THE HISTORIC DARK RIDE:
REIMAGINED FOR VIRTUAL EXPERIENCE

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PHD by Artefact and Exegesis
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Abstract

This research project centres on the creation of a contemporary ‘dark ride’. Dark rides are a media format that originated in the early 20th century and are still produced today for popular entertainment sites around the world. Throughout that evolution their themes have not greatly changed and still include the Ghost Train, Haunted Mansion and Haunted Castle among others. Although the dark ride is a well-known aspect of popular culture, examination of this form's history and impact on other media such as cinema has been limited, and the dark ride format has not been clearly defined in academic discourse. The research asks what the characteristics of the early dark ride are and how can they inform new experiential media production?

Practice-led investigation involved the creation of a unique work inside a functioning historic dark ride built in 1964. The methodology involved exploring how this ride worked and how it could be utilized to create a new experience. This hands-on investigation was supported by numerous research field trips that examined primary examples of functioning historic dark rides as well as secondary records of early iterations of the format. During the study thirteen dark rides built between 1930 and 1974 were visited and documented, representing a majority of these experiences still functioning today. The research covers prolific creators of the format such Leon Cassidy and Bill Tracy whose work has rarely been covered by academia. Both the documentation of the field research, and the creation of the artefact, utilised virtual reality video technology to review and examine these complex media experiences remotely.

Critical to this research was an understanding of the history of the dark ride as it pertains to creating new multimedia experiences. Tom Gunning’s important studies of early attractions and their relationship to the evolution of cinema show an overlap with ride culture; particularly the seminal influence of Frederick Thompson’s ‘A Trip to the Moon’ (1901) attraction and the tradition of the magic lantern show. Through historical and field examinations it became evident that every historical dark ride could be identified for its consistent application of six key characteristics. The six characteristics were a spatial journey, 360-degree design, perspectival illusion, lighting, sound and haptics. Once identified these characteristics offered a way of clearly identifying the dark ride and guided the creation of the original artefact.

Substantial new knowledge was created in the evolution of the unique artefact titled *A Southern Dark Ride*. These new understandings help define the nature of the dark ride experience and insert it into to the constellation of historic media offerings for practitioners and researchers. The research represents a thorough insight into this previously underexamined format, accompanied by rich media documentation which expands access to further study of this cultural phenomenon.

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The Historic Dark Ride : Reimagined For Virtual Experience

First Author

Name__Joel Zika_____Signature: _____

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Brief description of contribution to the 'paper' and your central responsibilities/role on project:

I am the sole author of this written work

Principal Coordinating Supervisor:

Name:__Angela Ndalianis Signature:_____

Date: 10/ 08 / 2020

In the case of more than four authors please attach another sheet with the names, signatures and contribution of the authors.

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Links to documentation of the artefact for assessment of this thesis submission:

A Southern Dark Ride - Full panoramic video by Joel Zika, 2018.
https://youtu.be/E2h539K3HfQ

An Introduction to A Southern Dark Ride, promotional video, by Joel Zika 2018
https://youtu.be/63p9CbpZyh0

A Southern Dark Ride – 360 Virtual Reality Video by Joel Zika, 2018.
https://youtu.be/BQh_0-KdOeI

A Southern Dark Ride – 3rd person Installation Footage by Joel Zika, 2018.
https://youtu.be/YJ9yahPZ3GI

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Declaration by candidate

I, Joel Zika, declare that the examinable outcome:

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Date: 24/08/2021

The Historic Dark Ride : Reimagined For Virtual Experience

Background to the Study

Introduction

This exegesis explores the creation of an original media artefact, a unique contemporary dark ride. Dark ride is the name traditionally given to indoor track-based amusements, a type of popular entertainment experience that has existed since the early 20th century. Each example of the dark ride takes place indoors on a vessel or cart that moves along a pre-determined path with lighting and props combining to create a mediated visual experience. Famous dark ride themes include haunted house rides, ghost trains as well as haunted mines and mills. Despite their frequent association with horror themes, the dark ride format has been associated with everything from space exploration to time travel. In his recent book on contemporary consumer environments, Brian Lonsway explains how the early dark ride was '…unique among mechanized rides for its interior-focused design'. (Lonsway, 2013, p.119).

The artefact I created used an actual example of a dark ride structure, a functioning attraction still operating in the USA since 1964. The artefact is a contemporary ride experience built using those historic components. This framework for my project solidified the need to focus my research on the historical period of dark ride production, recognizing a gap in research knowledge and a potential to inform practitioners in various media fields. Inside this ride I utilized digital projection technology to add my own visual content to the walls of space which the track and cart then move audiences through. Using multiple cameras attached to the cart I recorded a video of the ride experience as a complete 360-degree video. This incredibly wide panoramic image allows the audience to see all of the visual aspects of the ride remotely, as if riding on the cart. This technology for capture and

replay of space is an example of virtual reality video and it has been employed as research tool across this project. In explaining what I learned about the characteristics of the dark ride, examples of this 360-video will be cited to get a more immediate sense of what is being discussed.

Dark rides are mentioned by a number of theorists and historians that I will cover throughout this study. Through practice-led research, one of my contributions to knowledge is to provide a robust, historically, and technologically contextualized definition of the dark ride as a creative format. I will focus on the dark ride as a format because of the specificity that the term offers in explaining its approaches to creative communication throughout the past century. The dark ride tradition was made possible thanks to the birth of the electric motor, creating a format of amusement ride defined by six key creative characteristics which will be outlined below. The word 'format' is one which contextualises the dark ride's over-arching connection to analogue and digital technologies. In its earliest incarnation, the dark ride was used to repurpose disused spaces at the fairground. As a compact and automated format of indoor entertainment, the early dark ride was ideal for fitting content into empty ballrooms and bowling alleys. In the digital era, the term format tends to refer to software-based approaches to adapting and refining the delivery of a particular creative medium. In his book *MP3: The Meaning of a Format*, Jonathan Steme discusses the concept of format theory and the importance of format as a way of defining different media:

> In an analog device, the format is usually a particular utilization of a mechanism….The format is what specifies the protocols by which a medium will operate. (Steme, 2012, p.8)

Disney's most well known dark ride; *Pirates of the Caribbean* (Disney, 1973) was not built until the format had been well established. In this instance, Disney utilised the dark ride format to deliver an experience they believed could create unique spatial storytelling and immersion (Schweizer & Pearce, 2016, p.98). In my research I will track the dark ride back

to its earliest iterations and show how the format has held to consistent principles that can still be seen in the entertainment design of Disney and Universal rides.

In chapter one, I define the characteristics of the dark ride format, derived from field research and the hands-on creation of a new artefact. In support of the artefact my research also looks at the origins of the format in the early 20th century and follows how it was utilised in the pre-digital era. I outline six key characteristics that feature in all dark rides and guide the creation of new rides for myself and practitioners in the field. The dark ride has appeared at entertainment spaces around the globe, and for countless people it is part of their shared cultural memory of pre-digital entertainment. This exegesis outlines my investigation of the remains of this historic format, examining documentary evidence led me to discover its current creative possibilities.

Over the past thirty years, there has been a resurgent academic interest in late 19th and early 20th-century entertainment history. Academics I will cite have revisited historic fairgrounds and carnivals in search of new understandings of contemporary media practice. Despite this renewed interest, the dark ride has not featured prominently in the revisiting of classic or bygone media artefacts. There are few sustained examinations of dark rides, especially when compared to the better-known outdoor rides such as the roller coaster or Ferris Wheel[1]. Sadly, whilst there has been interest in the amusement park academically, locations have been closing rapidly since the 1950s (Wismer, 2001). With these closures has come a near-total disappearance of independent dark rides from the entertainment landscape, making this study timelier than ever.

Despite the continued production of dark indoor rides at major amusement and theme

[1] Historic outdoor rides have been explored in academic works far more often than indoor dark rides. This text will explore this imbalance and possible explanations for it. In two examples, Scott Lukas' *A Reader in Themed and Immersive Space,* the history of rides is linked to contemporary practice, but dark rides are only cited through contemporary examples (Lukas. 2016); in Lauren Rabinovitz's well known book *Electric Dreamland: Amusement parks, Movies and American Modernity,* dark rides are mentioned only twice without reference to any historic examples given (Rabinovitz, 2012).

parks[2], there has been very little study of the medium itself, particularly its history. Because of this lack of documentation, it is hard to establish what influence the dark ride has had on creative fields such as experiential media, horror cinema or theatre. In the summers of 2015 and 2016 I was granted access to an historical dark ride site called the *Haunted Castle*[3], with a complete working cart system. It was here that my creative artefact would be developed, allowing for a particular form of practice-led research within an historical location.

Scope of the Project

As a practice-led research project, the information covered in this exegesis is limited to what informed the production of the artefact and helps contextualise a reading of it. My project intersects with a number of theoretical paradigms as well as areas of discourse where my work might be a useful example. I will address some of these examples in the following section. Throughout the exegesis I will discuss intersections between the historic dark ride and other media discourses, highlighting their parallel evolutions in history and areas where my findings could inform contemporary practice. The types of media which would benefit from this new knowledge are broad and it is beyond the scope of this study to explore specific use cases. Throughout the study I will talk about interactive cinema, digital games, and virtual reality, as well as a range of diverse location-based experiences. The characteristics of the historic dark ride as articulated in chapter one are most applicable to those working across practices which I will refer to as 'experiential media'.

[2] Major theme parks have continued to produce dark rides on a yearly basis, Universal is known for Transformers, Harry Potter and Simpsons rides which will be discussed throughout this text. One company, Sally Corp, continues to manufacture new dark rides independently for parks around the world.

[3] The historic dark ride is the *Haunted Castle* which was originally located at the Miracle Strip Amusement Park in Florida, built in 1965. The ride was salvaged and rebuilt in Oxford Alabama. It is currently hosted by the Terrortorium haunted attraction site.

Immersion

The dark ride format is a particularly effective 360-degree media experience; riders are engulfed with image and sound from all directions (Figure 1). Concepts of theme, immersion and iconography are important aspects of our understanding of the amusement park and any study of the dark ride. Towering facades, lights, sounds, signs, characters and symbols form an immense spectacle even as you approach the exterior of an amusement park dark ride.

Figure 1. Example of imagery surrounding the viewer in 360 Still image from inside *Whacky Shack*, Waldameer Park by Joel Zika, Erie, Pennsylvania, United States of America, 2017.

The term 'immersion' can be used to describe complex engagements between theme and interactivity[4] some of which are present in the dark ride experience, however the term has a broad range of applications. Defining immersion is complex and much debated through history: broadly speaking the term articulates the audience's experience of feeling present within a creative work. This definition combines many fields of study, particularly psychology, which I will not cover in my analysis of dark rides. Many literary devices of the

[4] Qualitative degrees of immersion have been studied as they relate to particular media. As one doesn't exist for the dark ride experience a good reference is a study into immersion that was conducted in the games sphere, entitled *Measuring and defining the experience of immersion in games* (Jennett et al. 2008). This text covers definitions of immersion including "total immersion" and "engrossment" (Jennett et al. 2008, p1)

18th century are described as immersive for the way they present intimate engagement with character and point of view (Ryan, 2015, p.4). In contemporary media of the late 20th and early 21st century new approaches in the application of technology have been used to increase levels of immersion across different formats. Examples of a push towards greater immersion include increased screen size in cinema, more responsive graphics in computer games and the integration of 3D video in amusement park rides. In contemporary media discourse, the peak experience of immersion in media content has been described as "telepresence". Telepresence describes media experiences so visceral that they give the impression of being transported to a given location or space (Kaplan-Rakowski & Meseberg, 2018). In order to include immersion as a topic for examination in this study I would need to conduct studies of the format's effect on each rider, instead my research will focus on the characteristics that make up the dark ride. I will look at how certain dark rides employ a variety of media devices rather than offering a detailed analysis of how immersive each experience is to its audience. In order to answer the creative questions raised in building my own ride experience, I looked at formal attributes of early dark rides, examining which characteristics are common amongst them.

Iconography

As with immersion, many aspects of theme and iconography in the dark ride are also outside the scope of this study. Imagery of witches, ghosts and ghouls that shape our most identifiable shared memories of these spaces represent a long history of genre, storytelling and mythology that this research will not focus on directly. Engaging in this study meant being saturated in all forms of 'spooky' and 'haunted visual media': it is a genre that has always guided and influenced my practice. Given that history and preference I focused my research on the formatting, rather than iconic components of rides, looking at how visual and

experiential media was woven together. It is impossible to completely separate the visual language that is part of such a strong media experience, especially where rides often re-use and repurpose existing infrastructure or reference local culture. I have corralled my discussion to focus on how the format of the historic dark ride was affected directly by other practical changes in media delivery. Where social practices such as transportation have affected popular media such as cinema, I have also shown the parallel effect on ride design. I have not explored the visual tropes of transportation in my creative work due to the predetermined nature of the track and the fact that cart is not visible to the audience.

Travelling and experiencing many dark rides, I looked under the surface to determine how narratives and themes were facilitated best by that format. Through this understanding of the dark ride's characteristics, I was able to explore how common patterns in the format help practitioners successfully translate different themes into a dark ride build. Although my artefact utilises many thematic and iconographic visual elements, this exegesis discussion will focus on how those components are utilised as part of this format, rather than focusing on how they operate individually.

The Historic Dark Ride

Historical parameters were also an important part of the scope of this project, particularly as the artefact was designed around an historic site. This study is about defining the format by determining how to create a new ride in the historic tradition of that format, an entertainment type that evolved in the amusement parks of the 20th century.

Throughout the exegesis I will define the differences between three key entertainment zones: the fairground, amusement park and theme park. I will show how the fairgrounds helped define ride technology, amusement parks created media formats out of those rides and theme parks connected those rides with other cultural products. As my research will explore,

the first iterations of the dark ride were distributed amongst independent amusement parks. Each park applied bespoke approaches to designing their particular dark ride experience. Later theme parks would use this approach to create replicable, franchised media experiences which are not in the scope of this study. As a media practitioner working with a unique ride structure, my interests focused on how people approached the creation of these rides in different locations using similar materials and structures. I have limited the historic scope of this study to independent dark rides dating from the first iterations of the format in the 1930s to the rise of digital entertainments in the 1980s. I use the word 'independent' when I am discussing parks that were locally owned and not a franchise. The exegesis thus details the different ways these independent parks bought and adapted technologies like the historic dark ride to suit their audiences and location. Today, the majority of new dark rides are built at franchised theme parks, representing some of the highest level of technical and artistic craftsmanship. The scope of this research will not involve an analysis of the theme park space, but definitions of the early dark ride will examine and explain the origins of rides at these spaces.

The Cinema of Attractions

A major inspiration for this study is the research of Tom Gunning and Andre Gaudreault who explored the historical influences of turn of the century entertainment in the field of cinema. Throughout the 1980s they pioneered a field of research known as early cinema studies (Elsaesser, 2004, p.93), which looked closely at the first iterations of that medium. They observed cinema in the period when it was more overtly fused with a longer visual tradition of illusion shows and fairground concessions, rather than a primitive version of the feature films seen in cinemas later in its evolution. Gunning's most cited paper is "The Cinema of Attractions" (Gunning, 1986), where he brings together notions of early cinema as

spectacle of machine and attraction. He cites the fairground and amusement park as a crucial influence on the way cinema should be interpreted:

> Such viewing experiences relate more to the attractions of the fairground than to the traditions of the legitimate theater. The relation between films and the emergence of the great amusement parks, such as Coney Island, at the turn of the century provides rich ground for rethinking the roots of early cinema. (Gunning, 1986, p.58)

The field of inquiry established by Gunning and Gaudreault[5] became recognised widely and ushered in a period of re-examination of lesser known works of short and hybrid cinema[6]. Gunning and Gaudreault's research was made possible thanks to early 20th century film archives which became more accessible in the 1970s (Strauven, 2006, p.15).

This well-regarded examination by Gunning and Gaudreault is important to my study of the dark ride in two ways: It shows the parallel evolution that occurred between cinema and the fairground experience, and also how the revisiting of past media relationships can lead to new understandings of a contemporary media paradigm.

Preserving Media

When it comes to the dark ride, the physical and experiential nature of the medium has hindered its archiving, as have attitudes towards the novelty and value of such entertainments. In her article 'Forgetting Digital Games', Melanie Swalwell (2007) discusses many of the frustrations related to archiving media formats that no longer have the widespread acceptance of their heyday. Swalwell cites a cultural amnesia and lack of care for retaining past artefacts despite their impact on media history. Swalwell connects her ideas on

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5 For further reading from Gaudreault see: *Film and Attraction: From Kinematography to Cinema*, Champaign, University of Illinois Press, 2011; and *Du Litéraire au filmique. Système du récit*, Paris/Saint-Foy, Méridien Klincksieck/Presses de l'Université Laval, 1988. Published in English as From Plato to Lumière: Narration and Monstration in Literature and Cinema, Toronto, University of Toronto Press, 2009.

6 Early cinema research became a popular field that engaged research from many disciplines. It also influenced popular culture, with content from the early cinema period being utilised in music videos (Otherside, 1999), advertising (Mccallion, 2000) and even becoming the subject of feature films (Hugo, 2011).

the preservation of digital games to comments Gunning made about this ongoing effort to revive understanding and interest in media's past:

> The shift from novelty to detritus of past technological wonders, such as those displayed at World's Fairs and Expositions, and their journey from astonishment to second nature. It becomes crucial, then, to consider why we are so keen to forget the novelty of early digital technologies. (Swalwell, 2007, p.260)

Like digital games, the potential to define the dark ride as a format and analyse its influence on contemporary media practices has been severely limited because of its participatory nature. The format has also been adapted and modified by many independent parks who have added to the experience in ways that haven't been recorded. The format needs to be experienced and physically attended in order to be understood and studied. In Swalwell's research, she discusses the need to find platforms to run and emulate digital games in order to experience them (Swalwell, 2007 p.265). In addition to the limited documentation of the dark ride format, its physical immersion and low light have made it challenging to write about. A dark ride is complete in a matter of minutes, it is a fleeting and physical activity, making it difficult to take notes whilst experiencing. Finding a new way to understand in order to build, study and archive the dark ride would become a key technical challenge of the project.

Seeking to promote further discussion and comparative analysis of the dark ride, I embarked on an ambitious practice-led research project. The aim of the research was to discover what the creative characteristics of early dark rides were that might influence creative practitioners working broadly across participatory media (from cinema to theatre, games and virtual reality). Answering this question involved a practice-based solution, the creation of an artefact that used these characteristics in a singular work. I set out to create my own dark ride experience, looking to understand and define the paradigm of pre-digital dark ride experiences. This practice-led methodology was supported by extensive field research of the historic dark ride format. A study of the medium's creative characteristics led to the

development of an original my artefact where I have utilised these characteristics and explored their value in my practice.

To understand and define the format I visited every existing example of permanent dark rides built from the 1930s until the advent of digital technology in the 1980s. These rides are part of the amusement park tradition of permanent structures which may not include some temporary attractions and other carnival experiences (I discuss these specifics more on page 43). From this group of primary research sources one ride space was used for the creation of a media experience. I will discuss the relevance of the timeframe for sourcing these rides in the coming chapters. My field research and the creation of the artefact was useless without a way to document the spaces that allowed me to capture their experiential qualities. In such a temporally short experience, this was required for my own considered reflection, as well as to produce something shareable with an audience. The solution was to use panoramic 360-degree video, capturing the ride experience from the point of view of the person on each ride visited. The technology is a variant of the virtual reality format, it requires the stitching of multiple videos together in order to create an image that surrounds the audience and gives the impression of being on the ride. I used this technology to show the ride design at the centre of the study, the final result of hands-on engagement with the ride format. The results are rich panoramic images and experiential videos that support the exegesis and allow for the final artefact to be truly experienced (Figure 2). This methodology was led by the practice of building an experience guided by these classic rides, reviewing and refining the creative process by exploring and capturing ride experiences. As each ride was experienced, I documented and reviewed the different parts of the creative process at work and incorporated them into my final approach.

Figure 2. 360 degree photo of *Whacky Shack*, Waldameer Park by Joel Zika, Erie, Pennsylvania, United States of America, 2017.

Context

There are very few dark rides still in operation that are more than ten years old. In my research I found thirteen that I believe to be the last of their kind in the world. These dark rides vary in age from ninety to forty years old and are all considered classics by fans and enthusiasts of the genre[7]. Over four years of study, I visited all thirteen of these classic rides, also visiting former sites of dark rides which have been demolished, destroyed or abandoned. Threats to the existence of these classic artefacts from extreme weather and financial strain have added urgency to this study. Of the thirteen rides discussed, each has distinct unifying characteristics that I will discuss in detail. Throughout this study I will refer to rides from this period of investigation as historic dark rides.

Over the past three decades, much academic research has gone into analysing the connection between centuries old media and our contemporary practice. Nineteenth century devices like the stereoscope and kinetoscope[8] have been cited as precursors to contemporary cinema (Gaudreault, 2006, P.1). Common technology link these historical media with cinema

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[7] Whilst this text will show the lack of academic resources related to dark rides, the 13 chosen for examination are covered and discussed through popular internet forums for fans of the dark rides. These resources include *Laff In The Dark* (http://laffinthedark.com) and the *Dark Ride and Funhouse Enthusiasts group* (http://dafe.org). Both groups have extensive fan support and contribution as well as published magazines and DVDs.

[8] The kinetoscope was a single user device for viewing recorded film which was first seen in 1889, it was one of the first popular ways to view film (Singer, 1986, p38).

but also show the different ways that light, projection and screen were used to create different experiential relationships. Theorists have highlighted the links between the magic lantern and phantasmagoria[9], technologies which emerged in 17th century and have been compared to new inventions such as virtual reality (Otto, 2011, p.21; Grau,1999, p.367). Once again it is the use of different techniques to project light and create screens that has offered a great resource from the past to help define contemporary approaches. Understanding the dark ride, which came to prominence with the advent of electricity, contributes new knowledge to this map of media development.

Virtual Reality

Digital technological advancements of the last ten years have afforded new ways to create media that emulate full spatial experiences in similar ways to the historic dark ride. Virtual reality headsets have changed the games industry and are posing questions about the future of the cinematic experience (McMahon, 2017, p.68). While amusement rides have been built throughout the 20th century, the recent rise in head mounted virtual reality experiences has been the catalyst for new partnerships between roller coasters and virtual reality (Northfield, 2016, p.35). By encapsulating each participant, these hybrid experiences turn the coaster into a dark ride, creating an insular, controlled, virtual experience. Virtual reality, like the dark ride experience, creates spaces for a viewer that break cinematic notions of the frame and screen. They are part of a history of illusion which I have studied in the search for increased engagement and impact in the mediated spaces I design. Questions of the link between the historic dark ride and contemporary immersive media are something this research doesn't conclusively resolve but I hope to add key knowledge towards. Dark rides

[9] The Phantasmagoria was a staged theatrical performance which typically involved gothic ghost stories delivered through the use of multiple Magic Lanterns. The Magic Lantern was a device from the era which allowed images to be projected using light, creating one of the first projection illusions in popular media (Otto, 2011, p.1).

exist in today's contemporary entertainment space, utilising cutting edge technology to achieve many of the same characteristics of earlier rides. Although this study will not address the contemporary dark ride space, it will deliver an historical overview of the format for other researchers and practitioners to build on. My practice as a media artist features many of the technologies used across the entertainment landscape today, from three-dimensional computer graphics, optical illusion and virtual reality.

Virtual reality played a unique role in the documentation of this project, allowing me to capture existing media for research and to document media experiences I had created. The specific process used is known as 'lens-based' VR. Lens-based VR refers to the use of multiple video sources (lenses on each camera) which are joined or stitched together (Figure 3) to create a meaningful visual representation of the captured space. The completed video can be viewed as a wide panorama, or explored in a VR headset where the user turns their head to view the image in different directions (Figure 4).

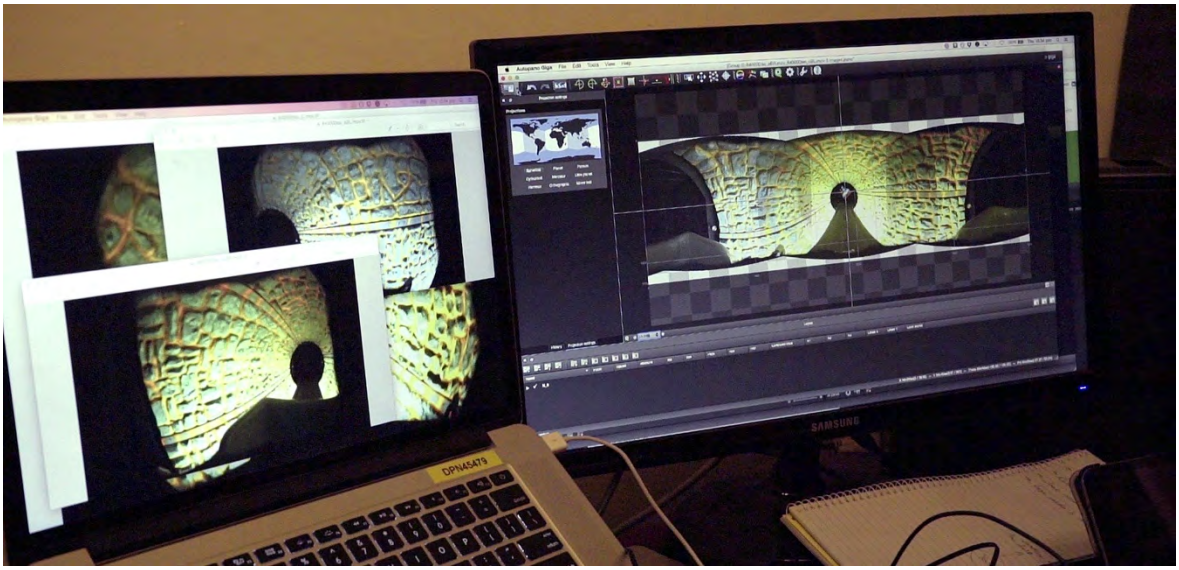

Figure 3. Example of 360 degree panoramic stitching process to create lens-based vr content. Joel Zika, 2018

Other forms of virtual reality other than lens-based VR use graphic representations of 3D space which are created digitally and not used to record existing space. The technical

choices I made have helped my investigations to be more thorough, portable and extensive. This study will explore the links between the historic dark ride and virtual reality, so it is apt that in its current form, this suite of technical tools has been of such service.

Figure 4. People using headsets to explore the dark ride archive at ScareLA. Joel Zika, 2016

The Haunted Castle

As I will discuss in more detail later, independently run dark rides are not commonplace in the entertainment landscape. Viewing and experiencing rides throughout this research has required close ties with historic parks, enthusiast groups and private collectors. Through field research I was able to engage with the creators, caretakers and owners of rides. I explored not only how the rides functioned mechanically but also discussed with these people how ride experiences were created and manipulated creatively. Extended periods of time spent engaging with ride owners and caretakes helped me find a dark ride facility where I could not only document the format but also experiment creatively within the structure.

Whilst documenting and defining the locations in this study I became interested in a particular demolished dark ride and amusement park in Panama City Beach, Florida. This particular dark ride stood out because of the extensive online documentation of the ride

throughout its lifetime from archivists and holiday goers. After the park was abandoned in 2007 it garnered considerable online interest thanks to distinctive images of its facades in varying states of decay[10] (Figure 5). The park was called the Miracle Strip Amusement Park, and one of its derelict rides was the *Haunted Castle*, built in 1964 (Figure 6). A classic of that era of dark rides, *Haunted Castle* was one of thousands of mid 20th century rides to adorn amusement parks around the USA and the world (McCreless, 2019, para.3). As I will discuss in the following chapters, this particular ride artefact became the pivotal component of my study.

