnqds. The original link no longer work. Alternative source from Barcroft TV. "DOCS: My Fake Baby," [Online Video], *YouTube*, May 7, 2015, retrieved February 10, 2016 from <https://www.youtube.com/watch?v=hTnr2CmLbG4>; National Geographic, *Taboo: Fantasy Lives*, narrated by Lance Lewman, 2011, retrieved December 15, 2014 from <https://www.youtube.com/watch?v=D1nC-6p1oTg>

sequences. Rituals can be, and often are in the secular sense, very routine. Applying the concept of ritual performance to the marketing of reborn dolls draws attention to the repetitive patterns as they move from their makers to owners. For example, there is a rite of passage or a status change ritual, so to speak, of reborn dolls from inactive to living objects through the manipulation of patterned behaviors, on the part of the artists. In *Rites of Passage*, Arnold van Gennep identifies three phases in rites of passage: 1) separation, 2) transition or liminality, and 3) reintegration. In creating a reborn doll, the process of painting, baking, veining, and adorning the doll with eyes and hair, the reborn artist initiates the separation phase during the course of transforming a doll from plastic objects to replicas of living beings. As opposed to operating in a separated workshop, many reborn artists work directly from their living room or kitchen. Behind the scene pictures and videos posted by online vendors frequently show the integration of the work space into the household, not unlike a home birth. Even when a separate creative or craft space is designated to the house, familial pictures, pets, and sometime children highlight the domestic relationship an artist places within her work and, by indirect inference, onto the dolls. The space conveys notions of the home and even motherhood while the supplies scattered about the space suggest artist or craftsman. I should note that this practice is not unique to the reborn doll business. Sellers on EBay, Etsy, and a host of other online marketplaces employ this technique in marketing and advertising as well.

The liminal stage is the threshold whereby neither old nor new identity exists.⁸⁹ The liminoid, as an expansion by Victor Turner on van Gennep's concept of liminality, functions like liminality, but is applicable to modern rather than tradition ritual practices. The marketing of reborn dolls exists, then, in the liminal phrase. Within this phase, reborn artists employ both visual and linguistic messages to convey the living qualities of reborn dolls. Take for example two post descriptions from online vendors:

“* Your baby will be crafted using Genesis heat-set paints.
* His/her nails will be painted, tipped and sealed and his/her lips, inner ears, nostrils and eyelids will have a natural-looking shine.
* His/her hair will be meticulously painted as in the examples above.
* S/he will be weighted and filled to be soft, cuddly and to feel just like a real baby in your arms, with a head that must be supported, just like an actual newborn.”⁹⁰

“Love bringing these little ones to life, seeing there [sic] personalities and character appearing as they go from doll to baby ! [sic]”⁹¹

Detailed and exacting words employed by reborn artists work to construct a sense of aliveness in reborn dolls. Expressions such as “your baby,” “in your arms,” and “little ones” work to convey the emotional connection and establish a sense of ownership in the buyer. They particularly emphasize tactility of the reborn process. This technique works to promote the experience of transforming dolls into babies.

⁸⁹ Arnold van Gennep, *Rites of Passage*, trans. Monika B. Vizedom and Gabrielle L. Caffee, (Chicago: University of Chicago Press, 1960), 11, 21.

⁹⁰ MelanieKathrynReborn, “Custom Realborn Presley Reborn Doll SO LE CoA Exclusive Presentation Box,” *Etsy*, October 14, 2014, retrieved from <https://www.etsy.com/listing/205969382/custom-realborn-presley-reborn-doll-so?ref=market>

⁹¹ Becca's baby dreams reborn nursery, In *Facebook* [About page], n.d., Retrieved December 15, 2014 from <https://www.facebook.com/beccasbabydreams>

Through expressive messaging via photographs and marketing techniques, reborn dolls are often posed to mimic the gestures and positioning of real babies. Particularly interesting is the trend of the artist's hand cuddling or tenderly holding the dolls.⁹² Because potential consumers are unable to touch the dolls, the artists in this pose act as surrogates. These embodied practices promote the softness and texture of the doll's skin and help to establish that the dolls do feel like a real baby. Highly standardized productions account for the sameness of Barbies, Cabbage Patch Kids, American Girls, and the likes. Reborn dolls, on the other hand, cannot rely on any singular significant deformation and stylized designs. Each doll must have its own essential, distinctive appearance; distinctive enough for buyers to abstract an identity and personality while projecting their own fantasies onto their reborn dolls. Often they are referred to by their names or "he" and "she" rather than "it." In doing so, artists mark the dolls with a human identity as opposed to that of an object. Though reborn dolls at this stage are given a living identity, it is not fixed or permanent until it is accepted by a buyer.

The purchase of the doll marks its reintegration with a new identity in the home of its owner. The dolls are often given names or renamed, given a birthday, and sent home with a welcome package that includes toys and clothes. A birth certificate—and sometimes handprints and footprints—identify it as a newly adopted baby and add a temporal element that helps signify the birth and

⁹² onewingedangel59, "Reborn baby boy Corbin," *ebay.com*, 2014, retrieved from [http://www.ebay.com/itm/Reborn-baby-boy-Corbin-\(2014\)/131379057059?pt=US_Dolls&hash=item1e96cd51a3](http://www.ebay.com/itm/Reborn-baby-boy-Corbin-(2014)/131379057059?pt=US_Dolls&hash=item1e96cd51a3); tatyamelni, "Mini reborn Zane," *eBay*, December 12, 2014, retrieved from http://www.ebay.com/itm/Mini-reborn-Zane-/151512094076?pt=US_Dolls&hash=item2346d3157c

recognition of its existence.⁹³ Other temporal signifiers extend to the paint and techniques used. The baked on genesis paint ensures a permanency (mistakes will be expensive) so that when advertisers employ phrases like “always” and “last forever,” they do mean the dolls last forever. While such practices fit into the historical trajectory of treating dolls as babies within a frame of “play,” for those outside the frame, those not in on the joke when encountering a reborn at the supermarket, the verisimilitude of the doll destabilizes, however briefly, their sense of the boundaries of “life.”

