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Remembered Experiences and Revisit Intentions

A Longitudinal Study of Safari Park Visitors

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REMEMBERED EXPERIENCES AND REVISIT INTENTIONS: A LONGITUDINAL STUDY OF ZOO VISITORS

Abstract

User-based innovation of the tourist experience requires an intimate understanding and tracking of visitors' preferences, attitudes, and behaviour. We adopt a longitudinal approach to memory data collection from psychological science, which has the potential to contribute to our understanding of tourist behaviour. In this study we examine the impact of remembered tourist experiences in a safari park. In particular, using matched survey data collected longitudinally and PLS path modelling, we examine the impact of positive affect tourist experiences on the development of revisit intentions. We find that longer-term remembered experiences have the strongest impact on revisit intentions, more so than predicted or more immediate memory after an event. We also find that remembered positive affect is temporally unstable and declines over time.

Keywords: Memory retrieval; attractions; revisit intentions; positive affect; PLSPM.

1. Introduction

How do tourists' memory of their experiences influence their future behaviour? There has been a paucity of research into the role of autobiographical memory in classical decision-making models in psychology. These models have instead focused on prior attitudes and comparisons of attributes in predicting choice. A strong argument against retrospective reports on specific memories has been that they have been shown to be unreliable compared to actual experiences followed "moment-by-moment" (Kahnemann, 2009). However, even

though memory of events may be inconsistent with actual and self-reported experiences during the event, they may nevertheless influence future action. For instance, it has been shown that vivid personal experiences may have this effect (Kovabara and Pillemer, 2010) and also that they are better at predicting future behaviour (Wirtz et al., 2010). Further, memory of episodes can have both a conscious, and unconscious, directive effect on future decisions (Pillemer, 2003). Consequently, specific personal memories may in fact be a powerful influence on beliefs and behaviours (Bluck, 2003). Hence, from a managerial point of view, prompting the recall of emotional and positive memories may be an effective way to influence intentions and decisions of tourists (Kuwabara and Pillemer, 2010). This is the underlying argument used for the research question of this paper, namely: How do tourists' memories of positive emotional experiences of a tourist attraction over a period of time influence revisit intentions? This knowledge is crucial in terms of user-based innovation in tourism because it provides more reliable hints about what development strategies attractions should follow in order to increase repeat visits, compared with, for example, more instantaneous satisfaction measurements.

In this article we present data collected about memories of tourist experiences in an open tourist setting, namely a large safari park. To examine the research question, we apply a longitudinal approach to memory data collection, in as much as we use the same survey instrument for tourists just before the entry to the park (t1), a day or two after the visit (t2), and finally a month and a half after the visit (t3). In this way, we investigate how longitudinal remembered positive affect for visitors' entire self-created safari experience predicts future revisit intentions.

The structure of the paper is as follows. In the next section we discuss the underlying theory and hypotheses for our research. This is followed by a discussion of the research methodology employed in our study. Subsequently, the results of our research are presented

and then discussed. Finally we round-off with conclusions, including the contribution and further implications of our research.

