

Cornelis, Pieter C. M.; Strijbosch, Wim

## Article

# Reconceptualizing the dark ride experience using first-hand experience: Including the visitor's perspective

Annals of Tourism Research Empirical Insights

## Provided in Cooperation with:

Elsevier

*Suggested Citation:* Cornelis, Pieter C. M.; Strijbosch, Wim (2024) : Reconceptualizing the dark ride experience using first-hand experience: Including the visitor's perspective, Annals of Tourism Research Empirical Insights, ISSN 2666-9579, Elsevier, Amsterdam, Vol. 5, Iss. 2, pp. 1-11, <https://doi.org/10.1016/j.annale.2024.100157>

This Version is available at:

<https://hdl.handle.net/10419/337815>

### Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

### Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>



# Reconceptualizing the dark ride experience using first-hand experience: Including the visitor's perspective

Pieter C.M. Cornelis<sup>\*</sup>, Wim Strijbosch

Academy for Leisure & Events, Breda University of Applied Sciences, Mgr. Hopmansstraat 2, 4817 JS Breda, the Netherlands

## ARTICLE INFO

Editor: Ksenia Kirillova

### Keywords:

Dark rides  
Theme parks  
Experience  
Immersion  
Imagery  
Emotion

## ABSTRACT

Dark rides embody a noteworthy phenomenon in theme park destinations and beyond, serving as a textbook example of structured experiences. They therefore offer valuable insights for knowledge development on structured experiences in the broader realm of tourism and leisure experiences. Despite various conceptualizations of the dark ride experience, the visitor's perspective has been largely overseen. Through qualitative interviews we explored 16 distinct dark rides, unveiling key constituent components of their experience and identifying contributing factors. Results indicate that dark rides are primarily appreciated for their ability to generate here-and-now experiences, characterized by imagery, imagery-based states, and emotions. However, visitors may inadvertently shift their focus to internal thoughts and cognitions based on motivation, opportunity, and ability-related switch factors, risking mental disengagement.

## 1. Introduction

Dark rides represent a noteworthy phenomenon within theme park destinations and beyond. Its manifestations are often regarded the most well-known attractions of a theme park, such as *Pirates of the Caribbean* and *Haunted Mansion* in the Disney parks. The success of dark rides stems from the attraction's capacity to narrate stories, operate independently of weather conditions, cater to specific target audiences, create differentiation from competitors, and provide high ride capacity (Younger, 2016). One crucial advantage of dark rides lies in their control over the staged experience, achieved by presenting scenes in a controlled, dimly lit environment. This allows for optimal engagement of all senses, resulting in the delivery of a carefully designed experience (Cornelis, Strijbosch, & Corsius, 2022). This makes dark rides a textbook example of a structured experience: a co-creation between consumer and provider for which the former bring their thoughts, emotions, values, memories and personal characteristics to the table and in which the latter meticulously manipulate objective design elements with a strong focus on the totality of the experience (Duerden, Ward, & Freeman, 2015). Dark rides therefore form an excellent case for knowledge development on structured experiences to serve the realm of tourism experiences more broadly.

In a nascent body of dark ride research, several conceptualizations of the dark ride experience have already been presented (Cornelis et al.,

2022; Langhof & Guldenberg, 2019). Langhof and Guldenberg (2019) formulated an initial conceptualization based on literature. Cornelis et al. (2022) built upon this foundation through exploring the totality of dark ride supply in the EMEA region. While their findings partially corroborated the initial conceptualization, Cornelis et al. (2022) also made several revisions. Yet, despite the push for already deductively testing extant conceptualizations, we argue that a crucial element has been overlooked in conceptualizing the dark ride experience thus far: inductively examining the experience from the visitor's perspective. The current study aims to fill this gap by conducting qualitative in-depth interviews with recent dark ride attendees to three major theme park destinations in Europe about their dark ride experience. This approach addresses the shortcoming of having conceptualized the dark ride experience without explicitly having considered the viewpoint of its first-hand experiencers: the visitors.

## 2. Literature review

### 2.1. Experience in tourism and leisure

Even though experience is one of the most significant concepts in the field of tourism and leisure, the concept tends to lack conceptual clarity due to a history of divergent conceptualizations and insufficient measures. Various tourism scholars have approached experience both in

<sup>\*</sup> Corresponding author at: Fontys Academy for the Creative Economy, Prof. Goossenslaan 1, 5022 DM Tilburg, the Netherlands.

E-mail addresses: [p.cornelis@fontys.nl](mailto:p.cornelis@fontys.nl) (P.C.M. Cornelis), [strijbosch.w@buas.nl](mailto:strijbosch.w@buas.nl) (W. Strijbosch).

terms of dedicated tourism experience models as well as that of brand experience models (Adhikari & Bhattacharya, 2015; Hwang & Seo, 2016; Packer & Ballantyne, 2016; Palmer, 2010). Recently, Godovykh and Tasci (2020) have conducted a review of a large body of work on tourism experience and synthesized a comprehensive definition of experience based on five aspects: 1) experience comprises affect, cognition, sensory and conation components; 2) spans a spectrum from negative to positive; 3) is evoked by stimuli in pre, during and post-consumption phases; 4) includes determinants of brand and consumer-related and situational factors; and 5) yields outcomes related to both brands and consumers.

Recent cognitive psychological approaches have taken a more conceptual approach and have redefined the understanding of experience by breaking it down into its constituent components. Following Zajchowski, Schwab, and Dustin (2017), a difference needs to be made between *lived experience*, occurring in the here-and-now, and *remembered experience*, a memory construct. Lived experience is conceptualized as a continuous stream of consciousness based on sensing and feeling internal and external stimuli in the here-and-now, processed by our perceptual and affective systems (Bastiaansen et al., 2019). Mental models segment this stream into experiential episodes with clear beginnings and endings. While these episodes can potentially be stored into memory as remembered experiences, the mind selectively chooses which episodes to retain. Most experiential episodes are simply forgotten. However, when strong emotions have been elicited during an experiential episode, that episode is much more likely to be preserved in memory (Bastiaansen et al., 2019).

While there are some differences in nuance between Bastiaansen et al.'s (2019) and Godovykh and Tasci's (2020) accounts on tourism experience (i.e., the former does not explicitly include cognitive and conative aspects of experience and does not explicitly situate stimuli in brand-related, consumer-related and situational factors), together, the two frameworks complement each other to provide a basis from which to further theorize about the dark ride experience.

## 2.2. Conceptualizations of the dark ride experience

To date, there is limited work on attraction experience beyond dark rides alone. Recent studies have addressed various elements related to attraction experiences, including the attraction mix (Mittermeier et al., 2023), storytelling (Baker, 2022, 2023a, 2023b; Oh & Ma, 2017), design (Younger, 2016) and investments (Cornelis, 2010b; Van Oest, Van Heerde, & Dekimpe, 2010). These studies often infer the types of experiences that attractions can offer based on their characteristics, but none have empirically examined attraction experiences. Exceptions include studies on virtual reality (VR) add-ons (Bastiaansen, Oosterholt, Mitas, Han, & Lub, 2020; Wei, Qi, & Zhang, 2019), yet these primarily focused on virtual reality enhancements of the attraction experience rather than the attraction experience itself. As a result, there is not much broader work on attraction experiences in which research on dark ride experiences can be embedded. Nevertheless, in 2019, Langhof and Güldenbergs (2019) proposed a first conceptualization of the dark ride experience based on a synthesis of the few accounts on dark rides available at the time. This conceptualization takes storytelling as a starting point, which depending on culture and prior knowledge of dark ride attendees may lead to the subjective state of immersion. Immersion may result in emotional attachment between dark ride attendees and the dark ride, resulting in experience outcomes such as customer loyalty, word of mouth and sales in turn.

Langhof and Güldenbergs (2019) conceptualization of the dark ride experience has put the topic on the scientific agenda, yet their pioneering work carries a notable limitation. It is mostly based on a synthesis of a relatively limited body of dark ride literature (14 accounts), of which most accounts (9 out of 14) merely mention the term in passing (Cornelis, 2010a, 2010b; Macdonald & Alsford, 1995; MacIntosh & Prentice, 1999; McIntosh, 1999; Milman, 2001; Moutinho, 1988; Sables,

2017; Wright, 2018) and of which the 5 remaining accounts rely on very specific case studies (Beeho & Prentice, 1997; Weinaug, 2015; Zika, 2014) or best practices of key industry players alone (Freitag, 2017; Nelson, 2016). Admittedly, Langhof and Güldenbergs (2019) primarily employed these 14 accounts to identify relevant themes, which they further enriched with insights from non-dark-ride literature. However, with only 5 out of 14 accounts directly focused on highly specific dark rides, this first conceptualization risks anchoring bias, potentially limiting its generalizability.

