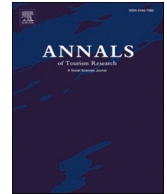




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Annals of Tourism Research

journal homepage: www.elsevier.com/locate/annals

Feeling dark, seeing dark: Mind–body in dark tourism

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ARTICLE INFO

Associate editor: Viglia Giampaolo

Keywords:

Dark tourism
Dark experience
Embodiment
Vision, Chernobyl

ABSTRACT

Embodiment is a key under-researched component of dark tourism experiences. Qualitative and experimental methods were applied in four studies to reveal the bidirectional body–mind synchronization in dark tourism experiences. Taking the Chernobyl zone as a case, we first prove the mind-to-body pathway in which the dark experience exerts a measurable effect on the participants' sensory expression in photographs and sketches. We then discover the body-to-mind pathway in which the expressions of darkness can be decoded by others. Furthermore, this study illustrates how the different dark levels of the product photos on a website affect the potential tourists' feelings. This study expands the understanding of embodiment theory in dark tourism with implications for product design and marketing.

Introduction

The dark tourism field has been studied for over 20 years. Research in the field began with Rojek's (1993) use of the term “black spot” (p. 137). Foley and Lennon (1996) then used the concept of dark tourism, which Seaton (1996) described as travel encounters with death. Other scholars also explored this type of tourism under different names, such as trauma tourism (Clark, 2006), thana-tourism (Jagielloński, 2015; Lee, Bendle, Yoon, & Kim, 2011; Seaton, 1996), morbid tourism (Blom, 2000), grief tourism (Sharpley & Stone, 2009), fright tourism (Bristow & Newman, 2004), and even death tourism (Biran, Shondell Miller & Gonzalez, 2013). Dunkley, Morgan, and Westwood (2007) summarized some of the names used in this tourism field: for example, horror tourism, hardship tourism, tragedy tourism, warfare tourism, genocide tourism, and extreme thanatourism.

Among all these names, “dark tourism” is the most commonly used because it implies the senses of “dark” and “light” in this unique type of tourism experience. Sharpley (2005) identified different “shades of darkness” of tourists' behavior, while Stone (2006) proposed a linear dark tourism spectrum model, which illustrates the dark tourism products within a “darkest–lightest” framework of supply. Besides the word “dark,” researchers also use descriptions on the other side of the spectrum, such as “pale” (Gouthro & Palmer, 2010; Haldrup & Larsen, 2003; Larsen, 2008; Obrador, 2012). Sharpley and Stone (2009) proposed a typology from “pale” to “dark” based on the degree of the interest in death.

The above descriptions show the connections between the experience of dark tourism and the visual perception of darkness and brightness. Although the close connection between vision and experience in dark tourism has been explored previously (Dunkley, Morgan, & Westwood, 2011; Walklate, Mythen, & McGarry, 2011; Xie & Sun, 2018), most studies were performed from the perspective of history representation (Turner & Peters, 2015; Wright & Sharpley, 2018) or meaning interpretation. Lennon (2017)

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Received 17 July 2020; Received in revised form 24 October 2020; Accepted 28 October 2020

Available online 9 November 2020

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noted that visual images at dark tourism sites presents the viewer with a range of multiple perceptual contexts that emphasize their cognitive process. These physical sensations can influence the unconscious mind directly (Krishna & Schwarz, 2014; Lv, Li, & McCabe, 2020), which plays a key role in the dark visitors' experience. Kock and Ringberg (2019) described the high relevance of embodied experiences to tourism research and listed a series of embodied sensations in which the lighting (e.g., bright vs. dim) was the most important factor for future reference. This finding is in line with embodied dark tourism research. Thus, the explanation of the direct mind–body interaction at the sensory level in dark tourism is not only a theoretical requirement, but also calls for empirical exploration.

Since the mid-1990s, studies focusing on the tourism–body relationship have adopted a variety of perspectives to focus on, such as the senses (Palmer & Andrews, 2020). Kock and Ringberg (2019) observed that embodiment is a bidirectional functional system. Embodiment is an expressive ongoing relationship with the world that attempts to bridge a dualistic divide between the subject and object by folding the two into each other (Thrift, 1997). However, these previous studies were mainly conducted in a one-way direction in their attempts to explain how sensation channels affect psychological experience. While the bidirectional body–mind effect is typically embodied in dark tourism experiences, this effect requires further clarification, which is also the purpose of this research study.

This study theoretically explores the body–mind synchronization in a dark tourism experience, which aims to show the bidirectional relationship between “seeing” and “feeling” the darkness. “Seeing” refers to both the visual experiences and expressions of the tourists and potential tourists. This relationship explains an alternative production mechanism of dark tourism experiences beyond the unidirectional cognitive pathways. Furthermore, this study identifies the effects of the visual presentation of dark products on dark experiences and dark tourism product evaluations. In addition, the study extends the embodiment experience in dark tourism to the interactions among different tourists instead of showing the human–environment relationship. The results offer a practical perspective on how to manage dark tourism experience levels during different phases in the whole dark tourism process to control the rhythm of the tourists' painful sublimation experiences, balance their excessive physical and mental pressures, and realize a rhythmic dark tourism experience. Thus, this study offers a reference for dark tourism destinations using visual image-based communication modes to promote dark tourism marketing, tourists' induced autonomous dark tourism experiences, and their deeper involvement in the dark tourism process.

Literature review and research framework

Emotion-laden dark tourism experiences

Dark tourism destinations are generally related to significant deaths, such as the Chernobyl zone, Ground Zero at the former site of New York's World Trade Center towers, the memorial and museum at Auschwitz-Birkenau, or the Memorial Hall of the Victims in Nanjing Massacre by Japanese Invaders, which has received more than 100 million visitors since it opened in 1985. Seaton (1996) described dark tourism as travels to encounter death. Stone (2012) argued that dark tourism provides an opportunity to contemplate the death of the self through gazing upon symbols of significant death, which allows the self to construct contemporary ontological meanings of mortality. Furthermore, Yan, Zhang, Zhang, Lu, and Guo (2016) found that tourists' emotional reactions more strongly influence their emotional tourist experiences than do their cognitive experiences.

Dark tourism is considered emotionally laden (Nawijn & Fricke, 2013) and its experience is subjective and personal (Martini & Buda, 2018), including both positive and negative experiences (Iliev, 2020; Sharma & Nayak, 2019). Positive emotions (Best, 2007; Biran, Liu, Li, & Eichhorn, 2014; Lisle, 2004; Nawijn & Fricke, 2013; Thurnell-Read, 2009) and negative emotions (Austin, 2002; Miles, 2002; Nawijn & Biran, 2018) in dark tourism have been studied by a wide variety of researchers. Cave and Buda (2018) called it the “emotional souvenirs process” (p. 707–726). Based on empirical research, Zhang, Yang, Zheng, and Zhang (2016) identified five affective experiences, including fear, sorrow, shock, appreciation, and depression. Zheng, Zhang, Qiu, Guo, and Zhang (2019) captured a feature of dark tourism experiences as a mixed and ambivalent emotional experience and further confirmed the usefulness of this frame for the above five emotions.

