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Tale as Old as Time: Storytelling and the Art of Dark Ride Design

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TALE AS OLD AS TIME: STORYTELLING AND THE ART OF DARK RIDE DESIGN

By

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of the Requirements for
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Thesis Summary:

This thesis project serves as an exploration of the theme park attraction, not as a commercial venture, but as an underappreciated art form. This thesis focuses specifically on the artistic merits of the dark ride, a type of theme park attraction with a narrative emphasis and structure similar to films and theatrical productions. The fact that these attractions are designed for public consumption does not negate their artistic merit. This project strives to inspire further research by examining the history and evolution of the dark ride, with a particular emphasis on the design process; it culminates in the development of a detailed ride proposal that blends traditional narrative emphasis with recent trends and technology.

Before examining the history of the dark ride, it is first necessary to establish a clear definition of a dark ride. A dark ride has traditionally been defined as an attraction in which riders travel past artificially illuminated scenes tied together by an overarching theme and, more recently, narrative. However, the incorporation of new technology has challenged and expanded this definition. Attractions may now be classified as either traditional or hybrid dark rides.

The history of the modern dark ride can be traced back to the trolley parks of the late-nineteenth and early-twentieth centuries. The Old Mill ride popularized by these parks gave rise to the single-rail electrical dark ride. Rides like *Futurama* marked the introduction of a sophisticated theme. Walt Disney revolutionized the genre by introducing a narrative perspective to dark rides. This narrative perspective stemmed from the film background of his “Imagineers,” who shaped the design process to reflect that of the film industry. While new trends and technologies were embraced over time, the

emphasis on an immersive narrative has remained a defining characteristic of the dark ride since the opening of Disneyland in 1955. The design process pioneered by the early Imagineers – including brainstorming, collaboration and the use of detailed storyboards – has persisted as well.

There have been several major trends in theme park development over the last several years. First, there has been a shift towards immersive experiences. This is evident in a movement towards interactive queues and environments displaying extraordinary attention to detail. Second, there has been a shift towards providing multiple ride experiences to encourage guests to re-visit attractions. Third, there has been a shift towards adapting intellectual property immediately and on a large scale.

New technologies have revolutionized dark rides as well. The RFID technology employed by Disney's MyMagic+ system has the potential to revolutionize the industry by providing individualized, interactive experiences. Trackless ride technology has the potential to create more immersive experiences by fundamentally changing the way guests move through and interact with attractions. These technologies have not been widely adopted within the United States, so there is a great deal of untapped potential to move the narrative dark ride into the twenty-first century.

The attraction proposal developed in this project highlights the narrative emphasis of dark rides and the unique design challenges presented by active consumption, as opposed to traditional (passive) mediums. It illustrates the merit of evaluating dark rides as artistic works and highlights opportunities for further research, including the development of an objective standard for classifying dark rides and a method for retrofitting existing attractions with new technologies.

I. Introduction:

The author's first trip to Walt Disney World in 1998 sparked a fascination with theme parks and the artificial realities they create – prompting more than a dozen trips to the Orlando-area parks in less than two decades. This is not unique, but rather a reflection of national interests. According to the International Association of Amusement Parks and Attractions (IAAPA), one-quarter of Americans surveyed in 2011 had visited an amusement park (or theme park) within the last twelve months ("Amusement Park and Attractions Industry Statistics," n.d.). This trend is not limited to the United States. Interest in theme parks has grown worldwide since the opening of Disneyland in 1955, even following the recent global recession. According to the most recent Global Attractions Attendance Report, attendance at parks operated by the ten largest theme park groups increased by 5.1 percent in 2014, from 372.9 million to 392 million (Rubin, ed., 2015). While overall growth has remained concentrated in the emerging Asian market, there have been significant breakthroughs in the established domestic market as well – including a seventeen percent increase in attendance at Universal Studios following the opening of the *Diagon Alley* expansion of *The Wizarding World of Harry Potter* (Rubin, ed., 2015). As the Themed Entertainment Association (TEA) noted, Universal's initial investment in 2010 has revitalized the Orlando-area parks, "breaking through post-recession behavior" and encouraging a competitive cycle of reinvestment (Rubin, ed., 2015). As the economy continues to improve, this growth is only expected to continue.

In light of the commercial success of theme parks, it is not surprising that the majority of scholarly work available on the subject stems from a business or management perspective. However, this perspective does little to address the cultural significance of

theme parks. *Walt Disney's Carousel of Progress*, which opened at the 1964 World's Fair, holds the record for the longest continuously running show in the history of American theatre (Cotter & Young, 85). In 2014, the Magic Kingdom alone welcomed 19.2 million guests – 6.2 million more than Broadway (Mauney, 2015) (Reaney & Crosby, 2015). The narrative emphasis and structure of dark rides, for example, is similar to that of films and theatrical plays. The fact that these attractions were designed for public consumption does nothing to negate their artistic merit. There is a strong argument that individual attractions can – and should – be evaluated as works of art.