Addressing this shortcoming, Cornelis et al. (2022) refined Langhof and Güldenbergs (2019) conceptualization of the dark ride experience by embedding it within a broader theoretical framework of media-entertainment experiences and aligning it with the characteristics of dark ride supply in the EMEA region. First, following media-entertainment experience conceptualizations of Hennig-Thurau and Houston (2019), Cornelis et al. (2022) proposed that immersion should be regarded as an umbrella concept for the three imagery-based states of narrative transportation, presence and flow, rather than as a distinct phenomenon. Second, following the notion that each of these three sub-states stems from distinct factors (Hennig-Thurau & Houston, 2019), they postulated several objective design elements to potentially trigger these states. For narrative transportation, they followed Van Laer, De Ruyter, Visconti, and Wetzels's (2014) suggestion that storytelling forms the input for this state. Recent work by Fu, Baker, Zhang, and Zhang (2022) on narrative immersion in theme parks through storytelling corroborates this suggestion. Presence, linked to theming as key objective design element, aligns with Hennig-Thurau and Houston's (2019) suggestion that a rich array of multisensory cues allows consumers to cognitively create an alternative world to act in. Lastly, challenge-based gaming elements were proposed to elicit flow, consistent with the notion that flow arises from an optimal balance of a product's offer of challenge and a consumer's cognitive, aesthetic or motor skills (Ermi & Mäyrä, 2005; Hennig-Thurau & Houston, 2019).

In examining whether the three mentioned states should be incorporated in conceptualizations of the dark ride experience, Cornelis et al. (2022) explored said objective design elements within dark ride supply throughout the EMEA region. These converged onto three underlying dimensions: the presence of story elements (related to narrative transportation), the number of themed features (related to presence) and the level of pervasive interactivity (related to flow). This reinforced Cornelis et al.'s (2022) delineation of immersion into the three states of narrative transportation, presence and flow. Moreover, it led Cornelis et al. (2022) to expand the stimulus domain of dark rides beyond storytelling to also include theming and pervasive interactivity as relevant stimuli for dark ride experiences. Several additional amendments to Langhof and Güldenbergs (2019) conceptualization included changing emotional attachment into emotions more broadly; and integrating word of mouth, customer loyalty and sales into the Attraction Response Matrix (ARM; Cornelis, 2010a), which is a more encompassing framework on the effect of attractions. These revisions resulted in an updated model of the dark ride experience (see Fig. 1).

### 2.2.1. Challenges for extant conceptualizations

Extant conceptualizations of the dark ride experience face two primary challenges. First, when comparing these conceptualizations to models for tourism experiences in general, both similarities and discrepancies come to the fore. Story, theming and pervasive interactivity can be regarded as external stimuli, as also identified in Bastiaansen et al.'s (2019) and Godovykh and Tasci's (2020) frameworks. Along the lines of Godovykh and Tasci (2020), these stimuli are clearly embedded in brand-related and situational contexts (i.e., the dark ride environment as part of a park's attraction portfolio). Imagery is included as sensory elements in Godovykh and Tasci (2020) and as mental models in Bastiaansen et al. (2019). Emotion is a common element in both Bastiaansen et al.'s (2019) and Godovykh and Tasci's (2020) framework. Also, effects according to the Attraction Response Matrix reflect the experience

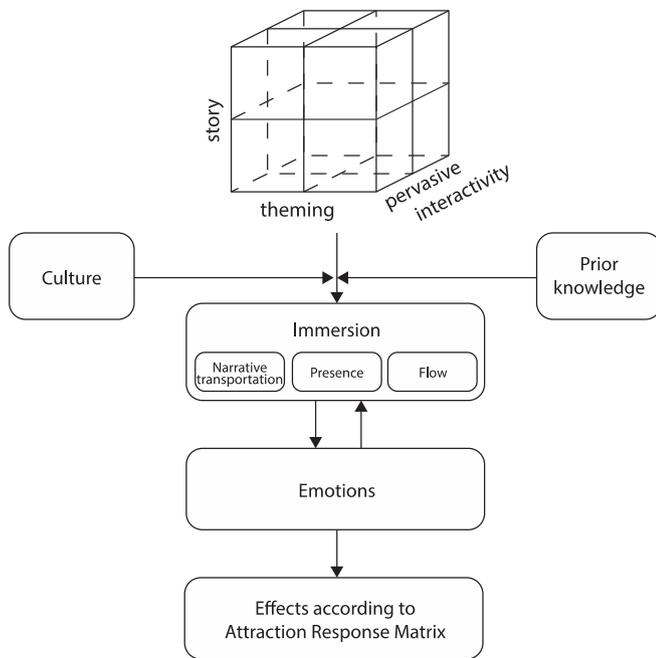


Fig. 1. Conceptual model of the dark ride experience by Cornelis et al. (2022), reprinted from Cornelis et al. (2022) with permission from Sage Publications.

outcomes in both frameworks (Bastiaansen et al., 2019; Godovykh & Tasci, 2020). However, cognitions and conative elements as listed by Godovykh and Tasci (2020) have previously not been identified in dark ride experience. Vice versa, imagery-based states have not been incorporated into either Bastiaansen et al.'s (2019) or Godovykh and Tasci's (2020) frameworks. Empirical insights from the visitor's perspective are indispensable in bridging the gaps identified. By exploring how visitors perceive and respond to the stimuli within dark ride environments, we can develop a more nuanced understanding of their experiences and identify the relevant experiential building blocks for further conceptualization.

Second, current conceptualizations of the dark ride experience have predominantly relied on either the supply side (Cornelis et al., 2022) or on existing literature covering dark rides quite selectively (Langhof & Gldenber, 2019). Yet experiences are fundamentally psychological phenomena shaped within the minds of consumers – in this case, dark ride attendees. Neglecting empirical assessment of dark ride experiences that taps into the platform where they truly take place (i.e., the minds of its attendees) risks incomplete and potentially inaccurate conceptualizations. Not having considered these aspects is therefore a significant shortcoming in previous accounts that have conceptualized the dark ride experience. While deductive testing of extant conceptualizations has already been proposed (Cornelis et al., 2022; Langhof & Gldenber, 2019), we therefore argue that inductive examination of the dark ride experience from the visitor perspective is an essential preliminary step. Including the visitor's perspective not only enriches current theoretical conceptualizations, but also ensures future developments in dark ride design and management being grounded in empirical evidence derived directly from those who actually experience them.

### 2.3. The present study

In the present study, we address the abovementioned challenges by using in-depth interviews with dark ride attendees to explore the dark ride experience from the visitor's perspective. Dark ride attendees visiting appointed dark rides across three European theme park destinations were interviewed one week after their visit. Immediately after their ride, informants were provided with a set of instructions asking

them to think back to their ride experience and to collect 6–8 images expressing the thoughts and feelings as experienced during the ride. Using the Zaltman Metaphor Elicitation Technique (ZMET), informants were asked to thoroughly elaborate on each selected image guided by unbiased laddering questions (Zaltman, 1997). Results were used to reevaluate current conceptualizations of the dark ride experience to address not only the lack of a visitor's perspective, but also to align them with more general theories on tourism and leisure experiences.

## 3. Methods

### 3.1. Informants

19 Dutch informants participated in the study, selected through convenience sampling. When the researchers knew of someone who had concrete plans to go to one of three theme park destinations known for their abundance and variety of dark rides (Disneyland Paris (France), Efteling (Netherlands) or Europa-Park (Germany), see Cornelis et al., 2022), this person was approached with a request to devote a small part of his/her trip to the current study. As an incentive, informants received a coupon of € 75 for a Dutch web shop. Because of this sampling strategy, informants predominantly consist of students and young adults (see Table 1), yet were evenly distributed across the three theme parks.