In 2014 I was contacted by Jeremy Cruse of Oxford, Alabama, who informed me that whilst the *Haunted Castle*'s façade had been demolished, he had purchased the ride in 2009. Cruse had kept the ride safe and re-assembled it over the years to run as a public entertainment. Like many of the sites considered in this study, the *Haunted Castle* wasn't a national monument or a well-studied historical landmark, but it was one of only a handful of remaining examples of the historical dark ride. The *Haunted Castle* was an important ride for the small contingent of fans of the format and a memorable part of holiday memories for those who frequented the beachside amusement park in its 40-year history. As I will discuss later in this study, access to this site to perform my practice-led research presented a very rare opportunity. Observation of the ride in use and as a format for creative practice would inform my approach to the research project as a whole.

[10] Images of the *The Miracle Strip* Amusement Park can be found in any internet search for abandoned amusement parks, they are featured in countless online articles including for the sites such as Abandoned Florida (Bulit, 2011) and Haunted Attraction online (Duncan, 2012).

Figure 5. Abandoned Dante's Inferno Ride at the Miracle Strip Amusement Park by Steve Sobczuk, Panama City Beach, Florida, United States of America, 2005.

Figure 6. Abandoned *Haunted Castle* Ride at the Miracle Strip Amusement Park by Steve Sobczuk, Panama City Beach, Florida, United States of America, 2005.

The Research Question

I have approached this study as a creator of digital media experiences, answering questions about my practice through the creation of my own contemporary ride experience. As a practitioner, my prior interest in this format has led it to influence many aspects my work, through experiencing it and observing the visual culture that surrounds it. For this body of research, executing the artefact demanded a more detailed understanding of the historic dark ride experience. The artefact represents the knowledge I have gained over the course of my research.

In order to create a new ride experience using this historic piece of infrastructure, I needed to create a definition of the format I was working within. These findings would frame observations of the archival history of the format and remaining artefacts in service of a new work.

Other Studies of the Dark Ride

The dark ride is a format that is well known throughout popular culture and continues to be a production focus of large entertainment spaces[11]. Throughout this exegesis I will discuss the work of researchers who have examined the historic dark ride, and this study will re-frame those observations for their value in the practical creation of a dark ride experience. My own hands-on studies of existing dark rides are supported by this historical investigation, asking the question: What are the characteristics of a historic dark ride are how are they applied in its creation?

The historic scope of this project outlines a period that has interested me for many years. Creating and researching the construction of a new work in this historic format has

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[11] Dark rides continue to be a strong focus of major theme parks, for example, in 2019 Universal studios have added *Jurassic World* while Disney have added *Star Wars Galaxy's Edge*.

derived new practical knowledge and richer historical context applicable to practitioners of digital media experiences. In chapter two I will define the importance of the early period of dark ride development and similar studies of media in that era which have influenced contemporary formats including cinema and virtual reality.

Through the informed creation of a new artefact, this research methodology offers a concise definition of a historic media format and direction for its further examination by practitioners. In the current media landscape where experiential technology is so pervasive in all aspects of our entertainment culture, scholarship has largely ignored the evolution of the dark ride as an influence on the media practices that have proceeded it. Studies have documented historic media devices and there has been a resurgent interest in fairground history. A body of research has emerged over the last 20 years focused directly on fairgrounds and amusement parks. Vanessa Toulmin has written extensively on the topic and her studies led to the creation of the British fairground archive (Toulmin, 2011). Well known academics such as Scott Lukas and Gunning have (in their writings from 1990-2010) spent time focusing on fairgrounds, amusement parks and the transition into themed entertainment (Gunning, 1994, p.434). However, the focus of most academic research has been on the way early media, from the technology of fairgrounds or the exposition[12], was ultimately subsumed or perfected by cinema.

Research has explored contemporary dark rides and their unique intersection with other media but without clearly pointing out the historic lineage. Theorists have discussed contemporary dark rides, not as media practitioners but in other theoretical contexts. Espen Aarseth wrote about the cross-media spectacle of the Pirates of the Caribbean ride (Disney, 1973), and the other popular media that it has spawned (Aarseth, 2009, p.7). In his thesis

[12] Expositions, came to prominence in the mid 19th century in France where they exhibited inventions and achievements of national significance, they were the main influence for the first World Expo in England in 1851 (Mattie, 1998, p.12). Since that date they have featured all over the world but never with the notoriety of the World's Fairs/Expo that featured around the turn of the century.

titled *Archaeology of a Dark Ride*, Graeme Baker wrote about a suite of dark rides including *Transformers* (Universal, 2012) and *The Mummy Returns* (Universal, 2004) (Baker, 2013). Baker's research included some valuable historic references which I will discuss later.

Both Baker's and Aarseth's analyses compared dark ride works through intermediality to cinema and games. My research creates a timeline or link between the historical and the contemporary which is missing from these studies. The lack of thorough focus on the dark ride is understandable giving the complex nature of the experience. The small institutions that do archive ride formats are not scholarly, heritage or professional cultural heritage enterprises, and are not easily accessible[13]. As will be discussed further on in this study, dark rides were distributed to disparate parts of the world with little documentation, making academic knowledge hard to build.

Media Archaeology

There has been a groundswell of interest in other historic media over past two decades, and the evolving research field known as media archaeology has been a driving force in many of these discussions. Media archaeology is an evolving approach to historical analysis which inspires me in the way it connects historic practices to contemporary popular media. From a reassessment of software viruses (Parikka, 2007) to analysis of video game platforms (Nicoll, 2019) media archaeology has been typified by its push to illuminate dismissed or overlooked practices, often focusing on lost or dead media (Hertz, 2010). This approach applies critical scrutiny and exposure to a diverse range of media practices from the past. Jussi Parrika is one of the most prolific media archaeology academics, who looks at artworks which utilise historic media components to understand more about media

[13] The National Roller Coaster Museum in Plainview, Texas is the first museum to house historic rides. Due to their size they aren't rideable within the space. This gives an example of the difficulty studying and reflecting on ride culture.

experiences. Like Melanie Swalwell's work in media preservation, Parrika's studies often explore important media which have been overlooked or become obsolete (Parrika, 2013, p.149).

This study of the historical dark ride acknowledges the evolving discourse of media archaeology and cultural heritage, positioning itself as a resource for further investigation under those methodologies. Dark ride studies of any form are scarce, and this study acts as a preliminary overview of the historical period of the format to guide and inform practitioners of experiential media content and those seeking to build on this knowledge. The scope of this study is driven by the research required for my artefact, an assessment of current functioning historical dark rides and historic research to contextualise that knowledge. Contemporary iterations of the dark ride represent a popular aspect of media culture, and although academic discussion is scarce, the format has boomed. Missing from this contemporary dialogue is a distinct definition of the format and its historic origins.

The Disappearance of the Dark Ride

Media archaeology – and Parrika's views in particular – offers crucial reference points for this work but does not define this study. This preliminary study of the dark ride leaves the door open for further interrogation of the ride's interconnection with other popular media. There are authors I will discuss in more detail throughout this study such as Peter Otto and Oliver Grau who draw connections between historic media and virtual reality (Otto, 2011; Grau,1999). The efforts made by academics to connect new technology with the past helps me contextualise my study amidst broader technological and archaeological discussion. This initial study utilises secondary sources and primary resources to support the practice-led methodology. This study better defines the dark ride's relevance, so that media archaeologists can include it within their discourse.

The dark ride represents a current and unique combination of location-based media with a long history. Sadly, the detail of that history is under-examined and the contemporary format itself lacks documentation or clear definition. This under-investigation is an oversight not only in the history of related media formats, it also neglects the shared community memories they represent. It is a medium experienced by generations, sharing experiences common across thousands of towns and cities where dark rides existed. The structural and aesthetic influence of dark rides can be seen in the countless references to dark rides in pop culture and the growth of the Halloween and scare industry (Alton, 2016, para.7). Examples of the dark ride from the 20th century continue to be demolished, abandoned and built over (Cross & Walton, 2019, p.132) along with independent amusement parks. Whilst there are many reasons for the downturn in these types of experience, the need to situate the dark ride amongst other historic media is paramount and timely.

Discovering the Project

In the preliminary stages of the project, my practice-led investigation took on many forms in search of a way to explore and create a new contemporary dark ride. This early challenge for the project was significant because of the difference in scale between commercial ride manufacturing and my experiences as a singular creative practitioner. The nature of the work needed to evoke some of the experiential impact of a historical dark ride experience to address questions about the format.

This journey began in a disused cotton store in the town of Oxford, Alabama. A local photographer named David M. Smith had rescued a classic dark ride from an abandoned local amusement park. Unable to store the attraction, he collaborated with fellow enthusiast Jeremy Cruse to rebuild the aforementioned ride in a warehouse which Cruse owned. With the space only used once a year as a Halloween attraction, the shed had just enough room for

the addition of the 1964 ride. Over three years from 2015 I was granted privileged access to the ride to study, experience, document and eventually use it to develop my own creative work. Planning to work in a site like this was not straightforward, it raised questions about how I would review and notate what was being learned and explored. The unique level of access to any historic dark ride was invaluable, particularly such a rare example. I was afforded regular daily walk-throughs of the ride, independent exploration and freedom to move and experiment with components. My first field expedition generated extensive video documentation of the space, filming from both the rider's point of view and other third person perspectives.

During my first visit in the northern summer of 2015, the video captures I completed might have suited a documentary film or museum installation but didn't deliver new creative understandings of the experience. The recordings I made helped me to understand the space, capturing its textures and sounds. This gave me content to review but didn't help me understand the creative process from the ride designer's point of view.

The format of the final artefact took a lot of trial and error to establish an approach. Some of my first attempts featured small models of rides using miniature cameras to show point of view. I gathered toy trains, miniature misting machines, keyring projectors and spy cameras to build a contained experience I could study from many perspectives. I was searching for a way to simulate the ride experience in order to review it and share with an audience. Miniature models had advantages of space and the availability of model train equipment. I also explored how a completely digital ride may be able to be constructed in virtual reality. Both of these options for artefact creation placed far too many time constraints on building the infrastructure of a ride, whether through programming software or building elaborate models. Ultimately, the scope of this thesis was to explore the creative characteristics rather than the engineering of the ride mechanics. I continued to search for

appropriate spaces where I could create dark ride characteristics without building the infrastructure from scratch.

Virtual Reality in the Dark Ride

In the interim months between visits to Alabama, I explored one of the oldest operational dark rides at Melbourne's Luna Park amusement park. I was given access to explore, ride and utilise the park's famous and still functioning *Ghost Train* dark ride (Cassidey & Rempfer, 1934). In this early stage of the project, I observed how different illustrative content was arranged on walls, as well as how light, movement and sound was orchestrated. Inside the park's dark ride I looked carefully at how I could document the experience to study and potentially recreate it as an original artefact.

Recent advances in camera technology suggested that capturing the ride using 360-degree video might be effective. Together with the staff of the park, I used a series of ultra-low-light, wide angle cameras to capture the ride complete ride experience. This process of capturing with multiple cameras evolved technically as I began to understand the dark ride experience more and more. At first, cameras were set up to capture 180-degree wide footage from the rider's point of view. I reviewed this content to see how well it represented the experience, watching the footage back through a virtual reality headset to see if it replicated the feeling of riding the *Ghost Train*. As I reviewed the experience, replaying it over and over again, I noticed complexities that would need to be accounted for as I captured more of these spaces. First tests showed how visual components appeared far outside of the viewers' peripheral vision[14], requiring a turned head to view naturally. This fact led to more cameras being added to create a 360-degree capture station attached to the cart (Figure 7). Audio

[14] In initial tests it was found that rides design content outside of your peripheral vision, meaning objects of some importance are placed further than 170 degrees from the front facing rider. This forces users to turn and interact with the content.

equipment and a gyroscope/accelerometer were added to the setup. In addition to surround sound, the gyroscope and accelerometer helped to capture haptics; the bumps and jumps of the cart and details on where it was in space[15].

Figure 7. Joel Zika with the six camera virtual reality rig aboard the *Ghost Train*, Pleasure Beach by Joel Zika, Blackpool, United Kingdom, 2018

This practice-led approach to building a new experience and documenting existing ones offers new knowledge for practitioners wishing to study and build similar experiential works. As I will show through the study, the use of 360-degree video shows a unique way I have developed to examine the relationship between dark ride's construction and how they are experienced. The results of my direct engagement with this key example of an historical dark ride led to new practical understandings of the format but to the design of unique capture apparatus developed for this project. This evolution through practice can be seen in the specificity of the research, the quality of the final artefact and the visual material accompanying this study. Throughout the captures, I used between three and six cameras

15 Accelerometer data is collected through a smart phone app, it captures orientation data, therefore it can articulate if the cart is being bumped, turned or rocked relative to the horizon. This process allows for a richer archive than simple video capture and would allow for a full simulation of the experiences at a later date, including a replication of bumps and drops.

attached to ride carts to generate 360-degree video panoramas. *The Haunted Castle, The Ghost Train* and countless other rides around the world were captured, reviewed and studied in ways they had never been before. I was able to capture any creative works set inside a dark ride and could use the ride mechanism to create my own work as a 360-degree panorama. I quickly began preparing an extended field trip to use the technology and establishing plans to create my own dark ride experience.

Methodology

The methodology I used for this study was practice-led research, making an original artefact to generate new knowledge about the creative characteristics of the historic dark ride. I was confronted with the challenge of finding a project that could prove what the key aspects of a dark ride were and show how they could be applied within a new creative work. My work up to this point had existed mainly in the context of gallery and public art exhibition. During the course of the project I created many singular visual elements which exemplified some of the aspects of the dark ride format. After the first two years of experimentation I realised I would need to find a new way of presenting my practice to an audience. I sought out structures similar to the dark ride that I could use to showcase my work and used the dark ride characteristics to derive unique engagements for an audience.

The search for a format for my work eventually led to using an existing historical apparatus, a historical dark ride which I could use as the testing grounds for my practice. As a methodology, my practice-led research involved answering questions about the format by creating and experimenting with the apparatus itself: the historic dark ride. I was able to experiment with this media in situ, developing, refining and applying content through practice-led trial and error.

All of my creative work involves real world observation and digital asset creation. In this study it is the presentation of that content where the experimental practice led research has taken place. Collected imagery became sketches which in turn became graphic models residing on the computer, with the presentation method evolving as my understanding and experience with this format grew. The outcomes of this experimentation show the possibilities of the historic dark ride format in a way that can be tested and repeated by other creatives. I outline clearly the different unique characteristics which can be utilised when engaging a historic dark ride, regardless of the media being used. I show how this historic format has temporal, spatial, tactile and sonic qualities which behave uniquely but are comparable in their affect to other experiential media such as computer games or virtual reality cinema. The project shows how this large physical apparatus can manoeuvre an audience around and through content, achieving different outcomes applicable to developers in any aspect of experiential media. These processes of practice-led research helped form an understanding of how scale, time and audience relationship can be used and how they are most exemplified in the historic dark ride format.

The theme park and amusement park industry are a significant commercial sector, and this research does not attempt to offer new knowledge that would immediately pertain to the commercial production of rides. Instead, this research acts to elucidate the history of a particular format, to show its relevance and historical significance evidenced by utilising a historic artefact in a current day project. The search for the particular apparatus, the historical research needed to understand it and the practice led research as a result, all offer new insights into the history of the dark ride for producers. This research explains where histories of pre-cinema and early ride culture collided and connected at points which are not often examined and can offer fruitful territory for those seeking new ideas about media production today.

This study applied understandings of the way media practice can be researched using creative endeavour. In his book, *Practice-led Research, Research-led practice in the Creative Arts*, Graeme Sullivan discusses the ways in which images and objects carry important cultural data and how practice-led research can best reveal them:

> .. the artist-researcher explores the uniquely human process of making meaning through experiences that are felt, lived, reconstructed and reinterpreted. These may be personal or public and may result from experiences of art-making processes or outcomes of encounters with artworks. (Sullivan, 2009, p.50)

A number of qualitative methods helped me determine how best to approach and complete this practice-led research. Planning, designing and executing the development of a new ride raised creative questions throughout the study. I addressed these questions through field research of primary examples of existing historic dark rides and historical investigation of secondary sources of documentation about the history of dark rides and their influences.

I completed an extensive analysis of existing historical dark rides, visiting thirteen key sites to identify creative characteristics that should be considered when creating in this field. This review of primary sources offered clarification of the characteristics of the creative format. Secondly, I completed an overview of the history of the format through analysis of secondary sources. This approach gave context to the practice-led investigation and supported the observations cited in the existing dark rides.

Because of the fleeting, temporal nature of the format being studied, it was necessary to capture examples in a form that could be studied repeatedly. A temporal and experiential method was utilised in the form of virtual reality video. This allowed for rides to be captured, archived and re-watched in their original pace with the ability to view them as a rider or as omniscient observer.

This innovative solution for observing the primary source material (the rides), resulted in outcomes that could reveal greater, more detailed insight into the complex format.

A unique by-product of this method was the development of a rich archive of supporting documentation that can benefit other researchers. Thirteen historic ride experiences which were still in existence were ridden and captured using this method. Through this method of riding, capturing and reviewing rides, I was able to develop a taxonomy of features that characterise the dark ride experience for creators.

This sample size represented the totality of the remaining artefacts of the historic dark ride. Understanding these characteristics in order to apply them called for further historic analysis of the format's past, using secondary sources. This examination added to the pool of knowledge, establishing the importance of the characteristics found in field research. In the artefact, the characteristics were applied to create the most effective experience in a practical project.

Through my personal experience of rides and review of virtual reality recordings, I was able to discern patterns in the characteristics that informed best practice in this format. These patterns could be seen appearing throughout the history of the format. Virtual reality was a crucial tool in the documentation of these historic spaces. Its implementation allowed me and audiences the opportunity to witness this captivating media in a way that reflects the 360-degree nature of the experience. The videos I recorded can be viewed in a range of different ways in order to study and understand the visual, sonic and experiential qualities of the space. Firstly, the videos are archived and accessible as panoramic images which show a flattened version of the entire 360-degree view from the cart (Figure 8).

Figure 8. Example of different ways to view the panoramic video, on left a 'tiny world' representation with cart in centre, on right the full panorama, *Haunted Mansion*, Playland, Rehoboth, 2016, Joel Zika.

This panoramic image provides a rich and detailed moving image for the observation of different components and time-based occurrences where every part of the ride can be seen at all times. Viewing these panoramic videos through a virtual reality headset allows the viewer to look around the scene by turning their head. These combinations of capture and playback technology gave me great insight when reviewing ride experiences. I used VR playback to experience the affect on the viewer, then studied the wider panoramic image to see how the particular effects worked in a sequence.

This research method represents a pragmatic approach to study and establish the characteristics of a media format in doing so I establish its creative value. By combining field research and theoretical discussion as research for creative production, I engage practitioners and contemporary dark ride enthusiasts on the importance of the historic dark ride.

Overview of the thesis

The exegesis has three distinct chapters that examine the development of my creative artefact and the accompanying field research, explaining the new knowledge it represents. All parts of this exegesis support and explain the practice-led methodology that offers new knowledge for creative practitioners.

In chapter one I address the nature of the historic dark ride by defining the

characteristics that are common throughout its evolution. This research is imperative to creating a new work, as it defines the format being used in a way that has not been done before. These understandings are part of my creative investigation, outlining the potential characteristics I should include in a new artefact. In chapter one, I discuss each of the thirteen remaining historic dark rides. As context for the development of my creative artefact, this chapter explains the rationale for determining the characteristics of the historic dark ride. I outline six characteristics that are common across all historic dark rides, characteristics that I will refer to throughout the exegesis.

With so few examples of the historic dark ride remaining, it was important that I looked at as many examples of the format that still existed. The second chapter explores the history of dark ride creation, from the first uses of electricity in indoor attractions to the development of the track system to move audiences through space. This chapter guides the creation of my artefact through an examination of the materials, technologies and concepts that evolved into the historic dark ride. Through historical analysis I provide an overview of the different media that evolved in parallel to the dark ride; how different technologies such as projection were used in early examples of indoor attractions as well as cinema. This examination of past artefacts addresses questions I had about how to implement content using the creative characteristics outlined in chapter one. Looking at the story of the dark ride in history provides an understanding of the types of materials and audience interaction that the dark ride catered for throughout the 20th century. This chapter provides an overview of the different ways that the historic dark ride combined media technologies, the relevance of which are tested during the development of my artefact. Through a search for practical, creative ideas this section of the study provides guidance, not only for this project but for practitioners developing experiential media content today.

The exegesis is concluded with a third chapter dedicated to the creation of my

creative artefact. The creative characteristics of the historic dark ride outlined in chapter one were critical to producing this new piece of work. The chapter discusses each dark ride example, the different characteristics and how these offered me new knowledge for the creation of the artefact. This chapter gives a first-hand account of how I worked with an original dark ride track and developed creative content to be translated into an historic dark ride experience. All of my studio-based observations support how each historic dark ride element was discovered, applied, and harnessed in my creative work.

The artefact is the ride itself. In this study the artefact is presented through virtual reality video documentation as well as via additional by video and stills at the location of the work. As discussed earlier the virtual reality video manifests as a panoramic image of the artefact made from a series of cameras recording as the cart moves through the ride space. The technique allows for the viewer to witness the physical space from all angles as if sitting on the cart themselves. Other support material shows the cart moving through the space from a third-person perspective, while the panoramic or VR shows only a first-person view of my creative artefact. Chapter three will look at the creation of this artefact, interrogating how my research helped to answer specific questions needed to complete the final work.

A final section concludes and summarises the exegesis, reiterating the key points outlined throughout the chapters. The final paragraphs explain the creative characteristics of the historic dark ride and touch on some of the areas where this new understanding could be influential. The summary of the findings will address areas where my research can be expanded and where the historical dark ride is under threat.

The complex and involved creative research process will also be reviewed in this final section, with mention of the profound impact it has had on my own creative practice. The exegesis concludes with a call to arms for practitioners to utilise my research, building upon it to recognize the significant creative and historical value of this format and to

integrate this new knowledge into future observations of and engagements with local historic dark rides as a means to promote and sustain their dwindling existence.

Chapter 1 – Field research

Context

When creating a new artefact within a particular media format, it is important to understand the works that have defined it. This chapter will look at a set of experiences that define the range of creative practices at play in the medium of the historic dark ride. My examination of historically significant examples helps explain the universal characteristics that can be utilised when working with the format.

The term 'dark ride' is not popularly used outside of the attractions industry, however, rides that fit this definition are some of the most popular amongst audiences, particularly those with spooky theming. There are few detailed publications on the topic and its links to other media discourses are sparsely documented. Independent fairgrounds[16], world's fairs and amusement parks have largely disappeared from the entertainment landscape[17]. With these closures, many of the earliest examples of electric popular media have been lost, particularly indoor rides like the dark ride.

Tom Gunning's seminal article "The Cinema of Attractions" (1986) outlined the influences from other media at the turn of the century that contributed to the cinematic language we know today. Gunning cited the amusement park, fairground and world's fairs as influences on cinema and as the sites where film technologies were combined and experimented with. These investigations by Gunning were part of an emerging academic discourse known as early cinema studies and brought some interest in early 20th century fairground technologies, albeit by showing its links to cinema. This focus on cinema's

[16] For most of the 20th century a majority of amusement parks were independently owned. One well known franchise emerged in the 1960s as Six Flags which bought and developed parks under a singular name. Generally, theme parks developed as franchised endeavours and amusement parks catered to regional interests. Later in the 20th century companies such as Merlin Entertainment and Parques Reunidos bought a range of entertainments including amusement parks. This syndication of spaces has most likely affected the themes and content although it is beyond the scope of this research.

[17] In addition to the research cited in Jennifer Wismer's book on the decline of the amusement park, many popular fan- based websites have documented those amusement parks which have closed down, these include http://Lostamusementparks.com and http://www.defunctparks.com/.

influences from outside of the cinematic arts is important in framing this research and its potential to show other influences from early ride culture on popular entertainment.

Academics and enthusiasts have documented many ride attractions such as roller coasters and Ferris wheels. Authors like David Braithwaite and Paul Braithwaite have both documented the history of fairground entertainment machinery (Braithwaite, 1978; Braithwaite, 1993). These texts are very technically focused and don't outline the experience of the ride or the audience who used them, and they do not explain the creative characteristics evident in the historical form of the dark ride. The works of Angela Ndalianis and Brian Lonsway do discuss many of the characteristics of the dark ride and begin to contextualise them alongside other media (Ndalianis 2010; Lonsway, 2013).

A key resource for me was The National Fairground archive at the University of Sheffield in England, which houses a large amount of literature on early fairground machinery but also includes articles on its digital site. There is a large amount of information available on early cinema, including specific works on cinema's engagement at the fairground (Neill, 2006). Other resources can be found focusing on specific aspects of pre cinematic technologies and illusionistic techniques (Sheffield, 2011) but nothing on indoor electric rides like the historic dark ride. Few have articulated historic timelines for rides that are comparable to the existing analysis of cinema. The lack of discussion compared to cinema is understandable, as cinema evolved into a mass distributed format, its reach outnumbering any other popular format of the 20th century.

The Problem

For practitioners setting out to build new material within a format, an overview of its history is pivotal, and it shapes the work. For indoor amusement creators this resource does not exist. This chapter addresses the problem of referencing and examining the existing

examples of the historic dark ride. This component of the study was crucial, understanding the characteristics of a dark ride through history to understand the potential of the apparatus I was working with to create my artefact.

Before practice-led investigation could take place, I needed to understand and define the creative devices that delivered the visual, physiological and sonic outcomes used in a historic dark ride experience. For inspiration I looked at cinema research about the earliest period of its evolution and related pre-cinematic creative traditions. A creative cinema practitioner can find new ideas from the history of cinema easily through an abundance of resources. Gunning and Gaudreault's theories on the cinema of attractions didn't merely connect contemporary cinema with a more diverse past: they also revealed creative, aesthetic, and narrative elements of early cinema with traces in contemporary film that had gone unnoticed or under-explored[18]. In addition to the connections made between fairground technology and cinema by Tom Gunning (1986, p.3), theoretical investigations have explored synergies between contemporary and historic artefacts in new and emerging media. More recent writing from Peter Otto and Oliver Grau shows the commonality between early light-based media experiences like the 16th century magic lantern and virtual reality and games development today (Otto, 2011, p.21 Grau, 1999, p.367). My research into the historic dark ride is part of a wider field of academic examination which has continued to generate new understandings of contemporary media informed by its past. A great example of this is Lauren Rabinovitz's observations of *Hales Tours* and their role in extending the multimedia capacity of cinema (Rabinovitz, 2012, p.93). Rabinovitz's study looks at one of the unexplored connections between contemporary media arts production and ride experiences from the early 20th century. In his paper *What Can the Magic Lantern Teach us about About*

[18] One example of an observation found in early cinema research can be found in the work of theorist Linda Williams. In her book *Viewing Positions* she explains that the concept of the spectator in film was more prominent in early cinema (Williams,1997, p.12). As this idea and many other observations are discovered and discussed they inform new approaches to the contemporary form of cinema.

