

# To Hold a Heartbeat:

A Materialist Investigation of Animation

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## Abstract

The earliest patents for the cel technique of animation, issued to Earl Hurd and John Randolph Bray in 1914, describes a division of labour between the animator and his helper, whereby the artist uses an unskilled assistant to perform the task of tracing and painting. This method standardized and industrialized animation, paving the way for massive labour inequity, and helping to define animation's hierarchy of creative authority. This delineation between skilled and unskilled labour led to the segregation of animation studios by gender, where women became responsible for most of the unskilled work and were precluded from creative areas of the studios. This thesis explores labour in the animation industry through the analysis, manipulation, alteration, and reproduction of the archival production materials that comprise an animated film. Using a methodological approach situated within research-creation, the body of work is composed of palimpsestic collages and paintings that explore the language and materiality of animation. I argue that a materialist approach to animation allows the viewer a more holistic understanding of a film's historiographic and sociopolitical implications: to expose its underlying power structure, an animation may be viewed not as a totality, but from its individual frames or 'cels.' Drawing from a theoretical framework underpinned by new materialism and theorists such as Hannah Frank and Esther Leslie, this work attempts to harness the vocabulary of animated visual culture and recontextualize it, questioning authorship, originality, notions of collective meaning, high versus low art, art and alienation, and the reproduction of the image.

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# Table of Contents

Abstract.....	ii
Acknowledgements.....	iii
Table of Contents.....	iv
List of Figures.....	v
Introduction.....	1
 Section One: Critical Frameworks and Methodologies.....	 6
I.    Thesis Questions.....	6
II.   Research Methods.....	6
III.  Theoretical Framework.....	7
IV.   Scope.....	9
V.    Personal Connection to Research.....	9
VI.   Relevance.....	11
 Section Two: A Material History.....	 14
I.    Cel Vinyl Paint.....	14
II.   Plastic Innovation.....	15
III.  A History of Animation Labour Inequity.....	17
IV. <i>The industrialization of animation and its consequences have been a disaster for artists</i> .....	22
V.    Animation Cels: A Definition.....	23
VI.   Outsourcing Animation Labour.....	26
 Section Three: Materialist Analysis.....	 28
I.    The Non-Archival Material.....	28
II.   The Morgue.....	30
III.  eBay as an Archival Resource.....	31
IV.   mater et anima.....	32
V.    Relevant Artworks.....	35
 Section Four: Body of Work.....	 38
 Conclusion.....	 52
Works Cited.....	54

## List of Figures

Figure 1: Still from The Reluctant Dragon, 1941.....	2
Figure 2: Dream Job, cel vinyl paint on acetate, used production cel, used production drawing .	4
Figure 3: Still from “This Is Dupont”, 1980, Dupont Public Affairs Department, 16:28:00, Hagley Library Archives.....	16
Figure 4: Disney artists strike outside their California studio in 1941 (Los Angeles Times) .....	19
Figure 5: Ink and Paint workers at Walt Disney's Hyperion Studio (A Film LA).....	24
Figure 6: A damaged cel from "He-Man and the Masters of the Universe" .....	28
Figure 7: A damaged cel from "Alice in Wonderland" .....	29
Figure 8: Cel vinyl paint.....	33
Figure 9: Larry Johnson, Untitled (Classically Tragic Story), 1991, colour photograph, 61 x 75 3/8" .....	35
Figure 10: Still from Morgan Fisher's Standard Gauge, 1984, Film, 16mm, colour, optical sound, 35 minutes .....	37
Figure 11: The process of cel painting as viewed from below.....	38
Figure 12: Untitled (Vinyl Experiment #1), canvas, cel vinyl paint on acrylic, 18 in x 24 in, 2021	39
Figure 13: Flowers and Trees, cel vinyl on acetate, 60 in x 48 in, 2022 .....	40
Figure 14: An Epiphany, cel vinyl on acetate, 10.5 in x 12.5 in, 2021 .....	41
Figure 15: The Turin Pony, 2022, cel vinyl on acetate, used production cel.....	42
Figure 16: Early iteration of "The Turin Pony", 2022.....	43
Figure 17: It's not given to Man to understand all of Nature's mysteries, 2021, cel vinyl on acrylic, oil on canvas .....	44
Figure 18: Dupont City, West Virginia!, 2022, gouache on paper, cel vinyl on acetate .....	46
Figure 19: Still from A Paroxysm, 2022, 25:50.....	47
Figure 20: Exhibition view, "A Paroxysm", 2022.....	48
Figure 21: Exposing the Foundation of the Museum, 2022, cel vinyl on acetate, gouache on paper .....	49
Figure 22: Mickey's Caravan of Fun, cel vinyl on acetate, gouache on paper.....	50
Figure 23: Two cels from Horton Hears a Who, 1970 .....	53

## Introduction

In 1941 Disney's promotional film *The Reluctant Dragon* introduced audiences to a behind-the-scenes look at how Walt Disney Studios created their animated films. While primarily filmed in black and white, the film includes a seminal scene depicting a stark shift to Technicolor, in which the narrator takes a trip to the 'Rainbow Room'. One of many nicknames for the Ink and Paint Department, the 'Rainbow Room' refers to the area of Walt Disney Studios where the individual frames of an animated film are hand inked and painted onto transparent sheets of cellulose nitrate or acetate ("cels"). The turn to this space in the film is important for myriad reasons, but I wish to highlight how it was one of the only areas at the studio open to women workers, a consequence of various company policies intent on gendered segregation. In the scene, young women rush about in white lab coats and dresses, holding up beakers, tweaking laboratory equipment, and stacking dozens of brightly coloured paint-filled jars onto metal shelves. "The girls add a couple hundred different chemicals to it and then it all goes through the paint mill", the actress portraying an Ink and Paint worker happily announces. What erupts is a semi-abstract phantasmagoria of colour and chemistry: fantastical machines grind highly saturated paint pigments which spill out of big glass receptacles; deep ruby red and bright lemon-yellow powders are piled high and weighed; a woman with long scarlet nails and a black gas mask obscuring her face pours a clear amber liquid into a bubbling and frothing beaker. A cloying, tinkling orchestral version of Snow White and the Seven Dwarf's recognizable song 'Heigh-Ho' plays (alluding to assembly-line labour systems) as wild machines whip colourful bulbs full of paint centrifugally, drizzle paint onto rotating gears, and pour paint in prismatic sequence from dozens of glass spigots. Colour plays a narrative role, combining witch-like potion making processes (reminiscent of those displayed by the Queen Witch in *Snow White and the Seven Dwarfs*) with sterile, modern laboratory processes to form an affective-

discursive relationship between the natural and the chemical, the biological and the industrial, the magical and the technological. Beakers and flasks bubble over with smoking rainbow concoctions and thick, viscous paint is measured and poured by manicured hands from one sparkling glass container to another. The intensely saturated liquid cascades down in ribbons, pooling into jars and mixing onto surfaces. It is a vibrant, chromatic fever dream, featuring cel vinyl paint as its star.



*Figure 1: Still from The Reluctant Dragon, 1941*

The film foregrounds the material qualities of the paint as novel, luxurious, and other-worldly. First developed in the early 1930's by the Catalina Color Company and refined by chemist Mary Weiser, cel vinyl paint would become the paint material of choice for animation over the next century. Its highly pigmented, saturated colour combined with its viscosity and rheological qualities made it ideal for the

cel technique animation process. It was hand-painted, one frame at a time, onto individual sheets of celluloid nitrate or 'cels' by an all-woman labour force, with over half a million cels comprising a full-length animated film. By the end of the century, the Catalina Color Company (later the Cartoon Color Company) was the last manufacturer of cel vinyl paint in the United States, having formerly supplied cel vinyl paint to studios such as Warner Bros, Walt Disney, MGM, Universal, United Artists, and Hanna-Barbera. In 2018 the Cartoon Color Company announced that they would no longer produce cel vinyl paint; My last-slowly-expiring-bottles, and those sitting on the back shelves of a few old animators, are what is left of the obsolete medium. The thousands of archival animation cels and sketches are all that remains of a massive industry spanning over a hundred years, one that may subsume live-action cinema itself within it, that stunned audiences with its technological advances and anarchic regard to physics and colour, that produced substantial government propaganda and contributed to the rise of a Chilean dictatorial regime. These cels are the skeletal remains, arrested in motion, documenting the millions of hours of labour that created them.

I began to collect these animation cels as evidence of labour: delicately painted works created by unknown artists, often with their drawings attached to them, discarded after the production process. These discarded relics, while 'dead,' are so vibrant to me, and tell a distinct story. From their inking techniques, the thickness of their line and quality of ink, whether they were hand-inked or created through xerography, their paint style, vibrancy of colour, and clarity of forms, their alphanumeric codes written at the bottom - a narrative was formed about the labour history of each one. I began to learn the language of animation, playing with its traditional materials by rearranging and altering my collected pieces. My resultant body of work was formed through the exploration of this material process, which at times took on a performative nature: recreating a traditional animation process is an immersive practice that requires historic study and long, focused hours of work. This body of work, ranging from large



abstractions utilizing cel vinyl paint, to collaged works using a variety of materials, to projected video works, represents an experimental investigation into a material history known for its rigidity and standardization of process.



