The Impossible Qualities Of Illusionary Spaces: Stop Motion Animation, Visual Effects And Metalepsis

Jane Shadbolt

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

Sydney College of the Arts

The University of Sydney

2018

This volume is presented as a record of the work undertaken for the degree of Doctor of Philosophy at Sydney College of the Arts, University of Sydney.

This is to certify that to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any degree or other purposes.

I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

Table of Contents

Acknowledgements

This project would not have been possible without the support and enthusiasm of so many, I would like to thank the following for all their help, advice and good cheer throughout my candidature:

My friends, Wayne Mullen and Tim Pollard, as well as Trisha Pender for being great mates when I needed them most. My family for asking periodically when this might be finished without any expectation of an answer.

My colleagues in the Design department at the University of Newcastle, Mario Minichiello, Mark Roxburgh and Caelli Brooker who offered encouragement and support, as well as good humour. I am so very thankful to the technical officers, Stu McDonald and Luke O'Donnell who have been endlessly helpful regarding the many and various technical demands of this project.

Katherine Moline for sage advice over an unconscionably long period of time.

Dr Stefan Popescu at Sydney College of the Arts for being the cavalry.

Also thank you to David Whittaker who provided proof reading services for the final draft.

This thesis is dedicated to Rebecca Beirne and Felix Shadbolt-Beirne, the former for heroically reading it all the way through and the latter for never reading it at all. I could never have done any of this without either of you.

List of Illustrations

Abstract

This thesis examines stop motion animation, its role as a special effect and how the stop motion form impacts on narrative. In particular, it is concerned with the relationship between stop motion animation and the rhetorical concept of metalepsis, as well as the disruption and transgression of narrative spaces in fiction.

The studio component of the work is an installation titled *All The Nice Things Come From Here* which uses an early film special effects technique, the Schüfftan process. The Schüfftan process is a form of in-camera compositing that uses mirrors to align two separate spaces to form the illusion of one cohesive space. The installation uses Newcastle's light industrial landscape as a backdrop to create impossible miniature narrative spaces that can only be understood when the viewer is aligned to a station point forced by the placement of the mirrors.

The theoretical portion of the thesis examines how this exploded view of an animated special effect can be used to explore ideas of narrative, narrative layers and the visual forms of stop motion animation. The thesis argues that object stop motion animation has aspects that are inherently metaleptic, as stop motion's use of real objects doing impossible things creates its own subtle and impossible metaleptic spaces that simultaneously refer to both the world within the film and the world outside the film.

Foreword

This project came about through my work as a stop motion animator when I was making the twelve minute stop motion film *The Cartographer*.[1] I became very interested in the processes that were happening around the work I was creating for the screen, in part because making stop motion animation is slow, difficult and maddening, but somehow despite all of that, a magical undertaking. As an animator, there is nothing quite as exciting as seeing all the static images of static objects, their trajectory carefully plotted out in the abstract, as they are played for the first time, and seeing their sudden transformation into graceful movement. Making *The Cartographer* introduced me to the disconnect between what happens on the screen and the incredible amount of labour it takes to create that image in the studio, and how the effortlessness of the screen images belies the complexity of the images' production. I became more and more interested in how the structural elements that are an invisible, yet indivisible, part of the production of stop motion animation are realised on screen. The processes of production give stop motion animation a different visual feel to other forms of film as it has a jerky imprecision, a visual playfulness with scale and a self-reflexivity in the way it truncates and telescopes time through frames. I wanted to explore these ideas through a large installation rather than another film, to see exactly how the visual elements that combine to create stop motion all contribute to the powerful, dreamlike affect stop motion productions display in contrast to live-action cinema.

This thesis is a visual and theoretical response to the hidden aspects that construct stop motion animation. It is impossible to really explore these concepts by making a narrative film as that would simply demonstrate the embedded qualities of the medium without

[1] *The Cartographer,* directed by Jane Shadbolt (2011; Australia: AFC). Short Film.

providing the structure from which to isolate and examine them. I have elected, instead, to create a more abstracted representation of these cinematic ideas. The creative work, the installation *All The Nice Things Come From Here*, suggests a sliver of a story that creates an accompanying mood. More pressingly, I wanted to reduce and distil the visual concepts that it explores, that slippages between visual layers and interchanges inside the animated frame are essential elements of the animated form, and that in order to allow them to be seen they need to be unfettered from their relationship to the screen. I wanted the audience to be simultaneously inside and outside the frame, so as to viscerally experience some of the interchanges between the visual and temporal levels which I argue are crucial to understanding the visual language of stop motion animation. Therefore, *All The Nice Things Come From Here* is not an animation but an installation, one that creates a scaffold around animation and allows a vantage point from which it is possible to see all of the elements unmoored from their usual positions in order to develop a more nuanced understanding of how these facets are part of the much larger whole that forms stop motion animation.

Introduction

This thesis and creative work is an exploration of the visual language of stop motion animation and how that language overlaps and interacts with the visual language of film through the lens of metalepsis, a rhetorical concept from literature concerned with the transgression of narrative layers. The installation work, *All The Nice Things Come From Here*, creates an expanded, deconstructed, minimalist animated world. It uses mirrors, projections and reflections to create filmic layers as physical objects in order to encourage the audience to become, in turn, a camera, a cinematographer, an editor, a writer and a director by physically negotiating a mirror room microcosm of stop motion shots. It is a journey that allows the audience to bodily experience an exploded view of the processes that create animation as a cinematic form, and the installation gives a unique vantage point from which to understand animation as a filmic special effect. This project brings together both film-maker practice and theoretical research in order to examine the ways in which the structural and visual elements of animation production can contribute to the overall structures and narratives of the animated form. In combining the two elements, I am examining how the structural elements of stop motion animation create narrative meaning though layers, movement, time and space and how these visual elements act as metaleptic modes of production.

Metalepsis is a rhetorical concept that describes the transgression of the narrative spaces between the audience, the author and the text. I am proposing that these transgressions between the narrative layers can be applied not only to literature but also to the visual layers that form stop motion animation. The narratological concept of metalepsis has been used to examine films as texts, but has not been applied to the visual components that make up a film. This project argues that metaleptic effects can be created visually, and

that the distinct visual qualities of stop motion animation are made possible by the interaction of several types of visual and temporal layers. Stop motion animation is a visual form that contains deliberate authorial slippages between both the visual layers that form the images and the time and space of the filmed images. All of these elements combine to form a type of metalepsis, one where visual elements combine to construct different aspects of a narrative. I am particularly interested in how authorial intrusions into these visual layers make for constant narrative shifts and create self-referential fictional spaces. As well as its conceptual applications in more traditional literature, metalepsis can be applied to texts in any media, and it has been used to discuss animation (see Feyersinger on the diegetic hand of the animator)[2], film (see Pethö on the "artifice" between two layers of the real" in the vérité style film documentaries of Agnés Varda),[3] music (see Campora on the use of sound in *Eternal Sunshine of the Spotless Mind* (Gondry, 2004) as a device to navigate a multiform narrative)[4] and television (see Thoss on television remote controls as both a literal control and narrative trope).[5] Although there are excellent essays about animation narratives, and particular animated films and animation studios, there is very little about the visual aspects of metalepsis and how it relates to the visual components of storytelling.[6]

I am employing a particular focus on object stop motion animation as a discrete sub-form

[2] Erwin Feyersinger, "Diegetic Short Circuits: Metalepsis in Animation," *Animation* 5(3) (2010): 279.
[3] Ágnes Pethö, *Cinema and Intermediality: The Passion for the in-Between*, (Newcastle upon Tyne: Cambridge Scholars Publishing, 2011)
[4] Matthew Campora, "Art Cinema and New Hollywood: Multiform Narrative and Sonic Metalepsis in Eternal Sunshine of the Spotless Mind," *New Review of Film & Television Studies* 7 (2) (2009): 119.
[5] Jeff Thoss, ""Some Weird Kind of Video Feedback Time Warp Zapping Thing": Television, Remote Controls and Metalepsis.," in *Metalepsis in Popular Culture*, ed. Karin Kukkonen and Sonja Klimek De Gruyter, 2011)
[6] See Jean-Marc Limoges, "Metalepsis in the Cartoons of Tex Avery: Expanding the Boundaries of Transgression," in *Metalepsis in Popular Culture*, ed. Karin Kukkonen and Sonja Klimek De Gruyter, 2011) or Jan Siebert, "Self-Reference in Animated Films," in *Self-Reference in the Media*, ed. Winifried Nöth and Nina Bishara (Berlin: Walter de Gruyter, 2007)

style within animation because, more than almost any other animated form, it has a strong metaleptic relationship embedded in its production processes through its use of real world artefacts. Stop motion animation, with its stuttering movements and peculiar scales, has a visual quality that makes it distinct from other forms of both animation and film-making, and I argue that viewing the relationship between the layers as a form of visual metalepsis is key to unpacking why it has such a distinct visual affect that is often referred to as uncanny or unsettling. Stop motion animation's depiction of real objects doing impossible things creates a subtle and impossible metaleptic space, one that simultaneously refers to both the world within the film and the world outside the film, and that this tension forms a central part of stop motion animation's visual strengths of oddness, peculiar affects and its relationship to the uncanny.

The primary concern of *All The Nice Things Come From Here* is an engagement with the embedded visual structures that form the animated cinematic language, and how those structures contribute to meaning by exploring particular aspects of the production of stop motion animation. As a form, stop motion animation has a peculiar, dream-like visual quality that celebrates the uncanny and the fantastic, and it has its own distinct vision created by the nature of frame by frame shooting and the other-worldly nature of the miniature. This thesis offers new ways to view and understand how the visual structures of animated film-making influence the meanings and effects in stop motion animation.

Stop motion animation as animation. Animation as film.

This project is a visual and intellectual response to specific aspects of stop motion animation production. As a film-maker, I could see a disconnect between analysing animation as a viewer and the processes of creating it as a film-maker. The field of animation studies still wrestles with definitions around animation, and whilst Lev

Manovich and Alan Cholodenko famously contended that all film is animation, Manovich proposed a kind of competition between the two forms, "Born from animation, cinema pushed animation to its boundary, only to become one particular case of animation in the end.", and Cholodenko an even more radical statement in the introduction to *The Illusion of Life: Essays on Animation*, that all film is in essence animation.[7] This thesis accepts these polemical arguments as simply a starting point from which to start mapping the vast and unruly area of animation practices and their relationships with animation theory. Academic journals such as *Animation: Practise, Process and Production* are starting to fold practitioners into Animation Studies (theory informing practice). This project proposes to explore how practices can inform theory by reflecting directly on the visual issues proposed by animation's structural elements of layers, motion, space and objects, and how they combine with ideas of narrative by specifically engaging with stop motion, both theoretically and practically, as a visual effect.[8] In *All The Nice Things Come From Here*, this idea is articulated through a recreation of the Schüfftan process, a trick with mirrors popular as an early cinema effect, as the central metaphor. Despite its use in such film classics as *Metropolis* (Fritz Lang, 1927) and *Blackmail* (Hitchcock, 1929), the Schüfftan process is under-researched and under-described in the contemporary literature, and there are not any published accounts of how to replicate the process. It remains a clever and elegant solution to combining two images in the same frame. However, beyond the interest in using modern digital technology to recreate analogue film techniques for contemporary repurposing, it also provides an encapsulated view of cinematic image production and is a striking visual metaphor that opens up cinematic forms to further critical analysis. The Schüfftan process was designed to unite two differing elements and works to bring together visuals that are different, either by virtue

[7] Lev Manovich, *The Language of New Media*, (Cambridge, Massachusetts: The MIT press, 2002), 255.
[8] "Animation Practice, Process & Production." 2011, http://www.intellectbooks.co.uk/journals/view-Journal,id=199/.

of their scale (model/live action) or technique (projected/photographed/live action). It is also an extremely apt vehicle to unpack stop motion animation and its constituent elements. The process provides a structure that unmoors stop motion animation from its usual single channel existence and allows the audience to experience the spaces between both the frames of the projected cinema and inside the frames themselves. *All The Nice Things Come From Here* uses a stripped down, deconstructed and decontextualised version of the Schüfftan process to visualise and create an immersive three dimensional embodiment of metalepsis, and is an animation that forces the audience to find their own position in regards to its images.

Both the studio work and this accompanying thesis engage with an under-examined area of filmic image production and animation by exploring stop motion animation. Stop motion animation is a specialised form within the larger field of animation, and there are a significant number of examples of stop motion in popular culture in the commercial cinema. Some recent examples for children being Aardman's *Shaun the Sheep* (2015) and Wes Anderson's *Fantastic Mr Fox* (2009), and for a more adult audience, Charlie Kaufman's *Anomalisa (2015),* and there have also been key figures that have crossed over into art cinema (the Quay Brothers and Jan Švankmajer being two key examples, and both are discussed further in Chapter Five). Nonetheless, it remains a small and specialised form of film-making.

It is traditional in animation studies to bemoan the lack of scholarship and attention that animation has received in comparison to the much larger field of film studies, but the critical discourses around animation are, by necessity, fractured. Animation is a cinematic form that has a multidisciplinary nature that resists easy categorisation and it has a long history as a peripheral area of academic study. Tom Gunning, for example, has described

the lack of discourse about animation as a "scandal"[9], and for Susan Buchan "the uneasy positioning of animation within film studies … needs urgent critical re-examination".[10] This doesn't mean that there are no academic discourses around animation, more that the area is complex, multifaceted and wide ranging one, with a critical discourse that is, by necessity, fractured due to the multidisciplinary nature of the practice and the extent to which it resists easy categorisation. Animation, the simple procession of images to create movement, is embedded in all forms of cinema and, as Cholodenko and Manivich have suggested, it might be more accurate to regard cinema as simply a sub-set of animation. Karen Beckman described one of the difficulties of theorising animation is "the way animation seems to wind in and out of the theorisation of other aspects of the experience and materiality of cinema".[11] It is this aspect of animation, the way it works both inside and outside the cinematic form, which I wish to examine more thoroughly through this thesis and my artwork. I am conducting a visual investigation into not just the spaces between the frames of film, but also the spaces inside those frame, which form the layers of filmic space in cinema. The visual work examines the tensions between the different forms of scale, form and movement in the cinematic frame, and proposes not just that these layers tell a type of visual narrative but that these visual tensions are wordless metaleptic layers that create and define the animated world.

There is much to be explored in animation through critical practices. Animation has been considered a small sub-genre of cinema proper and, until the 1990s, attracted little in the way of academic scholarship.[12] The reasons for this lacuna are manifold, but they relate

[9] Tom Gunning, "Moving Away From the Index: Cinema and the Impression of Reality," *differences* 18 (1) (2007), 38.
[10] Suzanne Buchan, Ed., *Pervasive Animation*. Routledge, 2013), 15.
[11] Karen Beckman, Ed., *Animating Film Theory*. (Durham and London: Duke University Press, 2014), 2.
[12] Cholodenko's 1991 edited volume *The Illusion of Life: Essays in Animation* is a considerable milestone in the field.

both to animation's modes of production and the types of subject matter it has adopted, as a result of which gave it a taxonomy based around technique and form, rather than say, genre, school or ideology, as is the case with live action cinema. While there have been notable national animation types, especially Eastern European forms in Poland and Czechoslovakia or even the considerable output of the National Film Board of Canada, there has been little in the way of unifying movements or schools. For example, there was no New Wave of animation, and it has not been subject to extensive scholarly discussions in that it has largely escaped the attention of most major film theory movements (such as formalism, auteur theory or feminist film theory). As a form of film-making, animation production is both cumbersome and time-consuming, and by the early 20th century in the USA at least, it was relegated by virtue of its labour intensive and industrial production style, to specialised studios that produced cartoons as children's entertainment, instructional movies and advertising. Paul Wells has argued that the model provided by studios like Disney Studios or Warner Brothers dominated so entirely that it "ghettoised the form itself by overshadowing its early history and creating an orthodox style. Animation, in some ways, has become synonymous with Disney and thus other types of animation and other important filmmakers in the field have been further neglected."[13] Mainstream commercial two dimensional (2D) cel animation, such as that made by Disney or Warner Brothers, has a significant place in Western popular culture, but the concentration of production in the genres of light entertainment and children's film and television has done little to promote animation as an art form outside of the commercial sphere. Inside the various specialisations of animation, of which there are many, with most identified around their production processes (i.e., 2D, 3D, cut-out, stop motion), there are still gaps in the analysis and scholarly discourses, some of it based around the perceived cultural worth of animated material. Rebecca Moseley, speaking of stop motion

[13] Paul Wells, *Understanding Animation*, (Abington, Oxon and New York: Routledge, 1998), 3.

animation, goes so far as to lament that,

> scholars are able to take stop-frame animation seriously if it fulfils one or more of the following criteria: an address to an adult audience; the perception that it is 'international', avant-garde or, at least, art; its distribution as film. If stop-frame animation is made explicitly for children, is (for US and UK scholars) understood as national or local, or for broadcast on television, it becomes less available for critical consideration.[14]

While this thesis does indeed focus on animators like the Quay Brothers and Švankmajer who easily fit the three indicators of the scholarly that she outlines, it is worth unpacking Moseley's claims as she is correct in identifying the significant gaps within the field of animation studies regarding certain types of animation. The accompanying installation work does embrace two of her markers for serious scholarly attention, in that it is for an adult audience and, as a visual response to a form and place, it can be "or, at least, art". However, it discounts the third marker since, as a quite complex optical installation, it resists distribution in all forms. As a complex optical trick, it also resists visual documentation in a peculiar way because it has a distinct phenomenological aspect that requires an audience to experience it directly, as a spatial construct, in a way that is impossible to replicate with photographs or models. However, it is not in the sense she describes, for popular commercial consumption through the media, so *All The Nice Things Come From Here* does fall quite neatly into the "already worthy of scholarly attention" category. However, this thesis work is concerned principally with understanding the formal properties of stop motion animation so, while playing firmly into the "animation as art" category, I see no reason to exclude any form of animation or consider any style of animation unworthy of scholarly attention. Therefore, I draw from a broad history of animation and related optical ideas that includes children's animation,

[14] Rachel Moseley, *Hand-Made Television: Stop-Frame Animation for Children in Britain, 1961-74*, (Basingstoke: Palgrave Macmillan, 2016), 13.

installation art, optical illusions, models, painting and photography. This thesis discusses, amongst many other examples, the diverse animated worlds of Bugs Bunny, the Soup Dragons and the apprentice in the Quay Brother's *The Street of Crocodiles* as conceptual keys to a broader understanding of the field. Despite their differing cultural aims, modes of production and audiences, all of these forms of animation share a commonality in their frame by frame creation, and it is unpacking and understanding this scaffolding that is one of the key aims of this research project.

Situating animation within cinema

Animation is deeply connected to both film and art. It shares both the formal elements of film but it can be easily unmoored from many of the areas of indexicality (photographic, motion, time, physics) that underpin live action narrative cinema, making animation an ideal vehicle to explore abstract visual ideas. Despite this, and the work of film-makers like Stan Brakhage who spent an entire career making visual connections between film, art and experimental animation, sub-specialisations like object stop motion animation still occupy an uneasy place within the larger world of cinema and film studies. If, as the artist Anthony McCall has contended, art and avant-garde film are like strands of DNA "that spiral closely around one another without ever quite meeting", then animation can be seen to occupy some deeper, more hidden part of the film/art genome sequence.[15]

In the cases of experimental animators such as Jan Švankmajer and the Quay Brothers, their oeuvres tend to be more aligned with specialist film-making, rather than moving image art, and their works tend to be exhibited at specialised film festivals as single channel works, rather than as installations in gallery or museum spaces. There are, of

[15] Stuart Cromer, *Film and Video Art*, (London: Tate, 2009), 8.

course, exceptions whose work is both animation and art, and Anthony McCall's *Solid Light* films of the 1970s (in their original 16mm form), for example, are explorations of projected light but, at their core, they can be seen as abstract animated projections. Stan Brakhage's film works are inherently about film and the frame and they have an underlying animated force in his abstracted assemblages of images. The utilisation of multiple channels can be seen in the work of William Kentridge, who has incorporated a variety of animated forms into his work since the late 1980s. In particular, his series *9 Drawings for Projection*, which contain his animated charcoal drawings from nine projects from 1989 to 2003, are exhibited as single and multiple channel works. Contemporary digital processes and projection technology have changed the technical landscape of animation production entirely, gradually making animation more accessible and exhibition much easier, and they have opened up further options beyond the single channel screenings that the days of film production suggested. In popular cultural exhibitions, large-scale animations that are projection-mapped onto buildings, such as those seen at Sydney's annual Vivid Festival, can also be seen as a new form of animation exhibition. Although they are broadly related to visual effects through their use of trompe l'oeil, they are principally decorative digital media works that have more of a relationship to public spectacle. However, large-scale animation exhibitions are less frequent. In the last decade, the San Diego Museum of Art hosted a 2007 exhibition, *Animated Painting*, curated by Betti-Sue Hertz, but even this included artists such as Sadie Benning and Julien Opie, for whom animation is part (but generally not the whole) of their practice.

More recent shows have included the *El Hotel Electrico - Rooms Available* at the Museum van Hedendaagse Kunst Antwerpen in 2014, which took as its starting point the principle dilemmas of classification that bedevil animation and lay the blame on the co-opting cultural forces of industrial cinema. The show included traditional, single channel

experimental animators such as Robert Breer and the Quay Brothers, but also the animated light projection of Anthony McCall's 2006 work *Between You and I*. The exhibition notes asked:

> When does animation become art? What remains of animation when it leaves the cinema or TV screen, and manifests itself in other spaces? The exhibition *El Hotel Eléctrico – Rooms Available* sets out in search of the many expressions of the phenomenon of 'animation' in a broader sense, starting with the medium in its earliest forms, at the time when this artistic practice was not yet constrained by the conventions and clichés of the film industry.[16]

This search for the "many expressions of the phenomenon" is central to understanding animation's protean position within larger cultural forms such as art and cinema. The expansive nature of the form, since most types of mark-making, drawing or model-making can be animated in some way, makes definitions elusive, but it is this quality that makes animation so interesting and dynamic. I've chosen to explore installation-based work because I wanted to find a way to expand my work beyond a single screen and to bring an audience into the aspects of animation production and reception that are otherwise hidden. The physical processes used for creating animations are completely erased by the time they are screened, and the loss of these processes have been felt keenly by animators since animation's first vaudeville lightning-sketch beginnings. It is no wonder that animators have continued to be drawn to metaleptic modes of delivery, constantly smashing though narrative levels and being keenly self-referential about the process of animation itself.

In this way, the entirety of *All The Nice Things Come From Here* can be understood as a metaleptic turn, in that the narrative levels have become physical and the audience is free

[16] "El Hotel Eléctrico – Rooms Available. Museum van Hedendaagse Kunst Antwerpen," accessed Aug 1, 2014, http://www.muhka.be/en/toont/event/3184/EL-HOTEL-ELCTRICO/.

to navigate, discard or confirm them as they so choose. The key point is that the creative work makes the viewers explore the metaleptic potential of the installation for themselves, which adds a dimension of audience participation not usually associated with metaleptic material. The relationship between the layers and exactly how they are transgressed is usually controlled by the author, and is presented to the audience as a constructed work, whereas *All The Nice Things Come From Here* folds the audience into that process as the negotiation and progression through the layers is driven entirely by the audience. The project also looks to pull together some of these threads in contemporary animation scholarship and art practice, and it looks more closely at some of the more hidden elements of McCall's double helix of experimental film and art because, even if they never touch they are still connected through innumerable strands. It is concerned with laying bare the basic elements of filmic language and animated language in order to provoke new, critical understandings of stop motion animation as a visual form.

Materials, methods and frameworks

In order to address ideas of animation, visual layers and how they contribute to creating visual metalepsis, *All The Nice Things Come From Here* is an installation work that visually unpacks and disassembles the structures of animation through a long-discarded special effects technique called the Schüfftan process. The Schüfftan process was an in-camera technique of the 1920s developed by the cinematographer Eugen Schüfftan It used angled mirrors to combine sets of various sizes, usually by extending full scale sets by using reflected images of miniatures and inserting live actors, in order to create impossible, filmic spaces. It was the technique that created some of the vast sets for Fritz Lang's *Metropolis* (Lang, 1927) and it continued as a viable, commercial visual effect up until the 1960s. The process was used by filmmakers such as Hitchcock in *Blackmail*

(1929), and in a modified version by Rossellini in *The Rise to Power of Louis XIV (La prise de pouvoir de Louis XIV)* (1966), as a low-cost and reliable solution to creating period set extensions.[17] As a visual effect, it is not specific to stop motion animation production, but it *is* specific to ideas of augmenting and creating different realities in film, working in any number of configurations with different types of live action film, projections and miniatures. The Schüfftan process is an ideal structure to explore stop motion animation as a visual effect as it allows an audience to consider the various visual elements that make up the filmic frame in a form that encourages them to both assemble and disassemble the shot as they engage with the installation.

The studio work *All The Nice Things Come From Here* uses a synthesised, cameraless model of the Schüfftan process to explore how four key formal elements of animation and animation production (frames, layers, motion and space) create meaning and mood. The installation is composed of five Schüfftan mirror set-ups, in which the visual elements of projection, image and animated footage are combined in the reflection of a carefully placed front-sided mirror. The mirror's surface has selected areas removed that reveal the clear glass beneath and the viewer (standing in for the cinematic camera) can see both the reflected mirrored image and through the excised areas to what lies beyond the mirror. The two images can be combined as one image only when the viewer is aligned to a specific and predetermined viewpoint, this point is called the "station point". From any other viewpoint the effect collapses into its constituent parts and the different elements remain unconnected. The set-up, which is discussed in greater technical detail in Chapter 2, is optically precise and needs careful construction with regards to the sizes, distances and angles of the elements, as well as the relationship to the viewer. However,

[17] Peter Bondanella and Federico Pacchioni, *A History of Italian Cinema*, (USA: Bloomsbury Publishing, 2017), Chapter 9.

within these mathematical confines, the content and content methods can be quite flexible and can be made up from any combination of still images, models or projected moving images. The overall outcome is a space consisting of fragmented, disconnected visual layers floating in mirrored reflections that can be spatially constructed or dismantled through audience interaction.

This project is visually and theoretically concerned with the slivers of space formed by this combination of layers and how they can be analysed as contributing to narrative, meaning and affect in animation in a more nuanced and complex way. The five Schüfftan components that complete the installation can be taken as a journey through the different strands of conceptual and theoretical enquiry, and the thesis is structured as a parallel discussion or guide to the ideas explored in each of the installations. The installation should be considered as akin to a five-shot film that can be physically traversed in any direction and at any pace. The shots can be considered separately or together as scenes or acts and then assembled in a variety of ways by the interactions of the viewer. However, assembling the shots themselves is also optional, and the audience can view the constituent parts from any angle as well. The Schüfftan mirrors reflect much more than the station point because as soon as the viewer moves out of the zone of visual convergence the mirrors reflect random and fragmentary aspects of both the entire installation and the reflected audience. The act of finding the station point for each piece requires travelling through a suspended, fragmentary experience in order to find the moments of visual and theoretical convergence. Here the ideas of film, meaning and narrative expand and collapse into a fragmented whole, and I will be exploring each of these station points as a theoretical embarkation with which to examine ideas central to an understanding of how animation's formal elements of layers, movement, space and place contribute to meaning and narrative.

In the five individual installations that comprise the work *All The Nice Things Come From Here,* the concern with the shifting meaning of vision is expressed in subtly varied ways. All the segments of the piece ask the audience to engage with the work both bodily and intellectually. These engagements range from the intimacy of the meditative reveal of the interior life of the industrial spaces through the animated iron filings in *4. Ferro Fluid* (where the audience is encouraged to sit and view the animated interior through a lens and mirrors) to the cerebral, where in *5. Metaleptic Exit* the spectator is asked to find the point at which the mirror excision becomes a perfect circle to frames the entrance to the gallery and positions the incoming audience to figuratively enter the mirror image of the works.[18] The others in the series make similar demands of the audience, *3. Roller Door* projects an endlessly opening roller door into a churning mess of storm clouds and *1. Headlights* (the work closest to a narrative starting point in the work as well as the one closest to the Schufftän illusionistic ideal) asks for total alignment to make the trick of vision work. The work that was created last but perhaps best pulls together all the threads of this thesis and artwork is *2. Iron Filings*, a table-mounted piece that shows the Schufftän mirror as a tiny mirror that reflects the macro (the vast expanses of corrugated shed) into the micro (the animated ferro-fluid and iron fillings) and allows the viewer a position of relative stability and comfort to explore the effect. The addition of a huge industrial magnifying glass is a visual reminder of the artifice of the reveal to the hidden tiny parts of this work. In *2. Iron Filings* the spectator can examine the whole apparatus at their leisure, falling in and out of the Schufftän effect as they wish. Nearly all the works have an accompanying soundscape, drawn from industrial sounds of roller doors clanking and the thumping of heavy machinery. I wanted to provide an aural counterpoint to the industrial soundscapes that form the majority of the piece by giving the animated sections a more organic

[18] Please refer to Catalogue of Works Presented for Exhibition on page 209 for images of all the works mentioned in this section..

soundtrack and I found that combining the sounds of radio static with the ominous creaking of ice sheets breaking gave a dynamism to the stuttering animated dust and smoothly mysterious magnetic fluid. In the same way the individual mirrors reflect each other, the soundscapes can all be heard at the same time and this element forms one of the most important aspects of the installation overall.

In the gallery space the Schufftän effect bleeds from one station point to the other, as it is possible to see almost all the works reflected in the others and it is here it reveals its most uneasy relationship with vision, illusion and the use of space in animation. While the effect is itself very controlled (both by the artist and by physics), once outside of the station point of visual convergence there is little to control the spectators view overall. I found this one of the most intriguing and satisfying parts of the whole installation, the gaining and then ceding of control to the spectator. Released from the station points the spectator is free to engage with the works freely and construct for themselves a beautiful melange of focal points, reflections, edges and overlaid images.

The chapters of this thesis loosely follow the structure of the installation and, perhaps, like a good instructional diagram, provide an overview of the whole concept. Each station point teases out one important theoretical strand but, of course, like the pieces themselves, they might be made up of several overlapping areas and all of them, at one level or another, refer to all of the other parts of the overall thesis. In this way, it is much like another optical reproduction process, the hologram, which paradoxically has enough information encoded in its enclosing glass plate to ensure that, if shattered, each glass shard shows a partial view of the whole, each from its own perspective.

Chapter Outlines

Metalepsis

Chapter One considers the installation *All The Nice Things Come From Here* as a whole, and the ways in which it functions as an animated visual metaleptic device by forcing a particular visual relationship with the work onto the audience, as well as exploring the current discussions around animation and metalepsis. I am proposing an argument for broadening the concept of metalepsis in visual forms, moving from an analysis focused on narratives in visual media, to considering the material itself to have its own narrative capacity that contributes to the mood and tone and that can be affected by metaleptic devices. Before addressing the inherent metaleptic aspects of animated material, the thesis will discuss different aspects of narrative and how they relate to the physical layering embedded in the installation itself. The structure of the artwork itself provides, like some sort of room-sized technical manual, an exploded view diagram of the layers, animation and special effects and their relationship to the viewer. It is a perspective that allows for an embodied understanding of the key concepts of this thesis, that the layers that constitute the animated stop motion image are metaleptic in nature, and that there are visual transgressions, slippages and connections in-between these layers that are an intrinsic and vital part of stop motion animation.

Layers

Chapter Two explores a crucial but invisible element in any type of finished film media, the layer. The creative work visualises these layers using the conceit of the Schüfftan process, and the idea of the mirrors acting as physical layers is central to the thematic, theoretical and visual concerns of *All The Nice Things Come From Here.* The mirrors and

mattes provide an expanded view of the filmic process and the fracturing of filmic space. The subsequent layering of both space and time inherent in the installation are the launching point of this thesis. Chapter Two includes a thorough review of the mechanics of the Schüfftan effect, as used in the installation, as a framework to discuss other, more hidden, layers of meaning within the animated frame.

The layer is the invisible part of the construction of an illusion of three dimensional space, and this chapter argues that these slivers of reconstituted vision can be thought of as foundational building blocks of larger metaleptic narratives, where the layers act as metaleptic constructs that create a narrative of space, as well as creating visual opportunities for porous narrative boundaries. This chapter will also examine different visual layering techniques within the animated frame (the multiplane camera, the matte, the composite and the cel), and will show how they can also function as narrative layers. Different types of layers allow for different types of authorial control of the narrative, and all have the potential for metaleptic transgressions.

Motion

Chapter Three explores motion and how motion frames the moving visual image as a storytelling tool, quite apart from the other narrative elements like the script or characters. The chapter frames the animated frame and shows how it functions to describe not just motion, but how the action of both the frames and motion are key elements in making stop motion animation a distinct animated form. I argue that there is metaleptic potential visually embedded in the structure of the frame itself, and that these qualities are a vital part of the stop motion form and that they contribute a great deal to its reputation for creating the uncanny. While much of the discourse around stop motion animation centres on its capacity for the uncanny (and animating the inanimate is a significant part of the

creation of uncanny affect within the form), there is less focus on the stop motion frame itself and what that brings to the animated film. Whilst stop motion animation has a powerful association with the uncanny, an uncanny affect can also be created through the visual metaleptic transgressions embedded in the form's visual aspects, and the way in which the stop motion frames combine to create motion is intrinsic to this effect.

Space

Chapter Four explores the physical qualities of stop motion animation, the ways in which stop motion animation is integrated into cinematic visual effects and how the animated space gives a particular visual affect that is quite distinct from other forms of cinema. In this chapter, I concentrate on the spatial qualities created by the Schüfftan mirrors, and their use in the installation, to discuss the larger issues of space and illusion in cinema, where space is used as a general term that indicates visual spatial relations both inside the visual world of the film and outside the frame (the visual world of the spectator). This includes the geographies of the objects and people inside the frame and how those visual relationships work to convey narrative, as well as the different types of spatiality described by the lenses and cameras. Stop motion animation's relationship with space is quite different to a cinematic one, in part because much stop motion animation content is frequently in miniature, and this makes for very different visual effects when viewed through the camera lens. I am exploring this as a part of the metaleptic effect because an audience's perception of space in moving images is part of a larger engagement with narrative, and is an area where space can be analysed as a metaleptic device. In examining how illusion and the manipulation of space work in cinema, this chapter will also offer an analysis of how metalepsis functions as a spatial construct in other visual forms as well. Still images, while lacking the detailed transformative storytelling potential of time-based media, can still have powerful underlying narratives, and the use of space within

these images is a significant historical aspect of narrative. For instance, it is impossible to ignore the fracturing of space and the repositioning of the spectator in Velazquez's 1656 painting *Las Meninas* and surprising ideas of space, narrative and power can also be found in Renaissance anamorphic images.

Objects

Chapter Five is concerned with materiality and objects and the types of narratives they embody within the stop motion animation form. It is the materiality of stop motion animation that is one of the key components of the form's metaleptic effect, that objects doing impossible things by moving, seemingly of their own volition, transgresses a narrative boundary by constantly drawing a self-reflexive attention to the object itself. The role of movement as a defining feature of animation is discussed in Chapter Three, and in this chapter I look at the role of the animated object itself as a metaleptic device. As all of them foreground the materiality and tactility of objects within their work, I discuss the role of objects in the work of the Quay Brothers, Jan Švankmajer and the objects within *All The Nice Things Come From Here*, and how the works explore the metaleptic potential within objects. It can be hard to extricate the object from the object-as-animation in stop motion animation, since one of the defining features of animation, after all, is the movement of objects. However, the object itself can be considered separately as it is the juxtaposition of objects and the way in which the animator chooses to animate the materiality of that object that is the key to understanding the role of objects within animation.

Chapter One: Metalepsis

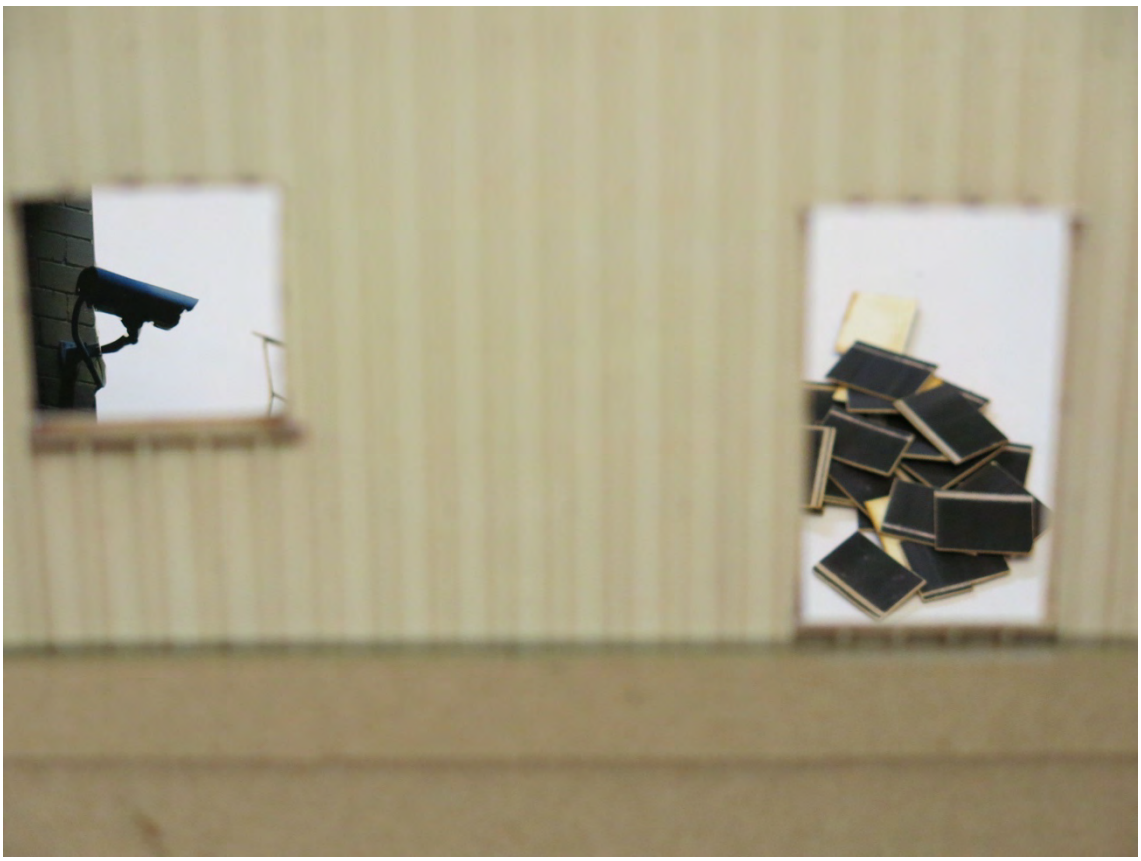


Figure 1. A model from work in progress *All The Nice Things Come From Here*.

All The Nice Things Come From Here

The initial impression of the installations in *All The Nice Things Come From Here* is one of visual chaos. Depending on the location of the viewer, the mirrors can reflect themselves, the surrounding artworks, the audience, or nothing at all. The points of visual and intellectual convergence are not immediately clear, nor does the installation help guide the viewer to the specific visual station points that are hidden within the whole of the work. Figure 2 shows an early working model of the 1:25 scale version of the installation.

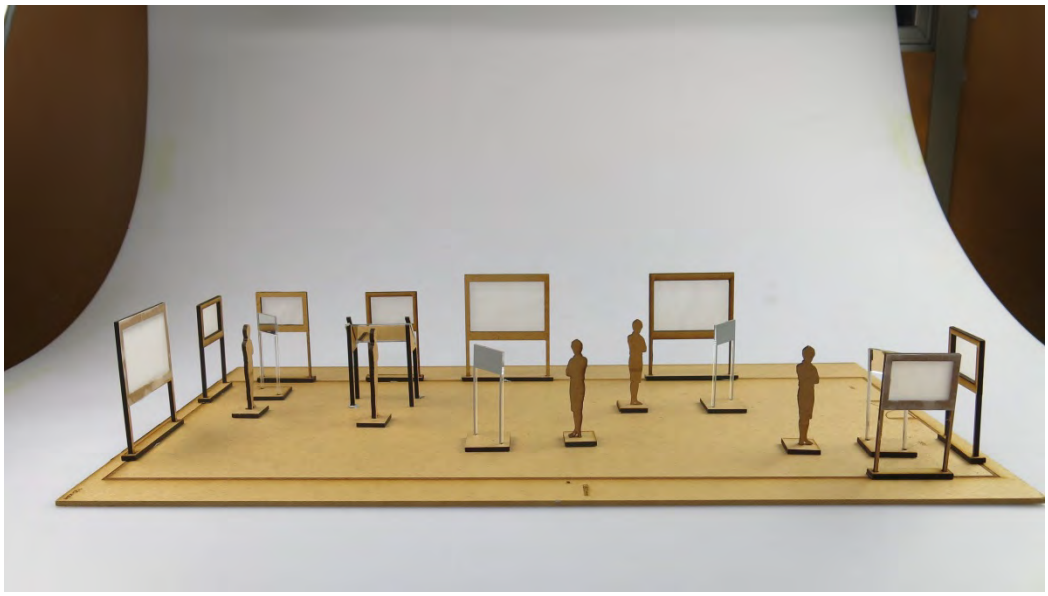


Figure 2. Scale Model (1:25) of *All The Nice Things Come From Here*.

The mirrors are confusingly reflective on both sides and are punctured by clear shapes in the glass that do not appear to be visually related to anything around them. The installation is made up of five individual Schüfftan set-ups, each one centred around a sheet of mirrored glass held at about eye height in an aluminium frame. Each one contains a hidden point of perspectival convergence, where all of the elements of the set-up will form one complete image. The placement of the mirrors doesn't help guide the viewer to these points of visual closure, instead the relationship between the elements is initially

quite obscure. There is also nothing to advise that the "correct" viewing position needs the viewer to look directly at the mirror angled at 45° to both the viewer and the reflected photographs or animations since there is no obvious relationship between the animated loops, the still photographs or the mirrors. The scale model shows the station points for this configuration (see Figure 3).

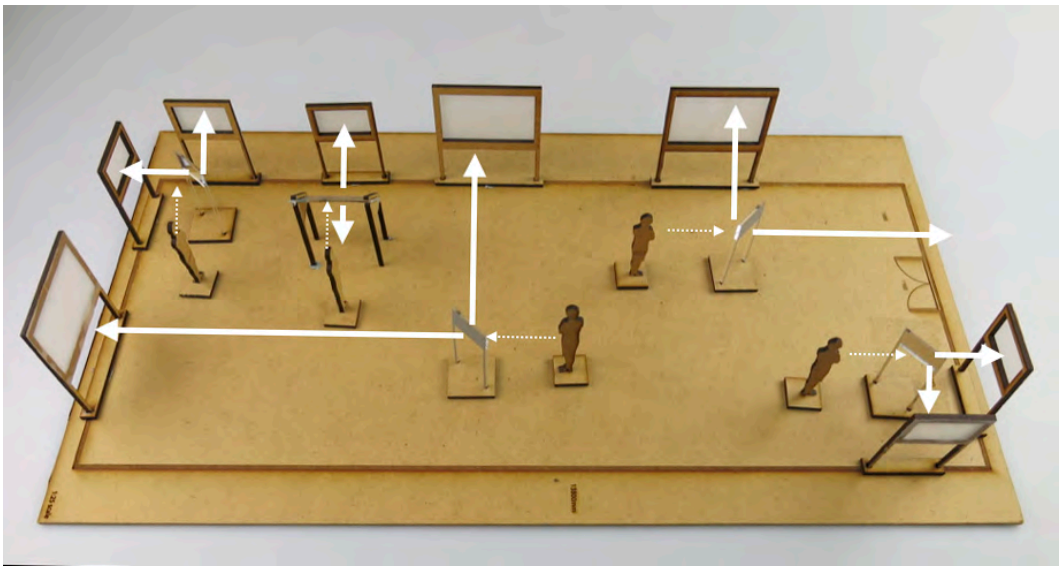


Figure 3. The invisible station point solution. Scale Model 1:25 of work in progress, *All the Nice Things Come From Here*.

The Schüfftan process is designed to keep the camera (and thus the viewer) from being reflected in the mirror, and so keeps them from being reflected into the shot. This forms the first, and most obvious, metaleptic layer between any creative work and its audience, that is the layer between the artwork and the viewer.