### 3.2. Data collection

Informants were asked 1) to visit a particular dark ride during their visit to the respective theme park destination and 2) to already schedule a moment for a 2-h long interview approximately one week after their visit. Informants were prompted to send the researcher a text message as soon as they had come off the ride. The researcher would then immediately send a form with instructions asking informants to think back to their visit to the dark ride and to collect 6–8 images that would express the thoughts and feelings as experienced during the ride. Importantly, informants were asked to look for images that would metaphorically express how they had thought and felt during their dark ride experience, with images being allowed to be taken from all kinds of sources (e.g., internet, newspapers, magazines). To do justice to the metaphorical aspect of the ZMET approach, informants were asked not to look for images containing pictures of the dark ride itself.

Informants were asked to bring these images with them to the interview one week later. The probing technique using metaphorical

Table 1  
Overview of informants.

| No. | Age | Gender | Dark ride  | Park                        |
|-----|-----|--------|--|-----------------------------|
| 1   | 30  | M      | Fata Morgana   | Efteling                    |
| 2   | 57  | M      | Carnaval Festival                                    | Efteling                    |
| 3   | 24  | M      | Buzz Lightyear Laser Blast                           | Disneyland Park             |
| 4   | 22  | F      | Pirates of the Caribbean                             | Disneyland Park             |
| 5   | 20  | F      | Droomvlucht  | Efteling                    |
| 6   | 21  | F      | Symbolica  | Efteling                    |
| 7   | 24  | M      | Phantom Manor  | Disneyland Park             |
| 8   | 23  | F      | Fata Morgana   | Efteling                    |
| 9   | 24  | M      | Abenteuer Atlantis                                   | Europa-Park                 |
| 10  | 22  | M      | Peter Pan's Flight                                   | Disneyland Park             |
| 11  | 21  | F      | Ratatouille: l'Aventure Totalement<br>Toque de Rmy | Walt Disney<br>Studios Park |
| 12  | 22  | F      | Arthur   | Europa-Park                 |
| 13  | 23  | F      | Piccolo Mondo  | Europa-Park                 |
| 14  | 21  | M      | Piraten in Batavia                                   | Europa-Park                 |
| 15  | 38  | M      | Geisterschloss                                       | Europa-Park                 |
| 16  | 20  | M      | Symbolica  | Efteling                    |
| 17  | 26  | M      | Schlittenfahrt Schneeflockchen                       | Europa-Park                 |
| 18  | 28  | M      | Spider-Man W.E.B. Adventure                          | Walt Disney<br>Studios Park |
| 19  | 26  | F      | Spider-Man W.E.B. Adventure                          | Walt Disney<br>Studios Park |

images is borrowed from the Zaltman Metaphor Elicitation Technique (ZMET) approach, a patented method involving semi-structured interviews centered around visual images (Zaltman, 1997). Two core premises of this approach are that thoughts are image-based and that most communication is nonverbal. Images therefore form a well-suited basis for in-depth interviews because one can more freely express and expand on his/her thoughts and feelings. The images are important non-literal tools for uncovering deeply held, often unconscious, thoughts and feelings. With a one-week time interval between the visit and the interview, informants have ample time to thoroughly consider their dark ride experience. Allowing this time for implicit processing of images enhances the likelihood of expanding the pool of important constructs during the interview itself (Zaltman, 1997).

The interviews, lasting approximately two hours, occurred at the universities of employment of both authors. Beforehand, informants provided informed consent and permission for recording. Beginning with a recap of the assignment in informants' own words, the ZMET protocol then involved discussing the 6–8 images, prompting informants to express thoughts and feelings during their dark ride experience. Laddering questions were used to explore each image unbiasedly and a triad task was employed after reaching saturation for each image. One image was selected for a vignette, prompting informants to imagine a short movie for adding the dimension of movement. To tap into other sensory modalities, informants also described thoughts and feelings in terms of sounds, smells, tastes, textures and colors. Upon completion, informants received the incentive. All procedures were approved by Breda University of Applied Sciences' Research Ethics Review Board (BUas-RERB-23-02-DaRiEx). Approval to use ZMET was given by Altuïtion, the Dutch agency protecting the rights of the method that also provided training to one of the authors in the past.

### 3.3. Data analysis

Transcriptions, images and researcher notes resulting from the interviews were printed and analyzed using markers for coding. Before analysis, each of the interviews were entirely reviewed (and recordings sometimes relistened) for obtaining a holistic understanding of the data. Analysis was conducted by both authors. To enhance reliability of the analysis process, data from the first two informants were analyzed collaboratively to promote a shared understanding of the coding scheme and procedure. Afterward, the authors would each analyze half of the number of informants. A first layer of coding entailed the constructs identified from Cornelis et al.'s (2022) model of the dark ride experience, making use of the definitions maintained in their paper to identify corresponding elements from the data. Cases of doubt were noted down and taken to frequently held meetings between the two authors for cross-validation and discussion. As this approach did not cover the full scope and depth of the data, a second layer of coding was based on themes emerging from the data, following an open coding approach. While originally applied to the data by both authors individually, codes were mutually discussed for cross-validation to reflect the meanings given by the informants as accurately as possible, followed by further categorization and the identification of themes. Inclusion in the eventual results required applying a predetermined threshold ( $n = 7$ ), indicating that particular constructs needed to be articulated by at least seven distinct respondents, thus enhancing trustworthiness of the data. Furthermore, the iterative nature of the process resulting from going back and forth through the data – both individually and mutually for discussion – promoted high reliability of the analysis.

## 4. Results and discussion

The current section presents the results from the interviews with the 19 informants. As part of the probing techniques within the ZMET approach, informants were asked to bring 6–8 images that metaphorically expressed how they had thought and felt during their dark ride

experience, which would serve as a conversation starter. Informants brought a wide variety of images. Most images depicted people with various facial expressions (e.g., awe, surprise, boredom) or doing various actions (e.g., hanging in a chair or sitting in a bar with a group of friends). Some informants also used images of enlarged emoji (e.g., one laughing or one wearing sunglasses). Other pictures depicted cartoon characters (e.g., Bart Simpson from *The Simpsons* or the Ice King from *Adventure Time*); either stationary or performing actions such as rafting on a river or vomiting. Yet another group of pictures depicted wide environments, from galaxies or vaults of heaven to wide landscapes such as meadows or fields of flowers. Some images depicted natural objects, from trees and flowers to butterflies and scorpions. Other images depicted man-made objects, from a machine gun to an egg carton and from a compass to a mirror.

The variety of images brought to the interviews illustrate the subjective nature of experience. Yet regardless of the subjectivity of experience, we identified three overarching themes in our analysis of data resulting from the interviews that were prompted by these images: experiential aspects associated with 1) outward-focused attention and with 2) inward-focused attention, and 3) switch factors prompting transitions between these two modes of dark ride experiencing. We employ these themes to structure our findings below.

### 4.1. Experiential aspects pertaining to outward-focused attention

A major theme emerging from the data is that informants appreciate dark rides for their ability to fully focus one's attention on the here-and-now and to suspend the duties that are part of their daily life. Articulated in 66 different ways, this aspect emerged in 17 of the 19 interviews. One informant indicates that this here-and-now is mostly connected what dark ride creators want you to experience, highlighting their nature as a structured experience:

For a moment, reality is truly cut off from you. (...) Imagine you are lying in bed and you are pulling a comforter over your head, then the world outside does not exist for a moment either (...). It is like watching a movie: okay, it has started, now my attention is fully devoted to this movie. (...) You let your emotions go along with that what is being offered. You go along with the emotions of the content presented to you. (...) I am only triggered by what the designer, in this case of the attraction, wants me to be triggered by. (Informant 1).

The question is: what does this here-and-now consist of experientially? Two overarching experience elements were identified in the data pertaining to the here-and-now: imagery and emotion. Additionally, several imagery-based states were identified that determine to which extent dark ride attendees' devotion is fully drawn towards the here-and-now and to what aspects of it. All these elements align with previous conceptualizations of the dark ride experience (Cornelis et al., 2022; Langhof & Guldenberg, 2019).

#### 4.1.1. Imagery and imagery-based states

A significant category of associations or evoked responses in the data (57 associations retrieved in 17 interviews) falls under the concept of imagery. Imagery refers to internal representations that help informants comprehend both external and internal stimuli (Hennig-Thurau & Houston, 2019). For example, when discussing Droomvlucht, informants conjure visual images of the scenery, fragments of music and scents. One informant indicates how these stimuli evoke imageries of spring and summertime:

In general, most scenes are springy and summery, so that is where I get the feeling of... well, you know, the flowers, everyone being outside, (...) the animals. In fact, it is everything what you see in spring: the flowers are back, the animals are back outside, it is nice

weather, everyone is outside, everyone is wearing nice skirts, you know. It is all a bit springy. (Informant 5).