*Figure 2: Dream Job (You Wish), cel vinyl paint on acetate, used production cel, used production drawing*

“To Hold a Heartbeat” explores labour in the animation industry through the analysis, manipulation, alteration, and reproduction of the archival production materials that comprise an animation: cel vinyl paint, used production cels, painted backgrounds, exposure sheets, folders, and other ephemera. It understands the animation cel to be the final product of a complex relationship between labour exchanges and complicated sociopolitical conditions. It is a study of the ways that the labour involved in creating an animated work is occluded and anonymized to reinforce hegemonic power structures and create viewer immersion in the semiotic world of animation. I argue that a materialist approach to animation allows the viewer a more holistic understanding of a film’s historiographic and sociopolitical implications: to expose its underlying power structure, an animation

may be viewed not as a singular work, but from its individual frames or ‘cels.’ This research culminates in a body of work comprised of palimpsestic paintings and collages that utilize these archival materials. My findings, which are discussed in greater depth in the conclusory paragraph of this paper and are ultimately represented through my resultant body of work, show an alteration in my perception of animated films that reflect a new scope of understanding, in which I am able to view a cartoon not just through the narrative or aesthetic, but through an awareness of its constitutive parts and its labour processes, giving it new context and the ability to view a work in totality.

This paper is divided into five sections. Section One presents the critical frameworks and methodologies that I employ in my research, including thesis questions, scope, and my own personal connections to the research. Section Two analyzes the history of animation labour, including historic strikes and labour disputes, revealing the ways in which animation labour is hidden from the audience, and how “unskilled” animation labour shifted during the 20th century in accordance with Western cultural imperialism. Section Three performs a material analysis of archival production materials, exploring the formal qualities of cel vinyl paint, examining the nature of animation cels, and analyzing the traces of labour present within these materials. Section Four overviews my own creative making process and the final exhibitory works accompanying this paper.

## Section One: Critical Frameworks and Methodologies

### I. **Thesis Questions**

- 1. How can artists reconstitute animation materials, strategies, and languages to form and express new meanings?** What are the implications of “freeing” these materials from the rigidity of industrialized animation?
- 2. How can the latent traces of the labour of animation be exposed through production materials such as animation cels and backgrounds?** How is the nature of the production process expressed in the language and materials of animation?

### II. **Research Methods**

This research involves an innovative method which combines textual and archival work with an experimental studio-based research practice that aims to transform the understanding of ongoing labour issues in art and animation. It is a hybrid method that draws on both historical analysis of archives and contemporary making processes to form a material-discursive aesthetics practice. This work performs materialist investigations of used archival animation production materials, as well as historical analyses of the labour behind American animated films and television shows, using both written records and visual records.

This research aligns itself with what Owen Chapman and Kim Sawchuck describe as “*creation-as-research*,” a subset of “*research-creation*,” an approach that understands research through expansive categories, making space for “creative material and process-focused research-outcomes” (Chapman & Sawchuck 2). According to Chapman and Sawchuck, creation-as-research is a category that receives the least academic attention but is crucial to multidisciplinary critical making. Much of my work for this project is experimental, open to a multiplicity of outcomes, and requires processual flexibility. Each animation cel communicates in a distinct way and may be reconstituted in multiple forms. Further, utilizing an obsolete artistic practice allows immersion into an art form so that the process is as much an artwork as the final piece. The generative connection between research and creation is fundamental to this project.

### III. **Theoretical Framework**

This project’s theoretical framework is underpinned by new materialism, recognizing the agency of animation materials and their unique qualities, and investigating them situated within a historical perspective to open new meanings. As Petra Lang-Berndt describes, “To understand materials is to be able to tell their histories” (16). Materialist aesthetics are combined with a conceptual approach using theoretical and practical strategies of appropriation of cartoon imagery and the language of animation to generate new meanings. Our visual environment is shaped by animation through advertising and media; this work attempts to harness the vocabulary learned in this visual culture and recontextualize it, questioning authorship, originality, and notions of collective meaning. It touches on theoretical issues surrounding the authority of images, high versus low art, art and alienation, and the reproduction of the image.

This practice-led research is supplemented by theoretical and conceptual analysis drawing from the works of multiple philosophers, writers, and theorists. At the forefront are theorists Hannah Frank, whose text *Frame by Frame: A Materialist Aesthetics of Animated Cartoons* provides an academic foundation for examining each individual frame of an animated cartoon, and Esther Leslie, whose text *Hollywood Flatlands: Animation, Critical Theory and the Avant-Garde* contextualizes animated cartoons as an artistic medium within modernism and contemporary art history. As a foundation for understanding the historical underpinnings of the animation industry, the work of writers Kristin Hunt, Mindy Johnson, Kirsten Moana Thompson, and Tom Sito provide in-depth analysis of the development of animation since its inception in the late nineteenth century. Crucial to my research is the publication *How to Read Donald Duck*, a Chilean text written by Ariel Dorfman and Armand Mattelart in 1971 that offers a Marxist perspective on Disney and the CIA's role during the rise of Augusto Pinochet's dictatorial regime. My research frequently draws from the work of theorist and filmmaker Sergei Eisenstein, a pioneer in film theory as it relates to animation, labour, and class conflict. Similarly, the works of philosopher Walter Benjamin, specifically *The Work of Art in the Age of Mechanical Reproduction*, and his contemporary, playwright Bertolt Brecht, inform my engagement with the techniques and conceptual approaches to the aesthetics of dialectical materialism. Additional research is drawn from various archives, including the Women in Animation Oral Histories, the Warner Bros. Archive at USC Cinematic Arts, and the UCLA Film and Television Archive, as well as informal interviews I conducted with animation professionals over a period of several years.

#### IV. **Scope**

This thesis focuses on the American animation industry during the 20th century, specifically on Walt Disney, as he played such a prominent role in the formation and proliferation of globalized

animation: “He is, arguably, the century’s most important figure in bourgeois popular culture” (Dorfman & Mattelart 11). Hanna-Barbera Studios and its offshoot, Cuckoo’s Nest-Wang Productions, feature in this work as well, as prominent examples of the outsourcing of animation labour. The development of Cuckoo’s Nest-Wang Productions is a crucial case which can be used to understand the transition through which “unskilled labour” was transferred to Taiwan, China, Thailand, and other developing nations through the process of a globalized animation production line. This can be understood as a facet of media imperialism, “the process whereby the ownership, structure, development, production, distribution, or content of the media in any country are simply or together subject to substantial external pressures from the media interests of another country” (Boyd-Barrett 117). Concerns of labour exploitation exist in a global context and must be understood through the lens of globalization and liberalization. Many of the animation cels examined during this research were produced by anonymous artists in Asia, for cartoons such as *The Smurfs*, *My Little Pony*, *Ghostbusters*, *Sonic the Hedgehog*, and other children’s television shows produced between 1975 and 1999.

## **V. Personal Connection to Research**

I became involved in the study of animation labour and its gendered nature in 2016 living in Los Angeles, California: the birthplace of Walt Disney Studio, Hanna-Barbera, Warner Bros., and many other historic animation studios. At that time, I became aware of Walt Disney Studios’ policy to bar women from creative positions and so I began to seek out women who had worked at the studio, with the intention of learning about their experiences. The process was difficult (due in part to the lack of on-screen credit awarded to women in the ink and paint department) but I was able to locate and interview several key animation workers, some of whom had inked and painted as early as 1949. These informal interviews were conducted via phone call, video chat, and filmed in-person interviews. I was able to

interview several influential figures in animation, ranging from Joanna Romersa, an Ink and Paint worker who began her career working on *Sleeping Beauty* at Walt Disney Studios in 1959, to Oscar-winning director Brenda Chapman, who began as an 'inbetweener'<sup>1</sup> for *Who Framed Roger Rabbit*. The impact of their stories floored me. They described long hours of monotonous and soul-crushing work, sexual harassment, noxious fumes, and an image of Walt Disney that conflicted with the Uncle Walt figure that I had been raised with.

*"Disney was a sick guy, he really was. He was sick."*

-Barbara Baldwin, Ink and Paint artist at Walt Disney Studios, WIA Oral History

These animation workers offered incredible insight into the working conditions of animation studios as well as the inner workings of labour organizing in animation, particularly within Walt Disney Studios. Pat Connolly-Sito, an ink and paint artist and animation checker, would offer stories about the various animation jobs available to women into the 1990's; Lorna Cook, animator and director of the film *Spirit: Stallion of the Cimarron* provided insight into animation education available for women in the 1980's and highlighted the importance of their role in pre-production drawings and concept work. It was through Joanna Romersa's advice that I was able to develop my earliest experiments with cel painting: Joanna coached me via phone calls, encouraging me to practice circles and "airplane swoops" to get the most perfect, delicate, tapered lines. Her influence led me to discover The Cartoon Color Company, the United States' last industrial animation supply company, which was by 2016 barely operating, supported mainly by animation hobbyists. These interviews would form the basis of my research on women's

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<sup>1</sup> An 'inbetweener' refers to the artist responsible for drawing the intermediate frames between an animations' 'keyframes' in order to give the illusion of movement through smooth transitions

contributions to animation and would inspire me to devote the next several years of my work to this pursuit<sup>2</sup>.