The narrative of the installation itself is short and mysterious. My chosen locations, the light industrial rings around my adopted home town of Newcastle, are themselves mysterious. I have long been interested in them as both visual places and cultural sites because they are, to me, spaces that seem so outside the normal bounds of human interaction. The spaces are vast, with blank and faceless expanses of extruded wide-span steel corrugate that are sullen and huddled in winter and lung-seeringly hot in summer.

They resist human scale and their purposes, although nominally storage and distribution, is unclear. Newcastle has given up huge tracts of land both outside and inside the city to these types of spaces and, despite being so much a fabric of the urban landscape, they are neither reviled nor loved by the locals. For structures that are so large, they appear to be invisible, and are simply accepted as a part of the fabric of the local area. In an effort to understand them, I made some exploratory photo essays (see Figure 4). Beyond the minimal explanations provided by their names or, in newer industrial parks, their signage, there was little to further explain their exact purposes to the casual observer. The most social activity I found was the remains of what seemed to be adolescent hangouts and party sites, somewhere perhaps where young people could feel unobserved and beyond the law. The detritus of teen parties was everywhere: discarded bongs, hose pipes, tyre skid marks, bonfires and, as always, items of discarded clothing. It reminded me very much of the pleasures of exploring abandoned building sites in my own youth and the heady feeling of both freedom and danger they engendered in me and my friends. At one undeveloped outer ring of an industrial park, I found a tableau of homemade skate ramps and a carefully positioned recliner armchair where, I guessed, young skaters performed tricks for each other, with a rotating audience of one seated in the faded velour of the recliner. If one pushed further out into the knee high grass, the party areas gave way to dumping grounds for cheap plastic toys and broken children's furniture, but beyond that ring there was nothing much more than cleared land and forlorn For Sale signs.

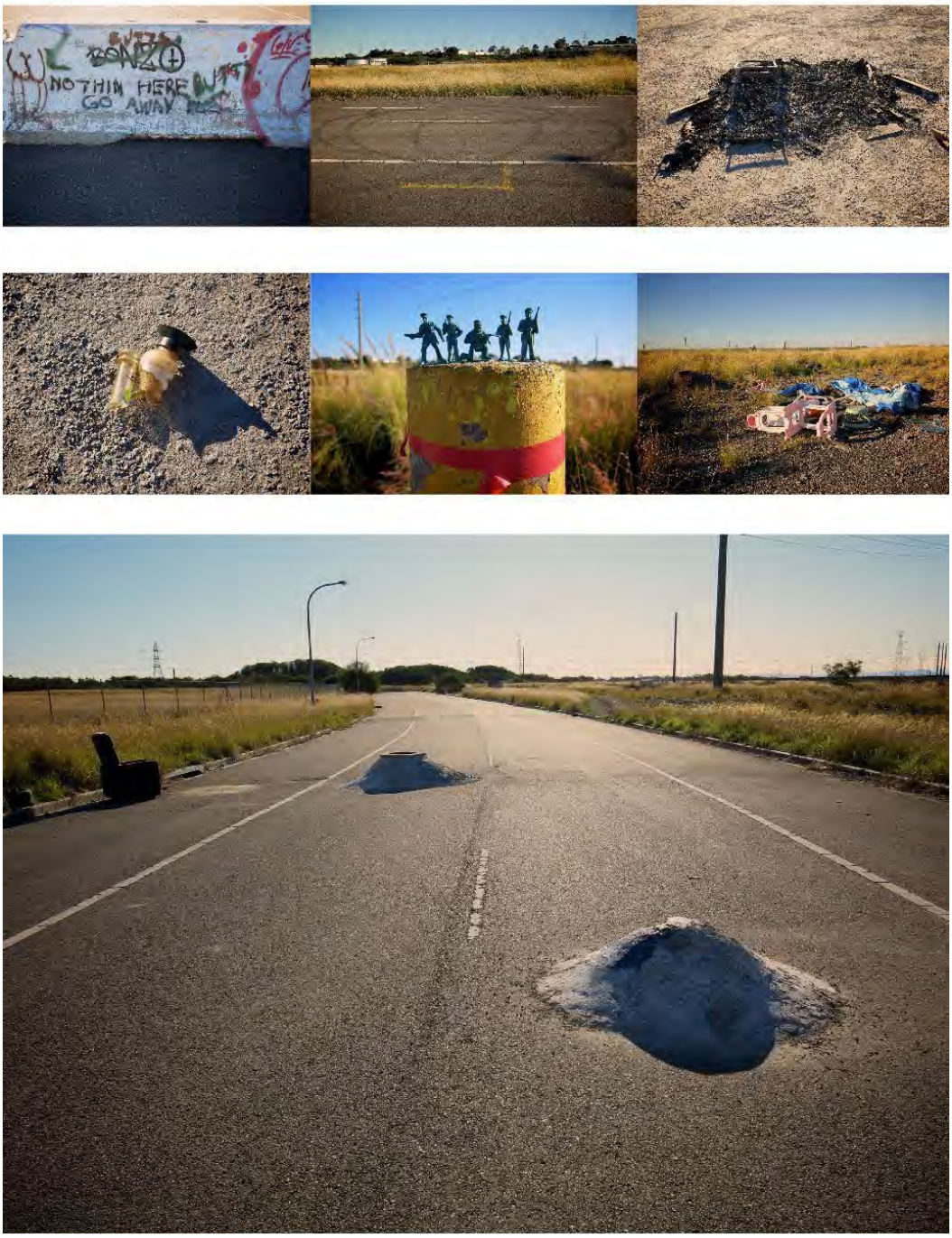


Figure 4. ***Nothin here. Go Away. (Butt).*** **Photos by Jane Shadbolt. Newcastle light industrial park. Mayfield. 2015.**

Beyond these signs of life there was nothing, and I think this in itself I found fascinating. These are the sorts of places where it seems possible that 'bad things happen', and this has become the guiding idea of the narrative of the work. A car is moving around a carpark and an unspecified bad thing is happening in a part of the world where no one has any reason to be and with no passers-by to help. I feel an additional frisson of foreboding in exploring these places because they are also such gendered environments,

they are masculine places in both their legitimate and illegitimate uses, and are not usually frequented by lone women with cameras. I made many trips into these environments and met no one beyond the occasional security guard who asked why I was photographing their buildings. They were happy enough with my explanations.

The *All The Nice Things Come From Here* work was to propose some alternative purposes for these sites, but the first exploratory work simply reflected on their impenetrability and resistance to narrative. The animated areas that I have composited into the reworked spaces are loops of time-lapse clouds, shifting walls and an endlessly turning but never opening roller door as a way of proposing a shifting time-loop for these places and to use this visual resistance to narrative as a first step in a series of alternative narratives. As I became more aware of my visual interest in these places, I began to become less and less interested in their representation, and my images and ideas became increasingly abstracted. The narratives now revolved around almost microscopic aspects of these environments, unseen and self-propelling, so perhaps moving full circle back to my initial interest in their essential unknowingness. The animated elements themselves became less specific, and they are now only tiny parts of the imagined interiors, iron filings, dust, oil and shadows.

It is from this vantage point of seemingly abstracted visual chaos, a place by necessity that is somewhere outside the narrative of the piece, that I would like to examine how visual layers and narrative layers work, in and around each other, as metaleptic devices to create meaning, mood and affect in object animation. The relationship of the work to the viewer is also examined as this installation disrupts the usual singular vantage point of the spectator by forcing the audience to become, firstly, the camera and, subsequently, the director of the piece themselves. This disrupts the usual frame of visual reference created by the rules of perspective, one where the spectator occupies a station point from

which they might expect that lineal perspective will mathematically unfold in the usual way to create the illusion of depth. In this respect, *All The Nice Things Come From Here* shares some of the characteristics of anamorphosis, a form of perspectival projection in which an image is distorted in such a way that it becomes only readable from one vantage point. As a visual trick it has been used for centuries, and famous examples are the stretched human skull floating in the foreground of Hans Holbien's *The Ambassadors* (1533) (see Figure 5) or in quadratura illusionistic frescos as trompe-l'oeil architectural extensions, such as those created by Andrea Pozzo on the ceiling of Rome's Church of Sant'Ignazio (1685) (see Figure 6).

Figure 5. The hovering anamorphic skull in Jean de Dinteville and Georges de Selve ('The Ambassadors'), Hans Holbein the Younger. © The National Gallery, London.

Figure 6. Sant'Ignazio, Rome. Trompe-l'oeil architectural extensions painted on a flat ceiling. Photo Bruce McAdam. Creative Commons license.

All of these artworks share a similar distancing effect because the act of viewing relies on the viewer understanding the work as both subject (the content of the image) and also the artwork as a structure containing the subject/viewer. This combination resists viewer immersion since the audience must understand the work not just as a visual subject but also from a point of intellectual remove as they seek to find the perfect spot from which to view the "completed" work. Anamorphic images are as much about the process of the artist making as the process of the viewer seeing. Since the artwork is stretched and distorted, the audience must work actively, often physically, moving to find the right viewing angle and covering one eye so that their normal depth perception is given over to the two dimensional optical illusion arranged before them. The place occupied by the viewer can be formulated as a phenomenological one. Lyle Massey, in her discussions of early modern anamorphosis, proposed a phenomenological framework of embodied understanding of perspectival shifts, and her work examines how the historical theoretical discourses around perspective accepted and understood the paradoxes around reality and representation. She countered Jonathan Crary's argument that shifts in how the observer

understands vision occurred principally around the technology of modernity, She instead argued that the observer was always a part of the understanding and discourse of vision, and that it is embedded in understanding the illusion of depth and space, "the study of perspective invoked an unresolved relations between subject and object, a repetitive play with proximity and distance, the absorption of the seer into the seen".[19] Exposing and relishing the structure of perspective has, in some form, always been a part of seeing and understanding the world for both creators and viewers, and *All The Nice Things Come From Here* explores how these layers of vision and understanding can be dismantled, reconstructed and challenged.

The act of observing anamorphosis, for example the stretched skull of the *The Ambassadors* (Figure 7), and attempting to assemble it as a visual subject reminds the viewer that they must also accept that seeing from most other points will not bring narrative visual closure because they may not be able to decipher what the images represent. In this way the artwork itself is about creating a space where it is possible to be both inside and outside the work at the same time, one where the viewer is engaged with understanding the image through its representational qualities but also that the viewer is engaged with the formal qualities of the work at the same time. In this sense, the use of anamorphosis is not just a gimmick or visual quirk, it is an investigation and exploration of perspectival certainty that challenges by revealing an unexpected opposite, a viewpoint that disrupts the accepted construct of the viewer at the centre of all things. It creates a spectator who becomes what Daniel L Collins described as an "eccentric observer", an "observer who literally stands apart and is self-aware of the process of seeing" and one who "realises that the full appreciation of aesthetic objects stems not

[19] Lyle Massey, *Picturing Space, Displacing Bodies: Anamorphosis in Early Modern Theories of Perspective*, (University Park, PA: The Pennsylvania State University Press, 2007), 79.

from “oblivion” (that is, literally a “forgetting”) but from playing an active role in the creation of the aesthetic object.”[20] The active viewer is then rewarded with the secondary version of the image, as in Figure 8.

Figure 7. The stretched anamorphic skull detail. Jean de Dinteville and Georges de Selve ('The Ambassadors'), Hans Holbein the Younger. © The National Gallery, London.

Figure 8. The skull as viewed by the “active observer”. Jean de Dinteville and

[20] Daniel L Collins, “Anamorphosis and the Eccentric Observer: Inverted Perspective and Construction of the Gaze,” *Leonardo* 25 (1) (1992), 74.

Georges de Selve ('The Ambassadors'), Hans Holbein the Younger. © The National Gallery, London.

The mirrored physical structure of *All The Nice Things Come From Here* shows quite literally the distancing effect that is caused by any disruptions to perspectival space for an audiences' understanding of any type of moving image. Spectatorship studies in film theory have examined similar ideas, such as how the relationship between the viewer, the screen and the filmed image combine to create the viewer's participation in their understanding of the filmic text, as well as an ideological apparatus. *All The Nice Things Come From Here* creates a contradictory idea of spectatorship through an interplay of the usual construction of the screened image as a single visual element (because it is possible to look at the separate components of the installation as single screen individual parts) with a radically different vantage point through the mirrored puzzle components, where the relationship between the screen and the viewer becomes a more complex and fractured negotiated space. Away from the millimetre precision of the station point, the spectator loses the privilege of Jean-Louis Baudry's "monocular vision", an aspect of apparatus theory which positions the relationship between the viewer and the conventional cinema screen as ideological, and instead seeing a disorientating array of possible meanings. As Michele Aaron explained in regard to single channel viewing, "the film image is laid out in such a way as to channel the (anticipated) spectator's unidirectional view: the image is composed *for* the spectator's vision yet seems to be a a product *of* the spectator's vision" (her emphasis).[21] In *All The Nice Things Come From Here* the spectator is cut adrift from perspectival certainty and thus loses immediate access to any authorial intent because the layered structure of the mirrors and images is now so chaotic. The viewer must now engage with the animation as a quite literal manifestation of metalepsis, in that they must physically negotiate each layer of each shot and then, through chance, design or sheer

[21] Michel Aaron, *Spectatorship: The Power of Looking on*, (London and New York: Wallflower Press, 2007), 10.

bloody-mindedness, form their own scenes in their journey through the room. This project is about looking at the projected image in a slightly different form, and it rejects the space that Aaron described as the implicit contract of "illusion as a form of reality", the space of collusion forged between the spectator and spectacle in cinema.[22]

All The Nice Things Come From Here does not ask the viewer to participate in the suspension of disbelief that is required in order to experience the cinematic space, as the cinematic space is now something it is possible to experience conceptually and literally inside, rather than as an obligation to understand a particular visual meaning. The work gives the spectator an agency that is not possible in a single channel work. There is a type of directorial control through the optics of the Schüfftan panels, but many other aspects of the work discard authorial intent, and the spectator is free to create their own shots, watch one shot for hours, or not watch it at all. They may watch it in any order and in any way they choose. There is some directorial suggestion in the placement of taped floor marks to indicate where to stand to make the Schüfftan mirrors converge optically, but otherwise the experience should be one of free fall immersion, not in a narrative, but into a suggestion of a narrative that the spectator is asked to create for themselves and to inhabit bodily. In this aspect, it is a miniature form of Bertolt Brecht's *Verfremdungseffect* (also called alienation or defamiliarisation), a distancing effect that draws attention to the mechanisms of the production of theatre. Brecht's Epic Theatre used a host of distancing techniques, from direct audience address (breaking the fourth wall), symbolic props and an overall awareness of the processes involved in the telling of a narrative. It is a technique that deliberately resists viewer immersion in a narrative or story and proposes the structure itself begins to form part of the viewer's critical analysis of the work and that the spectator is propelled into a more active role in experiencing the work.

[22] Aaron, ibid., 91.

All The Nice Things Come From Here is an artwork that draws attention to the mechanics of film in a way that is inherently self-reflexive because it is this aspect of self-reflexivity that is a specifically metaleptic device. Metalepsis is an apt structure for analysing stop motion animation because it allows a way of demonstrating exactly how stop motion's self-reflexivity is embedded inside every single visual aspect of the style.

Metalepsis

In discussing the physical layering of the installation piece, it is also important to locate the theoretical discourse that underpins the central argument of this thesis, that stop motion animation has a distinctive visual power through the interweaving of layers of visual and narrative meaning. It's important to provide an overview of the field of metalepsis in narratology studies because the ways in which the field has been expanding in recent years to include non-textual forms is one of the cornerstones of this thesis.

Metalepsis is not a new narrative device or area of study. As identified by Genette in the 1970s, narratological studies, as a means to understand the relationships in fictional worlds, is delineated by "a boundary that is precisely the narrating (or the performance) itself: a shifting but sacred frontier between two worlds, the world in which one tells, the world of which one tells".[23] Genette was exploring a rhetorical concept that has a much longer history, although metalepsis is now associated with postmodern narrative forms, it is a trope has a very long history in fiction. Laurence Sterne's 18th century novel *The Life and Opinions of Tristram Shandy, Gentleman*, for example, contains outstanding examples of the collapsing of boundaries between the author, audience and text. Sterne's

[23] Gérard Genette, *Narrative Discourse: An Essay in Method*, (Ithaca, NY: Cornell University Press, 1980), 236.

characters make frequent metaleptic references to the reader and pose complicated relationships between the characters and their story worlds. Sterne toys with his characters ("Shall I make him cuckold?"), addresses the reader, and leaves blank pages within the book instructing his (assumed male) reader to fill with a description of their own mistress, so that "the book will have one page, at least, within thy covers, which Malice will not blacken and which Ignorance cannot represent".[24] The concept of authorial disruption did not simply begin with the novel, as metalepsis has an even older rhetorical pedigree. The 16th century writer Henry Peacham the elder mentions it in his treatise on rhetoric in 1577 as a form of metaphor in which the author uses one example to describe another.[25] He felt it should be used with caution as it causes a distancing effect from the narrative and that, used improperly, it can be "Too farre removed" and that it is "Not to be used in matters requiring perspicutie".[26] Five and a half centuries later, modern examples face similar risks because the device constantly reminds the audience of their participation in a fiction and it draws the audience's attention to the structure of that fiction. This gives metaleptic texts, as Wolf has pointed out, a "strong anti-illusionist effect",[27] but Kukkonen expanded the question by asking if this function of metalepsis can work in two ways, firstly, as suggested by Wolf, in disrupting the illusion of immersion in a fictional world, or if metalepsis simply "mimics the readers double awareness of fiction and reality during the reading process. In the first instance the effects or function of metalepsis would be anti-illusionist; in the second instance they would be strongly illusionistic."[28] It is at this juncture where I argue that metalepsis resides within

[24] Laurence Sterne, *The Life and Opinions of Tristram Shandy, Gentleman*, (Hertfordshire: Wordsworth Editions, 2009), 327.
[25] The Elder Henry Peacham, *[the Garden of Eloquence, Etc]*, (London: The British Library, 2010)
[26] Peacham, [the Garden of Eloquence, Etc], 24.
[27] Werner Wolf, "Metalepsis as a Transgeneric and Transmedial Phenomenon," in *Narratology Beyond Literary Criticism : Mediality, Disciplinarity*, ed. Jan Christoph Meister (Berlin: de Gruyter, 2005), 103.
[28] Karin Kukkonen, "Metalepsis in Popular Culture: An Introduction," in *Metalepsis in Popular Culture*, ed. Karin Kukkonen and Sonja Klimek De Gruyter, 2011), 18.

the physical structures of animation, and in particular object stop motion animation, because the markers of its own fiction and own reality are entwined so closely. The constant self-reflexive references to stop motion's own creation through the impossible motion of inanimate objects repels immersion because the viewer is constantly reminded of the films fictionality through the means of production, and the dual awareness of being both inside the narrative of the film and of being outside the structure of the film are the layers that create the visual metalepsis. *AllTthe Nice Things Come from Here* is designed to expose this underlying aspect of stop motion by reconfiguring the usual screen-based consumption of animation into an experience that allows the audience to physically inhabit the projections and experience the spaces in-between the layers of the images themselves. In this sense, the installation works almost parallel to the ideals of the 1970s avant garde Structuralist/Materialist film–makers, yet reaches a quite opposite conclusion. The structuralist/materialist argument was that highlighting the materiality around the construct of a film destroys narrative by discarding the potential of audience illusion or immersion. As filmmaker Peter Gidal declared,

> one must beware not to let the construct, the shape, take the place of the 'story' in narrative film. Then one would merely be substituting one hierarchy for another within the same system, a formalism for what is traditionally called content. This is an absolutely crucial point.[29]

This work argues that the construct doesn't replace the idea of narrative, but that by exposing the material construct of a film it is possible to reveal the hidden narratives embedded within the moving images, and that the frictions and collisions of the different types of material layers contributes to narrative meaning.

It is not just stop motion animation that has metaleptic potential, as all forms of animation are rich areas of metaleptic material. As a medium with an elastic sense of storytelling,

[29] Peter Gidal, Ed., *Structural Film Anthology*. (London: BFI, 1978), 1.

animation functions in fictional worlds where an audience expects that the normal rules (those governing physics or talking animals, for instance) need not apply, and diegetic disruption has been a distinct feature of the form since the very beginning of animated films. The intrusion of the animator's hand into the animated frame, for example, is an early and repeated narrative device in animation. Donald Crafton called the process "self-figuration", and described the presence of the animator as a self-mythologising force, "a demigod, a purveyor of life itself", and positions the animator as the driving force of self-reflexive expression, "this perception does not arise from 'something in the form itself' or from a vague 'virtue' for the medium".[30] On the contrary, this genesis theme is the result of the animator's presenting himself in the role of life giver - not mysteriously, but deliberately - and (as the history of the medium unfolds) with increasing subtlety and expertise, until finally we take for granted that "the animator can vivify things that could never otherwise existed."[31] While the animator as demigod is a recurrent theme throughout animation history, I argue that there is also "something in the form itself" that creates the self-reflexivity of object stop motion animation, much of it to do with Kukkonen's double awareness of fiction and reality in the viewing process.[32]

Metalepsis is, at its most basic, concerned with the layers of narratives and how narrative worlds are created in any type of fictional material. Marie-Louise Ryan described the process as taking two forms, illocutionary and ontological, where the illocutionary form

[30] Donald Crafton, *Before Mickey: The Animated Film, 1898-1928*, (Chicago: University of Chicago Press, 1993), 12.
[31] *ibid*, 12.
[32] Animation history is littered with the heroic labours of lone animators as a featured part of the filmic narrative. McCay's 1914 *Gertie the Dinosaur* will be discussed in more detail in this chapter and other notable examples would be the Fleischer brothers' *Out of the Inkwell* series (1918-29) which featured the animator drawing the characters at his table and in each episode they would escape the inkwell to animate themselves in various adventures. Modern examples would include *Nova Seed* (Nick DiLiberto, 2016) who hand drew an entire feature film by himself. The film itself is not directly a metaleptic narrative but the backstory of the film as a one man studio was an important part of its festival success and marketing campaign.

stays within the story (for example, a character describing how they have arrived in the story), and the ontological form is where a story within a story asks the reader to engage with a new fictional world that displaces (sometimes only temporarily) the first.[33] The metaphor of a stack works here, as stories are nested within each other and the device is familiar enough that the audience understands when they are travelling from one level to another. Narratological studies use the term 'story world' to describe these levels, in that they occupy distinct narrative spaces. An audience would have no problems understanding a theatrical work that included a narrator, the principle narrative and, for example, a *mise en abyme* or play within a play and still be able to keep track of where all of these separate narratives are in relation to each other. Filmic story worlds tend to refer to the worlds inside and outside the film in much the same way, with *Stranger Than Fiction* (2006) being a fine example of a narrative that contains a main filmic world for the central character and a narrator, which suggests that there is a narrative layer outside the filmic world. It is later revealed that both of these worlds are contained within a fictional novel being written by the central character, and in this way creating a Klein flask of layers before even considering the layer of audience engagement. Animation has a great deal of metaleptic potential because it has the intrinsic visual element of layering the differences between a filmic world (the "real" or photographed) and an animated world (the "unreal" or constructed) and in its constant engagement with self-reflexive tropes that refer to either the world outside the frame or the animator. Animation can also feature a very porous membrane between reality and fiction, and the bleed between the two worlds of what is real and what is animated has been a regular feature of animation since *Gertie the Dinosaur* (1914), Disney's hallucinogenic live action/cartoon mix of *Alice's Wonderland* series (1925) and *Out of the Inkwell* (1926). The employment of

[33] Wolf, Werner, "Illusion (Aesthetic). The Living Handbook of Narratology." accessed June, 2012, http://hup.sub.uni-hamburg.de/lhn/index.php/Illusion_(Aesthetic).

metalepsis continues to feature in contemporary films, with the stop motion animated feature *Boxtrolls* (Graham Annable & Anthony Stacchi, 2014*)* having an extended metaleptic riff before it goes to the end credits (see Figure 9). The whole sequence is worth quoting in full because it touches on many of the ideas discussed here: the labour of production, the inclusion of the animator, the agency of the characters both inside and outside the narrative. The discussion starts with Mr Pickles and Mr Trout engaged in street sweeping. The camera begins a slow track out.

Figure 9. End credit sequence from *Boxtrolls*. Directed by Graham Annable & Anthony Stacchi (Laika) 2014.

Mr Pickles: (sighs)

Mr Trout: Just keeping the streets clean.

Mr Pickles: Free from evil.

Mr Trout: Yeah.

Mr Pickles: Ever think about the universe, Mr Trout? What if our world is just like a tiny speck?

(Animator fades in, time-lapse shadow of him animating the characters. Camera continues slow track out)

Mr Trout: A tiny little speck.

Mr Pickles: And there are giants looking down on us.

Mr Trout: and every time we move …

Mr Pickles: … it's actually them moving us

(Camera tracks back. Edges of set are now revealed. Animator still animating characters)

Mr Trout: Seems a bit tedious

Mr Pickles: Right, that. Just there. Me blinking. That would have taken them a day.

(Camera tracks out. Lights, tools and replacement puppet heads are visible)

Mr Trout: See me moving my arm. Five hundred men.

Mr Pickles: I mean none of them are going home. They are having to do this bit … and now this bit (moves leg) … and this bit (dances).

(Whole set is now visible. Animator can be seen almost at full opacity)

Mr Pickles: I mean this should stop (pants with effort) (Animator suddenly disappears.)

Mr Pickles balances precariously on one leg and wobbles, still panting.

Cut to black.

Mr Trout (Voice over): I think it throws up notions of free will

Mr Pickles (Voice over): It's too much. And then they would have had to have done me talking about the blink. And it never ends. I think they make a meal of it, to be honest. I don't know how they get the time. They've got to have other jobs. It's more like a hobby, you know like stamp-collecting, something you do in your free time.[34]

[34] The entire sequence can be seen on Youtube and was released by the distribution company. THE BOXTROLLS - Time Lapse End Credits.

The beauty of this sequence is that Mr Pickles continues to have agency for a couple of seconds *after* the animator disappears. The fourth wall is revealed but in those few frames it is suggested that the characters still exist as animated characters inside the narrative of the film. The ease and fluidity of the movement of the characters in this level of commercial animation is incredibly high and the puppets are entirely convincing as characters. For those couple of seconds, order is restored; the characters are real, they do have agency and they do exist both inside and outside the frame.

The tendency for animation to celebrate its own processes has been discussed in terms of its "self-reflexivity" (Siebert),[35] or "self-figuration" (Crafton),[36] or it has been described as metaleptic in general (Feyersinger),[37] or as metaleptic in particular (Limoges on the work of Tex Avery).[38] Metalepsis has developed as an analytical area of study for all manner of transmedia forms, notably by Wolf,[39] who explored how the term could be applied to other narrative forms such as drama and comic strips, and more recently in other forms of popular culture through the work of Kukkonen and Klimek.[40] There has been some scholarship around the problems of metalepsis in the visual arts, most notably by Ryan[41] and Wolf,[42] but it has mainly concentrated on single images rather than images in series. However, it has not been related to stop motion animation specifically, and not in terms of the specific materiality and processes of stop motion animation that I feel

---

https://www.youtube.com/watch?v=pF_MTFzm27A

[35] Siebert, "Self-Reference in Animated Films," 155-161.

[36] Crafton, Before Mickey: The Animated Film, 1898-1928.

[37] Erwin Feyersinger, "Diegetic Short Circuits: Metalepsis in Animation."

[38] Limoges, "Metalepsis in the Cartoons of Tex Avery: Expanding the Boundaries of Transgression," 196-212.

[39] Werner Wolf, "Narrative and Narrativity: A Narratological Reconceptualization and Its Applicability to the Visual Arts," *Word & Image* 19 (3) (2003): 180. and Wolf, "Metalepsis as a Transgeneric and Transmedial Phenomenon,"

[40] Kukkonen, "Metalepsis in Popular Culture: An Introduction,"

[41] Marie-Laure Ryan, "Fiction, Cognition, and Non-Verbal Media," in *Narratologia : Intermediality and Storytelling*, ed. Marina Grishakova and Marie-Laure Ryan (Berlin: De Gruyter, 2010)

[42] Werner Wolf, "Narrative and Narrativity: A Narratological Reconceptualization and Its Applicability to the Visual Arts."

contribute to an affect quite distinct to other forms of animation and film-making. Metalepsis becomes more complex when story worlds are visual, and Ryan has questioned if it is possible for images to possess conventional narratives at all. Although a different type of narrative, I argue that there is a story being told through visual aspects of any image, and that smaller, more subtle visual layers and their interactions with the audience can be considered as metaleptic. Animation has been looked at as a metaleptic vehicle for specific films, and Jean-Marc Limoges analyses Tex Avery's MGM cartoons of the 1940s and 1950s as being metaleptic, with their anarchic sight gags and constant references to their own production (with characters commenting on credit rolls, rewinding films or talking to the camera operator). Limoges also identifies within *TV of Tomorrow* (Tex Avery, 1953), "another metaleptic mode: visual metalepsis. Take for example the scene where a woman watching television while taking her bath turns the television screen the other way so as not to be "seen" by the characters on screen. The boundary transgressed here is neither verbal, nor physical, but visual". I think the pinpointing of this non-textual metalepsis is significant because it shows the potential of images to create metaleptic instances and for images to solely convey complex layers of narrative and meaning.[43]

As an animator, I found the discussions of the metaleptic nature of animation fascinating but also somehow lacking a dimension of practice as the concepts raised touch deeply on how animations are made, but the ideas stopped at the animated text itself. Analysis by theorists will always struggle to incorporate the embodied practise of making because the invisible processes of creating are not (nor are they designed to be) evident on the screen in a way that is accessible to those who consume animation, rather than produce it. The

[43] Limoges, "Metalepsis in the Cartoons of Tex Avery: Expanding the Boundaries of Transgression,", 205.

more I explored the idea of metalepsis, the more I could see that the ideas of the metaleptic transgressions of narrative are a part of the actual fabric of the visual aspects of the form. The most common metaleptic incursion, the inclusion of the animator's hand, seems to me to be a natural part of the animation process. How could anyone embark on something as time-consuming and singular as animation and not reference the process? Every single movement is the result of some sort of conscious decision by an artist, and every single item on screen is made/drawn/placed/created and serves a particular purpose. That is not to say that animation doesn't take advantage of serendipity, the mistake and the creative accident. Even the most stream-of-consciousness outpouring of images shares the same starting point in the terror of the blank frame, followed by a deliberate and controlled process that proceeds one frame at a time, one frame after, or between, another. It is from this space of deliberate creativity that visual incursions into and out of the visual space are made, and I could see that some of the arguments around where metalepsis can be found in animation didn't account for the visual aspects or the methods of production. Limoges touched on these issues when he asks,

> It would have also been interesting to look at the functions and effects caused by these transgressions (making one laugh, think, feel troubled, etc.) and at the modalities of their manifestations (how do these transgressions function? How does one move from one world to another? Are these passages explained or justified? If so, how? With a magic ticket, a remote control …?)[44]

He still arrives back at narrative devices (a remote control?), rather than what might be present in the visual make-up of metaleptic material. Feyersinger touched on the material properties of animated forms when he argued that metalepsis is mainly associated with drawn or two-dimensional animation because other forms are more concerned with a type of photorealism:

[44] Limoges, "Metalepsis in the Cartoons of Tex Avery: Expanding the Boundaries of Transgression,", 210.

> They [metaleptic transgressions] are less frequently used in computer animation (due to its common aspiration for realism) and object animation (due to its specific production process based on a real three-dimensional space and its tendency to obscure the presence of the animator). Usually, neither computer nor object animation want to distract from the illusion of a perfect mimesis or the illusion of animate objects and accordingly these modes of animation do not employ metaleptic transgressions as often as drawn animation does.[45]

I would seek to expand this definition because it doesn't fully explore the properties of stop motion animation and that this particular argument is true only for examples of rhetorical metalepsis that might include references to the animator. In this sense, both forms of 3D animation (digital and analogue) tend to resist the metaleptic forms familiar to drawn animation, but that doesn't mean they do not exhibit other types of metalepsis specific to their form. The ways in which different forms of animation have different visual metaleptic potentials will be discussed further in Chapter Three, but it is also useful to see how metalepsis works in animated films before exploring how it works in the visual aspects of animation using some historical examples. I find these fascinating because they are so early in the development of animation and so clearly show how the process of animating itself creates an almost reflexive instinct to be self-reflexive.

Metalepsis in animation

The historic performance of the apparatus of animation is nowhere more apparent than in Winsor McCay's twelve minute short animation *Gertie the Dinosaur* (1914), in which nearly half of the film is taken up with explaining the process of animation and the labour required to make it. McCay was already famous as the artist of *Little Nemo in Slumberland* (1905-1926), a popular full-page colour weekly cartoon strip for the New

[45] Erwin Feyersinger, "Diegetic Short Circuits: Metalepsis in Animation." , 282.

York Herald, and the film is posed as a bet between friends to make a dinosaur skeleton seen at the museum come to life. The film is mostly silent live action footage and the inter-titles inform the audience that, after six months work, McCay has finished drawing the beast. He explains to his friend, "I made ten thousand cartoons, each one a little bit different from the one preceding it", as a hapless assistant carries, staggers and then drops a dramatically exaggerated pile of sheet paper.[46] The bet won, the live action McCay has a screening for his pals at a dinner party and stands in front of a projection screen to introduce the animated Gertie. McCay gestures in front of a large drawing of Gertie in her cave and he then withdraws from the shot with a flourish, there is then a cut to an inter-title ("Come out Gertie, and make a pretty bow") to allow a cut to the animation proper. Gertie performs with comic recalcitrance to the inter-title instructions issued by McCay, and at the end McCay announces "Gertie will now show that she isn't afraid of me and take me for a ride". McCay is now a miniature cartoon version of his live action self and his dinner-suited form is plucked from the ground by Gertie and gently placed on her back as she walks offscreen while the whip-wielding McCay bows and gestures to the applause of an invisible audience. It is significant that this performance was initially conceived as a vaudeville act and was part of a stage tour that McCay launched in 1914. In it he stood in front of the projected image and, ringmaster like, directed Gertie live on stage. The show featured timed interactions, McCay mimed tossing her an apple from the stage (in the cinema version a pumpkin is used to better show the scale for the gag) for the animated "dinosaurus" to catch and he ducked off stage to allow his animated self to appear on-screen. McCay was a consummate showman and he realised the further potential and reach of the act as a filmed medium. The theatrical release that is extant today is a modified version using inter-title cards to replace McCay's on-stage patter and was released in the same year as a stage version, in an early form of multi-platform

[46] *Gertie the Dinosaur,* directed by Winsor McCay (1914; Box Office Attraction Company).

distribution.[47]

McCay's films demonstrate that, from the very beginning, animation explored a playful relationship between the artist, audience and film, as well as the willingness by both the audiences and the animators to entertain a state of constant ontological flux. Metalepsis was a part of the fabric of these early films, and referring to the connections between story worlds were threads that referenced the seemingly impossible act of making them. Either through highlighting the thousands of drawings that constitute them, or the magic of the artist's handiwork moving seemingly unaided, established animation as a medium that is endlessly entranced by its own impossibility. These metaleptic gestures by animators created ruptures between layers that established an anarchic relationship to reality, one that live action cinema couldn't follow. As Crafton has pointed out, when animation became more industrialised and the mechanisms of production became less of a novelty to be displayed as a part of the story, and more hidden, the animators found other ways to bring themselves into the cinematic form.[48] This could be considered a development of the authorial voice, an interesting notion in a filmmaking form known for industrial production methods that require the individual artist to renounce any personal style in order for the commercial animated form to work cohesively as a film. In this sense, the studio animators echo a previous cohort of narrative artists, the diorama specialists of the 19th century, whose huge, immersive panoramas of historical events were deemed so commercial the painters should not be even considered as artists, as a contemporary newspaper reported: "an academic expert report recently decided that panorama and diorama painting should be barred from becoming members of the academy or professors of painting"[49]

---

[47] *ibid.*
[48] Crafton, *Before Mickey: The Animated Film, 1898-1928*, 12.
[49] Oliver Grau, *Virtual Art: From Illusion to Immersion.*, (Cambridge, Mass.; London: MIT, 2004), 68.

The figuration of the authorial voice through the artist's hand became quite literally embodied when the Fleischer Brothers developed rotoscoping, a system for frame by frame tracing of live action footage to use as reference material in animation, and began using it wholesale in *Ko-ko the Clown*. In addition to the visual layering of drawn material over filmed material, there was an additional layer of performance through the tracing of Dave Fleischer's performance as the clown. While rotoscoping in itself is not metaleptic, it also has a distinct metaleptic potential if the original performance and the animated performance diverge or changes. Disney recycled many snippets of film footage, for example footage shot as motion references of the dancer Marjorie Belcher for *Snow White* (1937) found its way into subsequent Disney films, lending a particular 1930s dance performance style in much later films like *Robin Hood* (1973).[50] Additionally, those particular movements, recycled years apart, formed part of a house style of performance that became distinctly Disney's.[51] Rotoscoping can allow for all manner of performance layering and combinations, and a metaleptic layer of cultural appropriation is formed when black performer Cab Calloway's dance moves were copied frame by frame to perform as a white ghost in *St James Infirmary Blues* in the Fleischer's 1933 short *Snow White.*

I wanted to include some rotoscoping in this project because it is such an interesting and invisible layering process. My decisions not to use puppets or people in the animated sections of the work seemed to make this ambition difficult, until I found myself

[50] "Disney's 'Snow White and the Seven Dwarfs': Still the Fairest of Them All." "Snow White and the Seven Dwarfs" Platinum DVD Edition. Special feature. DVD. Directed by Harry Arends (Buena Vista Home Entertainment2001).
[51] This has been gleefully documented by fans with frame by frame comparisons showing identical footage from different films sometimes using a performance captured decades before. See "5 Disney Movies That Stole Footage From Other Films" https://www.youtube.com/watch?v=FepHIzaXTyg and other examples.

watching, in fascinated horror, a nature documentary featuring an eel suffering a convulsive seizure[52]. The movement of the eel as it writhed was so unnatural as to evoke the uncanny. The eel coiled around itself and then, in an instant, spasmed into another impossibly contorted shape. It was this unmotivated movement, a tensioning followed not by a relaxation, but another form of tension, that seemed to physically manifest some of the ideas that I am evoking in my macroscopic review of the spaces in *All The Nice Things Come From Here.* Many of my arguments around stop motion animation's capacity for the uncanny are centred on the way it displays motion, and how the motion specific to stop motion conveys a quite unnatural overall affect, and I'll expand further on this idea in Chapter Three. This found movement in a living creature was such a strong example of how motion itself can have a storytelling function that I decided to try to echo the movement with wire. Contemporary animation software makes rotoscoping a much simpler proposition than it ever has been before, and I used the eel footage broken down to individual frames as a template and guide for the animated writhing wire loops.

Rotoscoping provides a verisimilitude of movement (even if at one remove from photographic realism) that feels smoother, more human, than animated characters. When Ko-ko the Clown (Fleischer, 1928) is seen to be drawn from the animator's filmed hand and begins to walk, seemingly in the same universe, it highlights an impossible boundary between the world of the fictitious character and that of his creator. The divisions between the two worlds merge into each other, seemingly at will. The films in the series typically start with the animator's hand drawing Ko-ko, directing the audience into the world of the drawn, but Ko-ko also bursts into the filmic world by spilling out from the paper and onto his animator's desk to exist in the world of 1920's New York. In *Ko-ko's Earth*

[52] BBC Earth Channel, "Eel Suffers Toxic Shock From Brine Pool. Blue Planet II." accessed January, 2018, https://www.youtube.com/watch?reload=9&v=ZwuVpNYrKPY.

Control (1928), he pulls the lever that brings about the end of the world and he and his sidekick, Fitz the dog, are thrown into a vaudevillian combination of cut-out building collapse and pixelated carnage, culminating in both characters sliding across a live action table before seeking refuge in the inkwell from which they were presumably created. The spectator is aware that they cannot exist in the same world since they occupy very different ontological spaces, with one occupying the fictional world of the story being told and the other occupying the nominal world of the storyteller. It is a nominal space because the storyteller level purports to be the "real" world by featuring the "animator" Max Fleischer, in actuality the producer of the eponymous series. However, at least in the early films, the hand of the animator is that of Dave Fleischer, who was also the performer responsible for the Ko-ko reference material. Crafton argued that Dave finding his way into the series as the rotoscoped Ko-ko the Clown in the *Out of the Inkwell* series (1918 - 1929) marked a turning point in the history of the animated character as the literal "hand of the artist" disappears, only to be subtly reintroduced as the animator assimilates themselves into that of their character, in the end becoming a type of "amanuensis" for the animated creation.[53] Klein suggested that this relationship is always fraught, and that the animator's control is always shown as tenuous:

> The cartoon is a moving sketch with a frantic life of its own; it is the Sunday Funnies with filmic continuity. Koko refuses to take orders from the inkwell, Gertie balks when the drawing board tells her how to behave. The hand drawn image becomes a mock conflict in itself. In the early cartoons, Pinocchio could never be transformed into a 'real boy', not as a drawing that becomes "real", because the flat medium would not permit it.[54]

In all of these scenarios the story world of the animated character is brought into focus by introducing a narrative level above the story, that of the animator/narrator and, when

[53] *Crafton, Before Mickey: The Animated Film, 1898-1928*, 298.
[54] Norman M Klein, *Seven Minutes: The Life and Death of the American Animated Cartoon*, (London and New York: Verso, 1998), 17.

the two do interact, this forms a metalepsis. Visually, I am expanding these ideas to include stop motion object animation and examine more closely the unique area of film-making that it occupies because it is made with materials that are recognisably repurposed from their usual context and refigured in a filmic world has significant metaleptic potential. Stop motion animation, particularly the form which manipulates objects rather than creating miniature sets and replicas, is an area of animation that intensifies the metaleptic potential of the form. The majority of the animated objects in *All The Nice Things Come From Here* are usually static, and even those that might not be immediately familiar, like ferro-fluid or iron filings, are imbued with a movement that isn't natural or expected. These tiny slippages of purpose and movement, from one state (what we understand them to be; inert, lifeless) to another (what we see them to be; moving, purposeful), are what I identify as a visual metalepsis because it's a subtle slippage from one level of visual understanding to another one which references the act of animating. Here, animating itself, the act of simply making an object move, is an authorial intrusion onto how a viewer might understand an object, its purpose or its use.

The repurposing of materials can also apply to more conventional miniature models where the differences between the real world material and its narrative role are betrayed by slippages of scale or purpose. A brushstroke or texture on a model can immediately signify its provenance as a scaled, artificial construction, but could also be applied to the fingerprints artfully left as trace on a plasticine Aardman model. Even in commercial stop motion animation, the traces of production are held to be crucial elements of authenticity. Peter Lord, one of the founders of Aardman believes stop motion animation has "all the cues that tell you these are real people doing real things … In artists, it's the sight of fingerprints; it's the slight inaccuracies; it's the knowledge that it is real, tangible, touched

by hand, that I believe comes across on screen".[55] I argue that these cues that refer to the outside world of the animation are metaleptic devices that define stop motion animation's unique visual qualities and also are a significant factor in stop motion's traditional relationship to the uncanny in that they refer to the story world and the world of the storyteller at the same time. The traces of the author/artist are always present, and these artificial visual elements set up a story world that is simultaneously familiar and denaturalised at the same time.

The animator Jan Švankmajer's surrealist short films repurpose familiar household items as augmented objects of horror; the snapping, toothed shoes of *Do Pivnice (Down to the Cellar)* (1982) are a disturbing and hallucinatory reworking of an ordinary item made all the more unsettling because the puppet is made from something both ordinary and familiar. The animism of the inanimate is part of stop motion's visual power, and the transgression of narrative spaces between the object and the animated object is at the centre of visual metalepsis. Švankmajer's *Hra s Kameny* (*A Game with Stones*) (1965) is another example of the other-worldly strengths of stop motion animation. The film is a simple exploration of objects reconfigured and denaturalised: a kitchen tap on a wall squeezes out smooth river pebbles rather than gushing water and the whole set up is controlled by a wall clock contraption that seemingly controls this flow of rocks. Švankmajer's films are explorations of order disrupted and disorder corralled, as the stones initially fall pleasingly into alternate black and white coloured sides of a small tin can that hangs from the tap, white pebbles onto the black side and black pebbles onto the white side. The interior of the can is shown to be an infinite space where order and symmetry are explored as the stones form themselves into geometric patterns and, once

[55] Tasha Robinson, "Aardman Animations co-founder Peter Lord reveals the best gag in his new film *The Pirates! Band Of Misfits*," A.V Club, accessed January, 2016, http://www.avclub.com/article/aardman-animations-co-founder-peter-lord-reveals-t-72973.

finished, the pebbles are tipped from the can onto the floor where they become inert once more. The process falls apart as the tap begins to expel pebbles of more complex colours and more varied textures and, no longer matching the interior of the can, the stones start to smash each other and finally their combined weight destroys the can. The pebbles fall straight through to the floor, no longer passing through the can where their quiddity was given a brief chance to flourish.