In a different context, informants describe how the stylistic elements of the ride convey all kinds of imagery. One informant describes how this for Peter Pan's Flight:

When you fly over these houses, you can just see they are slightly flat, but how they worked with perspective and depth, that strikes me as inventive. (...) You go through it relatively quickly, there is a slight glow-in-the-dark glow, and things pop up every now and then, greeting you from the side and then going back again. That makes it slightly dollhouse'ish to me. (Informant 10).

Beyond the evoked imagery, several imagery-related states also emerged from the data, determining to which extent dark ride attendees' devotion is drawn towards the imageries at hand and to what aspects of it. One such state is presence (119 associations,  $n = 18$ ), wherein informants express to feel as if they were in a different world, as highlighted in earlier conceptualizations of the dark ride experience (Cornelis et al., 2022; Langhof & Guldenberg, 2019). Despite informants' awareness of being in a staged environment, they describe feeling fully immersed in a different time and space. One respondent describes this experience when seeing a simulated storm through a window in Phantom Manor:

I know I am still in an attraction building (...). But I find that the effect is done so well that I think: hey, for a moment, in my mind, I am in that abandoned house (...) and I do briefly get the idea that if I turn the corner in that room, there is another room there. It just makes me curious. It also excites me to continue walking and looking: okay what's in that room? Is there a piano? Is there a kitchen? Is there a bedroom? I want to know what is behind there, while I also know that there is probably nothing because there is likely to be a concrete hall with an emergency exit. But then, for a few milliseconds, that suspension of disbelief occurs. (Informant 7).

Another imagery-based state identified in the findings is that of narrative transportation (103 associations,  $n = 17$ ), again in line with previous conceptualizations (Cornelis et al., 2022). Informants indicated that the presence of a storyline, whether explicit or implicit, can lead to a feeling of being carried away by the story. In such instances, narrative transportation is related to the development and progression of the story through different scenes. One participant describes this in the case of Piraten in Batavia:

You get sucked into the story, you become part of it. Like being in Batavia and experiencing the story, waiting to see what happens next. (Informant 14).

Tapping into another dimension of narrative transportation, some informants also reported a strong social and empathetic connection with protagonists in dark rides. This occasionally extended to the point where informants believed themselves to be the central character of the story (55 associations,  $n = 16$ ). This was captured by one informant in Rata-touille: l'Aventure Totalement Toque de Rmy.

It felt that (...) you were the main protagonist of the attraction. You saw in one scene, that bad guy saw you, and wanted to catch you. And then you ran through those narrow hallways, between those walls. At one point, you then see his hand really reaching for you (...) and then you are the fugitive of that scene. (Informant 11).

Another respondent was so aware of this sensation that he articulated the empathetic connection almost as a transcendental experience:

Then I am looking at myself very much as a kind of third person. Not like a dream, but more like watching a film, in which I see myself

playing a role. A kind of stepping-outside-myself feeling. (Informant 7).

In line with Cornelis et al. (2022), a sense of flow was identified as well, but only in the case of interactive dark rides where participants had to shoot at various targets, which with  $n = 3$  strictly speaking does not surpass the cut-off point of 7. Depending on the challenge presented and the individual's skills, there was a sense of being fully absorbed in the task at hand. This left little mental space for anything else, as was the case with Abenteuer Atlantis:

Then you are fully engaged with everything in your body with what you are doing now because it's really from left to right and you must constantly shoot at those targets. You are really just focused on those targets; on those lights you see. (Informant 9).

In sum, alongside experiencing a sense of imagery, the various imagery-based states as recognized from the data (presence, narrative immersion, social immersion and flow) drag attendees' attention towards the various dark ride stimuli at hand, where their minds are mostly occupied with perceiving and responding to the here-and-now.

#### 4.1.2. Emotions

In total, over 200 different specific emotions and emotional states emerged from the data, which were reduced to a total of 50. Frequently mentioned emotions included joy ( $n = 18$ ), happiness ( $n = 13$ ), astonishment ( $n = 15$ ), wonder ( $n = 12$ ), curiosity ( $n = 12$ ) and wow ( $n = 10$ ) which are mostly positive in nature. Conversely, certain dark rides also evoke negative, unpleasant emotions such as fear, surprise, anger, and a general feeling of unease ( $n = 10$ ).

You feel like a royal, important person and you are very welcome there in a fine, magical environment. That feels warm and welcome, but also wondrous and curious, very impressed by what you see. (Informant 16).

Additionally, variations in the level of arousal also emerged from the findings.

You enter a forbidden city there and I find that super scary and exciting... and in the end, I am proud that I have overcome my fear. (Informant 8).

In some cases, the level of arousal was too much. This was mostly mentioned in the context of interactive shooter dark rides, where informants indicated to be overstimulated by the various targets to shoot at while also wanting to enjoy the sceneries at the same time. Yet, being overstimulated ( $n = 9$ ) is by no means restricted to the context of interactive rides alone, as captured by one informant for a non-interactive dark ride:

You do not have one thing to focus on. Something is happening there, something is happening there (...) and then you think, "Well, okay, now I have seen everything..." and then you see something popping up in the corner and then you see something moving again where you have just passed by. I got completely overstimulated. (Informant 15).

In other cases, the level of excitement and alertness was less intense and tapped into the other end of the arousal dimension. For example, one respondent experienced the first scenes of Pirates of the Caribbean as calm and relaxing:

The moment you sit down, you know you do not have to do anything (...) You have waterfalls, the smells and sounds of the water. That helps me to relax, to rest for a while. (Informant 4).

#### 4.2. Experiential aspects pertaining to inward-focused attention

A second major theme in the data suggests that some dark ride attendees can temporarily or permanently divert their attention from external stimuli (the here-and-now) to internal thoughts and cognitions (214 mentions). These thoughts may directly relate to the dark ride but can also be unrelated to the immediate stimuli at hand, leading dark ride attendees to redirect their attention from the here-and-now. Furthermore, the data suggest that these thoughts can evoke emotions not necessarily based on the immediate dark ride environment but rather on these internal thought processes and associations themselves.

##### 4.2.1. Cognitions

Three categories of cognitions emerged from the data: content-related (57 associations,  $n = 16$ ), artifact-related (68 associations,  $n = 15$ ) and other cognitions (89 associations,  $n = 12$ ). The distinction between content-related and artifact-related responses – previously identified in the media-entertainment literature (Tan, 1996) – underscores the difference in the appraised object: responses related to media content versus responses to the media representing this content. One type of content-related cognitions in the data involves reflections triggered by thematic elements in the ride ( $n = 14$ ), stimulating daydreaming about strolling through the depicted environment. For example, in *Symbolica*:

In that scene of the botanical garden, I was like “I would like to walk through this on my own. To discover that, just lock me in here for a while, give me the keys, let me hang out.” That aesthetic does make me just want to be there for a while. (Informant 2).

Also, we found dark ride attendees to have cognitive responses associated with the narrative elements or characters of the dark ride, such as with *Phantom Manor*'s infamous spiritual medium character of *Madame Leota*, whose head is encased in a crystal ball:

That feels more like a character which I then want to know more about. I am then curious about who that person really is, what her motivation is, what she is going to do when I am not riding here. (Informant 7).

Another aspect of content-related cognitions involves actively making sense of the observed stimuli ( $n = 8$ ). While some informants indicate a clear understanding of their rides' storylines, others actively engage in making sense of the ride's content. One informant points this out when comparing *Droomvlucht* to rides with more explicit storylines:

You are searching for a story or something. Or at least a storyline. (...) And also just, you know, you start to think like, “What do they want to tell me here? What should actually come out of this?” (...) It is not that I feel any difference in terms of “I think this is better or worse...” but it is just something else. At *Droomvlucht*, I think I really have more profound thoughts. (Informant 5).