Today's 'Right -Click' Culture (Jolly, 2017), Martin Jolly examines the influence of the Magic Lantern on contemporary digital discourse. Jolly discusses the way that the early 18th century device for viewing, projecting and disseminating images had ramifications on the way we interact with images and artworks in the today's digital paradigm. The following chapters will show how the history of the dark ride in particular can offer new ideas for contemporary media production akin to what cinema has learnt from its early history.

The Theme Park

Theme parks are dedicated and enclosed entertainment spaces with a consistent overarching theme. Immensely popular in the second half of the 20th century, they are the product of complex interlinking texts and intellectual property manifested through entertainment experiences. Although theme parks aren't the focus of this exegesis, they house almost all the contemporary iterations of the dark ride format today.

Themed attractions came to prominence in the 1970s and by the 1990s they had become part of academic discourse (Lukas, 2016, p.43). Scott Lukas is a leading academic voice in the field of contemporary themed attractions and his work spans many topic areas within the industry. Lukas' understanding of themed and immersive spaces helps position it in contemporary academic discourse but also shows just how broad it is as a field of study. Lukas' book *A Reader in Themed and Immersive Environments* (Lukas et al, 2016) is an edited volume relating to themed and immersive media development. Lukas begins by carefully articulating the scope of theming and immersion in contemporary creative production:

> 'Theming and immersion have numerous complementary modes, through which they operate. Material cultural, including décor, and architectural forms are foundational role in creating narrative, fantasy, and otherworldly space.' (Lukas, 2016, p.6)

This ubiquity in the application of theming and immersive theory puts it outside the scope of this research but informs the constellation of studies Lukas has articulated.

Today, theme parks such as Disney and Universal Studios produce rides based on media franchises in their theme parks across the world (Clavé, 2006, p.3). Rebecca Williams has written extensively on the unique nature of the theme park as a media experience. In her most recent book *Theme Park Fandom: Spatial Transmedia, Materiality and Participatory Cultures* Williams explains how theme parks capture fan engagement and interlink different intellectual properties through the complex use of transmedia design (Williams, 2020). Today, most contemporary dark rides are custom built for theme parks, duplicated and reproduced. My research looks at early dark ride design to find ways to utilise this unique structure in the creation of new experiences, whether at theme parks or any other experiential location.

Existing texts do not currently provide information for practitioners seeking to understand the historic ride experiences of the early amusement park (whether coaster, Ferris wheel or historic dark ride). A lack of historic research into the dark ride and broader amusement park culture has ramifications for all location-based entertainment industries. Succinct documentation and reflection of the industry's history, and links to other media, prevents those creating new experiences from discovering ride history as a space for inspiration. There are a few pivotal texts that can't be ignored by those seeking to create new work in the location-based entertainment field for example, Lukas' *Reader in Themed and Immersive Environments* (Lukas et al, 2016) or *The Global Theme Park Industry* by Salvador Clave. Clave's important work contextualises the way rides are built today through and in depth look at the history of entertainment culture (Clavé, 2006).

This study informs further readings and creative possibilities for contemporary dark rides in theme parks by examining the ways it was employed in earlier iterations of the

amusement park. Before the emergence of the theme park, the amusement park was the popular format for location-based entertainment. Rising to prominence in the late 19th and early 20th century, the amusement park was a delineated space with a disparate collection of entertainments without a singular theme. In Scott Lukas' reader there is no discussion of the historic dark ride but there are discussions of the amusement park culture that surrounds this study (Lukas, 2016). Lukas and the other writers focus on theories of immersion as they relate to applications of theme. As mentioned earlier, I will focus on a formal interpretation of immersion in the historic dark ride, looking at the placement and application of media technologies rather than narrative immersion. This does not discount the theories that Lukas et al have applied to the contemporary ride as they are important concepts which pertain to all forms of dark ride, but my novel approach provides new insight into this historical format.

Defining the Dark Ride

In 1954, William Mangels, a well-known amusement park historian and ride designer, defined the dark ride experience:

> Greatly popular at some resorts are the attractions known as dark rides. In these, passenger carrying vehicles, which may be boats, cars, or small trains, pass through dark tunnels or closed-in passages at a very slow speed (Mangels 1954. p.141).

Mangels was heavily involved in the amusement industry, working on various parks in the famous Coney Island district throughout the early 20th century. His quote is well known, but it does little to define or position the dark ride experience clearly amongst other popular media. Even for those who lived and breathed the dark ride experience, it was very difficult to firmly articulate it. Brandon Kwaitek wrote one of the earliest and still the most thorough historical analysis of the dark ride in his thesis, *The Dark Ride* (1995). Kwaitek takes an historical approach to defining the origins of the dark ride, examining the technology and the iconography that led to its invention. Kwaitek's analysis is thorough but focuses on the

context and themes of the dark ride rather than its structure and technical composition. In Kwaitek's research there is a welcomed hands-on discussion of his personal experience aboard the rides. For creatives seeking to make content, researchers investigating related imagery or those exploring parallels with other media, the appetite for investigation of this historic format is clear.

During my research I located a total of thirteen historic dark rides built between 1930 to 1974 and still in operation. With so few artefacts remaining they would each be crucially important references for my own work. Over four years of this study I travelled to each of these remaining historic sites, rode the rides and documented them using 360-degree cameras. This method allowed for a review of the experience in the spatio-temporal context in which it was presented - an application of new technology that has only recently been made available[19]. I was able to review the experience long after my field research had been completed, observing the interplay of creative characteristics throughout each ride.
This selection of still operational rides features examples from subsequent decades after the first patent of the dark ride in 1929. More will be discussed about the evolution and invention of the dark ride in chapter two, including context about other media that influenced it. Individuals had produced indoor ride experiences using electric lighting throughout the early 20th century but it wasn't until 1929 that a patent was first released for such a distributable format. The Pretzel Company of Bridgeton New Jersey, run by Leon Cassidy, was the first to distribute rides built from his patent. The company paused production during the second world war, after which time Leon's son, William F. Cassidy took control of the business.

This field examination reveals the creative characteristics of the format that are

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19 In 2016, a number of software and hardware solutions had recently been launched that would make capturing the historic dark ride easier to do and easier to distribute. From a capture point of view, Sony had just released its A7r series of cameras which were notable for their outstanding low light capabilities https://www.dpreview.com/products/sony/slrs/sony_a7riv. Google cardboard (2014), allowed for users to easily access virtual reality footage cheaply and the Facebook platform released a VR component to their social media network.

evident across all iterations of the media, establishing a definition of the format that can guide the development of a new work in the historic dark ride format. The thirteen rides visited as part of the analysis of historic dark rides are detailed in the following table:

Table 1.

List of historic dark rides documented

Title	Year Opened	Park Name	Location	Ride Designer	Ride Type
Ghost Train	1930	Pleasure Beach Amusement Park	Blackpool, UK	Pretzel Co	Electric Cart
Ghost Train	1934	Luna Park	Melbourne, Aus	Pretzel Co	Electric Cart
Laffland	1954	Sylvan Beach Amusement Park	Sylvan Beach, NY, USA	Pretzel Co	Electric Cart
Spookarama	1955	Deno's Wonderwheel	Coney Island, NY, USA	Pretzel Co	Electric Cart
Haunted House	1961	Camden Park	Huntington, WV, USA	Pretzel Co	Gravity Propelled Coaster
Haunted House	1964	Trimper's Rides	Ocean City, MD, USA	Bill Tracy	Electric Cart
Haunted Castle	1964	Terrortorium (ex Miracle Strip)	Oxford, AL, USA	Bill Tracy	Electric Cart
Terroride	1967	Lagoon Amusement Park	Salt Lake City, UT, USA	Bill Tracy	Electric Cart
Devil's Den	1968	Conneaut Lake Park	Conneaut Lake, PA, USA	Pretzel Co	Gravity Propelled Coaster
Whacky Shack	1969	Waldameer Park	Eerie, PA, USA	Bill Tracy	Electric Cart
Haunted Mansion	1973	Knoebels Amusement Park	Elysburg, PA, USA	Independent	Electric Cart
Dracula's Castle	1974	Lagoon Amusement Park	Salt Lake City, UT, USA	Bill Tracy	Electric Cart
Haunted Mansion	1974	Funland	Rehoboth Beach, DE, USA	Independent	Suspended Electric Cart

Six Characteristics of the Dark Ride

After extensive onsite and digital re-examination, six key characteristics were defined that were evident in every artefact and were pivotal to the experience of each historic dark ride. Each characteristic is listed under a different heading over the following pages. As this study represents a collection of the common creative characteristics, particular rides are described which exemplify that characteristic. The study presents a broad time period and some characteristics are stronger in the older and others in newer ride experiences.

1. An Internal and External Journey

At the end of the boardwalk in Blackpool, England is the Pleasure Beach Amusement park. Built in 1896, the park features the oldest running electric dark ride on earth. Purchased from the Pretzel Amusement Company in 1930 (Toulmin, 2011, p.150), it would have made it one of the earliest purchases of the newly patented product. A similar aged dark ride exists in Melbourne, Australia, which was purchased in 1934 a short time after its UK counterpart (Montagnana-Wallace, 2012, p.51). The rides were both titled Ghost Train, which was not a common term in the USA; the name was taken from a popular theatre show of the day (Toulmin, 2011, p.150). Disregarding the specific theming of the rides, we see a concentrated approach to bridge the formal gap between indoor and outdoor space within the dark ride. As participants sit in their carts, the scenic images surround them and connect with the themes of the journey that are about to begin. The props, such as ghouls and ghosts, surround the rider and the doorway itself a mouth, ready to eat the riders whole. At Pleasure Beach's *Ghost Train* (Table 2, A)[20], Camden Park's and Trimper's *Haunted House* rides (Table 2, E; Table 2, F), Funland's *Haunted Mansion* (Table 2, M), the Terrortorium's *Haunted Castle* (Table 2, G) and the *Whacky Shack* (Table 2, J), the characteristics of indoor and outdoor engagements

[20] References to specific rides that are documented in 360 as part of my research are tabulated in table 2.

are bold. At multiple points in each ride, participants are flung into the bright outdoors. This jarring effect sees the riders paraded in front of waiting guests, a shared experience which heightens the expectation for impending riders. It is a unique feature of the historic amusement park dark ride, reconnecting riders with the broader park audience.
The characteristic of the interior and exterior journey is today strongly articulated in the ride *Harry Potter and The Forbidden Journey* (Universal 2014), where it is used in both the digital and architectural design. *Forbidden Journey* uses the division between indoor and outdoor space regularly to create drama and heighten the effectiveness of the darkened mediated zones.

2. 360-Degree Design

The role of the cart and track is crucial to this study of the historic dark ride. Other attractions feature similar aesthetic components and even design characteristics but are engaged by audiences walking through them. The role of tracks and the cart itself are as important to the historic dark ride as the screen is to cinema. I will discuss the popular walk-through haunted attractions later as an entertainment that has been influenced by the dark ride but falls outside the scope of this study.

The design of the track and shape of the cart are carefully curated to place items outside of the visible range of the rider. Designers of dark ride environments and the shape of the track do so to force the rider to look left, right, above and behind at all times (Table 2, H). As will be covered in later chapters, the Pretzel Amusement Company were pivotal in the creation and patenting of the historic dark ride. Between 1955 and 1956, they created three rides that are still in operation today, two in the state of New York and one in Pennsylvania. The bending track maneuvered the participants through small spaces efficiently creating a large array of vignettes and dioramas. The constantly changing visual scene is designed to be

viewed from every angle at all times. This effect of constant panoramic design benefited from other characteristics of controlled light such as the enclosed rooms and crash doors. Most of all, it was the unique designs of the track and the constant forward movement of the cart that kept the viewer feeling surrounded by imagery.

The *Spookarama* sits inside Deno's Wonderwheel amusement park in the Coney Island suburb of Brooklyn; the lengthy ride was built in 1955 (Luca, 2018, para.2) and has one particularly unique feature. Unlike most dark rides, there are no walls, instead, the carts move quickly through the space, swinging the viewer from position to position, prop to prop (Figure 9). Despite the ride's unique structure, which utilises the entire panoramic space at all times, 360-degree environments are evident in all dark rides in this study.

360 degree environments play a major role in contemporary dark rides, even those using an extensive amount of virtual and screen based presentation. In *Transformers the Ride* (Universal, 2012), physical props surround the audience at all times, even while screens create extra illusionistic perspective. Total immersion is created in the *Transformers* ride by integrating 360 degree set designs with digital content to make it convincing.

Figure 9. Inside the *Spookarama* ride at Deno's Wonderwheel Amusement Park, Coney Island, New York, U.S.A. 2016, Joel Zika.

3. Triggered Sound

Triggered sound plays a key role in all historic dark rides, especially in the Laffland, a historic ride at New York State's Sylvan Beach amusement park. The ride features great examples of rudimentary sound devices that required no electricity to function. The Laffland was built for the small upstate park at a similar time to the *Spookarama* in 1954. Utilising an old bathing shed as the structure to house the experience (Kirst, 2003, Para11), it features many darkened hallways with few props (Figure 10).

Figure 10. Inside the Laffland Ride at Sylvan Beach Amusement Park by Joel Zika New York, U.S.A. 2016.

At various moments in the Laffland ride, a thud and a crash are heard from the peripheries of the rider's vision. These sound effects happen without any visual cue (Table 2, C) and make efficient use of the long periods of darkness, evoke the possibilities of other fictional happenings that might be at play out of sight. Despite the rudimentary nature of this effect it is a programmed moment in experience, the approaching cart tips over a metal container full of scraps which then resets with a spring and is repeated each time.

The *Devil's Den* was another ride built by the Pretzel Company in 1968 at Conneaut Lake, Pennsylvania (Table 2, I). Similar to the *Haunted House* in Huntington, West Virginia (Table 2, E), the *Devil's Den* utilised gravity to power the ride experience. These dark rides are often classified as roller coasters because the carts fall naturally and aren't individually powered. The power of each cart falling and dropping through the ride experience allows for a number of these automatic sound effects to be triggered. Despite this unique design with no

power, these types of dark rides still exhibit all of the unifying characteristics of the format. Their rudimentary construction and propensity to feel out of control is heightened by the fact that they are not subject to the pacing of an electric motor.

4. Perspective and Illusion

In the late 1950s and 1960s, cultural interests and demographics had changed, a new wave of development and innovation had swept the amusement park (Kane, 2013, p.256). The most prolific creator of dark rides in the second half of the 20th century was Bill Tracy, an entrepreneur from Toledo. Tracy created 54 rides throughout the 1950s and 1960s and five of the thirteen in this study (Kwaitek, 1995, p.89). Waldameer Park in Erie and Trimper's Rides in Ocean City, Maryland, both feature dark rides with iconic facades from the period and some exemplary examples of historic dark ride characteristics. Crash doors were a design device which appeared in the earliest examples of dark rides but were exemplified in Tracy's creations. The effect creates what appears to be a solid wall which riders crash through like barn doors, creating a jarring spatial and physical effect (Figure 11). Dark rides, regardless of their physical footprint, seek to create the illusion or potential for greater space. In the earliest dark rides, like the Pretzel *Ghost Train*, this was achieved with painted perspective (Table 2, B), painting dioramas with perspective drawn from the rider's point of view. Illusionistic techniques like these which create visual depth use techniques that were also used and refined in the panoramas of the 19th century (Oetterman, 1995, p.23). In the 1960s Bill Tracy used Dayglo paint to create a far bolder, less detailed set of space-distorting effects on the viewer. Sequences of fake squares gave the impression of a long or bending corridor, which would quickly prove fake as the cart hurtled through the painted illusion (Table 2, J). In this instance, crash doors were a crucial element to create shocks whilst also separating riders from seeing each other inside the space. In the Wacky Shack at

Waldameer Park, doors are used not only to separate rooms but operate as a kind of floating illusion; geometric shapes which appear solid until the cart smashes into them (Figure 12). The combination of dark lighting and Dayglo images creates a psychedelic distortion of the physical space which is unique to dark ride experiences. In Tracy's rides we see a consistent and extensive experimentation with perspectival illusion, sometimes extending the visual space with mirrors.

Figure 11. Crash doors inside Trimper's *Haunted House* Ride at Ocean City, Maryland by Joel Zika, U.S.A. 2016.

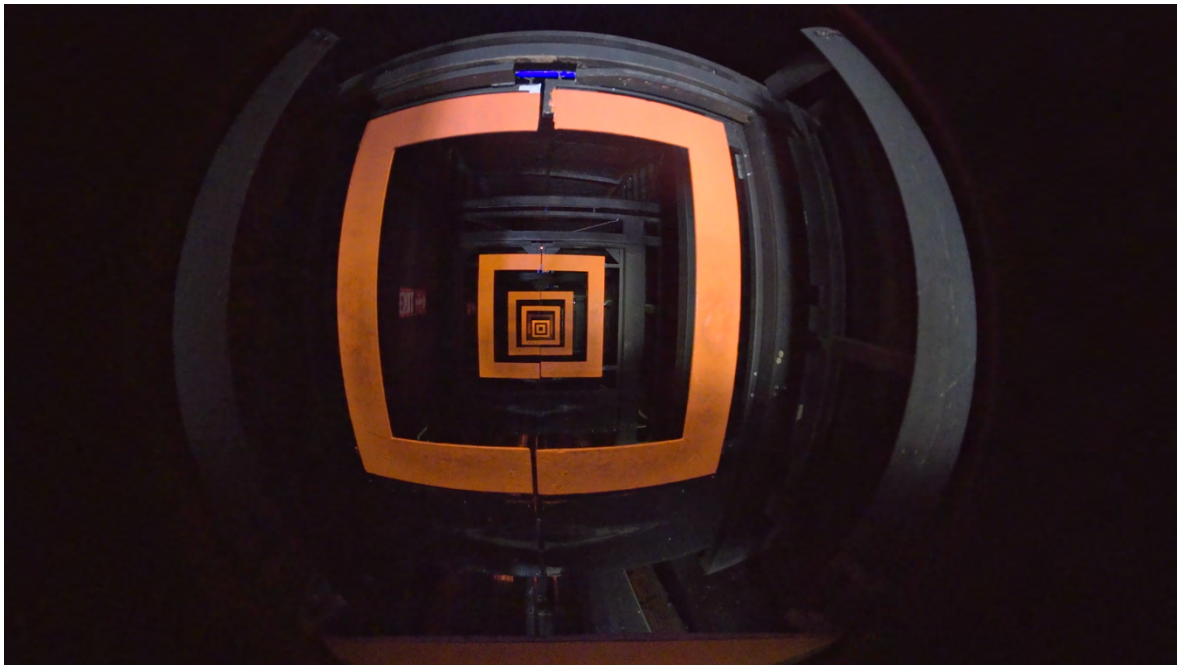

Figure 12. Suspended squares inside the *Whacky Shack* at Waldameer Amusement Park, Eerie, Pennsylvania by Joel Zika, U.S.A. 2017.

5. Mediated Lighting

As its name would suggest, the dark ride uses controlled lighting conditions to full advantage. Once the rider is contained within the cart, there is no need for the safety of light. Rides such as the *Haunted Castle* in Birmingham, AL utilise almost 30% pure darkness throughout the experience (Table 2, G). The structure of all rides is dependent on maintaining darkness, as it increases the impact of Dayglo features and heightens attention to sonic elements by creating moments of complete visual isolation.

Rides knowingly play with light through track designs that bring audiences back into the sunshine of the amusement park on balconies, before returning them into these sensation-starved environments. Crash doors are once again a crucial device to maintain darkness between each section. Darkness and light are still major devices in contemporary ride design. One of the most unique dark theme park rides, *Space Mountain* at Disneyland (Disney, 1977) utilises darkness as a core characteristic in this long running ride. *Space Mountain* is an indoor roller coaster, through what is a simple aesthetic trick, carts are surrounded by lights which resemble stars, while the tracks and other infrastructure becomes invisible.

6. Haptic Feedback

Where lighting is mediated to the point of complete darkness in the dark ride, orchestrated bumps, crashes, air blasts and objects brushing past have an amplified effect. These creative devices fall under the definition of haptic feedback, they connect the rider physical to the visual aesthetic by literally touching or moving them. In addition to simple collisions through crash doors, haptics give the impression of a rocky cave surface (Table 2, G) or cobwebs in a den of spiders (Table 2, I). The cart and track play a key role in the application of haptics in the historic dark ride. Historic dark rides can't change speed: effects were often created through rudimentary impedances to the cart which had the result of

slowing the experience down and adding a level of haptic feedback. Most haptic effects in the dark ride are either bumps built into the cart's path or items hanging down to brush passing riders. This consistently applied characteristic is often the most effective: a few pieces of string, a puff of air or a spray of water offer the most memorable effect with the simplest engineering.

One of the most startling uses of haptics in contemporary rides is in Disneyland's *Indiana Jones Adventure* (Disney, 1995). In this big budget ride – which makes extensive use of 360 built environments – a simple silhouette of spiders is projected on a wall while small strings fall from the roof to tickle the audience. Combined with audio and mediated lighting, this simple use of haptics creates one of the most memorable parts of the ride.

Review

In this chapter I have observed the way historic dark rides have utilised and experimented with many effects since first entering the amusement and fairground landscape in the early 20th century. Reviewing the thirteen remaining historic dark rides still functioning, I have outlined six consistent characteristics that appear in all of these experiences. These are not the only characteristics evident in the format but they are the common identifier, each enhancing the thrill, immersion and thematics evident in each particular attraction. The six characteristics of the historic dark ride design are:

- An Internal and External Journey
- 360-Degree Imagery
- Triggered Sound
- Perspective and Illusion
- Mediated Lighting
- Haptic Feedback

These characteristics offer me a framework for the development of a new work within the parameters of the historic dark ride. With patenting and distribution around the world, we have seen certain effects consistently in the delivery of the format over 90 years. Most of the techniques that the dark ride exemplified are well known to anyone who has ridden on a spooky ride. With artefacts disappearing rapidly, it is important to document and define the components used in this historic entertainment format. In this chapter, I have explained the key techniques that make up the historic dark ride; interior and exterior experiences, 360-degree imagery, sound, light, illusion and haptics. In the 60 years before digital media, these components were combined to create a consistent format for experiential media delivery. They also show me how little has changed from the earliest iterations of the format, from controlling light and vision, utilising hidden haptics and sound devices. Whether on large scale or small, these are still the building blocks for transporting audiences to curated realities. In the contemporary context, these few examples show us the ways that elements of this history can be applied and extended and how new technology still uses many of these same approaches. Through observation of these six components of a dark ride, we can add another element to the genealogy of location-based media that is more than a nostalgic cliché.

Video Table

The video archive that accompanies this chapter holds greater resources for future study of the form. It also represents an effective archival technique for other experience-based media.

Table 2.

List of 360-degree video documentation including links.

Ride name	Length	Park Name	360 Video Link	Ref	Year
Ghost Train	2:10	Pleasure Beach Amusement Park	https://youtu.be/8-t_oQYltrI	A	2018
Ghost Train	1:33	Luna Park	https://youtu.be/fIX8pzVOGlw	B	2016
Laffland	3:14	Sylvan Beach Amusement Park	https://youtu.be/3q7UUTSKvto	C	2016
Spookarama	4:09	Deno's Wonderwheel	https://youtu.be/Dl1jGAx_FI4	D	2016
Haunted House	1:03	Camden Park	https://youtu.be/L7kTTBIGmg4	E	2016
Haunted House	5:17	Trimper's Rides	https://youtu.be/ij3wFj8Om5M	F	2016
Haunted Castle	2:19	Terrortorium (ex Miracle Strip)	https://youtu.be/Xq76s3bV7ok	G	2016
Terroride	1:16	Lagoon Amusement Park	https://youtu.be/3MvJ2ftP5VA	H	2017
Devil's Den	1:09	Conneaut Lake Park	https://youtu.be/GOCpXpmpDE0	I	2017
Whacky Shack	2:21	Waldameer Park	https://youtu.be/BvFLK4OhWEE	J	2017
Haunted Mansion	3:31	Knoebels Amusement Park	https://youtu.be/NUiNhRLEsqw	K	2017
Dracula's Castle	2:36	Lagoon Amusement Park	https://youtu.be/4vXurGz4vgY	L	2017
Haunted Mansion	4:20	Funland	https://youtu.be/XJohY-3qFE0	M	2016

In addition to informing the development of the artefact it is my hope that the existence of this field work will help others to locate these rides and experience them in person. I gained a deeper understanding of the unique nature of these rides with each virtual capture and ride. In chapter three I discuss in depth the rare opportunity I was given to work directly within this format and create a new work where this field research became paramount.

Conclusion

The success of this project benefited not only from research into the characteristics I have outlined, but also from submerging myself in the spaces so intimately. The six characteristics I have defined are the building blocks for any work built within the historic dark ride, but their specific implementation can vary greatly. When it came to the production of my creative artefact, knowing that I would need to complete a new work within the space made me focus on structures beyond the decorative and iconic. From my experience working in dark rides such as the *Haunted Castle,* I understood the level of visual detail visible to riders, this would determine the kinds of visuals I needed to create. The intensity of light that could be used and how they could be separated between each room would also be formative in my creative process. Additionally, I was able to study the sounds the ride makes, walking through the ride and riding on the cart while prerecorded sound effects were turned off. Hearing only the creaks of the cart and the pneumatic triggers of the props would in cinematic terms be referred to as the 'diegetic' sounds of the experience. Walking and exploring the ride from the edges of the track as well as on the cart I was also able to listen and record audio from different vantage points normally off limits to the public.

Chapter 2: The history of the dark ride

Context

Dark rides existed throughout the 20th century and are still produced today for entertainment spaces around the world. They are part of a centuries old tradition of popular media experiences which used panoramic images and illusion. This combination of characteristics can be seen in trompe l'oeil paintings of the 16th century, magic lantern theatres of the 18th century and large entertainment devices like cycloramas of the 18th and 19th century[21]. The definition of the historic dark ride I outlined in chapter one, sees the format spanning across a number of epochs of media history. Dark rides have existed since the earliest days of electricity in entertainment and evolved in parallel to cinema and the rise of television with lesser levels of notoriety.

In search of examples to guide my practice-led methodology, this chapter will examine creative examples from the format's past, answering questions and informing the work I have set out to make. With the characteristics of the format well defined, I will outline specific approaches used in rides discussed previously and the links to entertainment technologies that preceded and influenced them. With the context of my creative artefact in mind, this analysis focuses on the look and feel of rides created in the 20th century before the development of digital media. Discussion will explore questions about how best to construct content for a historic dark ride experience and offer context on how my understandings evolved and were applied.

Throughout its evolution, the contemporary and historic dark ride has featured transmedial links with many other media formats. Rides have featured as plot devices within cinematic texts, dark rides have influenced scripts for cinema and computer games have

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[21] A cyclorama is a 360-degree image which is designed to be viewed from the inside. They were a popular entertainment medium of the 17th and 18th century (Oettermann, 1997).

utilised dark ride characteristics in gameplay and themes[22]. This research seeks to add a more informed and experience-driven depth to the understanding of the dark ride, by examining its history in detail. Establishing the timeline of the historic dark ride directly informs my practice and lays the foundation for further analysis of its contemporary influence on media. Through examination of historic dark ride examples, this chapter offers insight for practitioners and media historians across the gamut of creative media.

The story of the historic dark ride influenced the production of my creative artefact and has also informed the nature of my field research into the medium. It is only through the experiencing and building of new rides that I have been able to truly understand their characteristics. Experiencing more rides has led to new understandings of their characteristics, how to document them and how to contextualise them in the history of experiential media.