## VI. **Relevance**

Acting as a dialectic between art and labour, this research seeks to contribute to the study of industrialized creativity and explore how the fragmentation of a worker's mind and body lies therein. This dynamic of exploitative labour as it appears in the animation industry has not been fully explored, particularly through a feminist lens. While some theoretical attention has been paid to the labour practices present in the early American animation industry, and some attention has been paid to women's presence within it, there is a dearth of critical analyses linking them and connecting them to broader sociopolitical and artistic implications. The ink and paint department was the largest group of workers in an animation studio, yet they are often overlooked in contemporary analysis of labour and animation. As Allan Sekula describes, "the archive has to be read from below, from a position of solidarity with those displaced, deformed, silenced, or made invisible by the machineries of profit and progress." (Sekula 64). Examining the animation cel as a document of labour exposes the underlying social structures that the visual motifs within animation make manifest.

The societal impact of animated works, specifically those produced by Walt Disney studios from its inception to the early 1990's, cannot be overstated: they have had lasting, global psychosocial effects. Despite this, they are often dismissed as trivial entertainment or "low art" (Leslie 118). For

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<sup>2</sup> These interviews, while influential to my artistic practice and my research, were conducted informally prior to the undertaking of this thesis and as such, their content is not reproduced here to due Research Ethics Board constraints.



decades, these animated works dictated childhood culture, worked to strategically implant social and political ideologies, and have had long-lasting psychological ramifications upon young viewers (Uppal 49). Walt Disney Studio has maintained widespread global influence, its products salient in the lives of millions of people across the world. The ideological power that Walt Disney has sustained in conjunction with its historical use as a propaganda tool<sup>3</sup> merits close academic scrutiny. Given its far-reaching global influence and the ways it has historically portrayed dynamics of race and gender, it is important to examine these animated narratives and their intersection with their creators and viewers to sketch a holistic picture of its sociopolitical impact. Most analyses of the animation industry and its effects have lacked critical attention to the global psychosocial and political effects the cartoons have elicited *combined* with the labour that produced them. Ample attention in scholarly approaches to animation theory have focused on the “demand-side” of cartoons, such as the aesthetic, cultural, political, or historical (Shiau 3). Little attention has been paid to the “supply-side” of animation, such as the production process, especially in a global context.

*“To locate Disney correctly in the capitalist system would require a detailed analysis of the working conditions at Disney Productions and Walt Disney World. Such a study (which would, necessarily, break through the wall of secrecy behind which Disney operates), does not yet exist, but we may begin to piece together such information as may be gleaned about the circumstances in which the comics were created, and the people who created them; their relationship to their work, and to Disney.”*

(Dorfman & Mattelart 14)

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<sup>3</sup> Evidenced in its use by the United States military during the second world war and the CIA during the 1970's rise of Augusto Pinochet in Chile

Additionally, these animated works have had their own personal impact upon my childhood and my psyche: as a child I adored animation, worshipped such films as *Beauty and the Beast* and *Cinderella*, and was a devoted viewer of cartoons such as *the Care Bears* and *My Little Pony*. I was keenly aware of labour-based inconsistencies in animation, and tracked them with interest: recycled animation, colour mistakes, anything that betrayed the hand of the maker struck me. Their narratives, frequently reproducing hegemonic power structures and values present in ‘the real world,’ unfortunately helped to form my developing world view. As a woman who was weaned on animation as a child, an examination of its historical processes may help to illuminate the latent ways that I absorbed its tacit ideological messages.

## Section Two: A Material History

### I. Cel Vinyl Paint

By the early 1930's Walt Disney began to recognize the limits of black and white animation and turned his sights towards colour technologies. At the time, Technicolor's two-colour process allowed for green and red tones, but Walt envisioned a full spectrum of color. He was an early adopter of Technicolor's brand new three-strip colour process which would allow for a full range of colour, but distributors initially balked at the idea, conceiving audiences as satisfied with black, white, and gray forms. In addition to the prohibitive expenses of the Technicolor three-strip process, most studios found that their black-and-white cartoons were selling without these added expenditures, and Herbert and Natalie Kalmus, the developers of Technicolor, struggled to convince producers to adopt their technologies: as Walt recalled, "There were plenty of our associates – including sales and financial – who thought I was crazy. Cartoons sold well in black-and-white, they argued. Why change?" (Johnson 72). Disney's first colour animation *Flowers and Trees* was released in 1932 to much acclaim and would become Walt Disney Studios' first Oscar-winning animation<sup>4</sup>. Audiences were stunned and demanded more, but current technical processes at the studio prevented colour adoption on a mass scale. The industry standard paint at the time was Grumbacher, a German-made paint which had several limitations including adherence, dry time, shelf life, and availability. A need for opaque paints with a wide range of pre-blended colours emerged. In 1934, Edgar Wilkerson started the Catalina Color Company (later known as the Cartoon Color Company), filling a gap in the burgeoning Technicolor animation market (Johnson 77). His brightly coloured tempera paint had better adherence, came in a

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<sup>4</sup> As a part of their deal, Technicolour would allow Walt Disney Studios a two-year period of exclusive use of their technologies, further inhibiting its use by other animation studios (Johnson 74).

wide range of hues, and could be mixed to a range of up to 20 different shades to compensate for the layered cels and the muting effect they gave. By 1935, over 150 assorted colours were being utilized at Walt Disney Studio, but the paint formulas needed improvement. In response to the rising costs of fixing paint issues, Color Model Department Supervisor Mary Weiser began to develop her own chemical formulas, which would be produced in-house at Walt Disney Studio by an all-woman team of chemists. After extensive experimentation, Weiser arrived at an effective formula ideal for celluloid application, and she would later obtain two key patents for colour dimensionality techniques (Johnson 105). Cel vinyl paint would become industry standard and over the next 60 years would form the material basis of nearly every animated work to cross the screen.

Cel vinyl paint is highly viscous with incredible flow, yet dazzlingly pigmented and opaque. This is rare for a paint: cel vinyl's chemical rheological qualities allow for a strong opacity-viscosity balance, while most water-based paints suffer in opacity as they increase in flow (Beeching 2). It is a pleasure to paint with, if at times frustrating: it is smooth, delicate, and unforgiving of errors. The acetate itself is similarly delicate. Gloves must be worn when handling lest one incur oily smudges and a defaced surface, and small inking mistakes render the entire page useless. The technique of inking the front while painting the reverse results in beautiful, dense swatches of bright colour. The light shining through the cel, casting a shadow of the painted form, and reflecting off it lends to a dynamic, airy quality.

## **II. Plastic Innovation**

*"I love Los Angeles. I love Hollywood. They're beautiful. Everybody's plastic, but I love plastic. I want to be plastic." -Andy Warhol*



*Figure 3: Still from "This Is Dupont", 1980, Dupont Public Affairs Department, 16:28:00, Hagley Library Archives*

The beginning of the 20th century saw huge innovations in chemical engineering that resulted in the rapid advancement of the plastics industry. This advancement in plastics would have a profound effect on the physical world, from military operations to home and domestic life, to fine art and entertainment. Dozens of industrial polymers were synthesized for a wide range of uses, but necessary for the animation industry was a material that possessed specific qualities to ensure on-screen legibility and processual ease: transparency, flexibility, and colourlessness. The earliest plastic material used for animation cels was cellulose nitrate, plasticized with camphor and triphenyl phosphate to reduce flammability (Johnson 26). The material was manufactured under the name Pyralin by E.I du Pont de Nemours and Company, commonly referred to as DuPont, now the world's largest chemical company (Thompson 120). While cellulose nitrate fits the qualities necessary for cel animation, its instability, flammability, tendency to yellow with age, and generation of hazardous gases proved unsuitable for long term industrial use. It was gradually replaced by the safer and more chemically stable cellulose acetate, plasticized by a variety of phthalates, which unfortunately was also found to degrade over time through a process called hydrolysis; eventually, cellulose acetate was replaced by polyester, which did

not require plasticizers (McCormick and Schilling). Technological advancement had long been a cornerstone of animation, beginning with its inception of early stroboscopic illusions, to Canadian Raoul Barre's development of the peg system in 1913, to Max Fleischer's development of rotoscoping in 1917, to Lotte Reiniger's early development of the multiplane camera system. The drive towards material technological advancement was no different, and animation studios constantly pushed towards material innovation. This material innovation would turn towards colour in the early 1930's, with a preliminary two-colour Technicolor process used by Walter Lantz in the animated short *King of Jazz* (Johnson 71). A highly saturated paint with strong adherence was necessary for the cel animation process, but such pigments were unavailable in the current market. In addition to animation cel sheets, Dupont began to produce Monastral pigments that would be used in cel vinyl paint (Thompson 120), and provided the paint with its signature colour saturation, luminosity, and hue. In many ways, cel animation is the product of industrial modernity, its materials a direct result of increased advancements in chemical engineering that would similarly shape live-action cinema and fine art. Eisenstein refers lovingly to Disney's creations as *plastic visions*, "placed in a vise of the strictest plastic and temporal calculation" (Eisenstein 2), signaling his understanding of the discursive relationship between the dynamic animated forms and the materials that produced them. The link between plastics and animation is inextricable; but as technological advances progressed, by the 1990's computer generated animation began to replace hand-painted animation cels, and the material relationship between plastics and animation effectively ended.