Regarding artifact-related cognitions for dark rides, frequently mentioned aspects involve figuring out how things work and how they are constructed ( $n = 7$ ). One participant expresses enjoyment in visiting relatively older dark rides to explore how they were made:

In those kinds of attractions, the pace is often slower. (...) I think it is like an old movie. New movies are fast, with lots of special effects, while for an old movie you really sit down, the build-up is a bit slower. And I see that in those attractions as well. (...) So, I find it very nice to look at how they made everything “back in the days,” actually. (Informant 17).

Another source of artifact-related thoughts during dark ride experiences pertains to interactivity systems, where dark ride attendees may encounter thoughts related to the understanding or confusion

surrounding the interactive aspects of the ride.

Then I think: “How come I have to push a button here, who came up with that and why? What happens and why does it make this attraction better?” (Informant 2).

Finally, a miscellaneous category of thoughts exists, not necessarily tied to immediate dark ride stimuli, but rooted in dark ride attendee's existing personal associations with the ride ( $n = 8$ ). While these associations may not directly relate to the dark ride experience itself, individuals indicate to perceive them as integral to their overall experience. In the case of *Droomvlucht*, one participant thinks back to an agreement made with a friend:

It does not really matter with whom I ride *Droomvlucht*, but every time I am in that planet scene, I think: “Oh yes, this is where [name of friend] is going to tell me that she is pregnant, whenever she will be.” So that is the first thing I actually always immediately think about. (Informant 5).

Another informant indicates that because of an impactful prior experience with the attraction, he will always think back to that when revisiting the attraction:

I once stood in line at *Buzz Lightyear* and then a child vomited in that space and I feel nauseous when I am on that ride. I am afraid I won't be able to get rid of that association for the rest of my life. (...) Just thinking about that ride, I immediately have that association... (Informant 3).

Finally, a variety of unrelated associations may arise ( $n = 7$ ), such as contemplating the next attraction to visit or even thoughts completely unrelated to dark rides and attractions, such as personal work-related matters, household chores, or pending automobile maintenance tasks. In such cases, informants do no longer engage with the neither content nor artifact:

Sorry, but that is when I drop out. (...) Then I even think: “What am I doing here?” and all sorts of thoughts enter my head that have nothing to do with the attraction in particular. (Informant 15).

The question is: what triggers cause dark ride attendees to drop out? Or reversely: what triggers are lacking to keep them engaged? These triggers constitute the third major theme of findings in this study, which we have termed “switch factors”.

#### 4.3. Switch factors

Given dark ride attendees' emphasis on valuing dark rides for their potential to focus on the here-and-now, it is relevant to explore the factors that may disrupt this focus and those enabling a return to that. Three types of factors emerged from the data: 1) factors related to visitors' willingness to process dark ride content ( $n = 14$ ), 2) factors associated with situational constraints affecting visitors' processing of the dark ride ( $n = 19$ ) and 3) factors related to visitors' capacity to process the dark ride's content ( $n = 15$ ). These factors bear resemblance to the MOA-framework established by MacInnis and Jaworski (1989), listing motivation, opportunity and ability (MOA) as antecedents of consumer information processing.

##### 4.3.1. Motivation-related switch factors

In the context of consumer information processing, motivation is regarded as readiness, willingness, interest and desire to engage with particular information (MacInnis, Moorman, & Jaworski, 1991). In the data, these principles manifest in informants liking the ride's theme or not. When sufficiently motivated, dark ride attendees indicate their willingness to fully engage with the ride's content. Some also indicate

that their motivation to engage may shift during the ride. As one respondent puts it in the context of a falling portcullis in Fata Morgana:

Then I want to dive away, literally, but that's not really possible in a boat. So I try to avoid it, mentally shut myself off. But not completely, because I also find it exciting. (Informant 8).

Sometimes, people thus willingly decide to drop out, finding themselves confined within a ride vehicle without the ability to physically step out during the ride. The only escape lies in mental detachment, resulting in activities like checking cell phones, chatting with fellow riders, or experiencing critical thoughts revolving around the dark rides' design decisions. The motivation to disengage is often caused by negative cues in the dark ride, such as malfunctioning animatronics, broken lights, outdated technology, poor quality of decorations, missing details, a complicated story, scary scenes and the like ( $n = 10$ ).

Then I wonder why wasn't that light made? Why does that moving puppet there work so woodenly? They can do so much with technology these days and then I have to sit here and watch this? (Informant 13).

Often the dropping out is only temporary. Yet in some cases, informants report that these negative cues and distractions lead them to lose their suspension of disbelief, causing them to remain out-of-tune more extensively and prompting cognitive processes often accompanied with negative emotions.

#### 4.3.2. Opportunity-related switch factors

In the Motivation-Opportunity-Ability (MOA) framework, opportunity refers to the extent to which situational distractions divert a consumer's attention away from the content (MacInnis et al., 1991). In this study, a relationship can be seen between negative opportunity and a lack of motivation, as detailed earlier. In some instances, opportunity is hindered without resulting in a more sustained loss of motivation. This is influenced partly by external factors (20 associations,  $n = 8$ ) and partly by the dark ride itself (41 associations,  $n = 17$ ). External factors include disruptive stimuli like loud giggling teenagers as fellow riders, glowing phone screens, alerts from incoming social media messages or noisy, attention-seeking children. Factors within the attraction itself include faltering media screens, insufficiently audible content, misaligned special effects, improperly synchronized sound and movement, an open emergency exit revealing behind-the-scenes views, unattended technical maintenance or bumpy ride vehicles:

I do find that Peter Pan ride a bit jerky at times, which I find unfortunate, as it pulls me out of the experience for a while. (Informant 10).

#### 4.3.3. Ability-related switch factors

A final factor diverting dark ride attendees' from outward-focused experiences relates to ability, involving the level of cognitive, emotional or physical resources a guest can employ to engage with the dark ride as intended. In the data, ability-related switch factors include being familiar with the story or characters, presence or absence of fear of heights, prior experience with similar dark rides or stories, possession of background information and a person's overall level of understanding, highlighting some of the factors as proposed by Langhof and Güldenber (2019). Sometimes, it also pertains to the simple pragmatics of not speaking the language of the country that hosts the attraction:

It was actually the case that the story of the attraction itself was not 100 % clear to me because it was in German. (Informant 14).

When any of the aforementioned ability factors are severely lacking or disrupted, attendees seem likely to be taken out of the ostensibly

valued here-and-now, thus experiencing the attraction in a different way than intended by design.

## 5. Conclusion

This study delved into the dark ride experience from the visitor's perspective, aiming to enrich existing conceptualizations with first-hand experience information. Employing in-depth interviews via the ZMET approach, informants visited a designated dark ride in one of three European theme park destinations. Results highlight dark ride attendees' appreciation for dark rides' ability to facilitate here-and-now experiences, enabling them to jump on a carefully structured flow of the dark ride itself. This here-and-now experience was found to consist of imagery, imagery-based states and emotions related to the immediate stimuli as offered within dark ride itself. At times, dark ride attendees' attention may divert from these immediate stimuli to internal thoughts and cognitions, either related or unrelated to the dark ride at hand, thereby prompting a shift away from the ostensibly valued here-and-now. Various factors catalyzing the diversion of dark ride attendee's focus from the here-and-now were identified – both attendees' side as well as on the side of the dark ride itself.

The results informed a revised conceptual model (Fig. 2), corroborating aspects of prior conceptualizations (Cornelis et al., 2022; Langhof & Güldenber, 2019) as well as introducing novel components, offering a fresh perspective on the conceptualization of dark ride experiences. In concrete terms, this means that the relevance of imagery, imagery-based states and emotion were corroborated, yet were embedded in an outward-focused attention mode of the dark ride experience. Social immersion was included as a fourth imagery-related state, alongside narrative transportation, presence, and flow. Cognition (content-related, artifact-related, and other cognitions) was added as a new component to the model and embedded in an inward-focused mode of the dark ride experience. Finally, switch factors (motivation, opportunity and ability) were added to the model as triggers for oscillating between the two different modes of the dark ride experience.

### 5.1. Two routes of dark ride experiences

Our findings show that dark ride experiences can oscillate between two modes: an outward-focused and an inward-focused attention modes. The outward-focused mode is characterized by visitors' attention being focused on external stimuli within the context of a highly structured dark ride experience. These trigger imageries and imagery-based states (presence, narrative transportation, social immersion, flow) as well as emotions. It is mainly these aspects that have been covered in earlier conceptualizations of the dark ride experience (Cornelis et al., 2022; Langhof & Güldenber, 2019), thus corroborating these elements as core building blocks of the dark ride experience. This also aligns with some of the more general tourism experience theories, who conceptualize experience as the present sensing and feeling of the world around us (Bastiaansen et al., 2019).