As will be discussed further on in this study, the role of the dark ride in contemporary entertainment is one of highs and lows. It was first used as an efficient and automated way to revive dilapidated parts of amusement parks. Later in the 20th century the dark ride would come to symbolize a lost, mysterious or even foreboding part of entertainment history. Beyond experiencing its immediate qualities of thrill, the lost and discarded nature of the dark ride in archival documentation informs this project and the way the ride is remembered.

The historic overview explains the constellation of media that exists in the oldest examples of dark rides and explains some of the look and feel of contemporary iterations. This historical exploration does not explain every one of the dark ride's links to other media, but functions as the first step in my creative process to construct my own dark ride

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22 There are many examples of the dark rides featuring in movies, one memorable example is in *The Machinist* (Anderson, 2005) where it is used as a literal and metaphorical plot device. The narrative of Disney's *Pirates of the Caribbean*, the theme park dark ride (1967) was translated into a string of fice major motion pictures of the same name (Verbinski et al, 2003). A recent multi-platform computer game called *Until Dawn: Rush of Blood* (Sony, 2016) exists entirely within a fairground indoor dark ride. Although the imagery does not relate to a noticeable ride experience, it is a thorough attempt at utilising the dark ride format in a transmedial context.

experience. Just as it did for me, it is intended to offer the reader context and guide further investigation.

As a creative media practitioner, a large amount of work I produce is presented through screens, whether on solid monitors or light projection onto surfaces. In the contemporary paradigm, the construction of many media effects are made possible through this approach. Building effects such as tactility, haptics and other physiological components are difficult to fabricate digitally in comparison to the way they occur naturally in a physical ride. The historical dark ride blended visual practices built up over centuries such as illusionistic painting and lighting design and paired them with automated technologies to create a new experience format.

The following sections will explore the context that led to the creation of the historic dark ride. I will discuss technical, conceptual and cultural factors that had an impact on the development of the dark ride format and influenced my approach to creating the artefact.

The Magic Lantern

Light-based projection is ubiquitous in today's location-based media, whether through bespoke installations, live events or contemporary ride designs[23]. Illuminated surfaces and projection are used to transform spaces and create illusions on surfaces in public and private entertainment zones. Projection and illumination have always been part of the dark ride experience and part of a long tradition of entertainment featuring projection on screens that predates cinema. Illuminated indoor attractions had been incredibly popular throughout the 17th and 18th centuries, seen most notably through the invention of the magic lantern and resulting phantasmagoria[24]. Both of these attraction types used the projection of

[23] Projection design plays a major role in the majority of contemporary dark rides, most notably are the award-winning experiences at Universal studios of *Harry Potter and The Forbidden Journey* (2014) and *Transformers the Ride* (2012). Both of which are discussed throughout this research.

[24] The magic lantern was a technology developed in the late 16th century for focusing light through a transparent plate onto another

slide content onto screens and walls to create illusions of depth for seated audiences (Huhtamo, 2006, p.5). The advent of electricity enhanced the types of conditions with which light could be employed, affording remote and safe illumination of indoor media experiences. For the first time fuels and flames weren't required to create light: attractions could be created where lights turned on and off remotely. The phantasmagoria was a dynamic and exciting media format, in which the audience wasn't moved physically but images were scaled and moved around them to great vertiginous effect (Barber, 1989, p3). The first example of a dark ride cited by academics occurred in 1901 (Solomon, 2011, p.16). It offered a very unique blend of early projection technologies like the magic lantern, in conjunction with a unique ride-based engagement. *A Trip to the Moon* was built by Frederic Thompson and Skip Dundee for the Buffalo Pan American Exposition of 1901. The ride gave the illusion of moving through space from a static vessel, which was suspended inside a large building at the exposition.

Electricity was one of the most innovative aspects of the Buffalo exposition and played a distinct role in achieving various illusions in *A Trip to the Moon*. Fairs like the Pan America exposition existed to showcase the most cutting-edge examples of American technology and the Buffalo envent followed in that tradition. Electricity powered huge spires of light and a promenade of streetlights which illuminated every inch of the fair (Grant, 2001, p.18). This type of ubiquitous technology had only just begun to appear in entertainment zones and expositions and was not commonplace in American communities of the era. The scale of expositions and world's fairs across the United States brought huge infrastructure development and attracted people from rural communities into the major centres (Harvey, 2014. 53.20).

surface. This important invention can be seen as one of the earliest examples of projection media. The Phantasmagoria of the 18th century was a type of theatre play that used magic lanterns to project on to floating scrims and other surfaces, giving the impression of apparitions within the performance space (Barber, 1989).

The Panorama

Thompson and Dundee's ride was the first to feature electric light indoors and in a sequential fashion. Electricity allowed the pair to build upon on one of the most popular entertainment formats of the 19th-century, the panorama. From the 18th to the late 19th century, panoramic installations were a popular form of mass entertainment, which is best articulated in the book *The Panorama: History of a Mass Medium*, by Stephan Oettermann (1997). Panoramic entertainments featured enormous wrap-around images, installed into spaces as a way of placing the viewer into that environment (Zika, 2017). The works would attract paying visitors and were a unique extension of other amusements and cultural spectacles (Oetterman, 1997, p.53). Oettermann, explains that the format's importance was not simply pre-cinematic, but integral in the evolution of modern entertainment:

> The television of today is a direct descendant of the Panorama... an injection of vicarious adventure and excitement… while keeping the body immobilized. (1997, p.44).

The Cyclorama was a type of panorama in which image content surrounded the viewer and often contained props. Cycloramic entertainments were a static form of image presentation, typical of the preindustrial, pre-electric era. Immersive entertainments like the panorama and cyclorama took their cues from illusionistic forms of art from past centuries, particularly the visual marvels of 17th-century trompe l'oeil paintings, which were created for churches and palaces to create a false sense of depth for those looking up at the ceilings from beneath them (Lukas 2013, p.328). Unlike media which proceeded it, trompe l'oeil paintings weren't mass media and were seen predominantly by the upper classes of the day.

Historical images depicted in popular 19th century panoramas were often many storeys high, situating viewers in the centre of the room and used forced perspective illusions

to create depth (Zika, 2017). *The Battle of Gettysburg*, by Paul Philippoteaux (1863) is one of the best-known examples of a cyclorama, it reaches over a hundred metres length. The painting mixes the drama of historic landscape painting with the visual spectacle of the cycloramic format. Phillippoteaux's work was housed at a specially built facility in Boston from 1883 (Brenneman and Boardman, 2015). Oettermann noted that the audience engagement with the work was akin to relaxing in front of the television (1997, p.44). At the beginning of 1907, Luna Park at Coney Island launched a number of new attractions including one which featured a gigantic panorama of a sea wreck (New York Times, 1907, p.1). At the time, installations like this were as important as the roller coasters and Ferris wheels that most associate with the traditional amusement park.

A Trip to the Moon

Frederick Thompson's *A Trip to the Moon* ride utilised components of the panorama alongside other technology to create a novel new form of attraction. *A Trip to the Moon* positioned the audience –not as passive onlookers– but as engaged participants in a journey (Zika, 2017). Positioning the viewer within the narrative wasn't a new idea, in many ways it had been a part of illusion in the arts for centuries. Norman Klein addresses the long legacy of scripted spaces in his book *The Vatican To Vegas: A history of Special Effects* (Klein, 2004). Klein discusses the way that in 17th century baroque chapels, architects and artisans would 'steer a course' through complex and politically powerful narratives of the day (Klein, 2004, p.40). Klein's influential examination of scripted spaces throughout history reveals countless similarities between the electric media revolution of the early 20th century and the baroque 17th century. From large scale illusionistic paintings, optical technologies and dome environments, elements which form the basis of experiential media today and have existed for centuries (Klein, 2004, P.395). In ride designs like *A Trip to the Moon*, we see these

effects remediated to take advantage of electricity and projected light as they became available for the first time.

Rather than focus on a scene from history, *A Trip to the Moon* depicted a famous tale, a narrative text. Thompson's ride was influenced by two great works of science fiction literature from that era; Jules Verne's *From the Earth to the Moon* (1865) and HG Well's *The First Men in the Moon* (1901). *A Tip to the Moon* the ride was far more than a panorama or cyclorama. The audience experience begins before any mechanical or special effects have been set in motion, with the audience entering the large building, climbing a set of stairs and being forced to walk across a ramp onto a large suspended boat-like structure (Leary and Sholes, 1998, p.86).

The design of the ride can be seen illustrated in patent sketches which were lodged in 1903 by Thompson. The drawings depict a large boat with wings where oars might otherwise be, it is suspended inside a room, attached to a landing via two bridges, whilst otherwise appearing to float in mid-air (Figure 13). Outside the vessel were painted panoramic images, a moving cyclorama which operated in a like a gigantic scroll (Thompson, 1903). The scrolling images cycled in front of the audience whilst the vessel heaved and shook, creating the illusion that the boat was flying above the earth and approaching the moon (Leary and Sholes, 1998, p.86).

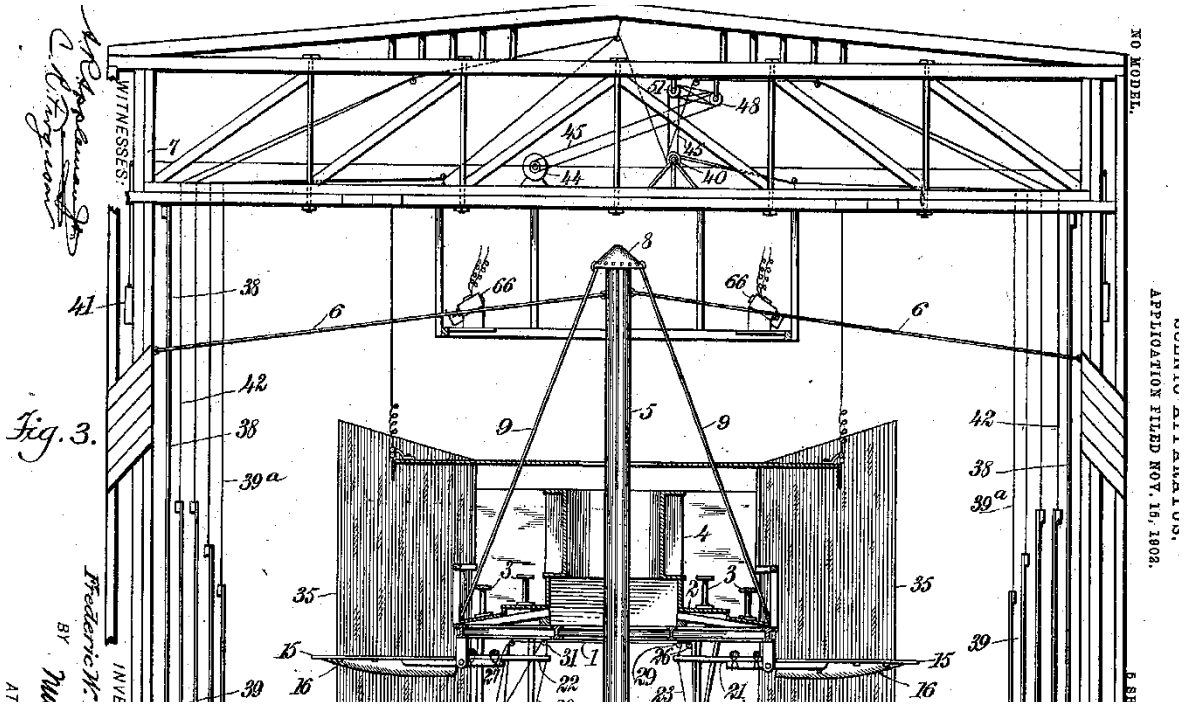

Figure 13. Patent drawings for F. W Thompson's Scenic Apparatus showing projection design devices below the ship, from USA patent office, 1903

Albert Bigelow Paine was a well-known author and biographer from the late 19th century, he journaled his experiences riding *A Trip to the Moon*, 'Suddenly there was a darkening, followed by complete blackness. Lightning flashed across the sky' (qtd in. Rabinowitz, 2012, p.9). What Paine wrote points out a key difference between Thompson's ride and other thrill rides of the day. Comparing *A Trip to the Moon* ride to rides like the Ferris wheel or the many other spinning, twisting and undulating rides at amusement parks, none focused so specifically on conjuring up such specific atmospheric illusions. The example of the lightning storm showed how technology was used to evoke subtle atmospheres in a specific linear sequence. Vignettes were unveiled in stages thanks to devices called stereopticons which were mounted to the bottom of the boat, devices that were part of the magic lantern tradition (Thompson, 1903). These devices allowed for illuminations to be triggered and project onto parts of the rolling panoramic murals at different times. Unlike the stereoscope, which was a 3D photographic viewing device, the

stereopticon was a fancy name for a slide projector. The main role and point of difference for the stereopticon was its capacity to fade between two illuminated images seamlessly (Robinson, 1996, p.7). Thompson's used this technology in *A Trip to the Moon* to give the impression of moving clouds which glided past on the surface of the printed cyclorama. A series of these stereopticons were placed above the boat and a number below, both out of sight of the audience (Thompson, 1903). This technique of using multiple sources to create a seamless visual image around the viewer is an early example of a 360-degree projected panoramic environment.

As a Trip to the Moon continues, it becomes apparent to the audience, through the moving panorama, that they are now floating above the city of Buffalo, looking down at the city from above. The giant oars of the boat continue to undulate up and down as the panoramic images of the town below start to change into more distant lights (Barry, 1901, p40). The installation features multiple layers of clouds whcich are scrolled vertically in synchronicity with the movement of the ship. Each of the visual layers are painted on semi translucent material and progress at different paces, creating the illusion of true perspectival movement (Thompson, 1903). Woody Register's *The Kid of Coney Island* (Register, 2001) and Matthew Solomon's *A Trip to the Fair* (Solomon, 2011) both quote an article by Julian Hawthorne titled, "Some Novelties at the Buffalo Fair". Hawthorne talks more specifically about the truly believable illusion of flight which is created throughout the ride:

> We find ourselves passing through a thunder-cloud, and the lightning flashes round us, and the thunder rolls, the wind howls, and the ship sways in it. But our speed is immense, and anon we have risen above the clouds, and now before us, beneath us, is revealed another planet—actually the moon herself!' (Hawthorne, 1901, p.483).

Thompson's *A Trip to the Moon* was a culmination of a life spent around immersive entertainment media. At 17 he worked as a janitor at the Columbian World's Exposition of

1893, and he went on to win a design competition for a pavilion at the Nashville fair of 1896 (Register, 2001, p18).

Many things about Thompson's approach to this piece appeal to - and influence - my understanding of the creative media process. *A Trip to the Moon*'s use of practical mechanics blended with light projection is a combination which this creative artefact has presented. As I will need to use efficient technologies in conjunction with the unwieldly mechanics of a historic dark ride, *A Trip to the Moon* offers the earliest reference for a work of this type. Thompson used projection of light to create believable dynamic illusions by syncing his visual ideas with experiential mechanical effects.

Physiological effects were appropriated from rides and other attractions and used indoors to create a more narrative experiential journey. The devices used in the production of *A Trip to the Moon* are used in other amusement park attractions of the late 19th century. For example, techniques like the mechanical shaking and undulating of the boat were first used in the switchback and scenic railroad[25] made popular in UK attraction designers (Kane, 2016, p.24). Programming and choreographing of light could be seen in the tunnel of love rides or swan rides which were popular across the USA at locations such as Sea Lion Park in Coney Island (Stanton, 1998, p.6). In most of those examples, audiences relied on gravity or rudimentary pully systems to propel them along a water-based track (Stanton, 1998, p.6). One of many things which was novel about *A Trip to the Moon* was its ability combine these technologies and them synchronously. Thanks to electricity, the craft could be maneuvered around without the need for loud motors, winds could be triggered, and complex lighting controlled without petrol motors.

Angela Ndalianis describes aspects of *A Trip to the Moon* as an early example of a

[25] A scenic railroad ride is a variation of the roller coaster it normally travels around the extremities of the park, giving audiences a scenic and sometimes thrilling view of the surrounding areas. A switchback railway was one of the first types of roller coaster where audiences walked to a great height before boarding a cart that descended down an undulating track.

historic dark ride in her article, "Dark Rides, Hybrid Machines and the Horror Experience" (2010). Ndalianis' research covers the topics from computer games, pop culture to robotics and is one of the few researchers to have promoted the importance of the dark ride in media history. Ndalianis articulates that the dark ride's influence is evident in many popular entertainments such as Universal's *Revenge of the Mummy* ride (Universal, 2004) (Ndalianis, 2010, p.57). Although not defined as such at the time, in *A Trip to the Moon* I see all the defining features that would come to signify and define a historic dark ride. My research offers a definitive history of the dark ride and its creative characteristics, helping to identify historic examples of hybrid entertainment like *A Trip to the Moon* as part of lineage to be preserved and studied.

Une Voyage Dans la Lune

From everything understood of Thompson's ride, it shows incredible and ground-breaking use of each of the characteristics of the historic dark ride. Particularly its illusionistic scenery combined with electric projection and haptics through the coordinated movement of the vessel. This ride was ahead of its time, the first example of the dark ride format and an attraction which has been regularly revisited as an influence on cinema's evolution. The hybrid use of entertainment technology that Thompson used would later be adopted by cinema, a fact supported by the premiere only nine months later of George Méliès' famous film, *Un Voyage Dans la Lune*[26] (1902). Although I cannot prove a direct influence of Thompson's ride on Méliès' film, the texts were part of the same popular zeitgeist. Matthew Solomon's 2011 essay gives strong insight into the commonalities between Méliès and Thompson's works. Solomon cites Thompson's ride as being of

[26] Méliès' film would become an iconic part of the early period of cinematic exploration, based largely on Jules Verne's *From the Earth to the Moon* (1865) the image of the rocket lodged in the moon would be used as a reference to cinema studies and cinefiles the world over.

comparable importance to Méliès' work in the way it used spatial entertainment design (Zika, 2017. In the following quote Solomon talks directly to the comparisons between these iconic works:

> Apart from serving as a possible inspiration, whether direct or indirect, it is worth pointing out that the film, like the ride, involves a journey to the moon in which passengers begin as passive spectators of a two-dimensional display, but then become more active parts of a three-dimensional experience. (2011, p,149).

Over the past century Méliès' film has garnered far more notoriety in media and cinema studies than its ride counterpart. Méliès' work has featured in countless books, essays as well as many re-imaginings and homages to the film throughout culture since the 1980s. References to Méliès'film in popular culture have including Martin Scorsese's film, *Hugo* (2011), and the HBO series, *From the Earth to The Moon* (1998). These examples of the films legacy came after Gunning's re-evaluation of the work in the 1980s, where the importance of Méliès' film and other works from the period was asserted (Gunning, 1986). Gunning's many publications have instigated a new appreciation and perception of early cinema. In his paper, "Shooting into Outer Space: Reframing Modern Vision" (1997), Gunning speaks specifically to Méliès' *Un Voyage Dans la Lune*:

> A Trip to the Moon reflects the intermedial palimpsest that typified early cinema (and I would argue cinema for most of its history) and all these sources contributed to the film's use of space. One could claim that Méliès's film explores the new composite space of cinema as imaginatively as its astronomers did outer space. (Gunning, 1997, p.100)

In this quote Gunning refers not only to the history of early cinema, but specifically to its influence on film's use of space to tell a story. In his essay "A Trip to the Moon: A Composite Film" (2002) Thierry Lefebvre adds to this conversation. Lefebvre attempts to qualify if Méliès might have been influenced by Thompson's ride before creating his cinematic version of the tale. He also further articulates some of the commonalities between

Thompson and Méliès' works:

> Several similarities are found between Méliès's film and the Buffalo attraction. In each case, the story unfolds in three distinct parts: the preparations for the journey, the journey itself, and the moon landing are believable enough; the encounter with the Selenites is pure fantasy; and the return to earth mystification pure and simple. (p.52)

The discussion about the influence of Thompson's ride is not conclusive but the possibility inspires the direction of my study. Any complete resolution of *A Trip to the Moon's* influence on cinema is outside the scope of my study but I hope that my research will lead to greater scrutiny of ride cultures overall influence on early cinema. In my creative practice Thompson's work is highly influential and the success of Méliès' work reinforces the notion that early attitudes to space in attraction and cinematic media have ongoing value for practitioners.

Legacy

A Trip to the Moon is an amazing example of literary text which has been redeveloped into an experiential media work. The experience of *A Trip to the Moon* has no precedent in cinema, it established a way of interpreting the text that was unique to the ride format. The ride format had evolved into a hybrid visual medium, one which combined ride technology and mediated visual spectacle in a definitive temporal experience. *A Trip to the Moon* offered Thompson a budget that would surpass most other examples of historic dark rides (Register, 2001, p.67). Regardless of its cost, what was achieved made it a standout work at the beginning of the 20th century. Similar examples of indoor experiences using carefully considered light on such a large scale would take many decades to emerge. In making choices in the development of my own artefact, *A Trip to the Moon* offers great insights into building experiences with the projection and audio technologies I have available

today. As a bespoke design with a relatively large budget, *A Trip to the Moon* shows me how simple technologies can augment large spaces to create complex experiences. In this ride we can see most of the characteristics of the dark ride being applied and experimented with. Particularly evident are early examples of 360-degree image making, perspectival illusion, electric lighting, haptics and sound.

In terms of its legacy, it is perhaps because of *A Trip to the Moon's* precipitation into other media forms that Thompson's ride does not live on in the popular consciousness like Melies' film. *A Trip to the Moon* was definitely a new type of media experience which offered an accessible way of experiencing a narrative text. Viewed today, the original patent drawings offer a relevant resource for anyone designing a modern theme park, computer game level or other interactive digital content (Figure 14). The patent details the technology used and how the devices work together (Thompson, 1903). Thompson melded established and proven experiential techniques together with electricity, to create a new type of ride. Whilst *Trip to the Moon's* history may have been co-opted into the narrative of early cinema, its value to the broader media sphere seems clear.

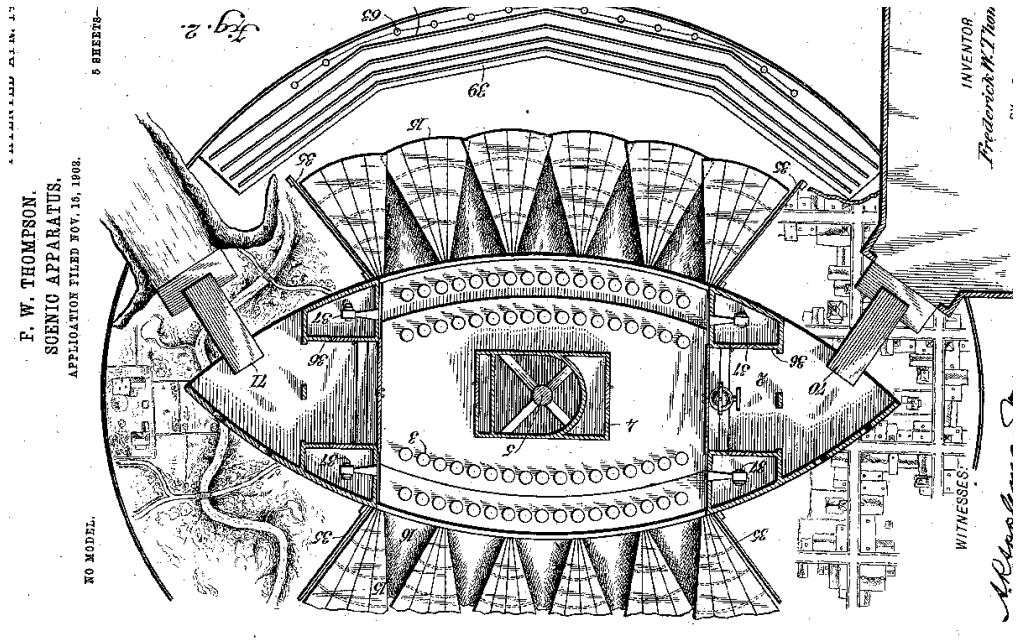

Figure 14. Patent drawings for F. W Thompson's Scenic Apparatus Showing the vessel with its on and off ramps. USA patent office, 1903.

For its use of technology Thompson's work was ahead of its time, and even through anecdotal reflections and patent drawings it has influenced my approach to designing experiential spaces. In *A Trip to the Moon* we see the first example of ride technology taken indoors to become a dark ride. A wide range of new electric amusement technology was combined for the first time including motors and light to move the audience and create dynamic projections. Access to technology today makes recreating Thompson's effects far more attainable; from the availability of digital projection, sound and haptic devices. Projection of light is a key tool in my practice and was used pragmatically to deliver large scale imagery within the dark ride space of my creative artefact. The research I undertook into *A Trip to the Moon* influenced my approach to the design of projected illusions and their integration into a moving and experiential space.

In the following section I will show the evolution of the indoor amusements that came after *A Trip to the Moon* which have been less studied. Although *A Trip to the Moo*n would inspire the development of a format, it would sadly be one of only a few to receive any broad media and academic attention.

The Dark Ride at the Amusement Park

However popular *A Trip to the Moon* was, the shared experience of the historic dark ride we know today would be popularised at the amusement park and not the exposition. It would be experienced not through one singular ride, but through multiple distributed experiences at amusement parks around the USA and the world. Given that my creative artefact would eventually be constructed using one of these historic rides, it was important to see how that type of dark ride evolved from *A Trip to the Moon*. The influence of Thompson's novel mechanical techniques could be seen in some attractions throughout the 20th century but its scale would not become the norm until the rise of the theme park

entertainments in the 1950s[27]. Historic dark rides each have unique features but they utilise common mechanics and props and were distributed around the globe (Kwaitek, 1995, p80).

Evolving from world's fairs and expositions of the era, the phenomenon of the amusement park began to emerge in the late 19th century. Amusement parks brought the grandeur of world's fairs to towns which had previously only experienced small fairs. What the amusement park offered even beyond even the world's fair model was permanency, the exposition was temporary and the fairground experience transient. Rides that debuted at world's fairs would often be moved to commercial amusement parks where they could enjoy longer periods of success (Zika, 2014). Amusement parks were the key showcase for experiential technologies in the late 19th and early 20th century and dark rides became one of the recurring examples across the thousands of new parks which had begun to appear.
Two early indoor rides that evolved in this time were Pittsburgh's *Old Mill Ride* (1905) in the USA and Blackpool's *River Caves* (1907) in the UK. These two rides represent the consolidation of technical and conceptual approaches being developed on both sides of the Atlantic. Whilst these rides have been mentioned in isolation in a small number of academic texts, their importance when looking at historic dark ride creation is unmatched. My personal experience of these early rides coupled with the historical context I have learnt has been of particular influence on my practice.

Dark Ride as Format

With the growth of defined amusement parks -rather than temporary fairs- it was possible to see the evolution of different styles of ride (Zika, 2014). Regional parks began to use, decorate and present rides in a bespoke manner despite their structural and mechanical

[27] In his book on Thompson, *The Kid of Coney Island*, Woody Register remarks that the influence of *Trip To The Moon* could be seen by 'Anyone who later embarked on Disneyland's 1955 fantasy Rocket to the Moon or rode *E.T.*'s flying bicycle at the Universal Studios Orlando' (2003, p.71)

similarities. Across the USA, the dark ride could be seen for the first time as a format, rather than a one-off spectacle.