Embodiment and vision in dark tourism

While dark tourism is intensely connected to emotion, the realization of this connection is not only through the psychological channel. For example, Ponty (2001, p. 133–134) observed that it is insufficient to only explain experiences from a psychological perspective because the connection between the body and experience must be noticed. The connection between feeling and body in dark tourism has been especially studied through the concept of embodiment. Miller and Del Casino (2018) studied the usefulness of the embodied experience in constituting the site of dark tourism. In a study of the Chernobyl zone as an attraction, Rush-Cooper (2019) explained how radiation in the Chernobyl zone as a landscape is first encountered as a bodily exposure from an embodiment perspective.

In embodiment cognition theory, sensory experiences and bodily feelings serve as unique sources of tacit information that subconsciously influence people's cognition, emotions, and behavior (Barsalou, 2008). Previous embodiment studies concerning the senses have explored sound (Bird, Leighton, & Mclean, 2020; Wilson, Chambers, & Johnson, 2019), touch (Bird et al., 2020), taste, smell (Dann & Jacobsen, 2003), and physical activity (Buda, 2015; Gillen & Mostafanezhad, 2019; Matteucci, 2014). In addition to the above senses involved in the embodiment process, vision is considered to be our dominant sense (Krishna, 2012) and also the most memorable and recognizable (Agapito, 2020; Lv et al., 2020). Kock and Ringberg (2019) listed the use of light in embodied cognition

theories. More specifically, in dark tourism embodiment, Xie and Sun (2018) observed that among the most important embodiment channels in dark tourism experience, the visual sense has the greatest influence on 27 embodied emotions and seven types of embodied cognition. Researchers have pointed out the application potential and direction of visual embodiment in dark tourism. However, its realization mechanism requires additional empirical exploration, which is also one of the objectives of this study.

Dark and light in dark tourism

Dark tourism experiences are tied to their visual features; therefore, tourists' visual experiences have been explored in depth (Richards, Pritchard, & Morgan, 2010). In particular, the visual experience of dark and light is a key aspect of dark tourism studies. Experiences of lightness and darkness leading to different bodily results (e.g., Jacobs, Gallo, Cooper, Pulli, & Levoy, 2015) and behaviors have been demonstrated, such as experiencing brightness increases the salience of moral considerations (Chiou & Cheng, 2013). Conversely, experiencing darkness increases dishonesty (Zhong, Bohns, & Gino, 2010). Dark tourism experiences are related both to visual and moral darkness; thus, whether the "darkness" in dark tourism experiences causes visitors' physical responses requires empirical study. Hence, hypothesis 1 (H1) is proposed as follows:

H1. The level of darkness in tourists' feelings influences the level of darkness in their visual expressions.

The description of "(color) value" according to the Munsell color system (e.g., lightness vs. darkness) (Cochrane, 2014) has been used in studies to demonstrate how the varying color intensity of the product affects consumers' evaluations (Reinoso-Carvalho, Dakduk, Wagemans, & Spence, 2019). However, most of these studies focus on hedonic experiences and material consumption (e.g., Garber Jr., Hyatt, & Starr Jr, 2000; Shankar, Levitan, & Spence, 2010). Compared to previous studies, dark tourism is a product of experience that is deeply involved with the tourists' subjective judgement and it is morally entwined with death and disaster (Bowman & Pezzullo, 2009). Robb (2009) questioned whether dark tourism participants were witnesses or voyeurs, while Cole (1999) described the dark tourism experience as a "rubbernecker's experience" (p. 114). Yuill (2004) described dark tourism as based on the curiosity of death. Embodied cognition research suggests that the metaphors of light and darkness as symbols of good and evil are useful not only for understanding and communicating abstract ideas, but also for forming a basis for concrete sensory experiences (Banerjee, Chatterjee, & Sinha, 2012). Thus, whether the visual sensation of darkness causes visitors' psychosocial results in dark tourism should be answered empirically. Based on the above, H2 is proposed as follows:

H2. The level of darkness in tourists' visual perceptions influences the level of their dark feelings.

Media presentations and viewers' evaluations

On the basis of their experiences, dark tourists' interpretations differ widely because they generate their own representations of the historical trauma (Reynolds, 2016). Tucker and Shelton (2018) stated that the affect tourism produced in tourism could be selected and directed purposefully. In this process, photographs have long been used as a means of interpretation in the study of dark tourism (Wright & Sharpley, 2018). The appeal and appetite for photographs illustrate not only their inherent fascination but also a series of dark, recurring themes (Lennon, 2017). Studies are increasingly focusing on pictures taken by dark tourist photographers to interpret their themes (Walklate et al., 2011) and understand dark tourism (Antick, 2013; Turner & Peters, 2015). In particular, Goatcher and Brunson (2011) noted that the iconological analysis of photographs has been a useful approach in the study of the Chernobyl zone.

Dark tourism ventures' websites showing pictures of the sites are an important means for the communicate between the destination and tourists, and they are especially meaningful in creating engagement with the dark tourist prior to their visit, which increases their motivation to visit, informs and shapes their expectations, and signals the appropriate behavior for the dark tourism site (Krisjanous, 2016). In a dark tourism study, the step from examining emotions to observing changes in behavior is inevitable and logical (Ashworth & Isaac, 2015). Based on the above, this study explores how images promoting dark tourist sites presented on the destinations' websites affects the viewers' experiences and then further influences their evaluation of the dark tourism product. If the relationship of the mind-body connection in dark tourism is established, the criterion variable (i.e., product evaluation) should be affected. In this process from seeing dark to experiencing darkness to dark product evaluation, the dark experience should show a mediating effect. We interpreted this finding in the development of H3:

H3. The level of darkness of the promoting images positively influences the viewers' evaluation of the dark tourism product, dark experience plays a mediation role.

Case selection

To test these hypotheses, the Chernobyl zone was chosen as the case. It is one of the most famous dark tourism destinations and a typical postdisaster destination based on the concept used by Biran et al. (2014). Until 2011, the Chernobyl zone was accessible to only a limited number of visitors who required special permission to enter. However, the operations of big tourism companies in the past few years have allowed 10,000 tourists to enter the forbidden zone annually (Amey, 2015; Hryhorczuk, 2018). Researchers began paying attention to the tourism activities in the Chernobyl zone at the end of the 20th century. Initially, they mainly analyzed the negative effect of the Chernobyl disaster on the tourism industry (Hultkrantz & Olsson, 1997). However, with the ruins remaining from the disaster becoming increasingly attractive to tourists, studies began to focus on the features of the Chernobyl zone as a tourism attraction. Hryhorczuk (2014) noted the new meaning for Chernobyl as being more than just a dark tourism site.