What has not been covered in earlier conceptualizations of the dark ride experience is the inward-focused mode, characterized by visitors' attention being focused on internal thoughts and cognitions. These elements have been addressed in some frameworks of more general tourism experiences (Godovykh & Tasci, 2020). The current findings therefore suggest incorporating cognitive components in the conceptualization of the dark ride experience as well, aligning it with more general conceptualizations of tourism experience. Our findings on cognitive responses are in line with Tan's (1996) distinction between content-related and artifact-related responses, a framework that has not been adopted in the tourism literature before. The distinction is relevant, as these different types of responses have different predeterminants and different consequences. Further research should explore exactly how they contribute to one's overall experience. Given the relevance of this distinction to other media-centric experiences in the field of tourism (e.

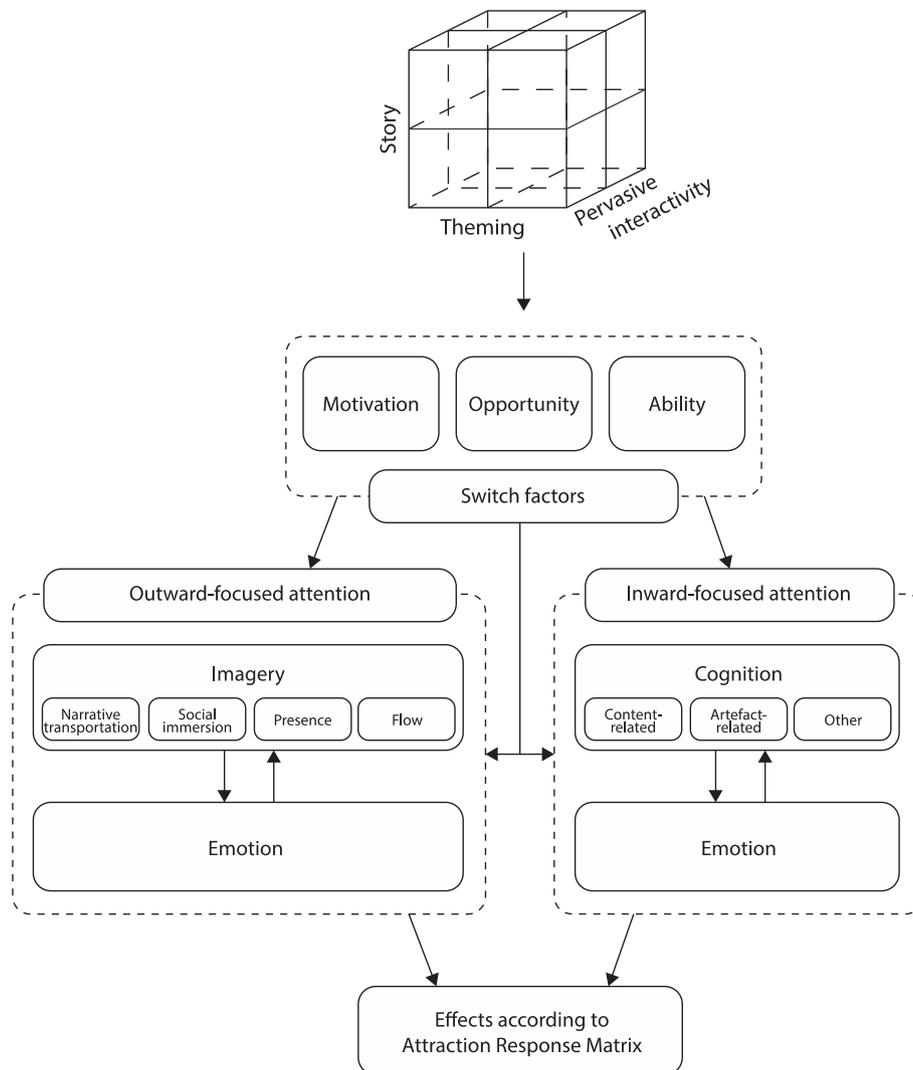


Fig. 2. The revised conceptualization of the dark ride experience.

g., virtual reality), we suggest examining these cognitive phenomena in a broader tourism context as well.

The oscillation between an outward- and inward-focused route is reminiscent of the Erlebnis-Erfahrung distinction that found its way to the tourism and leisure literature through the work of Schulze (1992). The outward-driven route has strong similarities with Schulze (1992) approach to Erlebnis as being pre-reflective, immediate, and predicated upon a passive subject. The inward-driven route has more similarities with Schulze (1992) approach to Erfahrung as entailing greater active cognitive participation. The philosophical Erlebnis-Erfahrung discourse traditionally tilts in favor of Erfahrung (Jay, 2005). However, our findings suggest that in dark ride experiences, it tilts in favor of Erlebnis, particularly given visitors' appreciation of dark rides as strong facilitators of here-and-now experiences, leading them to suspend or even forget the duties and responsibilities from their daily lives. Whereas this observation is in line with notions that are traditionally connotated with the experience economy (Schulze, 1992), more recent perspectives also highlight the importance of Erfahrung-like experiences in the experience economy (Pine & Gilmore, 2019). Elsewhere, theme parks have been characterized for their capacity to yield Erfahrungen compared to the more Erlebnis-driven amusement parks (Cornelis, 2017). It is remarkable that the current findings about a stereotypical theme park attraction tend to highlight the Erlebnis-side instead. To the best of our knowledge, there is no existing body of work in the tourism literature

exploring preferences for outward-focused/Erlebnis or inward-focused/Erfahrung aspects within one type of experience. We therefore argue that future research should be aimed at further exploring the relationship between these experience aspects and the overall evaluation of an experience, both in the context of dark rides and theme parks, but also in that of tourism and leisure more broadly.

### 5.2. Switch factors trigger diversion from the outward-focused route

The data reveal various factors catalyzing the diversion of dark ride attendees' focus on the here-and-now, bearing resemblance to MacInnis and Jaworski's (1989) Motivation-Opportunity-Ability (MOA) framework on consumer information processing. Motivation involves willingness to process dark ride content, opportunity pertains to situational constraints hampering dark ride content processing, and ability relates to dark ride attendees processing capacity. While Langhof and Guldenberg (2019) have incorporated ability-related factors in the dark ride experience before (culture and prior knowledge), motivation and opportunity factors have previously not been addressed. We propose incorporating all three MOA (motivation, opportunity, ability) factors into the dark ride experience conceptualization.

While other accounts have presented factors that foster certain imagery-based states (Fu et al., 2022), the current findings mostly suggested switch factors prompting dark ride visitors to divert their

attention from the here-and-now. In the case of motivation, it was found how visitors mentally block off when something scary happens. Since they cannot physically step out of the attraction ride, the only way out of the experience is a mental escape. In the case of opportunity, it was found how negative cues such as technical malfunctions and social distractions disturb focusing on the here-and-now. Thoughts of poor maintenance may occupy visitors' minds, shifting mental energy from processing the dark ride's content in the here-and-now to other issues at hand, potentially diminishing the overall experience. In the case of ability, it was found that visitors must have the cognitive, emotional, and physical ability to experience the dark ride as intended by design. If visitors do not master the language spoken in a dark ride, this hampers their ability to process its contents.

### 5.3. The intended wavelength of the structured experience

The current findings highlight dark rides as textbook examples of structured experience: settings where providers manipulate specific design elements with the intention to evoke an experience that is meticulously thought through from start to end (Duerden et al., 2015). In optimal structured experiences, lived experience closely aligns with the intended one. Our data suggest that some dark ride attendees achieve such seamless synchronizations, as if they effortlessly resonate with the essence of the dark ride itself (see e.g., the quote of Informant 1 in section 4.1). They move along, surrendered to and absorbing what is unfolding to them at that moment. However, our findings also indicate instances where attendees become desynchronized, shifting their focus from the here-and-now to internal thoughts and cognitions. Whereas our findings indicate that in some cases, participants eventually resynchronize with the intended experience again (see e.g., the quote of Informant 10 in section 4.3.2), in other cases participants completely tune out (see e.g., the quote of Informant 15 in section 4.2.1). This makes the dark ride experience a dynamic process, marked by continuous cycles of syncing and un syncing with the intended experience. This aligns with other findings on structured experiences (Strijbosch et al., 2021), where lived and intended experiences were also found to dynamically sync and un sync over time. Following these findings and alignments with earlier work, we developed a metaphorical visualization of this syncing and un syncing with the dark ride experience in Fig. 3. In this figure, the process of syncing and un syncing the lived experience with the intended experience and is metaphorically expressed using a continuous oscillation between intended here-and-now experiences and

unintended there-and-then experiences.