Object animation speaks intimately of a world that is not possible, in animating the world of the familiar and imbuing inanimate objects with a life-force in which the viewer is reminded, frame by frame, of the structure that surrounds the creation of the film. Its impossibility is explored through every denaturalised shot. In part, this is because stop motion animation does not look like live action cinema. Over a century of film-making has made audiences familiar with the visual form and the limitations of photographed live action cinema. What audiences understand as naturalistic in commercial cinema is a pastiche of photographic conventions - a visual language of depth of field, focus pulls and motion blur that audiences read as cues of speed, spatial relationships and narrative focus, all of which are utilised to keep the audience immersed in the film and within the narrative. As Lev Manovich has pointed out, the goal is to keep the audience within the narrative of the film:

> Cinema works hard to erase any traces of its own production process, including any indication that the images which we see could have been constructed rather than recorded. It denies that the reality it shows often does not exist outside of the film image, the image which was arrived at by photographing an already impossible space, itself put together with the use of models, mirrors, and matte paintings, and which was then combined with other images through optical printing. It pretends to be a simple recording of an already existing reality — both

to a viewer and to itself.[56]

Stop motion animation, on the other hand, uses photographic elements in a fundamentally different way from live action film, and displays Manovich's "traces of its own production process" as an overall part of the aesthetic of the form. The scale of the images is usually based around photographing miniatures and, even if the objects are life-sized, the need for frame by frame shooting does not give the footage motion blur. The lack of motion blur gives animation its characteristic jerky rhythm and the cues of photographic scale are disrupted by the changed depth of field created by miniature photography. Even if a stop motion animation follows the broader vocabulary of the language of live action film, through shot construction, sound and editing, it is still distinctly different because the visual fabric and texture of stop motion animation bends the capture of the images in fundamentally different ways. This aspect of stop motion animation is the aspect I found most compelling, so my animated snippets are now macroscopic and contained, and while over the course of this project they became abstracted they still exhibit the central tenets of stop motion animation in the way that they move and the way that they behave visually. They create an altogether unexpected reality that is one step removed from the indexical claims of cinema or those of narrative.

[56] Manovich, *The Language of New Media*, 253.

Chapter Two: Layers

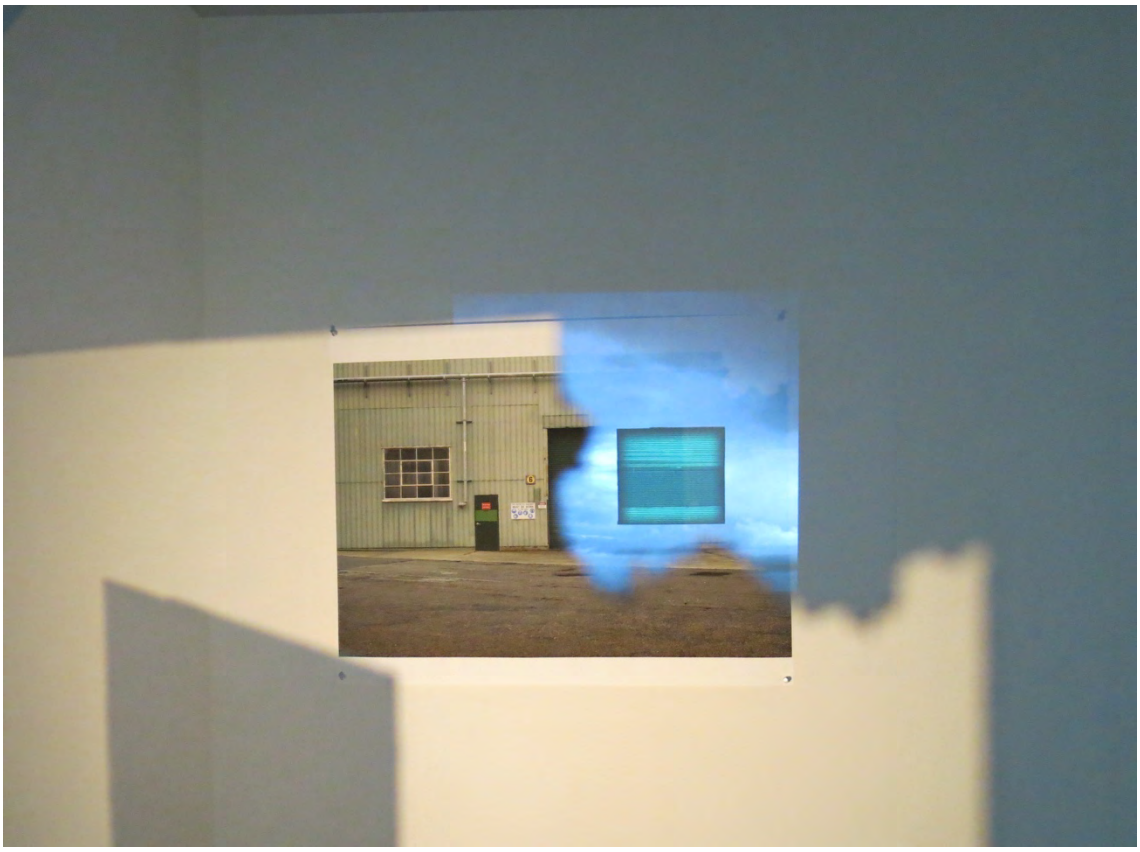


Figure 10. The Schüfftan process in *Quiddity #1 (Detail)*

Some time between 1401 and 1425, Filippo Brunelleschi created his famous Florentine Baptistery panel experiment, in which he painted a perspectively correct picture of the baptistery and, in order to prove its verisimilitude to the original, he had his viewers look through a peephole in the centre of the painting and into a mirror reflecting the painting (see Figure 11). By moving the mirror over the scene, the viewer could see the reflected painting and the actual building matched, one over the top of the other. Brunelleschi had proved his perspective construction method produced a mathematically correct, two-dimensional representation of three dimensional space. The long-since lost visual demonstration is considered one of the significant moments in the development of linear perspective in art.

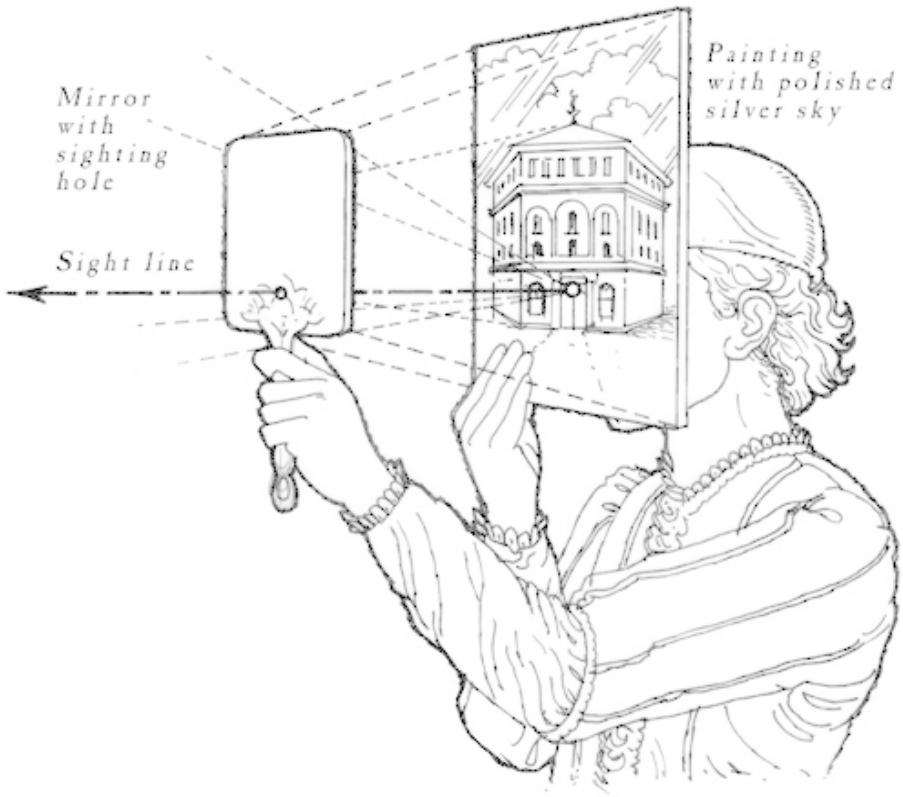


Figure 11. A recreation of the Brunelleschi panel experiment.

It was a decisive moment in the understanding and depiction of spatial relationships, and Brunelleschi was a key figure in ushering in a new cultural and visual paradigm in the

understanding and representation of space through the use of perspective.[57] Brunelleschi's biographer Manetti, in *The Life of Brunelleschi,* described the apparatus in detail, explaining the artist used burnished silver to create a reflective sky matte,

> and for as much of the sky as he had to show, that is where the walls in the picture vanish into the air, he put burnished silver, so that the air and the natural skies might be reflected in it; and thus also the clouds which are seen in that silver arc moved by the wind, when it blows.[58]

There has been much conjecture about how Brunelleschi created his painting. Tsuji proposed that a camera obscura could have mechanically simplified the complex task of creating a realistic mirrored miniature of the Baptistry (as the viewer would be reversing the image again by viewing it in a mirror, the original panel must have been painted as a reversed image), which brings a fascinating lens-based debate to the development of perspective in quattrocento art.[59] However, what I'd like to examine here is that Brunelleschi demonstrated that in order to create the conditions for illusionistic images to approach a representational form of realism, it is necessary to take control of the images through layers. The panel experiments could be thought of as a kind of Ur-visual effect, in that it embraces visual concepts critical to creating artificial lens-based images. Brunelleschi divided the image into its constituent parts of building and sky and then separated them by painting one section but leaving the other to be created procedurally by means of a reflection.[60] The image is recombined in a further layer (the mirror held by

---

[57] While art history reception is beyond the scope of this thesis, the development of perspective as representative of a new form of philosophical and cultural thought was first proposed by Panofsky and further expanded by Damisch as a whole new model of thinking about art, history and visual representation.

[58] Shigeru Tsuji, "Brunelleschi and the Camera Obscura: The Discovery of Pictorial Perspective," *Art history* 13(3) (1990), 227.

[59] Shigeru Tsuji, "Brunelleschi and the Camera Obscura: The Discovery of Pictorial Perspective."

[60] Procedural animation is a CGI term that describes algorithms dictating movement rather than individual elements being animated by hand. It is used for natural effects such as fog or water and the physical conditions are prescribed through a series of conditions (wave height, wind direction and strength, effect of gravity and so on) to get different results. The mirror in Brunelleschi's experiment could be thought of as a procedural tool, as it is creating the images

spectator) while the spectator peers through the original layer. It isn't necessary to have a moving sky to prove the mathematics of linear perspective, so it could be argued that an important aspect of the experiment was also theatrical, that convincing the audience of the veracity of the image through a certain representational completeness was also important. The small flourish of the burnished silver clouds was, as a contemporary special effects technician might say, what sold the image. In doing so, Brunelleschi did more than demonstrate perspective, he also demonstrated that he understood implicitly the power of the layer as a storytelling tool.

Layers in animation

This chapter looks at layers as visual devices, layers as narrative devices and the layer's metaleptic potential, in both visual and narrative senses, through the installation work *All The Nice Things Come From Here*. Animation production of all types has a fundamental relationship to layers. In 2D drawn animation, the development of the transparent celluloid overlay (called a cel) to separate animated action from the backgrounds enabled an integral part of the animation process. In more filmic animation styles, like object stop motion, the layers perform the same unseen work of separating objects from each other so that they can be visually manipulated in different ways as a visual effect. I am proposing that the layers that constitute an image have a similar storytelling potential as the metaleptic layers in other forms of narrative media, such as in literature or film, because they construct a visual space that creates an overall narrative and, as in other media, these layers can be manipulated, controlled and transgressed in the same way that other narrative levels can be controlled by an author.

mechanically through the physics of reflection.

Layers are the invisible core that run through all forms of animation. In addition to the metaleptic layers that separate the story worlds of animation (the world of the animator from the world of the animated) there are also the distinct mechanical layers that are a central feature of animated film. In traditional 2D drawn animation the layers are transparent plastic sheets that separate foreground from background, as well as isolating characters (and character parts) from each other. The development of celluloid layers (cels) in 1915 by Earl Hurd was a key event in the industrialised production of commercial animation as the layering the character drawings over a background obviated the need to redraw the backgrounds for each frame, and allowed teams of people to work on the same project simultaneously. Like many early production techniques, celluloid layers were patented and the objective was not so much artistic control as commercial gain, as Hurd's original cels were "to enable such animated cartoons to be made with the minimum of effort and expense and to facilitate the rapid execution of any series of poses".[61] The layers were elements that remained invisible to the audience but allowed for more sophisticated and complex visual outcomes. The layer in this form remained a hidden part of the production process until multiplane camera stands were developed, first by artist Lotte Reiniger for the *The Adventures of Prince Achmed* (1926), then commercially by Ub Iwerks in 1933 for the *Silly Symphonies*. The Fleischer studios had a patented version (see Figure 12) that was placed horizontally and swung layers around a pivot to create a feeling of parallax in the panning shots which simulated a sense of 3D space.

[61] Earl Hurd, Process of and Apparatus for Producing Moving Pictures. US Patent US 1143542 A filed 19 Dec 1914, and issued USA 15 Jun 1915. https://www.google.com.au/patents/US1143542.

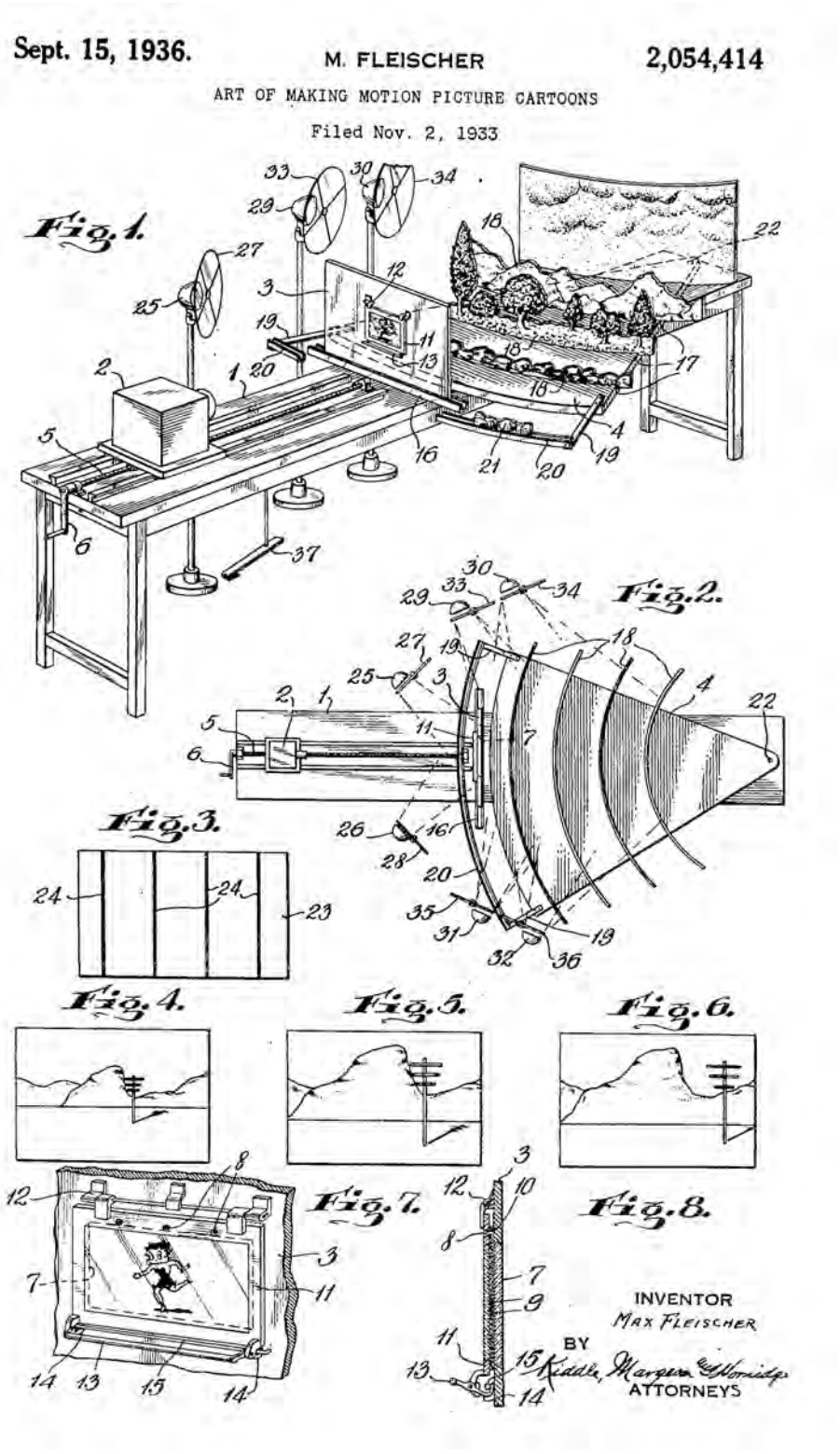


Figure 12. Fleischer's 1936 patent for his multiplane camera setup.

The technology peaked with the massive, room-sized machines created by Disney in the 1940s. Disney's motorised camera stands used glass planes layered horizontally to create a filmic three dimensional space with a facsimile of parallax movement that worked not

only for panning shots across the frame but also for shots that tracked into the frame (see Figure 13). The multiplane camera also maintained a resolutely artificial depiction of space through the use of drawn, illustrative layer elements, yet made them move in ways that conformed to live action expectations of movement. Unlike the industrial invisibility of the cel, the glass layers of the multiplane exploited the inherently visual power of the layer as a vital and intrinsic part of the image. The effect is a mixing and matching of various levels of indexicality and realism within the one frame, as illustrative elements could now behave like filmed elements in real space and move at different rates relative to the observer. It is just one of the complex visual feints that the animated form uses to create an extended and tacit agreement with the audience in the suspension of disbelief.

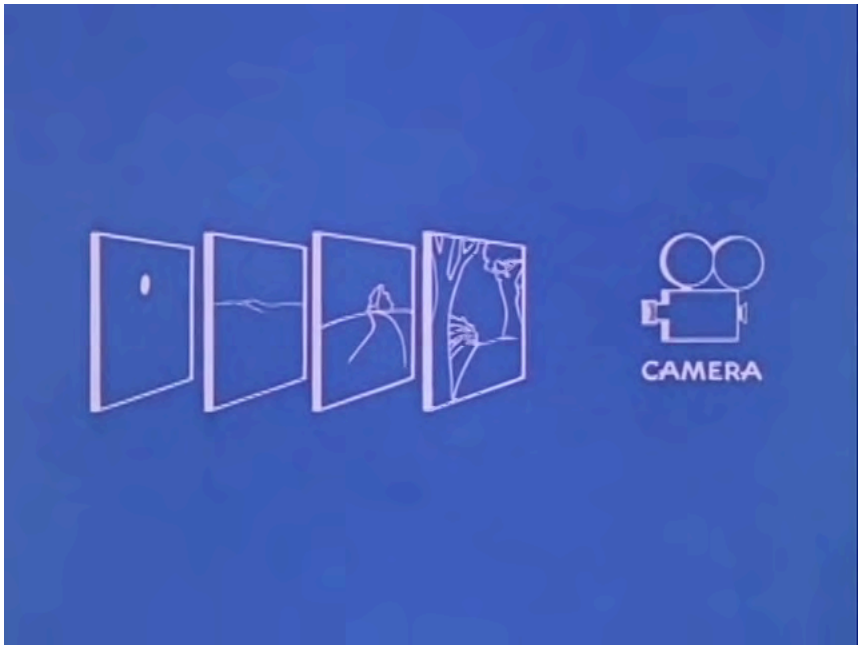


Figure 13. The Multiplane Camera in *Disneyland, Tricks of Our Trade*, aired February 13, 1957. TV.

Stop motion animation, being mostly a type of animation of objects, uses a layer construction very similar to that of live action film, where it is possible to shoot exclusively in camera and the layers, if they are used at all, function in a similar way to visual effects. However, when stop motion animation is a visual effect inside live action film then the effect of the layers as a form of visual metalepsis is very much in force. The combination of puppets and live action acts as an immediate diegetic rupture and the layer

construction is both visually and narratively obvious through the differences in the motion, scale and use of space. Early examples would be any shot that the puppet King Kong shared with Fay Wray in the Merian C. Cooper and Ernest B. Schoedsack 1933 version of the film. King Kong's fight with the Tyrannosaur (see Figure 14) is a masterful combination of rear projection, miniatures and mattes, with the sense of the layers heightened further by the Gustav Doré-inspired proscenium of dark foreground jungle framing the stop motion action. The marked visual differences between the puppet and the live action elements calls constant attention to the artificiality of the scene, but the friction caused by the differences is a visual metalepsis that allows the audience to be simultaneously inside and outside the frame. This is the mechanism that makes King Kong a pathetic, ruffled, rabbit-furred puppet and the seventh wonder of the world at the same time.

Layers in animation are part of a subtle, wordless story world, and at their most basic they define and contain the visual world of the animation. The layers create place, space and movement but they can also function in a metaleptic fashion through the ruptures, punctures and slippages that have a complex, self-reflexive power.

Figure 14. Kong battles the Tyrannosaurus Rex. *King Kong*, directed by Merian C Cooper and Ernest B. Schoedsack (1933). Film.

Layers as narrative devices

Stop motion animation shares with all cinematic visual effects two major underlying techniques for altering the cinematic image, either through manipulating space or through manipulating time. The techniques that create cinematic illusions through a manipulation of space are not just through lens-based means (although this is an important visual element) but also through the underlying structure of the layers. In modern imaging software, these layers can be visualised as different visual elements (for example, foreground, mid-ground, background) on virtual sheets of glass that are stacked one on top of another, and the operator can see the layers in combination or work on the constituent elements separately.[62] These layers mask some elements to allow the substitution of other elements and all of these layers work to reconfigure the visual information within the frame through compositing different images together. Much of today's digital image manipulation software uses the concept of layers as a visual metaphor, and the software interface itself has a direct visual relationship to the layers in the way that it presents the image information. Earlier film-makers had a slightly different concept of image manipulation as they needed to use multiple exposures and duplications to achieve the melding of disparate visual objects. Early filmmakers like Georges Méliès were immediately comfortable with the concept of layers, either in the theatricality of the painted flats that made the sets of the groundbreaking 1902 short *Le Voyage Dans La Lune* (*A Trip to the Moon*) or the more filmic manipulation of the double exposure used

[62] The visual metaphor of layers is, through the ubiquitous use of Adobe Photoshop, simply the most prevalent at the time of writing and there are other methods for visualising digital imagery compositing. Some compositing software packages such as Nuke, Fusion and Flame use a node-based system where the various instructions are plugged into the image using a visual metaphor of tiles (representing single instructions, e.g., colour correction or blur) that are linked in a tree-like structure to show all of the steps invoked to alter the image. Node-based compositing can offer finer detail and control as it allows for the results an adjustment might have on additional adjustments further down the tree. The order of commands in visual material can have a significant effect on the final outcome, so being able to adjust and order them precisely can be of benefit. The closest capacity Photoshop and After Effects have to this is the Adjustment Layer feature.

to splash the painted prop rocket into a real ocean.

The techniques available to early cinema exploited film's capacity for repeated passes through the camera as a film strip remains unexposed, and so still able to receive an image imprint, until light falls directly onto it. If a film strip is run through a camera and the scene only has light falling in one area then that area will be exposed on the film strip, and the portions of the film strip that did not receive light will remain unexposed and will be able to be run through a camera again to be exposed a second time. As long as no new light falls on the previously exposed area then this process won't affect the already shot footage, so could be repeated until all areas of the frame had received light. Manipulating this property of film remained the mainstay of visual effects through contact printing, duplication and rephotographing. The creation of what are known as travelling mattes (where the foreground and background elements in moving shots were composited together) was achieved through a complicated combination of filters and optical printer reprints.[63] Thus, whilst there was no layer metaphor when constructing early 20th century effects, except when creating glass mattes and hanging miniatures, layers were still a crucial and physical part of the shot.[64]

Layers are a hidden and technical part of the film-making process that are rarely visible to the viewer, even when the "fake" nature of constructed shots are betrayed to the audience through unintended outlines, mismatched colour or perspective errors, the underlying system that creates them remains largely concealed from view. Sean Cubitt traced the visual lineage of digital layers from the painted panel scenes of the theatrical

[63] An excellent overview of this process is demonstrated by Stu Maschwitz from Industrial Light and Magic in a recreation of analogue blue screen compositing techniques translated into an After Effects process. http://www.fxguide.com/featured/fxphd-the-role-of-the-optical-printer/

[64] Glass mattes and hanging miniatures are paintings or models that were placed between the camera and the real world subject and shot in camera. Matte paintings on glass were typically set extensions and backgrounds.

flat of 19th century scenography, where the flats "indicated rather than constituted space, drawing on audiences' implicit knowledge that such devices "meant" depth rather than created it".[65] The theatrical flat, as seen in a 19th century paper theatre example in Figure 15, used a mixture of one point perspective, overlap and distance to suggest a narratively coherent space rather than a visually coherent or perspectively correct one. While the contemporary digital layer might seem to be less coded and more effortlessly representative of three dimensional space than that of the symbolic space of 19th century theatre, there is still a contextual and cultural element to conceptualising and understanding screen-based imagery. As Lev Manovich has pointed out, new technologies update through a process of disavowal, as each new example repudiates the previous version and "each new technological development (e.g., sound, panchromatic stock, colour) points to the viewers just how 'un-realistic' the previous image was and also reminds them that the present image, even though more realistic, will be superseded in the future".[66] The fictional space created by the digital layer relies, in a similar way, on the audiences' implicit understanding (and acceptance) of lens-based imagery for its invisibility, and this understanding is always relative; what may appear to be a perfect integration of real and constructed objects in an image today will probably not appear as seamless in a decade.

[65] Sean Cubitt, *The Practice of Light: A Genealogy of Visual Technologies From Prints to Pixels*, (Cambridge, Massachusetts: The MIT Press, 2014), 185.
[66] Lev Manovich, "'Reality' Effects in Computer Animation," in *A Reader in Animation Studies*, ed. Jayne Pilling (Sydney: John Libby & Company, 1997), 8.

Figure 15. Paper Theatre background flats. Imagerie d'Épinal, No 1675. Grand Théâtre Nouveau. Jardin d`Hiver - Coulisses.

Individually, layers are the imperfect source of all the unseen visual slivers that form the structure of all filmic effects, it is only when they are viewed in combination that the whole effect can be seen. Layers follow much the same model, regardless of the film-making technique or means, whilst digital processes such as Photoshop have formalised the digital visualisation of the layer as a series of transparent glass plates that are viewed as if from above. There are no differences between the layers created in film through double exposures, optical printing or mattes and those created digitally using alpha channels and green screen. Regardless of whether they are constructed digitally or through analogue means, the separation and recombination of visual elements through layering inside an image is the single most important aspect of altering and expanding the filmic image. It is the separation of layers within frames that allows for the creation of every type of non-indexical image created since Méliès did comic battle with his *Four*

Troublesome Heads in 1898.[67]

It is the visual friction of the spaces *between* layers in each frame which is of interest here because, although the layers themselves might be invisible, their combined effects are the overall filmed image, and the combination of these images can have several different outcomes. It can be about highlighting the differences between the different layers, as in the metaleptic incursion of the animator's hand into the animated world or the friction of image against image, which can initially appear to be absent, but only contextually and temporarily, as per Manovich's idea of generational technological visual disavowal, or as Cubitt points out,

> Blue-screen compositions intended to make audiences "believe a man can fly" in 1979 no longer convince. The good-enough solution of one decade is the kitsch of the next. This is not a teleological theory: there is no terminal realism at the end of the rainbow, in special effects any more than in acting, in which performance styles likewise become stilted with age, but without any necessary movement towards increasing verisimilitude.[68]

It can take the retrospective distance of decades to really see how layers have shaped the final work, for example, Barbara Flueckiger's description of the theatrical faux-Méliès look in Baz Luhrmann's *Moulin Rouge!* (2000) as, "a tension in the computer generated imagery of the 2000s between achieving a higher degree of photorealism by appropriating

[67] For an exhaustive overview of historical and contemporary motion picture visual effects see Rickitt's *Special Effects: The History and Technique*. Digital mattes are based on the same principle as physical mattes, both forms mask some parts of the image so images can be combined together. Green screen creates digital matte shapes through colour selection. All green information in a shot is selected and used to create a masking element called a matte and the information about what is masked (i.e., transparent) and what is not is stored within the image channel next to the colour information (RGB) and called an "Alpha" channel. So RBGA indicates a colour image of four channels consisting of the Red, Green, Blue and Alpha information Skilful manipulation of mattes allows for different visual layers to be composited together. The system is a digital version of historical analogue techniques where mattes were made by using black card in front of the camera allowing the film to be wound back and the unexposed footage could be re-exposed with a new image.

[68] Cubitt, *The Practice of Light: A Genealogy of Visual Technologies From Prints to Pixels*, 195.

the cultural rules and mechanical properties of photography and at the same time marking these images as utterly artificial through a stylised rendition of such distortions".[69]This shows that much of what is achieved by applying layers of exaggerated, camera-like effects in colour, focus or motion blur becomes an integral part of, not just the look and feel of, a work, but also a part of its storytelling function.

The spaces inside the frame

The spaces that constitute the establishing shot divide into five main layers: the plate formed by the exterior window; the matte formed by the Schüfftan mirror; the plate formed by the animated projection on the wall; and the artificial trompe l'oeil filmed space within the model that forms the animated footage.[70] There is an additional aural space created by the soundscape of a car reversing and leaving the car park and there is one more temporal layer created by the time-lapse capture of the car headlights.

This is the first station point for *All The Nice Things Come From Here*, and inside this simple wide shot is a basic structure of animation as a visual effect. This is explored by drawing attention to the spaces, not just between the frames, but also the lateral gaps between the layers through the structure of the early film special effects technique of the Schüfftan process, a form of in-camera compositing that uses a mirror to align two separate spaces or images to form the illusion of one cohesive space. The Schüfftan process is an obsolete cinematic process that I have reconstructed in a spare, simplified form. I've used the visual core of the effect and have both refined and reduced it to its

[69] B Flueckiger, "Photorealism, Nostalgia, and Style," in *Special Effects: New Histories, Theories, Contexts*, ed. Dan North, Micheal Duffy, and Bob Rehack (London: Palgrave/British Film Institute, 2015), 78.
[70] I'll use the visual effects terminology for a layer, a "plate" originally referred to "paint on glass" effects and eventually came to refer a separate layer used for compositing visual effects of any media.

constituent parts. It is made up of a photographic image, a mirror acting as a matte and a projection of time-lapse animation. To experience the work as one composited shot the viewer has to find the point of alignment, the station point, where the photograph, mirror and projections align to form one composited image. Finding the composite image is not mandated though, and there are no instructions attached to the work. The work also functions optically from several other angles to provide surprisingly different mattes to the primary image. The installations are a diagrammatic view of some of the key issues of representation and meaning inherent in the formal structures of filmed effects.

I'd like to use this section to discuss the various ways that layers create filmic space which, in turn, creates meaning, and how these formal elements can be related to a broader metaleptic reading. The practicalities of the Schüfftan process and how it was recreated in *All The Nice Things Come From Here* are discussed at some length here as they are an integral part of the overall project. It is important to note that this project is not about a slavish recreation of a long dead analogue film technique. What is so fascinating about the Schüfftan process is how it creates a physical space that so neatly describes how contemporary cinematic illusions are made and how that, in turn, more broadly illustrates the concepts of space and representation in cinema. The space where the illusion aligns is the impossible place of this thesis' title, it exists only as a combination of virtual image and mirage. The final image constructed by the viewer will either confirm or deny the spectator's spatial (and therefore narrative) understanding of the scene. If the images align in such a way that they support the viewer's understanding of how the physical space should be, usually one that conforms to a conventional understanding of perspective, then the illusionary will be credible as an alternate space that exists inside the Schüfftan construction. There are other options, however, and as the station points progress within the installation it will create spaces that don't conform to Cartesian geometry by creating

spaces that break, collapse or otherwise rework the expectations the spectator may have had when encountering the model.

The Schüfftan process

The Schüfftan process was pioneered by German cinematographer Eugen Schüfftan, and was most famously used in Fritz Lang's 1927 science fiction epic *Metropolis* (see Katarina Loew's discussion of its use in Metropolis and other films).[71] It was an important special effects technique, used subsequently by film directors such as Hitchcock and Rossellini. Hitchcock described its use in his 1929 film, *Blackmail*, where it worked not just as a visual effect but also as a production ruse because the studio set-up for the shots looks so slight:

> there was never enough light in the British Museum, so we used what is known as the Schüfftan process. You have a mirror at an angle of 45 degrees and in it you reflect a full picture of the British Museum. I had some pictures taken with half-hour exposures. I had nine photographs taken in various rooms in the museum and we made then into transparencies so that we could back-light them. That is more luminous than a flat photograph. It was like a big lantern slide, about 12 by 14. And then I scraped the silvering away in the mirror only in the portions where I wanted the man to be seen running, and those portions we built on the stage. For example, one room was the Egyptian room, there were glass cases in there. All we built were the door frames from one room to another. We even had a man looking into a case, and he wasn't looking into anything on the stage. I did nine shots like this, but there was barely any set that could be seen on the stage. The front office was worrying about when the picture was going to be finished. So I did it all secretly because the studio heads knew nothing about the Schüfftan process. I had another camera set up on the side photographing an insert of a letter,

[71] Katharina Loew, "Magic Mirrors: The Schüfftan Process," in *Special Effects: New Histories, Theories, Contexts*, ed. Dan North, Bob Rehak, and Michael Duffy (London: BFI Palgrave, 2015), 63.

> and a look-out stationed at the door. When the big-shot from the front office would walk through, we would just be shooting the insert of the letter. They'd go on through and I'd say, "All right, bring back the Schüfftan." I did the whole nine shots that way.[72]

As Hitchcock discovered, and used to his advantage, the physical set-up for the Schüfftan process is quite intangible, and in addition to its use of optics and manifestation of layers this is one of the reasons I found the process so compelling. In viewing it one it feels like nothing at all is there until suddenly there isn't nothing, and instead there appears a mirage-like combination of the elements. It is this element of surprise and encouragement and reward of visual curiosity that made me want to research the technique further.

The Shufftan process remained current up until the late 1940s when it was gradually superseded by more nimble film stock techniques and optical printing processes.[73] There is little historical information about Schüfftan's work, and what is available includes a German language book on his work that mostly documents his correspondence with the theorist Siegfried Kracauer in the 1930s,[74] and a 2011 doctoral thesis analysing Schüfftan's body of work and how his cinematography contributed to the cinematic style and meaning of the films in his oeuvre.[75] Katharina Loew's work which positioned the technique as the beginning of the seamless, invisible visual effect but also shows it as illustrative of a "key feature of European silent cinema, namely the attempt to reconcile ideals of artisan filmmaking with the realities of the motion-picture business".[76]

---

[72] Peter Bogdanovich, *The Cinema of Alfred Hitchcock*, (New York: Museum of Modern Art Film Library : distributed by Doubleday, 1963)
[73] Edward Carrick, *Designing for Film*, (London & New York: Studio Publications, 1949), 106.
[74] Nachrichten aus Hollywood, New York und anderswo: Der Briefwechsel Eugen und Marlise Schüfftans mit Siegfried und Lili Kracauer, edited by Helmut G. Asper as cited in Tomas Rhys Williams, "Tricks of the Light: A Study of the Cinematographic Style of the Émigré Cinematographer Eugen Schüfftan" (thesis, University of Exeter, 2011-10-4) , 14.
[75] Tomas Rhys Williams, "Tricks of the Light: A Study of the Cinematographic Style of the Émigré Cinematographer Eugen Schüfftan" (thesis, University of Exeter, 2011-10-4)
[76] Loew, "Magic Mirrors: The Schüfftan Process," , 74.

Schüfftan had a prescient understanding of licensing and branding. At a time when cinematographers sold their expertise and experience to gain employment, Schüfftan travelled to the USA to try and sell the concept as a licensed package to various Hollywood studios where he met with limited success.[77] While he did licence the technique to Universal Studios, it was never the commercial success for which he had hoped. There are at least eight US patents, from 1926 to 1928, that expanded on various aspects and techniques of his mirror process, and in all Schüfftan filed over forty patents in eight countries. The patents are all similarly named variations on a theme, but each patent reveals a nuanced refinement of technique. In total, these patents reveal Schüfftan's considerable technical ingenuity and engagement with the problems of combining different visual elements within the same shot. Schüfftan's methods broadly engaged with the ways of defining what would today be called mattes through various combinations of mirrors, models and sets. However, he was also clearly interested in how the cinematic form works at a fundamental level when he proposed: camera-like devices that could expose film from both sides at the same time (see Figure 16), ways in which two cameras could film the same scene simultaneously to capture different masked elements;[78] the use of lenses to help hide focal discrepancies between miniature and full scale sets;[79] in-camera prisms to capture and mask different elements in double exposures;[80] mirror arrays for combining multiple areas;[81] as well as designing mounts, holders and camera

[77] Loew, "Magic Mirrors: The Schüfftan Process," , 68.
[78] Eugen Schüfftan, *Apparatus for Composite Cinematography*. US Patent US1613201 A filed Jul 6, 1925, and issued USA Jan 4, 1927. https://www.google.com/patents/US1613201.
[79] Eugen Schüfftan, *Apparatus for Composite Cinematography*. US Patent US1613201 A filed Jul 6, 1925, and issued USA Jan 4, 1927. https://www.google.com/patents/US1613201.
[80] Eugen Schüfftan, *Method and Apparatus for Producing Composite Motion Pictures*. US Patent US1606482 A filed July 6, 1925, and issued USA May 3, 1927. https://www.google.com/patents/US1627295.
[81] Eugen Schüfftan, *Making Moving Pictures*. US Patent US1569789 A filed 15 Sep 1923, and issued USA 12 Jan 1926. https://www.google.com.au/patents/US1569789.

equipment to position the glass mattes.[82] Schüfftan's body of work is technical and much of it remains unrealised, but overall I found the ideas he was exploring incredibly exciting because they relied on the properties of light and mirrors to (apparently) create something impossible from nothing.

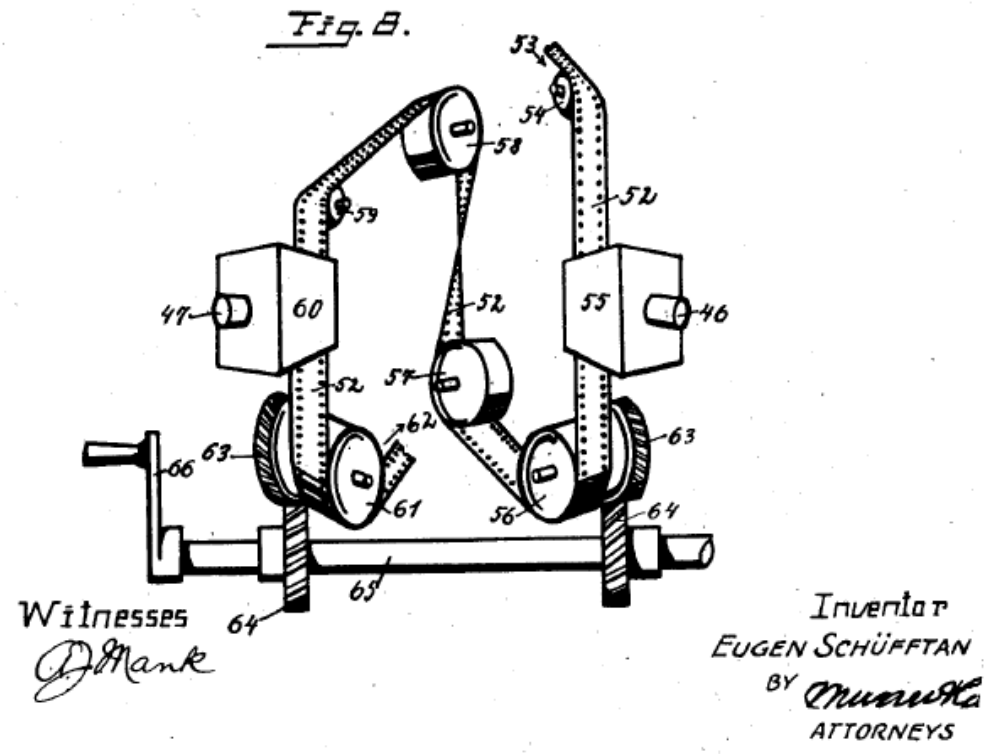


Figure 16. Schüfftan's 1927 patent illustration showing a method of filming on both sides of the same film strip in "Apparatus for Composite Cinematography (1,613,201)"

Although now completely obsolete and largely forgotten, the process was well-known and well-regarded by its practitioners at the time, as seen below in Figure 17, which shows its use by the 1940s production designer, Edward Carrick, in combining a miniature set extension and a full-scale live action set, and he further enthuses about the versatility of the system,

[82] Eugen Schüfftan, *Method and Apparatus for Producing Composite Motion Pictures*. US Patent US1606482 A filed Feb 27, 1925, and issued USA Nov 9, 1926. https://www.google.com/patents/US1606482.

I have employed this process for innumerable subjects and am convinced that when care is taken in its use it is the most adaptable and controllable process in use to-day. When used in combination with the split-matt shot there is no end to its possibilities. You can float a model ship in a tank of water and merge it with actual sea and sky; or reflect a model tower on to a ruined castle, thus making it complete; or, suppose you have a landscape that is perfect except for an offending building which you cannot take down, you just mirror that portion of the glass where the building appears and reflect some trees and bushes in its place, or even another building.[83]

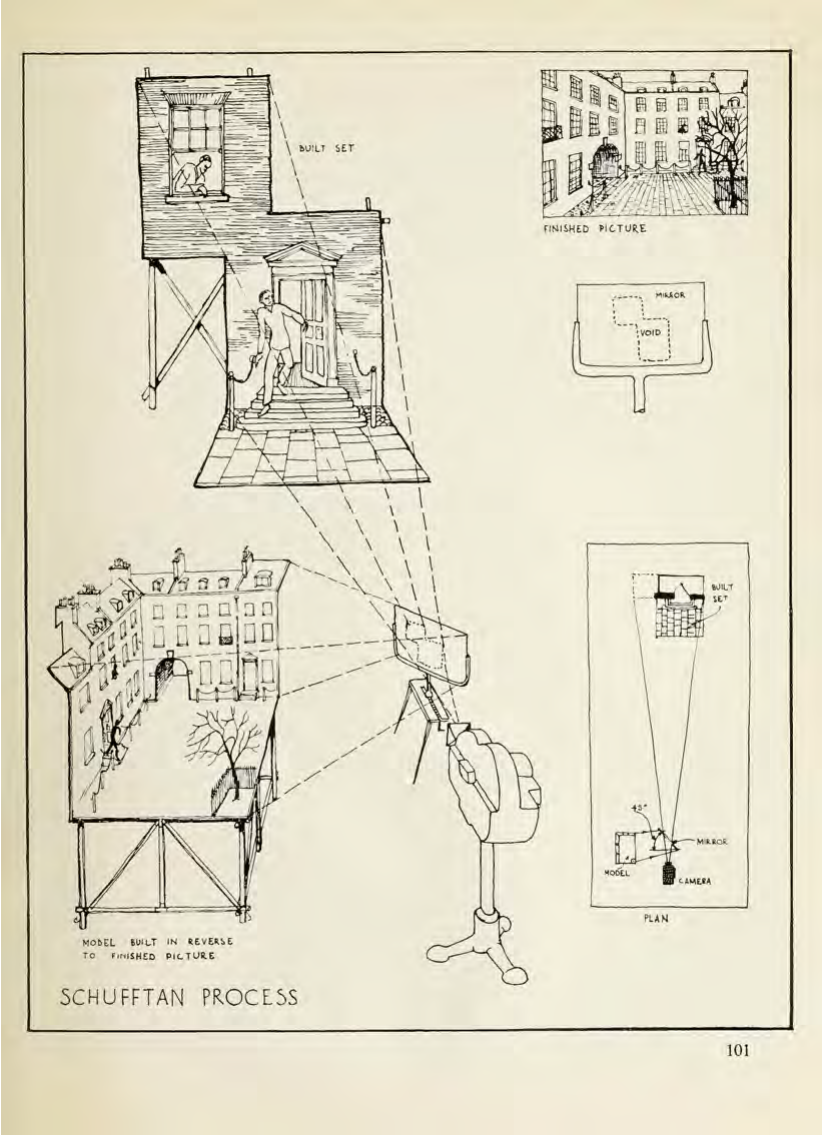


Figure 17. The Schüfftan Process in action on set (In *Designing for Film*. By Edward Carrick, London & New York: Studio Publications, 1949, 101.)