Viewing the different iterations of the dark ride as it evolved and adapted at different parks was highly influential on the development of my creative artefact. Studying how the format was applied would guide me as I designed my approach to using such a rigid mechanical structure to create a new experiential work.

In the 19th century, two of the most well know holiday entertainment destinations in the world were Coney Island in Brooklyn, USA and Blackpool in the UK. Referred to by Deborah Phillips as Pleasure Resorts, she describes them as the transformation from seaside spot to major tourist destination (Phillips, 2012, p.20). At each of these destinations audiences would see pleasure gardens, large indoor halls of amusements, fairground rides and a variety of ad-hoc concessions alongside the beach promenade. By the 1880s these entertainment zones had grown in size and notoriety, this was in no small part due to the creation of train and subway infrastructure (Cross, 2006, p.633). During the late 19th century New York built the Brooklyn Bridge and an electrified subway connecting the Brooklyn rail and Manhattan. In the UK the rail network continued to expand, connecting Blackpool to Liverpool and Manchester. Phillips talks further about this rapid growth:

> Coney Island in New York had been, like Blackpool, a seaside resort that grew because of the railways. Excursion trains brought in their wake investors in hotels and attractions, so that what had once been a boardwalk of small independent stalls became America's largest commercial pleasure ground. (2012, p.21)

Both of these sites quickly built amusement parks, larger and more distinct than the smaller sideshows and concessions that existed previously. These new entertainment areas were fenced off districts which offered a series of new experiences under one banner. On Coney Island it was Sea Lion Park that was built first in 1895, and later it would become Luna

Park[28]. The name Luna Park would be used throughout the world as new parks sought to leverage off the famous brand. The Pleasure Beach Amusement park was the UK's first foray into a dedicated amusement zone, appearing a year later in 1896. These sites would become the birthplace for a range of different rides and entertainment experiences that could be studied and compared for the way that audiences and communities engaged with them around the world.

Transportation, Carts and Tracks

Context

The historic dark ride is synonymous with its tracks and the carts that move audiences through the experiences. In building a new historic dark ride artefact, it is important to find out what the history of these components are and how that has influenced the development of the format.

Rail transportation was key to the early success of the amusement park and the technology which trains and trams delivered would be highly influential on the structure of the historic dark ride. In the early 20th century the train and trolley networks were integral in both transporting people to entertainment and expanding cultural access to new parts of society. Rebecca Harrison wrote one of the most comprehensive overviews of the trains influence on entertainment media. In her book, F*rom Steam to Screen: Cinema, the Railways and Modernity*, Harrison cites the influence of rail travel on audience's interpretation of media and also as a reoccurring symbol within different media:

[28] In 1902 work began on new park at Coney Island, on the site of Sea Lion park, Luna Park would base its name on Thompson and Dundee's ride with owner George C. Tilyou inviting the successful ride developers to invest (Register, 2003, p.88)

> Cinema and the railway, which are paradigms for experiences of mass media and consumption in an expanding public sphere, enlarged the visible world for different demographics of people. (Harrison, 2018, p.4)

Rail networks of many forms had a direct connection with the evolution of the early amusement park and in turn the dark ride. Trolley lines ferried people from downtown to urban parks, subway lines connected people to beachside promenades and national rail networks allowed a burgeoning middle class to reach amusement parks. Later in this study I will discuss how the dark ride was re-invented using the discarded electric motors and electrified track from these once great networks. In the early period of the amusement park before World War One, the appropriation of transportation technology into dark rides could already be seen. These few formative examples of the historic dark ride (the *Old Mill* and *River Caves*) were aligned with a culture obsessed with travel and adventure.

The Old Mill

The oldest running dark ride in the world is the *Old Mill* at Pennsylvania's Kennywood amusement park. The ride uses an imaginary mill as its structure and floating logs appropriated as a method to taxi passengers through this early amusement park dark ride.

The Mellon family owned the Monongahela street railway and in 1898 bought a popular piece of recreational land at the end of their tram line to encourage tram use on weekends (Zika, 2014). It sits on the banks of the Monongahela River, between the high reaches of the Northern Red Oak trees that densely populate the forests around Pittsburgh. The Kennywood amusement park is now a national historic site. Unlike Blackpool there is no bustling promenade or arcades, a simple fenced off zone with a small set of roller coasters peeking out over the natural wilderness.

The Old Mill was added to the Kennywood site in 1901, its façade and some aspects of its dark ride design are still functioning today[29]. Designed to imitate an old water-powered mill, the outside of the ride is an abstraction of what one would have seen in the adjacent land to the park (Zika. 2014). In the early 20th century, the Monongahela river was second only to the Rhine in Germany for the quantity of timber it transported (Anon, 2000). Examples of actual functioning mills could have been found at Dubois and Burnside nearby in Pennsylvania (USGW Archives, 1924). The façade consists of distressed and broken boards, peeling paint and broken windows. Unlike rides of the time, what is clear is that a narrative is being laid out for the viewer, they are entering an abandoned industrial site, one which would have been commonplace at the turn of the century. The characteristic of blending the interior and exterior experience is used extensively in this example. Mills at this time floated logs on water before feeding them through the mill building for sawing. This mechanical concept is upheld in the old mill, as participants enter through a platform and are sat inside a wooden log shaped vessel (Zika, 2014). This type of entertainment is commonplace now but at the time rides had been simple in their design and the experiential nature of this ride had not been seen before.

Inside the ride, the audience is led past a set of vignettes, they build to a creepy story of what goes on inside *The Old Mill*. This simple approach to sequencing images and positioning them around an audience became another key inspiration for my own approach to building the artefact. The old mill took the experiential design evident in A Trip to the Moon to another level, moving the audience through a real physical space rather than the illusion of one. Looking closely and reading about the old mill format of rides informed how I could use a pre-existing structure to build an experiential sequence.

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[29] Kennywood Park in Pittsburgh, PA is one of the USA's oldest running amusement parks. The Old Mill ride has retained the same facade since is was built in the early 20th century.

A functioning mill would have no waterways inside the actual building but ride interpretation uses this device to manipulate the point of view of the rider. In *The Old Mill* ride, audiences were ferried through darkened tunnels, and without noisy engines the ride was silent; designers were free to utilize the echoing creaks of props to great effect. The ride finishes as the saw milling process would in reverse; with the log falling out of the mill and into the water with rider on board. Little is known about the original content within the 1901 ride but one can presume that the content was linked directly to mythologies surrounding abandoned mills at the time. In his thesis *The Archaeology of a Dark Ride*, Graeme Baker writes:

> The interest in rumours of haunted houses and dilapidated mills was subsequently exploited by entrepreneurs in the amusement industry. They designed and built replicas of these abandoned buildings and created attractions that provided paying guests with the rare experience that linked excitement with safety in a winning combination. (2013, p.14)

The first incarnation of *The Old Mill* ride was said to have "gorgeous grottos and musical caves…lit by state-of-the-art electric lights" (Kwaitek, 1995, p.108). In 1957 the entire ride was fitted with a "trip around the world theme which included Hawaiian dancers, Australian Aborigines and ferocious tigers" (Hahner, 2004, p.74). Nowadays the *The Old Mill* is themed as *Garfield's Nightmare*, derived from the popular children's cartoon series. Again, we see how the old mill format used available models for space and transportation and could replace and substitute the narrative that played out within them. This freedom to re-invent and reuse spaces would be crucial as I devised my approach to build within the format of an historical dark ride.

Blackpool and the River Caves

Late in the 19th century, Blackpool, England was a booming seaside destination. Like other cities around the UK, transportation played a big part, not just in transportation but as a technology for entertainment experiences. In 1885 Blackpool built the first permanent electric tram line in the UK and the first electric streetlamps. Gary Cross describes the types of people who flocked there: "Blackpool was the holiday destination first of the wage earners of England's Lancashire cotton towns and eventually of most of the British Isles" (Cross, 2006, p.2). Blackpool's economic success came on the heels of the industrial revolution and the proximity of the Northern industrial boom to the seaside city. It was a different demographic to the audiences of the USA and with them came different desires for escapism and fantasy.

The British had a long history of developing fairground rides[30] but in the 1890s were following the US lead on the development of amusement parks like Kennywood and Coney Island (Zika, 2014). In the 1890s Blackpool's famous beachside tram line terminated at the end of the promenade on its southern shore. At this end of the boardwalk, away from Blackpool's piers and iconic winter garden sat a small carnival and settlement of itinerant workers. This ram shackled entertainment space would have typified the types of touring carnival and fairgrounds sites prevalent across the UK in the 19th century. In 1885 the area was bought by an entrepreneur named George Bean and one of the small-time carnival ride owners John W. Outhwaite. Bean was the better-known of the two and his story connects the emergence of the amusement park across the Pacific (Zika, 2014). From his teenage years Bean had worked in the USA; first in New York then Pennsylvania in different parts of the

[30] Britain's history of traveling fairgrounds meant that they led the way in developing portable rides. Rides like the *Switchback* and *Trabbant* were first invented in the UK and copied by companies across Europe. This was in addition to the development of Cinematographs and Bioscopes which is addressed later in the research.

amusement park sector. This experience would be pivotal to his later ventures in the UK (Kane, 1995, p.30). After Bean bought the fairground land in Blackpool he evicted the existing entertainers and he and Oustwaite started placing their own rides and attractions into that plot of land. In 1905, they officially launched the first amusement park in the UK, The Pleasure Beach, and in that same year opened *The River Caves of the World* dark ride.

Built into the side of a fake mountain, *The River Caves* ride's peak was visible from most parts of the grounds; a sign of the evolving architectural centrality of the dark ride to amusement parks during this period (Figure 11). Similar to *The Old Mill*, participants entered onto a vehicle floating in water, which was then dragged upwards into the mountain by a rudimentary conveyor. After reaching a considerable height the vehicle slowly shuttles back down to exit the mountain with a splash. Inside the mountain is where the narrative plays out.

Figure 15. Postcard of River Caves of the World Ride, Blackpool Pleasure Beach. UK, 1906.

Over the last 110 years, the themes of *The River Caves* ride have consistently centred on journeys to far flung lands. An expert on the fairgrounds and carnivals of Northern England, publisher of one of the few books about Pleasure Beach; Vanessa Toulmin described the original experiences of The River Caves ride:

> Boats carried up to ten passengers through a course of underground caverns, each painted and styled with a different theme. Electric lamps revealed dramatic tableaux recreating, amongst other delights, The Cave of Emeralds of Ceylon, and The Mysterious Dripping Well of Arizona (Toulmin, 2013, p.32)

In *The River Cave*s, one can see an approach to dark ride design that creates a format for experiencing travel through a singular location based entertainment (Zika, 2014). With the beachside and pleasure sites of the 20th century now available to the working class, a popular extension of this journey was to further explore the world. In 1977, park director Geoffrey Thompson added some new elements to the ride and discussed what he saw as the ride's unique ability to transport audiences to exotic travel destinations beyond their reach:

> On the completion of the construction of a replica of the temples of Angkor Wat in Cambodia: 'The temples are no longer on view to the Western World since the Khmer Rouge took over Cambodia so you could say that we are offering people the only chance they will get to see them' (Qtd in: Bennett 1995:299)

An important influence on my creative artefact and my practice generally are the different ways that *The River Caves* and *The Old Mill* used the dark ride's structural model to explore the desires of local people. The rides interpreted local community desires to escape and explore a lost or unattainable world. As I learnt and immersed myself in the story of these early historical dark rides, I saw how dark rides could be used to convey their own nostalgic story. The historic dark ride experience could, in a fantastic way, help me explain my own desire to share this media phenomenon with the broader world.

Despite the difference in tone between US and UK rides, the desire to travel through

different 360-degree worlds is a common component of the *The Old Mill* and *The River Caves* rides. This desire to build a more experiential media was consistent with experimentation being undertaken in cinema at the time (Zika, 2014). Whilst in its infancy in 1905, the technology of film was certainly prevalent as part of amusement parks like Blackpool and Kennywood (Neill, 2013, p.1). At the time, cinema was by no means as popular or effective in building intimate scenes for its audiences. Gunning explains that in this period, cinema existed as an evolving technology amongst the other rides, rather than as a major stand-alone product:

> In the earliest years of exhibition the cinema itself was an attraction. Early audiences went to exhibitions to see machines demonstrated (Gunning, 1986, p6).

A popular cinematic phenomenon that Gunning identified from this period were media called 'actuality films', which were filmed experiences where the camera was attached to a moving vehicle. Actuality films often reflected peoples' desire to experience the act of traveling via machine or other method (Gunning, 1986, p.383). The most popular actuality film type was called the phantom ride; these were films where a camera had been attached to a moving train. Phantom ride films could be seen at travelling cinemas or bioscopes[31] at fairs and amusement parks across both the USA and UK. From the 1850s onwards phantom ride film attractions were often housed in ornately decorated portable carts. The content of the phantom ride ranged from gondola trips to the view from a speeding train (Brewster & Jacobs, 1997, p.7) there was even a film made aboard a roller coaster. In his article "Moving landscapes: Film, vehicles and the travelling shot" (2011), John Edmond wrote about this phenomenon. Edmonds referenced Gunning's concept of the cinema of attractions in relationship to phantom rides, explaining the unique and emerging combination of

[31] Bioscopes were a primitive type of early animated picture reel projection, displayed in elaborate sideshows at local fairs between the 1880s and WW1 (Toulmin, 1994).

transportation and film (2001, p3).

Connections between transportation and entertainment and early cinema are a common topic of academic writing (Kockelkoren, 2002, p.12; Harrison, 2018, p.4) but very little of this discourse covers the dark ride and its appropriation of transportation devices and infrastructure. From this research we get a vivid idea of the spaces that the historic dark ride depicted, of immersive journeys that surpassed anything available in cinema at the time. Stories that use abandoned spaces, lost spaces and the spaces of aspiring travel.
In its earliest incarnations, the dark ride manoeuvres through panoramic visual spaces using localised imagery and adapting mechanisms of transport that made sense to audiences. These observations are critical to my translation of experiences for the historic dark ride and helped me determine which visual ideas would translate most effectively.

The Distribution of the Dark Ride

In the early 20th amusement parks were full of different explorations of the uncanny experienced which most park goers first had when engaging with motorised public transport for the first time. In places like Coney Island and Blackpool, the journey to the park offered a rare opportunity to catch the train or subway. One of the most iconic sections of early amusement parks was the scenic railway, which later evolved into the roller coaster. Often the scenic railway would traverse the park and give audiences a chance to see the location from new and amazing angles and heights. The train-based apparatus served as an extension of the mechanized transportation that brought people to the park in the first place. Most amusement parks that had thrived in the 1900s did so because they utilised electricity and the electric tramlines which were already in place.

After World War One, with the rise of the motor car and impact of the Great Depression, the demand for shared amusements changed considerably. The demand in size

and popularity of American amusement parks is detailed in Jennifer Wismer's Masters thesis; *The Rise and Decline of the Traditional American Amusement Park: From Amusement Thrills to Summer Chills* (2001). Wismer details the myriad reasons that affected the amusement park from its first decline in the 1920s to the almost complete disappearance of the phenomenon by the 1970s (Wismer,2001, p.51). Rising middle-class wealth of the early 20th century led to greater access to technology and entertainment experiences but by the 1920s this rise in wealth had come crashing to a halt. The uptake in popularity of the motor car changed cities, allowing them to grow and workers to travel further and be more selective about entertainment. These changes in social behavior in the 1920s added to a reduction in the numbers attending amusement parks, particularly families (Wismer,2001, p.49). Small parks found it harder to survive, and their tram or trolley lines were shut down and lay abandoned (Rabinovitz, 2012, p.63).

From the 1920s onwards, technologies such as electricity, panoramic painting and large ride mechanics were combined in entertainment devices. Observing how technologies evolved and how the combination of characteristics was popularised, fueled my ideas about how to translate an idea into this format in the final artefact.

Historic Archives and the Creative Process

My process as a media designer has involved utilising widely accepted technologies but creating work which references the historical origins of those creative tools. I am inspired by the way that early adopters of projection technology used the stereopticon in rides such as *A Trip to the Moon*. In the historic dark ride there are applications of simulation technology which I believe can continue to inspire and inform game and experience designers for decades to come. The search for innovative approaches for many creative practitioners can come from historic media, where access to detailed documentation is available. Take, for example, Abelardo Morell's Camera Obscura series in which he utilised the 16th century

photographic technique as a way to investigate street photography traditions of the early 20th century (Morell, 2008). In these examples the role of the archive, documentation and critical discourse on media histories is crucial.

As discussed earlier, Melanie Swalwell's approach to archiving and revisiting computer game history parallels the challenges of archiving experiential media like rides. James Newman also conducted an in-depth study into the games industriy's approach -or lack thereof- to archiving and maintaining its historical legacy (Newman, 2012). Newman cited the difficulties of preservation and questioned which characteristics of games can and cannot be archived (Newman, 2012 p.122). Studies conducted by these computer games researchers inspires not only my practice-led research but the work of other designers seeking to directly explore and preserve qualities of historic media. Cory Arcangel is a digital media artist who specialises in work which utilises old or forgotten computer game content. In a recent interview, Arcangel cited preservation and materiality as essential influences on his practice (Nowness, 2018). The practices of artists like Arcangel show the need to experiment with the material qualities of different types of historical media as a way to preserve and understand it.

Midway through this project I knew that I would need to utilise the components of the historic dark ride to build a new immersive media work. Like most designers working with a modest budget, I would have to use available technologies in combination to translate the work. The historical research in this chapter helped me locate the practices of the pre-digital dark ride designers alongside my own. The information I have gained about the appropriation of spaces influenced my approach to designing and curating the placement of visual components in my artefact. I knew that I could employ illusionistic imagery and panoramic scenes, not to build virtual spaces which appear realistic, but to transport viewers using more abstract spatial aesthetics. The historic dark ride is a captivating experience which moves

bodies through space but it doesn't strive for realism. In experiencing many of these unique rides, I observed that visual and audio material didn't need to be synced to movement to create a simulation. Whether on a first or fortieth ride, the experience of an historic dark ride is one of knowingly relinquishing control to the cart and track. There are countless distortions of space through muted light, optic and sonic illusions that rely on its audience's captive attention more than anything. Unlike virtual reality or computer games, the need to align haptic effects exactly with visual triggers is not so prevalent in the historic dark ride space. Often the ride will plunge into darkness while sonic or haptic effects are unleashed, and interior decorations can give a more general feeling of unease or displacement. The experience of the historical dark ride is often so captivating, uneasy or chaotic that the intervals between vignettes are used to catch one's breath rather than orientate to a particular visual or sonic logic.

The Dark Ride and Appropriated Spaces

The next phase in the historical dark ride's evolution was marked by the continued appropriation of existing spaces and technologies to create new engagements with audiences. As electric trams were shut down in the USA, similar sized small electric motors found another use; powering the individual carts of a new breed of historic dark ride[32]. The changing nature of transportation, both public and private, would continue to drive the interaction and iconography within the dark ride over the next century.

In 1929 The Pretzel Company was the first to develop a patent for a dark ride. The ride patent reflects the archetypal cart-based ride that defines popular imagery of the format today (Cassidy, 1929). Leon Cassidy and Marvin Rempfer founded the Pretzel Company,

[32] The Pretzel company would base their operations at 337 South Avenue in Bridgeton. This warehouse had been the trolley depot which ferried people from the Tumbling Dam amusement park through the township. The trolley company dissolved in 1897 and Leon Cassidy installed his first dark ride at Tumbling Dam in 1922.

they developed the ride which was described as an Amusement Railway, and the patent specifically states that the design of carts and trigger points is ideal for use in an enclosed or darkened building (Cassidy, 1929) (Figure 16). The design they patented was simple enough to be custom built and deliver designs to suit the spaces which amusement parks had available (Zika, 2017). Their format would revive the intimate passenger boat experiences of the Tunnel of Love ride and The Old Mill rides of the 1900s, combining it with a single electrified track (Baker, 2013, p.21). This melding of characteristics from earlier indoor rides led to a flexible system for maneuvering passengers around a given space cheaply and efficiently.

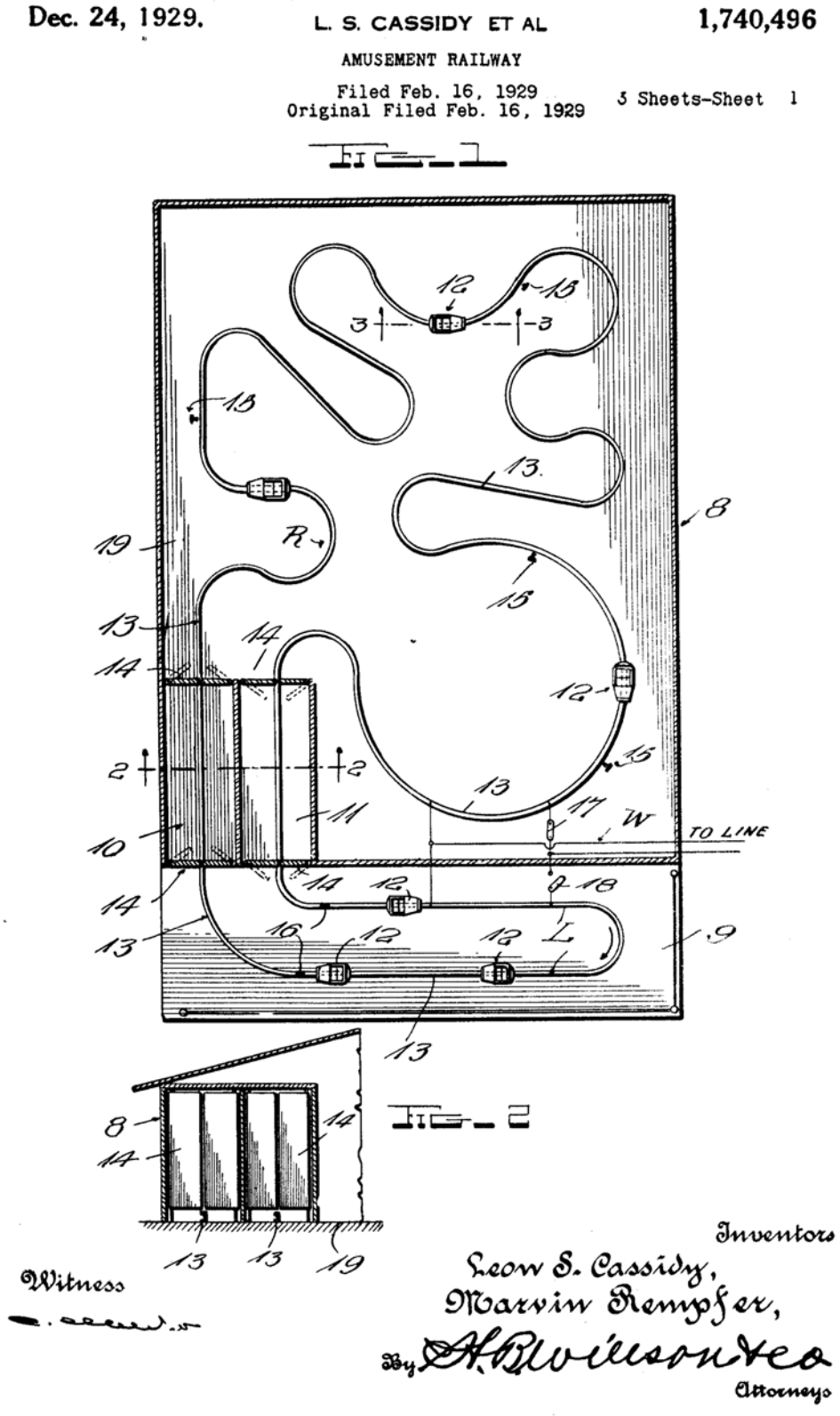

Figure 16. Patent drawings for W Cassidy's Indoor Amusement Railway showing map of carts and trigger points. USA patent office, 1929.

The Pretzel Ride design was modular so it could be built or programmed in ways to fit vastly different spaces (Zika, 2017). Due to their modular-style track, rather than a waterway or suspended coaster, the rides could be adapted easily or extended. One example is the comparison of the *Spookarama* dark ride at Coney Island and the *Laffland* in Sylvan Beach; Built in 1955 the *Spookrama* was installed into a space without any walls, while the *Laffland* was designed in 1954, custom built for a large space with hallways to encase the track (Malone, 2000. para.7). In this comparison the props in the two rides were fairly similar, but the trigger points and timing of the carts was programmed and structured to fit very different architectural spaces. The *Laffland* at Sylvan Beach was first conceived to make use of an old bathing house that had been repurposed (Butko and Butko, 2007, p.48). The ride carts move through the darkened rooms, occasionally hitting crash doors that are used to separate sections of the ride dark and offer punctuated thrills in low visibility when they are hit (Table 2, D). The *Laffland* ride is an uneasy but forward moving experience, unlike the *Spookarama* which is chaotic and involves far more spinning, with spills of light everywhere and much closer proximity to props. The *Spookarama* has no walls, as a result the design of the props and their timing needed to catch the viewer's eye quickly from one vignette to the next. This site-specific design makes the *Spookarama* a unique example of the historic dark rides bespoke potential.

The position of the cart in this 360-degree space is crucial for building an effective and captivating experience, particularly when the size of space cannot be altered. A key concern I had in approaching a design of my own was to ensure that imagery was created with the cart's position and orientation in mind. This didn't mean designing detailed content in every direction, rather maintaining a relationship between the rider and the content that was effective their field of view. In these various examples from the historic dark ride we see how crash doors, dark lighting and spinning carts all helped to create divides between

content; keeping riders excited about each component.

The tailored approach to designing rides in a strange space was particularly important as many amusement parks scaled down operations across their properties, leaving a variety of novel spaces without use (Futrell, 2002, p.97). The Pretzel Company made rides until 1979, but they are most famous for designs in the 1930s and 1950s (Zika, 2017). Throughout this period their devices allowed one operator to run a single venue that might previously have been home to a bowling alley, concert or dance hall. More than 1,700 ride kits were dispersed across the United States and the world, with common components and similar modular turns, tricks, triggers, lights and sound effect machines (Boggs, 2016, p.10).

The Pretzel Company rides melded technology and ideas adapted from earlier attractions like the *A Trip to the Moon* and *The Old Mill* ride to create an intimate attraction that was experienced by hundreds of thousands around the world. Sparks, creaks, crashing doors, spring-loaded ghouls, sirens, horns, and bright lights all combined to create common experiences of fear and surprise.

For Americans in the 1930s, creating haunting attractions was not a new pastime[33], however the Pretzel ride offered entertainers a format to experiment with their new spatial effects and designs, creating complex narratives and adding to them over the years. The ability to pitch black spaces at the amsusement park made it easy to hide the simple mechanics required to deliver these experiences. The park's ageing facades, built in the previous century, would only add to the increasingly rugged aesthetic of each ride.

No matter how revolutionary the historic dark ride was in its day, it will also reflect some sense of loss associated with the downturn of the amusement park. This realization would become central to the design of my creative artefact. Through my practice I explored

[33] Historical lineages of the Halloween festival vary but Lisa Morton's history explains it origins as a harvest festival which is now one of the most marketed holidays in the USA (Morton, 2012, p.7)

the structures of lost ride history that I had encountered in my research and I experimented rebuilding these items as new images in order to place them into new spatial contexts. Narratives of abandoned architecture and bygone transportation feature in almost every iteration of the historic dark ride. Iconography plays a big part in audiences' experience of the dark ride. In my work iconography is utilised but a more purposeful influence came from the memory and history or each space through the stories of the medium itself. As I will explore in chapter three, the stories of particular rides and their rise and fall became something I reflected on creatively. Discussion of lost, abandoned and dismantled dark rides fueled not only my own creative impulses but it also affected the enthusiast community. These enthusiast groups helped me to discover and critically explore the historic dark ride through their own archives, discussions and online forums.