When debating the artistic merit of dark rides, it is helpful to consider the similarities that exist between the theme park industry and the film industry. While both are controlled by large, profit-driven companies, the works they produce may still be evaluated on their artistic merits. Both films and contemporary dark rides strive to immerse their audience within a narrative, differing only in their medium of choice. While films present stories on screen for passive consumption, dark rides allow audiences to take a more active role by physically moving through those stories. Furthermore, the design process for theme park attractions is very similar to development process for films. This is hardly surprising, given the influential role the film industry played in the development of the contemporary dark ride (Baker, 2012). In light of these similarities, it is only fitting that dark rides should receive the same degree of artistic and cultural criticism displayed in film studies.

This purpose of this project is two-fold. First, to highlight the artistic merit of dark rides by outlining their history and development, with a specific emphasis on the design

process. Second, to illustrate this design process by developing a detailed proposal for a dark ride that incorporates recent trends and technologies within the industry.

II. Defining A Dark Ride

Before examining the complex history of the dark ride, it is first necessary to establish a clear definition of what a dark ride is. The term itself may be misleading, since these attractions are not necessarily dark in terms of either illumination or content. It stems from the fact that earliest attractions of this type took place in darkened buildings where artificial illumination to draw attention to figures and scenes. The darkened environment was considered a defining characteristic, since few attractions took place in this setting. When *Space Mountain* opened in at the Magic Kingdom 1975, it was the “he first indoor roller coaster where riders were in total darkness for the length of the ride so they couldn't tell where the drops or turns would occur” (Sampson, 2007). This was only possible due to the use of computers, which monitored ride vehicles to ensure they did not collide.

Today, the term “dark ride” refers to specific type of theme park attraction that features certain defining characteristics. In *The Unofficial Guide to Britain's Best Days Out*, Bob Sehlinger provides a neat summary of these characteristics:

“The defining element of a dark ride is travelling through various artificially illuminated scenes relating to an overarching theme. Degrees of illumination vary, with scarier rides being very dark indeed, while happier rides are often brightly lit. Depending on their level of sophistication (which generally correlates with the age of the ride), they might contain elaborate sets augmented by some

combination of sound, music, animation, animatronics, interactive elements and special effects.” (22)

While traditionally slow moving, dark rides enjoy a certain degree of flexibility in regards to ride systems and vehicles. Some feature boats that carry guests through water-filled canals, like *it's a small world*. Others, like *Peter Pan's Flight*, feature suspended ride vehicles that follow an overhead track. (Sehlinger & Testa, 2015) (Sehlinger, Kubersky, Selga, & Testa, 2015). It is worth noting that early dark rides featured little to no theming, while contemporary dark rides have adopted a narrative focus in addition to an overarching theme (Baker, 2012). Still, this simple definition was adequate for several decades because the dark ride did not undergo “any major technological or narrative style changes” (Baker, 2012).

The adequacy of this definition suffered near the turn of the 21st century, as rapid technological advances pushed the medium into a new era (Baker, 2012). Many of these advancements, such as the interactive elements Sehlinger mentioned, did not fundamentally alter the nature of the dark ride. However, other developments blurred the lines between dark rides and other kinds of attractions and raised a variety of questions. For example: What distinguishes a motion simulator that incorporates dark ride elements, like *Star Tours: The Adventure Continues*, from a dark ride that incorporates motion simulation, like *The Amazing Adventure of Spider-Man* (Sehlinger & Testa, 2015)? For the sake of clarity, it is necessary to establish a clear set of criteria for what constitutes a dark ride:

1. The ride must physically move through a three-dimensional environment. Rides may incorporate both physical movement and motion simulation, but cannot rely solely on motion simulation.
2. The ride must pass artificially illuminated scenes. Traditionally, these scenes are composed of three-dimensional figures but this is not always the case (Hix, 2013). Recently, dark rides such as *Toy Story Midway Mania* have made use of screens (Sehlinger & Testa, 2015).
3. The ride must pass by these scenes slowly enough for guests to understand them.
4. The ride must feature an overarching theme and narrative structure.

If a ride meets the criteria listed above, it may be considered a dark ride. Depending on the structure of the ride, it may be classified as a traditional dark ride or a hybrid dark ride. This distinction is a bit more subjective in nature, so the best way to differentiate between traditional dark rides and hybrid dark rides is by providing examples of each.

The Haunted Mansion is an excellent example of a traditional dark ride (Sehlinger & Testa, 2015). While it may provide mild thrills, this is a natural consequence of the attraction's theme and narrative. The overall format and structure of the ride reflect that of dark rides. The narrative remains the primary focus of the attraction. Likewise, *Tower of Terror* is an excellent example of a hybrid dark ride (Sehlinger & Testa, 2015). While the thrills are partially a consequence of the ride's theme and narrative, they are also the direct result of the ride's format and mechanics. The *Tower of Terror* concludes with a thrilling randomized drop sequence that outpaces gravity. The majority of the ride is spent in anticipation of the drop sequence, while elements traditionally found in dark rides are used to supplement the narrative and build suspense up until that point. Thus,

the incorporation of the drop sequence fundamentally changes the nature of the ride. The narrative is now the framework of the attraction, as opposed to the primary focus.