[83] Carrick, Designing for Film, 103.

Another film technician, British cameraman Bryan Langley, used the system in the UK studio films of the 1940s and called it "a bit of magic", but whilst regarded as an effect that gave good results, the downside was that it was both labour-intensive and time-consuming. Langley explained how "it had to be set up on the stage and all the arts and all the craft necessary was done on the stage so it locked up the whole stage for maybe a fortnight while it was being married together."[84]

There is no contemporary documentation of the technical aspects of the Schüfftan process, although the broad outline of the system can be seen in his patent applications in Figure 18. The process has long fallen from use and everything it can achieve as a technique can be replicated as a digital effect in contemporary film-making techniques. The concept itself is straightforward, and the technique is primarily used to unite models with live action elements by reflecting a miniature or model into the scene. The mirror used to reflect the miniature set, or set fragment, has selected parts excised so the camera can see both the reflection of the model element and the full-scale element behind the glass. The mirror is placed at a 45 degree angle to the camera, so that the camera is not reflected in the shot. The careful alignment of the model, mirror and set combined all of the elements into one in-camera shot and allowed for the compression of the real space of the sound stage, one that contained the models and actors in the fictional space of the filmed image. Schüfftan explored this idea over a number of years and had several more complicated variations of the mirror placement and excised areas, ones that allowed for different placements of the elements of the model, mirror and set that are an even more complicated concatenation of physical and fictional space. The patent for *Method and Apparatus for Producing Composite Motion Pictures* shows how the two mirrors could be used inside two parallel set pieces and how a hinged mirror could be used to unite set

[84] Brian Langley and Graham, Arthur, "Brian Langley: Bectu Interview Part 1 (1987)," *Interview by Arthur Graham* (1987-11-18):

pieces placed at 90 degrees to each other.[85]

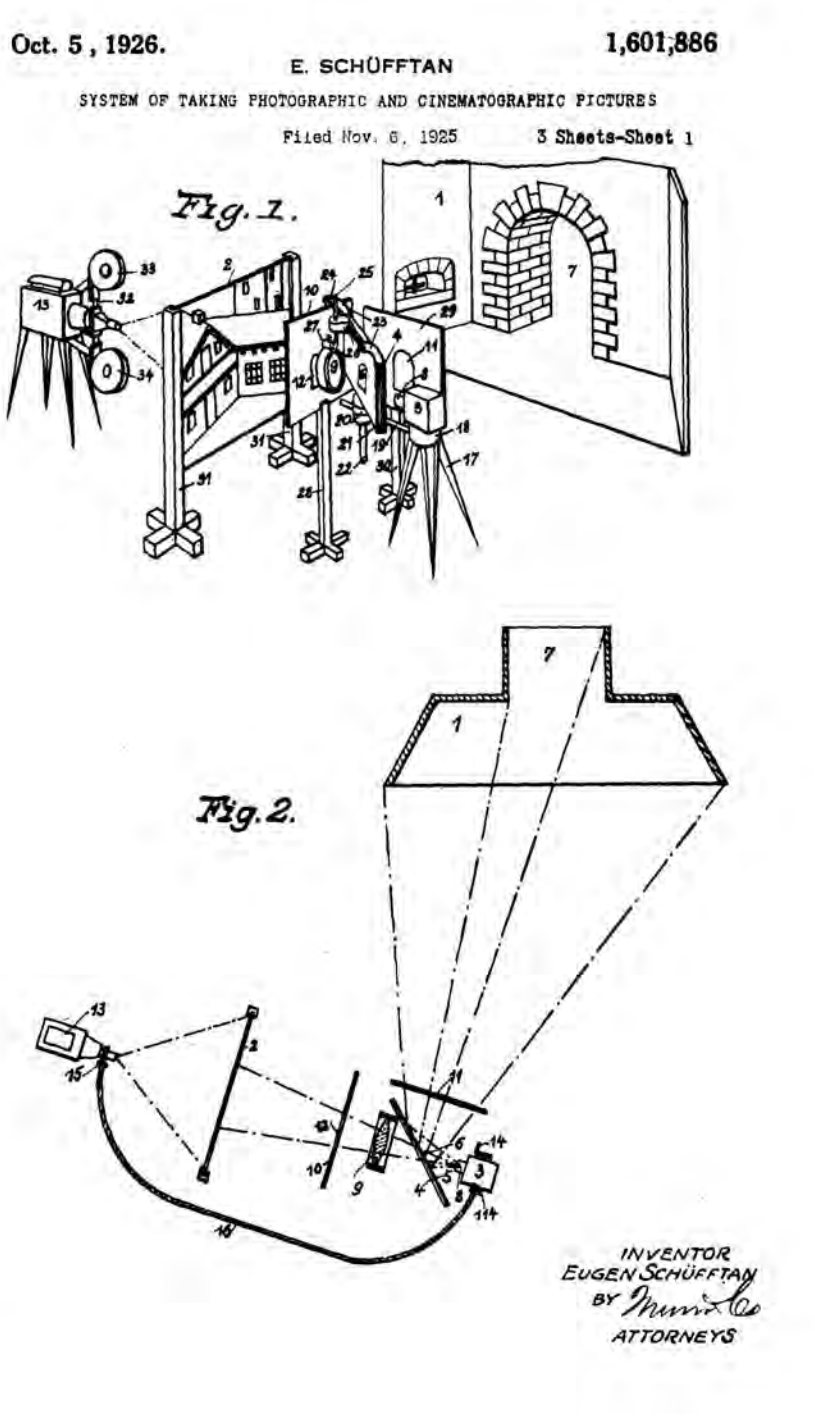


Figure 18. Diagramatic illustration from Patent 1601886A. *System of taking photographs and cinematographic pictures*. Eugan Schüfftan, 1926.

[85] Eugen Schüfftan, *Method and Apparatus for Producing Composite Motion Pictures*. US Patent US1606482 A filed July 6, 1925, and issued USA May 3, 1927. https://www.google.com/patents/US1627295.

Schüfftan's process, although analogue in construction, is not dissimilar to contemporary digital visual effects (VFX) practices in that images are disassembled as layers. The mirror works as a form of matte, in this case masking out an area of the live action shot that needs to be hidden from the camera and replacing that area with a reflected image from a nearby miniature set. The idea was a variation on a well-known process, as the matte in movie making was already a couple of decades old. Norman O. Dawn had used glass sheets with painted scenery placed in front of the camera to recreate the Spanish mission in 1907s' *California Missions*, and using a matte to mask out areas of the filmed image for later double exposure was a natural progression of that idea.[86] The term matte is still used in contemporary VFX and refers to a mask over (or inside) an image that creates an area of transparency through which another image can be combined.

All of the early types of mattes (painted on glass, cardboard masks or mirrors) required a locked-off shot, absolute precision and worked best with a certain type of depth of field to disguise the join between the scenic work (model or painting) and the live action scene. Using architectural or other natural geometrical forms to divide the features in the shot also helped to hide the seams. None of these methods were systems for compositing organic forms into space, and it works best using hard edges, such as building outlines or doorways to frame the composite area. Because of the optical qualities of the mirrored set up, Schüfftan's patents were equally concerned with the apparatus to hold the camera and mirror matte at the right angle, as well as the different methods of controlling the reflective surface of the mirror. I discovered the importance of this while creating my own versions, as even small errors or misalignments make the shot very difficult to achieve.

[86] Richard Rickett's *Special Effects: The History and Techniques* provides an excellent overview of the many variations of matte production in movie making.

I've had to accept a certain amount of visual error in my version because I feel it is creatively and theoretically important for the viewer to be the camera, and binocular vision introduces depth perception into what is essentially a monocular trick of faked perspective.[87] Langley described how complicated the system was in practice during his time as a studio cameraman:

> The system was a lathe bed, one end of which the camera was mounted and it could move in all directions on gears. On the other end was a cradle holding a mirror at 45°and the mirror was surface silvered with stuff which we said was German silver, very soft [unintelligible] silver. The set would be built on this studio floor up to head height we'll say, just above head height and you'd have a miniature set built or a photograph or a model to be reflected through this mirror to coincide what was built in actual size. The set might be a 10th of the scale of the actual set and the job of the Schüfftan technicians was to scrape away the silver so that the reflected image and the actual image would coincide and marry up one with the other.[88]

I occasionally yearned for a Schüfftan technician to appear with a precision geared lathe and removable "mirror foil" as it was quite a laborious process to work out a contemporary version of the process.[89] Schüfftan proposed either scraping away the mirrored surface (on either a front-surfaced or rear-surfaced mirror) to reveal the glass or using a semi-transparent (two-way) mirror and a black cut-out matte to control the areas of reflection and transparency. In the creative work I concentrated on the mirror scraping method and, for the initial works, I used the simplest arrangement of one mirror and sets of the same scale. As the ideas of how the space and narrative can be manipulated through this system have expanded in response to the studio work, I have become increasingly interested in how the system can work in different ways inside the strict parameters of object, mirror and background. The layers can be rearranged and reconfigured, and it

[87] Closing one eye helps in viewing these works.
[88] Brian Langley and Graham, Arthur, "Brian Langley: Bectu Interview Part 1 (1987)."
[89] Schüfftan's patents are not clear about what "mirror foil" was made from.

seems no longer necessary to be caught up in the representational problems of seamlessness that Schüfftan was so keen to achieve in his commercial applications of the idea. The process can combine miniatures inside full-scale sets or full-scale sets inside miniatures. It can combine projections, photographs, models or sets and there is considerable potential for site specific work that composites the audience inside the illusion. The first set-up in *All The Nice Things Come From Here* recreates the effect in its sparest form. The elegant simplicity of the reflected area and the transparent area uniting to form a different image is direct and powerful. It explains the complexity of cinematic illusion in an unambiguous and visually coherent way.

Making the glass mattes using contemporary methods required a great deal of trial and error. The first problem was defining the reflected matte area. The image in the mirror is a particular shape that is dependent on the distance of both the model and the spectator from the mirror. A mirror at 45 degrees to the subject reflects that subject to appear at 90 degrees to the original. The area to be removed is the shape of the reflection as it hits the mirror, not the otherwise unremarkable image, the virtual image of the subject in the mirror, and this is a more complicated shape than it might first appear. The matte shape is not the original turned at 45 degrees in perspective to the viewer, it is a stretched shape that must be calculated to account for the distance of the model to the mirror (which changes as the angle of the mirror changes which means the model is physically closer at one end to the other) and the distance of the viewer to the mirror (which also changes as the mirror is physically closer to the viewer at one side to the other). These calculations, by necessity, lock the viewer to one fixed central point called the station point where the stretched matte shape will appear to exactly match the original matte shape.[90] The station point would originally have been the viewpoint of the camera, and the effect is strictly

[90] See Appendix for the precise calculations and method.

monocular. Using both eyes will introduce errors into the positioning as well as introduce the viewer's natural depth perception into an effect that is trying to artificially create space. This piece asks the audience to be both inside the film and play the role of the camera and, in order to do so, they will have to adapt themselves to mimic the limitations of the photographic lens by either shutting one eye or simply engaging in a kind of embodied metaleptic transgression by negotiating the layers themselves.

Initial tests showed the process needed precise lighting and positioning and I initially used easily defined areas such as windows and doors to create masks. While the layout was precise and the measurements exact, an early draft of the design had a very small and precise placement for all of the elements (see Figure 19).

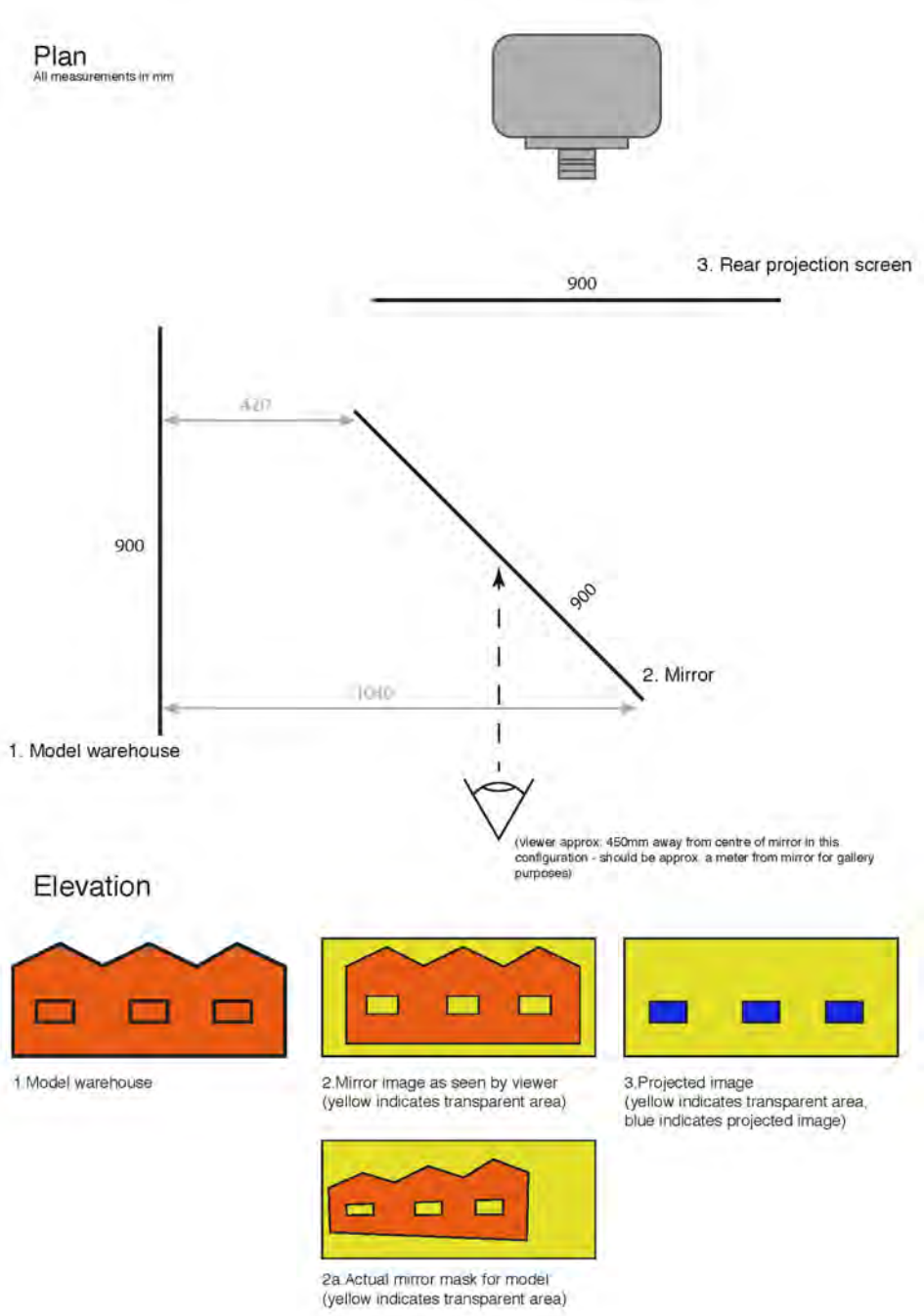


Figure 19. A first draft of the concept and the arrangement of mattes to achieve a single shot.

The outcomes were visually intriguing (see Figure 20 for a very early trial of the process), and brought together many of my theoretical and visual interests in the layers and production, and how they both inform meaning.

Figure 20. Work in progress. Early test by Jane Shadbolt, 2013

The mirrors were made using a laser cutter and chemical treatments to remove different mirror layers and the end result is a front-sided mirrors that acts as a reflective matte. It reflects only the portions of the image sources that are required in the final composite revealed in the station point viewing area. I originally used rear-surfaced mirrors (mass-produced domestic mirrors with the reflective surface behind the glass) but in the first iteration of this work, *Quiddity #1* (see Figure 21), I could see that the optical limitations of the rear-surfaced mirror were compromising the visual outcomes of the composite as well as providing (to me at least) a creatively irritating idea of a "front" and "back" spatial sense to the work itself.[91]

[91] Quiddity #1 by Jane Shadbolt. Video Installation exhibited at New Materialisms, Sydney College of the Arts, 2014.

Figure 21. *Quiddity #1* by Jane Shadbolt. Video Installation exhibited at New Materialisms, Sydney College of the Arts, 2014.

While the idea of the station point is central to decoding the work, the visual effect created by seeing the work mirroring the gallery and audience from different angles was visually exciting and made a far more interesting visual representation of layers than I had anticipated. Expanding the level of reflection by making both sides of the glass have a mirrored surface was the next step in making the installations into a more immersive and challenging experience. Front-sided (or front-surfaced) mirrors have, as the name suggests, the reflective mirrored surface on top of the glass not behind it, as in ordinary household mirrors. These are specialist mirrors generally used in optical applications such as reflecting lasers and they are expensive and precise scientific objects. They were not easily available in the sizes I would require and are prohibitively expensive. Instead I manufactured my own using a laser cutter to remove the paint surface of an ordinarily rear surface mirror and used chemical washes to remove the protective layers that make up the mirror. The result is a piece of glass with a mirrored surface on each side, one is a

completely optically accurate reflection as the light hitting the mirror is reflected exactly back, rather than refracted slightly through the glass substrate of the rear-surfaced mirror, and the other side is simply a regular mirror. My layers now reflected an area around the whole piece and the mirrored shapes were suspended as elegant, sparse mirrored forms that fragment all parts of the installation, only to be puzzled out by the viewer should they choose to engage with the composition as a whole.

Aside from offering incredible accuracy for the matte outline, I chose the laser cutter and mirror technique because it best demonstrates the layer component that is vital to understanding the overall set-up. The glass plate gives the layer a material form that makes the layer, usually an invisible element, an explicit part of the artwork. It would have been possible to make the mattes from mirrored acrylic and simply cut out the shapes required to obtain a similar optical outcome. However, the combination of the mirror shape embedded on the glass plate shows how the layers operate as structural elements, as well as allowing for complex nested shapes. Beyond laying bare the formal elements of compositing, I am also reminded of the pleasure of the reveal, as Norman Klein noted in his journey into special effects via the trompe l'oeil of Las Vegas, when he said the "designers kept reminding me that they *wanted* the spectator to notice how paper-thin the effects were. Thin was elegant. Thin showed control, like a ballet".[92] This knife edge of understanding, of the audience's willing collusion in the suspension of disbelief forms part of the narrative of this work. Here, the audience has to become the camera and find the station point themselves to force the final optical narrative into place. The works ask the audience to participate in the creation and navigation of space within images and in doing so they traverse different narrative levels within the work. *All The Nice Things*

[92] Norman M Klein, *The Vatican to Vegas : A History of Special Effects*, (New York: New Press, 2004), 8.

Come From Here exposes the structural elements of film and asks the audience to be complicit in constructing an immersive space themselves. Thus they become active participants in what is usually a passive reception of imagery designed to be seamlessly absorbed or offering them the option of ignoring that narrative entirely and resisting the completion of the constructed space. In this case they are rewarded with a subjective and fragmentary filmed experience.

The process in creating the installation differed a little from Shüfftan's original specifications. He used combinations of front-sided mirrors with a soft, easily removed coating or masked out semi-transparent mirrors. The shapes he used to mask the mirrors were simple and rough edged so as to better smooth over the compositing edges, but the application of contemporary technologies in creating digital mattes and etching them with laser cutters allows for a type of precision that was not available to Shüfftan or other early 20th century filmmakers. The system I have developed allows for more complex, detailed and hard-edged shapes, with greater and more accurate detail. Because the installation is not designed to be recorded onto film or video as shots and is instead designed to be decoded by an audience, there is no need for the complexity of Schüfftan's lathes and machinery, and the mirrors are presented at an average eye-line height in simple black frames. While this whole work is about structures and frameworks, I'd like the mechanics of the installation construction to be as simple and as minimal as possible, and I'd like to focus on the mirrored shapes reflecting and refracting endless variations and combinations of still, live action and animated footage.

The spaces between the layers

Animation's development as a form that refers so frequently to its own structure is grounded in animation's antecedents in the short, sharp trickfilm tradition of the early

19th century. Crafton placed the trickfilm as the prototype of all animated forms and that these popular spectacular entertainments, created by early filmmakers such as Georges Méliès, laid the foundations for the larger form of animation overall.[93] Trickfilms, as the name implies, relied on the sleight of hand of the substituted frame, stop-start photography and double exposures (all forms of temporal layering) to create the photographic artifices. Part animation, part visual effects and part sideshow performance, these early films occupy the space that Tom Gunning famously identified as the "cinema of attractions", an early cinematic form that is quite distinct from that of narrative film in that it celebrates the apparatus of cinema. At a time when the cinema was a novelty in and of itself, and screenings were often accompanied by showmen with extra-diegetic performances that promoted the structure and form of the cinema as an attraction as much as the content.[94] The development of animation was a collision of different pre-cinematic forms, popular theatrical entertainment and pro-filmic discoveries. It was formed not only from the stop-start of the trickfilm and the stuttering cycles of the zoetrope, but it can also draw a clear lineage from the vaudeville of the lightning sketch artist, and so it is no coincidence that some of the very earliest animated shorts were based on a conceit of a lightning sketch that comes to life.[95] Animation has always engaged with its own means of production, in terms of the narratives it tells, and more than any other cinematic form it uses those layers of audience understanding and collusion, of encouraging the audience to be both inside and outside the film as a central trope. I wanted to make this idea of inhabiting two places at once a central part of this project, and the Schüfftan process itself allows the spectator to literally see in two directions at the same time, and the sense of bodily impossibility is an important part of experiencing the work.

---

[93] Crafton, *Before Mickey: The Animated Film, 1898-1928*, 9.
[94] Tom Gunning, "The Cinema of Attraction: Early Film, Its Spectator, and the Avant-Garde," in *Film and Theory: An Anthology*, ed. Robert Stam and Toby Miller (Malden, Mass: Blackwell Publishing, 2000).
[95] Émile Cohl's 1908 *Fantasmgorie*, James Stuart Blackton's 1906 *Humorous Phases of Funny Faces* and Winsor McCay's 1911 *Little Nemo* would be a notable examples.

As I made the models and prototypes of the piece, I became more and more interested in way the effect physically represented layers, and how the work creates a feeling of inhabiting a filmic space rather than simply watching one.

The space that the viewer has to negotiate in *All The Nice Things Come From Here* is one that suggests that there is potential for visual completion. The first experience is one of the engineer's exploded view, but also of mirror fragments and partial images. If a viewer looks for, and then finds, the station point, they will be able to compose a complete image. In this case the image is a puzzle, one that will sometimes reward and sometimes will not, in that not all of the station points will result in perspectively correct or even representational images. The viewer is seeking what Norman Klein referred to as "three acts in three seconds"; the twist of cognitive satisfaction in seeing, decoding, comprehending the visual trick of trompe l'oeil.[96] Klein described these as scripted spaces, and I will expand on ideas of space, control and authorship in Chapter Four. The relationship between the visual space of animation and the fracturing of space in this work are so important to understanding how the layers work once they are reconstituted into an image. I am more interested here in unpacking that moment before the third act when the gaps between the layers offer visual slippages and re-combinations that speak to a more fundamental mechanics within the animated frame. This is a chaotic and unpredictable way of experiencing cinema as the frame is usually inviolate, the most basic unit of film, but the mirror layers allow for a whole new reading of the frame when they are exposed. The viewer can experience the frame in a complete different way, one that allows them to compose, then recompose these layers from the privileged vantage point of being inside the frame. I am describing this as a form of visual metalepsis, where the layers transgress

[96] Klein, *The Vatican to Vegas: A History of Special Effects*, 63.

and cross visual boundaries, allowing for different levels of visual narrative.

Chapter Three: Motion

Figure 22. A ferro fluid test shot. ***All The Nice Things Come From Here*****.**

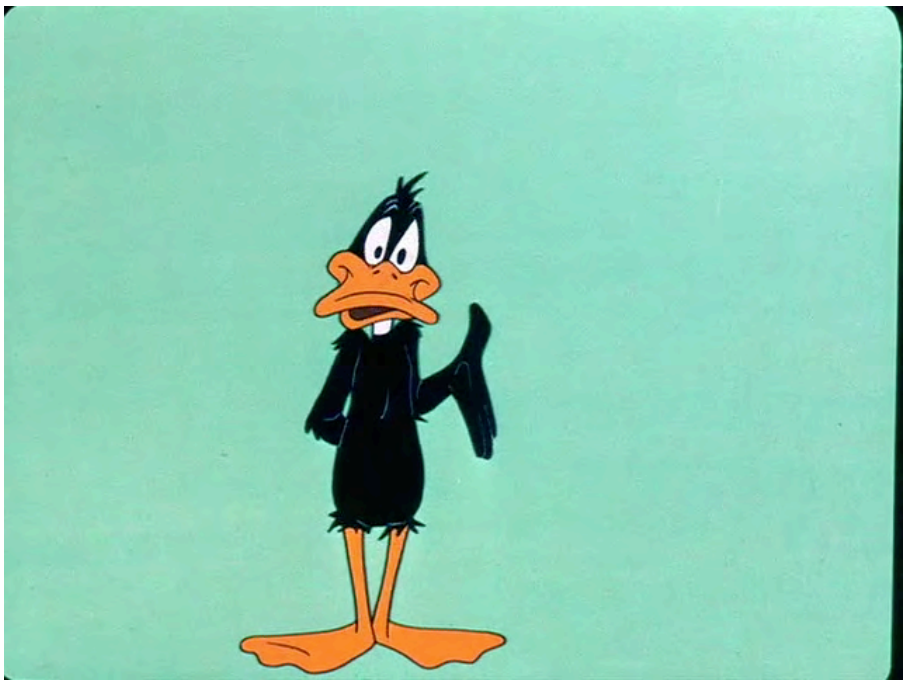


Figure 23. Daffy does battle with the frame. *Duck Amuck* directed by Chuck Jones (Warner Bros), 1953.

In Chuck Jones' 1953 *Duck Amuck* (see Figure 23), Daffy Duck finds himself embroiled in a protracted battle with his animator. Daffy waits patiently for his film to be drawn around him but the narrator is here not a voice in the usual sense but a paintbrush sketching out the visual stage in an increasingly bizarre fashion. Drawn and redrawn, humiliated and taunted, the hectored Daffy finally does battle with the cinematic frame itself as the celluloid space begins drooping and oozing around him. He props it up with a stick handily provided by the invisible paintbrush narrator but the frame resists and falls in smothering rolls around him. In a final assault Daffy demolishes the blackness by tearing it apart and hurling the tattered strips beyond the cinematic space. His chest heaving with effort, he shouts, "Let's get this picture started", but his victory is cut short by the incursion of another form of cinematic blackness, a shrinking circular iris wipe that proclaims "The End". Resisting this metaleptic intrusion, Daffy screams "No! No! NO!" and hurls himself at the end card, and with some effort he pushes it across the screen like a sliding door. Given a brief respite by the narrator, Daffy entreats the audience, "I will attempt to entertain you in my own inimitable fashion", before a clatter of the

projector indicates yet another metaleptic incursion into Daffy's animated world. The frame edge is forced once more onto the screen as the frame registration slips to bisect the screen and now shows the inimitable Daffy imitated as *two* Daffys, one in each half-frame and each Daffy behaving autonomously. It ends with the upper Daffy snatching the lower Daffy back into the single frame and, as is traditional in Warner Bros cartoons, engaging in a fist fight.

Duck Amuck is famously self-referential, and was described in Richard Thompson's 1975 essay "Duck Amuck" as a film not only "extremely conscious of itself as an act of cinema", but also as a playful exercise by director Chuck Jones in exploring the visual and formal elements of cinema by showing "foreground and background, space and action, character and environment, image and soundtrack are all in conflict with one another".[97] In doing so, Thompson also pointed out how the layers that form the structure of both the visual and narrative elements collide wildly inside its hermetically-sealed metaleptic universe. Daffy's battle in *Duck Amuck* was not just with metaleptic slippages from narrator to character, but also with the cinematic form itself. When Daffy is wrestling with the single unit of the frame he is wrestling with the most basic visual aspect of film, and for Thompson, "the basic concept in Duck Amuck is the idea of the frame and frame lines", and it is these visual elements of cinema that become metaleptic devices in themselves, working alongside the more traditional metaleptic layers of character and narrative.[98] Optically, the minute change of image in each frame also needs to be interrupted by the black of the shutter advancing each frame to complete the illusion of movement, and without the anchoring point of the frame the cinematic experience would just be a tonal blur. It is the space created by the projection between the frames that enable

[97] Richard Thompson, "Duck Amuck," *Film Comment* 11(1) (1975-1), 41.
[98] Richard Thompson, "Duck Amuck.", 42.

the most fundamental element of cinema, motion. Daffy is frantically anxious to preserve the frame because he knows, better than most, that there would be nothing there without it.

Frames and motion

This chapter unpacks the visual aspects of stop motion animation that make it a visually discrete cinematic form. The very heart of stop motion's difference to live action cinema lies in its relationship to the frame and the way in which those frames work to show time, as well as the very specific form of motion that is created inside the process of making those frames move. There are multiple aspects that work in combination to create the particular quality of stop motion animation, and this chapter looks at how those visual qualities of motion create an association with the uncanny, as well as how the structural elements of the frame, in conjunction with time and motion, contribute visually to create a unique form of film-making. While it may be obvious that motion is key to all forms of film-making, the specific qualities of cinematic motion are less examined. Gunning argued that motion can be considered as an alternative type of signifier of cinematic realism, one that runs parallel to the photographic index, so expanding an intellectual understanding of realism to include an embodied dimension of understanding:

> Spectatorship of cinematic motion raises new issues, such as the physical reactions that accompany the watching of motion. Considering this sensation of kinesthesia avoids the exclusive visual and ideological emphasis of most theories of spectatorship and acknowledges instead that film spectators are embodied beings rather than simply eyes and minds somehow suspended before the screen …We do not just see motion and we are not simply affected emotionally by its role within a plot; we feel it in our guts or throughout our bodies.[99]

[99] Tom Gunning, "Moving Away From the Index: Cinema and the Impression of Reality." , 39.

Motion can then be regarded as another layer that contributes to narrative, and therefore one that can be transgressed in a metaleptic fashion. The motion in stop motion animation can hover so easily between effortlessly believable and uncannily wrong that it forms an almost permanent metaleptic loop between the viewer's immersion in the narrative and the viewer's awareness of the artificiality of (and structure around) the animated object.

Gunning identified Christopher Metz's ideas of motion as a universal basis for understanding an image as naturalistic, which was that "a general law of psychology that movement is always perceived as real—unlike many other visual structures, such as volume, which is often very readily perceived as unreal" (quoted in Gunning, 2007).[100] This concept of naturalism positions motion as a kind of foundational element, as the bedrock of the embodied understanding of the elements by which a spectator might evaluate the relative likeliness of a cinematic experience and its veracity. If a spectator is predisposed to think of motion as a generally accurate element of cinema then the micro-movements of stop motion, which are subtly out of kilter with any movement possible in reality, are easily considered uncanny. Rebecca A. Sheehan, in discussing the work of the Quay Brothers, located that uncanniness within the medium itself:

> the uncanny nature of the Quays' subject matter to the very form of stop-motion animation they employ. "Life-in-death and death-in-life" is emphatically at work in this technique, as the still frame within the moving image simultaneously arrests and engenders movement.[101]

This friction between the still and the moving is at the heart of the animated movement itself, and I would argue that it is the key element in understanding stop motion animation's uncanny affect. Certainly, every aspect the Quay Brothers' film-making is

[100] Tom Gunning, "Moving Away From the Index: Cinema and the Impression of Reality.", 41.
[101] Rebecca A Sheehan, "The Disembodied Wound of the Piano Tuner of Earthquakes: The Quay Brothers' "Homage to Chris Marker"," *Discourse* 34 (2-3) (Spring/Fall 2012), 225.

aimed at invoking the uncanny, not just their intellectual interest in the metaphysical. Their sets, puppets, patina and camera work also all have an unnatural thread throughout that is pulled together by the unsettling motion created by a certain type of stop motion shooting that emphasises the mechanical role of the still frame within the motion picture.

Stop motion movement is unnatural because it doesn't record movement as it happens, instead approximating the impression of movement by recording the differences in the position of an object over time. This is the aspect that Sheehan described, where it is possible to "simultaneously arrest and engender movement", the impossible state of stillness and motion that is at stop motion's core. The physicality of movement is mapped out through the inter-relation between animation's timing and object spacing. These are the twin pillars of animation practice that dictate that the amount of time an element takes to move (say a one second movement at 24 frames per second equals 24 separate movements), combined with the spacing between those movements, create the speed at which it appears to move. A one second move of 24 frames where an object moves only a small amount from frame to frame would appear to travel very slowly, and a one second move of 24 frames where an object is moved a great deal would appear to move very fast. Here the concept is illustrated in Richard Williams' *The Animator's Survival Guide* (see Figure 24), where both of these examples take one second for the coin to complete the movement.

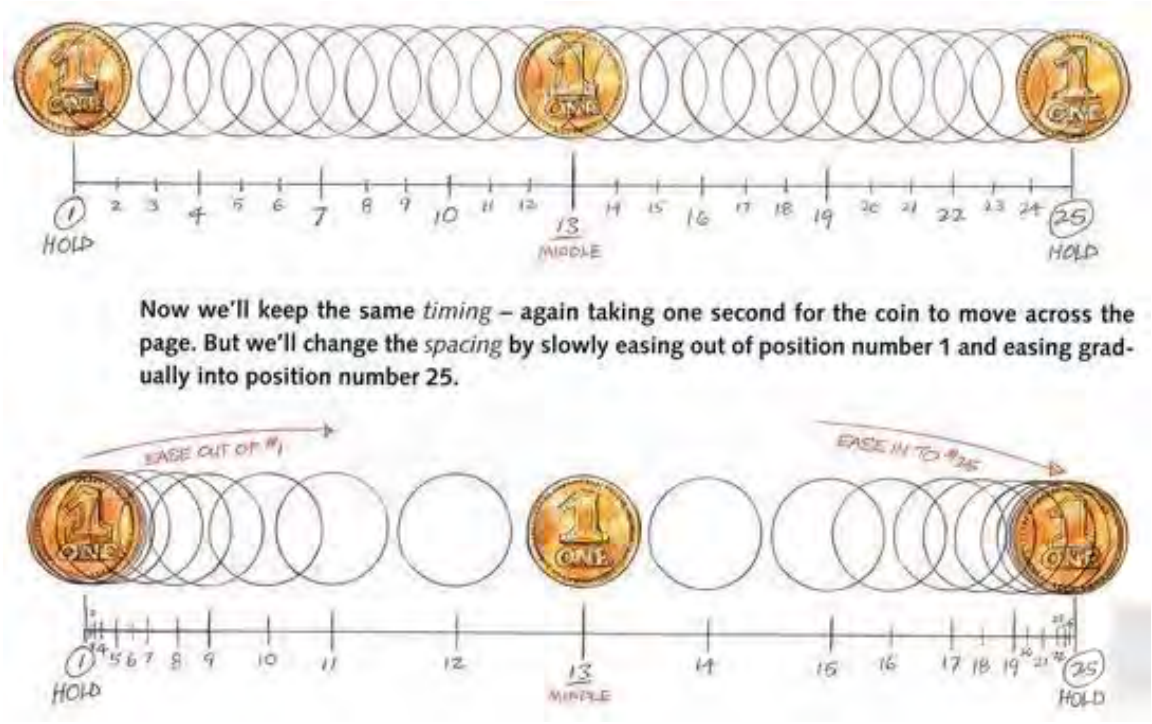


Figure 24. The same amount of frames but different spacings between the images will give different rates of movement. Richard Williams, *The Animator's Survival Guide* (2001), p38.

The animator's skill lies in knowing when to increase and decrease the amount of movement between each frame to create various effects and impressions of motion.[102] The ubiquitous bouncing ball example, here the Preston Blair classic instructional is used in Figure 20, shows how to mimic the effects of physics by having the ball slow (have more frames that are closer together) at the top of the ball's arc as it loses momentum and changes direction and then speed up (less frames further apart) as the ball falls to the ground.[103] The ball, depending on the physical properties of the object it is notionally representing, would then squash and stretch (if it were rubbery like a beach ball) or bounce (if it were rigid like a ping pong ball). Even if the animated ball is simply a circle drawn on a page, a photographed coin or a sphere of plasticine, it can be made to approximate any type of ball simply by echoing the motion characteristics of the represented object to read as either heavy or light, the visual aspects of the representation

[102] Richard Williams, *The Animator's Survival Kit*, (London: Faber, 2001), 38.
[103] Preston Blair, *Animation: Learn How to Draw Animated Cartoons*, (Laguna Beach, California: Walter T Foster, 1949)

are then overridden by the motion aspects.

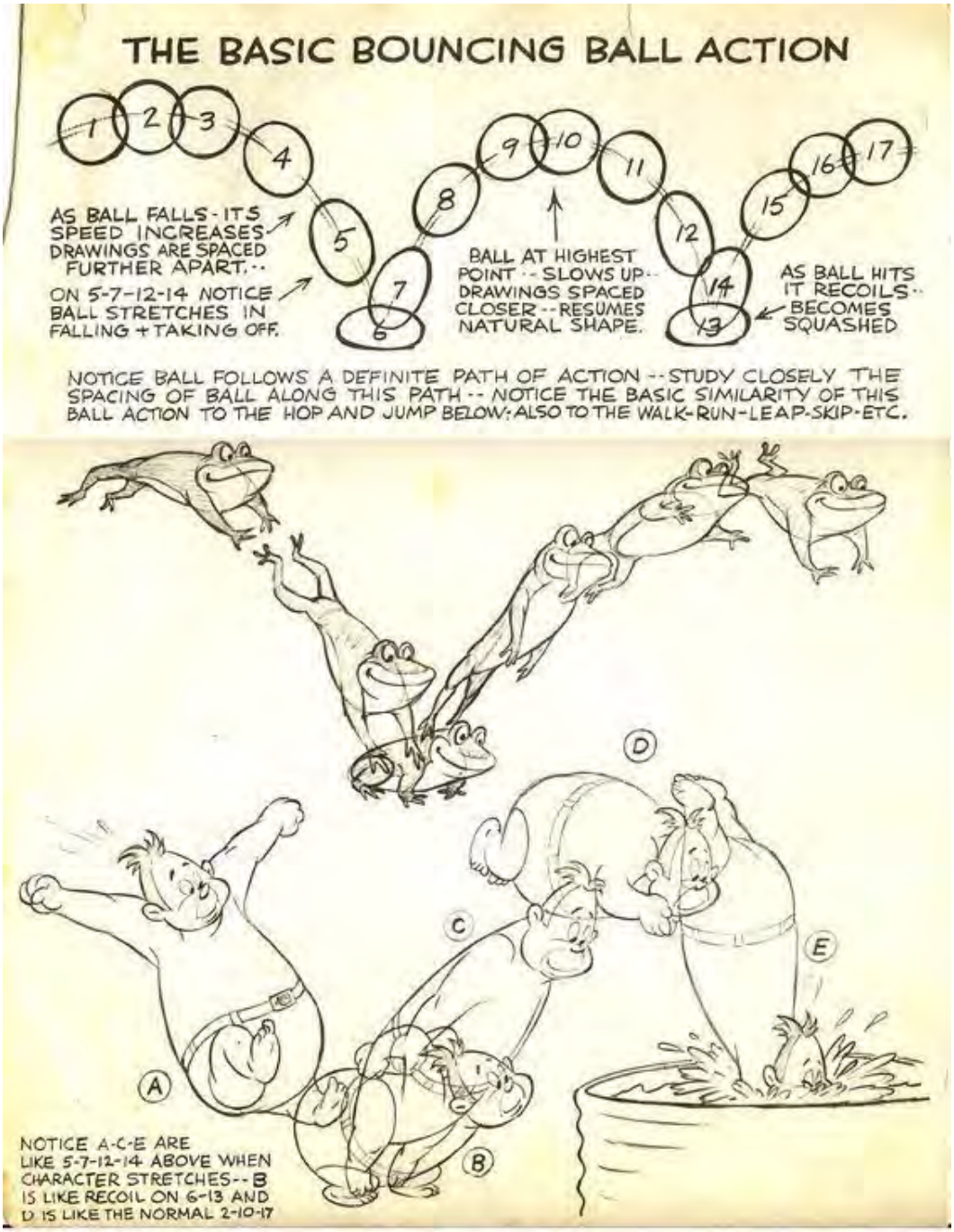


Figure 25. Preston Blair's overview shows how spacing (along with squash and stretch) can be applied to any object. Preston Blair, *Animation: Learn How to Draw Animated Cartoons*. (Laguna Beach, California: Walter T Foster. 1949)

Audiences have an inherent understanding of the effect of physics on everyday objects and drawn 2D animation, in particular, relies a great deal on drawings that exaggerate and enhance an object's underlying physical properties in motion in order to make a believable visual space for what are simply drawn representations. This audience

sensitivity to understanding motion means that when moving images don't conform to those in the natural world the perception of uncanniness increases, but it's not just the subject within the frame, as the mechanism of the frame itself that also contributes to the illusion of movement.

The frames (and their digital equivalent for television and digital playback-fields) that create that motion are designed to be an invisible part of the spectator experience, the frame isn't designed to be seen in the singular but in an aggregated form as motion. Even though the technical details are largely hidden from audiences, the effects of frames and their relationship to motion is still implicitly understood by non-technical audiences. Early Hollywood cinema was nicknamed "the flicks" simply because a film projections flickers. The action of the projection shuttle and shutter mechanism shows a frame, then black while the shutter passes over the gate, the film advances to the next frame and so on at 24 frames per second. In fact, a portion of an audience's viewing time is spent in front of an invisibly black screen, and this process gave early cinema its flicker. Later film projectors had a slightly more sophisticated three-way shutter mechanism that reduced much of the flicker, but nonetheless the action of the frame is a part of the viewing experience and gives a distinct visual experience. Even in the digital realm, where frames have been replaced by fields, there are similar visual effects caused by the mechanics of replay. A recent phenomenon, dubbed the "soap opera effect", is a by-product of contemporary motion smoothing the playback on high definition televisions.[104] The effect is intended to reduce the motion blur in fast moving footage, as found in sports or action movies, but a disconcerting side effect is that it appears to flatten lighting and enhance detail in a way that makes the footage reminiscent of the video quality of cheap TV soap

[104] Tim Moynihan, "WTF Just Happened: My New HDTV Makes Movies Look Unnaturally Smooth," Wired.com, accessed 15 July, 2016, http://www.wired.com/2014/08/wtf-just-happened-soap-opera-effect/.

operas. A Google search will attest to the amount of people who have found their expensive digital TV set gives their viewing an unpleasant edge, and are subsequently trawling the internet in search of a remedy to the effect. The visual changes are not in the way the television set processes the footage, but only in the way it interprets and play backs the images. The visual information is essentially the same, and by turning off some of the more advanced frame interpolation features in the television (typically marketed as "MotionFlow" or "Clear Motion" by the manufacturers), the footage returns to a more expected visual form, that has more lens-based blur to indicate distance and a softer display of shadows to show form. These more "cinematic" qualities are the result of a different frame playback, and so the entire relationship to the audience's perceptions of the visual qualities of cinema is through motion. Motion then, is crucial to an audience's understanding of the filmic image, even though the technical apparatus is hidden from the audience's view. The effect of frames on motion is even more foregrounded by stop motion animation, and one of the primary visual aesthetics of the form is its stuttering visual quality, as further discussed in the next section. The effect is frequently described as "other-worldly" or "dream-like", and even the name "stop motion" is an acknowledgement of the frame by frame nature of its creation.