Dis/playing Dolls

Women, who indulge in doll play, are often called delusional or accused of escaping the next stage of their life.⁹⁴ One such article denounces purchase of a \$4,000 reborn doll and calls women who engage in doll play “crazy.”⁹⁵ Additionally, such unkind comments within online forums and blogs extend to “crazy,” “horrid,” “sick,” et cetera.⁹⁶ The pathology of reborn dolls centers around the most common reaction to reborn dolls: they resemble dead babies. In one

⁹³ “How To Create a Reborn Doll Birth Certificate,” *Reborn DollMart.com*, 2013, retrieved from <http://www.reborndollmart.com/how-to-create-a-reborn-doll-birth-certificate/>

⁹⁴ Keith Ablow, “Fake Babies, Fake Lives,” *FoxNews.com*, June 28, 2011, retrieved from <http://www.foxnews.com/health/2011/06/28/fake-babies-fake-lives/>

⁹⁵ Lynn Crosbie, “Who buys a \$4,000 fake baby?,” *The Globe and Mail*, August 4, 2009, retrieved from <https://global-factiva-com.proxy.wm.edu/ga/default.aspx> Reborn dolls can be quite expensive the dolls are handmade and most sellers operate from their home. Starting cost for purchasing kits and other supplies need to make one doll can range between \$500-\$1,000. This partly accounts for why most reborn doll owners are older, middle-class women who can afford the dolls as oppose to younger children.

⁹⁶ “Reborn Dolls Opinion,” *Netmums.com* [forum], 2013, retrieved from <http://www.netmums.com/coffeehouse/general-coffeehouse-chat-514/wine-bar-494/1019059-reborn-dolls-opinions-all.html>;

sense, to view reborn dolls as dead is a valid notion. These dolls cannot be considered alive, in the sense that there is no potentiality for growth. They do not move, develop biologically or otherwise, nor are aware and incapable of reacting to their environment.

In spite of the intervention of science, at least for the moment, society sets up categorical definitions of the artificial and the real. Participants of a society are made aware of the inanimate or artificial nature of the dolls yet they are being treated as if they were animate and natural beings, through image, language, and performance. As Durkhiem suggests, "If adults are encountered who are ignorant of basic rules or refuse to recognize their authority, such ignorance or refusal to submit are irrefutably symptoms of a pathological aversion."⁹⁷ Durkhiem's model, it should be noted, is predicated on the awareness and acceptance that the rules inscribed are felt to be just and right. The development of the uncanny and ambiguity of reborn dolls stem from the actions of reborn artists and owners because it contradicts the boundaries society has constructed for its members.

A further contributor to the aversion towards reborn dolls is the fetishistic nature of the bond between dolls and owners and artists. Even those sympathetic with women who purchase reborn dolls as an alternative to being unable to having children describe their actions as engaging in a baby doll fetish.⁹⁸ Fetishism, in the traditional sense of the word, references objects

⁹⁷ Emile Durkheim, *Divisions of Labor in Society*, trans. W.D. Wells, (New York: the Free Press, 1984), 34.

⁹⁸ Fish Eater Forum
(<http://www.fisheaters.com/forums/index.php?topic=3440878.10>)

thought to be “animated by a spirit or spiritual power.”⁹⁹ I recognize that individuals who post such comments likely reference a type of sexual fetishism, it is in the sense of the embodiment of spiritual power that is the most applicable sense in this case. This distinction is important because sexual fetishism have the potential to violate social and moral norms. Fetishism, as observed with a secular American society, brings into mind ideas of animism. Here lies the difference between treating something *as living* and treating something *as being alive* with a spirit. Reborn mothers often treat their dolls like they treat real babies, but most are well aware that their dolls are not real.¹⁰⁰ One example, a posting of a YouTube video by a reborn mother filming “a day in the life of” her reborn doll, Cadan, a disclaimer, though defensive, at the bottom reads:

“I am not psycho, nor am I crazy! I know this is a FAKE doll, and I am just doing this for the video. I do NOT buy this formula, I get it as samples! Get it? Got it? Good!
Enjoy the video! :)
I don't own this baby anymore”¹⁰¹

The differentiation between imitation and simulation happens at various stages of the dolls’ production progress. Imitation via reborn dolls can occur on two levels. First, a reborn doll is modeled and constructed in the exact image of a specific child. Instances of parents and grandparents requesting artists and sculptors create a doll after a photograph or of their infant or stillborn appear in most often

⁹⁹ “fetish, n.”. OED Online. December 2014. Oxford University Press.
<http://www.oed.com/view/Entry/69611?rskey=EUF6cX&result=1&isAdvanced=false> (accessed December 19, 2014).

¹⁰⁰ BBC Four, *My Fake Baby*; National Geographic, *Taboo: Fantasy Lives*; Gutierrez, *Richmond Times Dispatch*.

¹⁰¹ blessedrebornmommy5, “Day In The Life of Newborn Caden! (Reborn Baby),” *youtube* [Online Video], June 18, 2013, retrieved from <https://www.youtube.com/watch?v=EqnDECluPXU>

in news reports and interviews. Second, the quality of love-at-first-sight can force buyers to order exact replicas of dolls they happen upon. Artists may also choose to imitate certain painting and rooting techniques from other artists to improve their own craft.

On the other hand, though the dolls are realistic replicas of living babies, they are, nevertheless, simulacrum. Stimulated heartbeats, papilating chest, body heat packs work to simulate the feeling of holding a newborn. “I haven’t got a need to fill,” one reborn mother stressed, “I’ve got my kids. This is something completely different. It’s not a need for another baby. It’s not desire for another child and the fact that I can’t have anymore.”¹⁰² Delusion comes into play when the copy is mistaken for the original. In recognizing the dolls as fakes reborn mothers acknowledge the difference between the copy and the original. Simulation “set[s] out to amaze and enthrall but, crucially, not to dissemble. If the audience is fooled into thinking they are seeing the original then the simulacrum has failed.”¹⁰³ Furthermore, as Seth Giddings explains:

“There is a different play between copy and original here—one in which the significance of representational components or interfaces....is less in terms of resembling their models and more to do with the provision of cues and frames for audience’s knowledge of, fascination with, and embodied response to, the technical apparatus of simulation.”¹⁰⁴

On another level, the interaction between owners and dolls (and realistic objects), in contrast to interaction with an original, becomes less about the

¹⁰² VICE, “Reborn Babies (Documentary),” *YouTube*, Feb. 13, 2014, retrieved from <https://www.youtube.com/watch?v=EkyUZJDGvMY>

¹⁰³ Seth Giddings, “Dionysiac Machines: videogames and the triumph of the simulacra,” *Convergence* 13 (2007): 428.