2. Theory and hypothesis development

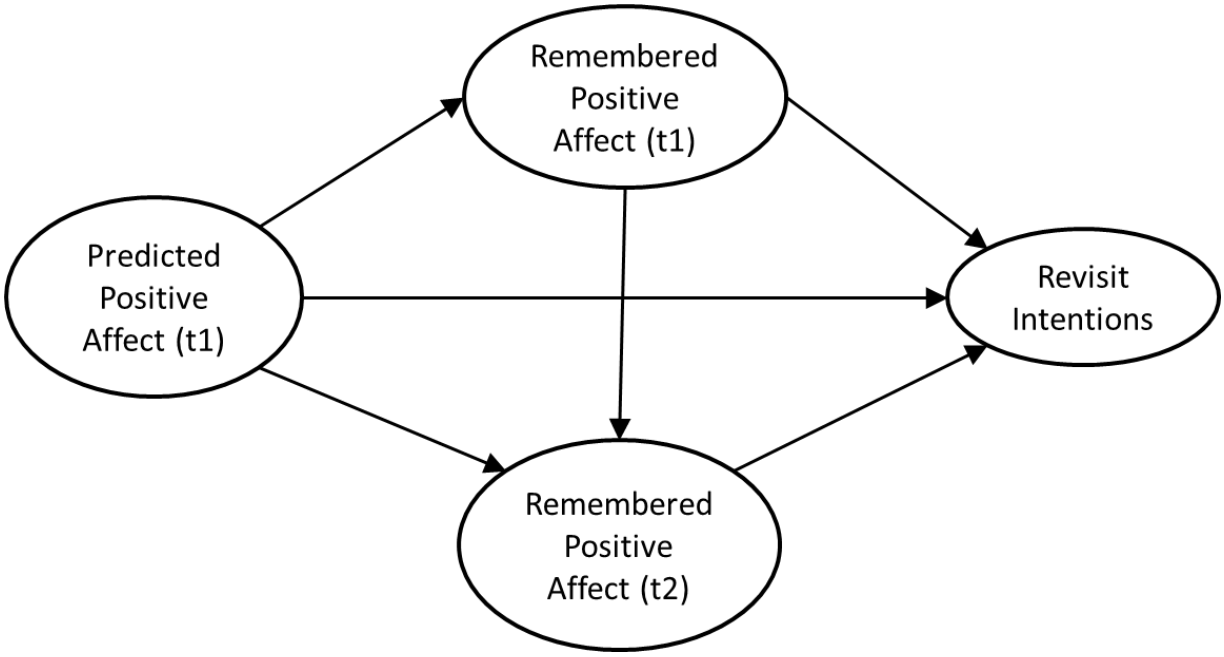
Tourism is an experience-intensive sector in which customers seek and pay for experiences above everything else (Sørensen and Jensen, 2015). The fundamental outcome of experiences and of experiencing is memory of the experience (Pine and Gilmore 1999; 2013; Sundbo and Sørensen, 2013). Thus, providing memorable experiences is critical for tourism providers' competitiveness (Grissemann and Stokburger-Sauer, 2012). Indeed, memory of the past is crucial for an understanding of the present, including the predicted behaviours of visitors to tourist destinations. One perspective on how memories are created and then develop over time is that of social representations – based on the theory of Moscovici (1963). Social representations refer to collective systems of meaning – of both the real and the symbolic – connecting individual and social spheres. Social representations are based on such resources as common sense, shared knowledge, cognition and understanding, and formed through the linkages between people and processes used to make sense of the world (Moscovici, 1982; 1988). Social representations tend to be complex, dynamic and anchored to social structures, and are further developed through communication and other behaviours. Many types of tourist experiences are social, and therefore memories are likely to be construed as social representations that are sophisticated and malleable.

To date, little research on the importance and nature of tourist experience memories has been conducted. Exceptions include Ballantyne et al,'s (2011) study on memories of wild-life tourism and Kim's (2014) study on how to measure destination attributes associated with memorable experiences. Other studies in hospitality and tourism research, such as those by del Bosque and San Martin (2008), Lee et al. (2008), and Jang and Namkung (2009), have

used constructs examining positive and negative emotions to examine determinants of post-consumption behaviour. In this article we intend to add to the existing studies by discussing the role of emotions and memories of tourism attractions for revisit intentions from a longitudinal perspective.

We seek to test the applicability of an extended psychological research model to explain revisit intentions in a tourism context (shown in Figure 1). The research model was developed by Wirtz et al. (2003) and tested in the context of the vacation experiences of university students during the Spring Break. Wirtz et al. (2003) found that behavioural intentions were determined only by remembered positive affect, and not by predicted positive affect or online (during event) positive affect. However, the study did not examine revisit intentions in a realistic, single consumer context. Rather the study asked "Would you take this same vacation over again (assuming you hadn't just been there, but knowing what you know now)?" (p. 521). We further extend the existing research model by omitting the "online" aspect of experience – originally measured using PDAs during an experience (Wirtz et al., 2003) – which was not a significant determinant of respondents' desires to repeat an experience and by including two distinct remembered time periods. The time periods we include are shortly after visiting the tourist attraction (1-2 days) and a longer period after visiting the attraction (six weeks). The latter period is used to capture long-term memory of the experience. This was important for two reasons. First, we wished to extend Wirtz et al.'s (2003) model of remembered experience and behavioural outcomes to create a serial model of remembered experience and tourist revisit intentions, whereby the most recent remembered experiences are posited to determine revisit intentions rather than previous remembered experiences. Second, we wished to test for a decline in remembered experiences over time.