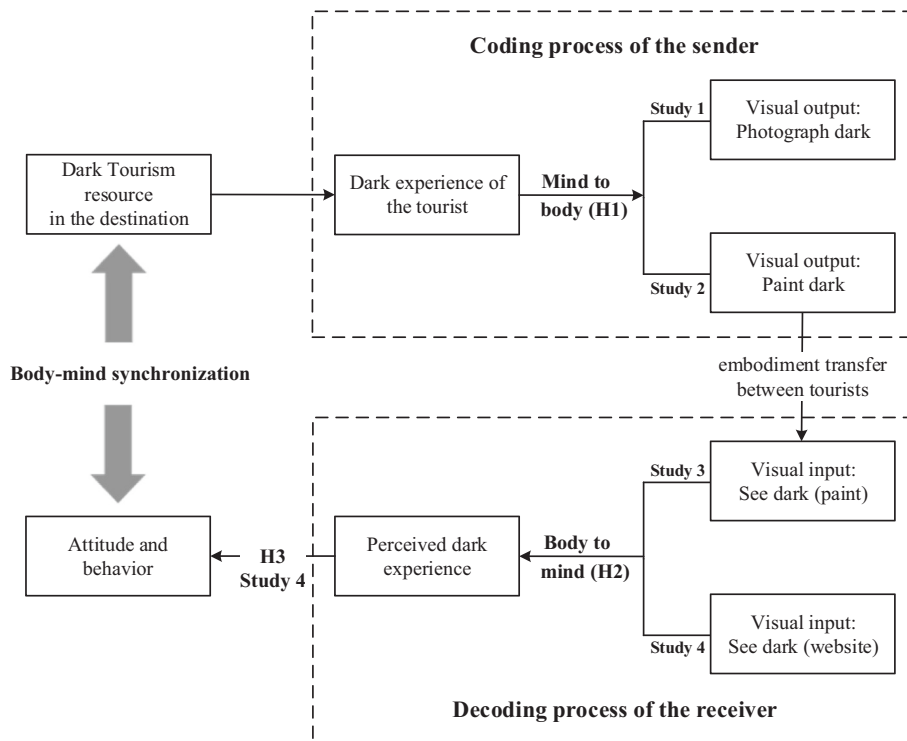


Fig. 1. Conceptual framework.

The Chernobyl zone was selected as the case based on the following considerations. First, Chernobyl was the first major nuclear accident to be rated at level 7 on the International Nuclear Event Scale. The incident caused many casualties. The impact of the nuclear radiation leak continues to the present day and Chernobyl’s current nuclear reactor crisis has not yet been resolved completely. Additionally, Ukraine has developed local tourism projects for visiting Chernobyl; therefore, the site matches the definition of dark tourism. Second, a foreign dark tourism destination was chosen to avoid the impact of national sentiment on the potential tourists’ dark experiences due to dark events in their own countries. Third, Chernobyl is well known to the public; thus, the potential influences from the tourists’ different brand awareness regarding the destination could be largely avoided, especially in Studies 3 and 4.

Overview of studies

The study’s conceptual framework is shown in Fig. 1, which describes the four steps in the study design. First, Studies 1 and 2 test if the tourists’ experiences are reflected in their sensory expression (visual expressions), that is, mind–body process (H1). Study 1 examined whether different levels of tourists’ dark feelings leads to different levels of darkness in the photos that they took at the dark tourism site based on real online reviews from TripAdvisor. The real network data provided a preliminarily proof of the phenomenon studied in this paper; however, the problem with online reviews is that the tourists’ photos will be affected by many factors, such as the scene and camera. Therefore, the test of the research hypothesis requires more evidence. Study 2 applied an experimental approach where the tourism scene and visual expression were controlled to more strictly test whether reading the descriptions of the Chernobyl incident at different darkness levels will affect the darkness of the participants’ painting results.

If the body and mind are synchronized, the coding process from tourists’ (senders) psychological experiences to their visual expressions should be decoded correctly by others (receivers). In other words, the different darkness levels in visual expression could affect the viewers’ perceived dark experiences, that is, the body–mind process (H2). Study 3 used an experimental approach to test whether the darkness of the sketches completed in Study 2 could be correctly decoded by the viewers in Study 3, that is, whether seeing (lighter) darker sketches makes the participants feel darker (lighter) about the Chernobyl incident. Study 4 further introduced a criterion variable for the perceived dark experience. Previous studies showed that the perceived dark experience could affect tourists’ attitudes and behavior (Lee, 2015; Oren, Shani, & Poria, 2020; Zhang et al., 2016). Thus, Study 4 tested whether the darkness of the promoting images of dark tourism destinations on the real tourism website will affect the viewers’ evaluation of the dark tourism product (H3). In summary, the mind–body and body–mind processes were combined to demonstrate body–mind synchronization.

A mixed-methods design was used to achieve the above objectives. Previous research on consumers’ behavior generally required evidence to be as close to reality as possible (Grewal & Stephen, 2019). Thus, in Study 1, we hoped to prove the existence of a psychosomatic connection by analyzing real-world data from dark tourists’ online reviews. Our qualitative analysis of the unstructured data can establish a real-world mind–body relationship. The results lay the foundation for the subsequent experiments. Studies 2–4 will

Table 1
Descriptive statistics for data coding in Study 1.

Variables	Number	Nonzero sample	Proportion	Min	Max	Mean	SD
Score	219	219	100.00%	1	5	4.88	0.511
Fear	219	127	57.99%	0	5	0.95	1.086
Sorrow	219	37	16.89%	0	5	0.22	0.591
Shock	219	68	31.05%	0	2	0.32	0.498
Appreciation	219	48	21.92%	0	6	0.47	1.155
Depress	219	20	9.13%	0	2	0.12	0.400
Dark experience	219	219	100.00%	1	7	2.09	1.436
Darkness	219	219	100.00%	76.71	209.64	138.23	16.538

Note: Dark experience = Fear+Sorrow+Shock+Appreciation+Depress.

adopt experimental methods to compensate for the problem of the potential influential factors in the qualitative research and enhance the robustness of the conclusions. Compared with word-of-mouth information, the experimental data may eliminate the potential interference of influential factors as much as possible, while experimental manipulation can effectively establish a causal relationship. In general, the joint use of qualitative and experimental methods with data from multiple sources can better test the hypotheses, construct a powerful evidence chain, enhance the reliability of our research conclusions, and expand the external validity.

Study 1

If tourists' inner dark experiences can influence their sense expression, then the result will be observed through the sense of vision as the most important information expression and communication channel among the five senses (Krishna, 2012). Thus, Study 1 used real online review data (textual descriptions of the dark tourists' experiences and their photos) to test the correlation between dark experiences and visual expressions (H1).

Methodology

Data and coding method

Online reviews are tourists' active expressions of their own tourism experiences that reflect their real tourism experiences. The online user-generated content has replaced professional reviewers (Viglia, Minazzi, & Buhalis, 2016) and becomes a significant driver of consumer behavior (Pera, Viglia, Grazzini, & Dalli, 2019). Previous studies using online reviews have proved their high reliability and validity (Cheng & Zhang, 2019). We collected 517 reviews containing texts and photos of the Chernobyl nuclear power plant from the TripAdvisor webpage (TripAdvisor, 2019), covering the period of October 2015 to October 2019. Snow and night scenes have a great influence on the overall brightness of the photos; thus, 497 valid samples were obtained after removing the photos containing scenes with large areas of snow or night views.

The coding process was based on the measurement items proposed by Zhang et al. (2016) regarding the dark tourists' emotions. Five dimensions were included: that is, fear, sorrow, shock, appreciation, and depression. Points were awarded for specific items when the relevant emotions are expressed in the reviews: "fear" receives one point (e.g., "it is eerily quiet" [308-W-C-U]); "sorrow" receives one point (e.g., "the experience itself is sobering" [3-G-C-U]); "shock" receives one point (e.g., "just mind-blowing" [139-K-E-U]); "appreciation" receives one point (e.g., "take a moment to reflect on the 600,000 liquidators who risked and in many cases threw away their lives to protect others" [396-I-W-U]); and "depression" receives one point (e.g., "...had its thoughtful and a little bit depressive moments" [71-J-N-U]).