¹⁰⁴ Giddings, *Convergence*, 417-437.

simulation and more about the fascination with how the objects (dolls) function and are constructed. In fact, most of the accounts of women who became reborners start similarly with them stumbling across an aesthetically lifelike doll and, after purchase, thought they could do a better job themselves. Nearly every site that sells reborn dolls also sells reborn doll kits.

Similar to the surrogacy of doll makers, as simulacrum, reborn dolls can also serve as surrogates. In acting as a replacement, whether as a therapeutic tool or substitute, for some women these dolls help prolong the maternal identity of the buyer.¹⁰⁵ As therapeutic tools, the release of serotonin and dopamine have been reported and used to justify use of reborn dolls for patients of dementia and grieving parents.¹⁰⁶ The hyperrealism of the dolls also make them appropriate in medical training. Without the neutral veil of science, however, how are these interactions characterized. The origins of reborn dolls—how they are made and for whom they are made—moves them beyond the dis/play dichotomy that normally defines other doll. When dolls move out of their normal functional purpose they become restricted to a category of “display,” becoming often time part of a collection. Within the doll industry, dolls are categorically define for “playing” or for “displaying”—*is this for play or is this for display?* Dolls marketed to adults rarely just the word “play.” Reborn dolls are marketed as both. The

¹⁰⁵ Fitzgerald, *European Journal of Cultural Studies*, 33.

¹⁰⁶ Patrick Dell and Anne-Marie Vettorel, “These Hyper-realistic baby dolls are a kind of therapy for Anxiety and Grief,” *The Globe and Mail* [video], Dec. 23, 2015, May 24, 2016, retrieved <http://www.theglobeandmail.com/life/life-video/video-these-hyper-realistic-baby-dolls-are-a-kind-of-therapy-for-anxiety-and-grief/article27931756/>; Vieve Montcombroux, “Simply Irresistible: What is that elusive quality that makes reborns so hard to resist?,” *Doll Reader Magazine*, June/July 2008.

ambiguity of the doll's function, both as a plaything and collectible, leave their buyers to dis/play with them. Doll play can become a ritualized performance. Women who treat reborn dolls like real babies can develop schedules and routines surrounding their dolls or, to some extent, incorporate the dolls into their daily schedule.¹⁰⁷

Erving Goffman identifies two stages for performance: front stage (public) and backstage (private). Front stage functions as a space for expression that conveys meaning to the audience and where performance adheres to societal convention and standards. Whereas, backstage functions as a space to hone performances, for storage of props, and where we can act out behavior that might otherwise be perceived as unacceptable by an audience.¹⁰⁸

Because the identification of abnormal behavior and stigma requires an active audience, for the purposes of this paper my focus will be on the front stage of doll play. Front stage doll play can be enacted in two arenas: 1) inside space (the home) and 2) outside space (the public).¹⁰⁹

The home as an immensely private and personal space is usually designated as the backstage by Goffman's definition. However, the home can be

¹⁰⁷ Carter News, "UK mother of 4 pays \$3400 for 'reborn' baby dolls after sterilization," *Daily News*, June 23, 2014, retrieved from <http://www.nydailynews.com/news/world/uk-mom-pays-3400-reborn-baby-dolls-article-1.1840643>; see youtube videos listed in bibliography

¹⁰⁸ Goffman, Erving, *The Presentation of Self in Everyday Life*, (New York: Anchor Books, 1959), 22, 112.

¹⁰⁹ In the introduction I had listed inside space, outside space, and childhood space. I did not include childhood space within this section for two reasons. First, I have mentions the violation of childhood space in doll play in a section above. Second, childhood is a temporal space whereas, in keeping with the concept of backstage and front stage, my focus for this section will be physical space.

brought to the front through the internet. Social media—facebook, Pinterest, Twitter, and others—enables the public collapse of the boundary between personal and social and the integration of social life into personal life. Tracking a quick search term of “reborn dolls” on YouTube over a period of six months turns up between thirty-five to eighty new videos posted every week,¹¹⁰ the majority of which are videos posted by reborn mothers documenting the interactions they have with their dolls. Such videos feature everyday activities mothers would engage in with their babies. “Morning routines” and “a day in the life of...” are common formats for posted video. Many people who posts video of their doll play over an extended period of time, serializing their performance in a sense. Through the repeated acts of waking, feeding, bathing, changing, and putting to sleep their dolls, owners take on fully the identity of a reborn mother. The association of reborn mothers as somehow delusional may stem from the fact that “the audience, in turn, often assume that the character projected before them is all there is to the individual who acts out the projection for them.”¹¹¹ Some reborn mothers stage movement, play sounds of a baby crying in the background, and even speak for their dolls, conveyed through spoken thought.¹¹²

Within this medium and space, performance is embodied, but disengaged because the format of the video separates the performer from a present

¹¹⁰ From January to end of May 2016, the procedure for each weekly search: search “reborn doll” and filtered my search to English-speaking videos posted from the U.S. within the last seven days. These filters making it more manageable to check for duplicate results.

¹¹¹ Goffman, *the Presentation*, 48.

¹¹² Hellomelissasue, “Reborn Baby Morning Routine :),” *youtube*, November 14, 2014, retrieved from <https://www.youtube.com/watch?v=WTUMmcxx8PU>; nlovewithreborns2011, “Reborn Baby Heavenly's morning routine,” *youtube*, June 28, 2013, retrieved from <https://www.youtube.com/watch?v=o2rHFNjbA0g>

audience. The comment section, nevertheless, allows for audience participation. Some videos begin with the acknowledgement that they are filming and uploading that particular activity with their reborn dolls because it had been requested.¹¹³ The performance is clear, but the video also showcase an exchange of knowledge. Behaviors get passed on. In essence, such videos and comment section become sites of newly formed practices. The box opening meme, in particular, showcases the mother who stands behind the camera giving prompts to their daughter(s). The fact that many women desire to capture their reaction and proceed to upload the video, on some level, speaks to their view of shared experience and their performance.