Figure 1: Research Model



The focus of our research is on positive affective experiences. Thus, we examine emotions, defined by Hosany and Prayag (2013), based on Cohen and Areni (1991), as: "affective states characterised by episodes of intense feelings associated with a specific referent and instigating specific response behaviours" (p. 731). Emotions have been measured using many typologies in psychology, social science and in tourism research more specifically. One of the most common typologies used in research is that of positive affect and negative affect, including the popular scales developed in social psychology by Watson et al. (1988). Other psychological scales applied in tourism research include Mehrabian and Russell's (1974) tripartite typology of pleasure, arousal and dominance and Plutchik's (1980) scale based on anger, anticipation, disgust, fear, joy, sadness, surprise and trust (e.g. see Bigné et al., 2005; Jang and Namkung, 2009). The Consumption Emotion Set is a scale that stems from the consumer behaviour literature and consists of 16 dimensions. This has also

been applied in the tourism context but found to lack fit (Huan and Back, 2007). More recently some typologies have been developed and applied solely within the tourism literature: Hosany and Gilbert (2010) develop a measure of destination emotion based on joy, love and positive surprise and further validate it in different national contexts (Hosany et al., 2015).

The role of emotion in understanding consumer behaviour, including as a determinant of satisfaction and behavioural intentions, is a core stream of marketing research. More recently, the role of emotion in leisure and tourism research has also been recognised as key in understanding post-consumption behaviours (Gnoth, 1997; Hosany and Prayag, 2013), influencing the development of tourists' satisfaction and behavioural intentions (Bigné et al., 2005; del Bosque and San Martin, 2008; Goossens, 2000l; Lee et al., 2005).

Research suggests that affective experiences are important in the formation and retention of memory (Tung and Ritchie, 2011). Moreover, positive affective experiences are much more relevant to the tourism context than negative or neutral affective experiences. Hosany et al. (2015) argue that vacations are essentially a set of positive experiential processes that are consumed principally through hedonic motivations (Hosany, 2012; Hosany and Gilbert, 2010; Mannell and Iso-Ahola, 1987; Nawijn, 2011; Otto and Ritchie 1996). Thus, unsurprisingly, tourists tend to seek pleasure and memorable experiences whilst on vacation (Currie, 1997). Hosany et al (2015) also suggest that the "rosy view" phenomenon (Mitchell et al., 1997) acts to alleviate or even override negative affective memories of experience of events and magnify positive experiences (Lee and Kyle, 2012).

Hosany and Prayag (2013) find that visitors experiencing positive affect are the most likely to display positive post consumption behaviours in a tourism context. Del Bosque and San Martin (2008) also find that positive emotions are a stronger driver of intention to return to and to recommend a tourism destination. Positive affect can broaden the scope of

attentiveness and increase happiness (Frederickson and Branigan, 2005). Research in psychology suggests that positivity is suggested to create more accurate knowledge that becomes a long-term resource for individuals (Frederickson and Losada, 2005), partly as a result of more exploratory, learning behaviours that can confirm or amend initial expectations (Frederickson, 2001). Thus, we would expect memories of positive affect experiences to drive future revisit intentions and we therefore posit:

H1: The decision to revisit a tourist attraction will be positively related to remembered positive affect.

Individuals forget information over time (Wixsted, 2004). Research has shown that forgetting in long-term memory does not come about as a result of decay, but rather, more complex phenomena (Jenkins and Dallenbach, 1924; McGeoch, 1932), such as those explained via the psychological theories of interference (Underwood, 1957; Underwood and Postman, 1960) and consolidation (Dudai, 2004; McGaugh, 2000). Interference theory suggests that with the passage of time existing memories will be disrupted by other information that has been learnt in the past or that will be learnt in the future (Baddeley et al., 2009). Forgetting will occur due to interference from other memories, as long-term memories become confused or combined (Baddeley et al., 2009). This process can happen proactively, where existing memories interfere with the encoding of new memories (Underwood, 1957; Underwood and Postman, 1960), or retroactively, where new memories displace or disrupt old ones (Keppel, 1968; Wixsted, 2004). Consolidation theory emphasises biological processes in creating memories (Squire and Alvarez, 1995). The consolidation process, which involves biochemical processes in the neurons of the brain (synaptic consolidation or late-phase long-term potentiation), takes time, during which information is encoded, stored and