Bill Tracy

In the 50s and 60s, audiences began to return to amusement parks across the USA. Bill Tracy was a dark ride designer who rose to prominence between 1950 and 1970, he was most prolific dark ride designer of that period. Tracy designed and built 57 rides, first working for Cassidy at the Pretzel Company then branching out as an independent ride creator (Bahur and Seidl, 2018b). His style of ride design intertwined with cinematic elements that were prevalent in the 1960s, from psychedelia to the gothic stylings of Universal's horror universe. One of Tracy's most iconic designs was his *Whacky Shack* dark ride, it melded the aesthetics of the hippy generation with traditional dark ride elements of the 1920s and 1930s (Table 2, J). Tracy installed this design in a range of parks around the country from Wichita to Georgia, New Jersey and one which still operates at Waldameer Park, Pennsylvania (Bahur and Seidl, 2018a).

Bill Tracy's work was the most prevalent of any singular practitioner working in the pre- digital dark ride space. Artefacts of his legacy are still in good working order across the

USA, and as a result, it is his works that I have spent the most time riding. The historic dark ride used in the final artefact discussed in chapter three was a Tracy design, built in 1964. In the 1960s, the experience of the historic dark ride had begun to be subsumed into the language of cinema. Tracy was a designer who used contemporary iconography and cinematic traits, combining them with dark ride components and systems that had been in use for four decades prior. His approach to designing these historic dark rides would heavily influence my work. His simple use of shape and line, detaching it from clichéd haunt iconography was something that I looked at closely. Tracy used the space like a contemporary projection artist might, understanding the position of the audience and the illusion they would see at every point from the cart. He clearly knew how to use the limited light required to build drama. Never over-embellishing a room or prop, scenes like the tropical garden at the *Whacky Shack* in Waldameer (Figure 17) are simple but as effective as any contemporary installation design, whether digital or physical. Aspects of Bill Tracy's design aesthetic influenced my approach to colour and theming in the final artefact. Abstract forms of wooden planks are applied to surfaces that surround track, with the colour palette often replicating the garish neon of Tracy's best work.

Figure 17. Dayglo grotto inside the *Whacky Shack* at Waldameer Amusement Park, Eerie, Pennsylvania by Randy Skalos, USA, 2020.

The End of the Dark Ride

The closing of the Pretzel Ride factory in 1971 and the death of Bill Tracy in 1974 signaled an end to the historic dark ride and the beginning of the indoor multimedia amusement (Zika, 2017). Disney's theme park attendances had soared since opening in 1955, and at these sites the ride themes were driven by popular cinematic content which proved immensely popular. It would be forty years before a popular ride theme influenced cinema content in the form of the *Pirates of the Caribbean* franchise.

The amusement park was a commercial monetised zone which served as an important public space for delivering access to new technologies and media experiences that were not available anywhere else. In the early 1900s, amusement parks had been built in new and expanding areas of citiesor at newly developing coastal locations like Santa Cruz Beach Boardwalk in California and Wildwoods in New Jersey. Parks had a unique geographical location in the community which meant they were always under threat from those who could

benefit from their sale (Cross 2005, p.4). Upper classes of the day felt that these new forms of popular entertainment were a hedonistic pursuit rather than cultural, a foolish indulgence with little value (Gabler, 1998, p.16).

By the 1970s the entertainment landscape had changed considerably, cinema was reaching more people and falling populations in rural areas saw the amusement park struggled to draw audiences (Zika, 2017). By the 1980s, hundreds of parks had closed (Stanton, 2018) and the attention of the consumer audience had shifted to home entertainment, the game arcade, and to major theme parks (Wismer, 2001, p.75). Theme parks like those of the Disney Corporation and Universal Studios were able to capture new markets by cross promoting and developing content that had recognition across the entire USA (Zika, 2017). American audiences had changed rapidly in this period and it is impossible to cover all aspects of the upheaval that saw such a downturn in the American amusement park. It is important to recognize that while there is photographic evidence of many hundreds of closed parks, with each closing we lose evidence of the indoor entertainments, most of which were never documented.

The Legacy of the Dark Ride

In the late 1950s directors like William Castle began to produce films with actual physical audience engagement, Castle often developed props to accompany his films that needed to be installed into each cinema (Zika, 2017). His films like *The Tingler* (1959), *13 Ghosts* (1960) and *Homicidal* (1961) attracted the type of film goers who might have gone to the amusement park in the 1930s for this kind of hybrid experience.

The films of William Castle reflect three things: An attempt to engage the filmfgoes in a more physical way, the drive for cinema to expand its experience in order to compete with television audiences, and an acceptance that cinema and the spectacle of the amusement

park had fused (Zika, 2017). Catherine Clepper is an expert on Castle's approach to filmmaking and experience design. In Clepper's article, "Death by Fright" (2016), she identifies the themes that Castle usese and cites the emergence of embodied spectatorship in Castle's work. This is a concept which is key to Castle's approach and the defines corporeal relationship between the audience and experiential media, which had existed with fairgoers for half a century:

> Castle revived the innate quality of the original dark ride that the audience must routinely entrust their bodies to the cinematic experience to the confines of the theater, to the reflexes and reactions evoked by films, and to the sensory conditions of the crowd, space, and atmosphere… evident in all of Castle's earliest independent productions were themes of risk, individuality, and consent related to the perils faced by both Castle's onscreen characters and offscreen audiences (Clepper, 2016, p.24).

Castle's methods framed him as an outlier in film but when it came to melding the fairground experience and cinematic his approach was in keeping with others cited in this research. Few other directors went to such lengths to create indoor attractions inside the cinema. The most striking example was in his theatrical presentations of *House on Haunted Hill* (1959), a skeleton was hoisted above the audience and released at crucial times during the picture to create a fright and give a visceral interaction with the audience (Zika, 2017). Castle's work has been influential to me as a creator of new media experiences. Like the historical dark ride designers, Castle used fairground mechanics and fused them with visual technology and film craft to re-invigorate the space of the cinema at a time when interest had waned. His modular approach to entertainment helps contextualise this research, as an example of how film technology could be added to and used in different ways. His work illustrates the influences on cinema that Gunning highlighted from earlier in the 20th century. Castle's application of fairground mechanics in a cinema context inspires me as I look for ways to do the opposite and bring projected media into the mechanized space of the dark ride.

Summary

Reflecting on this early period in the development of location-based entertainment, I see many characteristics still championed today through contemporary technology. From the panoramic scenes of Imax, the illusions of high-end themed park rides or the haptic immersion of arcade gaming, all of these characteristics can be seen in the earliest dark rides. The historic dark ride represents a concentrated evolution of experiential media which stands apart from cinema's well documented history. Today, as the media spaces meld with shopping centres, public spaces and also become remotely available, the learned experiences of the historic dark ride can be as influential as those of cinema. The historic dark ride continues to have many characteristics which cinema does not, it is part of a broad language of location-based entertainment that influences other media. Whilst more study is required, the benefits for new media practitioners of examining and comparing this historical format for ideas and inspiration seem clear. The potential influence of the historic dark ride is particularly relevant for contemporary evolving areas such as VR and experiential design using digital media.

This chapter and the areas of the artefact it highlights, show that the historic dark ride contains many of the characteristics that are often cited as new or without precedent. This historical research influences my approach to constructing the final artefact in bold ways, particularly through an understanding of the historic ride's ability to generate media experiences in found and available spaces. Planning towards the creation of a new ride experience, this research shows the synergies between my own experiences with contemporary projection design and the way the historic dark ride was developed. The characteristics discussed in chapter one are not disparately applied, but consistent throughout the history of the format. In planning my own designs within the format, I understood the need to apply ideas with the 360-degree environment in mind, looking closely at the position

of the cart. A simplicity of imagery is acceptable, but the application and placement of that content is crucial.

As the research has progressed, any sense that these historic artefacts are a relic of past practice has dissolved. For a practitioner, the historic pre-digital dark ride is a rigorously designed and engaging experience as any on offer today. In his article "Rewiring Media History", Mark Williams writes about the trend to wrongly classify new media inventions as unprecedented, rather than see them in an evolution of media (2005). Williams cites the continued convergence of technologies in new media and a growing interest in intermediality as a way of understanding their meaning and position in history:

> ...studies that afford a better reckoning of the scale and complexity of prior relations between and across "media" (understood in as complex and multiple a sense as required) will be important in media history. (Williams, 2005)

The dark ride features prominently in the makeup of amusement parks and theme parks throughout the 20th century. Dark rides offered the ability to appropriate space in unique ways. At other times the dark ride format allowed for experiences to be built from scratch; in both cases with a link to myth, local histories or stories. The earliest ride designs from the Pretzel company were developed pragmatically, with track designs using existing spaces and turning them into hybrid experiences. As cinema competed with television in the 1950s and 1960s, the dark ride offered new perspectives on the zietgiest and a new private space for young people to share media experiences (Cross 2005, p.9). New media technologies have followed in the footsteps of amusement phenomena like the historic dark ride. Observing the evolution of new experiential technologies and distribution for entertainment media - such as virtual reality and augmented reality - contextualising the historic context for these approaches is vital.

The downturn in amusement parks from the 1910s to 1930s was a tough time for the prosperity of local entertainments but it did lead to creative innovation in sector. Different techniques immerged in interaction and space which were explored and utilised by many ride designers across the USA and the world. In contrast, during the 1950s and 1960s, the technology of dark rides evolved far less, however the investment returned to parks with greater audiences returning to the amusement park (Phillips, 2012, p.202). Whilst links between today's new media entertainment and amusements is evident through an examination of the history of the medium, it is seldom discussed in theory. The amusement park is part of the current media zeitgeist, but is often referred to flippantly or only nostalgically (Zika, 2017). Commercial new media facilities have emerged branding themselves as *Virtual Amusement Parks* (Rogers, 2018) which seem largely driven by nostalgia rather than an insightful re-imagining of the amusement park (Picht, 2018 ; Griffith, 2018). Early ride-based entertainment is underrepresented in academia, despite its regular use in the vernacular of new media, especially virtual reality. The historic dark ride may hold the answers to integrating new technology into existing immersive formats. With advances in scent generation (Krumins, 2018), neuro-controllers (Houser, 2018) and advanced augmentation (Statt, 2018) the dark rides of the 30s, 40s and 50s may offer unexplored insights. The historic dark ride is a broad format that can easily encompass new and evolving technologies; further defining and utilising it will help to create a framework that ties the past to the future (Zika, 2017).

The artefact I have created at the centre of this study utilises an actual historic dark ride, taking advantage of many of its unique media qualities. Notable was its ability to explore different spaces through placement of the ride tracks. The concerns of space and re-purposing that led to the evolution of the dark ride are still relevant today. New entertainment and commercial spaces have evolved, and technology is looking for ways to fill, engage and

interact with real and virtual space. Exploring this history where dark ride tracks help re-invigorate perspectives on space, offers crucial insight into how I might use these characteristics in this project and other experiential creations.

Because of the prevalence of the amusement parks in the early 20th century, a culture of rides is something that most Americans grew up with, despite this they are seldom cited as an influence in art, design, film or architecture (Zika, 2017). I have been interested in the aesthetics surrounding rides, horror and haunted attractions but solidifying this understanding of the historic dark ride adds a practical and transferable link to a widely shared set of experiences. As potentially the earliest example of electric experiential media, ride experiences need to be one of the first points of reference when developing creative media work in space. Through the construction of my creative artefact and this contextual investigation, I believe more practitioners will engage the history of rides, particularly historical dark rides. Understanding this important part of media history, I hope will lead a push to restore, rebuild and protect the small number of dark rides from the 20th century that still exist today.

Chapter 3 - A Southern Dark ride

Context

This study is led by the work that I created, a ride experience titled *A Southern Dark Ride*. I created it by utilizing an existing ride, replacing, adjusting and applying new digital media content to the interior of the ride structure. Using projected sequences mapped onto the walls, I built my own experience which is presented in various forms as the artefact. The research I have presented in previous chapters of this exegesis has shown existing rides featured six key characteristics which they utilised in delivering new media experiences. This chapter will examine how I applied those characteristics in the creation of this original work.

Throughout the 20th century, different circumstances in the evolution of amusement parks changed the application of the historic dark ride. Dark rides have manifested themselves as large scale media attractions at world's fairs, subtle simulations in the form of old mill rides and widely distributed cart-based dark rides at amusement and theme parks from the 1930s onwards. Despite the different scales, locations and audiences of the historic dark ride, its essential characteristics remained the same, even in my creative artefact.

Throughout chapter two of this study I detailed the technical and cultural developments that led to the patenting of an indoor scenic apparatus in 1929. The Pretzel company dark ride was the first indoor amusement to be patented and would become the model for the best-known examples of the historical dark ride. Throughout the study I have examined the history and engaged in historic dark ride culture, travelling to sites, riding the rides as well as exploring their surrounds. The creation of an artefact represents an exploration through practice; demonstrating the value of this format, exploring and sharing the use of historic dark ride technology to build a new media piece.

Dark rides and other location-based entertainments continue to be built today at both

theme parks and stand-alone venues. The industry is growing rapidly around the world (Sampson, 2019, Para.8). Examining the history of production in the sector is important to inspire and contextualise the work that is being done by creators and producers. However, establishing the creative characteristics of the historic dark ride through practice-led research is a difficult task. Recreating ride experiences or even mimicking their effects is difficult for an independent practitioner due to cost and the sheer mechanical complexity of these devices. There are some interesting examples of creatives working with ride elements outside of their original location. Artist and architect Carsten Höller created a carousel and slide inside New York's New Museum for his work experience. Covered in mirrors the rides were used as devices to encourage the audience into personal psychological reflection (Höller, 2011). Although the work doesn't discuss the fairground or amusement park directly, it does stimulate further discussion about the role of these spaces and devices in our lives. Like Höller, Australian artist Callum Morton utilises the iconography and mechanics of the fairground in a number of his works. In his piece *The Other Side* for the 2014 Sydney Biennale, Morton references what he describes as a 'Ghost Train' in creating a cart-based system to ferry audiences through an installation environment (Morton, 2014). As with research in gaming and cinema, these examples offer little to elucidate a greater understanding of the role of the dark ride in media, but they do re-iterate their ongoing relevance in creative discourse. The rare opportunities to see fairground and specifically dark ride experiences outside of their park context is exciting to me as a practitioner. In both these instances, Höller and Morton were afforded the support of major creative institutes to facilitate their creations. Despite the support given to these works, the scale of experience is dwarfed by even the most basic of fairground rides. The large-scale installation *Dismaland* by British artist Banksy is one of the few examples of an artwork truly emulating the grandeur of a popular entertainment space to convey creative ideas (Jobson, 2015). Built in

2015, *Dismaland* utilised the layout of an abandoned seaside resort as the backdrop for a satirical theme park. In this example the creative focus was primarily on the re-design and distortion of the public spaces in the theme park environment.

Historic dark rides -and their contemporary equivalents- are large commercial pieces of infrastructure, often taking years to build[34]. This project does not aim to compete with big budget contemporary attractions: instead, it offers new insight to practice-led and creative scholarship on the influence of historic media on present formats, while also offering the attraction industries new understandings of how the techniques of historic dark rides could be adopted in contemporary attractions. It is impossible to completely recreate the conditions that affected smaller dark ride designers throughout the 20th century, but my attempts inform a rich understanding of what working with this historic medium involved. Finding a way to utilise mechanics and other elements from the historic dark ride would represent the first study of its kind to give a hands-on reflection of the format. Examining the characteristics of a historic dark ride and working with the presentation and translation of content in that space benefits people working and studying popular entertainments, future and past.

This study defines the creative potential of the historic dark ride through engaging with the historic dark ride as a participant and as a creator. Remarkably, a historic dark ride was found that could be used to build a new creative experience for this study. From this valuable position, I developed a new work within a ride and an experience-based artefact that other practitioners can observe and learn from. The unique approach to practice-led research that I engaged in took place in Oxford, Alabama in the USA using the town's *Haunted Castle* ride. My artefact features a panoramic video of the experience which can be viewed in virtual reality by audiences, as well as documentation of the space through video and stills. The

[34] As an example of the timeline for developing contemporary dark rides, the Men in Black ride at Universal studios Florida was created over 3 years between 1998 and 2001 (Kubin, 2001, para.2)

work being discussed was installed in the space throughout the summer of 2016, and it includes visual media designed to surround the audience from the position of the ride cart. The final result of my investigation was a complete original dark ride design, using the tracks and innate qualities of this historic space.

This chapter details the complex history of the space, how it relates to the broader story of the historic dark ride and my journey to meld the two stories to create the artefact. The history of the *Haunted Cas*tle and the historic dark ride informs and inspires the content that is ultimately used to build the artefact. Historical research provided the text that formed the first step in my creative process. Methods such as the virtual reality video capture gave me the opportunity to share this content with other creative practitioners.

In chapter one, field observation outlined common characteristics in historic dark rides that could inform outcomes and offered ideas for the development of my own ride. In chapter two I took that definition and explained the history that led to its evolution. I outlined the historical relationships between the historic dark ride and other formats which helped me understand the contexts that make a ride successful. This new understanding added material and experiential ideas to the creative process, it also helped me establish the historic dark ride's position amidst other media both new and old, famed and forgotten. Historical and field research is put to use in this final chapter, which outlines the development of content for an original dark ride. New creative materials were produced, and questions posed about how to utilise and apply them to this particular ride example. This process is then discussed throughout the chapter and made available as a demonstration of how the characteristics discussed in chapter one might be applied.

In this final chapter I will explain how I developed the final artefact, through an intimate understanding of a unique historic dark ride location, utilising the characteristics of the dark ride established and articulated in chapter one; applying each of them to create a

cohesive and engaged original experience. I will show how these characteristics, applied together, can create new approaches to experiential media creation, informed by the format of the historical dark ride.

Discovering the Miracle Strip

In this chapter I will show how the new historical knowledge of the format and its characteristics contributed to the creation of a unique media work. My practice-led research methodology is used to deliver learned outcomes to practitioners. Each visual element that was developed contains multiple influences that come from years of engaging with historical dark rides and experimenting with ways of applying them in the format. I will explain the process of taking different sources, such as visual illustrations, sonic samples, animated elements and 3D graphics and deciding what role they will play in a completed ride.
When seeking a direction for a new work, research into the canon of existing rides was paramount. My early investigation into the history of the format helped inform questions of what to make the work about, as well as what stories I could explore most effectively. The visual content I used in the artefact was influenced by the history of the dark ride discussed in the earlier chapters and the specific tale I learnt from the *Haunted Castle*. In addition to the formal characteristics that are brought together to achieve a strong dark ride experience, other aspects of nostalgia, loss and abandonment are also evident in the dark aesthetic of my projected installation.

In its unique way, the demise and rebirth of the ride are explored through the format itself. *A Southern Dark Ride*, recreates different aspects of the park where the *Haunted Castle* used to reside. I pay homage to the owners, Jeremy Cruse and David M Smith, who salvaged the ride and rebuilt it. As they rebuilt the current ride from their own memories, my artefact revives other elements from the Miracle Strip amusement park as symbols of its particular

history. The demolition of the Miracle Strip amusement park in 2007 signaled an end not only for the park, but for many people's ability to share those vacation memories. My creative artefact shows how the historic dark ride can take audiences on a particular type of abstracted journey, utilising the memories of an iconic Floridian Amusement park as the source material.

Early in the course of this research I was contacted by Jeremy Cruse, the owner of a restored and relocated historic dark ride. Cruse was keen for me to visit his ride, an opportunity which presented a unique chance to engage first-hand with an historical dark ride and see it through the eyes of a contemporary creator and enthusiast.

The ride Cruse acquired came from the Miracle Strip amusement park which used to sit on a block looking out over Panama City Beach in Florida. Wanting to understand more about the story of the ride and the visual influences that led to its particular creation, I made the trip to the ride's original location in the Autumn of 2016. The coastline had changed dramatically since the 1900s when the resort district consisted of little more than a series of shacks nestled along Florida's portion of the Gulf of Mexico (Hollis, 2008). Despite being part of Florida, the area of beach between Destin and Panama City Beach attracted people from Alabama and Georgia. Whilst it was geographically labelled The Emerald Coast, it would often be affectionately referred to as the Redneck Riviera by locals and popular cultural figures (Jackson, 2012). New highways connecting Florida with western states sent new traffic through Alabama and led to a culture of roadside attractions beckoning tourists to stop and spend. Huge sculptures began lining freeways, attracting families to stop on long haul drives (Hollis, 1999) (Figure 18).

Figure 18. King Neptune's Castle restaurant formerly the Sir Loin Steakhouse which used the same promotional character, Panama City Beach, USA by David M Smith, 1993.

This particular story of the American amusement park and the historical dark ride takes place in the 1960s when the Miracle Strip amusement park was at its most successful as a business. One local who is connected with the visual and cultural history of the area is Tim Hollis, an author and historian who has written prolifically about entertainment culture in the southern states of the USA. Hollis is a well-known figure amongst the Alabama community, particularly because of his collection of memorabilia from the 1950s and '60s. He makes his collection available on request and I took the opportunity to meet with him and view the

archive which is in his house outside Birmingham[35] (Figure 19). Hollis showed me archival images of the area as it had been in the 1960s featuring many of the major roadside attractions.

Figure 19. Author Tim Hollis' private memorabilia collection, Dora, Alabama, USA by Jodie Mclelland, 2015.

The densest section of giant facades could be found at the Miracle Strip amusement park. The Miracle Strip was born out of this new cultural phenomenon of attractions and car culture. From the enormous acrylic pirate statue at Petticoat Junction, the huge statue of the Sir Loin Steak House or the man-made mountain at the Jungle Land Zoo (Figure 20), large items dotted the highways beckoning passers-by. The beachside destination of Panama City Beach was the endpoint of days of driving past other enormous commercial statues, all designed to work aesthetically from the viewpoint of the car. Observing and understanding this visual culture began to have an influence on my ideas for a potential experiential artefact. Understanding the way this entertainment space used to operate and engage with the public felt like the perfect content to re-imagine and relive through the abstracted lens of a dark ride.

35 Tim Hollis's private archive is located in the town of Dora in Alabama, a private museum of memorabilia from the 1940s to the 1980s (Devoe, 2018).

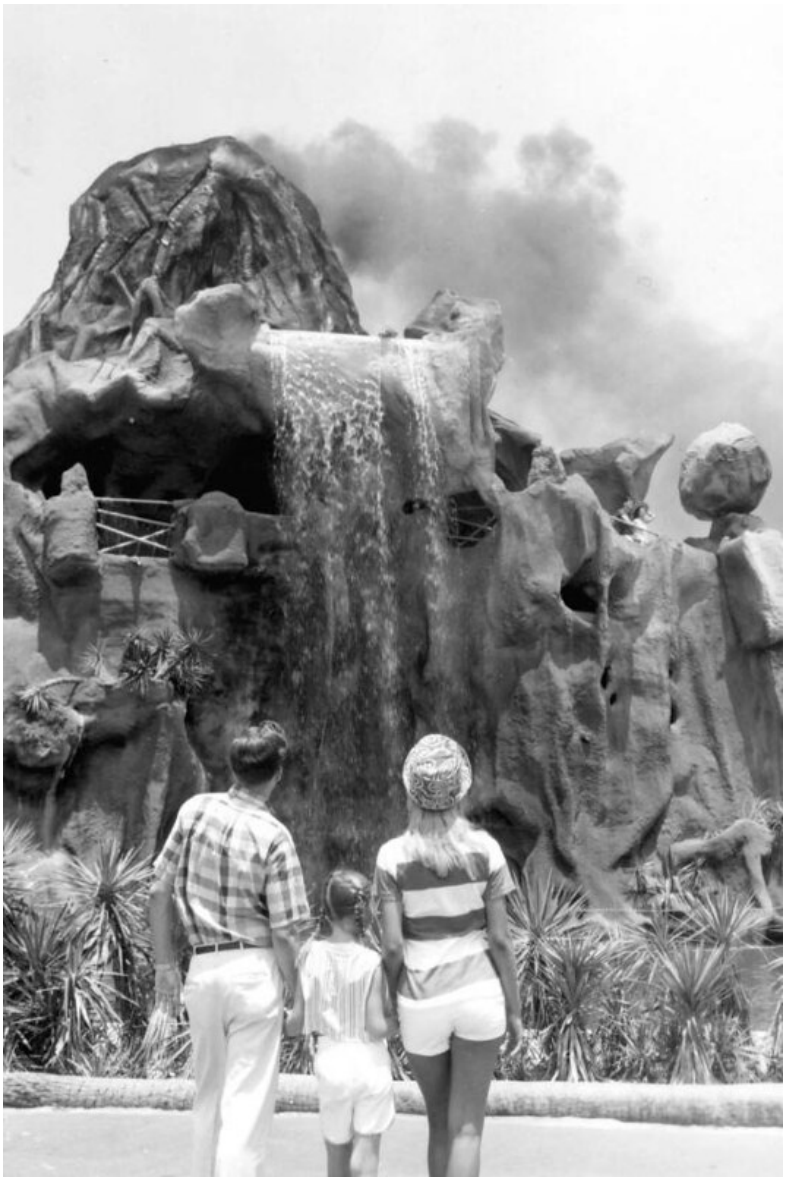

Figure 20. The Jungle Land Attraction, Panama City Beach, USA by David M Smith, USA, 1968.

Like Coney Island and Blackpool in the 1900s, or Conneaut Lake and other trolley parks locations in the 1910-20s, Panama City Beach's Miracle Strip extended aspects of the transportation network and continued them in ride experiences. A product of the 1960s, The Miracle Strip showcased different aesthetics that reflected and catered to automotive travelers. In 1965, Bill Tracy, brought a concept to the owner of the Miracle Strip, a brand-new dark ride (Hollis, 1999). Before building the *Haunted Castle*, Tracy had completed 35 other projects on the eastern and western sides of the United States (Bahur and Seidl, 2018a).

Tracy came to the Miracle Strip in 1965 to build a dark ride, but as I would discover, the ride would evolve from that day to become a unique product of its environment. Travelling to these sites gave me great insight into how different creative influences were applied to the historic dark ride. With questions about how to build my own content and structure it in the dark ride, I was fascinated by the way that location and audience affected the original designs for these early experiences.

Val Valentine

Initially, Bill Tracy's design for a dark ride in Florida did not conform to the roadside attraction style of the area. Built for the North Eastern climates, the ride he built in 1965 had a strong roof (for snow) but a flimsy and exposed facade, which was a liability in Gulf Coast storms. After less than four years, the *Haunted Castle* was beginning to look old and worn, as intense blasts of salt air lashed the park, eroding the paint (Figure 21).

During my visit to Tim Hollis' archive, he showed me images of the work of a local artist who transformed the ride to better suit the requirements of the Gulf Coast. In the early '70s, Local artist and designer Val Valentine was employed to redesign the façade of the *Haunted Castle*, creating a work that protected carts from the harsh conditions. Valentine had come from Miami where he worked for Fleischer Animation Studios, drawing characters such as Betty Boop and Popeye for the popular animation studio (Garman, 2015, para.3). Valentine was a perfect fit to re-design the façade, as his creative style lent itself to large bold figures that were simple enough to protect the rides from the elements. Valentine created rides in the shape of enormous characters, melding the visual language of road-side attractions with cartoons and bringing it to the amusement park. His design for the dark ride facade saw the development of an enormous castle intertwined with an anthropomorphised tree (Figure 23).