The coding process was performed by three doctors with dark tourism research experience. During the coding process, only the review texts (without the photos) were shown to avoid the potential impact of the photos on the coders. The coding results are shown in Table 1. The intercoding reliability was measured by Cohen's kappa score. In this case, the reliability scores for the five emotions were: fear, 0.86; sorrow, 0.81; shock, 0.79; appreciation, 0.89; and depression, 0.80. Usually, if the result is higher than 0.80, it is considered good, and 0.60–0.80 is considered adequate to good (Landis & Koch, 1977; Pearce & Wang, 2019). Thus, these five emotions can be retained. Many of the reviews in the coding results were only commenting on the quality of the Chernobyl zone as a tourist product instead of mentioning their personal experiences; thus, only the reviews related to experiences were retained to finally obtain 219 samples.

The mean brightness of each photo can be calculated using Photoshop CS (v. 5.0; Adobe, San Jose, CA, USA). Based on the need for this research, the darkness can be considered as the opposite of the brightness, that is, the mean darkness equals 255 minus mean brightness (darkness = 255–mean of brightness).

Results and discussion

Using the review score as the control variable, the dark experience as the independent variable, and the darkness as the dependent variable, the regression equation was constructed as follows:

$$\text{Darkness} = C + \beta_1 \text{Score} + \beta_2 \text{Dark experience} + \varepsilon$$

Table 2
Effects of dark experience on photos of online reviews.

Model/dependent variables	Model 1/darkness				Model 2/darkness				
	Variable	Unstandardized coefficients	Standardized coefficients	t	Sig.	Unstandardized coefficients	Standardized coefficients	t	Sig.
Constant	1552.516			14.202	0.000	147.405		13.580	0.000
Score	-2.927	-0.090		-1.338	0.182	-2.650	-0.082	-1.222	0.223
Dark experience						1.802	0.156	2.333	0.021
R ²	0.008 (F = 1.789, p = 0.182)				0.033 (F = 3.636, p = 0.028)				
F change	= 5.445 (df ₁ = 1, df ₂ = 216), p = 0.021, ΔR = 0.024								

Note: variance inflation factors between score and dark experience is 1.003.

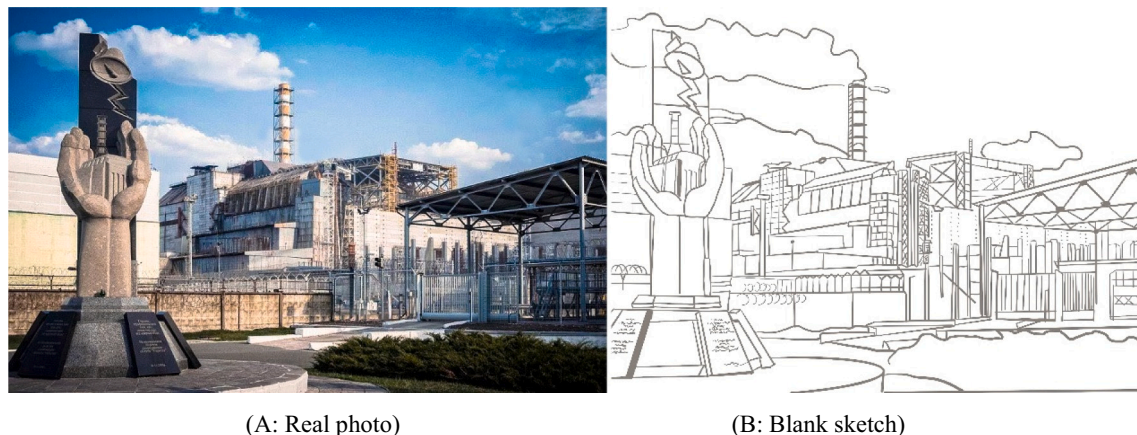


Fig. 2. Experiment photo and sketch.

Note: In Study 2, the blank sketch used in the experiment is 50% lighter than in panel B, panel B is shown with a darker line for the convenience of the reader.

The hierarchical regression results show that (see Table 2) in the basic model (Model 1) including only the scores, $F = 1.789, p = 0.182 > 0.05, R^2 = 0.008$, the regression coefficient of the score is insignificant ($\beta = -0.090, p = 0.182$). After the independent variable of dark experience was added (Model 2), $F = 3.636, p = 0.028$, the regression coefficient of the score becomes significant, and when $R^2 = 0.033, \Delta R^2 = 0.024$, the regression coefficient of the score is still insignificant ($\beta = -0.082, p = 0.223$). The regression coefficient of the dark experience is significant ($\beta = 0.156, p = 0.021$), Variance inflation factor = 1.003, and no multicollinearity problems are shown.

By studying the texts and photos in the tourists’ reviews, this study proved the influence of tourists’ dark experiences on the level of darkness in their photos. This study provides initial evidence for our predicted effect. The dark experiences in Study 1 exerted a measurable effect on the participants’ sensory expression, that is, tourists’ experiences are reflected in their visual expressions (i.e., mind–body process). The empirical data were used to establish the body–mind connection, which is in line with the embodied cognitive theory.

However, Study 1 has two potential limitations: (1) the differences in the darkness of the photos could be caused by the different camera equipment (e.g., built-in photo filters), weather (e.g., sunny or cloudy), or other factors; and (2) the different scenes at the dark tourism site may affect the darkness of the photos. The above two reasons also cause the low R-squared values; therefore, it is necessary to control the potential influential factors, that is, to test the relationship between experiences and visual results in a controlled situation.

Study 2

To exclude the potential interference caused by the camera equipment, weather, scenes, and other factors, Study 2 was designed to examine the robustness of the effect observed in Study 1 by testing whether dark experiences impact the levels of darkness in sketches. Through an experimental approach, Study 2 applied a “charcoal pencil painting task,” which required the participants to paint a sketch of the Chernobyl scene on a blank piece of paper (see Fig. 2A) using charcoal pencils in different shades of darkness that they could choose from.

This study is designed to test the relationship between the dark experiences and the tourists’ visual expressions. Previous research confirmed that handwriting involves enhanced consumer engagement and several processes starting with sensory information until the visual output is produced (Tassiello, Viglia, & Mattila, 2018). We applied a similar logic of using the “hand.” In addition to taking photos, painting tasks also allow participants to express their dark experiences in images (Stylianou-Lambert, 2012), that is, they can transform their personal psychological experience into a visual expression. If the participants with deeper dark experiences paint

Table 3
Effects of dark experience on painting.

Model/dependent variables	Model 3/darkness				Model 4/darkness			
	Unstandardized coefficients	Standardized coefficients	t	Sig.	Unstandardized coefficients	Standardized coefficients	t	Sig.
Constant	51.550		5.014	0.000	45.232		4.436	0.000
Gender	-3.901	-0.169	-1.398	0.167	-2.921	-0.126	-1.078	0.285
Age	0.165	0.039	0.327	0.745	-0.360	-0.086	-0.682	0.498
Dark experience					3.383	0.321	2.537	0.014
R ²	0.029 (F = 1.007, p = 0.371)				0.115 (F = 2.872, p = 0.043)			
F change	6.439 (df ₁ = 1, df ₂ = 66), p = 0.014, ΔR ² = 0.086							

Note: variance inflation factors of the variables in both models are between 1.025 and 1.195.

darker images, this implies that the dark experience affects the visual expression (H1). To solve the problem in Study 1 that the photography scenes and equipment cannot be controlled in the use of online data, Study 2 allows all the participants use the same equipment (i.e., five charcoal pencils with different darkness levels) to paint the same scene (Chernobyl's Unit No. 4).