moved from working memory to long-term memory (Martin et al., 2000). This process can take months or even years (Abraham et al., 2002). Factors facilitating consolidation of experiences as long-term memories include emotionality and stress during the encoding of significant experiences (as a result of hormones such as epinephrine) (McGaugh and Roozendaal, 2002), quality of sleep (Walker et al., 2005), mental replay of experiences (Vertes, 2004), and the new and unique nature of the experience (Wixsted, 2004). Memory that is not consolidated will thus be lost over time.

Memory is malleable and dynamic, not fixed (Helkkula et al., 2012). Bartlett (1932) suggests that focusing upon the process of remembering is more important than memory *per se*. Barlett (1932) explains that memory is complex and mutable:

> "Remembering is not the re-excitation of innumerable fixed, lifeless and fragmentary traces. It is an imaginative reconstruction or construction, built out of the relation of our attitude towards a whole active mass of organised past reactions or experience, and to a little outstanding detail which commonly appears in image or in language form. It is thus hardly ever really exact, even in the most rudimentary cases of rote recapitulation, and it is not at all important that it should be so." (p. 213).

In line with the theories outlined above, we would expect visitors' remembered experiences to fall over time following a visit to a tourist attraction. We therefore posit:

H2: Remembered positive affect will fall over time following the visit to the tourist attraction.

Behavioural intentions of consumers have been demonstrated to be temporally unstable (Mazursky, 1990): “sometimes they are formed immediately after learning about the unique characteristics of an object (or person). In other instances, the need to form a decision is invoked only after an initial delay interval.” (p. 383). In particular, behavioural intentions develop over time as the result of memory and differential modes of information processing (Mazursky, 1990; 2000). While specific object attribute beliefs (e.g. of a product or service) are likely to exert a strong impact directly after an experience, after a time gap general product beliefs are likely to be the primary driver for behavioural intentions (Mazursky, 1990). The process is likely to be due to the formation of memory over time (e.g. through consolidation) and the recall of formed memory in determining behavioural intentions. As a result, we would expect more recent behavioural intentions after a time gap to be a greater determinant of revisit intentions for an attraction than those formed immediately after the visit, due to the temporal effects of memory (including consolidation and disruption, as explained previously). In other words, the long-term formation of memory from attraction experiences is more important in determining revisit intentions than immediate memories. Thus we posit:

H3: Intentions to revisit a tourist attraction will be most significantly determined by recent memory.

In the following section we discuss the context and practical methodological issues associated with our study.

3. Methodology

In this section we briefly summarize the research context and the method of data collection and analysis adopted in this study.

3.1 The tourism context

Data collection took place in the large safari park, Knuthenborg Safaripark, which is the largest of its kind in Northern Europe (www.knuthenborg.dk). Its main attraction is the possibility for visitors to drive their vehicles among animals roaming freely within large fenced areas. The park also has a number of facilities such as playgrounds and restaurants. The attraction is located in the Danish coastal destination of Lolland-Falster. It is the largest attraction at the destination measured by numbers of visitors: about 250,000 visitors per year. The dominant visitor segment to the attraction is the same as for the coastal destination: families with children. Dominant nationalities among visitors are Danes and Germans. The company owning the park is an entrepreneurial top-down managed business with approximately 100 (mostly seasonal) employees.

Like in other safari parks, visitors can drive their vehicles and observe freely roaming animals. Apart from areas with dangerous animals, visitors can also leave their cars and walk among animals, for example camels and kangaroos. Smaller areas are prepared for walking only, for example the 'Birds Paradise', and the playground area. The main attractions within the park are the Tiger, the Wolf and the Monkey Forests, as well as a 'Savannah' with African animals such as giraffes, zebras, antelopes, and rhinoceros. Another major attraction within the safari park is the large nature playground area where a souvenir shop and a restaurant are located. Here is also found a water playground and a so-called Expedition Tiger attraction, an audio-visual and theatrical attraction taking the visitors on a trip in search for tigers, as well as a flume ride. Another major attraction in itself is the landscape of the park, which has been designed as a large English garden from the 19th century.