The communities that are created through these public forums and sites are reminiscent of Turner's *communitas*. The interaction, adoption of usernames, and comment postings together create a renewed sense of comradery and shared knowledge—trading tips and techniques—reinforces established practices among the reborn community. However, even in Turner's secular definition and, despite, its existence within a liminal state, such reborn communities are not *communitas*. There is an evident structure and establish hierarchy.¹¹⁴ Reborners are held in high esteem and an individual's reputation, like those of traditional artists, is dependent on their skill level and experience.

In the public space, the performance of reborn mothers is similar to those that take place in the home. Part of the traditional artifacts that embody motherhood, props such as strollers, carriers, and slings are used to carry and

¹¹³ littlexloves, "TT: Reborn baby Caden's morning routine!," *youtube*, March 20, 2014, retrieved from <https://www.youtube.com/watch?v=AATe9D32iYs>

¹¹⁴ Victor Turner, *Ritual Process*, (Chicago: Aldine Publishing Co., 1969), 95-97.

hold the reborn dolls. While waiting in line, the dolls are being cradled and rocked. When mothers have to step to the bathroom, the dolls are often handed over their husbands or companion.¹¹⁵

Comparable to posting videos is a certain level of showmanship—a presentation of the self. American society has a stratified class structure. One interpretation of the American Dream emphasizes social mobility. In *The Presentation of Self in Everyday Life* (1959), Goffman attests that individuals' performance in public or in front of another will tend to exemplify the values and attributes officially recognized by the society. The performance then becomes highly idealized with the end goal of moving up the social ladder or giving the perception of being a step above. To that end, any behavior inconsistent with the social standard, "dirty work," must be abandoned or concealed.¹¹⁶ Whether or not they "march to their own drums"¹¹⁷ people perceived as deviant possess a conscious awareness and purposeful defiance of social norm. Women who take reborn dolls out in public are aware of the comments and stares they will receive once the dolls are recognized as being dolls. The recognition or discovery of the reborn dolls leads to identification and association of deviance and stigma.¹¹⁸

When women engage in doll play, the boundary between artificial and real blurs. Reborn dolls are easy to pick up and put down. They neither cry nor react

¹¹⁵ BBC Four, *My Fake Baby*; National Geographic, *Taboo: Fantasy Lives*

¹¹⁶ Goffman, *the Presentation*, 30-51.

¹¹⁷ Gutierrez, *Richmond Times Dispatch*.

¹¹⁸ It would be a generalization to say that all people consider doll play as deviant behavior. Some are fascinated and enthralled. As Erikson notes, "One of the stubborn difficulties in the study of deviation is that the problem is defined different at each one of [the] levels [collective units]." Classification of deviance, even among groups in the same society, will differ. Kai Erikson, *Wayward Puritans*, (New York: John Wiley & Sons, Inc., 1966), 9.

when handled roughly. When the need arises, reborn mothers stop their play and performance. For example, when asked to show paperwork for her baby at airport security, despite it being swaddled in a blanket in her arms, Grace Thornton replied, “I don’t need to.”¹¹⁹ This is the inherent contradiction that many see within doll play: reborn dolls can be cradled, cared for, and treated like real babies and then discarded after the next moment—motherhood without the “mess.” The temporary fix for motherhood, however, explains the behavior of women who, on one hand, claim they have no need to fulfill, yet actively seeks comfort in these dolls to prolong their maternal identity. Despite the efforts of artists to transform a reborn doll from doll to baby, reborn dolls can still be disassembled, given new features, sold, and even destroyed; babies cannot.

What does it mean to play with these dolls? The discomfort some have to seeing women publically interacting with their dolls in such a way that they do not see a differentiation between play and real. For women engaging in doll play, the differentiation is apparent. Play itself is not an activity, but a context; a frame by which to discriminate between levels of communication and, at the same time, blur these levels because play is a paradoxical form of communication. When we play we engage in meta-communication: “That is, to recognize that the other individual’s and its own signals are only signals, which can be trusted, distrusted, falsified, denied, amplified, corrected, and so forth.”¹²⁰ In other words, it is communication that lets the receiver know how to interpret what is being received.

¹¹⁹ Gutierrez, *Richmond Times Dispatch*.

¹²⁰ Gregory Bateson, *Steps to an Ecology of Mind* (Chicago: University of Chicago Press, 2000), 178.

Consider this example. Two actors perform in a play. One actor kisses the other while on stage. The partner of the first actor witnesses the kiss, but does not mistake the kiss as unfaithfulness. “These actions in which we now engage do not denote what those actions for which they stand would denote.”¹²¹ In other words, the stage kiss means a kiss, but it does not mean what a kiss would mean were it not on stage. Through the meta-signals, the kiss is real, but by virtue of the actors being on stage in costumes with an audience in attendance, the kiss does not mean what it would otherwise mean in another context.

Explicated in Gregory Bateson’s “Theory of Play and Fantasy” in *Steps to an Ecology of Mind* and his lesser known article “The Message ‘this is play,’” the capacity to develop categories within categories allows us to confuse the logical types (categories) and makes play and jest possible. “This double frame is, we believe, not merely a matter of “frames within frames” but an indication that mental processes resemble logic in *needing* an outer frame to delimit the ground against which the figures are to be perceived.”¹²² The frame in which the picture is set is meant to focus our attention on the picture, but the picture, by virtue of having a frame, paradoxically draws our eyes to the wallpaper behind as well.

As mentioned above, the videos posted give viewers only a glimpse of a person’s life. A woman goes through a morning ritual with her doll, but by filming it and putting it on YouTube with the comment that she fully recognizes the doll is not a baby, signifies that she is playing. The message of play, however,

¹²¹ Ibid, 180

¹²² Ibid, 188.

separates from the message interpreted by the viewer. Like Alfred Korzybski's map-territory relation, whereby a map is not a territory and the message cannot contain the object to which it refers and the boundary of the map to territory can break down, so too can the viewer thinking that the woman does this routine every day. This division line is delicate. For the individuals engage in doll play as well, "within the dream the dreamer is usually unaware that he is dreaming, and within "play" he must often be reminded that "This is play.""¹²³ For the outsider, 'this is play' can easily shift to 'is this play?'"