As dark rides are often integral to highly branded theme park destinations, their role extends beyond the provision of a merely satisfying experience. Dark rides are also presumed to enhance the overall park experience, to contribute to the park's brand image and to exemplify multiple downstream effects (see the Attraction Response Matrix, Cornelis, 2010a). Providers should take these matters serious, as attractions ultimately serve as means to an end, not an end in themselves. The impact of transitioning between the intended outward-focused and unintended inward-focused experiences on the overall experience outcomes remains unclear to date. Follow-up research should further enhance our understanding of the role that switch factors play in oscillating between intended here-and-now and unintended there-and-then experiences and what this means for the overall experience outcomes and their downstream effects, so as to get a better understanding of the intermediary role of dark rides in the broader theme park destination.

In terms of practical implications, optimal processing of a dark ride begins with tapping into the proper visitor motivation. Designers must therefore thoroughly understand content (themes and stories) relevant to their target audience, so that visitors are interested to begin with. This can be achieved by conducting market research and by being receptive to societal trends and developments. Designers must then align with the audience's prior knowledge to ensure sufficient ability for processing. Pretesting and prototype testing are crucial methods to assess alignment concerning both motivation and ability. They also help determine if, to what extent, and through which means the desired emotions and intended imagery-based states are achieved. Additionally, the use of clichés can positively tap into the ability factor for wider target groups. However, this also increases the risk of un syncing due to boredom and insufficient engagement for other segments of the audience (Cornelis, 2017). Introducing layers in the story and theming can, if applied correctly, appeal to an audience with a broad variation in prior knowledge and need for more cognitive stimulation. Examples include Disney's "hidden Mickey's" or intellectual jokes and stimuli that are not necessary for a basic understanding of the dark ride yet, if understood, provide a secondary layer of meaning. Proper application lies in ensuring that the audience does not dwell too long on the cognitive processing of these easter eggs, as this could risk a diversion to inward-focused attention. Clear and concise toolboxes to measure this have not been presented yet.

In operational terms, it is important that controllable opportunity-

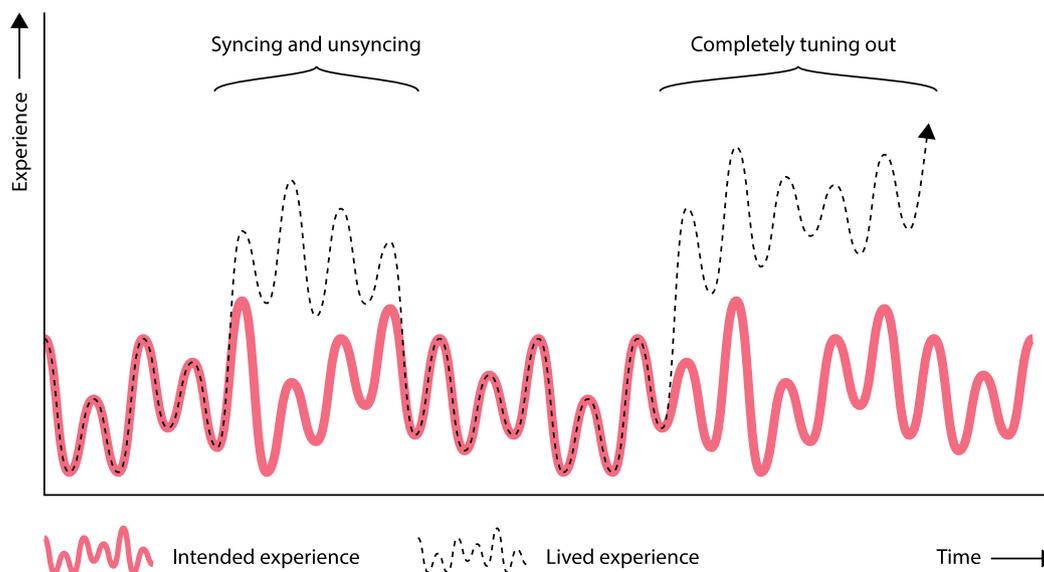


Fig. 3. Syncing and un syncing with the wavelength of the intended dark ride experience.

related switch factors are managed correctly (e.g., regular maintenance, clear instructions for operating staff, and regular quality checks to ensure the dark ride's execution remains aligned with the original design and delivery). In sum, the dark ride can be developed and operated to align the visitor's motivation, opportunity, and ability with the provider's intentions. Future studies should explore how dark ride providers can better optimize these switch factors.

#### 5.4. Limitations and further considerations

Although we tried including a wide variation of dark rides in our study, the selection of parks resulted in a partial representation only. All parks are in northern Europe, potentially introducing cultural bias. Despite efforts to cover all dimensions of dark ride supply as captured by the Dark Ride Cube (Cornelis et al., 2022), not all ends of these dimensions were equally addressed. Exploring a spectrum of dark rides could provide more insights into the impact of investment and design sophistication on the experience. Another limitation is that informants are relatively young and highly educated, potentially influencing their dark ride experiences differently from other target groups such as parents with children. Further research should explore dark ride experiences using a more representative sample.

#### Funding information

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

#### CRedit authorship contribution statement

**Pieter C.M. Cornelis:** Writing – original draft, Visualization, Validation, Supervision, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Wim Strijbosch:** Writing – original draft, Visualization, Validation, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

#### Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used ChatGPT as a tool for text refinement, specifically to enhance conciseness and brevity. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

#### Declaration of competing interest

Pieter Cornelis reports financial support was provided by Fontys University of Applied Sciences. Pieter Cornelis reports a relationship with Fontys University of Applied Sciences that includes: employment. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Wim Strijbosch reports financial support and administrative support were provided by Breda University of Applied Sciences. Wim Strijbosch reports a relationship with Breda University of Applied Sciences that includes: employment. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

#### Acknowledgements

The authors would like to thank Altuition (the Netherlands) for training and use of the ZMET method.