Stop motion and the uncanny

The other-worldly feel of stop motion animation can be seen in its ability to breathe animated life into otherwise inanimate dolls, puppets and objects. As Alan Cholodenko pointed out, animation is "the simultaneous bringing of death to life and life to death", and in their animated form the self-propelling puppets and objects of stop motion are both alive and dead at the same time.[105] Stop motion animation can then be seen as an almost

[105] Alan Cholodenko, Ed., *The Illusion of Life: Essays on Animation*. (Sydney: University of

perfect example of Freud's concept of the uncanny, where the familiar and understood combine unsettlingly with the repellent and grotesque.[106] Freud's famous 1919 essay expanded on Ernst Jentsch's earlier descriptions of the key elements necessary to conjure the uncanny, one of the most important being a sense of intellectual uncertainty, for example to "doubt as to whether an apparently animate object really is alive and, conversely, whether a lifeless object might not perhaps be animate".[107] Freud expanded on these examples in his psychoanalytic analysis of the feelings of dread and unease wrought by the uncanny as "that species of the frightening that goes back to what was once known and had long been familiar", Stop motion animation in the hands of an animator like Jan Švankmajer exploits this capacity to the fullest.[108] In early short films such as *The Flat* (1968), quite ordinary objects are imbued with a deeply sinister life-force and unexpected powers of resistance; a light bulb can smash through a wall, fork tines snaggle rather than spear food, chairs simply become shorter to prevent a helpless protagonist from using it as a footstool. Discussions of object stop motion films usually include some examination of the various aspects of the uncanny, as Judith Halberstam says, "There is no question that stop-motion lends animation a spooky and uncanny quality; it conveys life where we expect stillness, and stillness where we expect liveliness".[109] Uncanniness is always invoked when discussing the films of the Quay Brothers, whose purposeless automata, sentient puppets and fascination with Victoriana have an aesthetic force that speaks directly (perhaps in a visual sense, contemporaneously) to Freud's ideas of the familiar made malevolent. Suzanne Buchan explored the uncanny through the defamiliarisation of architecture in the set design in the Quay Brother's work, where the friction between the film's elaborate, claustrophobic

---

Sydney, Power Institute of Fine Arts, 1991), 29.
[106] Sigmund Freud, "The Uncanny," in *The Uncanny*, ed. (London: Penguin, 2003)
[107] Freud, "The Uncanny,", 135.
[108] Freud, "The Uncanny," , 124.
[109] Judith Halberstam, *The Queer Art of Failure*, (Durham and London: Duke University Press, 2011), 178.

environments and the indexical nature of their filmic reality is inherently disorientating and creates the feelings of uncertainty so crucial to creating the uncanny. Buchan argued more broadly that in addition to the Quay's destabilising visual environments, it is the way they populate those environments with familiar objects performing unfamiliar actions that sets up a "fundamental principle of all puppet animation films - the animation of the inanimate - goes against logic in terms of our experience of the phenomenological world".[110] However, not all stop motion needs to be considered uncanny. Moseley suggested it is "possible to intervene in the long-standing, almost automatic, association of animation with 'the uncanny'", and she positions children's stop motion animation as "enchanting" and likens it much more to a type of imaginative children's play made real. In the charmingly handmade puppet television of the 1970s British studio Smallfilms' series *The Pingwings*, the stop motion is escapist and comforting in its animation of familiar objects combined with live action footage. Moseley described how "what emerges in stop frame animation which intersects physically with the real world is a different mode of temporality outside the everyday", and that this different mode is "magical" rather than terrifying.[111]

What seems to be clear about stop motion animation is that is has strong, but distinctly different, affects in all of its incarnations. The defamiliarising effects of the combination of miniaturisation and unnatural motion can be disturbing in the work of the Quays or nostalgically escapist in a children's television series. In terms of commercial practitioners, many also thought stop motion animation has its own visual properties that are quite distinct from other forms of film-making. The animation effects giant Ray Harryhausen, known for his work on creature features and fantasy films like *Jason and*

[110] Suzanne Buchan, *The Quay Brothers: Into a Metaphysical Playroom*, (Minneapolis: University of Minnesota Press, 2011), 93.
[111] Moseley, *Hand-Made Television: Stop-Frame Animation for Children in Britain, 1961-74*, 104.

the Argonauts (1963), *The 7th Voyage of Sinbad* (1958) and *Clash of the Titans* (1981), was well aware of stop motion animation's dynamic, especially when it is juxtaposed with live action cinema. He thought the appeal of the effect was hard to identify exactly, and described it as a "dream world" and "fantasy":

> The stop-motion process provides a unique form of fantasy that is difficult to analyse because it provides an atmosphere of a dream world rather than a fake reality. If you are too real the fantasy can be broken.[112]

In later interviews he expanded on the same ideas in comparing stop motion animation to photoreal computer animation: "There's a strange quality in stop-motion photography, like in King Kong, that adds to the fantasy. If you make things too real, sometimes you bring it down to the mundane. In Kong, you knew he wasn't real, but he looked like a nightmare, you know? He acted real, and the dinosaurs looked real. But there was something about them that had a magic that you don't quite get yet in CGI".[113]

The peculiar sense of reality is echoed by other practitioners, such as ILM animator Jon Berg who described watching *King Kong* as a child, "While Kong didn't look 'real', he somehow looked better than 'real'".[114] Many practitioners have declared that there is something special in the quality of the final filmed work, and Phil Tippet said, "As a viewer I find stop motion more mysterious and compelling aesthetically"[115] This constant reference by practitioners to what is real and what is not in stop motion animation, and how that creates an intangible feeling in them, is what I would argue is part of stop motion's metaleptic qualities in showing objects moving in impossible ways. Uncanny affect is certainly a large, perhaps the central part, of the stop motion form, but the

---

[112] Ray Harryhausen and Tony Dalton, *A Century of Stop Motion Animation: From Méliès to Aardman*, (New York: Watson-Guptill Publications, 2008), 113.
[113] Christopher Bahn, "Interview: Ray Harryhausen," The A.V Club, accessed 14 October, 2016, https://film.avclub.com/ray-harryhausen-1798209229.
[114] Harryhausen and Dalton, *A Century of Stop Motion Animation: From Méliès to Aardman*, 196.
[115] Harryhausen and Dalton, *A Century of Stop Motion Animation: From Méliès to Aardman*, 219.

potential for the uncanny is exploited in different ways by practitioners and is not the entirety of stop motion's intrinsic meaning or aesthetic. Stop motion animation's effects are more intricate than to be simply labelled uncanny, as it has a multilayered visual complexity that can work to create dreams or nightmares.

In a narrative sense, stop motion has always exploited this peculiar effect, even when played for laughs its stories tended to rotate about the friction between life and death, as played out through the uncertainty generated by the inanimate becoming animate. Ghostly and magically infused early films like J. Stuart Blackton's 1907 *The Haunted Hotel or Strange Adventures of a Traveller*, combined in-camera trick film techniques, such as canted camera moves, and objects on wires to make the Hotel appear alive. It included a short animated sequence of a self-preparing breakfast followed by the guest being snatched by a live-action giant. In Spain, similar territory was being covered in *El Hotel Eléctrico* (Segundo de Chomón, 1908), where surprised hotel guests are tended to by objects that contain a mysterious and unexplained agency - brushes clean shoes, hairbrushes comb hair and razors (safety ones at least) shave beards (see Figure 26). All set in motion, the denouement suggests, by electricity running amok, but there is also a sinister underlying metaphysical current running through these objects because their agency lacks clear motivation. Even when the motivation is explained through utilitarian use (form following function in that the objects mostly stick to their designed tasks) then the objects combine their deathless movement with surprising results when, for example, a few sweeps of a hairbrush delivers an elaborate coiffure. The motion, the actions and the results are all unnatural and this is also key to understanding the effects generated by stop motion animation as it references the indexical nature of photography through the use of real sets, people and objects and then subverts that indexicality completely by introducing impossible movement to those same sets, people and objects. In *El Hotel*

Eléctrico, the subversion caused by this conflict becomes narratively overwhelming for the characters when all control is lost and the guests run from the hotel as the activated hotel furniture runs riot in mindless circles.

Figure 26. A shave and cut in El Hotel Eléctrico. Except from *El Hotel Eléctrico*. Directed by Segundo de Chomón, 1908.

Other early animators explored variations of death versus life, and Wladyslaw Starewicz, the early 20th century Russian animator, approached death head-on by animating dead grasshoppers and insects in his most famous film *Mest Kinematograficheskogo Operatora* (*The Cameraman's Revenge*) (Starewicz, 1912). In the film the tiny, lifeless protagonists inhabit a paradoxically rich emotional world of insect philandering, sexual betrayal and cold-blooded revenge. It is an unexpected mix of the uncanny, spectacle and melodrama, and perhaps all teetering on the knife-edge of kitsch.[116] Starewicz explored

[116] It is interesting that Susan Sontag included the 1933 stop motion *King Kong* in her canon of camp items in her 1964 essay "Notes on Camp" in because there is an element of stretched credulity in pretending a puppet is a terrifying beast. Early stop motion "creature features" would always battle this inconsistency between the narrative claims for the work and the visual actuality on screen. This is another example of meaning created from layering, in this case the friction between the intended and received meanings in ironically celebrating camp as a cultural marker. As Sontag says, "The ultimate Camp statement: it's good because it's awful" in "Notes on 'Camp'." *Partisan Review* 31 (4) (Fall 1964): 515-530.

the dead animal motif throughout his career, and used wired up frogs, insects and rats to make taxidermic films for family audiences, including at least one Christmas special *Rozhdestvo Obitateley Lesa* (*The Insect's Christmas*) (1913).

While these examples all have uncanny aspects, they are also all about various layers of meaning interacting with each other to create the detached affect that defines the form. I'd like to expand on how the processes of frames and motion have other visual aspects that are a part of not just the construction of the uncanny in animation, but are also inherently visually metaleptic. It is the same process that makes Bill Morrison's *Light is Calling* (2004) so emotionally powerful, with the intrusion of one layer onto another. Here the decaying film nitrate of the 1926 original film swirls around a soldier, perhaps riding off to war, and his meeting with a ghostly woman. The film is beautiful, the images themselves are liquifying and swirlingly indistinct, which combined with the fractured materiality of the deteriorating film surface works to create a melancholic whole, where the passing of time united with loss seems unavoidable. Morrison described them as having "several different layers of reality … having archaeological layers of time, that was fascinating to me".[117]

The friction between layers, both inside and outside of the frame, is crucial here to understanding how it creates meaning. Halberstam argued that the uncanny is embedded in the process itself: "uncanny precisely because it depends on the manipulation of the figures in front of the camera by those behind it. These relations of dependency, of submission even, are precisely the ones that we go to the cinema to forget".[118] The relationship between what is inside and outside of the frame is a question that also

[117] Christian Lund, "Bill Morrison Interview: The Film Archaeologist." YouTube video posted by "Louisiana Channel, Louisiana Museum of Modern Art", December 5, 2013. www.youtube.com/watch?v=6aaHYVc9T6o.
[118] Halberstam, *The Queer Art of Failure*, 178.

intrigued Buchan, who questioned what the ontological status of the animated object is if she can only experience the animated motion by watching the film, as we "can never be in the presence of that moving, animated object".[119] It's here that I'd like to relate these descriptions of the uncanny back to a discussion of the metaleptic potential baked into stop motion's core, because Halberstam and Buchan were also describing the transgression of the interior and exterior boundaries of the frame through the process of animation, and this chapter is about exploring and expanding this further through the disarticulated layers and frames of *All The Nice Things Come from Here.*

The creative work doesn't use puppets, a creative decision I explain in more detail in Chapter Five. I didn't want to layer the project with additional narrative ideas when I really wanted to see what narrative potential was embedded in the stop motion form itself. Another aim was to unpack some of the ideas around the form being explicitly uncanny, and why that is a default description for stop motion animation. I'd like to analyse the visual nature of this uncanniness because this is a key part to understanding how the motion within stop motion brings an underlying and metaleptic sense of the uncanny to the form. The bristling shards of filings and the weirdly animistic liquids in *All The Nice Things Come From Here* are objects reduced to their most basic elements, particles and fluids, yet once controlled by the stop motion animation process they become something different, something inhabited by this additional force that is revealed through movement. This is the metaleptic visual moment, the collision of the real world with the animated world, and while it can be described as uncanny, I think the concept of visual metalepsis is a better way to encompass all the different aspects of stop motions' effects.

The idea of one layer intruding onto another is a core part of stop motion's visual make

[119] Buchan, The Quay Brothers: Into a Metaphysical Playroom, xxv.

up, not just in the way it creates the detached, unreal effects described by so many. Visually, the most significant factor enabling the unnatural cinematic nature of stop motion object motion is the way in which the frames are captured so differently to live action cine film. On a technical level, the technique forces the subject to always be still and unmoving. Each frame of stop motion animation is essentially a still photograph, and when the individual frames are projected sequentially at approximately twenty-four frames per second it achieves what could be thought of as a type motion that can be experienced as approximating "real time".

What separates this projected stop motion animation time from real time is motion blur, the cinematic visual artefact which underpins the ideas of visual realism in live action film. The blurring of fast movement is a cinematic construct that is understood by audiences as form of photographic realism, a filmic rather than an indexical element in Prince's perceptual realism construct.[120] It is an artefact completely absent in traditional stop motion animation, where each frame is a still and as each object in that frame must be stationary in order to be photographed, the control of the movement of all of the objects is crucial in creating the animation itself. Without movement within the frame there is no chance of creating the blurs that are the conventional visual signifiers of speed or motion in cine film, and the lack of it gives animated movement a stuttering, slightly unworldly look.

The lack of cinematic blur is just one aspect of other, more subtle, visual elements that contribute to the peculiar differences of stop motion animation. While it can only work in conjunction with the other aspects covered in this thesis - motion, timing, layers, objects

[120] Stephen Prince, "True Lies: Perceptual Realism, Digital Images and Film Theory," *Film Quarterly* 49(3) (1996): 27.

and space - it is one part of the motion contained within stop motion animation which is an integral aspect of visual metalepsis. This is because it is woven into the fabric of stop motion's construction and is a constant reminder of the world outside the frame; a world where the shooting process itself elides both time and space in the construction of the frame.

Time elided and frame ellipses

The frames of *All The Nice Things Come From Here* will never be celluloid. They pile up as digital artefacts in folders six deep and will never be printed or projected as filmic frames in the sense of 20th century cinema film forms. When I started animating I loved the idea of film, the tiny pictures flowing one after another in long unwieldy strips and reels. I also loved the tactility of film, the excitement of sending the negative away and waiting for the print to return, the random scratches and dirt, the fragility of the final form and the clatter of the projector as it played it back onto a wall. Film also offers a more nuanced and subtle engagement with the interrelated aspects of time, frames and motion. Gunning called the meeting of these three elements "the manufacture of the instant", a point of intersection for film and animation through their shared use of frames to create motion.[121] Cameraless animation, as practised by artists and animators such as Stan Brakhage, Norman McLaren and Len Lye, use the film strip in a completely different way, to hold an image that need not be contained or restricted by the photographic frame, and this process produces cinema that engages the frame (and thus time and motion) by ignoring the boundaries formed by the frame. But even Stan Brakhage's *Mothlight* (1963) and its beautiful frame-breaking organic collages are forced to return to the frame through

[121] Tom Gunning, "Animating the Instant: The Secret Symmetry Between Animation and Photography," in *Animating Film Theory*, ed. Karen Beckman 2014), 38.

the process of projection. The action of the projector reimposes both a frame and a frame registration through the action of the shuttle and shutter which progresses the film past the film gate at an orderly 24 frames per second. The images themselves purposely ignore the frame, spilling out over the length of the filmstrip without regard for the frame at all, and the filmstrips make for beautiful objects in and of themselves (see Figure 27) which do not have a sense of temporal progression over time but one of physical progression in the instant.

Figure 27. *Mothlight* by Stan Brakhage (1963, 16 mm film, color, silent, 3 min 13 sec.) Still image reproduction by Fred Camper. Courtesy Marilyn Brakhage.

The digital process offers no such equivalent as the frame is a digital image and the digital media player simply does not suggest a natural segue of images in the same way that film

running through a projector does.[122] Unlike film frames, they can be reordered simply by being renamed, and they can be quickly duplicated or discarded without disturbing the rest. If they are fed into a non-linear editor they can be manipulated at a pixel level without touching the original image. The digital image always works at one remove. Most editing programs effect change on copies (called non-destructive editing), with the software collecting instructions and commands from decisions made by the artist using visual proxies and then the computer executes those commands through an outputting process called rendering.

Despite my nostalgic fondness for film, I have developed a real respect for the democratic advantages of the digital image because it allows for such greater access to film-making tools for those outside commercial film-making production. The first digital alternatives to film processes in stop motion animation were demonstrated in 2005 when Tim Burton's *The Corpse Bride* became the first commercial stop motion feature film shot on a Digital Single Lens Reflex (DSLR) camera. This was a turning point for stop motion animation,[123] and it showed that cinema-quality film could be made using off-the-shelf DSLRs, rather than expensive modified film movie cameras and this has had a profound effect on both the form and production of stop motion animation films. With the innovation of DSLR as an animation tool came a whole slew of technical advantages, including instant playback and previewing frames before shooting, both of which were impossible using a cine camera and which have changed so much of the quality (both quantitive and qualitative) of stop motion animation.[124] Changes in the production

[122] All analogue processes can be replicated in a digital environment and there is no reason that sequential photographs of a continuous strip of imagery couldn't be played back as a moving images but the point here is more that the processes of cinematic projections offered visual production pathways and outcomes that are not immediately apparent in digital manufacture.
[123] Robin Rowe. "'Bride' Stripped Bare." *The Editors Guild Magazine*, June 10 July-August 2005, http://www.stopmotionworks.com/articles/cbrdstrpdbare.htm.
[124] The *Editor's Guild Magazine* article, "'Bride' Stripped Bare" was a revelation to me and I pored over the one accompanying photo of the camera set-up for clues to making my own

processes are not simply systems made more efficient or practises modernised, they can also have profound effects on the way creative work is conceived and produced. The digital revolution of the late 20th century has changed whole swathes of visual thought, and as this thesis is primarily about the effects that processes have on creative outputs it is important to examine the implications of digital workflows through an overview of the types of animation that different production workflows produce because it describes the immediacy that the digital image has brought to the animated form. I talk further about the different affordances offered by the digital image, particularly in relationship to the index and what that brings to the material aspects of the digital image in Chapter Five.

Stop motion animators use a form of animating called straight ahead animation, where an object (or puppet) is posed and photographed, then moved and photographed, with this process continuing until the entire movement is captured. Straight ahead animation is an incremental process, with each movement building on the previous movement, so there is little possibility to redo an errant frame as that would mean reposing the puppet/object and losing the position of the object in the sequence of frames, which even in a short shot can run to some hundreds of frames. The alternative method, used by drawn animation, is called pose to pose and it uses key drawings to plot out the overall movement by indicating the most extreme part of the action (a keyframe or extreme) and then fills in the remaining frames between those extremes (a process called in-betweening). The distinction has implications for the types of motion and movement possible in both forms, and each brings a subtly different feel to the type of animation produced. Williams described straight ahead animation as more spontaneous and creative despite having

camera rig. For me, this showed the way to getting professional level visual outcomes using low-budget means. Even at that time a consumer-level DSLR could shoot frames that were larger than 2k cinema frames at about 1% of the cost of professional film gear. All feature stop motion films since this have used similar DSLR setups.

corresponding disadvantages in terms of organisation and consistency.[125] The pose to pose method is favoured by commercially drawn animation because it allows for distributed production, as typically senior animators can draw the key frames and junior animators do the less creative frames in-between each of the poses. Stop motion animation, however, was typically straight ahead animation because of the difficulty in revisiting poses accurately whilst filming. The process during filmed animation was to use articulated gauges called "surface gauges" next to the puppet to pinpoint key positions and then move the puppet relative to the gauges. The gauge helps the animator judge the distance of each puppet move relative to the puppet's last position. The gauge was removed for each frame and replaced for the next one (see Figure 22 for examples in action). Playback of the animation during shooting was impossible because the film had to be developed and printed, and even when video split systems became available in the 1950s there was no way of seeing both the captured frames and the current frame together.[126] Innovation brought about by video cameras gave the industry the *Video Lunchbox* by Animation Tool Works in the early 1990s. It was an expensive video feed system that at last allowed the animator to compare the frame they had just taken with the frame they were about to take, this being the three dimensional equivalent of a traditional 2D animator using a light box to trace a new drawing over an existing one.[127] The process is called onion-skinning, and the relationship between this technology and its effect on the progression and style of animation is worth discussing because it is the key technological advancement that has determined key parts of the visual quality of stop motion. The crucial difference for animators who worked with film cameras is that they could not see what they were doing so they animated using timing charts, surface gauges

[125] Williams, *The Animator's Survival Kit*, 61.
[126] Peter Glaskowsky, "Video assist predates Jerry Lewis 'patent'," accessed November 18, 2017, http://www.cnet.com/news/video-assist-predates-jerry-lewis-patent/.
[127] The last list price for a unit on the company website was $3,495USD in 2010 and the technology is now largely abandoned. See www.animationtoolworks.com

and the muscle-memory of experience. The animation of the film animator is an embodied experience and the ruffle-furred charm of King Kong, the staccato deathly movement of the skeleton scene in *Jason and the Argonauts* or the grim agency of Švankmajer's dolls and objects are all the more remarkable for being animated by their creators almost blindfolded.

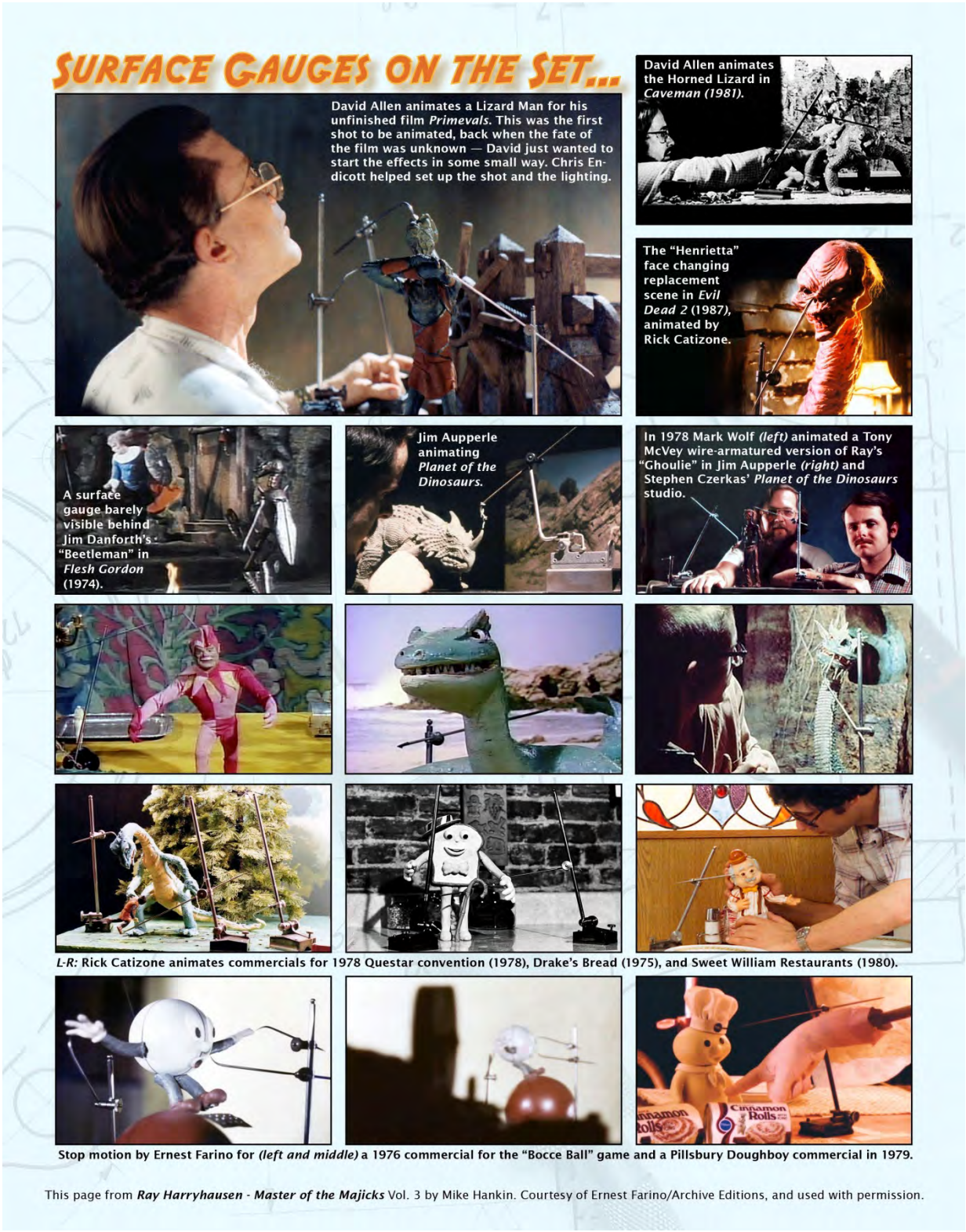


Figure 28. The surface gauge seen here in a variety of films. Image from *Ray HarryHausen - Master of the Majicks Vol. 3* by Mike Hankin. Courtesy of Ernest Farino/Archive Editions.

The development of the now industry-standard software DragonFrame leveraged all of the inherent advantages of digital cameras and the technical abilities now possible in stop

motion have never been more diverse.[128] Frame by frame camera motion is now possible in affordable motion control rigs, frame preview is now possible and stop motion animation can easily rival CGI 3D animation for smoothness. At the time of writing, the digital frame is affordable, malleable and instant, and the tools that support digital imagery allow for sophisticated manipulation, with the results being both instantaneous and of cinema quality. It is the great democratisation of animation and echoes the same seismic shift in production that the digital world offered film production. The effects can be seen online in the thousands upon thousands of hand-made GIFS, animated snippets and loops that feed websites like Youtube and Facebook.

The animation in *All The Nice Things Come From Here* is a hybrid that blends the aesthetics of filmed and digital animation. Creatively, I am not interested in the smoothly perfected image. This animation is about celebrating the frame, the spaces between the frames and the effects of the still image on the animated form. To smooth the rough edges from the movements of stop motion animation is to remove much of what makes it so alive and distinct as a cinematic form. Thus, there is a nostalgic yearning for film in everything I make, but on the other hand I use digital means and celebrate the freedom that digital processes provide. This entire project is heavily dependent on digital processes, and just a few of the processes I use include: digital capture, live view, non-linear editing, colour correction, retouching, digital mattes, lens corrections and motion control. However, I am resistant to smoothing the animated life from animation or perfecting the movement of animation until it is indistinguishable from live action. I often animate straight ahead and I do so quickly, sometimes using onion skinning to prepare the timing, but especially with more organic forms like the iron filings I control the iron filings and use the camera as a frame capture device, concentrating mainly on the slow

[128] See http://www.dragonframe.com/dragonframe-software/

unfolding of the performances from the objects themselves. In this I am following Švankmeyer's third rule in his *Decalogue for Filmmakers*, which declared "The process of animation of objects must be a natural one. It needs to come from within the object, not from your whim. Never abuse an object! And never try to tell your stories through them, tell their own instead".[129] The iron filings tell their own story through their own movement, and the further I went with the idea of animating the iron filings, the more I let them unfold as a kind of growing, natural organism with a cryptic, perhaps unknowable motivation.

The rebellion of things

The motion captured in Station Point Four is about the object, the object in motion, and how to release the motion that is bound within the object. The thousands and thousands of iron filings aggregate and become an animated biological mass with its own animistic power, and in this way they are exactly as supernatural as Sean Cubbit described:

> Animation may then be seen not only in terms of inanimate objects magically brought to light, but as the rebellion of things. Without a god to drive them, and in the absence of a human user, self-moving things seemed to have no explanation except mysterious forces.[130]

The iron filings are controlled by magnets under the stage and the motion that I am exploring here is more akin to CGI 3D production's procedural animation, in that I don't animate each grain individually, instead setting up a series of conditions (a magnet, iron filings, a path of motion for the magnet which is then animated by hand) and then film

[129] Jan Švankmajer, Frantisek Dryje, Bertrand Schmitt, Ivo Purs, and Pavel Zelenka, Eds., *Short Anthology of the Writings By Jan Švankmeyer - Decalogue*. (Prague: Arbor Vitae, 2012), 462.
[130] Sean Cubitt, "Observations on the History and Uses of Animation Occasioned By the Exhibition Eyes, Lies and Illusions Selected From Works in the Werner Nekes Collection," *Animation* 3(1) (2008-3-1), 52.

the results frame by frame. The iron filings, when seen in extreme close up, have a peculiar wave-like motion, and the magnetic field forces the tiny shards of iron to arrange themselves north/south and they then start to take on a furred, biological quality. Organic movements such as water, smoke or fire are difficult to capture in stop motion animation, mostly because moving complex multi-part objects frame by frame is simply too complex and complicated to control, but I wanted to explore the idea of something viral and alive inside these industrial spaces. The mechanisms of stop motion animation are about infusing the lifeless object with motion, and in this exploration of stop motion there needs to be an examination of movement at its most molecular level. The pitting of organic movement against the inert inorganic nature of these industrial spaces neatly sums up the collisions of motion that happen in stop motion animation, collisions which set it apart from other forms of film-making - the friction between the "naturalism" of real movement and the artificiality of the frame by frame stuttering of the stop motion approximation. The second station point seeks to highlight the space between the frames by translating this fluid, natural movement of magnetism into the filmic language of stop motion animation where it takes on a different temporal rhythm, one that shows a constant form of visual ellipsis between the frames. The artificiality of the movement and the choppy jerkiness of stop motion animation is always hinting at the excision of the frames and, therefore, of time. The motion in Station Point Four could have taken minutes or it could have been captured over years, and this uncertainty is part of the metaleptic effect. Stop motion has an unusual relationship with the indexicality of the image, in that the image is photographically indexical but the motion it creates cannot be, and it is this that allows the audience to be both inside and outside the frame at the same time. The spaces between the frames do not echo the smooth rhythm of 1/24th of a second that is familiar to film audiences, and in viewing the footage the audience is simply reminded by the impossible

motion that time has been manipulated and that the film's physical world has somehow been compressed.

The animated camera and metalepsis

The motion of puppets is not the only form of animated motion in stop motion animation, as the movement of the camera forms a vital part of the effects of the form. In the same way, the puppets must be moved frame by frame, so too the camera moves must be plotted out and moved incrementally. The stop motion camera has a similar power to that of live action cinema, and stop motion animation shares much of the same cinema grammar and language. However, animated camera moves can have their own particular visual power because they have all the properties of animated footage discussed earlier in this chapter. Buchan touched on the metaleptic potential inherent in animated camera moves in her extensive analysis of the whip-pan camera moves in the Quay Brother's *Street of Crocodiles* (1986), which were used frequently as blurred, space-smashing devices that "meld(s) two phenomenally independent spaces into a continuous perceptual flow" and highlights how the Quays created shots where "as the visual result is not a convention of live-action film, it self-reflexively draws the viewer's attention to how animation's formal technical means expand those of live-action cinema".[131] The key is in the stop motion animation's frame by frame process, and how the same combination of temporal excisions and staccato movements that give the content of stop motion animation its self-reflexive qualities also infuses the structure of the medium itself, creating a metaleptic visual loop of constant self-reference through camera work. Atkinson also described the visual power of the camera as used as an animated character in the Quay's work:

> Thus the "subject" of a Quay film - characteristically, a weathered puppet

[131] Buchan, The Quay Brothers: Into a Metaphysical Playroom, 161.

> constructed from common, discarded materials - shares its frame-by-frame life-movement with the "object" - namely, the frame, the film, the camera itself (referred to by the Quays as "the third puppet"). The seamless animated manipulation of the camera's position, and its focal setting, is perhaps the Quays' trump card, a degree of fanatical precision no other animator would, or could, sanely co-opt.[132]

The camera in animation can be either less or more constrained than a live action camera, and if the camera is a digital one then almost anything is possible and if it is a physical camera than it has some advantages of scale in a miniature set over a live action camera in a live action environment. The Quays exploit the uncanny motions of the animated frame by frame camera moves and use them to dizzyingly propel their audiences into different spaces within their narratives, while other film-makers exploit the unfettered animated camera in different ways.

As the animated camera tends not to be bound by the laws of physics and because the bleed between fictional and non-fictional spaces is already eroded through the form's visual remove from Bazinian ideas of cinematic realism, film-makers can create camera set ups that are visually unmoored from the live action conventions. While animation borrows from the broader cinematic language of film, it doesn't need to use that language in the same way since the normal bounds of gravity, space, atmosphere, form and light can be manipulated in all of the aspects and storytelling levels of the animated world. The diegetic world, the extra diegetic world, and even the film-makers world, can all be explored in ways that would be impossible in a live action shoot.

Animation's great strength is its visual immediacy and physical plasticity, and it is that flexibility that brings additional possibilities to cinematic language. An otherwise

[132] Michael Atkinson. "The Night Countries of the Brothers Quay." *Film Comment*, 1994-9, 37.

conventionally told animated narrative in Koji Yamamura's 2D *Atama-yama* (*Mt Head*) (2002) ends with the central character mysteriously developing, and then endlessly falling into, a miniature pond and park that has grown on the top of his own head. Since space is enormously plastic in the drawn animated world, there are no physical prohibitions in setting up a visual world where one can fall into one's own head pond, something that might be more complicated to achieve using the conventionally understood Cartesian spaces expected in live action films. Similar ideas of passing through impossible spaces are a part of the fabric of Satoshi Kon's 2006 anime *Paprika*, where the camera effortlessly glides through optically paradoxical transitions from narrative space to narrative space, such as having a character leap into another character to become an illustration on his T-shirt (see Figure 29), but then continuing the film narrative by crashing the camera "inside" that T-shirt's illustrated space to make it the central narrative space.

Figure 29. *Paprika*. Directed by Satoshi Kon. 2006.

These visual sleights of hand can work just as well without the benefits of narrative, and Takashi Ito's 1981 single screen artwork *Spacey* looks to an endless recursive free-fall into a photo of an otherwise unremarkable high school gym basketball court. The feeling

is one of of falling into and through the same space as the camera first travels around the court through a series of still images that speed up until the camera hurtles towards an image of the gym within an image of the gym within the gym. The looping sets up a wordless and powerful *mise en abyme* that feels genuinely unsettling, uncontrollable and destabilising (see Figure 30).

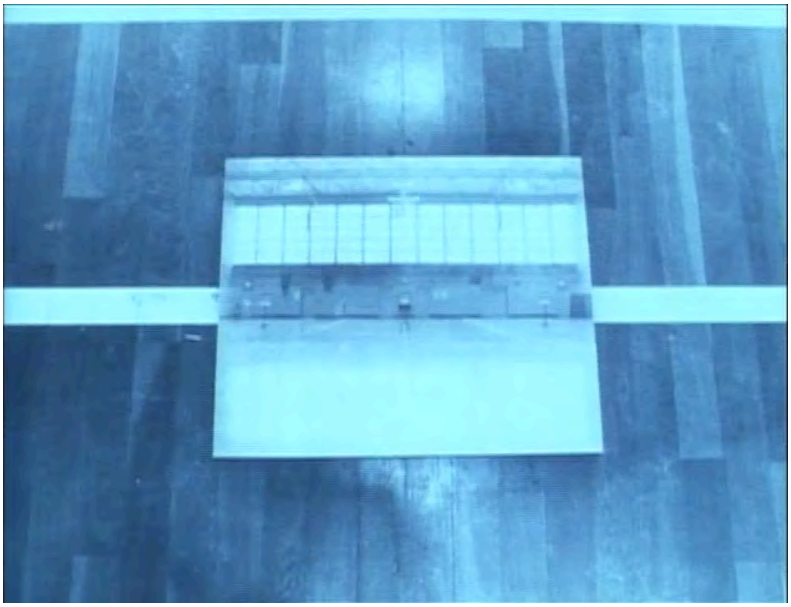


Figure 30. *Spacey*. Directed by Takashi Ito, 1981.

The animated camera is employed for all of these effects in live action film. Much of the animation present in live action special effects is designed to be unseen and this brings an additional repertoire of filmic devices and an expansion of cinematic language. This was witnessed in the effect that "bullet time" in *The Matrix* (The Wachowski Brothers, 1999) had on ideas of representing cinematic time through "ramping" (extreme changes within the shot to fast or slow motion). The effect was originally constructed through camera arrays and banks of DSLR cameras which were arranged in sequence to capture an image from multiple viewpoints. The overall effect is one where time is seemingly frozen yet space is not as the camera continues to move around the subject. Characters experiencing a scene in different, usually subjective, time modes of either super-fast or super-slow motion is now a staple of Hollywood. It can be seen in mainstream blockbusters such as *X-Men: Days of Future Past* (Bryan Singer, 2014) with the depiction

of the ultra-fast character Quicksilver moving through other characters frozen in space, and is featured heavily in commercials and music videos like Michel Gondry's 1995 *Like a Rolling Stone* for the Rolling Stones.[133] It is essentially the most basic of animated sequences, a frame by frame sequential playback but the manipulation of space through the positioning of multiple cameras in the construction of the shot gives the appearance the unusual viewpoint of being able to move through cinematic space at a particular moment in time. The mechanics of setting up the effect means the shots themselves are very short, since each frame is produced by a different camera the shot length, and they are limited by the number of individual cameras in the array. There was a cine example in the very early experimental version of the idea pioneered by Tim McMillan in the 1980s (he later started the company TimeSlice Films to commercialise the idea), where he used a strip of cinefilm, exposed through hand-made pinholes in an overlay of magnetic tape, to that captured a frozen instant and then allowed the camera to move through that instant (see Figure 31). His experiments perfectly demonstrate the connections between time, space and frames in cinema and show how surprising the results can be when any part of the usual equation is altered.

[133] Ripcurl used the technique in a 2010 promotional project to market a technical range of boardshorts. Even though the technique in its modern form is over 20 years old. Ripcurl felt it displayed their product as cutting edge technology. Neil Ridgeway, Ripcurl Marketing Chairman described the project as "A leading technological way that showcases the innovation that we have in our product and our thinking." Mirage Boardshort 2 - Behind Mirage - YouTube

Figure 31. "The result was a tracking shot through a space. The profound revelation was that while the viewer experienced a move through space, time was frozen. A paradox!", Tim Macmillan - Early Work 1980 - 1994. www.youtube.com/watch?v=ocLJWCnMhTo

While fiction and cinema might rely on metaleptic devices such as using a narrator or the play within the play, it is possible to use only visual means to disrupt or distort the ideas of story worlds and spectator positioning. The concept was explored by Peter Campus in *Three Transitions* (*1973*), where he used a simple projection and choreography to construct a self-portrait where he appears to occupy an impossible space in front of and behind a projected screen simultaneously. Campus walks to a screen and turns his back to the audience, seemingly starting to tear into the backdrop and another Campus tears the screen from the opposite side, apparently stabbing himself in the back to push through to the projected Campus, who is performing the same action. The rupture is twofold as there is an ontological shift of understanding when the first Campus, what could be seen as the "real" Campus suddenly becomes understood as a projected Campus, and then a physical rupture when both Campus' slice and then step through the other in order to exchange places. The narrative of exchange set up by this sequence suggests the Campus twins then become the other, the projected Campus emerging in the real space and the real Campus is subsumed into the projected space.

The audience quickly becomes aware of the multiple levels of diegesis in the film and it forces the viewer to consider (or at least become aware of) their position as spectator. Campus used a simple visual effect created by in-camera layers and a projected image that was re-filmed with additional action to achieve this recursive effect. It is an effect that needs some form of technical intervention to achieve with live action film, a problem not shared by animation, where the impossible is easily achieved within the diegetic space of the film.

Chapter Four: Space

Figure 32. Scale model detail. *All The Nice Things Come From Here*.

Space and narrative

As discussed in Chapter One, metalepsis is usually applicable to narrative story world layers and can also be applied to the structural and formal elements of media. In this chapter, I put forward a more detailed analysis of how depictions of space can function as metaleptic devices in visual media. One of the essential features of metaleptic transgression is the way in which it produces an anti-illusionistic quality by drawing attention to the artificial construct of the narrative and any type of breaking of the fourth wall reminds the audience that they are watching a film, reading a book or seeing a play. This is a significant element in Brecht's *Verfremdung*, as in any defamiliarisation there lies an opportunity for the reconsidering and representing of understanding. Theatre director Manfred Wekwerth, who worked with Brecht and became the director of the Berlin Ensemble, described how Brecht "merely wanted his audiences to wonder. For wondering purges the spectator of his tendency to take things for granted, a tendency whereby familiarity stops him from seeing things as they really are".[134] Wekwerth states that Brecht borrowed the concept of *Verfremdung* from the Russian theorist Viktor Schklovskij, who wrote about it in "On the dissimilarity of the similar":

> In the way that it works Verfremdung is like a puzzle. The puzzle is always a pretext for engaging in the pleasure of discovery. A puzzle, by hiding something that is known, forces you to revisit all the characteristics of that thing in order to guess what it is. And the technique of Verfremdung must show the world in such a manner that it is freed from its usual associations so that it can be seen as if for the first time.[135]

In the process of crossing the narrative world/real world boundaries, the audience is forced outside of the diegetic space of the story world, and that reminder disrupts the

[134] Manfred Wekwerth, *Daring to Play: A Brecht Companion*, (London and New York: Routledge, 2012), xvii.
[135] Schklovskij as quoted in Wekwerth, *Daring to Play: A Brecht Companion*, 43.

immersive fictional experience because these types of metaleptic markers declare the fictional world as a construct and compel the audience to be aware of the structural elements that contain the story world. The audience is reminded again that they are experiencing a fiction. Wolf described metalepsis, in itself, as being a significant "marker of fictionality" where, counter-intuively, disrupting the fiction confirms the fiction.[136] This does not mean that metalepsis is anti- or counter-narrative, on the contrary, it is a technique which relies on creating at least one functional fictional world in order to use it as springboard into additional worlds through either ontological or rhetorical metalepsis. Metalepsis requires a representational fictional space from which to begin, and the audience needs to be aware (at least initially) of the certainty of where the fictional world lies. This aspect of metalepsis has a great deal to add to the analysis of visual media and imagery which, as Kukkonen has discussed, has a different set of affordances than that of written media.[137] One of the most important structural elements of visual narrative (no matter how brief or fleeting) is conveyed by the depiction of spatial relationships within the frame. Until there is a technology that conveys a convincing three dimensional virtual world (and one is no doubt imminent through current technologies like the virtual reality proposed by devices like Oculus Rift), the current forms of screen-based representational visual media rely on the illusion of three-dimensional space described on a two-dimensional plane. Audiences rely on cues of perspective, scale and dimension to understand them as representational spaces but when those relationships are disrupted there is a metaleptic shift that draws attention to the surrounding structure and the formal elements of the visual construction. At its simplest level this plays out through the pleasure of being fooled by trompe l'oeil or solving the mysteries of an anamorphic image, one such example is Hans Holbein the Younger's *The Ambassadors* (*1533*), and the

[136] Wolf, "Metalepsis as a Transgeneric and Transmedial Phenomenon," , 102.
[137] Kukkonen, "Metalepsis in Popular Culture: An Introduction," , 16.

inclusion of a layered floating, stretched human skull offers several such narratives. The first immediate reading of the painting as a double portrait (including the narrative of the carefully chosen objects to accompany the two men to display their status and position) gives way to a second reading of the stretched anamorphic shape that, if viewed from one angle, resolves itself as a skull. The act of interpreting the skull by considering the painting from one station point is an action that is intrinsically metaleptic, as you have to extricate yourself as a viewer from one level of narrative (the subjects of the painting) and re-enter the painting again at another level (decoding the skull image). The viewer must reference the painted surface as both a two-dimensional surface and three-dimensional illusion in order to understand the image, a sleight of hand that *All The Nice Things Comes from Here* uses in each station point.

Whilst the installation does not create representational anamorphic images, the matte outlines in the mirror shapes that make up each station point are themselves stretched anamorphic shapes, so a stretched ellipse in the mirror will resolve itself into a perfect circle once the station point has been found. The Schüfftan process and the mirror mattes lend themselves to narrative ideas because they are about combining visual elements together and creating a seamless whole, but I enjoyed subverting the precision with less representational, more abstract ideas. The repetition of the vertical lines of the rolled steel of the walls of these buildings, their relentless visual commitment to utility and their squat shunning of the environment that surrounds them deserves a visual examination, so in Station Point Two and Station Point Four the images are about the abstraction of these sites and what might lie inside them. The answer, to my mind, is an endless repetition of pressed steel profiles, a Matryoshka doll of vertical lines and imaginary spaces. I used circles because they have a geometric precision that echoes the lines of the material, but since circles are almost absent in widespan shed design they are also something imposed

onto the image. The circle shapes don't respond to the actual images in the Schüfftan set-ups, instead they punch huge holes to the other side of the image and reveal only the same again. The metaleptic layer is one of incompleteness because completing the puzzle and finding the station point deposits you outside of the narrative and examining only the structure. The audience must negotiate the original image, the anamorphic matte in the mirror and the new image to find the station point, and in Station Point Five the only visual cues I provide to show the station point has been complete is through the promise of an ellipse reforming into a perfect circle.