Methodology

Procedure

First, the Chernobyl incident was described to the participants for 10 min, including the incident and consequences. The content of the introduction was objective, and the incident was explained using data as much as possible. The materials used in the process were taken from Wikipedia and the BBC documentary *The Battle of Chernobyl*. No images were shown to avoid any misleading visual images. Second, the participants were asked to answer questions regarding their feelings about the Chernobyl accident using the same measurement terms as in Study 1. Third, the participants were given five charcoal pencils with different darkness levels: 2H, HB, 2B, 4B, and 6B (where "H" means hardness, "B" means darkness and the darkness order is 2H < HB < 2B < 4B < 6B). Before the formal test started, the participants are shown five small blank squares on a piece of white paper, each with an area of 1 cm × 2 cm, and then they are asked to paint inside the five squares with the five pencils in different darkness, respectively, to familiar themselves with the shade of each pencil. After the preparation, every participant got a blank piece of paper for their sketch of the Chernobyl scene (Fig. 2B) and was asked to paint without a time limit. As in Study 1, we scanned each sketch and extracted the data for the levels of darkness in each sketch using Photoshop software.

Participants

Eighty-five undergraduate students from the same university participated in this study. The purpose of using a single type of sample population is to control for other potentially influential factors. In the experiment, 70 valid samples (45.7% male; M_{age} = 20.16, SD = 2.770) were obtained by excluding the incomplete sketches.

Results and discussion

Taking darkness as the dependent variable, gender and age as control variables, and dark experiences as an independent variable, the regression equation was constructed as follows:

$$\text{Darkness} = C + \beta_1 \text{Gender} + \beta_2 \text{Age} + \beta_3 \text{Dark experience} + \varepsilon.$$

Hierarchical regression results show that $F = 1.007$, $p = 0.371$, and $R^2 = 0.029$ for a basic model (Model 3) containing only the control variables of gender and age (see Table 3). The regression coefficients for both genders ($\beta = -0.169$, $p = 0.167$) and age ($\beta = 0.039$, $p = 0.327$) are insignificant. After introducing the dependent variable of dark experience into Model 4, the results show that $F = 2.872$, $p = 0.043 < 0.05$, $R^2 = 0.115$, $\Delta R^2 = 0.086$. The regression coefficient of dark experience is significant ($\beta = 0.321$, $p = 0.014$). Therefore, the participants' dark experiences significantly affected their use of darkness in their sketch.

In Study 2, dark experiences exerted a measurable effect on the participants' sensory expression. When participants had a darker experience, they tended to paint using darker pencils and paint darker. Study 2 provided additional evidence for our assumption. Taken together, Studies 1 and 2 established that dark experiences impact visual expressions using the visual dimension of darkness. The "mind-body" coding process (H1) is thus supported. This means that the tourists' implicit dark tourism experience is not only expressed as word-of-mouth information, but also reflected in nonverbal sensory experiences. This result provides a new idea for the measurement of tourist experiences. In addition to the traditional questionnaire and the content or text analysis of words, researchers can directly evaluate the tourists' travel experiences through the explicit photos or picture brightness provided by tourists.

Study 3

Study 2 showed that the participants with different levels of dark experiences tended to paint their sketches using different levels of darkness. This result proved the effect of the dark experience on the participants' visual expression. Study 3 extended the results of Study 2 to test the above mind-body coding process that will be decoded by other participants correctly. Thus, an experimental

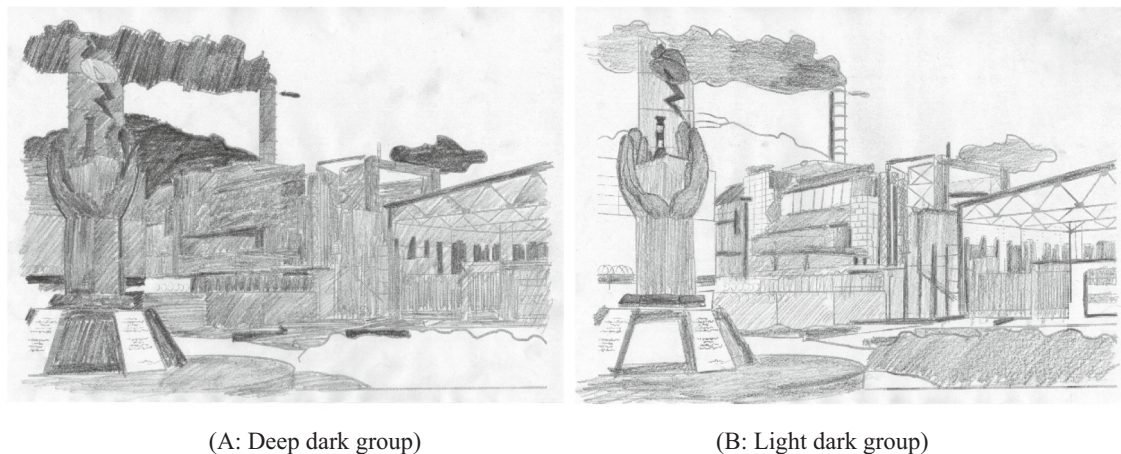


Fig. 3. Sketches used in Study 3.

approach was conducted in Study 3 to show whether the viewers of the sketches using different levels of darkness can feel the different levels of darkness in the painters' experiences (H2).

Methodology

Participants and design

This one-factor experiment (darkness: deep dark vs. light dark) used a between-group design. The material was taken from two sketches using different levels of darkness that were completed by two participants during Study 2 (see Fig. 3). Among these two sketches, the deep dark one was a sketch from Study 2 that was ranked in the top 25% of darkness, while the light dark one was ranked in the bottom 25% of darkness. The deep dark group ($M_{\text{deep}} = 193.96$, $SD = 52.81$) was obviously darker than the light dark group ($M_{\text{light}} = 211.12$, $SD = 40.05$). Eighty-nine undergraduate students (50.6% male; $M_{\text{age}} = 21.11$, $SD = 2.786$) were randomly assigned to one of the two experimental sketches.

Procedure

The participants were first required to read the textual information provided about the Chernobyl incident (the materials were taken from Wikipedia) and the exploration of Unit No. 4. The participants were then asked to evaluate the severity of the Chernobyl accident by answering the following question: "To what extent do you think the 'Chernobyl nuclear power plant accident' was serious?" (their responses were graded using a 7-point Likert scale: i.e., 1 = not at all to 7 = very much). The participants were also asked to evaluate the level of danger inside Unit No. 4 by answering the following question: "To what extent do you think that the Unit No. 4 sarcophagus is dangerous?" (Their responses were graded using a 7-point Likert scale: i.e., 1 = not at all to 7 = very much). In the third step, the experimental images were shown to the participants (see Fig. 3A and B) with an explanation that they were images posted by tourists on the TripAdvisor website after their trip into the Chernobyl zone. Finally, the participants were asked to evaluate the painters' dark experience using the same measurement items from Study 2.

Results and discussion

The results of one-way analyses of variance (ANOVA) show no significant differences between the groups regarding the participants' feelings about the severity of the Chernobyl zone ($M_{\text{deep}} = 6.60$, $M_{\text{light}} = 6.46$, $F(1,87) = 0.360$, $p = 0.550$) and the danger inside Unit No. 4 ($M_{\text{deep}} = 6.16$, $M_{\text{light}} = 6.07$, $F(1,87) = 0.223$, $p = 0.638$). This experiment was manipulated successfully. The potential impact of participants' personal feelings of Chernobyl zone and Unit No. 4 was excluded to avoid the influence of their own factors on the evaluation of the painters' experience. For the dark experience ($\alpha = 0.812$), participants in the deep dark group showed significantly higher darker evaluation than in the light dark group ($M_{\text{deep}} = 5.65$, $M_{\text{light}} = 5.24$, $F(1,87) = 4.705$, $p = 0.033$). Thus, H2 was supported.