### **III. A History of Animation Labour Inequity**

Largely staged with elaborate sets and actors hired to play the part of staff members, *The Reluctant Dragon* was created in part as a response to the 1941 strike at Walt Disney Studios and the resulting bad

press the studio was receiving because of it. Strikes in the animation industry had rolled across the country with the goal of creating organized labour unions, beginning with Fleischer Studios in 1937 and followed soon after by Leon Schlesinger Productions (later known as Warner Bros.) (Sito 91). As the popularity of animated cartoons grew, so did management's demands of their workers. Studios typically operated under a 6-day, 54-hour workweek; there were no sick days, and many had their pay cut during the Depression, only to receive the same wages in later years as the studios recovered economically and turned a profit (Sito 86). Dangerous conditions put workers proximal to noxious chemicals that would lead to severe health issues; one inbetweenner at Fleischer, Dan Glass, was said to have died due in part to his badly ventilated and cramped workspace (Sito 84). Weekly animation quotas, which were already grueling and differed across the various studios<sup>5</sup>, continued to steadily increase. At Fleischer, the booming popularity of their new *Popeye* cartoons led management to double their footage quota to keep up. Workers refused, and this event would lead to the industry's first strikes, culminating in the demise of Fleischer Studio.

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<sup>5</sup> Animation quotas are often measured in feet, indicating the amount of expected finished drawings in 35 mm film. By 1940, Disney demanded 5 feet per week (approximately 40 drawings), Warner Bros. demanded 23 feet per week (approximately 276 drawings), MGM demanded 25 feet per week and Iwerks demanded 30 feet. Due to their high production standards, Disney had a lower animation quota because their animators were required to complete pencil tests on all of their work, an extremely time consuming process that other studios often skipped. (Sito 17)



Figure 4: Disney artists strike outside their California studio in 1941 (Los Angeles Times)

However, no animation strike was as impactful as the Great Disney Cartoonists Strike of 1941: what erupted was a clash that would shape the animation industry for decades to come and would severely impact hundreds of careers (Sito 101). *The Reluctant Dragon* was meant to portray Walt Disney Studios as an animation workplace utopia with abundant facilities and smiling staff engaged in enthralling practices that pushed the boundaries of science and creativity. Walt Disney himself is shown convivially sitting in the projection room among his workers: just one of the boys. Offscreen, Walt Disney was deep into the chaotic 1941 strike with over 200 members of his staff actively picketing against him outside his studio, responding to unfair treatment, abusive conditions, long working hours, low wages, and a lack of meaningful credit for their work.



*"If there's going to be awards, I'm going to get them"*

-Walt Disney (Gabler 355)

Walt Disney was known for hoarding the lion's share of the on-screen credit. Lack of meaningful credit generated deep resentment among his staff which would develop into outright hostility. While hundreds of artists contributed to a film, very few names ever appeared on-screen to acknowledge their contributions, and no name was as prominent as the large 'Walt Disney' signature flourish to appear at the beginning of all films. The collaborative effort, for which these artists had trained, worked overtime, and created new and exciting techniques were all reduced to the authorship of one man. As described by historian Neal Gabler: "For all his talk of collaboration, Walt was an autocrat whose word was the only word." (Gabler 396). He was known for his volatile nature, and fired any staff who dared question him, including his own sister-in-law, Hazel Sewell. Sewell was instrumental in building Walt Disney Studios since its inception: she had 'blackened' for Disney since his earliest animations in 1927, and was single handedly responsible for research and development, training, hiring, and managing the Ink and Paint department over the course of 11 years. In 1938, after contributing huge cost-saving measures to the ink and paint process and devoting thousands of hours of overtime to the studio, she suffered a nervous breakdown due to being overworked during the production of *Snow White*; Walt Disney docked her pay, and she left the company (Gabler 353). Disney saw his employees in terms of how they could be used to satisfy his vision and would eliminate those who outlived their usefulness - even his own family. His temper was well known within the company - as Ward Kimball said, "you learned early on never to argue with him or cross him" (Gabler 355). A storyman was fired for announcing that it was noon and time for lunch; Pinto Colvig, who voiced Goofy and two of the seven dwarfs, brought up concerns regarding low pay and was publicly dismissed (Gabler 353). People learned not to voice creative

suggestions, lest they be publicly humiliated and lose their job. Resentment for poor treatment, wage disparities, and lack of meaningful credit grew.

By the early 1940's, famed labour organizer Herbert K. Sorrel had taken it upon himself to sign all major animation studios to the newly created Screen Cartoonists Guild, and eventually turned his sights on Disney (Sito 117). Disney staff approached Disney with an idea to avoid signing with the SCG by creating an in-house union - a compromise that would protect the studio from outside organizing and boost morale among the workers. Disney refused to negotiate, and his workers walked off the job. Picketing lasted for months, with other animation unions refusing to work in solidarity with the striking Disney animators. While he was primarily responsible for the strike due to his prioritization of profits over the concerns and wellbeing of his workers, Walt Disney was personally incensed by their organizing and publicly blamed communist infiltration. He would move on to inform on his ex-workers at the infamous House Un-American Committee and made it his personal mission to blacklist them from the industry. This was not unique to Walt Disney Studios; Van Beuren Studios and Max Fleischer reacted similarly, firing and blacklisting workers who made attempts to organize. Many workers were greatly impacted, ending up in financial ruin with severely damaged job prospects; some, notably Frank Churchill, the composer of "Who's Afraid of the Big Bad Wolf?", committed suicide (Sito 30).

Disney, who portrayed himself as a genius artist and benevolent father figure, was a ruthless businessman who could not even draw his own famous signature, let alone the complicated drawings and paintings that would form 'his' masterpieces. His star, the iconic mouse, was created by animator Ub Iwerks (who left the studio in 1930 after clashing with Walt over inadequate pay and lack of credit for his work), and it was a persistent inside joke among staff that while he tried, Walt Disney could not draw any of their characters. But the worship of his fanbase is enduring and faithful, with even Sergei

Eisenstein, who toured Walt Disney's first small studio on Hyperion Avenue in 1930, declaring him a master who is "simply beyond good and evil" (Eisenstein 9). The world of Disney now is not the world of Disney nearly a century ago. The myth of the great artist endures, and Walt's efforts have culminated in a widely beloved multinational corporation with annual revenue of almost 70 billion dollars (Guttman). Over his lifetime he became, arguably, the most important figure in popular culture; in doing so he developed a global corporate empire that produced a myriad of works that have had deep, lasting, and harmful sociopolitical ramifications. His empire was built on a foundation of labour exploitation that continues today. Current Walt Disney staff across the globe face unfair labour practices, while similar labour inequities persist across the entire contemporary animation industry. This historical background gives a crucial foundation of understanding and context to the dynamics of labour and power that are present within animation and its materials.

#### **IV. *The industrialization of animation and its consequences have been a disaster for artists***

Labour exploitation is fundamental to animation. From its inception, the standardized method of animation was hierarchical. Drawing from the Taylorist model of scientific management theory, the earliest patents for the "cel" technique of animation developed by John Randolph Bray and Earl Hurd describes "a division of labor between the animator and his helper," whereby "the artist" uses "an unskilled assistant" to perform the task of tracing and painting (Bray & Hurd 1). This method industrialized the art form of animation, paved the way for massive labour inequity and exploitation, and helped define animation's hierarchy of creative authority. This standardized method of animation would also result in the rapid development of the animation industry on a massive scale, reinventing cinema as we know it. The delineation between "skilled" and "unskilled" labour was foundational to the exploitation of animation workers, contributing to organized union-busting efforts, leading directly to

the segregation of animation studios by gender, and used to justify the outsourcing of work to developing nations.

## **V. Animation Cels: A Definition**

An animated film is made up of thousands of cels; At 24 frames per second, this amounts to more than half a million cels in a feature length film. The cel begins as a drawing. An animator draws two key frames, and an inbetweeners draws all the motion between those two frames. The drawings are then cleaned up and sent to be inked. After the image is painstakingly hand-inked on the front of the cel, it is painted in on the reverse of the cel. Each cel has an accompanying set of instructions with exact colour guidelines, as well as rigid expectations for the amount of time it should take to paint. The cel is then photographed in sequence on a painted background. At this point the cel has been touched by dozens of people, and after it has been recorded, it is discarded. Labour is present within the very materials that comprise an animated film: it is seen in the tiny ghosts of smudges and partial fingerprints on celluloid, in the tiny mistakes in line and colour, in a single stray eyelash photographed against a background. It betrays the mechanical approach that seeks to make each line robotic and the seamless illusion it hopes to build, exposing the *human*.



*Figure 5: Ink and Paint workers at Walt Disney's Hyperion Studio (A Film LA)*

The ink and paint stage of production is one of the most crucial to the final product, and paradoxically the most underappreciated: by the definition outlined in Bray and Hurd's patent, this labour was designated 'unskilled'<sup>6</sup>. But the reality is that it was anything but, and ink and paint workers would bristle at this designation. The work was painstaking and required immense skill, precision, patience, and dedication. Like much work that was considered clerical or unskilled during the early 20th century, the Ink and Paint Department was gendered, with women at Walt Disney Studios barred by company policy from working in other creative areas of the studio. The Ink and Paint staff received by far the lowest wages and worked the longest hours: in 1941 it was \$12/week on average for painters, as opposed to \$300/week for animators, and \$500/week for a top animator (Sito 19). At Fleischer Studio,

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<sup>6</sup> In fact, the work that was later patented by Earl Hurd was in collaboration with his wife, Margaret: the original 'unskilled assistant' (Johnson 25)

Lillian Friedman was promoted to the first woman animator and was given \$40/week, in comparison to her male counterparts who received \$125/week (Sito 21). Their work was onerous: while weekly quotas for animators at Disney amounted to about 7 drawings a day, inkers were expected to generate 7 inked cels per hour (Johnson 115).