III. The History of Dark Rides:

While one may associate dark rides with theme parks, their origins date back to the trolley parks of the late-nineteenth and early-twentieth centuries (Baker, 2012). The Industrial Revolution of the late-eighteenth century led to massive population shifts, as people moved from rural areas to urban centers (Baker, 2012). Trolley cars soon emerged as a popular form of transit for the working population, connecting various parts of the city. (Baker) In an effort to increase revenue, railway companies built leisure parks at the end of trolley lines to serve as incentives for weekend travel (Baker, 2012). These trolley parks were the first “amusement parks” in the United States (“Trolley Parks - America's First Amusement Parks,” n.d.). Initially, these parks consisted largely of picnic areas and live entertainment. As their popularity increased, they grew to include more impressive attractions such as arcades, swimming pools and a variety of rides (“Trolley Parks - America's First Amusement Parks,” n.d.). One of the most popular rides around the turn-of-the-century was the Old Mill ride - a simple boat ride that is now considered the first “dark ride” (Baker, 2012).

The term “Old Mill ride” refers to the inspiration behind these rides - the water-powered sawmills that were abandoned following the shift to steam power in the late nineteenth-century (Baker, 2012). Trolley parks profited from the rumors surrounding these old mills by recreating them as park attractions, offering guests the excitement of exploring dangerous locations in a safe manner (Baker, 2012). As the ride spread to other trolley parks, the theme and name changed. In some areas, these rides became known as

the Tunnel of Love (Hix, 2013). The basic format of the Old Mill ride is similar to modern boat rides, such as *it's a small world*. Guests boarded small, unpowered boats and travelled through a system of water-filled channels, passing different scenes and figures en route (Hix, 2013). Some versions incorporated a large splashdown at the end of the ride. This variation became known as the Mill Chute ride and is the predecessor of modern flume rides, such as *Splash Mountain* (Samuelson & Yegoiants, 2001, pg. 90). However, wooden canals and large water wheels meant that these rides were expensive to install and maintain (Hix, 2013) (Samuelson & Yegoiants, 2001, pg. 89). The high cost of the Old Mill ride led to the next major development in history of dark rides - the electrified single-rail dark ride.

The electrified single-rail dark ride was developed by Leon Cassidy and Marvin Rempfer, owners of the Tumbling Dam Amusement Park in New Jersey (Baker, 2012). They lacked the money to install the water-based Old Mill ride, so they devised a less expensive alternative powered by electricity (Hix, 2013). They retrofitted a “dodgem car” (a bumper car) to run on an electrified rail - creating the first ‘dry’ version of a dark ride (Hix, 2013). “The Pretzel” (briefly named “The Firefly”) opened in 1928 and was an immediate success (Luca, n.d.). Cassidy and Rempfer’s patent for the electrified single-rail system was granted one year later in 1929 (Baker, 2012). The ride vehicle employed a triangular configuration of three wheels. The front wheel engaged with the electrified rail, guiding the vehicle. The rear wheels rested on the floor on either side of the rail, allowing the rear of the vehicle to move and turn corners with relative ease (Baker, 2012).

Cassidy and Rempfer quickly established the Pretzel Amusement Ride Company to manufacture and market their rides for other (non-competing) trolley parks (Hix, 2013). However, the Pretzel Company soon faced competition from other manufacturers. While Cassidy and Rempfer held patents on specific aspects of their ride vehicles, they could not patent the concept of an electric, ‘dry’ dark ride (Hix, 2013). Other companies were able to circumvent their patents through deliberate modification, finding slightly different means to achieve the same ends (Luca, n.d.). For example, Traver Engineering Company modified the Pretzel Company’s design by adding a second engaged wheel in the front and separating the electrified rail from the steering rail (Luca, n.d.). Cassidy and Rempfer decided not to sue for patent infringement, concluding that it simply wasn’t worth the effort (Luca, n.d.). Regardless of the manufacturers, electric dark rides continued to increase in popularity, quickly spreading to trolley parks throughout the United States and overseas.

The theming and effects employed by these early single-rail rides were extremely basic. Like the original Old Mill rides, most single-rail dark rides were designed to frighten and thrill riders. Much of the appeal stemmed from the total darkness of the ride and the shock of the sudden effects (Hix, 2013). As George LaCross of Laff in the Dark explains, “park owners...put question marks on the doors, because what was behind them was supposed to be a mystery” (Hix, 2013). The effects were extremely basic, albeit effective for the time period. Initially, these effects were triggered by mechanical levers on the track itself. As the vehicle passed over, the weight would physically trigger a sound effect (such as cymbals crashing together) or force figures to move (Hix, 2013). Over time, these effects became a bit more sophisticated. Mechanical

levers were replaced with magnetic switches to trigger effects and physical noisemakers were replaced with sound recordings (Hix, 2013.) Traver Engineering Company began producing two-dimensional figures with minor movement, powered by motors (Hix, 2013). Third parties began to manufacture more detailed figures that could be combined with existing Pretzel or Laff in the Dark systems (Hix, 2013). Even with these advancements, dark rides still lacked a sophisticated, over-arching theme.