Study 3 shows that the darkness of the sketch can affect the viewers' perceptions of the painters' dark experience. Based on Study 2, Study 3 further proves that the inner experience of the painter can be decoded correctly by others, that is, the decoding process of body-mind (H2) is proved. Studies 2 and 3 prove the two-way mind-body communication. Furthermore, the results prove the noncognitive process: that is, the sender encodes their dark experience into visual darkness and the receiver decodes the sender's dark experience from the visual darkness, that is, the sender's coding process and receiver's decoding process must be based on a set of common rules, which is the two-way mind-body relationship that we identified. In contrast to the former cognitive model of the mental process, this cognitive process is nonmental and nonlinguistic.

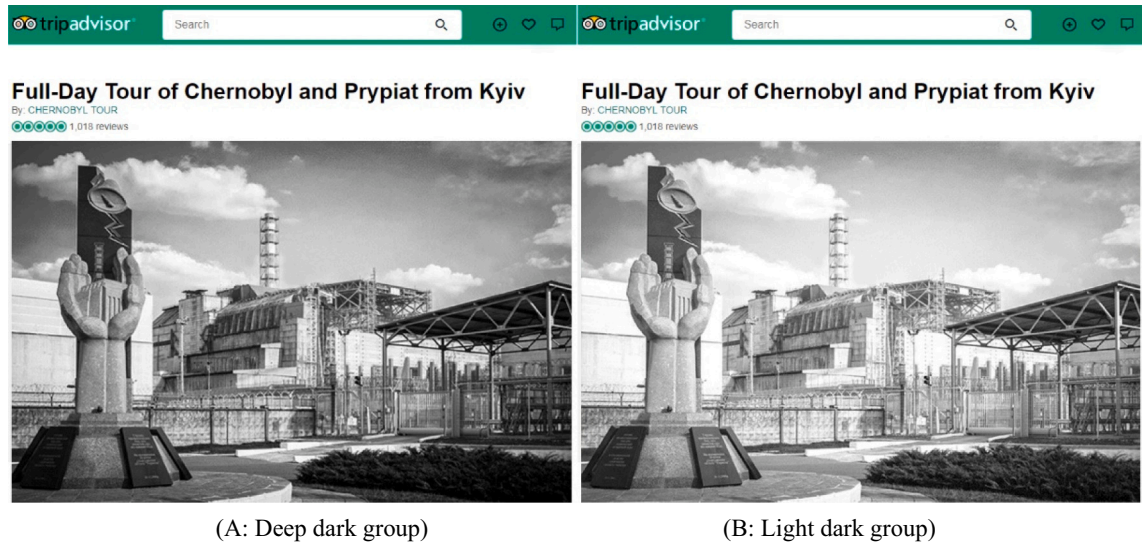


Fig. 4. The website photos with adjusted darkness/lightness and the same product description.

Study 4

As a robustness test for Study 3, Study 4 took the real online promotional images of tourism products as study materials to further test the influences of different images with different darkness levels on the viewers' dark experiences. Furthermore, the viewers' attitudes and behaviors will be affected if they can correctly decode the dark experience behind the images with different levels of darkness. Study 4 analyzed the influences of product images with different levels of darkness on potential tourists. The dark experience at the center of the dark tourism product influences the tourists' revisit intentions (Cui, Cheng, Xin, Hua, & Yao, 2019; Nawijn, Isaac, Gridnevskiy, & van Liempt, 2015). This study tested the influence of the darkness of images using product evaluations as the criterion variable (H3).

Methodology

This study used a one-factor (darkness: deep dark vs. light dark) between-group design. The material texts were obtained from the product introduction for a "Full-Day Tour of Chernobyl and Prypiat from Kyiv" on the TripAdvisor website (see Appendix 1), while the visual material is a photo of Unit No. 4 in Chernobyl (see Fig. 2A). The exposure and saturation of images were modified by Photoshop CS 5.0 to control the darkness. Eighty-four participants (54.8% male; $M_{\text{age}} = 32.96$, $SD = 11.429$) recruited from Sojump (China's largest online survey platform, similar to MTurk) were randomly assigned to one of the two groups: that is, the deep dark (Fig. 4A; $Mean = 122.97$, $SD = 66.26$) or light dark (Fig. 4B; $Mean = 87.00$, $SD = 63.55$) groups.

Procedure

The participants were asked to read information about the Chernobyl accident and the tourism product for the Chernobyl zone tour (see Fig. 4). After completing the reading, the participants were asked about their dark experiences (using the same measurement scale as in Studies 1–3) and product evaluation (responses were scored using a 7-point scale: 1 = very badly; 7 = very good).

Results and discussion

The one-way ANOVA result shows significant group differences in product evaluation ($F(1,82) = 5.446$, $p = 0.022$). The result for the deep dark group ($M_{\text{deep}} = 5.51$, $SD = 1.121$) was significantly higher than that for the light dark group ($M_{\text{light}} = 4.93$, $SD = 1.163$). H3 was supported. Similarly, for dark experiences ($\alpha = 0.806$), the one-way ANOVA result shows a significant group difference ($F(1,82) = 4.624$, $p = 0.034$). The result for the deep dark group ($M_{\text{deep}} = 5.21$, $SD = 0.943$) was significantly higher than that for the light dark group ($M_{\text{light}} = 4.80$, $SD = 0.843$). H2 was supported again.

The analysis process set the images' darkness as a virtual variable: that is, deep darkness as "1" and light darkness as "0." The bootstrap method (Hayes, 2013; Preacher & Hayes, 2004; Zhao, Lynch, & Chen, 2010) was then used to test the mediating effect of dark experiences. A 95% bias-corrected bootstrap method (Model 4 in PROCESS; Hayes, 2013) based on a 5000-samples confidence interval (CI) was used to test the mediating effect of dark experiences. For the mediating variable "dark experiences," the main effect of darkness is significant ($\beta = 0.419$, lower level of CI [LLCI] = 0.031, upper level of CI [ULCI] = 0.807, not included 0). For the dependent variable "product evaluation," the indirect effect is significant ($\beta = 0.366$, LLCI = 0.043, ULCI = 0.743, not included 0), but the direct effect is not significant ($\beta = 0.216$, LLCI = -0.159 , ULCI = 0.591, included 0). Thus, the dark experiences shows a full mediating effect.

Study 4 shows that different levels of photo darkness in the tourism product presentation influenced the viewers' product evaluation and the dark experiences has a full mediating effect in this process. Taking product evaluation as a criterion variable, we proved that the influence of visual experience on dark experience shows good criterion validity. Therefore, the link from visual black to experiential black is reliable. Taken together, Studies 3 and 4 proved the body–mind decoding process. From a practical point of view, Study 4 simulated the sales situation of online tourism products and the results provide guidance for the marketing of dark tourism products, such as a nonverbal marketing tool that can influence potential dark tourists.