*"I don't know whether the Inkers get enough acclaim or not, but they are artists, all of them, and they have to be..."* – Ruthie Thompson, Walt Disney Studios Ink and Paint worker (Johnson 112)

There were stark disparities and inequities at every level. Ink and Paint departments, particularly at Disney, were subjected to strict dress codes and personal rules that dictated all aspects of their appearance, behavior, and movements; women at Disney were barred from 'fraternizing' with other departments and were not allowed in certain areas of the studio, notably the infamous 'Penthouse Club' (Johnson 91). Sexual harassment was common, with dozens of stories reported by former ink and paint workers ranging in severity. Many women led and participated in labour organizing: Van Beuren Studios inker Sadie Bodin was the first person in the animation industry fired for union activities, after encouraging her coworkers in the ladies' room to stand up to management together (Sito 73). Throughout the Golden Age of animation, few women managed to break through into "above the line" work, with exceptions like concept artist Mary Blair, and animators Retta Scott and Laverne Harding. Because of these gendered roles, from the early 1920's and lasting well into the 1980's, each frame of each animated work was hand inked and painted almost entirely by women.

Cels became a form of waste - initially, after photographing them, they were washed off and reused. After a production they were discarded, like so much cinematic flotsam. When studios went bankrupt, they incinerated hundreds of thousands of sketches, drawings, cels and backgrounds, with entire movie and television collections being lost. By the 1990's, production had moved to Asia and had

increased dramatically - studios were now able to produce many animated tv shows per year, with dozens of episodes each, resulting in hundreds of thousands of used production cels available for sale at auctions, where collectors are the only ones left who see value in them.

## **VI. Outsourcing Animation Labour**

As global labour and supply chains shifted in accordance with neoliberal geopolitical strategies, so did the labour within the animation industry. By the 1950's, animated television shows had begun to dominate the market and studios struggled to keep up with demand. Producing the large amount of animation required for television was difficult: instead of 25 feet per week, animators were now expected to churn out 80 to 100 feet per week. Hanna-Barbera, which specialized in television animation, began to work with cost-saving aesthetic shortcuts, such as minimalist backgrounds, stylized motion, and reused walk cycles. Limited animation techniques reduced the amount of necessary animation cels for a seven-minute cartoon from 14,000 to 2,000, but even these cost-saving measures were not enough for the studio. By the late 1960's, Hanna-Barbera was desperate for increased production, and began to subcontract animation work through a newly established studio called Cuckoo's Nest Productions in Taipei, Taiwan. It would grow to be the largest studio in Asia, employing hundreds of workers, and several other animation studios would sprout up around Asia in its wake. Ink and paint would make up the bulk of the work, and disparities in labour equity would worsen: staff worked even longer hours, were given far less pay, and received absolutely no credit for their contributions. American professionals were flown in for training purposes, reproducing neocolonial power imbalances: as one American animator stated, "I was sitting in India making double what I usually make, and I know the guy sitting next to me is making a bowl of rice for doing the same work" (Sito 258). These studios would replace the bulk of 'below-the-line' work for Hanna-Barbera and would be

responsible for the production of such popular shows as *the Smurfs*, *My Little Pony*, *Ghostbusters*, *Scooby-Doo*, and *the Pink Panther*, among dozens of others. At the time, the dominant animated media *consumed* in Taiwan was produced in Japan, while the media *produced* by Taiwan was consumed by a Western market; there was no internal system by which Taiwanese media was both produced and consumed in-country. The development of Cuckoo's Nest as a facet of a globalized animation production line is a crucial case in understanding Western cultural and media imperialism, the process in which the ownership, structure, distribution, or content of the media in a country are subject to external media pressures of another country (Shiau 117). This system followed the trends of deregulation, corporatization, and the adoption of Western free-market ideologies that would come to dominate global economies during the Reagan era. The material effect on cartoons was distinct: due to the high volume and fast pace of output expected by the ink and paint department combined with language and culture barriers to the interpretation of instructional charts, mistakes in colour and line were common. While these would typically go unnoticed when watching an animation at full speed, they are clear when analyzing the individual cels: many use incorrect colours in certain areas or are painted outside of the lines. These are the traces of labour that I relish: those that speak to the person who created it, that say, "I was here, I made this, and my mistakes will live in animated perpetuity."



## Section Three: Material Analysis

### I. The Non-Archival Material



*Figure 6: A damaged cel from "He-Man and the Masters of the Universe"*

In this paper I use the descriptor 'archival' in relationship to the animation cel as a document, to refer to its historical status, its value, and its usefulness as a research tool. But in the context of the animation cel as artwork, using unofficial definitions<sup>7</sup> evoked by museums, galleries, and art-supply companies surrounding the potential aging qualities of a material, they are extremely non-archival: prone to oxidation, acetate ages poorly, especially if exposed to heat or light. As animator Bill Justice stated, "Cels were only expected to last long enough to be photographed - they were not made to be

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<sup>7</sup> In a material context, the term archival traditionally refers to its potential to be used within an archive, and therefore remain in unchangingly good condition. The term is not standardized or quantifiable, with no set expectations for how long a material is expected to remain unchanged.

durable” (Johnson 110). As they age, they become warped, brittle, they pucker and, in many cases, develop a mottled, bubble-like surface. Early cels made of nitrate cellulose are highly reactive to moisture, shrinking and shriveling significantly in humid conditions (Combemale). In extreme cases of degradation, they let off noxious fumes such as pungent acetic acid; colloquially, this is known to conservationists as ‘vinegar syndrome’ (McCormick and Schilling). If they are not properly separated by a sheet of thin tissue paper they stick together, flaking the paint when you attempt to peel them apart. Many come with their accompanying production drawing stuck to the back, which rips into pieces when carefully removed. Areas of paint are missing; lines have been worn down to patchiness. They are covered in smudges and fingerprints, not just of their creators but of the many people who have handled them subsequently: collectors, enthusiasts, sellers, historians. They are difficult to care for, and difficult to preserve.



*Figure 7: A damaged cel from "Alice in Wonderland"*

As the chemical composition of cel vinyl paint changed slightly throughout the years, often in accordance with its pigmentation, cels from different animation eras reacted notably differently: for

example, the whites of Alice in Wonderland's dress have all cracked, while the other colours stayed vibrant (Combemale). The paint of the elephants in Dumbo flaked badly, related perhaps to the reduction of skilled staff during its production due to the strikes. While it's true that many are upwards of 80 years old, the material itself is delicate and unforgiving. It is a truly terrible medium to use within the framework of art collection; I am anxious of this often, worrying about the durability of my own cel-based works I have sold over the years, wondering if they are hung in direct sunlight, imagining their degradation over time. Their impermanence occupies my mind. How long should the artwork last? Will they remain unchanged for 5 years, 20 years, a lifetime? Is my concern related more to that of investment and decreased monetary significance? I give detailed care and storage instructions to collectors stressing the importance of light and heat, and I fret over each one.

## **II. The Morgue**

*"Many cels were simply thrown away once the picture was completed. None of us considered them works of art"* -Bill Justice, Animator (Johnson 110)

A key component of the degradation of animation cels has been the lack of attention, care, and value that they have been afforded until very recently. For decades, animation studios dismissed the production materials that comprised their final filmic works, relegating the thousands of concept sketches, drawings, cels, and background paintings to storage areas, basements, and even complete destruction. Walt Disney's nickname for their storage location was "The Morgue," a term he borrowed from the newspaper industry used to refer to the area where old articles and research files were kept (McCormick and Schilling). The Morgue at Disney Studios was located in an unprotected, disorganized back room; most production art was unceremoniously stored here, while other pieces were given away,

taken home by secretaries, or sold inexpensively out of bins at Disneyland Park (Sito 18). Some cel sheets were reused, with studios such as Fleischer, Schlesinger, and Van Beuren having washed the paint and ink from their cels as a cost efficiency process. In the 1950's, Warner Bros. dug up the tens of thousands of pieces of Looney Tunes and Merrie Melodies production art from storage and had the entire archive incinerated (Sito 218). Nevertheless, many cels from this era have remained intact; in the early 1990's Disney moved their collection of production art to the Animation Research Library, a climate-controlled, protected facility used for research purposes by Disney staff. Today, their collection holds over sixty-five million pieces of animation art, with over two hundred thousand animation cels ranging from 1920 to 1989 (McCormick and Schilling). An entire industry of animation art collectors has sprung up, with dedicated galleries and historians trading well-preserved and sometimes restored animation cels for thousands of dollars. And while these collectors, historians, and conservationists work to preserve some of the most valuable historic and iconic animation cels, thousands more exist in amateur collections, forgotten in storage boxes in attics, or for sale on platforms such as eBay that have little to no protection (or monetary value) at all.