In 1939, Futurama opened at the New York's World Fair, becoming one of the first dark rides with a sophisticated, overarching theme (Baker, n.d.). Sponsored by General Motors, it allowed guests to move through a large diorama depicting what life might be like in the year 1960 (Kalan, 2010) (Clavé, 2007, pp. 11-12). The attraction hosted twenty-seven thousand visitors a day, the ride track covered 480 meters, and each ride lasted fifteen minutes. While Futurama was more of an exhibition than a narrative, its immersive nature and sophisticated theme set the stage for Walt Disney's work at Disneyland (Baker, 2012).

In 1955, the opening of Disneyland in Anaheim, California, marked another major development in the evolution of the dark ride (Baker, 2012). The park included three dark rides based on Disney animated features - *Peter Pan's Flight*, *Mr. Toad's Wild Ride* (based on *The Adventures of Ichabod and Mr. Toad*) and *Snow White's Scary Adventures* ("Disneyland Attractions by Opening Date" n.d.) (Weiss, n.d.). These attractions elevated the dark ride to a new level by introducing a clear and compelling narrative (Baker, 2012). This change was largely due to the influence of "Imagineers" (a portmanteau of imagine and engineers) - a team of designers handpicked by Walt Disney, many with backgrounds in film and animation (Baker, 2012). They approached attraction

design just as they would approach film development - with a strong emphasis on plot and narrative (Baker, 2012). They utilized a variety of techniques common in the film industry, including the use of storyboards. The structure of the rides they created closely mirrored the narrative structure of a film - a series of connected scenes with a clear beginning, middle and end. Now guests were not only immersed within an environment, they were immersed within a story, becoming active participants (Baker, 2012). Disney's design choices reflected this mindset. In *Snow White's Scary Adventures*, there are no figures or images of Snow White beyond the loading platforms (Baker, 2012). Guests were to assume the role of Snow White, playing the protagonist in the story. The Disney model became the new industry standard in terms of both the development process and the final product. Even in smaller-scale amusement parks, dark rides are now approached from a narrative perspective.

While Disney's Imagineers were in charge of the design process, the manufacturing and installation of these rides were outsourced to other companies. One of these companies was Arrow Development, which created many of the rides that opened on opening day, including *Mr. Toad's Wild Ride* and *Snow White's Scary Adventures* (Reynolds, 1999). Over the years, Arrow Development would become synonymous with Disneyland and, later, Walt Disney World. They created many well-known dark rides for the parks, such as *The Haunted Mansion*, in addition to other attractions (Reynolds, 1999). Technological development by Arrow and other companies continued to push the medium forward. The degree of Arrow's involvement and the degree to which Disney outsourced the engineering component of "Imagineering" varied over the years. At one point, Disney owned one third of Arrow Development (Reynolds, 1999). Disney served

as a model for the industry in this respect as well, separating the design process from the manufacturing process and allowing for outsourcing as required.

The narrative dark ride became so synonymous with the genre that it is now considered the traditional form of the ride. While newer dark rides maintained this emphasis on storytelling, they began to incorporate new technologies and trends as well (Baker, 2012). These new developments have expanded and challenged the definition of a dark ride, as discussed in Section I. Attractions like *Roger Rabbit's Cartoon Spin* allow guests to control their focus within the artificially illuminated environment, while rides like *Toy Story Midway Mania* utilize screens and allowed riders to interact with the environment in the form of the shooting gallery (Sehlinger et al., 2015) (Sehlinger & Testa, 2015). After a period of technical stagnation that lasted roughly three decades, it is now necessary to reconsider the definition of a dark ride (Baker, 2012).

IV. The Design and Development of Dark Rides:

Before examining the process by which dark rides are designed, it is necessary to revisit the process' connection to the film industry. The early work and influence of Walt Disney's Imagineers shaped the design process to reflect the values and format of the film industry (Baker, 2012). The format of the traditional dark ride mirrors the narrative structure of film a collection of scenes united by an over arching plot with a beginning, middle and end. In order to realize this vision, designers adopted the processes of the film industry (Baker, 2012). Attractions were outlined and pitched in a series of storyboards, which were then repeatedly critiqued and revised until a final product was achieved (Sklar, 2015).