The metaleptic effects of the station points are both subtle and visual as it is the way the installation uses space and layers that forms the different levels of imagery that form (or don't form) into visual narratives. It is one shared by other forms of illusion, such as anamorphosis or trompe l'oeil, which have different levels of narrative that can be accessed by the viewer. The first narrative is the one proposed by the image as it is first seen, which is achieved by simply viewing the image and making sense of it, perhaps a stretched anamorphic image that seems initially baffling. In finding the next step to decode the image, perhaps by finding the angle that makes it resolve into another image, the audience must have an understanding (and thus complicity in a type of endorsement of the underlying order of things) of the principles of Cartesian space and a desire to find the reveal of the image. The metaleptic shift occurs when one understands the second image and the new narrative created by the combination of both images. Sometimes the metaleptic narrative is discovered by simply understanding that there has been a shift, and that the power of the optical illusion has little else to add to this next reading apart from the pleasure of decoding the image, as can be seen in 3D street chalk art, such as that in Figure 33.

Figure 33. Three acts in three seconds. Leon Keer, Ruben Poncia, Remko van Schaik and Peter Westerink. 3D Lego terracotta army. Chalkfestival, Sarasota Florida. 2011

Norman Klein described illusions of this kind as a type of visual narrative, a "highly compressed story ... three acts in a few seconds", one that requires a first reading of the image, followed by an understanding of the optical trick, the "Moment of Wonder", and then 'rumination afterwards, leading to 'revelation', as in faith at the end of a pilgrimage".[138] It is the speed with which visual stories can be told (and then changed) that gives them their power. Even though they don't have the precision or complexity of the written word, they are compact narratives nonetheless and it is this sense of ethereal

[138] Klein, The Vatican to Vegas : A History of Special Effects, 63.

storytelling and mood that I am keen to explore in *All The Nice Things Come From Here*.

Klein also located this as a narrative of power, since control of the illusion is also a control of the viewer, and even when these types of illusions are not demonstrations of wealth, power and influence they are a powerful reminder of the status quo. The most important part of the decoding for the viewer is the assemblage and reassembling of space. This fracturing and restoration of space is a reminder of the chaos and instability created when a world is disrupted, but it is then followed by a demonstration of the safety of order restored once the puzzle is solved.

Early optical tricks were part science and part magic and carried a considerable suspicion of the devil's work. The showman artist Belgian Etienne Gaspard Robertson's late 18th century theatrical shows are an outstanding example. Part theatre and part séance, they exploited the effects of projection to create phantasmagoric spectacles that Robertson linked to a kind of revelatory science, declaring them a "science of effects", and hinting that the technology was simply revealing otherwise hidden natural phenomena to a terrified and delighted audience (see Figure 34).[139]

[139] Barbara Maria Stafford, "Revealing Technologies/magical Domains," in *Devices of Wonder: From the World in a Box to Images on a Screen*, ed. Barbara Maria Stafford, Frances Terpak, and Isotta Poggi (Los Angeles, CA: Getty Research Institute, 2001), 85.

Figure 34. The frontispiece from Robertson's memoirs showing a performance. From *Mémoires: récréatifs, scientifiques et anecdotiques* Robertson, E. G. (Etienne Gaspard). 1831-33. Image owned and digitised by the Library of Congress.

Early optical devices had the ability to create illusions, and sense-tricking images created what Marina Warner described as an "anxiety about the unreliability of vision", where the power of optical tricks of projection in conjuring images from thin air immediately lent itself to being explained through dark phantasms and devils (see Figure 35).[140]

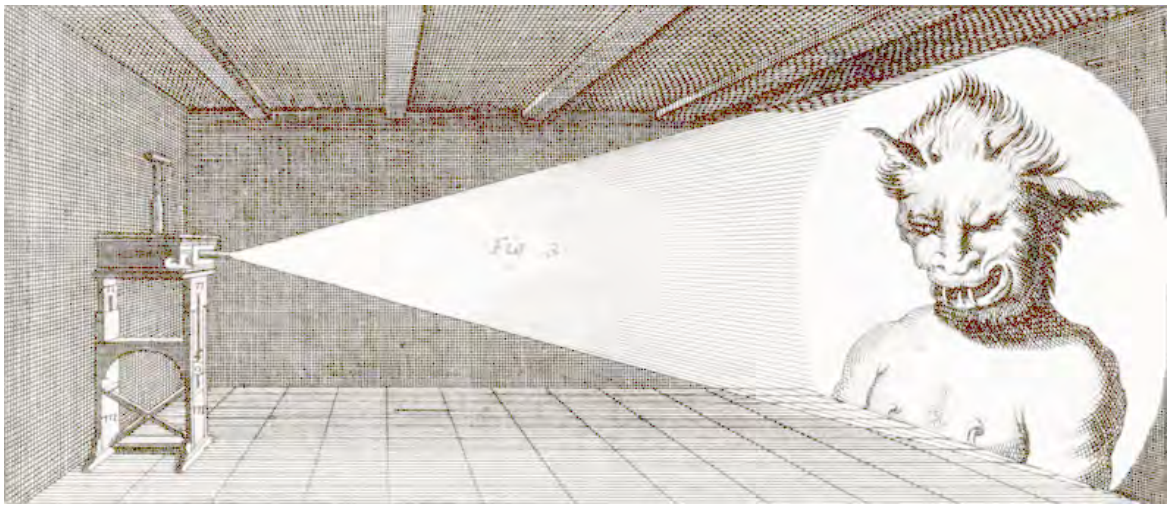


Figure 35. The devil is in the detail. A magic lantern projection. In Willem Jacob Gravesande's *Physices Elementa Mathematica, Experimentis Confirmata: Sive Introduction ad Philosophiam Newtonianam*, (1742).

[140] Marina Warner, "Camera Lucida," in *Eyes, Lies and Illusions: Drawn From the Werner Nekes Collection*, ed. Laurent Mannoni, Werner Nekes, and Marina Warner (Melbourne: Australian Centre for the Moving Image, 2006), 19.

The unreliability of vision is tested in *All The Good Things Come From Here* in several ways; the audience can accept the fracturing of space and fragmented reflections as a visual experience or they can try and engage with the narrative by finding the individual station points for each piece and assembling the composited images themselves. If they choose this path, of restoring order and finding meaning, they can then try and assemble the connections between all five pieces and construct a larger understanding of the work. In these choices, the viewer seeking narrative closure is the key, not the narrative itself, as the work is a scaffold around the animation and film rather than a five shot film. The work seeks to immerse the viewer inside a film as a phenomenological experience. In short, I am asking my audience to walk between the layers and inside the frames, between the shots and around the film and consider how the perception of space in film is a powerful unconscious narrative cue in itself.

The capacity of the space within the frame to function in a formal sense as a part of the story-telling structure is integral to *All The Nice Things Come From Here*, where the fracturing of the picture plane into its constituent parts through mirrors and projections is asking the audience to complete the narrative themselves by aligning the elements at an optically correct point of perspectival alignment. The restoration of order is presented as a choice as the audience can instead opt not to align the images and not restore order. As the narrative of the work is so loose, in fact just an arrangement of vaguely unsettling loops and extreme close-ups of a kind of hidden story of self-propelling detritus, there is the added difficulty of it being a largely abstracted narrative in the first place.

The space created by miniatures

The realm of stop motion animation is unavoidably indivisible from the lens-based world as it does not exist outside of the act of shooting, the camera does not simply record the movement of inanimate objects as the camera is an integral part of the making of the inanimate move. Therefore, part of the strangeness and denaturalisation of stop motion animation is in how the camera shows these accumulations of distorted cues of scale and how they occupy cinematic space. Notable lens-based effects include a shallow depth of field, which causes an exaggerated amount of the blur that viewers of live action cinema would equate with distance, and is unavoidable when shooting objects which are centimetres, not meters, apart. A shallow depth of field leaves only a thin strip of an image in focus, an effect that most viewers would understand to indicate a small physical space.[141] Other effects particular to the photographic image include the magnification of real world objects, in which their textures and patina will appear in crisp and highlighted detail by virtue of being impossibly large relative to their normal real world size.

The miniature sets in *All The Nice Things Come From Here* are mostly photographic images papered onto MDF. They are really tiny miniature theatrical flats which operate in much the same way as those described by Cubbit, as an indication of a narrative space rather than a descriptive simulacra of an actual space.[142] The design and use of sets is a crucial part of stop motion animation as they create the visual world of the film. Because

[141] This implicit understanding of photographic convention can be seen in the popularity of tilt-shift effects, which can be achieved with special lenses or approximated with digital manipulation. Using the technique, it is easy to make a large building or vista look like a toy or model simply through manipulating the amount of focus present in the image. It has been used by artists such as Olivo Barbieri and has entered the amateur photographic lexicon through articles in the popular media such as The New York Times 2007 article "Fake Tilt-shift Photography" http://www.nytimes.com/2007/12/09/magazine/09_19_tiltshift.html

[142] Cubitt, The Practice of Light: A Genealogy of Visual Technologies From Prints to Pixels, 185.

they are frequently miniature constructions, they have a distinct visual appearance, and create a quite different type of cinematic space to their full-scale live action counterparts. The cinematic spaces of stop motion animation are like, but also unlike, other forms of film, and that friction of the visually expected combined with the visually unexpected is part of what sets it apart from live action film.

Like live action film, stop motion animation is comprised of real objects (whether they are puppets or everyday objects), but unlike in live action, the space that these objects occupy is miniaturised and the time they occupy is staccato, and it is these physical and temporal dimensions that are the crucial two points of stop motion's divergence from cinema. The shift from human-size to miniature creates a whole new physical reality as the optics of shooting and capturing small scale sets is quite different to that of their full-scale counterparts. Elements such as depth of field and frame rate are also notably dissimilar to their real world equivalents when the subjects of the shot are miniaturised.[143] This might be smoothed over in a commercial mainstream film, for example in a high-end animation like Wes Anderson's *Fantastic Mr Fox* (2009) the miniatures allow for incredible set pieces (cut-away sets, beautiful textures and intricate puppets) but there is a unifying aesthetic, in terms of the scale and camera work, that makes the onscreen world whole, complete and visually consistent. While *Fantastic Mr Fox* has a different (and differently crafted) aesthetic to live action film, the aspects of scale are not emphasised as a part of the overall look of the film. Other film-makers exploit the other-worldliness of unusual shallow depths of field and the potential for huge camera moves to create a more unsettling theatrical space with obvious changes in scale. An example of this is seen in the ghostly self-winding screws in the Quay Brother's *The Street of Crocodiles* (1986),

[143] Rickitt's overview of special effects techniques in *Special Effects; The History and Technique* lists three major considerations for shooting models: scale, speed and depth of field. There are the formulas of frame rates and aperture sizes that help the cinematographer account for some of the differences between photographing life-sized and miniature sets.

which appear outsized next to the puppets, and are complimented by more subtle comparisons from the use of everyday objects in miniature. The doll-parts character, The Tailor's Apprentice, caresses an out-sized kidney (taken from what animal? A mouse? An elephant?) and his hand is wrapped in threads of cotton that would be the size of ropes if scaled up to human size (see Figure 36).

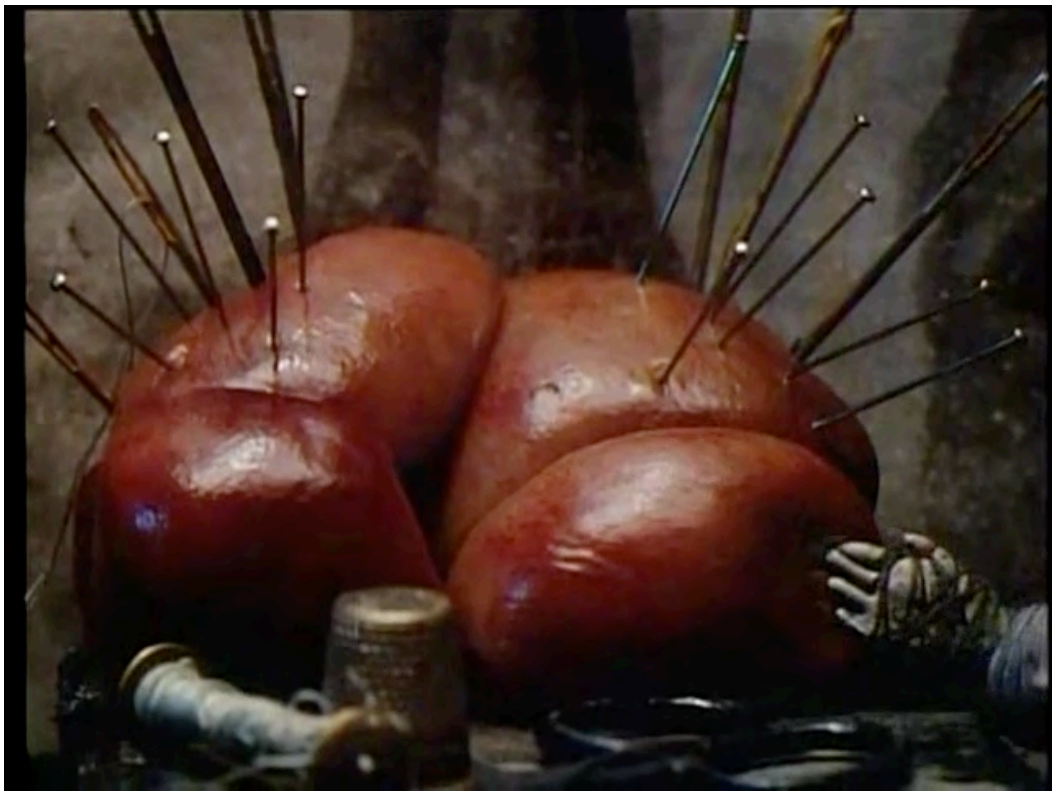


Figure 36. The Tailor's Apprentice feels his way around a kidney in the Quay Brother's *The Street of Crocodiles* (1986)

The cotton threads read both as familiar and then unfamiliar when placed in a puppet world of uncertain scale. Regardless of the materials of manufacture, any variations of scale, no matter how subtle, highlight and expose the material and tactile nature of the set's construction, and the usual scale of objects becomes distorted through unusual applications. As Michael Atkinson wrote, the reminders of scale and their relationship to the outside world permeate the entire production:

> All Quay films celebrate their own exploding miniatureness in similar fashion, by locating within their tabletop cosmos unsounded depths of image, allusion,

> and atmosphere. The hallways of *Street of Crocodiles* go on forever, though we never see to where, and we know on the right side of our brain that it's a matter of inches to the table edge.[144]

What Atkinson has called a "right side of the brain" understanding of what is inside and outside the frame is the metaleptic conceit of stop motion animation, and it is part of the disruption inbuilt into the style.

The space created by optics

The disrupted visual relationship between the photographic world and the real world image continues to defamiliarise the viewer through the shooting techniques of the form. Each frame of stop motion animation is part of a series, with only slight differences from the image preceding it, and the individual frames need to be played or projected sequentially (at any rate from about 10 frames per second) to achieve what could be thought of as a motion that can be experienced as approximating real time. What separates stop motion animation most significantly from live action footage is the lack of motion blur, the cinematic visual artefact which underpins the ideas of visual realism in live action film. The blurring of fast movement is a cinematic construct that is understood by audiences as form of photographic realism that shows movement, and it is completely absent in stop motion animation. Each frame in stop motion shooting must be stationary in order to be photographed and, as the gradated control of the movement of all objects is the crucial part of stop motion animation creation, there is no chance of creating the blurs that are the conventional visual signifiers of speed or motion in cine film. It is the lack of that blur which gives animated movement a stuttering, slightly unworldly look.

[144] Atkinson, "*The Night Countries of the Brothers Quay.*", 38.

The space created by live action

The optical disparity creating an uncertain sense of scale, combined with the artificial movement in the frame, makes for a natural visual friction between live action and animated images when they exist within the same shot. The uncanny effect it produces (essentially dolls animated by unseen forces with unnaturally artificial movement) was also exploited for the creature-based visual effects of popular animation great, Ray Harryhausen, whose animation work in his fantasy films of the 1950s and 1960s were key to the popularisation of stop motion animation as a visual effect. Many of the last wave of analogue visual effects creators in the 1980s cite Harryhausen's work, in particular the skeleton fight in *Jason and the Argonauts* (Don Chaffey, 1963) as instrumental in their own development as animators. Phil Tippett, a visual effects supervisor and stop motion animator who worked on many commercial feature films such as *Star Wars Episode V: The Empire Strikes Back* (Irvin Kershner, 1980) and *Dragonslayer* (Matthew Robbins, 1981) described stop motion's particular qualities:

> There's still a fascination with stop-motion, even though it's antiquated. Looking at *King Kong*, *The Black Scorpion*, or Ray Harryhausen's films, it still elicits that tinge of excitement you get from seeing these strange miniature worlds. It's not real, but these creatures are moving under their own power. What is it? It's really a kind of ghostly endeavour. Something that's physically manipulated in tiny bits by a human being, who moves out of the way and then the image is captured on film. It's a very surrealistic kind of filmmaking.[145]

Tippett is a practitioner whose career has spanned stop motion in commercial film-making, from creature features to the abrupt visual effects rupture caused by the introduction of commercially viable digital effects in the 1980s. He is an award winning

[145] Lawrence French. "Phil Tippet: Stop-Motion May be Going Extinct, But the Former Animator is Alive and Well." *Cinefantastique*, February 1999, 40.

stop motion effects animator and he was a key pioneer in the technique known as “Go Motion” that attempted to smooth out some of the unworldly aspects of stop motion animation by introducing motion blur to the animated frame in the hope of better integrating it with live action footage. The Go Motion technique moved the puppet slightly during a shot to create a blur in order to replicate a sensation of movement in the finished frame and it was used in several creature films of the 1980s, including *Star Wars* (1980), *RoboCop* (1987-1983) and *Willow* (1988). Tippett led the animation team on *Jurassic Park* (Steven Spielberg, 1993), utilising the then ground-breaking hybrid digital/analogue system where animators manipulated sensor-equipped armatures that fed the positioning information to their digital counterparts to complete the digital end of the animation. The end of stop motion animation as a commercial technique was apparent to Tippett as he began to see the rise of Computer Generated Imagery (CGI) in the early *Jurassic Park* test screenings and he turned to Steven Spielberg and said, "I'm extinct". He experienced a kind of personal crisis around the transition:

> I felt like Georges Méliès, that was a real low point. I actually got physically ill with pneumonia and had to go to bed during that period. It was definitely a big change of life for me, because when something new is replacing something old, there's a kind of trashing of what's gone on before.[146]

The change Tippett felt so bodily was a paradigm shift in the visual effects of commercial cinema, from the symbolic approximations of analogue special effects to the new digital ideas that were pursuing the potential for seamless and invisible visual integration into the cinematic vision. Lev Manovich, writing as the wave of digital effects in visual media was gathering force in the 1990s, described contextual and structural visual redundancy in terms of Comolli's ideas of audience disavowal as a means of achieving narrative immersion. Manovich argued that ideas of visual verisimilitude are progressively

[146] French, “Phil Tippet: Stop-Motion May be Going Extinct, But the Former Animator is Alive and Well.”, 40.

expanded by technology but that each new understanding of cinematic realism involves a rejection of the previous level of authenticity:

> Each new technological development (e.g. sound, panchromatic stock, colour) points to the viewers just how 'un-realistic' the previous image was and also reminds them that the present image, even though more realistic, will be superseded in the future-thus constantly sustaining the state of disavowal.[147]

Tippett might have tried to bend stop motion animation to photorealism with the development of Go Motion, but the technique could only ever be a stopgap. Industrial cinema wanted diegetic photorealism and the digital world had the tools, even at the very early stages of digital development, to start the visual processes that make that possible. Hollywood visual effects have photorealism and what Stephen Prince called "perceptual realism" at their core, where the photoreal integration of digital imagery into live action creates a process of believing that is not an absolute, and instead ideas of cinematic realism are mediated by the audience's expectations and understanding of the film as a visual artefact, rather than as a fixed end point of "realism".[148] In this sense, the creative content of the effects themselves are mandated through a complex interweaving of technical parameters and contemporary fashion in expected visual effects.

Visual effects are contextual, and Julie Turnock has written about the effects and influences of Industrial Light and Magic (ILM) on the aesthetics of visual effects in Hollywood in the late 1970s and early 1980s and how influential ILM became in setting the visual agenda for the VFX industry as a whole.[149] Dan North has suggested that the contextual elements of visual effects are key to understanding the relationships between effects and representation, as "all processes leave traces of themselves behind" which the

[147] Manovich, "'Reality' Effects in Computer Animation," , 7.
[148] Stephen Prince, "True Lies: Perceptual Realism, Digital Images and Film Theory", 28.
[149] Julie Turnock, "Plastic Reality: Special Effects, Art and Technology in 1970s Us Filmmaking" (PhD thesis, The University of Chicago, 2008).

spectator then uses to evaluate the success or failure of the effect in terms of how visually seamlessly it integrates into the film. North argued that while visual effects technicians might be hoping that "their effects will be indistinguishable from the real but what they are actually seeking is a new, idealised simulation that is absolute *representation*, when the illusion is the perfect fit for the diegetic space into which it is placed".[150] Stop motion animation inside live action cinema alone creates a diegetic space that is quite aesthetically different to live action because it asks the audience to accept scale and movement differences between the different elements as part of the whole.

It is this aesthetic friction between the spaces occupied by live action and stop motion that has made stop motion animation redundant as a commercial visual effects technique. However, this is the very reason that it is now used in contemporary cinema and film-making in ways that are about exploiting its inherent visual strengths as a film-making technique. It has been having something of a renaissance with film-makers, and Steve Rose when writing about Charlie Kaufman's *Anomalisa* (2016) spoke of the small but sustained interest in feature length stop motion animation as a form that might well have been considered dead at the beginning of the seismic cultural shift to CGI,

> But stop-motion has not just prevailed, it has moved into new territories. Once associated with children's entertainment, it has somehow found a new lease of life among "grown-up" film-makers – be they live-action auteurs, or animators dealing in darker, child-unfriendlier content. Anomalisa ticks both boxes, and it's the tip of an iceberg that's still growing.[151]

There are a handful of film-makers who use stop motion as a visual effect in counterpoint

[150] Dan North, *Performing Illusions: Cinema, Special Effects and the Virtual Actor*, (London: Wallflower Press, 2008), 10.
[151] Steve Rose. "Masters of Puppets: Charlie Kaufman and the Subversive Allure of Stop-Motion." *The Guardian*, 8th January, 2016, https://www.theguardian.com/film/2016/jan/07/subversive-allure-stop-motion-anomalisa-tim-burton.

to live action footage, with the most notable being Michel Gondry in *The Science of Sleep* (2006) and Wes Anderson in *The Life Aquatic with Steve Zissou* (2004), and both of them use animation to signify a character's internal, private world or as a way of visualizing a character's unachievable longing. Now that it is no longer a presence in visual effects, stop motion animation has split into three distinct streams in popular Western media: in children's animation, where there is a lucrative industry for claymation studios like Aardman; as a stylistic visual trick for mainstream independent film-makers such as Gondry and Anderson; or as a niche film-making style for experimental animators such as Švankmajer. More recently, there have been animators like Kirsten Lapore, whose surreal short, *Hi Stranger* (Lepore, 2016), on loss and longing is cultivating multi-million view audiences online. Lapore is neatly straddling the commercial/arthouse divide by creating non-commercial online films with animation collective The Late Night Work Club, but has also directed a stop motion special for the Cartoon Network series *Adventure Time* (*Bad Jubies*, Season 7, Episode 20) and commercials. The commercial/personal project path is one also favoured by the short film maker Pes, whose debut short film *Roof Sex* (Pes, 2001), an enthusiastic imagining of velour armchairs having sex on a New York rooftop, has led to a career filled with festival acclaim, Academy Award nominations and high end commercials for clients like Nike. Stop motion also remains a distinct style in the short animation film festival circuit, where there are several notable festivals devoted entirely to the form, such as the Montreal Stop Motion Festival or Se Ma Fa in Lodz, Poland.

Space as a metaleptic concept

It is important to contextualise stop motion animation in this way culturally as the form has had so many applications, both as a stand-alone style and as a visual effect within live action film, that it can be easy to lose sight of its particular and singular relationships with

cinema. Stop motion animation is constantly referring to the filmic form through the visual style created by its stop-start nature and through the materiality of its subject matter in the use of real objects. The seamless immersion in narrative that CGI effects promote is almost always absent in stop motion animation because the audience is constantly aware of animation as a filmed, artificial artefact. I posit that space in stop motion animation is a visual element that creates authorial layers and other subtle layers of visual meaning to the work to set a mood, tone and overall affect. These visual components, space and materiality, are as much an element of the language of film as editing or scriptwriting, and can be analysed in much the same way in order to tease out their relationships to the film as a whole. Regardless of the style it takes, whether stand-alone or combined with other filmic forms, stop motion is always referencing itself and it is this self-referenciality that functions as a metaleptic layer that is either conforming or breaking the audience's expectations of Cartesian space.

The paradox of surface and distance

The treatment of space is central to my creative work, not just in the animated footage, but because I've chosen to expand the space so artificially so as to allow the audience in-between the layers of the work. Space became not just an aesthetic question but one of physics, and one of the key challenges in realising this project was working out the formula for the mirror mattes. Early efforts failed miserably and, apart from developing either a steadier eye or a longer arm, I soon realised that success would only be found in accuracy and that the mattes would need an algorithm to describe the transformation of the shape of the artwork as it hit the mirror. In my initial approaches to the problem I tried a less mathematical, more heuristic approach, by trying to outline them by eye. The difficulties in doing so were not just the errors that crept into the mirror shapes, but also a constant battle with the mirror itself. Reflections can be mysterious parallel universes

that are both exactly like and unlike our own world. Baudrillard described mirrors, along with trompe l'oeil, as places in which "we are bewitched by the spell of the missing dimension ... that establishes the space of seduction and becomes a source of vertigo".[152] In *Seduction*, he detailed the virtual image in mirrors as a space that hovers in-between the real and the Other, an impossible place without a centre which makes the mirror into a powerful metaphor for deception and illusion. Baudrillard's recounting of the myth of Narcissus shows the mirror as "an absence of depth, a superficial abyss", a paradox of both surface and distance. The initial stages of this project made me acutely aware of the relationship between the virtual spaces of reflection and the unforgiving surface of the glass as I tried to resolve the puzzle of the optical spaces created in, through and behind the mirror in order to create the optically correct station points of visual convergence. Physically, the properties of the mirror are straightforwardly explained by physics, but culturally, the mirror is a crucial metaphor that has held its relevance from the ancient Greek myth of Narcissus through innumerable instances in literature and film. Lacanian film theory uses the mirror as a central part of understanding the relationship between the spectator and camera through psychoanalysis. While this project uses mirrors as a central part of the process, I have not used Lacanian analysis as a theoretical tool in this project because, apart from the obvious connection that both use references to mirrors, I felt that layers and metalepsis provided a less-travelled way of analysing the properties of stop motion animation and its relationships with spectatorship, cinema and the cinematic form.

In creating my mirror plates, I became more and more interested in the mirrors themselves, in part because of the difficulty in working with them coupled with a surprising and growing awareness that I didn't visually understand the physical properties

[152] Jean Baudrillard, *Seduction*, trans. Brian Singer (Montréal: New World Perspectives, 1990), 67.

of mirrors as well as I thought I did. It became clear that an additional dimension of the allure of the mirror could also be a part of a more prosaic puzzle about both the limits of an individual's visual imagination and how the construction of narrative in any media uses all sorts of forms of suspension of disbelief to sustain that narrative.

People's understanding of how reflections in mirrors work has been shown to be surprisingly inaccurate, a type of common misunderstanding of the physical world that psychologists term naïve or intuitive physics.[153] Even though mirrors are a commonplace object used daily by most people, the actual physics of mirror reflections are difficult for many people to predict. For instance, many people are unaware that their reflection in a mirror is half their physical size and they also find it hard to predict what size a reflection might be as they move further away from the mirror.[154] In addition to difficulties in visualising mirror images, people are also susceptible to what Bertamini et al. called the "Venus Effect", in which viewers commonly accept without question an impossible, or physically nonsensical, depiction of mirrors in paintings if it fits within the overall narrative of the picture.[155] In such cases the spectator assumes that a painted subject is looking at their own reflection in a mirror when there is a reflection of the subject depicted. While the narrative of the work (any of the many variations of Venus at her toilette are used by Bertamini as examples) would suggest that the subject is looking at themselves, the actual angle of the mirror would mean that the fictional subject would, in fact, be looking at the painter. The effect is not simply restricted to paintings, where even in representational art a certain amount of leeway with reality is expected inside a fictional

[153] Ugo Savardi, Bianchi, Ivana, and Bertamini, Marco, "Naïve Predictions of Motion and Orientation in Mirrors: From What We See to What We Expect Reflections to Do," *Acta psychologica* 134(1) (2010), 1.
[154] Marco Bertamini and Parks, Theodore E, "On What People Know About Images on Mirrors," *Cognition* 98(1) (2005), 86.
[155] Marco Bertamini, Latto, Richard, and Spooner, Alice, "The Venus Effect: People's Understanding of Mirror Reflections in Paintings," *Perception* 32(5) (2003), 596.

pictorial space, as Bertamini has found the same misunderstandings in naive observers using real mirrors or photographic examples. In a set-up where a mannequin and a mirror are placed so that the mannequin's face is framed so that it can be seen in the mirror to an outside observer, the majority of his participants (over 70%) preferred to construct a narrative (the model is looking at herself) than visualise or conceptualise the actual optical reality (the model would actually be looking at the viewer).[156] For the majority of viewers, a mirror used in this way is simply a narrative device and the optical reality has little effect on their understanding of the story being told, and they simply discard any contradictory information. Bertamini suggested that "It is possible that the mirror surface and the windowpane are *transparent* to our perceptual experience in both senses of the word."[157] In showings of *Quiddity #1* and other variations of *All The Nice Things Come From Here,* I was reminded of how unintuitive our understanding of mirrors are, as viewers invariably spend the first few seconds of the encounter with the work attempting to establish the relationship between the mirror and the photograph/projected video before attempting to align all three elements of the image. The mirror, as a decentring element in and of itself, had not been a part of my initial understanding of the work and I am intrigued by this additional layer that so clearly shows how a reading of a visual work is dependent on an audience's complicity and understanding of the formal structures surrounding them.

The problem of mirrors plays out in other visual forms and is nowhere more evident than in the various interpretations of Valázquez's 1656 *Las Meninas* (see Figure 37), and its shifting and ambiguous visual relationships between subject and the viewer.

[156] Marco Bertamini, Lawson, Rebecca, Jones, Luke, and Winters, Madeline, "The Venus Effect in Real Life and in Photographs," *Attention, Perception & Psychophysics* 72 (7) (2010), 1949.
[157] Marco Bertamini and Parks, Theodore E, "On What People Know About Images on Mirrors." , 91.

Figure 37. Las Meninas by Diego Velázquez. 1656. Creative Commons image.

Las Meninas is a masterwork that decentres the viewer through undermining both the physical and social expectations of Cartesian space. The list of fractures is extensive: the painter of the picture should not be staring back at the viewer; the royal portrait subjects should not be evident in the smallest space in the painting; the royal couple should not be in the back of the room; and the viewer should not be occupying the same space as the royal couple. Michel's Foucault's famous analysis of the painting in *The Order of Things* positions the viewer and the King in the same space so that the whole painting becomes a "whole complex network of uncertainties, exchanges, and feints".[158] Foucault suggested

[158] Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences*, New York, Pantheon Books, 1971), 2.

that the painting is about representation itself, where the viewpoint, not the subjects, becomes the primary portrait. This reading, because it is so reliant on positioning established by eye-lines and mirrors, generated much debate from art historians regarding the placement of the background mirror, the mirror reflection of the King and Queen and how that affects the underlying narrative of the painting. Foucault and John Searle both position the background mirror as reflecting the royal couple sitting for the portrait, thus collapsing the pictorial plane for the viewer. However, Joel Snyder and Ted Cohen argued in “Reflexions on "Las Meninas": Paradox Lost” that this in incorrect, and through demonstrating the vanishing points of the painting showed that the reflection can't be that of the viewer, and instead is the reflection of the canvas that Valezquez is painting.[159] Others have taken less literal interpretations, for example Svetlana Alpers in “Interpretation without Representation, or, the Viewing of Las Meninas”, who argued that it is the friction of the two ideas of world-making that make *Las Meninas* powerful and paradoxical:

> It confounds a stable reading, not because of the absence of the viewer-subject, but because the painting holds in suspension two contradictory (and to Velizquez's sense of things, inseparable) modes of picturing the relationship of viewer, and picture, to world.[160]

It can be argued that the actual positioning of the mirror is irrelevant in the painting in light of the findings of Bertamimi et al, which have shown the vast majority of viewers are happy to accept the mirror view as largely metaphorical. The mirror reflects the central narrative of the story and its actual placement and optics are immaterial when most people are unable to easily visualise the outcome and so simply accept the veracity of the narrative instead.

---

[159] John R Searle, “Las Meninas” and the Paradoxes of Pictorial Representation,” *Critical Inquiry* (1980), 477.
[160] Svetlana Alpers, “Interpretation Without Representation, or, the Viewing of Las Meninas,” *Representations* (1) (1983), 39.

In an early installation version of *All The Nice Things Come From Here* (*Quiddity #1*), the spectator reaction showed me that the mirror is a part of the narrative in a structural way, in that it is necessary to understand the mirror image enough to attempt to seek out the narrative that is offered by the virtual image of the mirror.[161] In this sense, it is *the* controlling element in the work overall and refers the viewer constantly back to the relationship between the spaces in the different narrative levels of the work, in the space where the story is told and the space of the story being told. I observed audience members checking and re-checking the properties of the mirror as a part of their engagement with the work, bobbing and weaving as they sought to see how the mirror fitted into the overall work and some, seeing the connection between the mirror plate and a floor-marker, made the connection to complete the image, but others were more engaged with the work as a series of objects. In both scenarios the audience engaged with the mirrors as objects and their ideas of what a mirror should reflect, and then using that information to either try to make a narrative (or sense) or to not engage with that part of it at all, but still the space created by the work influenced how they engaged with it.

The immateriality of the reflected image also made the pieces challenging to design. Mocking them up was difficult, in that the mirror forms such an integral part of the work that making a maquette or model of them proved difficult. I made some 3D models in the 3D software Cinema 4D but found the system cumbersome, slow and technical. The digital 3D process mainly proved that the algorithm for the matte distortions was correct, and that the mattes formed one image when aligned, but the process brought nothing to the creative processes or helped with the content. I found making the cardboard stands and exploring different photographic combinations (as seen in Figure 38) to be the most

[161] *Quiddity #1* by Jane Shadbolt. Video Installation exhibited at *New Materialisms*, Sydney College of the Arts, 2014.

visually engaging way of dealing with the three-part puzzles that form each station point, While these were exploratory pieces, they began to structure the visualisation of these spaces as much more abstracted spaces rather than considering the mattes along filmic lines (where natural framing elements like doors or windows might be used). It was through this process that I began to understand some of the issues of space, and how it is formed through layers, in a much more visual and immediate way. I began to see the narrative as one of suggestion and mood rather than as a traditional three act structure, becoming much more engaged with suggested narratives rather than directed ones.

Figure 38. Cardboard stands (work in progress). Jane Shadbolt. 2016.

It is not just in still images where narratives can be controlled through an understanding of space and position. Spatiality informs a large part of camera placement in narrative films where it is a vital part of the conventions around the construction of shots that provide a cohesive and continuous spectator understanding of the spaces that the characters occupy. The major convention is simply called "the line" (also termed the "axis of action" or the "180 degree rule"), and it describes an imaginary line between characters,

both between each character and between the characters and the camera.[162] While the camera can represent the omnipresent spectator, the construction of the actual film has several underlying conventions of shot size and camera placement that help keep the viewer orientated to where and how the action is unfolding. The conceit of the camera as a spectator-eye supposes that the viewer is watching an unfolding scene, say a mid-shot between two people standing and talking, from a continuous vantage point on the same physical side of the actors and that the viewer/camera is simply rotating from one person to another to see the action. If the camera suddenly hops, unmotivated, to the other side of the actors then it is violating this rule, an act termed 'crossing the line' which results in spatial incoherence for the spectator by flipping the players onto opposite sides of the screen. This disorientating effect can be exploited as a means to decentre the spectator or it can simply indicate an imperfect grasp of film language on the part of the director. Crossing the line needs to be done carefully and in the context of a distinct overall editing and directorial vision otherwise, to the lay-observer, their experience of the scene suddenly feels wrong or 'jumpy'. Manipulating the line during the shoot to keep the screen action conforming to the convention is a commonplace occurrence, and film-makers (or more precisely cinematographers) routinely perform what are called 'cheats' to make the physical objects they are shooting match with either the line established in the scene or to keep the continuity of the lighting when they change shot size. For example, lighting equipment used for a close up might become visible when the camera is moved further away for a wide shot and the lighting effect would be cheated by the crew to keep the visual continuity of the shot after moving the equipment.

All The Nice Things Come From Here violates all of the cinematic rules of the line. It erases the line by creating so many multiple points of entry into the piece that the

[162] Steven D Katz, *Film Directing Shot By Shot : Visualizing From Concept to Screen*, (Studio City, CA: Michael Wiese Productions in conjunction with Focal Press, 1991), 129.

directorial indications of spatial relationships are destroyed. The audience creates their own cinematic space by walking from one station point to another, which leaves the option of the points of cinematic space formed by viewing from through the station points or the more random relationships between the Schüfftan mirrors themselves. In this sense, the work is both a designed (and so directed) experience but is also anti-authorial as well. Despite the conceit of the Schüfftan set-up controlling where the audience stands and where they look, I am thrilled that I cannot control what, if any, narrative they take from it. For a work questioning how narrative is constructed through structure, I chose somewhat counter-intuitively to dismantle any tradition narrative almost entirely.

Space creates narrative

In the same way that space dictates meaning in *Las Meninas*, or an audience understands the constructed space of a film, the visual depiction of space is one of the crucial points of impact in this creative work. It is worthwhile examining the underlying narrative framework suggested through the layering and re-aligning of imagery through these points of visual coherence and incoherence in *All The Nice Things Come From Here* as it is the construction of the illusion of space that creates the potential for metaleptic layers. While the layers sometimes combine to create a seamless new image (as perhaps is the goal of contemporary commercial special effects), they can also work to create a series of ruptured, displaced spaces that suggest being inside and outside the frame simultaneously as a metaleptic device.

While metalepsis can prevent audience immersion because it draws attention to the structure surrounding the creative work, it can also be argued that the audience's awareness of being a part of the construction of the work is part of the understanding and pleasure of the conceit of a narrative proposed through illusion. Even the early days of

Renaissance explorations of perspective geometry had a sense of the viewer as an integral part of the creation of the illusion. As discussed in Chapter Two, Brunelleschi's lost demonstration panels for the Florentine Baptistry and Palazzo Vecchio were created using a method that entirely centred on the position of the viewer as the key element of the work. The viewer becomes the camera, while the mirror and images become a series of mattes that both occlude and include the visual elements of the view. The viewer has a privileged position in being able to construct the effect themselves, thus being able to see it in all of the stages of its construction. The narrative is mostly one of completion: when the viewer's alignment matches that of the artist's, the narrative is complete. This is a station point that represents the ideal spectator, the point where the linear perspective of the image converges in the most optically correct way. While it is a point of Cartesian certainty, it is also a point of some epistemological complexity and the spectator occupies an ambiguous zone where object and subject collide. In order to understand the space offered up by Brunelleschi's device, the viewer is first removed several times (seeing a painted representation that is mirrored back at them), while at some level being inside the object as well (reconstructions show the viewer can see their own disembodied eye though the peephole in the reflection) and the whole circular experience simply recreates what is already there. Success in this experiment is measured through the correct mapping of the recreated perspective to the actual perspective of the subject. Like so many optical effects, Brunelleschi's experiment was about confirming the natural visual order rather than proposing an alternate one. It is no coincidence that Brunelleschi chose two sites of Florentine religious and civic power, the Baptistry and the Palazzo Vecchio for his demonstrations, as illusion is about power and complicity and it is a collusion between the subject, the object and the viewer.

In *All The Nice Things Come From Here*, the space between the layers is the most difficult to negotiate because it doesn't immediately have a pattern or rhythm. Although

mathematically correct, the angle and placement of each element is surprisingly asymmetrical and decoding it takes some time if markers for the station point position are not provided. This is the outermost metaleptic layer, a work that resists entry to the narrative right from the very beginning. Although difficulty in accessing the work was not my initial aim, it does provide a great starting point to consider the idea of the cinematic spectator as someone who must quite literally try and make sense of the cinematic work before them. Once the filmed animated space is dismantled it opens up all sorts of visual and narrative possibilities that are quite distinct from conventional narratives. In *All The Nice Things Come From Here* these opportunities are all about viewer autonomy and creating a mood rather than definite narrative. The swing of headlights from station point to station point binds the works together in a temporal fashion by suggesting an order of approach, but otherwise the different station points are different meditations on different aspects of the materiality of their environments: an endless rolling door, crawling particles and pressed steel.

Chapter Five: Objects

Figure 39. A still from work in progress *All The Nice Things Come From Here*.

Objects, images and metalepsis

This chapter starts with the object itself, and considers the animated object both as a metaleptic device and how it operates as a visual image within the digital space. In object stop motion animation the materiality of the animated object is vitally important as the object speaks for the animator in the same way as an actor speaks for a film. The object's selection, presence, framing and tactility are all visually and materially voicing the central structural elements of the animated idea as revealed through movement. The object's performance, by animated necessity, was mediated through the camera, in the past on film, and now in digital. This offers some exciting possibilities but also a slightly different relationship to the object, the image and its metaleptic potential.

Elizabeth Walden positions contemporary object stop motion as a kind of paradox, existing in a digital sliver between the destruction of the index by digital photography and the possibilities offered by materiality when indexicality is removed,

> The infinite malleability of the digital image paradoxically creates the conditions for an encounter with materiality, and that encounter makes possible a deep re-ordering of our relation *to things*. [163]

While I agree that the material possibilities of images have increased through digital means, I would argue that the index is simply rearranged, reordered and reshuffled by digital imagery rather than removed entirely. While it is true that the objects of digital photography or cinematography can easily be uncoupled from their indexical relationships to their subjects because the digital image is so easily manipulated, it still remains that a (representational) manipulated digital image is still coupled to an index of sorts in order to be believably connected to an (imaginary) indexical moment. The index

[163] Elizabeth Walden, "Heavy as a Feather: On Agnieszka Woznicka's Birdy, Object Animation and the Moral Gravity of Things," *Animation: an interdisiplinary journal* (2010-7), 59.

for these types of images retreats to layers, shadows, blurs, occlusion and reflections, and each one of these elements contributes to the whole of a non-indexical yet representational image. It is in the layering and compositing of these images that brings them to a place where a suspension of the index of disbelief can be sustained. It is the layering being perfected by CGI in mainstream cinema that allows for the entire Marvel back-catalogue to be made believably cinematic, one comic book at a time.

As a practitioner, the new digital hegemony allows for more than just a new relationship with the index. The promise of "the digital assumption of the power to create whatever can be conceived without material constraint" is a heady one.[164] I chose to exercise it in a tangential way, not by creating elements from scratch through defining points of mathematical geometry (the essential technique in creating CGI objects), but through manipulating the photo frames I take to specific outcomes. The materials are real but the limits to what is practical are lessened, and the ability to easily incorporate elements, erase mistakes and manage filmic time is a new type of freedom. The ability to easily create macro shooting environments allowed me access to a whole new world of scale and material. The arrangement of the work and the oblique progression through the different station points is a type of falling into animation. I move from the representational (spaces, shadows, doors) into a more abstracted visual space throughout the course of this project, and the filings and ferrofluid make the perfect dust and fluids for these imagined spaces. I didn't have any desire to form these into other objects or make them perform in mimetic ways, instead I became interested in their inherent nature and visual properties and sought to capture that as a main visual and theoretical concern. I echo Walden's description of object animation:

> Object animation, rather, directs us to the objects themselves. It frees materiality

[164] Elizabeth Walden, "Heavy as a Feather: On Agnieszka Woznicka's Birdy, Object Animation and the Moral Gravity of Things." , 61.