### **III. eBay as an Archival Resource**

Over the years I have developed a strong relationship with eBay, the online auction platform founded in California in 1995, and have found it to be an incredibly rich source of primary research material. I have operated as both a seller and a buyer, learning and navigating the multi-billion-dollar companies marketplace culture. As of January 2022, eBay hosts 152 million active buyers, 19 million sellers, and over 1.5 billion active listings (eBay.com). It is the largest and oldest online auction site on the internet, generating billions of dollars in revenue. As a research tool for primary sources, I have found it to be unparalleled: there are thousands of rare, antique, incredibly useful artifacts at my

fingertips, hosted by independent sellers and collectors all over the world. Nearly all of my collection of animation archival materials has been found on eBay, from overflowing folders filled with exposure sheets and notes, to drawings, postcards, promotional material, old film strips, anything my material-loving heart has desired. There are items I didn't know existed, like antique film canisters and production binders of Disney design standards and concept art. Some items readily available shock me, like wooden Dupont dynamite boxes from the 1930's or South American Mickey Mouse comic books from the 1970's during their use as CIA propaganda tools. I scour the site regularly, with hundreds of new animation cels added daily. I sift through listings of items from old Japanese animated children's shows, of items from my own favorite television shows as a child, remembering some keyframes from decades ago. I pine for certain animation cels, attempting to rationalize spending \$500.00 for a cel depicting Otto from The Simpsons spray painting graffiti onto a wall. While many cels at online auction sites are highly priced, reaching tens of thousands of dollars, most animation materials on eBay are inexpensive. Still, I have spent over a thousand dollars in the last year on dozens of items that most consider to be nothing more than a curiosity, but I consider to be precious. I imagine a web of similarly fixated buyers and sellers, building a global, decentralized archive that resists the traditions and constraints of the institutional archive. The possibilities generated by the site fascinate me, and I believe it has far-reaching implications within a historiographic research methodology that remains largely untapped as a resource.

#### **IV. mater et anima**

I am not an animator. I am interested in animation as a collectivist creative practice, as a conceptual apparatus through which to explore the semiotics of imagery, and primarily, for its material qualities. Cel vinyl paint as a material is imbued with meaning, attached to the long history of gendered, feminized

labour. Interestingly, the etymological root of material is *mater* - Latin for mother. It usually denotes a substance that is subject to change, through processes of shaping and handling, or in reaction to the environment or external influences - it points towards sources of production. As described by Petra Lang-Berndt: “It is therefore a political decision to focus on the materials of art: it means to consider the processes of making and their associated power relations, to consider the workers - whether they are in factories, studios or public spaces, whether they are known or anonymous and their tools and spaces of production.” The materials are inseparable from their histories, their former use imbricated with their own politics and relations. Having been used and developed by a feminized labour force, they possess an inherent attachment to socio-political ecologies of power. They reflect the conditions that created them.



Figure 8: Cel vinyl paint

Within a Deleuzian context that conceives of matter-flow, these are materials in flux. They have a vibrant life, agency, and being discontinued, my last bottles are slowly rotting. They are in a constant state of becoming: rather than being fixed or dead, as most would conceive of them, they are alive... and becoming-dead. The paint is separating, hardening at the bottom of tubes, returning to its separate chemical components. A clear liquid forms at the top, necessitating rigorous mixing at every use. The cels themselves are oxidizing quietly. They are old - years old now, and have been dragged between multiple studios, between countries, independently changing the whole way.

The materials have their own language, one that I am attempting and struggling to learn and become fluent in. Unlike the women of ink and paint I have creative freedom, the ability to decide and make my own marks. The paint, more like a liquid plastic than traditional paint that I am used to, requires a technique referred to as “puddling” - moving large drops of it around within inked lines, rather than painting in strokes. I wear gloves to avoid defacing the cels with the oils of my hands and my fingerprints. It is a never-ending battle to prevent traces of my own labour, and I wipe and polish the clear, shining sheets constantly. Working with animation materials and replicating traditional techniques is an immersive process, almost like a performance. After 4 hours inking delicate lines and letters onto cels, my hand cramping and seizing up, I have an aching respect and wonderment for a worker who could spend 18 hours at a time inking. Eventually, my eyes start to strain, and I can no longer see my lines clearly. How could someone have possibly laboured over such minute details for so long? I become aware of the automatized movements of my arm and its separation from my brain, reminding me of the fragmentation of body and mind that were necessary in the mechanization of manual production and reproduction. Immersing myself in the process gives me a new understanding for the collectivist and industrialist nature of animation and its requirements - I long for an assistant, for standardization of colour and the ability to choose from thousands of pre-mixed shades.

## V. Relevant Art Works

The conceptual-materialist approach to animation in my work is somewhat unique, and because of this I've struggled to situate it alongside other modern or contemporary art practices. The artists who have been most influential on my work use the language of animation and employ strategies of appropriation. These artists' practices are wide ranging and differ across a variety of media.



Figure 9: Larry Johnson, *Untitled (Classically Tragic Story)*, 1991, colour photograph, 61 x 75 3/8"

Particularly influential has been Los Angeles-based conceptual artist Larry Johnson, who draws on vocabularies of animation, American popular culture, and advertising in his photographic works. Employing practical strategies utilized in commercial graphic design and establishing strong codified



relationships between the textual and visual, Johnson's work often uses motifs and styles commonly used in animation to form critiques about high versus low art, the role of the viewer in cinema, and the nature of Hollywood archetypes. I was lucky to form a relationship with Johnson over the last years; what a relief it was to meet someone else who *cared*: who had mined the archives of Disney in pursuit of queer symbolism, who had an understanding and appreciation of the various animation strikes and their effects, who didn't dismiss animation as trivial or inconsequential. The codification of semiotic imagery through text-visual relationships has been an inspiration for the conceptual approach to my making process.

Similarly influential to the focus on materialist processes in my work were contemporaries of Johnson's, filmmaker and artist Morgan Fisher and conceptual artist Jack Goldstein, who both employ minimalist strategies combined with the use of filmic language to critique what Mary Coyne describes as "the Hollywood industrial apparatus" of the early 1970's. Fisher uses a materialist approach to experimental filmmaking that explores the processes of celluloid film and traditional methodologies of producing moving images. His close analysis of film materials and his interest in gathering them mirrors my own fascination with production materials.

"When I was working around 35mm film I collected bits of it. I couldn't help it. I didn't know what to do with them until it occurred to me to make a film that showed them while I talk about them. Standard Gauge is a film of fragments: what you see are fragments and the narration is fragments of an autobiography and fragments of film history and technology. But the film presents these fragments in one continuous shot."

-Morgan Fisher (Coyne)



*Figure 10: Still from Morgan Fisher's Standard Gauge, 1984, Film, 16mm, colour, optical sound, 35 minutes*

Fisher often employs used production materials in his work, such as scripts, instructional manuals for film equipment, call-sheets, discarded fragments of film, and other ephemera that brings to the forefront the intrinsic properties of film, its material limits, and the invisible labour present within cinema. He expertly pulls back the curtain of the Hollywood façade to reveal the nature of film production. I've found his work to be extremely relevant to my practice in its value placed on the material nature of film and the extended relationship to labour that arises from it. I have been similarly inspired by Jack Goldstein, who has worked across many media, including sculpture, performance, painting, and film. Known as one of *The Pictures* artists, his work employs appropriative strategies that use fragments of popular media to question documentation, image/viewer relationships and the ways in which images are circulated in mass culture. His film works often involve Hollywood techniques including hired actors, stunt men and visual effects, exploring the ways in which the viewer experiences and interprets cinematic imagery. His interest in the psychological influence that cinema holds dovetails with my own.

## Section Four: Body of Work



*Figure 11: The process of cel painting as viewed from below*

I began my research into the materiality of animation labour in 2016 with a project entitled “No Damsel”, in which I altered Walt Disney’s gendered iconography in transgressive ways utilizing hand-painted animation cels. Through this research, I connected with women who had worked in ink and paint departments, and they instructed me in the delicate art of cel painting. The materials are not easy to acquire; after the Cartoon Color Company shut down, I was left with less than 50 small bottles of cel vinyl paint, of which many are now useless due to separation and hardening. In the past years I have not found a suitable replacement that mimics cel vinyl’s adherence to acetate, let alone its opacity and viscosity. For inking I use the same Gillott 290 nibs and Koh-I-Noor pens with Rapidograph India ink that became industry standard. My cel sheets come with their peg holes pre-punched from Lightfoot Ltd, a small animation supply company run by one Mr. Lightfoot, who will not tell me his first name but will tell me that he pioneered high school animation classes across the US in the 1990’s. I cut the thumb and

index finger out of my protective dust gloves, a trick I learned from the women of ink and paint that allows the pen to be gripped and moved with ease while the hand rests on the cel's surface, protected by the soft cotton. I use the same sable brushes, immaculately kept to a point. My set-up is in every way authentic to the traditional process of industrialized animation used over the last century, with one exception: it's just me. There is no assembly-line, and no producer. Having dipped my toes into the process by animating just one hand-painted five second clip at 24 frames per second, amounting to 120 individual paintings, I immediately and intimately understood the implications of a collective approach to animation, rather than an individual one. It is really, *really* hard. Painting becomes a durational performance, in which you've been hunched over tiny images so long that your eyes start to blur, and you begin to vividly imagine the intensity of the work behind a full-length animated film.