This process by which attractions are developed has remained relatively unchanged since 1955. However, the most notable aspect of the design process is the “Blue Sky Process” – a phase of unlimited brainstorming that precedes development (Chanel, 2015). The term “Blue Sky” is used because Imagineers are encouraged to develop ideas without regard for practical or financial limitations: “The sky’s the limit” (Chanel, 2015). In reality, there are practical limitations – such as financial constraints and corporate pressure to incorporate new intellectual property (Rubin, ed., 2015). These are typically brought up after the initial brainstorming process, when ideas are workshopped with other designers (Chanel, 2015) (Verrier, 2002).

Another perspective that provides insight into the mindset of the designers is a list of guidelines developed by Marty Sklar, former head of Disney Imagineering. The rules, which he refers to as his “Ten Commandments”, can be applied throughout the design process:

- 1. Know your audience.** Identify your prime audience for the your attraction or show before you begin.
- 2. Wear your guest’s shoes.** Insist that your team members experience your creation just the way guests do.
- 3. Organize the flow of people and ideas.** Make sure there is logic and sequence in your stories and the way guests experience them.
- 4. Create a... visual magnet.** Create “visual targets” that will lead visitors clearly and logically through your facility.
- 5. Communicate with visual literacy.** Make good use of shape, color, form, texture – all the nonverbal ways of communication.

6. Resist overload – create turn-ons. Resist the temptation to overload your audience with too much information and too many objects.

7. Tell one story at a time. Stick to the story line; good stories are clear, logical and consistent.

8. Avoid contradictions – maintain identity. Details in design that contradict one another confuse the audience about your story or the time period it takes place in.

(The remaining two rules are omitted because they are specific to educational attractions and park maintenance.) (pp. 322-325).

From the inspiration of the film industry to Marty Sklar’s “Ten Commandments”, the design and development of dark rides underscores the emphasis on narrative that merits the medium’s consideration as an artistic work.

V. Future Trends and Technology in Dark Rides:

Several major trends in theme park development have emerged in recent years. Some of these trends are broadly applicable, while others (especially those incorporating specific technologies) are specific to dark rides. Since the international theme park industry is incredibly vast and complex, this project will focus primarily on changes within the domestic (American) market. International trends will be discussed, but only within the context of how they apply to theme parks within the United States.

One broad trend that has emerged in recent years is an increased focus on creating immersive environments. Traditionally, Disney has excelled in this respect and Disneyland’s *Haunted Mansion* is an excellent example (Surrell, 2003). According to most guests, the show begins in the “stretching room,” where the Ghost Host begins to

speak directly to guests. However, this is actually a cleverly themed queue; guests are simply in an elevator and must still wait to board the ride after exiting (Surrell, 2003). As crowds and wait times have increased, Disney has begun a deliberate effort to make their queues more immersive and interactive (Burkhardt, 2013). A recent refurbishment of *Peter Pan's Flight* at the Magic Kingdom allows guests to interact with Tinkerbell in the Darling's nursery while they wait (Andersson, 2015). Recent expansions like The Wizarding World of Harry Potter at Universal Orlando and New Fantasyland at the Magic Kingdom are raising the bar for attention to detail, pushing audience immersion beyond the boundaries of a traditional queue (Brigante, "Disney World's New Fantasyland Isn't Just an Expansion," 2012).

This is closely linked to another broad trend in theme park development, which the Themed Entertainment Association described as “the sophisticated application of... intellectual property” (Rubin, ed., 2015). The majority of the ten largest theme park groups (as identified by the latest Global Attractions Attendance Report) have established partnerships with intellectual property owners (Rubin, ed., 2015). Furthermore, two of the three largest theme park groups (Walt Disney Attractions and Universal Parks & Resorts) have direct ties to major film and television studios (Rubin, ed., 2015). These partnerships are by no means a novel concept. These partnerships can be traced back to the opening of Disneyland in 1955. Many of Disneyland's attractions were based on the animated films produced by Walt Disney Productions (Baker, 2012). *Walt Disney's Disneyland*, a popular television show that aired on ABC from 1954 to 1958, was used both to promote and finance the park ("Disneyland", n.d.). However, the TEA notes these partnerships have recently “...ascended to a new level of creative collaboration and

holistic planning” (Rubin, ed., 2015). This trend towards holistic planning is closely tied to the trend towards immersive environments, as discussed earlier in this section (Brigante, "Disney World's New Fantasyland Isn't Just an Expansion; It's an Immersion," 2012).