This distinction is particular tricky to navigate. "In primary process, map and territory are equated; in secondary process, they can be discriminated. In play, they are both equated and discriminated."¹²⁴ A woman playing with a doll (e.g. changing its diapers) is showcasing simultaneously the absence and presence of a baby. No real baby exists, but the diaper is being changed. Similarly, one is a mother and one is the baby yet, neither is a mother nor a baby. The contradiction is inherent in 'play' in much the same way that reborn artists promote the realism and aliveness of the dolls while reborn mothers communicate with their audience that they are cognizant the dolls are not real. These performances set up the contradiction that many see in adult women playing with dolls. Whether the public condemns the behavior of women treating the dolls as real and not as play or they recognize it as play, but still disparage the behavior, both interpretations fall into their own system of classification.

¹²³ Ibid, 185.

¹²⁴ Ibid, 182.

Conclusion

The dystopia constructed in Philip K. Dick's *Do Androids dream of Electric Sheep* in which war and overconsumption has killed off millions of people and led to mass extinction of entire species have created an environment where living creatures becomes a scarce and coveted commodity. Most people must content with simulacrae in the form of electric birds, sheep, and replicant androids that are near indistinguishable from the real thing. Through the progression of his day hunting down six Nexus 6 replicants, Rick Deckard's worldview gradually crumbles to a point where he questions his own reality. The discovery of a real toad in the wasteland of northern Oregon reconciles him with his situation, restores his excitement, and he feels "like being a kid again."¹²⁵ Deckard returns home to show his wife, Iran, who quickly discovers the toad is electric. Despite his disappointment, Deckard expresses his appreciation at the discovery. "I'm glad to know. Or rather—...I'd prefer to know."¹²⁶

For participants in reborn doll culture, the hyperreality of the dolls, along with their treatment as "real," disrespect the conventional distinction between objects and living beings for many observers. Reborn dolls and their owners' interactions with them create ambiguity which threatens established categories within a social space where people prefer to know. By granting a form of artificial life to the dolls, through material designs, language and expressions, reborners are, in essence, creating something similar to Donna Haraway's cyborg and Philip K. Dick's replicants. "The cyborg," Haraway writes, "is a condensed image

¹²⁵ Philip K. Dick, *Do Androids Dream of Electric Sheep?* (1st Ballantine Books trade pbk. ed., New York: Ballantine Books, 1996), 238.

¹²⁶ Ibid, 241.

of both imagination and material reality.”¹²⁷ Though made of vinyl and silicone, reborn dolls are not linguistically “created” or “manufactured.” They are “reborn” and “adopted.” The dolls then exist as a hybrid between the living and the dead, the animate and inanimate, human and object. Treatment of the dolls also blurs the line of gender and space, specifically the female role. From childhood, the presumption is that doll play encourages the learning and development of maternal skills. The transition into adulthood shifts play into display. Reborn doll owners and artists have a tendency to blur this temporal boundary so that the difference between a woman who chooses to display her reborn doll and a woman who chooses to play with her reborn doll is dependent on their perception of their own reality. To be part of the common conscience is to agree to share and be governed (encouraged or prohibited) by certain behaviors and values society has deemed important. Established values, categories, and boundaries, after all, are social contracts that bind individuals together.¹²⁸ It is living in a society’s constructed reality. The reality of the society becomes intertwined with individual reality. “Right and wrong is not a violation of metaphysical truths embedded in the structure of the universe.”¹²⁹ The reality that we experience, because it is socially constructed, may not match that of the reality that exists in our environment. It is the crisis that we experience that influences our perception

¹²⁷ Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature*, (New York: Routledge, 1991), 156.

¹²⁸ Mary Douglas, *Purity and Danger*, (New York: ARK Paperbacks, 1988), 71.

¹²⁹ Steve Wilkens and Alan G. Padgett. (2010). *Christianity and Western Thought, vol. 2: Faith and Reason in the 19th Century*, (Illinois: InterVarsity Press, 2010), 316.

of reality and, thereby, influences what we classify as cultural norms or morally accepted behavior, which in turn reestablish our perceived reality.

Society creates boundaries and categories as a navigation tool to help individuals transverse and manage life within that given society. The boundaries and categories are in no way permanent or set in stone and vary from society to society. Hence, recalling the aforementioned story of the police officer wanting to hold his gun to the reborn doll's head for a picture pose, the reborn dolls in the arms of men in Mexico were cradled and tended as well.¹³⁰ Boundaries shift and change, but they always exist to reflect the values and standards of a particular society.

Reborning in the doll industry is a growing trend. The advent of new doll designs and venues like the blogs, vlogs, and online marketplaces such as eBay and Etsy create new forums and spaces for exchange and growth of communities of reborn doll artists and owners. The view of their own position as artists and professionals within the business of reborning sets up a value system that measures the integrity and quality of their work. The communication infrastructure of social media and knowledge transference discussed earlier can be employed to reward or ostracize members who fail to meet those values.

Part of how we live is by making distinctions and classification, but not always of an abstraction by similarities. Much of how we categorize the world is based on a hierarchy of logical types and when we start to recognize that

¹³⁰ Williams, *The Guardian*.

hierarchy we come to realize its paradoxical nature.¹³¹ The capability to navigate between multiple layers of abstractions accounts partly for the histrionic reactions some have towards reborn dolls community, but it also allows a reborn doll's diapers to be changed one day and lay untouched for the next seven. Echoing Deckard, at some level "it doesn't matter things have their lives, too. Paltry as those lives are."¹³²

¹³¹ Ibid, 186. Bertrand Russell's theory of logical types postulates that no class can contain itself as a member to avoid confusion and paradoxes in logic, which Bateson acknowledges. However, he illustrates via his onion skin structure that the development of human cognition is possible because we naturally fall into a primary process, as oppose to the more analytical secondary process, and we fail to distinguish "all" from "some" and "not all" from "none," drawing that distinction between the proper NOT (i.e. of the same logical type) from the improper NOT, thus, generating the paradox that Russell had hoped to avoid.

¹³² Ibid, 241.