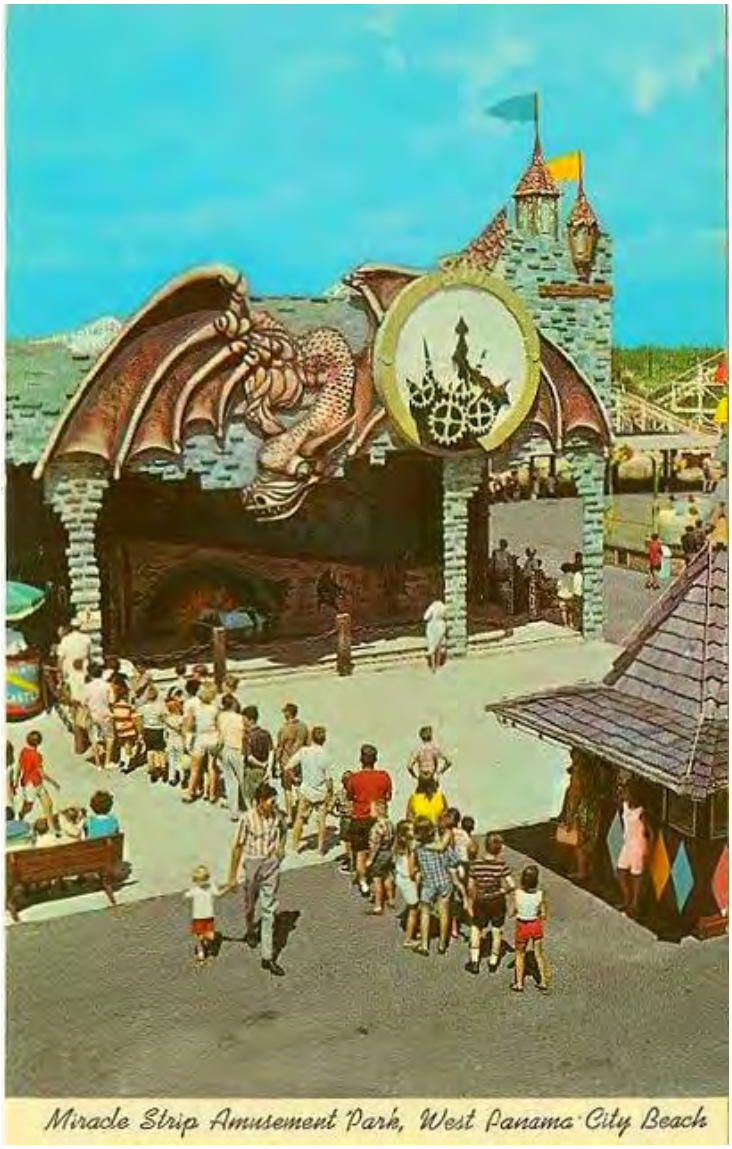

Figure 21. Postcard of the original *Haunted Castle* dark ride, Panama City Beach, USA, Tim Hollis, 1967.

Once more, the stories about the development of a historic dark ride helped me to understand how the aesthetic evolved. This understanding inspired me to tell the story of what the old rides were like, knowing what aspects were unique and held potent memories. Valentine melded a more traditional approach to image making with the intimate experience of ride design. He applied a bold use of character design, converting large figures into sculptural parts of the ride. In my own practice I began to digitally rebuild the more public facing elements that Valentine had created on the Miracle Strip. Whilst I would have many creative options for how to use these elements, this initial field research inspired me to retell

the story of this entertainment through the final work.

Within a short amount of time, Val Valentine had not only redesigned the *Haunted Castle*, but he had built structures that added more protection and spectacle to three more of the rides. Two other spinning rides from the park had new structures built to encase them and protect them from the elements. The addition to each of these new structures also created a new thematic element to each experience. The renovations turned the spaces into props that could be seen from a great distance and entered into. The rather simple spinning Trabant ride[36] was now concealed by an enormous snow monster, with an entrance to the ride between his legs (Figure 22). In his time at the park Valentine created a wide range of outlandish structures that would redefine the look of Panama City Beach. Some of the features he created might have seemed cosmetic additions; an attempt to imbue structures with the iconic value of the newly opened Disney World in Florida in 1971. But Valentine's efforts echoed a far more localised approach to experience building that had been utilised since the early days of the Pretzel Company.

Figure 22. Photos of (from left) Dante's Inferno and Abominable Snowman attractions, Panama City Beach, USA by Tim Hollis, USA, 1982.

[36] Trabbant is German for Satellite, it was a American ride with an undulating circular platform, it was made by the Chance company throughout the 20th century (Sheffield, 2011).

In response to this research I continued to create models and other digital objects that revived Valentine's facades. As I got a sense of the park's former geography, I felt that an abstracted version of this former space could be explored through the format of a dark ride. Valentine's approach to replacing and re-using rides, coupled with the historical dark rides propensity to explore loss, coalesced with my creative thinking. From these discoveries of Valentine's influence on the ride, I took great inspiration and felt reassured to experiment and apply my own interpretation of history through my artefact.

In the same way that Sylvan Beach and Deno's Wonderwheel had rides built to best suit their circumstances, the Miracle Strip took existing rides and redeveloped their thematics and structure to suit the conditions. Roller coasters, carousels, switchbacks and Trabants were all technologies that had existed since the turn of last century (Braithwaite, 1968), but by creating an enclosed environment, Valentine was able to transform the experience into a dark ride. Rather than merely experiencing the physiological thrills of a spinning Trabant ride, the newly appointed indoor ride featured a light show and intense bursts of chilled air that reinforced the snow monster theme.

Just as the electric tram technology was used to create new interest in the disused spaces of the 1930s parks, advancements in fiberglass and concrete allowed for rapid additions to be made to dark rides in 1950s. This revamp not only breathed life into parks, but the revamped dark rides attracted adults to entertainments previously aimed at young children. New designs created themed indoor experiences, with the most basic of mechanical rides at the park's disposal.

In the case of the *Haunted Castle*, the redesign of the façade changed the way that the audience interacted not only with the ride experience itself, but with those not on the ride (Hollis, 1999). The entrance now featured a spiral staircase that led the audience slowly into the ride, and beside the staircase riders were visible through a small opening. As riders past

the queue, a portion of the façade would appear to break apart, toying with audience expectations and understanding of the format.

Reinventing the Haunted Castle

In 2004, during the height of the property boom, the land that the Miracle Strip stood on was sold to developers with the intention to build residential holiday housing on the site. The enterprise was called the Miracles Resort Park and promised multimillion-dollar condos on the site (White, 2007). The roller coaster was taken down and the dark ride was stripped of its tracks, but Valentine's designs stood firm, as the resort erected an information booth and concrete bollards with their company logo. Within a year the development was cancelled, and the real estate showrooms also became derelict.

The *Abominable Snowma*n, the *Dante's Inferno* and the *Haunted Castle* all remained at the site, amongst the rubble and detritus. For years they were photographed in this surreal state, empty facades slowly being graffitied but maintaining structural integrity against the elements (Figure. 23). Sadly in 2008 the site was bulldozed and remains an empty lot to this day.

Figure 23. The *Haunted Castle* dark ride after the closure of the Miracle Strip amusement park, Panama City Beach, USA by Steve Sobczuk, 2005.

During the process of demolishing the Miracle Strip amusement park an Alabama based artist named David M Smith had arranged to buy the internal mechanics of the dark ride before they were destroyed. Smith had been a fan of the Miracle Strip as a child and in the dying days of the park had taken extensive footage of the various rides in states of disrepair. Smith had also followed the work of Val Valentine, meeting and documenting his practice before his death in 2015[37]. Seeing this documentation of the park in such states of decay began to solidify a story that I could interpret through the historic dark ride, one not only with loss and nostalgia but with a visceral sense of unease.

Between 2005 and 2009, David M Smith would assemble and re-assemble his

[37] David M Smith met with Val Valentine 2013 before his death two years later, a small recording of Val drawing one of Fleischer's famous Popeye characters was archived by Smith https://vimeo.com/user1921417

favourite childhood ride for Halloween festivities and charities. He installed it into warehouse spaces and even at the Birmingham Zoo for a one-off thrill (Hayes, 2010, para.3). Smith used the ride indoors and out, creating ad hoc coverings and available props and locations to create new iterations of the ride.

Over the past 20 years, the culture of haunted entertainment has exploded in popularity across the United States. This has been seen in both the multimillion-dollar theme park industry and a more local independent level. Like the dark ride owners of the 20th century, the independent haunt developers, sometimes called 'hauntreprenuers' (Pickel, 2018) have adopted modular approaches to the use of space, technology and performance (which plays a strong role in a classic haunt). Today's haunts exist in every state of the USA and are particularly common in areas with decreasing population and economy such as the deep south (Findahaunt.com, 2004).

Jeremy Cruse was one such haunter who operated a Halloween attraction in the small town of Oxford, Alabama. In 2009, he bought the *Haunted Castle* dark ride from Smith to be installed in his 100-year-old cotton store which also hosted a haunted walk-through attraction. Together with David Smith, the two set about re-developing the ride to fit the space and evoke the memory of the Miracle Strip amusement park (Figure 24).

Figure 24. Photos of (from left) Jeremy Cruse and David M Smith constructing the *Haunted Castle* dark ride, Oxford, Alabama, USA by David M Smith, 2007.

With the tracks able to be re-distributed in a modular fashion, the ride could be adapted to fit a new space. Re-configured and intertwined with Cruse's existing haunted attraction, the ride now sits in contrast to a more contemporary form of spooky experience. Cruse had changed the ride to suit a different type of experience, no longer aimed at summer guests, the *Haunted Castle* is an October phenomenon. The original ride had moments where carts exited a balcony overlooking the park and the bright summer sun, now riders hurtle through an exposed part of the track in the indoor lobby (Figure 25). Customers waiting in the queue are within meters of the waving and screaming riders.

Figure 25. Photo of the Interior of the new *Haunted Castle* dark ride, Oxford, Alabama, USA by Joel Zika, 2015.

While sadly the façade of the *Haunted Castle* was destroyed, Cruse and Smith were able to rebuild and salvage a handful of the original props to re-create the permanent attraction. It now stood over two hundred and seventy-eight miles away from where they had first experienced the ride as children. There was no blueprint of the ride available: the entire process had to be completed from memory.

There are many interesting ways in which the *Haunted Castle* ride has been re-interpreted and re-configured for its new location. One of the most striking similarities to the photos I'd seen was the way that façade had been integrated into an indoor facility. The rebuilt ride begins in the open lobby of the small warehouse where Cruse has painstakingly re-created the faux brick look from the ride's original open-air façade (Figure 26).

Figure 26. Photos (from left) The original *Haunted Castle* façade, Panama City Beach, USA by David M Smith, 2005. The relocated *Haunted Castle* dark ride with replica façade elements built by Jeremy Cruse, Oxford, Alabama, USA by Joel Zika, 2007.

Planning the Artefact

In rebuilding his version of the *Haunted Castle* dark ride, Jeremy Cruse was able to study not only the work of Bill Tracy to compare prop designs, but also use social media to source records and local memories when re-creating the ride elements[38]. Unlike the many historic rides of the 20th century, the Miracle Strip flourished well into the age of the digital archive. Visiting and exploring this ride and many others around the world, I have observed the creative options that the historic dark ride presents. Ride creators and caretakers across the globe work within a defined format and characteristics but seek to explore local stories and aesthetics through that structure.

The particular creative approach that I have applied evolved from visiting and studying the ride and its history. Creatively, I could have built this experience without using an existing dark ride but appropriating an existing space and working with available infrastructure felt most aligned with the ethos of dark ride creation. From Bill Tracy's first design, to Val Valentine's massive rebrand of the Miracle Strip space (including the dark ride) to Smith and Cruse's contemporary revival. This experience gave me a first-hand example of how the dark ride can be moved, covered, redecorated and reconfigured whilst still utilising the key characteristics of the historic dark ride format.

[38] Youtube links captured by tourists show footage of the Miracle strip, particularly the dark ride as it was in 1988, https://youtu.be/AVSea9eUe2Y?t=55 , https://youtu.be/T3Y219vIDyk?t=429

Results

Developing the content

Through multiple trips to Panama City Beach and later to Oxford Alabama, the artefact began to take form. I observed and researched how the ride was experienced, how it changed and how I might use the new *Haunted Castle* space to develop new understandings of the format.

In my initial field trips, I was able to see the way the ride was developed and how it compared to other examples of classic Bill Tracy rides. In addition to examining the original design, I looked at how the ride evolved over time and how history and circumstance had created a narrative around it. Observing this evolution, I began to study and create small visual components from my field research. I studied photos from digital archives and social media which helped me to create a 3D digital replica of the *Haunted Castle*, signage from entrance to the park and the decal illustrations from the roller coaster. Digitally these components could exist without scale or position, created as two and three-dimensional artefacts ready for static print, 3D prototype or projection. These components all reflected different objects from the original Miracle Strip site and nearby attractions which no longer existed. Throughout the study these works manifested as different digital objects which were stitched together in the format of the final artefact.

The major works developed for the experience included a detailed digital model of the Val Valentine refurbished *Haunted Castle* (Figure 23), models of the Abominable Snowman (Figure 24) and the Dante's Inferno ride (Figure 25). Throughout the course of the study I experimented with these objects as stand-alone projections (Figure 26), digital prints (Figure 27), Vinyl Banners (Figure 28) and digitally printed 3D sandstone prototypes (Figure 29).

This practice-led approach allowed me to explore the impact of these images through dynamic production methods, such as banner printing, 3D sandstone modelling and large-scale digital projection. Different processes and translations allowed me to see the artefacts at different scales and levels of tactility and understand the impact they would have had as facades many years earlier. The final artefact could have taken many forms, from gallery-based installation, miniature train model, museological exhibit or documentary film. Key in this decision-making process exploring how the characteristics of the historic dark ride could influence a new piece of work. The understanding of what made up a historic dark ride represented new findings to my research which now defined the direction that the work would take. I considered the different characteristics of the historic dark ride, what I might need to create my own experience, and how content I had made could work with that structure. The six key characteristics needed to be used however combining haptics, sound, illusion, lighting, 360 degree design and indoor/outdoor experience meant looking for very specific circumstances to present the work. Feeding off my observations of the *Haunted Mansion* ride and the many other historical examples I had experienced, I believed there was an opportunity for me to use this exact format to make a new work. I felt it was best to work on a large scale, creating an experience as close to a historic dark ride as possible, if possible using an existing ride structure.

Figure 27. Digital recreation of the Original *Haunted Castle* façade by Joel Zika, 2015.

Figure 28. Digital recreation of the Original *Abominable Snowman* façade by Joel Zika, 2015

Figure 29. Digital recreation of the Original Dante's Inferno Ride façade by Joel Zika, 2015

Figure 30. Digital projection work for the exhibition *Miracle Strip* at Diane Tanzer Gallery by Joel Zika, 2013

Figure 31. Photographic prints from the exhibition *Miracle Strip* at Diane Tanzer Gallery by Joel Zika, 2013

Figure 32. Vinyl print from the exhibition Horror Show at Strange Neighbor Gallery by Joel Zika, 2014

Figure 33. Digital Sandstone Prints from the exhibition *Miracle Strip* at Diane Tanzer Gallery by Joel Zika, 2013

Establishing the Structure of the Artefact

In 2016 I made an agreement to use the *Haunted Castle* dark ride in Oxford as the location for an original work. Jeremy Cruse and myself agreed that I would use the site, the carts and tracks over a four-week period while the ride was not open to the public.

At this stage in the study I had spent some considerable time with the ride and the community around it. Researchers such as Hollis had made an impression on me through their commitment to documenting the Southern states impact on entertainment culture (Figure 30). I had also attended many of the haunted attractions and other amusement zones in the lower south of the USA and experienced the passion for community driven production. Paying respect to the connection between the Miracle Strip and its neighbouring states I decided to call the potential artefact *A Southern Dark Ride*.

Figure 34. Photos of (from left) Miracle Strip memorabilia from Tim Hollis' archive, Joel Zika and Tim Hollis in his archive by Kate Moon, 2016

Having access to the ride structure opened up many creative possibilities as well as instilling some limitations. At a practical level the decision meant that the artefact would manifest as a cart-based ride, with timing and space now rigid components of the design. This ride experience would be captured in virtual reality. This would not replace the feeling of riding it in person but it would allow me to archive and document it in the most thorough way. Having ridden and documented the ride in 2015 I had a firm idea of how the layout and production of a ride could be carried out. I began preparing a sequence of the visual components I had developed throughout the study in such a way as to take the audience through my own exploration of the Miracle Strip history. Having access to a historic dark ride solved immediate problems in establishing the effectiveness of the format for the creation of a new experiential work. Using unique content to develop a new experience would show how others can use its characteristics for a variety of purposes.

Have a cart-based ride structure where the audience's position is set (rather than a work in gallery or film in a cinema) suited my desire to work with digital projection to transform the dark ride space. Perspectival illusion relies on knowing the audience's position in space relative to the visual media, and this characteristic is exemplified in formats such as virtual reality and cart-based rides. Knowing where a viewer is seated -or their head is positioned- allows for perspectival illusion to be built into the image making at every part of the ride.

Working with the *Haunted Castle* meant having access to the mechanical structures which deliver the light, haptic and movement characteristics of the dark ride, and that these elements could not only be studied but also re-imagined in my own work.

I built and simultaneously documented the work in the summer of 2016. The process involved the installation of visual media into the space and the removal of existing props. Projectors were attached to the roof of each section, and in between each crash door I created a pattern of digital light that I could use to insert digital media I had developed. Witches, headless men, coffins and spiders were either removed or obscured by dark fabric so as not to be seen in documentation. The original ride was studied and discussed as part of chapter one with complete footage of the current ride accessible (Table 2, G). After the original components were removed, the experience consisted of a largely blackened space with a two-person cart moving through it.

Capturing the Artefact

Virtual reality video was a method I used for documenting the research for further study, it allowed me to review the research work I had done in the field and in creating the artefact. Due to the participatory quality of the work and the complexity of the installation, the piece would only be seen in its original form by myself. Rather than being a limitation of the work, this approach is in keeping with practice-led methods of research. In studies of this sort, an examination of the research which led to the artefact is the primary concern, with the audience's experience of the work less important than the research knowledge it represents. In her article, "Creative Practice as Research", Lyle Skains discusses the difference between practice-led methodologies and practice based, she explains:

> The distinction lies in the role of the creative artefact. For practice-led projects, the artefact is not as important as the process of creating it. (Skains, 2018, p.85)

The role of documentation is crucial in this instance, as it supports the claims I have made about the experience of the historic dark ride. Discussing documentation of her practice, Finnish visual artist Nithikul Nimkulrat explains the interplay between creation and documentation in the practice-led process:

> The artistic process is a series of interactions among different actors, such as materials, practitioner, and artefact…When the artistic process is performed, it needs to be presented as evidence for practice-led research. To transform an interactive process into evidence, it needs to be represented in textual and visual forms. (Nimkulrat, 2007, para.16)

To study the historic dark ride and document my study, I needed to capture the complete 360-degree experience. The decision to document the work using virtual reality video posed many technical problems but without a public space to view the ride it offered the best ongoing way to share and review the documentation. A set of 4 video cameras were attached to the cart, capturing every angle of the work from the moving vantage point. The resulting video documentation created a moving 360-degree panorama from the position of the rider (Figure 31). Audiences can view the results as either panoramic video or through a head mounted display, wherein the user can turn their head as they would on the real cart in virtual reality.

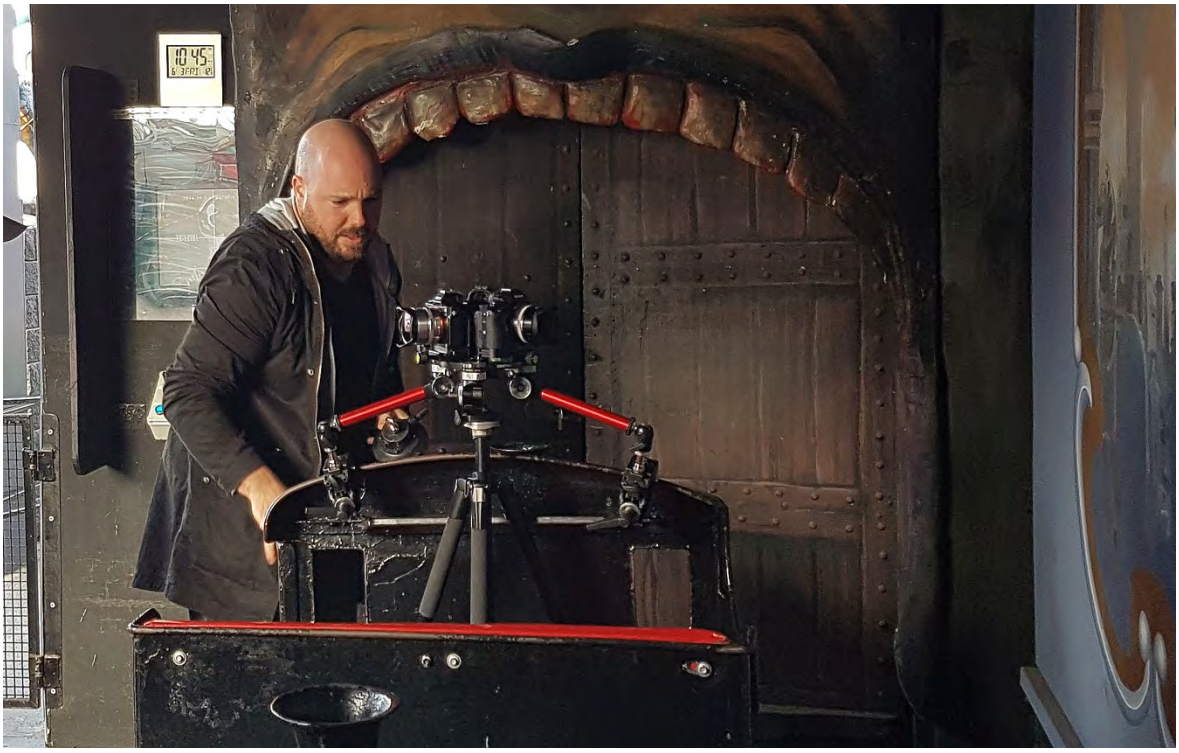

Figure 35. Photo of Joel Zika preparing the VR camera array at Luna Park Melbourne, Australia by Kate Moon, 2015

This method of capturing the space was experimented with during field research on rides discussed in chapter one however utilising it in the context of the artefact made me more critical of it as a creative device. 360-degree video captures an incredibly wide frame of vision, because of this, more information needs to be captured by the camera to create a facsimile of the scene. The capacity of 360-degree video to capture realisitic scenes has been made possible by advancements digital photographic technology. With cameras able to capture more detail, the experience of viewing landscape 360 degree images has become more convincing. Today, the technology for capturing moving experiences – such as rides – virtually is still far from perfect. Issues of digital resolution affect the clarity of images and the capacity for dynamic range in dark and moving environments depletes any true facsimile of the original experience. I decided to use a collection of high-quality cameras to capture *A Southern Dark Ride*. I tested the way the images were stitched together as well as the amount of light and shutter speed needed for a viewer to see the final work clearly. Singular cameras

with ultra-wide lenses exist, as well as cameras with multiple small lenses which can irradicate strange stitching errors called parallax. After testing technology such as the InstaPro 360 (an all in one camera) and the Entaniya 250 (an ultra wide lens), I chose equipment that would afford me control over the detail, light and colours of space rather than consistent stitching. The final results are images which stand alone as beautiful documentation when viewed printed, on a screen, or in a head mounted display.

Technology has improved since the work was captured and I have discovered aspects of the production that I would improve on. In 2020 it is possible to capture at double the resolution which the work was originally shot at, and cameras have also improved in their low light capacity and stabilization. One unexpected shortfall in the finished work is that the camera occasionally casts a shadow on the projected content, and this could be prepared for in future projects of this style.

Despite the visual focus to the documentation, it was sound that was the first element to be developed for the work. Before the visual work was installed audio was captured from the space and developed in parallel with the on-site production. Stereo audio was recorded in various places around the site and on the ride, the original score and spot effects from the *Haunted Castle* ride were turned off during recording (Table 2, G). The atmospheric sound of the work is important in the dark ride because the creaks and bumps form part of the work's role in exploring and sharing this unique media space.

Designing the Artefact

As discussed in chapter one, the historic dark ride combines at least six different unique characteristics. The development of the artefact allowed me to take the characteristics which I had documented in the historic dark ride, apply and reflect on them through the real-

life construction of a ride experience. In the following section I will outline how and where I applied the six defined characteristics of the historic dark ride format.

The *Haunted Castle* ride was used as the structure for this new work and in the following section I will discuss the process of constructing a new experience within this location. I will articulate the artefact as a ride experience, seen from the point of view of the available electric carts with further discussion of the documentation in its digital form to follow. The focus will be on what the creative options were in the space, how I engaged with them and what the results were.

1. Internal and External Journey

The first section of the ride structure plunges downwards. Here, my creative process was to establish the context of the journey. Most rides feature characters beckoning, warning viewers or using other props to set the tone for what is about to come. I used images of the former entrance to the Miracle Strip amusement park (Figures 36,37). From found imagery, I remade roadside signage for the park which was central to the cultural memory of the site (Ms-pp.com, 2017). Portraying the signs as buried in tropical palm fronds to build up the idea that you were entering into a park over-run by nature.

Figure 36. Photo of the closed and overgrown entrance to the Miracle Strip Amusement Park, Panama City Beach, USA, 2007 by Steve Sobczuk.

Figure 37. Photo of the closed and overgrown entrance to the Miracle Strip Amusement Park, Panama City Beach, USA, 2018 by Steve Sobczuk.

2. 360 Degree Design

The design and placement of content in *A Southern Dark Ride* makes use of the unique 360-degree experience that the dark ride format provides. It is one of the defining parts of the format; at all points in the ride every direction from the cart has elements of visual and sonic activity. Riders look behind and above themselves, but as I learned through building my own ride, the position of the track negates or controls the availability of that 360-degree experience. Sections of the tracks in the historic dark ride wind as tightly as possible, it is the characteristic that gave the Pretzel Company its name. In the *Haunted Castle*, the viewer's attention is moved close to areas of visual interest and then whipped quickly away. In this early stage of the ride structure, the cart whips from the right to the left. In this large space without walls, my creative process to set the scene led me to project one image to the right of the viewer and another to the left. The cart manoeuvres between the two, forcing the rider to look from both sides, controlling their attention.

There is always a need to have visual content built and considered in multiple directions but the constant turning of the viewer's gaze means that it is impossible to see in all directions at all times. The result of this constant movement is that some vignettes become fleeting glances that set the scene while others, where the cart movement is less frantic, can be enjoyed or examined.