Universal Parks and Resort’s partnership with Warner Brothers Studios to create *The Wizarding World of Harry Potter*, which opened at *Universal’s Islands of Adventure* in 2010, was a leader in this respect (“THE WIZARDING WORLD OF HARRY POTTER AT UNIVERSAL ORLANDO RESORT IS NOW OPEN,” 2010) (Rubin, ed., 2015). Disney, who has traditionally been slower to adapt intellectual property to new park attractions, responded almost immediately with the introduction of New Fantasyland in 2012 (Hill, 2014) (Brigante, "Disney World's New Fantasyland Isn't Just an Expansion; It's an Immersion," 2012). The attractions in New Fantasyland drew exclusively from intellectual property originating in the previous century – including *Snow White and the Seven Dwarves* (1937), *The Little Mermaid* (1989) and *Beauty and the Beast* (1991) ("Our Films," n.d.). However, TEA also noted the importance of speed in successfully capitalizing on intellectual property: “We see that the sooner you can get IP to move from screen to a physical environment, the sooner you reap the rewards and the larger those rewards may be” (Rubin, ed., 2015). As such, Disney, along with other industry leaders, has become more pro-active in incorporating current intellectual property in recent years. Following Disney’s acquisition of Lucasfilm in 2012, the existing partnership between Disney Parks and Star Wars was significantly expanded in order to capitalize on the new trilogy of films (Krantz, Snider, Cava, & Alexander, 2012) (Munarriz, 2015). In November and December of 2015, *Star Wars Launch Bay* opened at

Hollywood Studios and *Star Wars: The Adventures Continue* introduced new segments featuring characters and locations from *Episode VII: The Force Awakens*, which was released on December 18th ("*Star Wars: The Force Awakens' Attraction Opens at Disney*," 2015) ("*Star Wars: The Force Awakens' Scene Added to Star Tours*," 2015). Meanwhile, construction has already begun on a fourteen-acre *Star Wars* expansion, which is expected to open around the release of *Episode IX* in 2019 (Munarriz, 2015) ("*The Future of 'Star Wars'*," 2015)

A third broad trend in theme park development is the use of multiple ride experiences as an incentive to revisit attractions. This trend is not specific to dark rides and is often seen in rollercoasters. *Star Tours: The Adventure Continues* introduced the most sophisticated execution of this concept yet when it opened in 2011; the motion simulator attraction employs a series of randomized sequences with more than fifty possible combinations (Brigante, 2011) (Sehlinger & Testa, 2015, pg. 616). Implementing multiple ride experiences within dark has traditionally been difficult, since housing separate tracks required more space. One of the earliest examples is *Mr. Toad's Wild Ride*, which opened at the Magic Kingdom in 1971. Unlike the original attraction in Disneyland, this version offered two ride tracks with different scenes in order to increase capacity (Weiss, n.d.). Decades later, *Horizons* expanded on this concept, allowing guests to play an active role in the experience by choosing from one of three possible endings (Krosnick, 2015). As new technology emerges, incorporating multiple experiences within dark rides has gotten considerably easier.

In addition to the incorporation of intellectual property, the Themed Entertainment Association identified "the sophisticated application of technology" as one

the “dominant elements in [the] contemporary [theme park] industry” (Rubin, ed., 2015). The incorporation of new technologies is not necessarily a new development within the industry. It has been occurring for at least two decades, especially within the emerging Asian market as new rides were introduced (Baker, 2012) (Rubin, ed., 2015). However, the incorporation of new technology has become increasingly significant in recent years for two reasons. First, American theme parks are engaged in the first major cycle of reinvestment following a period of stagnation during the Great Recession (Rubin, ed., 2015). Second, rapid advancements in technology have revolutionized the way the members of the public, especially those in younger generations, interact with the world around them. Parks quickly recognized that they must adapt to this changing reality:

“If Disney wanted these tech-oriented generations to love it as much as their parents, who had grown up with fewer entertainment alternatives, had, it would have to embrace change now” (Carr, 2015).

Recent advances in the field of wireless technology have had a major impact on theme park attractions. In 2013, Walt Disney World announced MyMagic+, a system of interconnected technologies designed to improve the guest experience and streamline park operations (Carr, 2015). A major component of this initiative was the MagicBand, a plastic wristband containing a Radio-Frequency Identification (RFID) chip and connected to a guest’s digital account (Carr, 2015). While these chips serve practical purposes, they were heavily marketed based on their ability to facilitate interactive and personalized experiences for guests. (Staggs) Many Imagineers, however, were hesitant to embrace this technology, out of concerns it might fundamentally change the guest experience for the worse (Carr, 2015). According to a former executive:

“Imagineers didn’t know what [MyMagic+ would become]... So if you need to design it into a ride that has to handle thousands of people an hour, continuously, that can be really hard! [They] wanted to wait to figure out how they want[ed] to use it in their storytelling” (Carr, 2015).

The same source suggested “the public ‘won’t see Imagineering leverage the [MyMagic+] platform until the next wave of attractions” (Carr, 2015). However, the interactive component of MyMagic+ is slowly beginning to appear in the parks. In 2012, *Test Track* at Disney’s Epcot introduced an interactive queue that allowed guests to design concept cars that were integrated into the attraction once they boarded (Brigante, "Test Track 2.0 Grand Opening at Epcot," 2012). Guests were given cards containing an RFID chip to scan at the kiosks and at the loading dock (Brigante, "Test Track 2.0 Grand Opening at Epcot," 2012). When MagicBands were issued in 2014, they were already compatible with the existing system (Carr, 2015). In March 2016, *it’s a small world* became the first attraction to deliberately incorporate MyMagic+ in order to create a customized ride experience for guests. As guests pass a series of multilingual signs at the end of the ride, their names appear on a screen, making the message personal (Kubersky, 2016).