*Figure 12: Untitled (Vinyl Experiment #1), canvas, cel vinyl paint on acrylic, 18 in x 24 in, 2021*

I began a series of experimentations using these same materials that would otherwise be methodically translated into illusory moving beings. For all the hyperregulation and precision of control present in industrialized animation, my process was deconstructed and randomized. Where an

animation at full-speed obscures its labour through the perception of its characters as *alive*, this process removed the cel from its context, and stopped them motion, extracting a fraction of a second and placing it under a microscope. The resultant experimental works touched on abstraction, and involved material exploration: how could these paints, inks, and cel sheets be freed from their constraints?

What were their unique material qualities, what lay within them? Some works, like “Flowers and Trees,” a multiplane painted on three 4-foot acrylic sheets depicting red and orange cartoon flames, focus primarily on the cel and its historic relationship; others, like “Dream Job (You Wish),” take these pre-existing animation cels and iconographic cartoon imagery and appropriate them into new works. By their palimpsestic nature, these works are in some way modular and may be rearranged and recombined to generate new meanings and outcomes.



Figure 13: *Flowers and Trees*, cel vinyl on acetate, 60 in x 48 in, 2022



*Figure 14: An Epiphany, cel vinyl on acetate, 10.5 in x 12.5 in, 2021*

In “An Epiphany,” two production cels are laid back-to-front, exposing the painted side of the cel that is not meant to be seen by the viewer. The work is formed from appropriated cels sourced from eBay that were used in a short-lived animated production called *Oz Kids*. The work depicts Joe as he sees himself, his true self, revealed for what he really is: some lines and paint on transparent plastic, rather than an animated figure. Drawing on Jungian concepts of the shadow self, Joe faces his mirror image that unveils to him the underlying machinations that form his being. As he becomes conscious of his various selves an enlightenment occurs, and we see the stupefaction on his face. In Brechtian tradition it uncovers the apparatus of animation, showing the audience the muddled paint forms that are behind



their most beloved characters; These muddled paint forms reveal the obfuscated labour involved in its creation.



Figure 15: *The Turin Pony*, 2022, cel vinyl on acetate, used production cel

In "The Turin Pony," used production cels are combined with my own painted text-based cels to form a layered collage. In saccharine text graphics, the words "God Is Dead and We Have Killed Him" are painted in the format of cartoon opening title cards; accompanying them is a production drawing of Bobby Hill from the television show *King of the Hill*, alongside a production cel from the children's show *My Little Pony*, in which two ponies smile and embrace each other. Did the ponies kill God? Have We killed God, and the ponies embrace in comfort? Are the ponies in some way related to God, mythological winged equine beings, motifs symbolizing purity and the immortal? The text, drawn from

one of Friedrich Nietzsche's most famous phrases first seen in *The Gay Science*, is decontextualized, and remade into an aesthetic, tongue-in-cheek idea - an abstraction. The text-image relationship plays off internet meme culture, reproducing a longstanding philosophical concept in an easily digestible, simplified way. The work recontextualizes the visuals of *My Little Pony*, a show that was born in the wake of the Reagan-era deregulation of advertising to children, created as a long-form narrative commercial to sell plastic pony figurines. As a predatory creative product, it was able to exist and thrive in the spiritual vacuum described by Nietzsche, one in which there is no morality and no guiding principles which would prevent its proliferation. The title refers to the horse in Turin that, upon witnessing its beating, was purportedly the final trigger of Nietzsche's severe mental decline.



Figure 16: Early iteration of "The Turin Pony", 2022





*Figure 17: It's not given to Man to understand all of Nature's mysteries, 2021, cel vinyl on acrylic, oil on canvas*

"It's not given to Man to understand all of Nature's mysteries" is a multiplane work comprised of three panels of painted clear acrylic with an oil-painted background. It depicts several falling cartoon lemmings, suspended in motion. This work is drawn from the pseudo-documentary *White Wilderness*, produced by Walt Disney Studios in 1958. Purportedly the first 'nature documentary,' *White Wilderness* is meant to be an overview of animals in the Alaskan ecosystem. Filmed primarily in Alberta, Canada, the film features several scenes of abject animal cruelty. In one of its most famous scenes, the film's narrator describes a fabulous natural phenomenon in which lemmings commit mass suicide by following each other off the edges of cliffs, dramatically stating, "A kind of compulsion seizes each tiny rodent and, carried along by an unreasoning hysteria, each falls into step for a march that will take them to a strange destiny... They've become victims of an obsession — a one-track thought: Move on! Move on!... This is the last chance to turn back... Yet over they go, casting themselves out bodily into space." This is a popularly repeated, yet untrue myth: Lemmings *do not* commit mass suicide or naturally behave in any way relating to it. The film depicts dozens of lemmings rushing off a cliff and tumbling down into the sea, hitting rocks, and sliding before plunging into the water, in what the film describes as a "migration ritual." In reality, the lemmings were filmed in a studio near Calgary, Alberta, before being taken to the Bow River and physically forced off the cliff's edge by stagehands standing just off-camera. The work takes this filmic event and translates it into cartoon visual language, portraying cute animals comedically tumbling against a blue sky with fluffy clouds. The lemmings are painted with cel vinyl, reproducing the material conditions which would contain the light-hearted world of visual culture of Disney that allowed *White Wilderness* to exist. The film's cruelty is held within Disney's material history. It depicts the concealed insidiousness of Disney, whose goals were to capitalize off colonial ideals about the 'rugged, untouched frontier.' Further, it reflects one of Sergei Eisenstein's key preoccupations with Disney's work: animism. For Eisenstein, the existence of these animated creatures represents the preconscious state of humanity's ancestors: "What Walt Disney does is connected with one of the deepest traits of

man's early psyche" (Eisenstein 128). Each anthropomorphized character and object doubles as itself and something else; in this instance, the lemmings act as themselves, and as a representation of a socio-political concept of humanity, in which groups of humans are understood to follow each other in nonsensical patterns.



Figure 18: *Dupont City, West Virginia!*, 2022, gouache on paper, cel vinyl on acetate

"Dupont City, West Virginia!" is a layered painting composed of a gouache painted background overlaid with an animation cel, depicting a sign erected in front of Dupont's Belle Plant in Dupont City, West Virginia. This work is a confluence of materiality and history: a sign marking the great chemical achievements of the Dupont Corporation, which include massive influence over global militarized conflict, the synthesis of materials that would result in the world's supply of plastic refuse, and

ultimately, the materials that would create all animated films. It is a painting formed from the very materials which the subject matter boasts of. The relationship between Dupont and the materiality of animation is inextricable, as is the relationship between Dupont and the military, and plastic and animation, and the military and plastic, and the military and animation; this work serves as a memorial of these complicated, intertwined histories.



*Figure 19: Still from A Paroxysm, 2022, 25:50*

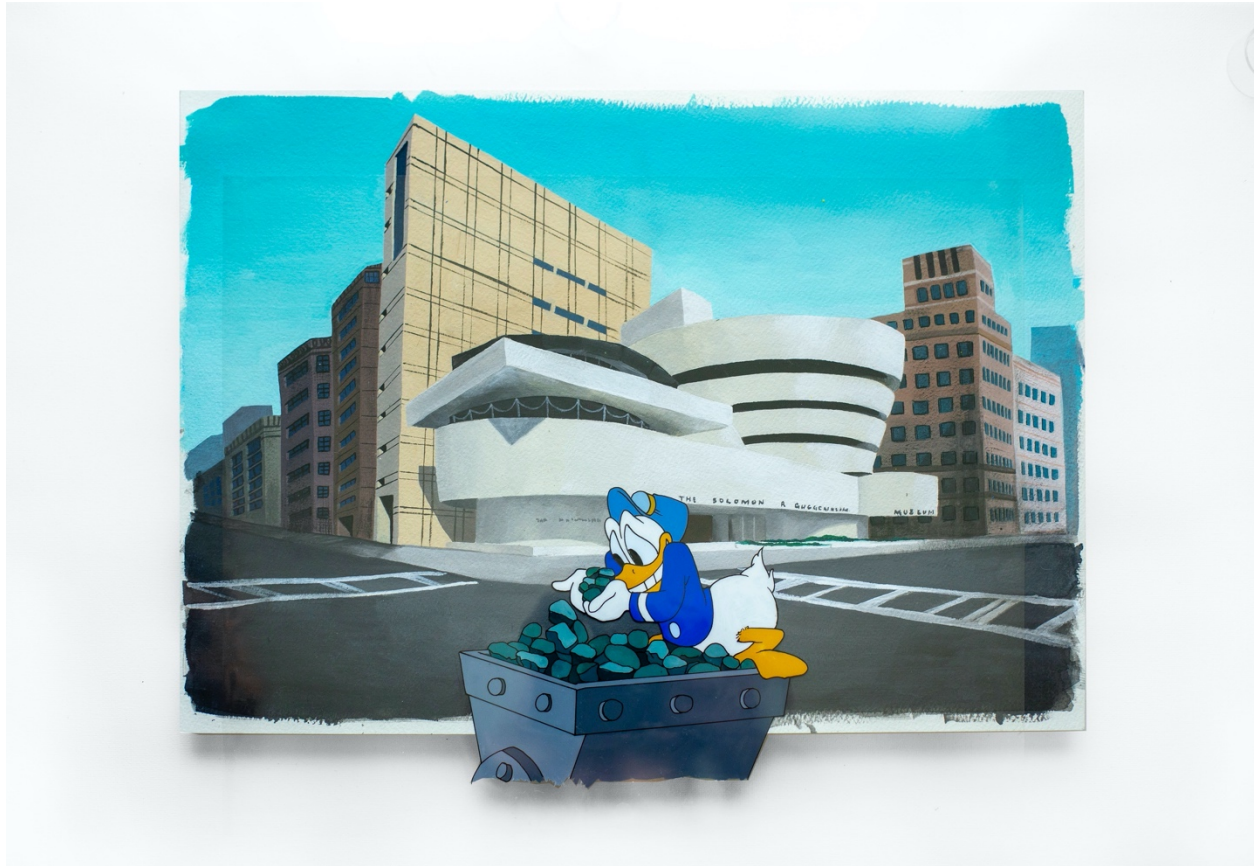
Acting as a site of aesthetic inquiry, “A Paroxysm” is a video work composed of hundreds of cartoon explosions gathered from dozens of various films, shorts, and television shows. Rather than viewing the explosions at full speed, the work is slowed down to 1/24<sup>th</sup> its normal speed, showing the