#### References

- Adhikari, A., & Bhattacharya, S. (2015). Appraisal of literature on customer experience in tourism sector: Review and framework. *Current Issues in Tourism*, 19(4), 296–321. <https://doi.org/10.1080/13683500.2015.1082538>
- Baker, C. (2022). From story-based to story-interactive experiences: Layers of narrative application in theme parks and attractions. In A. C. Campos, & S. Almeida (Eds.), *Global perspectives on strategic storytelling in destination marketing*. IGI Global.
- Baker, C. (2023a). The prevalence of storyworlds and thematic landscapes in global theme parks. *Annals of Tourism Research Empirical Insights*, 4(1). <https://doi.org/10.1016/j.annale.2022.100080>
- Baker, C. (2023b). Themed attractions and storytelling. In A. Fyall, B. Garrod, A. Leask, & S. Wanhill (Eds.), *Managing visitor attractions*. Routledge.
- Bastiaansen, M., Lub, X. D., Mitas, O., Jung, T. H., Ascensão, M. P., Han, D.-I., ... Strijbosch, W. (2019). Emotions as core building blocks of an experience. *International Journal of Contemporary Hospitality Management*, 31(2), 651–668. <https://doi.org/10.1108/ijchm-11-2017-0761>
- Bastiaansen, M., Oosterholt, M., Mitas, O., Han, D., & Lub, X. (2020). An emotional roller coaster: electrophysiological evidence of emotional engagement during a roller-coaster ride with virtual reality add-on. *Journal of Hospitality & Tourism Research*, 46(1), 29–54. <https://doi.org/10.1177/1096348020944436>
- Beeho, A. J., & Prentice, R. C. (1997). Conceptualizing the experiences of heritage tourists. *Tourism Management*, 18(2), 75–87. [https://doi.org/10.1016/s0261-5177\(96\)00103-3](https://doi.org/10.1016/s0261-5177(96)00103-3)
- Cornelis, P. C. M. (2010a). Achieving attraction accountability through an attraction response matrix. *Journal of Travel & Tourism Marketing*, 27(4), 361–382. <https://doi.org/10.1080/10548408.2010.481571>
- Cornelis, P. C. M. (2010b). Impact of new attractions on theme park attendance. *Worldwide Hospitality and Tourism Themes*, 2(3), 262–280. <https://doi.org/10.1108/17554211011052203>
- Cornelis, P. C. M. (2017). *Investment thrills*. NRIT Media.
- Cornelis, P. C. M., Strijbosch, W., & Corsius, P. (2022). Conceptualizing the dark ride experience through the dark ride cube: Evidence from the EMEA region. *Journal of Hospitality & Tourism Research*. <https://doi.org/10.1177/10963480221080331>
- Duerden, M. D., Ward, P. J., & Freeman, P. A. (2015). Conceptualizing structured experiences: Seeking interdisciplinary integration. *Journal of Leisure Research*, 47(5), 601–620. <https://doi.org/10.18666/jlr-2015-v47-i5-6096>
- Ermi, L., & Mäyrä, F. (2005). Fundamental components of the gameplay experience: Analysing immersion. In S. de Castell, & J. Jenson (Eds.), *Proceedings of DiGRA 2005 conference: Changing views—Worlds in play*. DiGRA. <http://www.digra.org/wp-content/uploads/digital-library/06276.41516.pdf>.
- Freitag, F. (2017). Like walking into a movie: Intermedial relations between theme parks and movies. *The Journal of Popular Culture*, 50(4), 704–722.
- Fu, X., Baker, C., Zhang, W., & Zhang, R. (2022). Theme Park storytelling: Deconstructing immersion in Chinese theme parks. *Journal of Travel Research*, 62(4), 893–906. <https://doi.org/10.1177/00472875221098933>
- Godovykh, M., & Tasci, A. D. A. (2020). Customer experience in tourism: A review of definitions, components, and measurements. *Tourism Management Perspectives*, 35. <https://doi.org/10.1016/j.tmp.2020.100694>
- Hennig-Thurau, T., & Houston, M. B. (2019). *Entertainment science. Data analytics and practical theory for movies, games, books, and music*. Springer Nature.
- Hwang, J., & Seo, S. (2016). A critical review of research on customer experience management. *International Journal of Contemporary Hospitality Management*, 28(10), 2218–2246. <https://doi.org/10.1108/ijchm-04-2015-0192>
- Jay, M. (2005). *Songs of experience: Modern American and European variations on a universal theme*. University of California Press.
- Langhof, J. G., & Guldenberg, S. (2019). Pirates, ghosts and customer loyalty – Reviewing the dark ride experience. *Tourism Management Perspectives*, 31, 398–420. <https://doi.org/10.1016/j.tmp.2019.06.004>
- Macdonald, G. F., & Alsford, S. (1995). Museums and theme parks: Worlds in collision? *Museum Management and Curatorship*, 14(2), 129–147. <https://doi.org/10.1080/09647779509515435>
- MacInnis, D. J., & Jaworski, B. J. (1989). Information processing from advertisements: Toward an integrative framework. *Journal of Marketing*, 53(4), 1–23. <https://doi.org/10.1177/002224298905300401>
- MacInnis, D. J., Moorman, C., & Jaworski, B. J. (1991). Enhancing and measuring Consumers' motivation, opportunity, and ability to process brand information from ads. *Journal of Marketing*, 55(4), 32–53. <https://doi.org/10.1177/002224299105500403>
- MacIntosh, A., & Prentice, R. C. (1999). Affirming authenticity: Consulting cultural heritage. *Annals of Tourism Research*, 26(3), 589–612.
- McIntosh, A. J. (1999). Into the Tourist's mind: Understanding the value of the heritage experience. *Journal of Travel & Tourism Marketing*, 8(1), 41–64. [https://doi.org/10.1300/J073v08n01\\_03](https://doi.org/10.1300/J073v08n01_03)
- Milman, A. (2001). The future of the Theme Park and attraction industry: A management perspective. *Journal of Travel Research*, 40(2), 139–147. <https://doi.org/10.1177/004728750104000204>
- Mittermeier, S., Lukas, S. A., Schwarz, A., Freitag, F., Anton Clavé, S., Böger, A., ... Widmann, T. (2023). Attractions: How rides, retail, dining, and entertainment structure the theme park. In F. Freitag, F. Carlà-Uhink, & S. Anton Clavé (Eds.), *Key concepts in theme park studies: Understanding tourism and leisure spaces* (pp. 57–75). Springer Nature.
- Moutinho, L. (1988). Amusement park visitor behaviour — Scottish attitudes. *Tourism Management*, 9(4), 291–300. [https://doi.org/10.1016/0261-5177\(88\)90003-9](https://doi.org/10.1016/0261-5177(88)90003-9)
- Nelson, E. (2016). The art of queuing up at Disneyland. *Journal of Tourism History*, 8(1), 47–56. <https://doi.org/10.1080/1755182x.2016.1179795>

- Oh, J.-E., & Ma, H. (2017). Enhancing visitor experience of theme park attractions: Focusing on animation and narrative. In *7th international conference on literature, humanities, fashion and hospitality management, Paris*.
- Packer, J., & Ballantyne, R. (2016). Conceptualizing the visitor experience: A review of literature and development of a multifaceted model. *Visitor Studies*, 19(2), 128–143. <https://doi.org/10.1080/10645578.2016.1144023>
- Palmer, A. (2010). Customer experience management: A critical review of an emerging idea. *Journal of Services Marketing*, 24(3), 196–208. <https://doi.org/10.1108/08876041011040604>
- Pine, B. J., & Gilmore, J. H. (2019). *The experience economy: Competing for customer time, attention, and money* (Revised ed.). Harvard Business Review Press.
- Sables, D. (2017). Industry, heritage, the media, and the formation of a British National Cultural Memory. *International Journal of Historical Archaeology*, 21(4), 978–1010. <https://doi.org/10.1007/s10761-017-0396-3>
- Schulze, G. (1992). *Die Erlebnisgesellschaft*. Campus Verlag.
- Strijbosch, W., Mitas, O., van Blaricum, T., Vugts, O., Govers, C., Hover, M., ... Bastiaansen, M. (2021). Evaluating the temporal dynamics of a structured experience: Real-time skin conductance and experience reconstruction measures. *Leisure Sciences*, 1-25. <https://doi.org/10.1080/01490400.2021.1967233>
- Tan, E. S.-H. (1996). *Emotion and the structure of narrative film*. Lawrence Erlbaum Associates.
- Van Laer, T., De Ruyter, K., Visconti, L. M., & Wetzels, M. (2014). The extended transportation-imagery model: A meta-analysis of the antecedents and consequences of consumers' narrative transportation. *Journal of Consumer Research*, 40(5), 797–817. <https://doi.org/10.1086/673383>
- Van Oest, R. D., Van Heerde, H. J., & Dekimpe, M. G. (2010). Return on roller coasters: A model to guide Investments in Theme Park Attractions. *Marketing Science*, 29(4), 721–737. <https://doi.org/10.1287/mksc.1090.0553>
- Wei, W., Qi, R., & Zhang, L. (2019). Effects of virtual reality on theme park visitors' experience and behaviors: A presence perspective. *Tourism Management*, 71, 282–293. <https://doi.org/10.1016/j.tourman.2018.10.024>
- Weinaug, W. C. (2015). Antarctica: Empire of the penguin. *ASHR-AE Journal*, 57(4), 42–50.
- Wright, D. W. M. (2018). Terror park: A future theme park in 2100. *Futures*, 96, 1–22. <https://doi.org/10.1016/j.futures.2017.11.002>
- Younger, D. (2016). *Theme park design: The art of themed entertainment*. Inklingwood Press.
- Zajchowski, C. A. B., Schwab, K. A., & Dustin, D. L. (2017). The experiencing self and the remembering self: Implications for leisure science. *Leisure Sciences*, 39(6), 561–568. <https://doi.org/10.1080/01490400.2016.1209140>
- Zaltman, G. (1997). Rethinking market research: putting people back in. *Journal of Marketing Research*, 34(4), 424–437. <https://doi.org/10.1177/002224379703400402>
- Zika, J. (2014). The dawn of the dark ride at the amusement park. In *Proceedings of the 2014 conference on interactive entertainment - IE2014*. <https://doi.org/10.1145/2677758.2677775>