Reference/Bibliography
Introduction

Benjamin, Walter. "The Work of Art in the Age of Mechanical Reproduction" in *Illuminations*, ed. Hannah Arendt, trans. Harry Zohn, from the 1935 essay, New York: Schocken Books, 1969.

Blade Runner. Directed by Ripley Scott. 1982. Burbank, CA: Warner Bros. Entertainment Inc., 2006. DVD.

Bowker, Geoffrey and Susan Leigh Star. *Sorting Things Out: Classification and Its Consequences*. Cambridge, MA: MIT Press, 1999.

Ex Machina. Directed by Alex Garland. 2015. Santa Monica, CA: Lionsgate, 2015. DVD.

Freud, Sigmund, David McIntock, and Huge Haughton. *The Uncanny*. New York: Penguin Books, 2003.

Hume, David. *The Natural History of Religion*. Stanford, Calif.: Stanford University Press, 1957.

Meredith, Charlotte. "London's Very Own Urban Legend." *The Huffington Post UK*. June 6, 2014. Retrieved from http://www.huffingtonpost.co.uk/2014/06/06/london-urban-legend-jcb-digger_n_5459717.html

Philipso, Alice. "London's Trail of Buried Diggers," *The Telegraph*. June 5, 2014. Retrieved from <http://www.telegraph.co.uk/finance/property/news/10879282/Londons-trail-of-buried-diggers.html>

Robinson, Wills and Kieran Corcoran. "Are London's Ever-Expanding Basements being Turned into a Graveyard of Diggers?" *Dailymail.com*. June 7, 2014. Retrieved from <http://www.dailymail.co.uk/news/article-2651496/Are-Londons-expanding-basements-turned-graveyard-diggers.html>

Sheets-Johnstone, Maxine. *The Primacy of Movement*, ed. 2. Amsterdam/Philadelphia: John Benjamins Pubs., 2011.

Smith, Ed. "The Bizarre Secret of London's Buried Diggers." *NewStatesMan*. June 5, 2014. Retrieved from <http://www.newstatesman.com/business/2014/06/bizarre-secret-london-s-buried-diggers>

Somerset, Merryn Webb. "The 1,000 Diggers 'Buried' Beneath London." *Money Week*. June 6, 2014. Retrieved from <http://moneyweek.com/merryns-blog/the-1000-diggers-buried-beneath-london/>

Tiffany, Daniel. *Toy Medium: Materialism and Modern Lyric*. Berkeley: University of California Press, 2000.

Toffoletti, Kim. *Cyborgs and Barbie Dolls: Feminism, Popular Culture and the Posthuman Body*. New York: I.B. Tauris, 2007.

Uncanny. 2015. Directed by Matthew Leutwyler. Chatsworth, CA: Image Entertainment, 2015. DVD.

Essay 1

Cellan-Jones, Rory. "Stephen Hawking Warns artificial intelligence could end mankind." *BBC News, Technology*. Dec. 2, 2014. Retrieved from <http://www.bbc.com/news/technology-30290540>

Cosmic Polymath. "Mechanical Marvel: Clockwork Dreams." [video] *YouTube*. May 13, 2015. Retrieved from <https://www.youtube.com/watch?v=MZMeQl1V1Ow>

Descartes, Rene. *The philosophical writings of Descartes*. Cambridge [Cambridgeshire] ; New York: Cambridge University Press, 1984.

Dewey, John. "The Reflex Arc Concept in Psychology." *Psychological Review* 3(1896): 357-370.

Flinley, Klint. "Did a Computer Bug Help Deep Blue Beat Kasparov?" *Wired*. Sept. 28, 2012. Retrieved from www.wired.com/

Friedenberg, Jay and Gordon Silverman. *Cognitive science: An introduction to the study of mind*. Thousand Oaks, Calif.: Sage Publication, 2006.

Furnish, Tim. "Motion Sensor." *Illumin*, 9, no.4 (Fall 2008). Retrieved from <http://illumin.usc.edu/>

Gill, Mary Louis and James G. Lennox. *Self-Motion*. New Jersey: Princeton University Press, 2004.

Ingham, Richard and Pascale Mollard. "Experts Are Divided on Stephen Hawking's Claim that Artificial Intelligence Could End Humanity." *Business Insider*. Dec. 6, 2014. Retrieved from

<http://www.businessinsider.com/afp-artificial-intelligence-hawkings-fears-stir-debate-2014-12>

Ingold, Tim. *Lines: A brief history*. London ; New York: Routledge, 2007.

Kang, Minsoo. *Sublime dreams of living machines: The automaton in the European imagination*. Cambridge, Mass.: Harvard University Press, 2011.

La Mettrie, Julien Offray de. *Man a machine*. Translated from the French of Mons. de la Mettrie, A celebrated Physician of the Faculty at Paris, and Author of Penelope, or the Machiavel in Physic (3rd ed.). London: printed for G. Smith, near Temple-Bar, 1750. Eighteenth Century Collections Online. Gale. Retrieved from http://find.galegroup.com.proxy.wm.edu/ecco/infomark.do?&source=gale&prodId=ECCO&userGroupName=viva_wm&tabID=T001&docId=CW117776747&type=multipage&contentSet=ECCOArticles&version=1.0&docLevel=FASCIMILE

LaViers, Amy and Magnus Egerstedt. "The ballet automaton: A formal model for human motion." In: IEEE American Control Conference (ACC' 2011)," 3837-3842.

Lowe, Ernest.J. *Subjects of Experience*. Cambridge: Cambridge University Press, 1996.

Menand, Louis. *The Metaphysical Club*. New York: Farrar, Straus and Giroux, 2001.

Moosa, Mahdi Muhammad and S.M. Minhaz Ud-Dean. (Mar. 2010). "Danger Avoidance: An Evolutionary Explanation of Uncanny Valley." *Biological Theory* 5, no. 1 (Mar. 2010): 12-14.

Mori, Masahiro. "The Uncanny Valley." *Energy* 7, no. 4 (1970): 33–35.

Newton, Isaac, I. Bernard Cohen, and Anne Miller Whitman. *The Principia: Mathematical principles of natural philosophy*. Berkeley, Calif.: University of California Press, 1999.