> from its practical or natural contexts to see what it can do. It begins collaboration between the material and the animator: the animator teases out latent potential in the objects, while the objects direct the animator in their possibilities [165]

In the macro world of extreme close ups I finally found the material texture, form and substance I had been searching for during this project, with the additional bonus of making procedural animation from analogue means.

The combination of analogue and digital is a central part of this project. The "mirrors as layers" in the Schüfftan process plates are also an archaeology of digital practices as I wanted to see how the layers work, why they function as they do and how they contribute to meaning in and of themselves. This process came back to an analogue process enabled by digital means and I think that this is an exciting nexus of process and materials. The digital process is a material as well, as it has rules, limits and techniques and it shouldn't always be seen as simply a reflection of the photographic or the photoreal.

On a practical note, digital affordances have brought once high-end means to easily contained one-person operations. With a laptop and a camera, I can now single-handedly crew shoots, do my own lighting, create post-production effects and make colour corrections with my own animated experiments. I own my own equipment and I don't need to hire specialist gear or specialist gear operators. These things may sound peripheral or tangental to the actual work, but they're not, as they enable and empower work outside the gendered norms of media, art and cultural production.

[165] Elizabeth Walden, "Heavy as a Feather: On Agnieszka Woznicka's Birdy, Object Animation and the Moral Gravity of Things." , 63.

The story of the object

Narratology studies have approached the idea of narrative potential within images mainly through an analysis of paintings and single images, and how to regard the potential for narrative in visual images at all has been discussed by Wolf and Ryan, who both argued for recognising a form of visual narrative within images, but one that is different to the narratives available through literary or textual works. Ryan approached the image as a part of a larger idea of how images might reflect concepts of fictionality and narrative. She proposed that the image itself has a broad spectrum of narrative positions that need not map specifically to literary models. This avoids the problems of imposing one language (textual) upon another (visual) and still allows each medium its own markers of narrative, fictionality or non-fictionality.[166] Wolf took a more radical position by presuming that there is narrative capacity embedded in all visual media and it is simply a graduated system,

> The real question is not *whether* the visual arts can be narrative or not but *to what extent* they can be narrative. Generally, we can say that in principle the visual arts can embrace the whole scale between full narratives with 'strong' narrativity and works that possess zero narrativity[167]

Visual narratives are slightly different to literary or textual narratives because they map to only some of the conditions of narrative. Static images struggle in some respects as narrative devices because they lack the capacity for change, one of the defining aspects of narrative and, as Wolf points out, "purely visual works inevitably have difficulties with the representation of the inner world of thoughts, hence with the crucial aspect of the motivation and intention of action, and, even more importantly, with the vital narrative

[166] Ryan, “Fiction, Cognition, and Non-Verbal Media”, 8-26.
[167] Werner Wolf, “Narrative and Narrativity: A Narratological Reconceptualization and Its Applicability to the Visual Arts”, 192.

element of time".[168] This doesn't mean that images are without narratives, just that they are a different type of narrative. Animation does possess one of the central conditions of narrativity, which is change over time, and thus even from a purely visual standpoint, non-narrative animation has the capacity to hold more narrative potential than a single image. I'd argue that this is why animation of all types has such powerful potential as a metaleptic medium, not just because its narratives can be bent to layered, self-referential forms, as seen historically in Warner Bros *Duck Amuck* or more recently, for example, in a 'live' animated performance of the cartoon rock band Gorillaz, but because the materials themselves can have several layers of meaning created by means of movement, use and context along with their juxtaposition with other objects.[169]

Can images, or more specifically images depicting objects, contain narratives? Including some limitations, I argue that they can, and I will discuss some of the objects within *All The Nice Things Come From Here* as well as the use of objects within Švankmajer's work to explore how objects can themselves be stories. There will also be a consideration of how animating objects through stop motion techniques imbues them with a type of metaleptic physicality that is both a central pillar of the stop motion viewing experience and a part of what makes stop motion visually distinct from other forms of animation.

Švankmajer considers the object to be central to his animation practices, and has a complex relationship to objects in all aspects of his artistic practices. His work has explored different areas of the haptic experience, and tactile experiments with objects were a large part of his work during the 1970s when his film-making was halted by the

[168] Werner Wolf, "Narrative and Narrativity: A Narratological Reconceptualization and Its Applicability to the Visual Arts", 189.
[169] The band Gorillaz frequently perform as projected animated characters in front of live audiences. See Gorillaz - Feel Good Inc. (Live at the MTV EMA's) Jan 16. 2010, https://www.youtube.com/watch?v=BdAXIj5QViw.

Czech Communist Party. In his film work, his visual preoccupations are with texture, and the objects he chooses invariably have a certain patina; they are battered and worn by past use, suggesting a long, previous and secret history of touch, utility and sometimes abuse. He believes objects have an "inner life" that can be "heard", and all of his choices relate to an emotional response elicited from the objects. Švankmajer says,

> I am a collector but I am unsystematic. I collect impressions of my scattered feelings which I find in certain objects, whether that object is without value or whether it is a work of art, a product of nature or a chance find. These objects are not dead artefacts to me. I lovingly give them starring roles in my films.[170]

He allows the objects to find their own roles, sometimes partially in tune with their actual function, like the pulsating disembodied ox tongue that licks clean the sink full of plates in *A Quiet Week in the House* (1969) or the stabbing pen knife that cuts itself on closure in *Jabberwocky* (1971) (see Figure 40). More often they are somewhat at odds with their normal usage, as in the display of objects within *Dimensions in Dialogue* (1982), where each object rejects its normal usage and instead offers itself in wildly destructive combinations with other objects. The selection and use of objects in Švankmajer's films

Figure 40. The pen knife in *Jabberwocky*.

[170] Peter Hames, "Interview With Jan Švankmajer," in *Dark Alchemy: The Films of Jan Švankmajer*, ed. Peter Hames (Trowbridge: Flicks Books, 1995), 109.

is not accidental as they build a whole story, not just by themselves, but through combination and reuse. Often an audience are encouraged to feel at ease with the object's new found animated agency, as when both the knife and the tongue initially revel in the freedom of movement by exploring their tiny constructed worlds, but this always comes at a price. In *Jabberwocky*, the pen knife, with its kitsch anthropomorphic lady-shaped handle, leaps around, seemingly testing its power on the net tablecloth, and the tongue in *Dimensions in Dialogue*, repulsively textured, licks its way around the sink, perhaps enjoying the leftover scraps stuck to the plates. However, as in most Švankmajer films, freedom is curtailed by a final surprise action as the knife commits *seppuku* on closure (see Figure 40), and the tongue slithers in an exploratory way into a meat grinder. The stories build from a rush of images, sometimes related and sometimes not, but all build to a small visual denouement. Roger Cardinal has described it as a type of visual syntax that is formed through Švankmajer's assemblage and juxtaposition of images, through to his cutting style, and has argued that although the content is Surrealist, and so often associative rather than rational, it is none the less a "visual argument, a way of thinking, in which ideas are articulated through objects instead of words".[171]

[171] R Cardinal, "Thinking Through Things: The Presence of Objects in the Early Films of Jan Švankmajer," in *Dark Alchemy. The Films of Jan Svankmajer*, ed. (Trowbridge: Flicks Books, 1995), 79.

The possibilities inherent in objects can be uncovered in the purposes of the objects themselves, for instance the Quay Brother's endlessly self-tapping screws in *The Street of Crocodiles* show an action that is a natural part of that object's repertoire of movements and yet it is the individual agency of the screws themselves that is remarkable (see Figure 41).

Figure 41. Self-tapping screws. *The Street of Crocodiles* by the Quay Brothers.

Objects can also peel away to reveal an animistic agency through their actions and movements, and this is especially evident when the purpose of an object can be multi-faceted, diverse or generally unknowable. Timmun Alariaq's 1973 *Inukshuk* ᐃᓄᒃᓱᒃ (see Figure 42) used the landscape of Cape Dorset on Baffin Island, Canada, to construct a stone Inuksuk, a type of figure-shaped stone cairn structure which is constructed by several indigenous cultures in the Arctic circle. The lichen covered slabs move with their own heavy impetus across the treeless, boulder strewn fields as if driven by the landscape itself in order to come together to form the block figure of the Inuksuk.

Figure 2. Timmun Alariaq's *Inukshuk* ᐃᓄᒃᓱᒃ (1973)

In both films the particular materiality of the objects is important and, described carefully, the Quay's screws are tarnished, used, worn (in the context of the film's design it would be impossible to think of them as new, shiny, metric) and Alariaq's stone slabs are carefully selected (block-like, stackable, manoeuvrable) but are definitively a part of the stark outdoor environment in which they are animated. The specific materiality of the objects forms a part of visual narratives, and in many cases the materiality is the narrative; the stories are the objects and objects are the story. Both types of animation are achieving a visual metaleptic transgression because they are referencing an impossible space, one where a previously unseen but inherently physical agency of the object is released through constructed movement. The visual metaleptic friction lies between what is known (the motion of the screws is rotation and the blocks can be stacked on top of each other) and what is seen (screws and rocks do not move by themselves). It is a kind of a dismantling of the index, in that the objects are so absolutely a part of their environment, so resolutely there, and their presence has been recorded by photographic means, but they also unnaturally inhabit that presence through motion. In order for this to work the objects themselves must be chosen carefully, like Švankmajer's actors they are cast for particular

roles. The number of objects naturally inhabiting the environments that make up *All The Nice Things Come From Here* that can actually move is extremely limited. The hermetic, self-contained nature of the spaces is, in many ways, inert and motionless. I was attracted to these spaces because of this odd emptiness, and because it seemed like a stage for something of a completely different scale, something miniature, mysterious and hidden. However, there is one object that has a movement that is consistently present, and that is the roller door, usually shut.

The endless roller doors in Station Point Three are an exploration of these ideas of object agency. The doors roll endlessly, suggesting a narrative reveal that is perpetually withheld from the audience. The doors themselves are resisting the reveal as they will never divulge what lies inside, and their action of steady, continuous movement is both entirely natural (since they can only perform one action) and also entirely unnatural, as doors don't loop. The simplicity and directness of the action neatly sums up some of the narrative concerns of this project, as tiny detours of purpose that suggest a greater but ultimately mysterious story.

In practice, the construction of the roller doors proved to be an instructive exercise regarding some the key points of stop motion movement. Like most of this project, the models have a photographic origin, and in this case the doors themselves are photographs of the loading bays at the Australian Wire Factory in Mayfield. I initially planned to make a physical model of them by gluing the photographs to cards, scoring them and animating the door section as a conveyer belt construction. However, the model was clumsy and the materials fought visually with the photograph in a way that reduced the first-viewing veracity I felt the piece needed, which was that the reveal needed to arrive for the audience after a moment of comprehension and acceptance of the door as a convincingly physical

object. The movement and the form seemed to be clumsy and distracting, but even if the roller door wasn't resolved I still needed to test the Schüfftan elements of the piece so I turned to a digital mock up to use as a stopgap while I ascertained what movement was lacking in my door model. In doing so, I discovered some unlikely insights into the properties of stop motion movement.

To make my digital mock-up I used an After Effects set of presets called Stop Motion Kit by Quba Michalski which offered to give a stop motion look to footage or still images.[172] I initially simply wanted to explore how the pre-set worked, and I was not at all convinced that the stop motion look could be replicated convincingly this way, but I was curious as to what visual elements the pre-set manipulated to achieve a stop motion look. To my surprise it was quietly convincing. The Stop Motion Kit is made up of a group of pre-sets that use what After Effects term "expressions", which are snippets of java script that link different animatable properties together within After Effects. A java script expression can be used for all sorts of automated tasks, for example an expression can link the rotation of a minute hand on a clock dial to that of the hour hand to create a preset that creates a clock movement for the hands sweeping around the clockface. In this way the animator doesn't need to animate all of the positions of the clock hands manually, they rotate the minute hand and the hour hand would move appropriately by itself. The Stop Motion Kit pre-sets allow still photos to be animated with introduced errors, or glitches as Michalski calls them, that mimic the movement of stop motion by introducing errors of movement into several different aspects (rotation, spacing and time). The pre-set moves both the digital camera and the still photos to mimic the imprecision of film-based stop motion animation because the increments of movement in both the models and camera of the real

[172] The free set of pre-sets for After Effects is available here: http://qubahq.com/2011/06/stop-motion-kit/

world film animation are not likely to be exact. The pre-sets apply subtly random motions to the objects in order to mimic camera shake and set movement, and I can see the author has very thoroughly thought through the visual aspects of stop motion animation, and how they would translate algorithmically. The expression that controls the variances in movement of the object is illustrated below. It simply performs a calculation based on the maximum and minimum speeds allowed and shifts the position according to a randomised amount it finds through combining various settings the user has chosen:

```
minSpeed=thisComp.layer("QHQ Stop Motion").effect("Min Speed")("Slider");
maxSpeed=thisComp.layer("QHQ Stop Motion").effect("Max Speed")("Slider");
maxShift=thisComp.layer("QHQ Stop Motion").effect("Shift Position")("Slider");
framerate=thisComp.layer("QHQ Stop Motion").effect("Framerate")("Slider");
dist=length(transform.position, transform.position.valueAtTime(time-
thisComp.frameDuration));
amp=(dist, minSpeed, maxSpeed,0,maxShift);
 wiggle(framerate/3, amp)
```

The result, when used judiciously, is quite an accurate replica of the camera style and motion of stop motion, and I felt a small sense of disappointment to have the elements that I consider to be the foundations of stop motion aesthetics laid bare as an algorithm, as if all the visual elements I find so compelling in stop motion animation could be replicated through a set of instructions without creative human intervention. Although I am impressed by the author's attention to detail and stylistic analysis of the visual outcomes of stop motion animation, I can also see that the visual results of stop motion animation are a combination of so much more than just wobbly camera moves and randomised wiggles. Thus I don't predict the end of stop motion animation any time soon, and The Stop Motion Kit remains a stylistic effect, one that is unmoored from the process of animation itself and can't draw on the whole range of creative decisions (for example, lighting, framing, depth of field and focus) that happen on set in response to the materials in front of the camera.

This didn't stop me using the pre-set for the roller doors in Station Point Three, precisely because it is a good way of analysing and exploring the visual parameters of stop motion animation. However, I've chosen to use the effect subtly in order to keep the artwork in keeping with the other station points. The roller door piece is a very simple animation loop and the stop motion effect adds a type of veracity to the piece, not the veracity of the hand-generated frames that I originally thought was important, but still a kind of imperfection and decay in a loop that would otherwise be a perfectly closed loop of movement.

Puppets and dolls

I made a conscious decision not to use puppets in the installation work. While this project is about the ways in which structures construct narratives, I wanted to strip away the creation of narrative to see what remains as a way of establishing which elements of the structure of animation contribute to its effects, not create an effect through characters. Of the work of the animators discussed in this chapter, Švankmajer and the Quay Brothers use puppets combined with objects, and I am particularly interested in the animation of objects rather than the creation of puppets because they reveal the metaleptic effects of the materials more readily. Puppets foreground a familiar form of narrative, one of storytelling through characters where one of the layers of narrative they employ is demonstrated through the character design and is expressed through conventional narrative forms.

The uncovering of the otherwise unseen life-forces inside inanimate objects, especially that within toys, has been discussed by many. For Freud, dolls were representative of the uncanny because the "uncertainty as to whether an object is animate or inanimate"

generates apprehension and anxiety.[173] Perhaps dolls themselves are proxies of ourselves, as Charles Baudelaire described in a more whimsical way, they are tools with which children might learn about life:

> The overriding desire of most little brats, on the other hand, is to get and *see the soul* of their toys, either at the end of a certain period of use, or on occasion *straightaway* … finally he prises it open, for he is the stronger party. But *where is its soul?* This moment marks the beginnings of stupor and melancholy.[174]

The promises of dolls and toys to be extensions of ourselves, and their mute refusal to fulfil these promises, are enough to give any child a harsh introduction to metaphysics. Animation, then, offers a partial satisfaction by providing an object with an artificial life–force, but the results are uncomfortable, detached and unreal. An audience is able to enjoy the disconnect between the impossibility of movement and the uncomfortable knowledge that, in the end, the object has no soul. The uncanny discomfort felt in watching objects move unaided was captured by the writer and poet Dennis Silk in *The Marionette Theatre*, where he wonders if perhaps we are denying that objects might have rather too much soul, and that we need to protect ourselves from the animistic potential contained within the objects themselves:

> We say animism. Then we put it back on the shelf with the other relegated religions. Maybe our flight from animism is our flight from madness. We're afraid of the life we're meagre enough to term inanimate. Meagre because we can't cope with all those witnesses. Rainer Maria Rilke hesitates whether to abandon a bar of soap in a hotel room. During Gilles de Rais' confession, the Bishop of Nantes covers the Cross. (The world of wood, incarnate in the Cross, rejects Gilles.) If a cross is a witness, why not a loaf of bread, or a shoe-tree, or a sugar-tongs, or a piece of string? We should have an All Souls' Night for dead objects, and confer on them some hours of the life we deny them.[175]

---

[173] Kenneth Gross, Ed., *On Dolls*. (Notting Hill Gate, London: Notting Hill Editions, 2012), 52.
[174] Kenneth Gross, Ed., *On Dolls*. (Notting Hill Gate, London: Notting Hill Editions, 2012), 44.
[175] Kenneth Gross, Ed., *On Dolls*. (Notting Hill Gate, London: Notting Hill Editions, 2012), 97.

I wanted to isolate the project from some of the debates around the animated object, and I thought the association with the uncanny overwhelmed the uncanny elements inherent in the motion itself. While dolls and puppets have a rich theatrical tradition that has long informed stop motion animation, especially Eastern European practitioners like Švankmajer, the puppets cannot help but provide additional layers of history, narrative and meaning, therefore I am keeping to the animation of objects so as to review the effects of motion on the objects themselves. This is not to say that objects don't come without some sort of cultural meaning attached, since all objects have a certain specificity and location. The props that Švankmajer uses; bowls, spoons, plates are completely redolent of the Prague of the mid to late 20th century, and the props used by the Quay Brothers echo Švankmajer's aesthetic but also delve deep into a type of English Victorian past that is deeply informed by the Quays' aesthetic interest in the history of their adopted town of London.

The issue of objects in animation expands beyond specific art-based practitioners, as all styles of stop motion animation have to engage with some form of materiality and the divide between children's animation and art animation, for example, is no more stark than it is around the use of objects and puppets. In children's puppet animation the puppets are friendly, cute and rounded and their movement is unthreatening. The puppets behave in ways consistent with their character and it would be hard to draw ideas of the uncanny from, for example, the slapstick stop motion comedy of Aardman's *Shaun the Sheep*. Although Aardman allows a gentle reminder of the materiality of their plasticine origins with the trace of fingerprints.

Moseley proposed that there is an uncertain ontological status of the "things" in children's animation - as the characters are composed of identifiably real artefacts a child audience might reasonably ask: are stop motion animated characters real? Or are they real things

in a parallel universe where things move? This permeable relationship between fantasy play and reality is also one that is different to that experienced by adults. She argued that it is the act of how we allow ourselves to relate to "things" (divided between what is permissible for children and what is permissible for adults) that goes some way to:

> explaining the reluctance of theorists of both television and animation to examine in detail the aesthetics and affectivity of stop-motion. At the heart of this is discomfort around the image of an adult playing with toys, particularly dolls, which inherit the 'nerdy' or even 'creepy' associations attached to grown men who play with train sets, models or even My Little Pony.[176]

I found myself torn by this argument because I believe the effects of stop motion are not entirely bound up in its use of puppets and I have chosen not to use them. Perhaps I am deliberately avoiding the particular transgression of an adult playing with dolls, but I think, more accurately, that I am keen to peel back the particular layers of effect and meaning from within stop motion. The one element embedded within stop motion animation that is certainly transgressive is the element of toys for adults, and both Švankmajer and the Quays exploit this uncanniness by using familiar childhood dolls and toys as monstrous objects of fear. Švankmajer's 1966 short film *Rakvičkárna* (Punch and Judy) begins with the clashing cymbals of a mechanical organ-grinder's monkey orchestra and their sightless toy eyes are made more disturbing by the battered bandleader's one empty socket. As if the blind glass eyes were not enough, we are reminded again by the absence of this one eye that this puppet is blind. As is typical of Švankmajer's early films, the editing tempo is fast and staccato, as extreme macro shots of battered textures pile onto and after each other, the shots handled much like a form of stop motion in the way they truncate and elide time. The shots do not function to describe a space as might be described in a conventional cinema narrative construction but are

[176] Moseley, *Hand-Made Television: Stop-Frame Animation for Children in Britain, 1961-7*4, 91.

instead an assemblage of images that describe objects and actions. The disconnections between the images can be extreme, but the dislocation is not entire. Despite the barrage of distinct images, each shot relates to the next, but the narrative they build is not a conventional one, but is a visual one that foregrounds textures, decay and a layered patina that hints at a cycle of ceaselessness that goes on long before and long after the cameras stop rolling. Švankmajer used the trope of Punch and Judy as a narrative structure, and the certainty here is that the puppets will fight, but the sudden appearance of a guinea pig adds a surprise dimension of pathos to the familiar story. The battered wooden hands of the puppet feed absurdly large seeds to the guinea pig and, as the puppet caresses its fur, the enormous gulf between what is living, what is dead and what is occupying the liminal zone of uncanniness in-between those two states is revealed. In this early Švankmajer film there is little actual animation, and the marionette movements are reassuringly evidenced as part of the natural world by the inclusion of the puppeteer's hands. However, I think this film begins to build the visual case for describing the metaleptic potential of objects in later films, as the subjects themselves are so lovingly described by the camera and Švankmajer begins to subvert ideas around what should be inanimate by giving the marionette the role of the live guinea pig's doting owner. As Švankmajer says, puppets are a large part of his creative practice:

> Puppets are firmly fixed in my mental morphology, and therefore I keep returning to them in my creative work as something which, for me, represent a certain relationship with the outside world. I usually resort to them at moments when I feel threatened. Thus I make my own Golems that are designed to protect me from the pogroms of reality.[177]

Instead of puppets I am using rather more abstracted images of space and place, but I

[177] Jan Švankmajer, Frantisek Dryje, Bertrand Schmitt, Ivo Purs, and Pavel Zelenka, Eds., *Jan Švankmajer: Dimensions of Dialogue/between Film and Fine Art*. (Prague, Czech Republic: Arbor Vitae, 2013), 34.

wanted my animated snippets to use objects and, as the project progressed, I became more and more interested in ideas of organic motion within these inorganic spaces. It is a decision that resists the usual stop motion conventions and practices, since moving multiples of objects starts to increase the complexity of a shoot, so I started to look at procedural ways of moving objects in organic and wavelike motions. Experiments with sand proved difficult to wrangle and control, and I moved to exploring magnets as a way to control the objects in microscopic multiples. Initial explorations used fragments of cardboard with staples glued to them to achieve an overlapping, lizard-scaled look, but once again controlling the outcome proved difficult as they flipped without warning and it proved impossible to get the 'many objects working as one' concept across in any meaningful way. I moved onto iron filings and discovered that animating them in extreme close up started to expose a biological motion and liveliness from an inorganic material that was mysterious, convincing and filled with visual potential. The iron filings became the inhabitants of the dark, empty light industrial world that I am creating in this work, and I think visually they work perfectly to describe these huge, empty, resistant spaces. I know that there is a massive flow of goods and capital through these areas but they are invariably closed to the outsider, and each vast industrial park feels empty and unused to the casual observer. There is little to differentiate them from each other and they share many of the same oppressive visual qualities through their shared indifference to placement, location and orientation. There are no environmental considerations in the wide span shed as it is the architectural apex predator of outer ring suburb design.

Iron filings have been used before in stop motion animation. The Quay Brothers used them as form of creeping mould inside the first instalment of the trilogy *Stille Nacht, Dramolet* (1988). This short two minute black and white piece begins when a small block of iron flips on a floor, attracting particles to itself and, as a nameless puppet watches, the

iron filings grow like mildew over the contents of the room. The puppet turns away, back to its table, and it seems that it has been looking through a mirror into where the iron filings have been inhabiting an identical mirror space in another dimension on the other side. The film has a dense, claustrophobic atmosphere and the mirror reveal comes as a kind of relief, proving that the iron fragments are a part of some sort of other world. On a physical level, I sense that the Quays struggled with the iron filings in the same way I have, as the movement of individual particles is so beautifully intriguing, but the movement itself is very restricted. The particles will only obey the laws of magnetism, which means that the shapes formed are very repetitive and animating the magnet itself can give an impression of something living, perhaps a tiny cute magnetic mecha-mole or mecha-hedgehog travelling somewhere below the surface. I could see the Quays cut out of the shots before the cuteness took over, and how they filmed to suggest movement but resisted actually showing it, as the shards rise and fall but the magnet itself moves very little. My initial experiments were dispiriting, messy and quaintly awful, but I found the suggestion of the movement of the multiple particles too alluring to let go. The promise of animating multiples was too attractive, so I worked on it further and decided to overcome the visual nightmare of the comical burrowing vole by pushing in closer, filling the screen and exploring almost macroscopically the life inherent in the filings themselves. I was able to get close enough to fill the frame with the filings and at last could start to explore the material and its properties without seeing the magnetic field drop off at the edges of the frame. The idea that the filings are an endless organic material is important in this context, as the image needs to feel immersive or even claustrophobic in style.

The experiments with iron filings moved onto other magnetised materials and I started exploring ferrofluids as another potential micro-inhabitant in my miniature world. The ferrofluid was immediately visually exciting as a magnetised material. It is a thick black

fluid with suspended iron particles infused throughout (it has an industrial purpose in printing inks, and one of its uses is to print cheques as it makes the printed numbers machine readable by magnetic scanners) and has the same properties as iron filings, in that it gives a material form to magnetic fields. In the case of ferrofluid, the liquid forms tiny little spikes radiating out from the polar ends of the magnet, and like the iron filings it looks cute and contained and circular. However, by using the same practice as the iron filings, I moved to macro photography and the whole material suddenly opened up to create a dirty, oil-like slick that has a mysterious industrial ambiance. The ferrofluid leaves indelible brown marks on everything it touches so every shot needs to be set up fresh, but since most of my shots occupy an area of about two square centimetres I kept moving around my tiny set, each time finding new textures and territories to test. It moves best as a controlled ripple and leaves a crawling rust in its wake. These iron filings and oils became my actors and I animated them following their visual leads.

The sum of the parts

I used the location of Newcastle as a backdrop because of the way the town itself informs my practice. As much as I enjoy living here, I have never shaken the feeling of being a bigger-city outsider and interloper into the place I call “the rest of Australia”, and I enjoy the feeling of freshness and thoughtfulness that this brings to my ideas of place. However, I did initially struggle with how to translate this into an exploratory and visually animated language because the blankness of the environments leaves so little to animate. I wanted to find objects that spoke of the types of unease and threat that the lonely, after-hours, fluorescent-lit world that sub-industrial Newcastle displays and, in the end, I decided that the most appropriate materials were the elemental materials of light, iron filings, wire and dust.

The physicality of *All The Nice Things Come From Here* is manifold, and the whole project was designed to make manifest the various parts of the animated frame so that the work itself divides into a series of different material experiences. There is the materiality of the animated footage itself, the rough particulate of the iron filings which reveals the macroscopic, hidden world of light, shadow and magnetic fields. However, these elements are just flickering visual planes within the reflective chaos of the double-sided mirrors. There are additional experiences to be had from the immateriality created by the piece, and there is the chasing of a kind of visual and intellectual completeness by searching for the station points to complete the images. The digital projections themselves have their own type of materiality (a precise unchanging digital beam of light not the soft purring rattle of a projector that leaves its trace of scratches and wear on every frame that passes through the shutter) and the digital images that make up the animation also have their own materiality, secretly malleable, repeatable and polished to look artlessly, effortlessly material. As a whole, the installation is a fragmented disconnection of glass, mirrors, light and reflections that attempts to bring the audience into the impossible spaces of the animated frame.

Conclusion

This thesis began with a question about stop motion animation and why it looks the way it does, and finding answers to that question has taken me through much uncharted territory. *All The Nice Things Come From Here* brought me to understand new aspects of my animated practice and expanded my theoretical research, and in the end brought together a long-discarded film technique and the narratological concept of metalepsis. The research study broadens the concept of metalepsis to include embedded visual elements in a way that prioritises visual aspects as much as narrative elements and explores their capacity to create mood and meaning in the moving animated image.

A key moment in the whole project was investigating the physical separation of the layers of the animated image through the Schüfftan process. I was initially interested in it because the effect itself was curious. As someone who produces special effects I thought Lang's *Metropolis* (1927) had a visual completeness in obviously impossible locations that seemed bafflingly integrated for a film of that era. I had always admired the seamlessness of the effects in *Metropolis* and the sets, the ideas and the visual scope of the film seemed so advanced for a movie made before sufficient technology was developed to include sound in motion pictures. The more I researched the Schüfftan process the more interesting it became. Even to an eye accustomed to special effects it is hard to identify Schüfftan sequences in film because it is so well disguised in the overall optics of the shot. In Hitchcock's *Blackmail* (1929) it is difficult to believe that the process was employed at all because the shot composites using the Schüfftan set ups are light years ahead of other technological processes of the time. Watching the British

Museum sequence in *Blackmail* while reading Hitchcock's description of shooting the scenes was fascinating. I couldn't see the seams, I couldn't see the process and the shots that matched perfectly to the look and feel of the rest of the film. I was intrigued enough to make a tentative rough model to understand how it worked in practice and I laboriously scratched out a mirror back using a razor blade scraper. The effect was immediately compelling, even as a tiny bathroom mirror with a crude scraped square of silver removed from the centre and propped up in my studio. The effect was slightly disorientating as I could suddenly see in two directions at the same time and the composite image seemed to occupy a different space altogether. This is a defining visual feature of the process and when my mattes improved and the matte shapes themselves became optical effects to be resolved by the viewer, that feeling of entering a new optical space was still apparent. I could see that this model allowed for a type of dismantling of space that would be immediately useful in understanding and inhabiting the layers that I felt were so crucial to researching the animated image. This was instrumental in leading me to the idea of regarding these visual slivers as a form of visual metalepsis. The mirrored surfaces themselves, reflecting the projected images (and each other) brought new insights into how the frame itself can be reconsidered and how the audience can have a new and privileged view of the animated image by being able to navigate it in layers.

This moment of being able to physically see the relationship between animation, special effects and the filmic frame was what really made the connections to metalepsis possible. Here was a visual model that showed the relationships between filmed elements could be constructed as a hidden form of metalepsis that spoke visually through the different layers of the image. These ideas became the central argument of this dissertation.

I wanted to examine how structural elements within stop motion animation create visual meaning by considering layers, motion, space and objects as metaleptic modes of production. I identify how distinct qualities of stop motion animation are made possible by the interaction of several types of visual and temporal layers, and that these layers are a visual form of metalepsis. In this way the transgressions of narrative spaces between audience, author and text are made concrete to consider how visual forms themselves can also provide scope for similar crossover. This project explores the metaleptic qualities of object animation: its self-reflexivity and its relationship to real world objects are an inherently metaleptic form of filmmaking. Theoretically the project brings together ideas from narratology that have previously been about the narrative *of* animation and expands them to include a practitioner's experience of the visual narrative embedded *within* animation. The result is the installation work, *All The Nice Things Come From Here* which creates a minimalist animated world designed to explore the singular visual language of stop motion animation by creating an exploded view of animation as visual metalepsis.

The thesis identifies and unpacks three other distinct visual aspects of the animated film and image that have metaleptic potential. It looks at animated motion, filmic space and animated objects in order to understand how metaleptic transgressions between various layers creates a visual storytelling thread that runs concurrent to more conventionally understood ways of building narrative. This abstraction of narrative layers includes how layering within fictional spaces can work as a narrative device, how time creates layers that are evidenced through motion and how the power of objects works as metaleptic devices through their ontological relationship to the world both inside and outside the frame. Each one of these areas is an indivisible part of a larger whole but when

dismantled each aspect reveals how they are comprised of subtle visual layers that are continually being transgressed in a way that makes object stop motion animation a unique film-making form.

The animation that I chose to create for the installation was also a creative journey, from wider narrative ideas to macroscopic abstraction. The idea of real-world procedural stop motion animation is an exciting one and is something that brought the creative work to a more interesting and emphatically visual place. The progression of the installation follows my own creative path from representational narrative (the headlights of a car passing over a closed building with the suggestion of arrival, or departure or simply of someone up to no good) through to the endless narrative deferral of the never-opening roller door. The narrative then becomes macroscopic in nature as I became more interested in the more organic elements of my subject, the dust, oil and wire of the extreme close up shots. The final station point is one of narrative release as the mirrors simply composite the entrance of the installation room into a Schüfftan space so that entering and leaving the installation the viewer becomes an unknowing part of the narrative, and so in leaving they have an opportunity to understand their place in the work and how they have been framed as a viewer and spectator throughout. It is the final point of being both inside and outside the narrative and the viewer is folded into the metaleptic space itself.

This work still has much potential to expand, especially around the idea of the body as a site of narrative. As the project grew and the mirror installations became more complex in design, the role of the viewer became more apparent. The installation became more of an interesting challenge to Cartesian dualism than I had initially understood from the original scope of the project. Now the viewer is an essential part of the experience of

creating the work, it is clear this aspect of the project could be significantly expanded. There is potential to use the structure of the Schüfftan process to examine other forms of filmmaking and I can also see that it could have really interesting sculptural potential, especially through the Schüfftan process' inherent strength in visually uniting disparate spaces into one.

The journey to this point was led by practice. The work expanded as each element was made and tested. Beyond the interest in special effects themselves, the work led me to a really different place as a filmmaker and as the installation progressed, the lack of directorial control over the viewing experience became especially intriguing. Initially the design was to allow the viewer to see the installation sections as a series of shots that could be assembled in any order, an installation I imagined would be a kind of co-production, one that combined my directorial voice with that the audience. As I began to understand the nature of the mirror process more I could see that optics set some very strict rules regarding viewing. The idea that the installations themselves forced a very particular viewing position to get to the station point was also attractive to me. The authorial voice was now shared between the viewer, the artist and the laws of physics, and I enjoyed that at least one of those could not be argued with. The viewer could now choose to get the reward of visual completion or not and I was happy to relinquish that creative control.

However, expanding the idea to include front-sided mirrors immediately made the order of shots much less important because of the sudden visual prioritisation of layers over shots. The work became immediately more visually complex, the location of the station points much harder to find and the visual results more fragmented. This was an unexpected finding that emerged through the work itself and opened up many

interesting ideas about quite different and embodied ways to experience the moving image in a phenomenological way. The viewer of *All the Nice Things Come From Here* is now an entirely subjective one, and perhaps in a unique position to explore what Vivian Sobchack calls "the meaningful relation between cinema and our sensate bodies."[178] This was something that came later in the project and was an exciting development in both the visual and conceptual framework of the project.

Creating this framework was immensely satisfying and I can see many variations on the themes and ideas this initial research has presented. One of the things that I enjoyed a great deal in creating this work, apart from the excitement of dismantling the animated cinematic frame, was the opportunity to research the evident joy that Schüfftan displayed in trying to extend the range of the whole filmic process. Ideas such as exposing both sides of the film at the same time or creating complex arrays of tilting mirrors to divide up an image were heroically impractical but also showed a heroic interest in the moving image itself and it is this aspect of his work, rather than just filmic and special effects that I responded to the most in looking at his technical work. I hope that *All The Nice Things Come From Here* also takes that exploratory path and opens viewers to new ways of thinking of the moving image, as well as a new and more thorough understanding of how the structure of stop motion animation tells its own compelling stories through the most basic of visual elements.

[178] Vivian Sobchak, "What My Fingers Knew: The Cinesthetic Subject, or Vision in the Flesh," *Senses of Cinema* 5 (April 2000):

Filmography

Alariaq, Timmun, dir. *Inukshuk*. Short Film. 1973; Canada: Animation from Cape Dorset, National Film Board of Canada, DVD.

Anderson, Wes, dir. *The Life Aquatic with Steve Zissou*. Film. 2004; USA: Touchstone Pictures.

Anderson, Wes, dir. *Fantastic Mr Fox*. Film. 2009; USA: 20th Century Fox.

Annable, Graham and Anthony Stacchi, dir. *Boxtrolls*. Film. 2015; USA: Laika.

Avery, Tex, dir. *TV of Tomorrow.* Animated Short. 1953; USA: MGM, Online Video. vimeo.com/216313121.

Blu, dir. *Muto: A wall-painted animation by BLU*. Short Film. 2008; Online Video. https://youtu.be/uuGaqLT-gO4.

Brakhage, Stan, dir. *Mothlight.* Short Film. 1963; Online video. www.youtube.com/watch?v=S5P5vkegmvU.

Campus, Peter, dir. *Three Transitions*. Video. 1973; USA.

Chaffey, Don, dir. *Jason and the Argonauts*. Film. 1963; USA: Colombia Pictures.

Chomón, Segundo de, dir. *El Hotel Eléctrico (The Electric Hotel).* Short Film. 1908; Spain: Pathé, Online Video. www.youtube.com/watch?v=cCzru63JBSE.

Cooper, Merian and Ernest Schoedsack, dir. *King Kong*. Film. 1933; USA: Classic Collection, 2015. DVD.

Disney, Walt, dir. *Alice's Wonderland*. Short Film Series. 1923-27; USA: Disney Studios.

Fleischer, Dave, dir. *Betty Boop:Snow White*. Animated Short. 1933; USA: Fleischer Studios, Online Video. https://archive.org/details/bb_snow_white.

Fleischer, Dave and Max Fleischer, dir. *Inkwell Imps*. 1928; Inkwell Studios.

Fleischer, Dave and Max Fleischer, dir. *Ko-Ko's Earth Control*. Short film. 1928; USA: Inkwell Studios, Online Video. www.youtube.com/watch?v=5ysCS1NB0zE.

Forster, Marc, dir. *Stranger Than Fiction*. Film. 2006; USA: Columbia Pictures

Gondry, Michel, dir. *The Science of Sleep*. Film. 2006; France/Italy: Partizan Films.

Hitchcock, Alfred, dir. *Blackmail*. Film. 1929; UK: British International Pictures.

Hoyt, Harry O., dir. *The Lost World*. Film. 1925; First National Pictures.

Ito, Takashi, dir. *Spacy.* Short Film. 1981; Japan: Takashi Ito Film Anthology, Image Forum Video, DVD.

Jackson, Peter, dir. *King Kong*. Film. 2006; Hollywood, CA: Two-Disc Collector's

Edition, Universal Studios, 2006. DVD.

Jones, Chuck, dir. *Duck Amuck*. Short Animation. 1953; USA: Warner Bros.

Kaufman, Charlie and Duke Johnson, dir. *Anomalisa.* Film. 2015; Harmonius Claptrap/Snoot Entertainment/Starburns Industries.

Lang, Fritz, dir. *Metropolis.* Film. 1927; Metropolis -Two Disc Special Edition, Eureka, 2003. DVD.

Lepore, Kirsten, dir. *Hi Stranger*. Short Film. 2016; Online Video. https://vimeo.com/190063150.

McCay, Winsor, dir. *Gertie the Dinosaur*. 1914; Box Office Attraction Company, Online Video. https://archive.org/details/Gertie.

Méliès, Georges, dir. *Un Homme de Têtes (The Four Troublesome Heads)*. Short Film. 1898; France: Star Film Company.

Méliès, Georges, dir. *Le Voyage Dans La Lune (A Trip to the Moon).* Short Film. 1902; France: Star Film Company.

Morrison, Bill, dir. *Light is Calling.* Short Film. 2004; USA: Bill Morrison, Online Video. https://www.youtube.com/watch?v=yx0HzBiaVn4.

PES, dir. *Roof Sex*. Short film. 2001; New York, USA: PESfilm, Online Video. www.youtube.com/watch?v=1aodpb3vFU0.

Quay, Stephen and Timothy Quay, dir. *Street of Crocodiles*. Blu Ray. 1986; London: The Quay Brothers: Collected Short Films, Zeitgeist Films, 2015. Blu-Ray.

Quay, Stephen and Timothy Quay, dir. *Stille Nacht 1 - Dramolet. Short Film*. 1988; London: The Quay Brothers: Collected Short Films, Zeitgeist Films, 2015. Blu-Ray.

Reiniger, Lotte, dir. *Die Abenteuer des Prinzen Achmed (The Adventures of Prince Achmed)*. Film. 1926; Germany.

Rosenthal, Tatia, dir. *$9.99*. Film. 2008; Australia: $9.99, Lama Films.

Shadbolt, Jane, dir. *The Cartographer*. Short Film. 2011; Australia: AFC, DVD.

Singer, Bryan, dir. *X-Men:Days of Future Past*. Film. 2014; USA: 20th Century Fox/ Marvel Entertainment.

Arends, Harry, dir. *Disney's 'Snow White and the Seven Dwarfs': Still the Fairest of Them All* in *Snow White and the Seven Dwarfs.* Platinum DVD Edition. Special feature. DVD. Buena Vista Home Entertainment, 2001.

Starewicz, Władysław, dir. *Mest Kinematograficheskogo Operatora (The Cameraman's Revenge).* Short Film. 1912; Moscow: Khanzhonkov Company, Online Video. https://vimeo.com/11685009.

Starzak, Richard and Christopher Sadler, dir. *Shaun the Sheep*. 2007-2016; Aardman

Animations/BBC/WDR, Televison Series.

Švankmajer, Jan, dir. *Hra s Kameny (A Game with Stones)*. Short film. 1965; Prague: The Collected Shorts of Jan Švankmajer, The Kimstim Collection, 2005. DVD.

Švankmajer, Jan, dir. *Rakvičkárna (Punch & Judy).* Short FIlm. 1966; Prague: The Collected Shorts of Jan Švankmajer, The Kimstim Collection, 2005. DVD.

Švankmajer, Jan, dir. *Byt (The Flat).* 1968; Prague: The Collected Shorts of Jan Švankmajer, The Kimstim Collection, 2005. DVD.

Švankmajer, Jan, dir. *Tichý Týden V Domě (A Quiet Week in the House).* 1969; Prague: The Collected Shorts of Jan Švankmajer, The Kimstim Collection, 2005. DVD.

Švankmajer, Jan, dir. *Žvahlav aneb šatičky slaměného Huberta (Jabberwocky).* 1971; Prague: The Collected Shorts of Jan Švankmajer, The Kimstim Collection, 2005. DVD.

Švankmajer, Jan, dir. *Do Pivnice (Down to the Cellar).* 1982; Prague: The Collected Shorts of Jan Švankmajer, The Kimstim Collection, 2005. DVD.

Švankmajer, Jan, dir. *Možnosti Dialogu (Dimensions of Dialogue).* Short Film. 1982; Prague: The Collected Shorts of Jan Švankmajer, The Kimstim Collection, 2005. DVD.

Wachowski, Lana and Lilly Wachowski, dir. *The Matrix*. Film. 1999; USA/Australia: Warner Bros. Entertainment.

Yamamura, Koji, dir. *Atama-yama (Mt. Head).* Short Film. 2002; Japan.

Zeman, Karel, dir. *Baron Prasil (The Outrageous Baron Munchausen).* Film. 1961; Prague: Krátký Film Praha.

Bibliography

Aaron, Michel. *Spectatorship: The Power of Looking on*. London and New York: Wallflower Press, 2007.

Alpers, Svetlana. "Interpretation Without Representation, or, the Viewing of Las Meninas." *Representations* (1) (1983): 31-42.

Atkinson, Michael. "The Night Countries of the Brothers Quay." *Film Comment*, 1994-9, 36-44.

Bahn, Christopher, "Interview: Ray Harryhausen." The A.V Club, accessed 14 October, 2016, https://film.avclub.com/ray-harryhausen-1798209229.

Baudrillard, Jean. *Seduction*. Translated by Brian Singer. Montréal: New World Perspectives, 1990.

Karen Beckman, ed., *Animating Film Theory.* Durham and London, Duke University Press, 2014.

Bertamini, Marco, Richard Latto, and Alice Spooner. "The Venus Effect: People's Understanding of Mirror Reflections in Paintings." *Perception* 32(5) (2003): 593-599.

Blair, Preston. *Animation: Learn How to Draw Animated Cartoons*. Laguna Beach, California: Walter T Foster, 1949.

Bertamini, Marco, Rebecca Lawson, Luke Jones, and Madeline Winters. "The Venus Effect in Real Life and in Photographs." *Attention, Perception & Psychophysics* 72 (7) (2010): 1948-1964.