The effect is similar to one used in *E.T. Adventure*, a dark ride at Universal Studios Florida (Niles, 2014). Near the end of that attraction, an animatronic E.T. thanks the guests in each vehicle by name based on information collected earlier by ride attendants. When the attraction opened in 1990, it “represented one of the first widespread uses of interactivity in a major theme park attraction” (Niles, 2014). Disney’s use of RFID technology can be seen as the natural evolution of this effect, yet more

efficient and more accurate. While this is a relatively simple implementation, reactions have been positive and demonstrate the potential of RFID to improve the guest experience.

One trend specific to dark rides has been the introduction of “trackless” ride technology, which has evolved significantly since it was first introduced (Wawzenek, 2013). Initially, “trackless” ride vehicles operated by following a track that was hidden in the floor (Wawzenek, 2013). However, ride vehicles are now able to operate using local positioning systems, providing more versatility and allowing them to move in truly randomized patterns (Wawzenek, 2013). This technology fundamentally changes the way that guests are able to interact with the environment (Wawzenek, 2013). Rather than moving around the perimeter, they are able to weave through the environment as if they are a part of it. The speed and movements of the vehicles may vary to suit the story (Wawzenek, 2013) (“Pooh's Hunny Hunt,” n.d.).

Rides using trackless technology have been extremely popular overseas, including *Mystic Manor* at Hong Kong Disneyland, where emerging markets have resulted in massive investments (Wawzenek, 2013) (Rubin, ed., 2015). However, domestic parks have been slower to adopt this technology. The only example of modern trackless technology in the Orlando-area parks is *Antarctica: Empire of the Penguin* at SeaWorld (“Antarctica - Empire of the Penguin,” n.d.). This is primarily because American theme parks represent a mature market, in which growth is stable but less dynamic (Rubin, ed., 2015). Practically speaking, it is far more difficult to make major changes within existing parks than it is to create new attractions for new theme parks. Building new attractions, or even retrofitting existing attractions with new technology, requires substantial time and

effort and can negatively impact the guest experience due to closures. However, industry leaders believe the technological advances seen overseas will appear stateside in due course:

“While in the near-term much of the industry’s know-how is traveling out of the U.S. to support the development of new parks in other markets, in the longer term this innovation is likely to lead to further innovations in the Americas, as successful new ideas from international parks are implemented there” (Rubin, ed., 2015).

With all major American parks engaged in substantial re-investment projects, it is likely that this will occur sooner, rather than later.

VI. Designing a Dark Ride:

When designing this attraction, there were only two criteria. The first was to design a traditional dark ride, as opposed to a hybrid ride, in order to emphasize the storytelling and artistic elements. The second was to incorporate new trends and technology into the proposal.

In keeping with the current focus on intellectual property, the attraction proposal was based on Disney's 1991 film, *Beauty and the Beast*. This film was chosen for several reasons. First and foremost, the film was never adapted as a dark ride. The lack of precedent provided flexibility to fully exercise the "blue sky process" and design process, without relying on pre-existing work. Second, *Beauty and the Beast* remains one of Disney's most successful properties, both critically and commercially. The film inspired a successful Broadway adaptation, as well as an upcoming live-action adaptation. If the purpose of a theme park attraction is to capitalize on intellectual property, an attraction

based on *Beauty and the Beast* is overdue. Finally, there is a wealth of material to draw from, artistically speaking, between the original film and the Broadway adaptation.

During the brainstorming stage of the “Blue Sky Process”, a proposal for a dark ride on the scale of *Harry Potter and the Forbidden Journey* at Universal’s Islands of Adventure developed. The proposed attraction offered the same degree of technological innovation and attention to detail but was intended for a broader, “family” audience. It offered two ride paths - one following the narrative perspective of Belle and the other following the narrative perspective of the Beast. This allowed the incorporation of more material, including music from the Broadway play. The Beast's perspective offered the opportunity to create a more mature ride, focusing on some of the darker aspects of the film.

The initial proposal was revised following consultation with Dr. Smith, Thesis Director. The initial concept was developed based on the author’s preferences as a frequent park guest. However, Dr. Smith pointed out that personal preferences do not necessarily reflect the preferences of the general public. Based on guest feedback published in the *Unofficial Guide to Walt Disney World*, there was no evidence of a desire for scarier dark rides. Instead, feedback suggested that guests were more likely to be concerned that some dark rides were too frightening for children (Sehlinger & Testa, 2015, pp. 404-409). Consequently, the initial two-track proposal was revised to highlight the differences in narrative rather than the differences in tone. Belle's perspective now focuses on the romantic subplot, while the Beast's perspective focuses more on the curse over the castle.