Conclusion and discussions

This study analyzes the bidirectional function of body–mind synchronization in dark tourism experiences. First, the “mind-to-body” pathway of dark tourists is proven by Studies 1 and 2. By analyzing the texts and photos in the tourists' reviews, Study 1 proves the influence of the tourists' dark experience on the darkness of the photos they took: that is, the darker they feel, the darker the photos they took. This result shows that dark experiences exert a measurable effect on the participants' sensory expressions. The previous study interpreted embodiment cognition to explain that people attend to their feelings as a source of information (Kock & Ringberg, 2019). However, embodiment is an important area for work at the intersections of tourism and contemporary society (Cohen & Cohen, 2012), which is not only at an information level, but also at the level of direct sensations. Starting from the above results, this research study expanded the feelings-as-information theory into the feelings-to-expression theory, which leads to a further step on the mutual mind–body pathway.

The results of the experiment in Study 2 showed that participants tend to paint with more darkness in their sketches pictures when they feel darker, which provides additional evidence for the mind–body effect. Taken together, Studies 1 and 2 prove that the level of darkness in tourists' feelings influenced the level of darkness in their visual expressions. Previous studies noted that sensory experiences serve as unique sources of tacit information that influence peoples' emotions as described in the feelings-as-information theory (Greifeneder, Bless, & Pham, 2010; Kock & Ringberg, 2019). This study further showed that emotions could affect tourists' sensory expressions in turn; thus, the vision shown by the methods of both photography and sketches acquires different levels of subjective expression. Palmer and Andrews (2020) observed that the concept of embodiment highlights the role of the body in making and remaking the world into experiences, which was also proved by Studies 1 and 2 using the tourist-generated images.

The body–mind pathway is proven in Study 3. The sketches from Study 2 were shown to the participants and their feelings of darkness were tested afterward. The results show that the darkness of the sketch can affect the viewers' perceptions of the painters' dark experience, which means that the painters' inner experience can be decoded correctly by other participants. Thus, the body–mind decoding process is proved. Embodiment in tourism experience was usually discussed as humans versus the physical environment. The interaction between tourists' embodiment in dark tourism is little explored; however, dark tourism experiences especially involve human understanding and empathy. Based on the above results, this study further discovers a “mind–body–mind” decoding process, which shows the transfer of emotions through the embodiment of visions between the different tourist groups.

In Study 4, The body–mind pathway was further proven using dark tourism marketing content. Tourism product photos with different levels of darkness but the same description were shown to the participants, and their evaluations of the darkness of the product were measured. The full mediating effect of dark experiences was demonstrated by this process. In tourism studies, vision has been commonly studied from the perspective of its symbolic meaning (e.g., Dabezies, 2020); however, we explore the physical results further based on the embodiment of the vision. While Turner and Peters (2015) studied how visual materials create the atmosphere of the dark tourism sites, this study considered that lightness/darkness as the basis of atmosphere not only creates experiences but also can be created by the tourists who have experienced the dark tourism site. Research Studies 1–4 demonstrate the bidirectional channel of mind–body embodiment in dark tourism experiences as well as the different tourists' coding and decoding processes.

Theoretical contributions

Although the bidirectional body–mind synchronization is discussed in psychological research (Schneider, Rutjens, Jostmann, & Lakens, 2011) and tourists loyalty (Lv et al., 2020), it still remains little explored in the dark tourism field where studies usually analyzed dark experiences within the psychological dimension (Kidron, 2013; Wang, Shen, Zheng, Wu, & Cao, 2020; Zheng et al., 2019). This study explored beyond the unidirectional cognitive process to discover the direct body–mind synchronization of individuals and between different groups, which demonstrates a new pathway for embodied experiences producing dark tourism experiences.

Previous studies proved that embodied cognitive reactions can be created by having people reading linguistic expressions related to sensory-based metaphors (Ijzerman & Semin, 2009; Kock & Ringberg, 2019). This study further found that the embodiment transfer process through the interpretation of the image created by others could also transfer dark emotions between people. The “visual depiction effect” of embodiment (Elder & Krishna, 2012) has been discussed in marketing studies; however, this study discussed embodiment in dark tourism, which has a unique feature regarding the “lightness/darkness” of the dark tourism site and requires specific attention to visual characteristics. This result offers references for future atmosphere or situation studies of dark tourism.

The tourist is an embodied subject moved by affect and emotions, who is anything but passive and duped (Miller & Del Casino, 2018). This study not only showed the linear communication between websites and potential tourists, but also the inner communication within individuals' own body–mind connection and the transferring of dark feelings among potential tourists.

Managerial implications

The above theoretical findings also show the significance of management. First, the destinations can design the tourists' dark

experience by controlling the lightness to manipulate the rhythm of the dark tourism experience, such as creating an appropriate amount of dark experiences at different locations. For example, more darkness could be used at the points where pain and other dark experiences must be created, and more light should be used where reflection and hope are needed to reduce the tourists' discomfort and avoid an impact on their physical and mental health.

Second, visual image-based communication modes could be used by dark tourism destinations to promote themselves to dark tourists. The darkness of the images can represent different degrees of dark tourism experience and can be decoded by potential tourists; therefore, the dark tourism destination could encourage tourists to share their experiences visually in a cocreation of the dark experience among other tourists. Similarly, for tourism destinations, the tourists' expectations about experiences can be shaped by promotional images with different degrees of darkness.

Furthermore, the results show a production mechanism for a more autonomously dark experience that could be used by dark tourism destinations to encourage the tourists' greater involvement instead of offering only unilateral information. Additionally, this involvement means not only the tourists' sharing images on the Internet after their experience, but also the display of visual contents generated by customers during the on-site experience, which means that the tourists are also the suppliers of the tourism experience.

Limitations and future research

This study proves the bidirectional link between visually seeing dark and psychologically feeling dark. However, more sensory types and their embodiment in dark tourism experiments remain to be discovered, such as cold/warm temperatures (Hong & Sun, 2012) or audio (Lowe, Loveland, & Krishna, 2019), which could also be key components in dark tourism experiences.

Dark tourism is always emotionally and morally laden. A previous study showed how the lighter environment increases the likelihood of moral behavior (Chiou & Cheng, 2013). This study further proves the influence of the "feeling dark" on the expression of the darkness and how it affects others' feelings. In the future, specific moral feelings or behaviors in visiting dark tourism destinations may be observed and measured concerning their different levels of darkness, which could offer more sociological meaning.

Although we finally offer a marketing perspective in applying the theory, there are more implications and potential fields of application based on this relationship. In particular, while the global COVID-19 pandemic influences tourists' well-being, it is useful to understand how the body–mind synchronization is constructed and its potential function in the tourists' well-being. In this case, it means understanding that the tourists' perceived lightness/darkness could deeply affect their feelings, and in turn, the potential tourists' feelings could be reflected in their expressions of color, further affecting other potential tourists. Dark tourism destinations could consider constructing a more preferred tourism experience by creating communication channels among tourists using tourist-generated photos or paintings. Based on the above results, this study also aims to offer a better and "lighter" experience for tourists in the post-pandemic era.

Statement of contribution

1. What is the contribution to knowledge, theory, policy or practice offered by the paper?

This study reaches beyond the psychological dimension to discover the body–mind synchronization of the individuals and between different groups. It proves that different levels of darkness not only create experiences, but can also be created by experienced tourists and then further be interpreted by other tourists which offers a deep understanding of embodied dark tourism experiences. The results show a production mechanism for a more autonomously dark experience that could be used by dark tourism destinations to encourage more involvement instead of offering only unilateral information. It illustrates how the different dark levels of the product photos on a website affect the potential tourists' feelings and offers a deeper understanding of embodiment in dark tourism with implications for emotion as well as marketing studies.