Crash doors delineate each visual zone in the ride sequence of *A Southern Dark Ride*. Throughout the historic dark ride's existence these devices have served two main purposes. The first is to create a separation of light and sound from each vignette or room; this allowed spaces to avoid light and sound spill, muffling the screams of others ahead of you[39]. The second purpose was a combination of sonic, haptic and spatial illusion where riders might see

[39] As discussed in chapter 1 and 2 this was a technique that wasn't always applied, in the case of the *Spookarama*, riders were possibly meant to hear each other but because of the high cart design they could not see each other.

an image and presume a solid wall before the cart crashed through it. In *Haunted Castle*, the second room is entered through a set of crash doors where the ride progresses calmly beneath an archway. I decided to use this point in the ride to explore an iconic landmark of the long-lost Miracle Strip amusement park which would have been experienced on the roller coaster. I repositioned an image of a serpent's mouth which was once used to engulf audiences on the roller coaster in the 1980s (Figure 38, 39), to sit above the dark ride track and swallow the rider whole.

Figure 38. Photo of the original serpent illustration on the Starliner Roller Coaster at the Miracle Strip Amusement Park, Panama City Beach, USA, 1988 by Tim Hollis.

Figure 39. Photo of the serpent illustration in *A Southern Dark Ride*, Oxford, Alabama, 2015 by Joel Zika.

3. Triggered Sound

The early sequence with the serpent's head afforded a great example of how sound design could be applied in the dark ride, adding a fantastic diegetic score to the room. The process for sound design started with my first visit to the *Haunted Cast*le in 2017. An audio recording of the ride accompanied the virtual reality video recording of the *Haunted Castle* in 2016 (Table 2, G). This work not only formed part of my study for chapter one but was used to inspire and redesign the audio score to fit the new content. Sound designers Patrick McMahon and Shane Jarvie-Kohn worked to build sound elements that emphasised the mechanics of the ride and created trigger points where the new visual elements had their own sound effects. This complex approach saw three types of sound elements mixed together to create the work. Recorded diegetic sound of ride mechanics, external diegetic sound to match the animated content and non-diegetic elements including the score.

McMahon and Jarvie-Kohn worked with score designer Darrin Verhagen to add overarching thematic elements to the three-minute work. Verhagen's work continued to use

elements directly from the original documentation or similar replicated sounds. These decisions were created in consultation with myself and by sharing the completed background research on the historic dark ride and the different ways that sound might work in the format. This process of building a sound design and score around an existing site led me to a new understanding about which sounds are important in the ride experience. During recording of the onsite audio, multiple carts were run through the ride, creating distant echoes and creaking floorboards from every angle.

Audio triggering is something that occurs throughout the history of the dark ride. In the original ride, sonic occurrences helped to create the constant unease between the rider and their environment. Audio was designed to be triggered at significant intervals after the rider had passed. Whilst the sound is triggered precisely, it is not aligned to a visual cue. This was something that inspired my contemporary design for *A Southern Dark Ride*. Dark rides since the 1920s had featured a range of live triggered percussive instruments designed to be set off by an approaching cart. In addition to sirens and gongs, the current and original *Haunted Castle* featured a number of loud crashing sounds during a blacked-out section of the ride, to the rider it is unclear where the sounds come from (Table 2, G).

My creative process for directing sound design in *A Southern Dark Ride* was to take advantage of the darkened space in the ride. I wanted to create a mechanical atmosphere that conjured up a space of grinding gears, crashing noises and bending timber. Influenced by the historic dark ride, sonic elements were designed as a mixture of synchronous diegetic audio applied alongside the sounds generated from the haptic occurrences where the cart bumped and knock through doors.

4. Perspective and Illusion

The arched room with the serpent's jaws lent itself to an architectural decoration, the adjoining room featured a sparser space and required me to build illusion and perspective to create engagement. I positioned a model of the Dante's Inferno ride, (one of the original features of the Miracle Strip) in the corner of the approaching walls. The visual image is created by projecting onto both walls, as the cart passes by. Dante's head, which protrudes through the wall is a replica of the iconic ride at the park, its eyes would light up throughout the day and night (Figure 40). I designed the projection to create a trompe l'oeil image which is synchronised to the position of the cart and appears three-dimensional. The process for this design involved experimentation with the location of the content to make it engaging from a distance and up close. The timing of the animation was created in such a way that the three-dimensional digital model turns as the viewer moves past it, with shadows helping to make the fake perspective more pronounced (Figure 45).

Figure 40. Photo of the Dante's Inferno Ride with illuminated eyes, Panama City Beach, Florida, USA 2002 by Brad Bishop.

I learnt that vertiginous illusions were a major part not only of the historical dark ride but hundreds of years of popular spatial design leading up to it. Effects where space is distorted, walls seem to move or disappear and riders are left with an uneasy sense of perspective. In chapter two I discuss the use of illusion in entertainment spaces dating back to the 16th century. There is nowehere in the *Haunted castle* where illusion and vertigo play as big a roll as in the spinning passageway. Following the Dante's head illlusion, the cart crashes through its second set of barrier doors and into a spinning passageway (Figure 41). In the existing ride the passageway is made up of a rotating tube with faux bricks, an effect that has been in the ride since its inception, and is found in rides created by Bill Tracy. The spinning room is an old carnival trick which Tracy had revived in the 1960s (Bahur and Seidl, 2018c).

Figure 41. Photo from *A Southern Dark Ride* of the spinning passageway, Oxford USA by Joel Zika, 2015.

The room spins whilst an object on the wall also spins, creating a dizzying feeling that the cart might be out of control. A vertiginous effect is created through the synchronising of the spinning image and the walls in the original ride. Like the moving panoramas

discussed in chapter two, the spinning room takes a simple visual installation and creates a location specific engagement with the audience. In the dark ride, this type of illusion works immediately and to great effect as the viewer is confined to the cart and is also thrust into the visual vortex. In a traditional panorama attraction many meters of image is required to invoke such a visceral feeling (Oetterman, 1999, p.314). In Bill Tracy's original ride from 1964, he attached a spinning replica of the rear of a cart with the heads of two riders to increase the spinning feeling (Table 2, G) (Figure 42). In *A Southern Dark Ride*, I used the mechanisms to create a vertiginous effect with new content. Replacing the spinning passengers with a monstrous figure wielding blades which turn in time with the tunnel, this afforded me a similarly uneasy effect to place on the rider. The figure is an adaptation of the structure from the nearby Goofy Golf mini-golf course which has since been replaced.

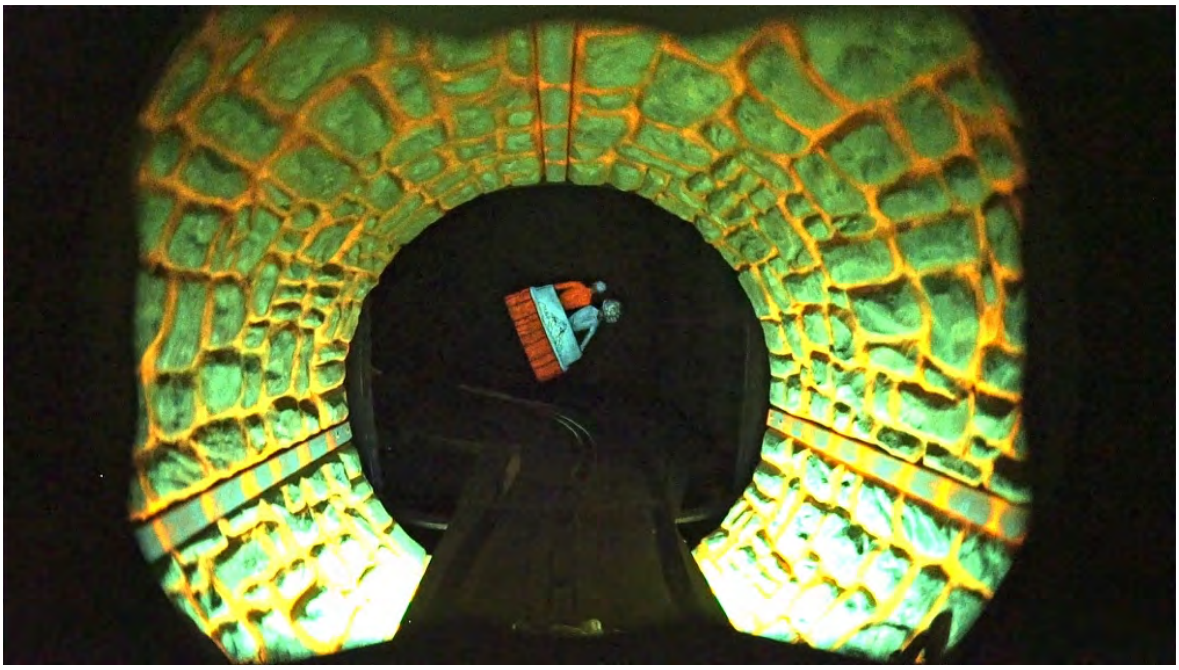

Figure 42. Photo from the *Haunted Castle* showing the spinning passageway with spinning sculpture of fellow riders up ahead, Oxford, USA by Joel Zika, 2015.

Both the Dante's head projection and the spinning room create perspective illusions in the space, using the controlled point of view of the cart to render specific illusions. One of the most simple, effective uses of perspectival illusion has been left in the artefact from the

original *Haunted Castle*. It forms a bridge from old techniques to the new and occurs when the optical illusion of an extended hallway is drawn onto a set of crash doors (Figure 43). The lights go out and the cart begins to descend downwards, with almost complete darkness apart from some fluorescent paint on the walls. A corridor of drawn arches articulates the corridor with a fake perspective extended onto the crash doors to fool the rider.

Figure 43. Photo from The *Haunted Castle* showing the illusionistic hallways which appears to disappear into the foreground, Oxford, USA by Joel Zika, 2015.

Projection design is the key visual media used in *A Southern Dark ride*, as it helps me achieve goals in both establishing the journey and creating optical illusions. The original journey of the *Haunted Castle* was a tour through a diabolical medieval property (Table 2, G). In *A Southern Dark Ride*, the nature of my content had been resolved early but the process for its application and the nature of the journey took time to coalesce. I explored the specifics of this cart structure and referred back to other historical examples to inform the aesthetic decisions for this contemporary work.

The final result takes the audience on a ride through a haunting version of the Miracle Strip amusement park. The design process looked at the ways a dark ride might explore a

castle or old mill, with the carts in *A Southern Dark Ride* maneuvering through a space of fantasy and peril. Animation and digital projection were used to reinvigorate the acrylic creatures as ghostly apparitions and form the three-dimensional space of the ride journey.

5. Mediated Lighting

I used a range of techniques to frame and position the images that were projected onto the walls of *A Southern Dark Ride*. The characteristics of the historic dark ride determined my approach to placing images inside the historic dark ride structure. Illusion was a key component which worked hand-in-hand with mediated lighting to give the impression that images and their subject matter had presence. In historic dark rides the illusion of extended space could be manipulated by using Dayglo paint. As discussed in chapter two, the technology for this paint came to prominence in the 1960s[40] and it informs the application of images to the surfaces of the historic dark ride. The key characteristic of the paint is its ability to highlight patches of colour while leaving large areas in total darkness. Images of ghoulish architecture recreated from old park imagery are used and projected onto barrier doors throughout the journey, they appear solid before the carts crash through them (Figure 43, 44). Using projection design, I applied a process influenced by my observations of Dayglo on the spatial qualities of each ride. For each vignette of projected content, a virtual moving light source was designed that would emulate a sharp spotlight pointing towards it from within the ride. This allowed for the vignettes to disappear into the darkness; a modern way to create more perspective with less image visible (Figure 45).

[40] Florescent paint came to prominence in the 1930s, thanks to the experiments the DayGlo corporation whose name would become synonymous with the glowing look of their paints when used in conjunction with an ultraviolet light. The DayGlo substances revolutionized haunted attractions and the ability for locals to create their own spaces and adapt rides like the *Haunted Castle* (American Chemical Society, 2015).

Figure 44. Photo of the Projections on crash doors in *A Southern Dark Ride*, Oxford, Alabama, 2015 by Joel Zika

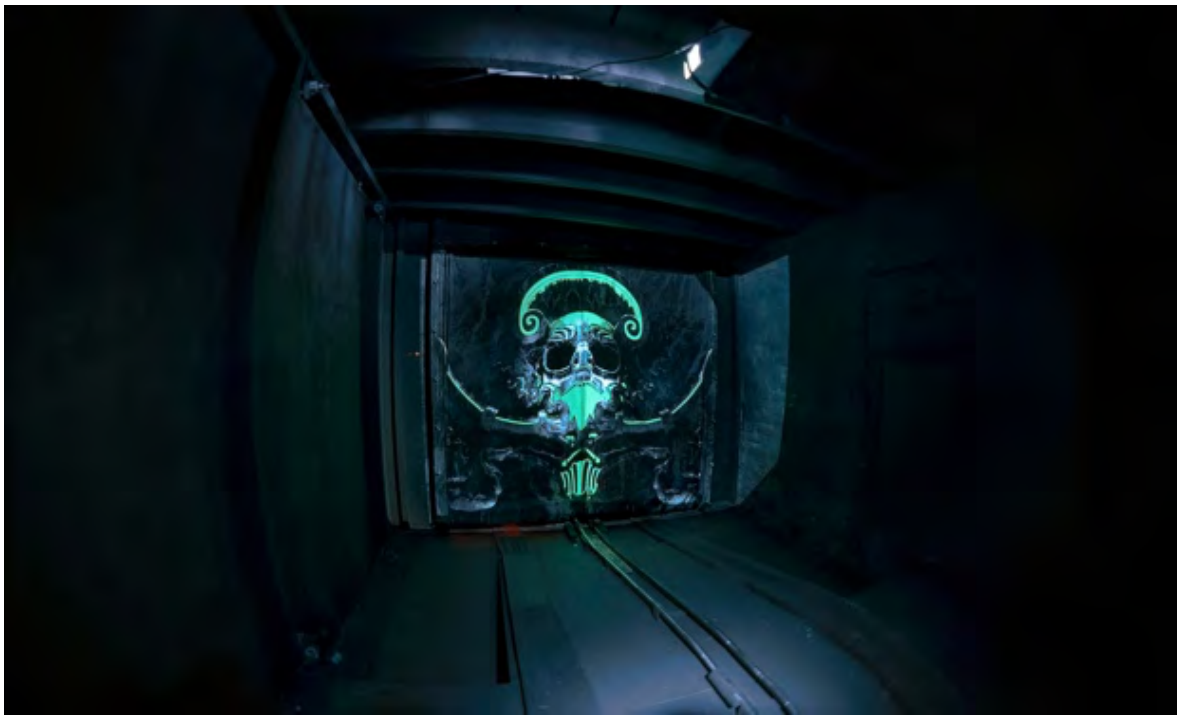

Figure 45. Photo of the Projections on crash doors in *A Southern Dark Ride*, Oxford, Alabama, 2015 by Joel Zika

Figure 46. Photo of spotlit illusions in *A Southern Dark Ride*, Oxford, Alabama, 2015 by Joel Zika

6. *Haptic Feedback*

Something that has been elucidated through the making of *A Southern Dark Ride* and is evident in experiencing it even through VR, is the role of the cart and track as a generator of complex haptic experience. The experience not only of being moved forward but specifically of being thrust, jolted, hurtled and shaken through environments is an experience particular to ride based attractions. Throughout this research I experienced the nuances of cart-based haptics and how they affect the way audiences experience images and have applied them in the artefact. The ride apparatus of the *Haunted Castle* is rich in haptic feedback. Using haptics effectively was one of the processes in the design of *A Southern Dark Ride*. There are rudimentary effects that occur through the mechanics of the ride and those that are orchestrated. Bumps, crashes and jolts are crucial to move, scare and distract the audience from an impending fright, while improvised props brush against the user in darkness to add tactility to a visual prop. From the earliest days of the dark ride at the amusement park the small motors in each cart were not ideally suited to tasks asked of them

by their designers. Cassidy's original design for a dark ride doesn't feature breaks of any sort (Cassidy, 1929) nor do any of the historic rides featured in this study. This creates a jarring journey on a cart which can only be slowed by lifting the cart off the track to disconnect the power or as the motor struggles on an incline. Carts race around corners, slow awkwardly and stutter up inclines creating a vernacular that is unique to the historic dark ride experience.

In *A Southern Dark Ride*, I did not create new haptic props, but utilised existing shakes and shudders and crashes into the design. There are moments of contrived haptic feedback in the *Haunted Castle*, such as in the spinning tunnel where the ride is shaken to emulate the rough surface that is being traversed. These techniques are developed by lifting the cart higher on one wheel than the other in a motion that evokes tension in the rider. My process integrated these haptic movements into the creative artefact by riding and understanding the tension they created. In the moments as the cart creeks and stutters before approaching crash doors or when the cart rattles down an incline, the speed and stability of the experience needed to suit these tense moments. Awareness of these heightened moments of tension and exhilaration informed the placement of image content.

Summary

The infrastructure required for all indoor amusement park rides has not changed substantially from Thompson's *A Trip to the Moon* ride in 1901. The format still relies on creative props, imagery and an adherence to the six characteristics outlined in chapter one. *A Southern Dark Ride* creates a new work simply by utilising the mechanics and infrastructure of the original 1964 ride. Through my processes of practice-led research I show how this format worked in ways that are still pertinent to practitioners. The outcomes of this production illustrate how historic approaches from media history can offer novel ways to preserve, examine or generate new approaches to design.

This practice-led methodology offers a way of preserving and creatively restoring lesser known media formats. Whether it is historic dark rides, pinball machines or drive in theatres, this approach to utilising and documenting new practice using historic media gives this methodology a renewed relevance for creatives and academics studying those fields.

Perspective illusion is the largest part of *A Southern Dark Ride*, and digital projection makes this easy to employ quickly and couple with the existing infrastructure. I used digital technology to create more detailed illusions in smaller spaces, as the control of light, movement and sound still function in largely the same way they have for over a century. The use of perspectival projection has been part of the media arts since its inception; some of its first uses were to augment wax work installations in the 1890s (March, 2018, Para.10). Electric slide projectors play a big part in Trip to the Moon, as the projections moved to give the illusion of flight for the participants. The implementation of projection technology in *A Trip to the Moon* influenced the technical implementation of the content in *A Southern Dark Ride*.

In the development of *A Southern Dark Ride*, it was crucial to utilise and maintain the dark space, particularly when working with projections. Content needed to have a limited amount of light so that dark areas of the space maintain their ambiguity. Concepts of 360-degree immersion are constantly at play in the design and production of dark ride content. Whilst all directions need to be designed, trigger points attract a viewer away from emptiness, or distract them from an impending scare.

A Southern Dark Ride is a small production, similar to many of the historic dark rides in its aspirations. To make it effective, I needed to look at how the original dark rides used space efficiently. The editing and sequencing of trigger points helps guide the viewer's attention in the 360-degree environment.

In the final room of my creative artefact documentation, a digital spotlight illuminates

the right wall where the original façade of the *Haunted Castle* stands, now in digital form. It exposes the original façade with the perspective designed to give an illusory sense of depth to the rider. Meanwhile, the cart speeds up and is thrust through more crash doors, which simultaneously have a projection of the *Abominable Snowman* ride on them (Figure 46). Dark rides used this distraction effect often, with an item appearing calmly in an opposing part of the landscape before the point of view shudders back to something frightening. This effect could be a physical prop, a projection or a spotlight.

Figure 46. Photo of the Abominable Snowman image projected on crash doors in *A Southern Dark Ride*, Oxford, Alabama, 2015 by Joel Zika

A Southern Dark Ride is an artwork where I have woven together and explored years of history that are embedded in the *Haunted Castle* dark ride. I have exploited the format's ability to reflect memory and deliver the rich and multifaceted creative experience which I

have addressed throughout this exegesis. Each element of the artefact exemplifies the six key characteristics that the historic dark ride is known for. Over the decades since its inception, the *Haunted Castle* dark ride has had many different creators add to its appearance and design. It has become a space embedded with rich nostalgia as artists and owners have added to, remembered and re-interpreted the story of its origins.

Along with the unique technical aspects of historic dark rides, the link between the device and its local audience is extremely important. I used *A Southern Dark Ride* to showcase its relevance for practitioners. The earliest example of a dark ride, A Trip to the Moon (1901), was popular because it provided a complete experiential escape, through technology and spatial design. Specific experiences like this have gradually become obsolete but the lasting impact of technological location-based entertainments like the dark ride continue to have resonance. Beyond their six characteristics, historic dark rides were capable of rich modular experiences. They utilised small motorised electric carts and lighting in ways that could be deployed quickly and easily. This agility of design and technology is reflected in the dynamic capabilities of today's entertainment technology. The processes that I used to create *A Southern Dark Ride* reveals how the valuable technology of the historic dark ride can still be seen reflected in the high-tech contemporary ride experiences of today.

Conclusion

This research set out to discover what the creative characteristics of the historical dark ride format were, in such a way as to deliver learned outcomes to creative practitioners. My question; 'what are the characteristics of a historic dark ride?' centres around a format of experiential entertainment which is widely appreciated but seldom discussed in critical fields. As I have articulated throughout this study, the dark ride has been widely appreciated as mass entertainment, but not appreciated or analysed in scholarship and media histories. This question, and the current level of discourse, necessitated a practice-led methodology where I created a new work as a way of examining the format.

My practice-led methodological approach meant building a new ride and answering creative questions it raised through investigating primary sources and secondary historical research. By building an actual functioning ride experience, I was able to see what creative options were open to me first-hand, then explore them in other iterations of the format, citing their relevance through history. As a practitioner, I experimented with different ways to actually produce the ride artefact, returning regularly to field research and historical studies to find and perfect the best model for the practice. The result of this approach is a unique practice-led study where I spent time literally inside the format.

This thesis defines the creative characteristics of the dark ride format for the first time. This was something that I, as practitioner, was passionate to relay as new knowledge. As an experiential entertainment format, the dark ride is known by those who appreciate amusement park rides and theme park experiences, but until now the dark ride format had not been clearly defined. This research examines the period of the format's evolution; from the first electric indoor ride in 1901, the first dark ride patent in 1929 through to the death of its most prolific independent creator in 1979, and how this evolution has defined the dark ride as we know it today.

Many aspects of this historic, pre-digital dark ride experience can be seen referenced throughout cinema and games culture, without analysis of their influence or specific lineage. This study gives a more detailed foundational background for further study into dark rides, haunt themed entertainment and countless interlinking media technologies. The production of the artefact provides a rich example from which to understand the practical nature of the historic dark ride. Researchers can engage directly with *A Southern Dark Ride*, experiencing a unique example of an historic dark ride built in the contemporary paradigm.

In chapter one, I explored the context for this research through the interrogation of immersive video documentation of ride experiences dating from 1930 to 1974. These personal experiences are crucial in informing the development of the artefact. In doing so they form the first survey of the medium to date. In chapter one I offer more than a mere timeline of the historic dark ride but show how someone building this type of experience classifies and defines the characteristics of the format. This new knowledge is crucial for a creator in the field, adding a vocabulary for others working not only with the historic dark ride but other experiential media. The characteristics I have outlined inform academic media discourses and elucidate the nostalgic mystery that surrounds the format. I believe this study will guide the necessary approaches to heritage and preservation of this influential format that it so dearly requires.

By experiencing each of these rides countless times and re-visiting them through virtual reality video, I defined six key characteristics that must be understood to make best use of the historic dark ride format. Although some rides are more emblematic in their application of different characteristics, all of the examples studied contain these six common characteristics. In each ride I found examples of 360-degree immersion, a connection between interior and exterior design, triggered sound, perspectival illusion, controlled light and haptic feedback.

Despite the thoroughness of the field research, evidence of the historic dark ride has largely disappeared. What is left shows us only a subset of the thousands of attractions that existed and were experienced globally throughout last century. This scarcity adds an urgency to the research, with dark rides disappearing every year from the entertainment landscape.

Chapter two of this study provides an overview of the historic dark ride's evolution, showing the conglomeration of media types that led to the creation and evolution of the historic dark ride. The overlap of parallel histories shows the important role of the format in the constellation of other media such as cinema. This chapter supports the importance associated with each of the characteristics of the format defined in chapter one. We see each media attribute come together to form a unique media format, a history of influential approaches to immersive media design that helps answer questions raised in the development of the artefact.

Through engaging with the artefact, *A Southern Dark Ride*, audiences can experience the amusement park dark ride deconstructed, outside of a nostalgic cliché or impressionistic illustration. *A Southern Dark Ride* is a true representation of one piece of the format's history, exhibited and seen from many angles. The documentation features a ride experience presented in an experiential format, in addition to other media that show the ride experience from new points of view. The artefact offers audiences a way to engage as viewers or practitioners in appreciating the characteristics of the format in an entirely new and contemporary work.

Dark rides and other location-based indoor attractions are popular formats today, from haunted attractions, major indoor theme park rides or virtual reality experiences. Formats similar to the historic dark ride draw millions of customers globally. These experiences employ state of the art technology in their development, but many similarities remain with the characteristics of the historic dark ride. This research is created for

practitioners, from game level designers working in the virtual, to spatial designers working in retail and entertainment worlds. The experiences described throughout this exegesis -and the archive contained within- offer a bounty of inspiration and ideas for practitioners of evolving and established media. The exciting potential of the historic dark ride as a format for use today is supported by the potential intersections these results have with other media theories. Of particular note are the established fields that re-assess the connection between contemporary media and historic approaches. The historic dark ride can help add context to theories such as Peter Otto's work on the emergence of VR (2011), Oliver Grau's theories on screenology (1999) or Gunning's and Gaudreault's cinema of attractions (1986). An area which hasn't been covered in depth but would benefit from this research is the emerging field of media archaeology. Aspects of the media archaeological approach have great overlap both in relation to practical use of old media and the study of its intermedial relationships with other forms.

There are many areas where I know this research can continue and be expanded upon, some of which are born out of the cultural experiences associated with the research and others based on the relevance to other media disciplines. Questions about the historic dark ride's influence on virtual or augmented reality development is fruitful territory for more in-depth analysis.

The creation of the archive and the rich experiences generated through participating in these rides still leaves me much more to explore through practice. Translating the complexities of this dynamic experiential format is something that I will continue to do through my creative work, interpreting and reviewing the archive to create new artefacts. As technology evolves, I hope to show how the historic dark ride can influence approaches to implementing cutting edge technology, particularly in VR and location-based entertainment.

Throughout the evolution of this research the support offered to me from enthusiasts

of haunted attraction culture has been overwhelming. I have touched on the relevance of this burgeoning entertainment genre in some parts of this study. The depth and connection between this culture and the historic dark ride is where I believe the most interesting opportunities for further research lie. It is amazing to see contemporary creators using found spaces and experiential creative tools to build media experiences today. Their process mirrors the way early creatives worked with the historic dark ride as a format for their ideas. Despite the US$8 billion-dollars spent in the haunted attraction industry every year[41], there is a sense of democratisation and access, particularly in the way it has spread across all parts of the USA. As a cultural area with such a massive financial weight, more discussion and more serious and considered dialogue would surely be encouraged.

My creative artefact, *A Southern Dark Ride* shows how different available technologies can be used in conjunction with historic technology to produce new experiences. The question of what the characteristics of the historic dark ride are is explored directly through the artefact, which offers a unique chance to participate in what is now a rare entertainment format. The historic dark ride has been experienced by so many around the world and has doubtlessly influenced creative practitioners in countless fields since its inception. The ramifications of the genre on media history are only just being understood. As this study is expanded on and these influences better understood, hopefully preservation of the format will also become a priority.

[41] It has been widely reported that US consumers spent in excess of US$8 billion dollars on Halloween attractions and costumes alone in 2018 (Zagorsky, 2019).

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