As discussed earlier, a deliberate effort was made to incorporate new trends and technologies in the proposed attraction. In keeping with the movement towards detailed and interactive queues, two separate queues were designed for the attraction in order to set the stage for each ride experience. The queue for Belle's ride path passes through the village seen in the beginning of the film, while the queue for the Beast's ride path passes through the forest and the castle. Small-scale interactive elements are incorporated throughout both queues, from moving displays in shop windows to fidgeting suits of armor within the castle.

Trackless ride technology is used to create a more immersive experience. This technology allows guests to move through the grand environments depicted in the original film as if they were a part of them, rather than simply moving around the perimeter of each scene. In the ballroom, vehicles are able to move around each other as if they were waltzing, similar to the “dancing” effect used in *Pooh's Hunny Hunt* in Tokyo Disneyland. This also allows for multiple ride experiences within each ride track. In large scenes like “Be Our Guest”, the ride vehicle is able to navigate to and focus on a number of different areas within the room. By combining these options, guests are able to experience dozens of unique ride experiences within the same ride track. The incorporation of trackless ride technology offers practical benefits as well, making handicap loading easier and allowing rides vehicles to transition between the ride tracks as needed.

Finally, trackless technology is combined with the RFID technology in MagicBands in order to encourage guests to experience the attraction multiple times. The RFID technology in MagicBands is used to track which combination of experiences

within the ride path the rider had already encountered. This ensures that individuals riding for a second time do not have identical experiences, even if they chose the same ride path.

VII. Conclusion and Further Research:

In addition to highlighting the artistic merit of dark rides, this project has highlighted substantive differences between the dark ride and other forms of art, such as film. While the active nature of dark rides is a significant factor in their appeal, it also presents a major limitation when compared to the passive medium of film. While films are able to shift between multiple perspectives and locations without breaking the audience's immersion within the narrative, dark rides do not share this ability. Since guests take an active role in the narrative, any drastic shifts in perspective or location would break the suspension of disbelief. This fundamental difference makes translating a complex film into an abbreviated theme park attraction extremely difficult. However, it also fosters a greater understanding of narrative. When designing a dark ride, it is necessary to identify and focus solely on the elements that are essential to the narrative. In adapting *Beauty and the Beast*, the author was forced to completely eliminate a subplot involving Gaston and his repeated attempts to win Belle. While interesting, this subplot was not essential to the narrative and would require frequent shifts in both perspective and location.

At the same time, the essential elements of the narrative must be balanced with audience expectations. When adapting a well-known property (such as an animated film) to an attraction, guests are likely to have pre-conceived notions as to what popular scenes should be included. However, these scenes may be non-essential and ultimately distract

from attraction's narrative. This was the case with "Gaston," a popular musical sequence from *Beauty and the Beast* that was eliminated with the aforementioned subplot. When narrative essentials conflict with audience expectations, it may require creative solutions. While this sequence was not incorporated into the ride, it was incorporated into the queue – a compromise designed to meet guest expectations without compromising the narrative.

Examining attractions from an artistic perspective reveals that the purpose of dark rides in the modern era is to facilitate escapism. This was not necessarily true of earlier rides, which usually strove to provide a thrilling experience for guests. The original "Old Mill" ride was designed to provide guests with the thrills of exploring an abandoned sawmill in a safe manner. Variants like the "Tunnel of Love" were considered thrilling because they gave couples the opportunity to be close to each other in public. The modern era of dark rides began with the opening of Disneyland in 1955. As the first "theme park," it introduced the concept of engaging guests in a truly immersive experience. That concept was applied to dark rides as well, with Disney's design team embracing film techniques to engage guests in a narrative. Since then, the intellectual thrills provided by traditional dark rides have been surpassed by the physical thrills offered by rollercoasters, motion simulators and other attractions. The appeal of dark rides rests in their ability to immerse audiences within a narrative. Even when new technology is incorporated, it is done to further this purpose.

Examining theme park attractions from this perspective also highlights the need for more research into an objective system of defining and classifying attractions. As discussed in Section II, the term "dark ride" is rooted in the attraction's history and may no longer be appropriate. Introducing new terminology that highlights what makes these

attractions unique has the potential to promote better understanding of them within the academic community. Based on this author's analysis, it appears that "narrative attraction" would be a more appropriate term. There is also room for more research on classifying attractions within this genre. As discussed in Section III and Section V, the distinction between traditional and hybrid attractions is somewhat subjective. While establishing new terminology for this class of attraction would be beneficial, establishing a clear set of criteria for traditional and hybrid attractions is also necessary to improve classification. The mere existence of multiple defining characteristics, as discussed in Section II, suggests that this classification should not be viewed as a dichotomy but a scale that recognizes various degrees of hybridization.

This thesis project demonstrates that simple change in perspective has the potential to generate new insight and inspire research on issues not addressed by existing academic literature. It is the hope of the author that this thesis project prompts individuals within the academic community to challenge the framework from which they approach not only theme park attractions, but also the industry as a whole.

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