2. How does the paper offer a social science perspective/approach?

This study discussed embodiment in dark tourism, which has a unique feature regarding the "lightness/darkness" of the dark tourism site and requires specific attention to visual characteristics. It expands the psychological dimension of dark tourism experience studies by discovering a body–mind synchronization within individuals and between different groups of potential tourists. This result offers references for future atmosphere or situation studies of dark tourism. Although we finally offer a marketing perspective in applying the theory, there are more potential fields of application. In particular, while the global pandemic influences tourists' well-being, it is useful to understand how the body–mind synchronization is constructed and its potential function in the tourists' well-being. In this case, it means understanding that the tourists' perceived lightness/darkness could deeply affect their feelings and, in turn, the potential tourists' feelings could be reflected in their expressions of color and further affect other potential tourists.

CRedit authorship contribution statement

Jiaojiao Sun is responsible for the writing, qualitative analysis and theoretical construction.

Xinyang Lv is responsible for the conception, research framework design, experiments and data analysis of the article.

Appendix 1. Materials for Study 4

Full-Day Tour of Chernobyl and Prypiat from Kyiv
By: CHERNOBYL TOUR
1,018 reviews

Overview
You are welcome to join one-full-day Chernobyl and Prypiat tour, during which you will spend maximum time inside of the Zone and see all of the possible locations. Professional and friendly guides. Exclusive routes. An open-eye experience.

Highlights
Full-day trip to the Chernobyl nuclear power plant site from Kiev
A guided tour of the abandoned site is the only permissible way to see it
Tour the exclusion zone to see the secret military radar station
Explore the abandoned nearby towns, including Prypiat
Learn about the impacts of the explosion from your guide
Includes use of a personal dosimeter (radiation meter)

What to Expect
Board an air-conditioned bus in central Kiev with a guide and travel to Chernobyl while watching documentaries about the 1986 disaster. Compulsory insurance and a radiation meter to use on your visit are included.
On arrival, enter the Exclusion Zone via the Dyt'yatky gate, and pass the abandoned villages of Zalisyya and Kopachki, and the decontaminated Red Forest, the first victim of the radioactive fallout.
Visit the derelict town of Prypiat, seeing the hospital that received the firefighters and workers affected by the explosion, and the town hall, fire station, Polissya hotel, and the never-opened amusement park.
Take a guided tour of the plant, seeing the Sarcophagus and New Safe Confinement arch from observation points, plus the fire station, cooling towers, and Soviet radar station.
Finally, visit Chernobyl town and have an eco-clean dinner at a canteen for exclusion zone workers before your tour ends in central Kiev.

Important Information

Departure Point	Inclusions
Heorhilia Kipyi St. 6, Kyiv, Ukraine. 02000	• Dosimeter
Departure Time 8:00 AM	• Dinner
	• Professional guide

Additional Info

- Confirmation will be received within 48 hours of booking, subject to availability
- ATTENTION! To make your trip successful, please while filling booking application, kindly write your email address and phone number into field "Special requirements", so our managers will be able to provide you with all necessary information and tour-details about the trip and to stay in touch on a day-trip in the case of any emergency.
- PLEASE NOTE: Tours booked within 5 days of departure are unlikely to be confirmed
- In case of no-show, the trip payment is not refunded
- Minimum age is 18 years
- It is obligatory to have your passport with you for each participant (and it should be the one that you specified in the application for the trip! Please check information you have sent to us thoroughly - it is required to send the full name, passport number, date of birth (ddmm/yyyy) and citizenship per EACH PARTICIPANT. Any mistake in passport data may be a reason not to let you pass passport control at checkpoint successfully)
- Dress code is long sleeves (jacket, shirt), pants(no skirts), closed comfortable shoes
- The Rules of stay in the Zone prohibit - eating, drinking and smoking in open air - touching buildings, trees, plants - gathering and eating mushrooms, berries, fruit and nuts in forests and gardens of the abandoned settlements - sitting on the ground - putting photo and video cameras, bags, backpacks and other personal belongings on the ground.
- Persons under alcoholic/drug intoxication are not allowed to take a trip to the Zone

Cancellation Policy
For a full refund, cancel at least 24 hours in advance of the start date of the experience.

(A: Deep dark group)

Full-Day Tour of Chernobyl and Prypiat from Kyiv
By: CHERNOBYL TOUR
1,018 reviews

Overview
You are welcome to join one-full-day Chernobyl and Prypiat tour, during which you will spend maximum time inside of the Zone and see all of the possible locations. Professional and friendly guides. Exclusive routes. An open-eye experience.

Highlights
Full-day trip to the Chernobyl nuclear power plant site from Kiev
A guided tour of the abandoned site is the only permissible way to see it
Tour the exclusion zone to see the secret military radar station
Explore the abandoned nearby towns, including Prypiat
Learn about the impacts of the explosion from your guide
Includes use of a personal dosimeter (radiation meter)

What to Expect
Board an air-conditioned bus in central Kiev with a guide and travel to Chernobyl while watching documentaries about the 1986 disaster. Compulsory insurance and a radiation meter to use on your visit are included.
On arrival, enter the Exclusion Zone via the Dyt'yatky gate, and pass the abandoned villages of Zalisyya and Kopachki, and the decontaminated Red Forest, the first victim of the radioactive fallout.
Visit the derelict town of Prypiat, seeing the hospital that received the firefighters and workers affected by the explosion, and the town hall, fire station, Polissya hotel, and the never-opened amusement park.
Take a guided tour of the plant, seeing the Sarcophagus and New Safe Confinement arch from observation points, plus the fire station, cooling towers, and Soviet radar station.
Finally, visit Chernobyl town and have an eco-clean dinner at a canteen for exclusion zone workers before your tour ends in central Kiev.

Important Information

Departure Point	Inclusions
Heorhilia Kipyi St. 6, Kyiv, Ukraine. 02000	• Dosimeter
Departure Time 8:00 AM	• Dinner
	• Professional guide

Additional Info

- Confirmation will be received within 48 hours of booking, subject to availability
- ATTENTION! To make your trip successful, please while filling booking application, kindly write your email address and phone number into field "Special requirements", so our managers will be able to provide you with all necessary information and tour-details about the trip and to stay in touch on a day-trip in the case of any emergency.
- PLEASE NOTE: Tours booked within 5 days of departure are unlikely to be confirmed
- In case of no-show, the trip payment is not refunded
- Minimum age is 18 years
- It is obligatory to have your passport with you for each participant (and it should be the one that you specified in the application for the trip! Please check information you have sent to us thoroughly - it is required to send the full name, passport number, date of birth (ddmm/yyyy) and citizenship per EACH PARTICIPANT. Any mistake in passport data may be a reason not to let you pass passport control at checkpoint successfully)
- Dress code is long sleeves (jacket, shirt), pants(no skirts), closed comfortable shoes
- The Rules of stay in the Zone prohibit - eating, drinking and smoking in open air - touching buildings, trees, plants - gathering and eating mushrooms, berries, fruit and nuts in forests and gardens of the abandoned settlements - sitting on the ground - putting photo and video cameras, bags, backpacks and other personal belongings on the ground.
- Persons under alcoholic/drug intoxication are not allowed to take a trip to the Zone

Cancellation Policy
For a full refund, cancel at least 24 hours in advance of the start date of the experience.

(B: Light dark group)

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