Bertamini, Marco and Theodore E Parks. "On What People Know About Images on Mirrors." *Cognition* 98(1) (2005): 85-104.

Bondanella, Peter and Federico Pacchioni. *A History of Italian Cinema*. USA: Bloomsbury Publishing, 2017.

Bogdanovich, Peter. *The Cinema of Alfred Hitchcock*. New York: Museum of Modern Art Film Library: distributed by Doubleday, 1963.

Suzanne Buchan, ed., *Pervasive Animation.* Routledge, 2013.

Buchan, Suzanne. *The Quay Brothers: Into a Metaphysical Playroom*. Minneapolis: University of Minnesota Press, 2011.

Campora, Matthew. "Art Cinema and New Hollywood: Multiform Narrative and Sonic Metalepsis in Eternal Sunshine of the Spotless Mind." *New Review of Film & Television Studies* 7 (2) (2009): 119-131

Cardinal, R. “Thinking Through Things: The Presence of Objects in the Early Films of Jan Švankmajer.” in *Dark Alchemy. The Films of Jan Svankmajer,* Trowbridge: Flicks Books, 1995.

Carrick, Edward. *Designing for Film*. London & New York: Studio Publications, 1949.

Alan Cholodenko, ed., *The Illusion of Life: Essays on Animation.* Sydney, University of Sydney, Power Institute of Fine Arts, 1991.

Collins, Daniel L. “Anamorphosis and the Eccentric Observer: Inverted Perspective and Construction of the Gaze.” *Leonardo* 25 (1) (1992): 73.

Crafton, Donald. *Before Mickey: The Animated Film, 1898-1928*. Chicago: University of Chicago Press, 1993.

Cromer, Stuart. *Film and Video Art*. London: Tate, 2009.

Cubitt, Sean. “Observations on the History and Uses of Animation Occasioned By the Exhibition Eyes, Lies and Illusions Selected From Works in the Werner Nekes Collection.” *Animation* 3(1) (2008-3-1): 49.

---. *The Practice of Light: A Genealogy of Visual Technologies From Prints to Pixels*. Cambridge, Massachusetts: The MIT Press, 2014.

Feyersinger, Erwin. “Diegetic Short Circuits: Metalepsis in Animation.” *Animation* 5(3) (2010): 279-294.

Flueckiger, B. “Photorealism, Nostalgia, and Style.” in *Special Effects: New Histories, Theories, Contexts,* edited by Dan North, Micheal Duffy, and Bob Rehack, 78-94. London: Palgrave/British Film Institute, 2015.

French, Lawrence. “Phil Tippet: Stop-Motion May be Going Extinct, But the Former Animator is Alive and Well.” *Cinefantastique*, February 1999, 40-45.

Freud, Sigmund. “The Uncanny.” in *The Uncanny,* 123-162. London: Penguin, 2003.

Genette, Gérard. *Narrative Discourse: An Essay in Method*. Ithaca, NY: Cornell University Press, 1980.

Foucault, Michel. *The Order of Things: An Archaeology of the Human Sciences*. New York, Pantheon Books, 1971.

Peter Gidal, ed., *Structural Film Anthology.* London, BFI, 1978.

Glaskowsky, Peter, “Video assist predates Jerry Lewis ‘patent’.” accessed November 18, 2017, http://www.cnet.com/news/video-assist-predates-jerry-lewis-patent/.

Grau, Oliver. *Virtual Art: From Illusion to Immersion.* Cambridge, Mass.; London: MIT, 2004.

Gunning, Tom. “The Cinema of Attraction: Early Film, Its Spectator, and the Avant-Garde.” in *Film and Theory: An Anthology,* edited by Robert Stam and Toby Miller, 229-235. Malden, Mass: Blackwell Publishing, 2000.

---. “Moving Away From the Index: Cinema and the Impression of Reality.” *differences* 18 (1) (2007): 29.

---. “Animating the Instant: The Secret Symmetry Between Animation and Photography.” in *Animating Film Theory,* edited by Karen Beckman, 37-53. 2014.

Halberstam, Judith. *The Queer Art of Failure*. Durham and London: Duke University Press, 2011.

Hames, Peter. “Interview With Jan Švankmajer.” in *Dark Alchemy: The Films of Jan Švankmajer,* edited by Peter Hames, Trowbridge: Flicks Books, 1995.

Harryhausen, Ray and Tony Dalton. *A Century of Stop Motion Animation: From Méliès to Aardman*. New York: Watson-Guptill Publications, 2008.

Hurd, Earl. Process of and Apparatus for Producing Moving Pictures. US Patent US 1143542 A filed 19 Dec 1914, and issued USA 15 Jun 1915. https://www.google.com.au/patents/US1143542.

Katz, Steven D. *Film Directing Shot By Shot : Visualizing From Concept to Screen*. Studio City, CA: Michael Wiese Productions in conjunction with Focal Press, 1991.

Kenneth Gross, ed., *On Dolls.* Notting Hill Gate, London, Notting Hill Editions, 2012.

Klein, Norman M. *Seven Minutes: The Life and Death of the American Animated Cartoon*. London and New York: Verso, 1998.

---. *The Vatican to Vegas : A History of Special Effects*. New York: New Press, 2004.

Kukkonen, Karin. “Metalepsis in Popular Culture: An Introduction.” in *Metalepsis in Popular Culture,* edited by Karin Kukkonen and Sonja Klimek, De Gruyter, 2011.

Limoges, Jean-Marc. “Metalepsis in the Cartoons of Tex Avery: Expanding the Boundaries of Transgression.” in *Metalepsis in Popular Culture,* edited by Karin Kukkonen and Sonja Klimek, 196-212. De Gruyter, 2011.

Langley, Brian and Arthur Graham. “Brian Langley: Bectu Interview Part 1 (1987).” *Interview by Arthur Graham* (1987-11-18): http://www.screenonline.org.uk/audio/id/946143/index.html.

Loew, Katharina. “Magic Mirrors: The Schüfftan Process.” in *Special Effects: New Histories, Theories, Contexts,* edited by Dan North, Bob Rehak, and Michael Duffy, 62-77. London: BFI Palgrave, 2015.

Lund, Christian, “Bill Morrison Interview: The Film Archaeologist.” YouTube video posted by “Louisiana Channel, Louisiana Museum of Modern Art”, December 5, 2013. www.youtube.com/watch?v=6aaHYVc9T6o.

North, Dan. *Performing Illusions: Cinema, Special Effects and the Virtual Actor*. London: Wallflower Press, 2008.

Manovich, Lev. *The Language of New Media*. Cambridge, Massachusetts: The MIT press, 2002.

---. “‘Reality’ Effects in Computer Animation.*”* in *A Reader in Animation Studies,* edited by Jayne Pilling, 5-15. Sydney: John Libby & Company, 1997.

Massey, Lyle. *Picturing Space, Displacing Bodies: Anamorphosis in Early Modern Theories of Perspective*. University Park, PA: The Pennsylvania State University Press, 2007.

Moseley, Rachel. *Hand-Made Television: Stop-Frame Animation for Children in Britain, 1961-74*. Basingstoke: Palgrave Macmillan, 2016.

Moynihan, Tim, “WTF Just Happened: My New HDTV Makes Movies Look Unnaturally Smooth.” Wired.com, accessed 15 July, 2016, http://www.wired.com/2014/08/wtf-just-happened-soap-opera-effect/.

Museum of Contemporary Art Antwerp. “El Hotel Eléctrico – Rooms Available. Museum van Hedendaagse Kunst Antwerpen.” accessed Aug 1, 2014, http://www.muhka.be/en/toont/event/3184/EL-HOTEL-ELCTRICO/.

Peacham, The Elder Henry. *[the Garden of Eloquence, Etc]*. London: The British Library, 2010.

Pethö, Ágnes. *Cinema and Intermediality: The Passion for the in-Between*. Newcastle upon Tyne: Cambridge Scholars Publishing, 2011.

Prince, Stephen. “True Lies: Perceptual Realism, Digital Images and Film Theory.” *Film Quarterly* 49(3) (1996): 27-37.

Robinson, Tasha, “Aardman Animations co-founder Peter Lord reveals the best gag in his new film *The Pirates! Band Of Misfits*.” A.V Club, accessed January, 2016, http://www.avclub.com/article/aardman-animations-co-founder-peter-lord-reveals-t-72973.

Rose, Steve. “Masters of puppets: Charlie Kaufman and the subversive allure of stop-motion.” *The Guardian*, 8th January, 2016. https://www.theguardian.com/film/2016/jan/07/subversive-allure-stop-motion-anomalisa-tim-burton.

Rowe, Robin. "'Bride' Stripped Bare." *The Editors Guild Magazine*, July-August 2005, http://www.stopmotionworks.com/articles/cbrdstrpdbare.htm.
Ryan, Marie-Laure. "Fiction, Cognition, and Non-Verbal Media*."* in *Narratologia: Intermediality and Storytelling,* edited by Marina Grishakova and Marie-Laure Ryan, 8-26. Berlin: De Gruyter, 2010.
Savardi, Ugo, Ivana Bianchi, and Marco Bertamini. "Naïve Predictions of Motion and Orientation in Mirrors: From What We See to What We Expect Reflections to Do." *Acta psychologica* 134(1) (2010): 1-15.
Schüfftan, Eugen. Apparatus for Composite Cinematography. US Patent US1613201 A filed Jul 6, 1925, and issued USA Jan 4, 1927.
https://www.google.com/patents/US1613201.
---. Making Moving Pictures. US Patent US1569789 A filed 15 Sep 1923, and issued USA 12 Jan 1926. https://www.google.com.au/patents/US1569789.
---. Method and Apparatus for Producing Composite Motion Pictures. US Patent US1606482 A filed Feb 27, 1925, and issued USA Nov 9, 1926.
https://www.google.com/patents/US1606482.
---. Method and Apparatus for Producing Composite Motion Pictures. US Patent US1606482 A filed July 6, 1925, and issued USA May 3, 1927.
https://www.google.com/patents/US1627295.
Searle, John R. "Las Meninas" and the Paradoxes of Pictorial Representation." *Critical Inquiry* (1980): 477-488.
Sheehan, Rebecca A. "The Disembodied Wound of the Piano Tuner of Earthquakes: The Quay Brothers' "Homage to Chris Marker"." *Discourse* 34 (2-3) (Spring/Fall 2012): 209-229.
Siebert, Jan. "Self-Reference in Animated Films*."* in *Self-Reference in the Media,* edited by Winifried Nöth and Nina Bishara, 155-161. Berlin: Walter de Gruyter, 2007.
Stafford, Barbara Maria. "Revealing Technologies/magical Domains*."* in *Devices of Wonder: From the World in a Box to Images on a Screen,* edited by Barbara Maria Stafford, Frances Terpak, and Isotta Poggi, Los Angeles, CA: Getty Research Institute, 2001.
Sterne, Laurence. *The Life and Opinions of Tristram Shandy, Gentleman*. Hertfordshire: Wordsworth Editions, 2009.
Jan Švankmajer, Frantisek Dryje, Bertrand Schmitt, Ivo Purs, and Pavel Zelenka, eds., *Short Anthology of the Writings By Jan Švankmeyer - Decalogue.* Prague, Arbor Vitae, 2013.

Sobchak, Vivian. “What My Fingers Knew: The Cinesthetic Subject, or Vision in the Flesh.” *Senses of Cinema* 5 (April 2000).
Thompson, Richard. “Duck Amuck.” *Film Comment* 11(1) (1975-1): 39-43.
Thoss, Jeff. ““Some Weird Kind of Video Feedback Time Warp Zapping Thing”: Television, Remote Controls and Metalepsis.*”* in *Metalepsis in Popular Culture,* edited by Karin Kukkonen and Sonja Klimek, 196-212. De Gruyter, 2011.
Tsuji, Shigeru. “Brunelleschi and the Camera Obscura: The Discovery of Pictorial Perspective.” *Art history* 13(3) (1990): 276-292.
Turnock, Julie. “Plastic Reality: Special Effects, Art and Technology in 1970s Us Filmmaking.” PhD Thesis, The University of Chicago, 2008.
Walden, Elizabeth. “Heavy as a Feather: On Agnieszka Woznicka’s Birdy, Object Animation and the Moral Gravity of Things.” *Animation: an interdisiplinary journal* 5 (1) (2010): 57-71.
Warner, Marina. “Camera Lucida.*”* in *Eyes, Lies and Illusions: Drawn From the Werner Nekes Collection,* edited by Laurent Mannoni, Werner Nekes, and Marina Warner, Melbourne: Australian Centre for the Moving Image, 2006.
Wekwerth, Manfred. *Daring to Play: A Brecht Companion*. London and New York: Routledge, 2012.
Wells, Paul. *Understanding Animation*. Abington, Oxon and New York: Routledge, 1998.
Williams, Richard. *The Animator’s Survival Kit*. London: Faber, 2001.
Williams, Tomas Rhys. “Tricks of the Light: A Study of the Cinematographic Style of the Émigré Cinematographer Eugen Schüfftan.” PhD Thesis, University of Exeter, 2011.
Wolf, Werner. “Metalepsis as a Transgeneric and Transmedial Phenomenon.*”* in *Narratology Beyond Literary Criticism : Mediality, Disciplinarity,* edited by Jan Christoph Meister, Berlin: de Gruyter, 2005.
---. “Narrative and Narrativity: A Narratological Reconceptualization and Its Applicability to the Visual Arts.” *Word & Image* 19 (3) (2003): 180-197.

Appendix

Basic workflow to prepare artwork for mirror mattes and 3d models

The master image is colour corrected and adjusted in Photoshop, all the images are treated to remove lens distortion and manipulated to remove visual distractions with the aim was to make the base images as clear and as geometric as possible. The shapes that are to be excised in the mirror are selected and saved as Paths. This links an exportable vector outline to the image in Photoshop.

Matte distortions

The information about the size and distance of the mirror and artwork is entered into the matte script, I used a small program called Soulver to make a "template calculator". In this example (figure 43) the original artwork is 750mm x 500mm, the centre of the angled mirror is 1500mm from the artwork and to see the illusion at its most accurate the audience needs to view the mirror from 1000mm away. Using the matte equations and simply entering the size and shape of the master image as well as both the distance of the mirror from the master image and the viewer from the mirror, gives the coordinates of the reflected shape that the artwork would take in the angled mirror surface. The algorithm results in the coordinates of the outside shape distortion of the matte and the matte shape can be manipulated to fit, squashing and stretching all the shapes inside the outside boundary to the correct sizes. Only the outside bounds of the image are needed as manipulating the image to fit the outside perimeter shape distorts all the shapes inside the outline to the correct shape for the mirrored image as it hits the glass.

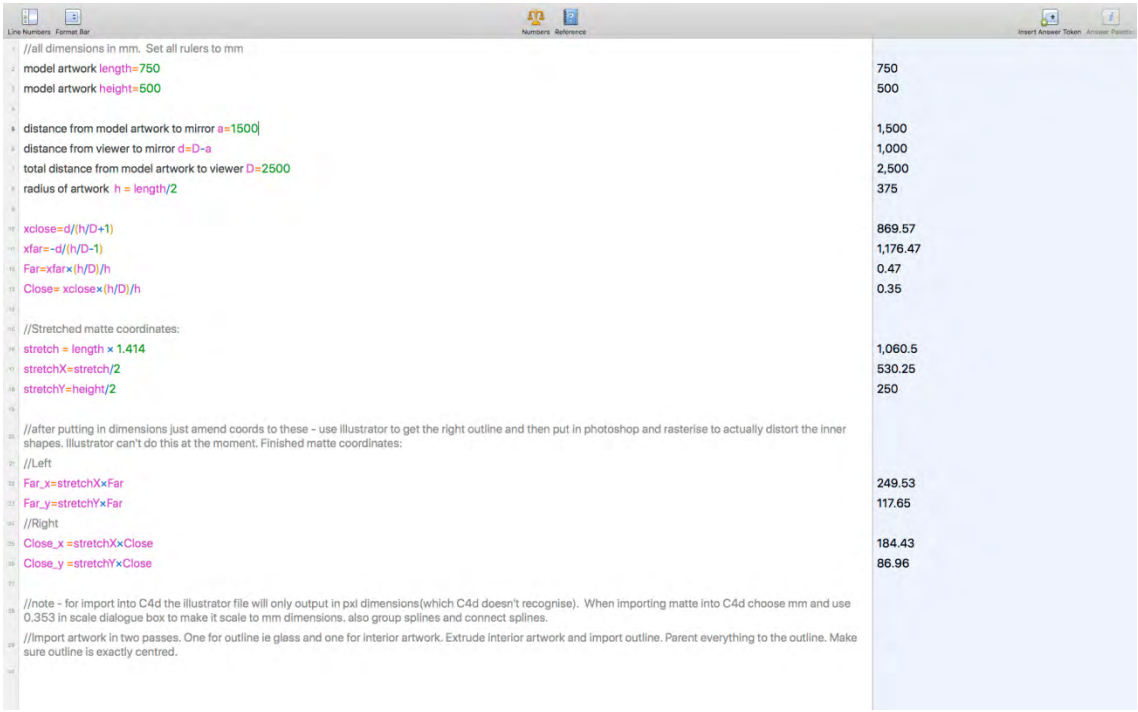


Figure 41. The calculations required to work out the correct distortion needed for the anamorphic shape to work at particular distances.

While the initial distortion template is made in Adobe Illustrator (see figure 42) the image must be roundtripped through Photoshop to complete the process. [179] A shape is made the size of the master image in Illustrator and each corner is adjusted to the coordinates shown in the template calculator, if the shape is rectangular it forms a wedge-shaped quadrilateral that mimics perfectly the size and shape of the image in the 45 degree mirror reflecting the artwork (see figure 44 and 45). While Illustrator has the most convenient tools for adjusting shapes according to vector coordinates, it is not possible to manipulate complex vector shapes (shapes with multiple shapes inside them) in Illustrator with the required accuracy so I am forced to export the overall template shape to Photoshop where, after mirroring the image, the Transform/Distort tool works well to distort the mask matte as a raster image. The matte shape can be saved as a vector path which can be exported

[179] Adobe Illustrator uses the fourth quadrant as the point of origin for its coordinate system and while it would be possible to use the matte algorithm with this arrangement, it is needlessly complicated and adds another margin for error in an already complicated process. I used the script below to force Illustrator CS6 to use a more conventional first quadrant origin and centred the ruler system to the middle of each file using millimetres as the unit.

back again to Illustrator.

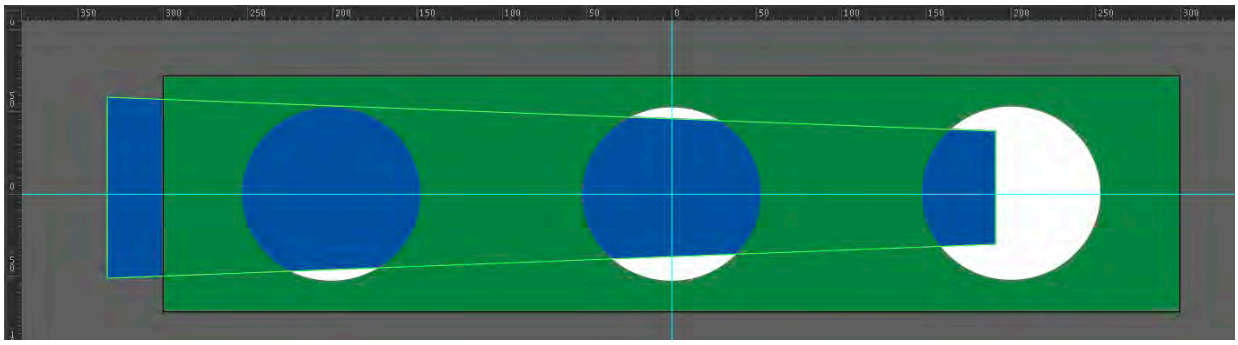


Figure 42. This shows the original shape to be distorted (in this example three circles in green) and distortion needed to show the three circles again when viewed at 45 degrees at a certain distance (the blue shape in the background)

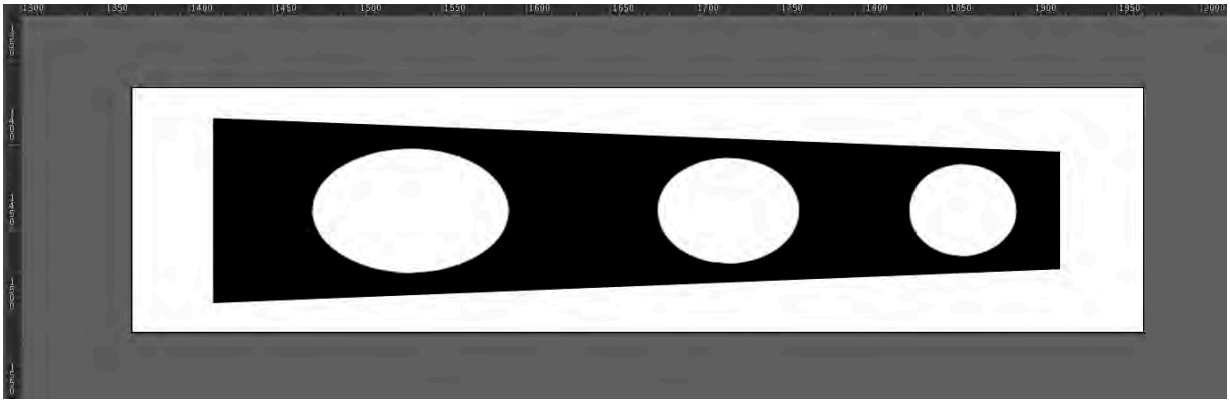


Figure 43. The final matte shape to be etched from the mirror showing the distorted circles.

The Illustrator matte shape can then be used to cut the mirror matte on the laser cutter and the same file can be imported into Cinema 4d as a shape to create mock ups. Like much of the processes behind these works, this rather laborious roundtripping was born of necessity. There are no out of the box tools to achieve the results the project needed and the whole process has been a constant state of revision, experimentation and workarounds with available tools. [180]

[180] The most frustrating being the maddeningly inaccurate import into Cinema 4D, where it was only after some research I found that the Illustrator file export process logs dimension information only in points (regardless of the unit specified for the file) and the file must be imported into C4d in mm at a scale of 1:0.352 in order to effect a correct conversion.

Mirror Calculations

The calculations to create this matte shape create the distortion to be applied to the artwork by using the coordinate system in Adobe Illustrator and Adobe Photoshop. The original shape needs to be defined by a rectangular object and then each corner coordinate is adjusted to match the final coordinates provided by the formula. This action stretches and deforms the original artwork to match where the reflection falls in the angled mirror. Here the original artwork image length = L and the original artwork height = H while the radius = h. The distance of the viewer to the mirror = d while the total distance of the viewer to the artwork = D. To accommodate the angle of the mirror reflection the image needs to be stretched in the axis of the rotation, so the original image profile is multiplied by $2/\sqrt{2}$ (1.41421356237) in the x axis only. The general formula is $1/\cos(\theta)$ where theta is the angle of the mirror. The formula gives a new series of x,y coordinates for the four corner points of the matte shape and the matte shape can be adjusted by using the transform tool (using the distort submenu item) in Photoshop to deform the whole shape to match the reflected mirror matte.

stretch = L × 1.414

Stretched matte coordinates:

stretchX=stretch/2

StretchY= l/2

xclose=d/(h/D + 1)

xfar=-d/(h/D-1)

Far=xfar×(h/D)/h

Close= xclose×(h/D)/h

Finished matte coordinates:

Left side of artwork (x,y)

Far_x=stretchX×Far

Far_y=stretchY×Far

Right side of artwork (x,y)

Close_x =stretchX×Close

Close_y =stretchY×Close[181]

The matte shape is now accurate to the millimetre and can be etched from a mirror backing using a laser cutter. The laser cutter can only be used to remove the paint backing layer from the mirror, if it etches too deeply it renders the surface of the glass opaque (a result similar to sand blasting). Mirrors are made from several layers of materials, a silvered material (generally aluminium in mass produced mirrors) that lies directly on the glass and provides the reflection, a layer of copper and a protective layer of paint. The protective paint layer is mostly chemical resistant and this quality is essential in the matte construction which involves using the paint layer to protect the mirrored area to create either clear glass or front-sided mirror. The laser cutter is used to burn away the top layer of protective paint exposing the layer of copper and underlying silver. A phosphoric acid spray using commercially available rust converter (Ranex Rust Buster, phosphoric acid 10-35% applied as spray, left for 60 minutes, then wiped with cotton rags and rinsed under running water) will dissolve both exposed copper and silver layers, leaving a clean,

[181] I'm grateful to Samuel Legge, doctoral candidate in Maths and Applied Physics at the University of Newcastle who wrote the this algorithm to describe the matte distortion in the mirror.

precise edge between the painted matte sections and perfectly clear glass. For the front-sided mirror the mirror must be etched again with an inverted matte and the remaining painted matte shape is burnt away. The underlying copper layer is removed with acetone which, if applied and removed quickly (applied with microfibre cloth, wiped down gently within 5 minutes and rinsed with distilled water), won't affect the aluminium layer below. The result is a front-sided mirror with the mirrored shapes visible on both sides of the glass. The result is time limited as the aluminium surface will tarnish over a period of weeks. It is however, stable in the short term.

Front sided mirrors are usually used for optically precise work with lasers and are extremely expensive scientific items. This method allows for cheap and repeatable manufacture of the mirrored mattes and is only limited by the size of the laser bed. For this project that limit is 900mm x 600mm but there remains enormous potential to scale these sculpture to a much larger size using industrial laser cutters.

Front surface mirrors

To achieve a two sided mirror with a matte shape mirror surface is a two part process. For the artwork for the rear surface mirror, etch paint from rear of mirror @600dpi with laser cutter and apply phosphoric acid (Ranax Rust Buster with trigger spray) to the copper layer. Both copper and aluminium layers will lift off after approximately 45 mins leaving clear glass. The glass is washed in water and the glass is again etched for the front surface mirror. The artwork is changed the inverse of rear surface mirror matte and the laser cutter etches remaining paint from mirror. The copper layer is removed with acetone and a microfibre cloth (this part is critical!) leaving an exposed mirror surface.

Catalogue of Work Presented for Exhibition

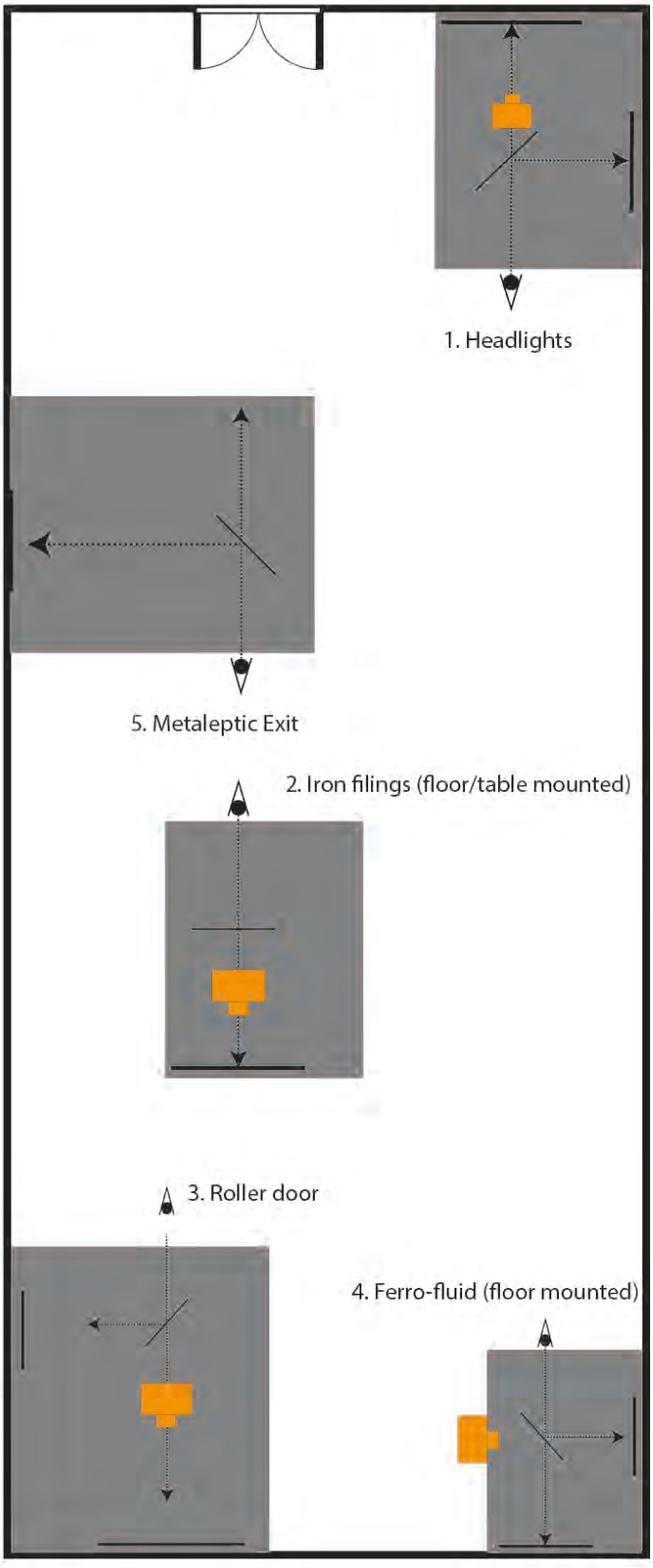
All The Nice Things Come From Here is a site specific installation. It depends very much on the spatial arrangements between the five sub-installations to work as a cohesive piece. Over the course of this project I've found that documenting the work in a comprehensive way is quite difficult because the viewers relationship to the work is critical and that relationship can be challenging to document with photographs. The install is very technical and precise, and ambient factors such as light levels and reflections can have quite a big impact on the work overall.

Because of the nature of the work I have elected to keep some aspects of it open until the final install so I can respond to the various difficulties of projections and light levels in situ by (for example) swapping out a projection for a photograph and make sure the final design works for the space in which it is exhibited.

The overall design is below in plan form and I have included some of the process documentation to provide a fuller picture of the project documentation as per the SCA thesis guidelines.

The installation itself divides into 5 discrete sections. As outlined in the thesis they can be approached in any order. The order below roughly follows the development of the thesis overall.

1. Headlights
2. Ferro fluid
3. Roller door
4. Iron filings
5. Metaleptic exit



All The Nice Things Come From Here

Install floorplan
June 2018

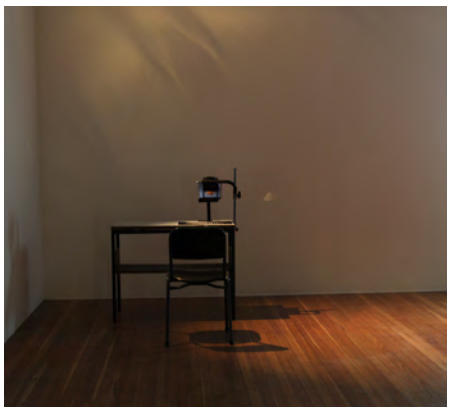
Legend

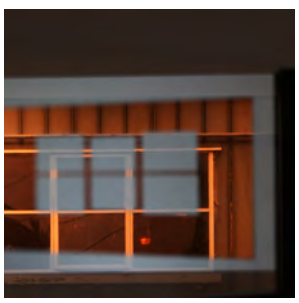
- Photo or screen
- Viewer
- Projector
- Schufftan area
- Mirror

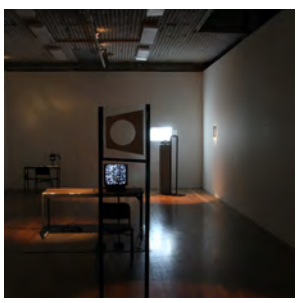
1:50 scale

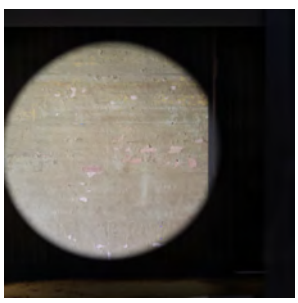
Building 25
Gallery
Sydney College of the Arts

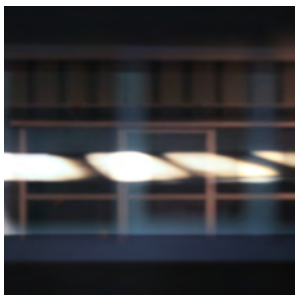

ALL THE NICE
THINGS COME
FROM HERE
Phd Exhibition Documentation July 2018

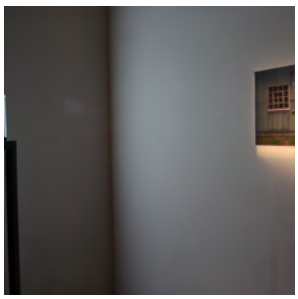
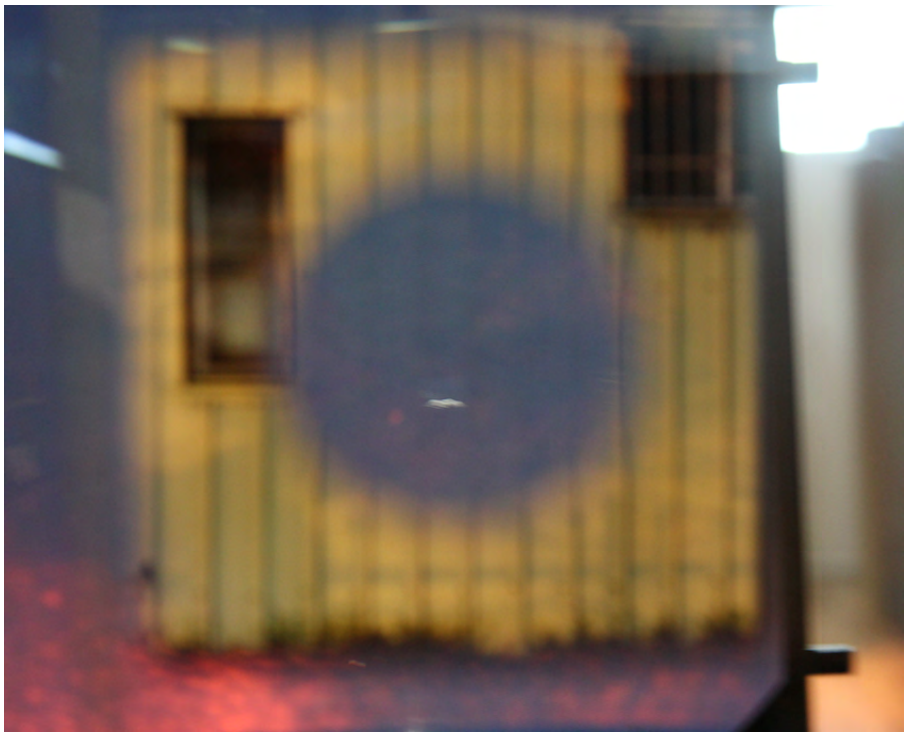
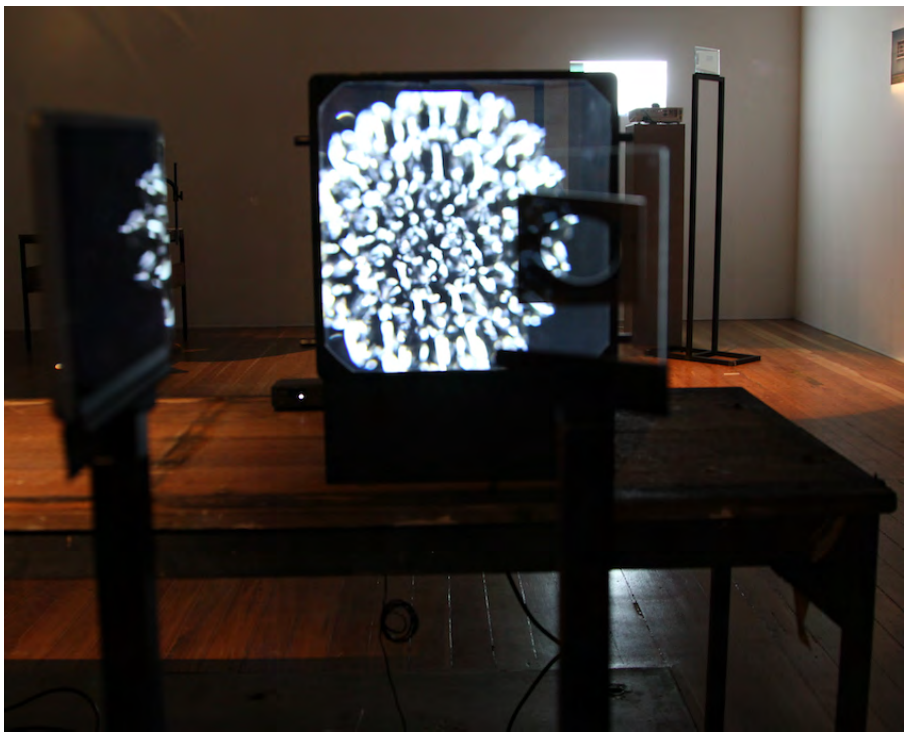


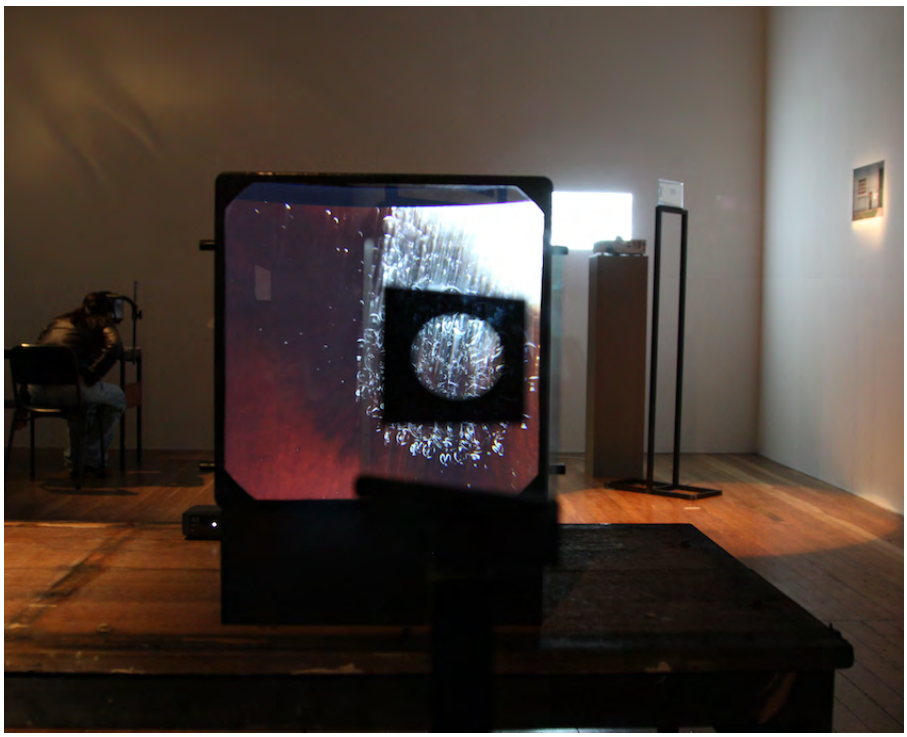


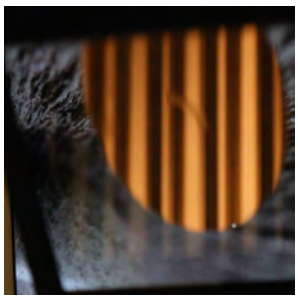


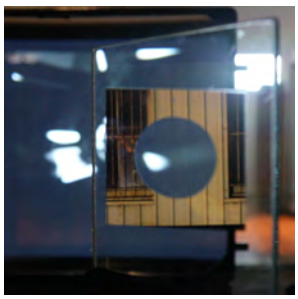


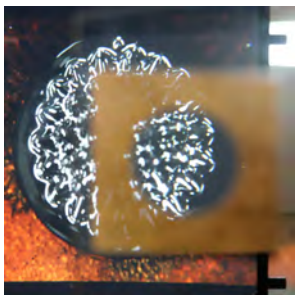


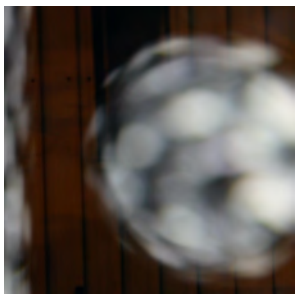




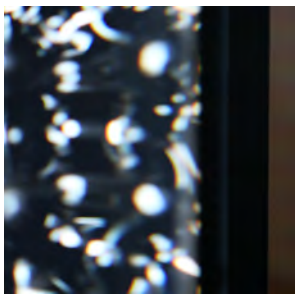


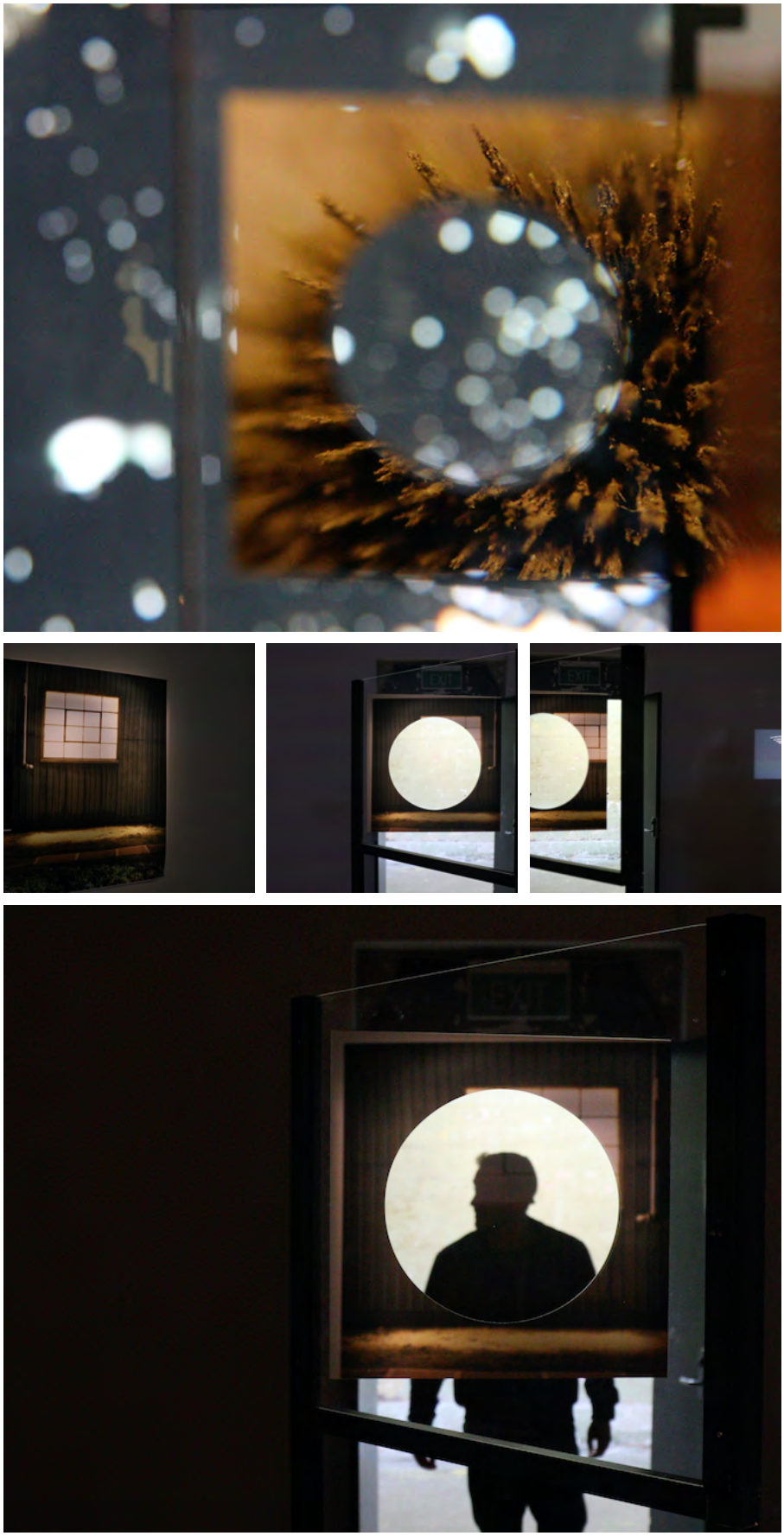












All The Nice Things Come From Here (Details) SCA Gallery, July 2018. Exhibition documentation.