Orvell, Miles. *The Real Thing: Imitation and Authenticity in American Culture, 1880-1940*. Chapel Hill, North Carolina: University of North Carolina Press, 1989.

Palca, Joe. "How Can Robots Learn New Tasks? Practice, Practice, Practice." *NPR Podcast*. Nov. 11, 2015. Podcast retrieved from

<http://www.npr.org/sections/alltechconsidered/2015/11/11/455507215/how-can-robots-learn-new-tasks-practice-practice-practice>

Piwek, Lukasz, Lawrie S. McKay, and Frank E. Pollick. "Empirical Evaluation of the Uncanny Valley Hypothesis Fails to Confirm the Predicted Effect of Motion." *Cognition* 130, no.3 (2014): 271-277.

Riskin, Jessica. (2003a). "Eighteenth Century Wetware." *Representations* 83, no.1 (2003a): 97-125.

-----_. "The Defecating Duck, Or, The Ambiguous Origins of Artificial Life." *Critical Inquiry* 29, no.4 (2003b): 599-633.

----- (ed.) *Genesis Redux: Essays in the History and Philosophy of Artificial Life*. Chicago: University of Chicago Press, 2007

Seyama, Jun'ichiro and Ruth S. Nagayama. "The Uncanny Valley: Effect of Realism on the Impression of Artificial Human Faces." *Presence* 16, no.4 (August 2007): 337-351.

Sheets-Johnstone, Maxine. *The Primacy of Movement* (Expanded 2nd ed.). Amsterdam; Philadelphia: John Benjamins Pub., 2011.

Souriau, Paul and Manon Souriau (trans.). *The Aesthetics of Movement*. Amherst, Massachusetts: the University of Massachusetts Press, 1983.

Standage, Tom. *The Turk*. New York: Walker Publishing Co., Inc., 2002.

Twain, Mark. *Innocents Abroad*, vol. 1. New York: Harper & Brothers Publishers, 1905.

LaViers A. and M. Egerstedt. The ballet automaton: A formal model for human motion. In: IEEE American Control Conference (ACC' 2011), 3837-3842.

Veder, Robin. *The Living Line: Modern Art and the Economy of Energy*. Hanover, New Hampshire: Dartmouth College Press, 2015.

Williams, Zoe. Reborns: dolls so lifelike you could mistake them for real infants. *The Guardian*. Nov. 25, 2011. Retrieved from <http://www.theguardian.com/>

Wood, Gaby. *Edison's Eve: A Magical History of the Quest for Mechanical Life*. London: Anchor, 2003.

Essay 2

- 2014 Essential Facts About the Computer and Video Game Industry.
Entertainment Software Association (ESA). April 2014. Retrieved from
http://www.theesa.com/wp-content/uploads/2014/10/ESA_EF_2014.pdf
- Ablow, Keith. "Fake Babies, Fake Lives," *FoxNews.com*. June. 28, 2011.
Retrieved from <http://www.foxnews.com/health/2011/06/28/fake-babies-fake-lives/>
- BBC Four. *My Fake Baby*. Directed by Victoria Silver. 2008. Retrieved from
www.youtube.com/watch?v=xyr7yjDnqds
Alternative source: Barcroft TV. "DOCS: My Fake Baby." [Online Video].
YouTube. May 7, 2015. Retrieved from
<https://www.youtube.com/watch?v=hTnr2CmLbG4>
- Bateson, Gregory. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. Chicago: University of Chicago Press, 2000.
- Blessedrebornmommy5. "Day In The Life of Newborn Caden! (Reborn Baby)." [Online Video]. *Youtube*. June 18, 2013. Retrieved from
<https://www.youtube.com/watch?v=EqnDECluPXU>
- Burleigh, Tyler J., Jordan R. Schoenherr, and Guy L. Lacroix. "Does the uncanny valley exist? An Empirical Test of the Relationship Between Eeriness and the Human Likeness of Digitally Created Faces." *Computers In Human Behavior* 29, no. 3 (2013): 759-771.
- Croissant, Michelle. "Feature: Unique 'Reborn Artist Works in Boundary.'" *The Boundary Sentinel*. November, 21. 2014. Retrieved from
<http://boundariesentinel.com/news/feature-unique-reborn-artist-works-boundary-34654#.VJCKP6NOS1c>
- Carter News. "UK mother of 4 pays \$3400 for 'reborn' baby dolls after sterilization." *Daily News*. June 23, 2014. Retrieved from
<http://www.nydailynews.com/news/world/uk-mom-pays-3400-reborn-baby-dolls-article-1.1840643>
- Crosbie, Lynn. "Who buys a \$4,000 fake baby?," *The Globe and Mail*. August 4, 2009. Retrieved from <https://global-factiva-com.proxy.wm.edu/ga/default.aspx>
- Daily Mail Reporter. "Police smash their way into car to rescue baby on a hot day... only to discover a DOLL." *DailyMail.com*. July 29, 2011. Retrieved from <http://www.dailymail.co.uk/news/article-2020222/Bungling-police->

smash-way-car-rescue-baby-hot-day--discover-
DOLL.html#ixzz3MUA5djTK

Davis, Erik. "Congratulations, It's A Bot!" *Wired*. September 2000. Retrieved from http://archive.wired.com/wired/archive/8.09/robobaby_pr.html

Deleuze, Gilles and Rosalind Krauss. "Plato and the Simulacrum." *October* 27 (Winter, 1983): 45-56.

Dell, Patrick and Anne-Marie Vettorel. "These Hyper-realistic baby dolls are a kind of therapy for Anxiety and Grief." *The Globe and Mail*. [video]. Dec. 23, 2015. Retrieved <http://www.theglobeandmail.com/life/life-video/video-these-hyper-realistic-baby-dolls-are-a-kind-of-therapy-for-anxiety-and-grief/article27931756/>

Dick, Philip K. *Do Androids Dream of Electric Sheep?* 1st Ballantine Books trade pbk. ed. New York: Ballantine Books, 1996.

Douglas, Mary. *Purity and Danger*. New York: ARK Paperbacks, 1988.

Durkheim, Emile. *Divisions of Labor in Society*. New York: the Free Press, 1984.

----- . *The Rules of Sociological Method*. Glencoe: The Free Press, 1950.