viewer just one frame per second. What results is a fantastical, abstracted array of colours and shapes that are disassociated from their contexts and reduced to their formal qualities. Encompassing the viewers field of view in a mesmerizing display, this work exemplifies what it means to carefully *look* at animation in order to expose their histories. Though each is taken from a different animated film, certain frames repeat, and the re-use of animation cycles becomes apparent. The repetitive lines are frequently and noticeably created through xerography, calling to Walter Benjamin's theories of technological reproducibility. In addition to its formal qualities, this work touches on the role of violence and the militarization of visual cartoon culture; Benjamin refers to it thusly: "The enormous number of grotesque events consumed in films today is a graphic indication of the dangers threatening mankind from the repressions implicit in civilization" (Benjamin 31). The bombs explode, and they explode again, ad infinitum, with the same perpetual futility as they are used in real-world geopolitical conflict. Interestingly, Disney is the largest consumer of fireworks in the world, and the second largest consumer of explosives in the United States, after the US Department of Defense.



*Figure 20: Exhibition view, "A Paroxysm", 2022*



*Figure 21: Exposing the Foundation of the Museum, 2022, cel vinyl on acetate, gouache on paper*

A similar material strategy utilizing a combination of a painted cel and background is used in “Exposing the Foundation of the Museum”. This work examines the complicated socio-economic histories that intertwine the Guggenheim family, Disney, and the 1973 military coup d’état of Chile. While it is discussed at length in the seminal text “How to Read Donald Duck”, which gives a much greater in-depth analysis than I can, this work draws on the history of Disney’s role as a CIA asset: during the 1970’s, Donald Duck and Mickey Mouse printed cartoon comics were exceptionally popular throughout South America. These periodicals were used to insert anti-socialist propaganda among the Chilean population, contributing in part to the political rise of dictator Augusto Pinochet. The CIA’s

interest in Chilean political affairs was in many ways financial, due to American investments in Chilean mining. The Guggenheim family, among others, grew their substantial wealth through the exploitation of Chilean nitrate mines; the museum would not exist in its current form without a foundation of substantial global labour exploitation. The work's title is in reference to the Chris Burden artwork, "Exposing the Foundation of the Museum", in which the artist dug up the floors of MOCA to literally expose the building's foundation. A companion work, "Mickey's Caravan of Fun", is a nod to the so-called Chilean Death Caravans, for which Pinochet would become notorious as a means of eliminating his enemies, prisoners of war, and innocent civilians.



*Figure 22: Mickey's Caravan of Fun, cel vinyl on acetate, gouache on paper*

The relationship between the layered cels and painted backgrounds fascinates me, and I consider meaning that may be hidden within these combinations. There are additional formal considerations, which Kristin Thompson describes in "Implications of the Cel Animation Technique" as such:

"This difference in the amount of work involved in the background and foreground tends to promote a split between the types of depth cues used in the separate layers... In practice, this visual difference between backgrounds and figures has led to a considerable mixing of whole perspective systems within single films"

For a painting practice, it introduces an exploration of the spatiality of the multi-plane: through the introduction of a third (flattened) dimension. There may be a conceptual realm to these planes - what can each plane of a painting mean or represent? Using production cels allows for a formal freedom that allows for generative creation: I can rearrange them, add to them; if I wish, I am able to completely remake an animated work by recombining its constitutive parts. The cels and the images they contain hold semiotic power, which may be altered and transformed as they are reconstituted. This practice is an exercise in formalized codification, one that becomes akin to a puzzle with unlimited configurations.



## Conclusion

When I last spoke with Tom Sito, he told me that famed animation historian Jerry Beck liked to say that an animation cel was like one heartbeat of a film. To hold an animation cel is to hold a film's heartbeat in your hands: a fragile fraction of a second, a memory of motion suspended in plastic.

The labour of animation is incredibly arduous, and I appreciate that a collectivist approach may be necessary to complete a work at the scale of a 90-minute film. I see the studio as an organism, one which does not necessitate a hierarchy of creative authority. I see the endless possibilities within these materials and processes for independent animators, that artists such as Lotte Reiniger, Mary Ellen Bute, Suzan Pitt, Grace-Nayoon Rhee, or Shiva Ahmadi have exemplified in their experimental and boundary-pushing works; Canada itself has been a champion of expanding horizons in animation, through the National Film Board. These materials may be freed from their limitations but may also be viewed in the context of their history. Some labour inequities may have been alleviated through the adoption of technological and computerized processes, others would supplant them: working conditions in the animation industry today face new issues that in many ways mirror the historic conditions discussed in this thesis, including unpaid overtime, gendered discrepancy in pay, and uncredited work.

Rather than forming a conclusion, this work invites further questions, the most important being: *What if?* As Hannah Frank asks, "What if we looked at each cel as a work of art in its own right?" What if the singular author of an animated film was eliminated, and the anonymous collective that created it was given full consideration? Would there be greater variety in visual culture, rather than the global visual homogeneity that exists in cartoons today? What would a studio free of creative hierarchy look

like? What if these animation materials were freed from their industrial constraints? These questions are meant to test the boundaries of animation and open the medium in an anarchic, expansive way. What are we able to see within an animation if we look deeper, past the intoxicating visuals and into its framework? As Walter Benjamin states in *Eduard Fuchs: Collector and Historian*, “such attention to anonymous artists and to objects that have preserved the traces of their hands” holds utopian potential (Benjamin 284). Looking is laborious – to detect animation’s anomalies, to view an animated film not in a totality but through each of its singular frames, is in itself work. And it is work that is necessary to understand an animated film completely: its context, histories, intentions, effects, and its secrets.

This body of work is a part of a larger exploration that will exceed the scope of this thesis and continue to grow in new and yet-unrealized ways; I am reminded of my very favorite animated work, Dr. Seuss’ *Horton Hears a Who* (directed by famed animator and union supporter Chuck Jones) which sweetly and tantalizingly ends with a simple question mark, a single cel with two white painted marks, no inked outline, against a solid fuchsia gouache background.

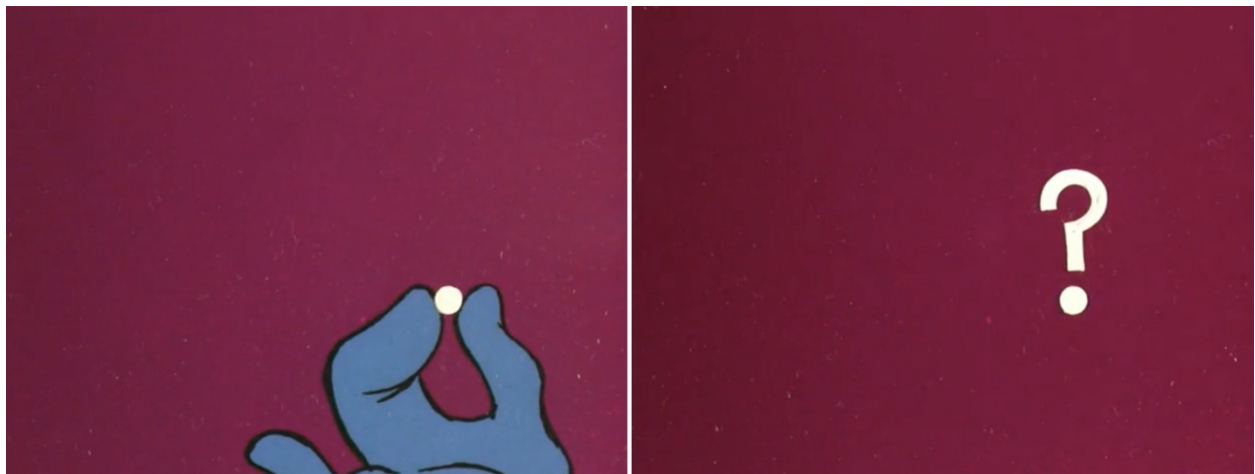


Figure 23: Two cels from *Horton Hears a Who*, 1970

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