Erikson, Kai. *Wayward Puritans*, New York: John Wiley & Sons, Inc., 1966.

Falk, Gerhard. *Stigma: How We Treat Outsiders*. New York: Prometheus Books, 2001.

Formanek-Brunell, Miriam. *Made to Play House*, New Haven: Yale University Press, 1993.

Fin, Al. "Baby Convergence: Toys, Tools, and Fetishes How Does This All Come Together?" *Al Fin* (blog). January 3, 2009. Retrieved from <http://alfin2100.blogspot.com/2009/01/baby-convergence-toys-tools-and.html>

Fitzgerald, Louise. "'Let's play Mummy': Simulacrum babies and reborn mothers." *European Journal of Cultural Studies* 14, no. 1 (2011): 26-39.

Freud, Sigmund. *The Uncanny*. New York: Penguin Books, 2003.

Giddings, Seth. "Dionysiac Machines: videogames and the triumph of the simulacra." *Convergence* 13 (2007): 417-437.

Gennep, Arnold van. *The Rites of Passage*. Chicago: University of Chicago Press, 1960.

Goffman, Erving. *The Presentation of Self in Everyday Life*. New York: Anchor Books, 1959.

----- . *Stigma: Notes on the Management of Spoiled Identity*. New York: Simon & Schuster, 1963.

Gutierrez, Lisa. "Dolls so life like they're not assembled, they're 'reborn.'" *Richmond Times Dispatch*. November 29, 2014. Retrieved from http://www.timesdispatch.com/entertainment-life/dolls-so-life-like-they-re-not-assembled-they-re/article_80d9fda7-1e3d-5652-82a1-5b403ae717f7.html

Hellomelissasue, (2014, Nov. 14), "Reborn Baby Morning Routine :)." [Online Video]. *Youtube*. November 14, 2014. Retrieved from <https://www.youtube.com/watch?v=WTUMmcxx8PU>

Hersey, George L. *Falling in Love with Statues*. Chicago: University of Chicago Press, 2009.

Holland, Nikki. "Box Packing Reborn Twins Thomas and Faye - The SMN Show #328." [Online Video]. *Youtube*. October 12, 2012. Retrieved from <https://www.youtube.com/watch?v=KU6Z0Rm6214>

littlexloves. "TT: Reborn baby Caden's morning routine!" [Online Video]. *Youtube*. March 20, 2014. <https://www.youtube.com/watch?v=AATe9D32iYs>

MelanieKathrynReborn. "Custom Realborn Presley Reborn Doll SO LE CoA Exclusive Presentation Box." *Etsy*. October 14, 2014. Retrieved from <https://www.etsy.com/listing/205969382/custom-realborn-presley-reborn-doll-so?ref=market>

Montcombroux, Vieve. "Simply Irresistible: What is that elusive quality that makes reborns so hard to resist?" *Doll Reader Magazine* (June/July 2008).

Mori, Masahiro. The Uncanny Valley. *Energy* 7, no. 4 (1970): 33–35.

National Geographic. "Taboo: Fantasy Lives." Narrated by Lance Lewman. 2011. Retrieved from <https://www.youtube.com/watch?v=D1nC-6p1oTg>

- nlovewithreborns2011. "Reborn Baby Heavenly's morning routine." [Online Video]. *Youtube*. June 28, 2013. Retrieved from <https://www.youtube.com/watch?v=o2rHFNjbA0g>
- onewingedangel59. "Reborn baby boy Corbin." *eBay*. 2014. Retrieved from http://www.ebay.com/itm/Reborn-baby-boy-Corbin/131379057059?pt=US_Dolls&hash=item1e96cd51a3
- O'Reilly, Abby. (2008, Jan. 4). "My Fake Baby." *ThefWord* [blog]. January, 4, 2008. Retrieved from http://www.thefword.org.uk/blog/2008/01/my_fake_baby
- Randolph, Laura B. "Living Dolls." *EBONY* 53, no. 3 (Jan. 1998): 22.
- Roach, Joseph. *Cities of the Dead*. New York: Columbia University Press, 1996.
- Robertson, A.F. *Life Like Dolls*. New York: Routledge, 2004.
- Schechner, Richard. *Performance Studies: An Introduction*. New York: Routledge, 2013.
- Sheets-Johnstone, Maxine. *The Primacy of Movement* (Expanded 2nd ed.). Philadelphia: John Benjamins Pub, 2011.
- Stein, Sadie. "Anti-Abortion Blogger's Miracle Baby Was, In Fact, A Doll." *Jezebel*. June 12, 2009. Retrieved from <http://jezebel.com/5288543/anti-abortion-bloggers-miracle-baby-was-in-fact-a-doll>
- Tatyamelni. "Mini reborn Zane," *eBay*. December 12, 2014. Retrieved from http://www.ebay.com/itm/Mini-reborn-Zane-/151512094076?pt=US_Dolls&hash=item2346d3157c
- Taylor, Diana. *The Archive and the Repertoire: Performing Cultural Memory in the Americas*. Durham: Duke University Press, 2003.
- Vlahos, James. "Barbie Wants to Get to Know Your Child." *The New York Times Magazine*. September 16, 2015. Retrieved from http://www.nytimes.com/2015/09/20/magazine/barbie-wants-to-get-to-know-your-child.html?mwrs=Email&_r=0
- Walker, Rob. "The Way We Live Now: 2-20-05: Consumed; Hyperreality Hobbying." *The New York Times*. February 20, 2005. Retrieved from <http://query.nytimes.com/gst/fullpage.html?res=9A06E2D8153AF933A15751C0A9639C8B63>

- White, Michele. "Babies Who Touch You," in *Political Emotions*, ed. Janet Staiger, Ann Chetkovich, and Ann Reynolds. New York: Routledge, 2010.
- Wilkins, Steve and Alan G. Padgett. *Christianity and Western Thought, vol. 2: Faith and Reason in the 19th Century*. Illinois: InterVarsity Press, 2010.
- Williams, Zoe. "Reborns: dolls so lifelike you could mistake them for real infants." *The Guardian*. November 25, 2014. Retrieved from <http://www.theguardian.com/lifeandstyle/2011/nov/25/reborns-lifelike-baby-dolls>