241

242 *3.2 Survey design and data collection*

243 Three sets of questionnaires were filled out by visitors to the safari park. The first
244 questionnaire was handed out to visitors queuing at the entrance to the park shortly before the
245 park opened in the morning. This questionnaire was filled out manually before the
246 respondents entered the park. Questions concerned the respondents' experiential expectations
247 about their visit to the park and of specific attractions at the park. Predicted positive affect
248 was measured using two items from Wirtz et al. (2003), "Happy" and "Joyful," via the
249 question "To what extent do you agree or disagree that your visit to Knuthenborg will make
250 you feel the following emotions?" measured on a 7-point Likert scale from 7=completely
251 agree to 1=completely disagree, where 4= neither agree nor disagree. The data collected was
252 confidential but not anonymous since we required to track respondents through the three time
253 periods. Hence, the data from the three questionnaires were joined into one file by matching
254 the respondents' e-mail addresses. However, all email addresses were removed to anonymise
255 the data prior to analysis.

256 Both the second and third questionnaires were sent to the same respondents as an on-
257 line survey. The second questionnaire was distributed one to two days after the respondents
258 visited the park, and the third questionnaire about six weeks later. The second and third
259 questionnaire included the same questions as the first questionnaire but they were phrased in
260 the past tense, that is, they focused on the remembered experience. The second questionnaire
261 also included questions about demographics, including age and gender. The last questionnaire
262 measured revisit intentions via the question: "To which degree to you agree that you would
263 like to visit Knuthenborg again?" measured on a 7-point Likert scale from 7=completely
264 agree to 1=completely disagree, where 4=neither agree nor disagree.

Our data was collected in summer and autumn 2014. The initial questionnaire was handed out to, and responded to, by 175 visitors. Of the initial sample of n=175 (all of which received a link to the second questionnaire), 82 responded to the second questionnaire, and of those 82 individuals, 55 responded to the third questionnaire. Responses with missing data were excluded. Consequently, of the initial 175 respondents, 31% filled out all three questionnaires and the following analysis is therefore based only on the answers of those 55 respondents. This sample size is 57% larger than the original sample of n=35 in the study by Wirtz et al. (2003) reported in *Psychological Science*, one of the leading journals in the field of psychology. In order to gauge the adequacy of our sample for partial least squares path modelling, we conducted a post-hoc power analysis using G*Power 3.1 (Faul et al., 2007). The analysis (α=0.05, 1-β=0.8) indicated that the matched sample (n=55) is adequate for moderate to high population effects (effect size $f^2 \geq 0.15$). Given the problematic nature of longitudinal data collection from respondents it represents a good sample size for this type of study.

The questionnaires were formulated in Danish and all respondents were Danes. The mean age of respondents was 42.19 years (SD=11.92 years). The sample was 59.3% female and 94% visited the zoo with family. A summary of the descriptive statistics for items used in the study is shown in Table 1.

Table 1: Descriptive statistics for items used in the study

Construct	Items	Mean	Std. deviation
Predicted Positive Affect (t1)	Happy (t1)	6.887	0.317
	Joyful (t1)	5.981	1.073
Remembered Positive Affect (t2)	Happy (t2)	6.623	0.621
	Joyful (t2)	5.906	1.233
Remembered Positive Affect (t3)	Happy (t3)	6.472	0.716
	Joyful (t3)	5.585	1.265
Revisit Intentions		6.830	0.423

3.3 Data analysis

The research utilized the PLSPM module of the XLSTAT software package (XLSTAT, 2015). PLSPM is a variance maximization structural equation modelling technique that makes no distributional assumptions for data samples. It has greater statistical power than covariance-based structural equation modelling (Hair et al. 2014). The PLS technique has become increasingly popular in tourism and business research more generally in the last decade or so, influenced by its flexibility; indeed, PLS is able to handle small- to medium-sized samples (Chin, 1998). Our study relies on a small sample and thus PLS was an appropriate choice for analysis.

3.4 Validity and reliability

Unidimensionality and homogeneity of the reflexive multi-item constructs were measured using recent best practice guidelines on the application of PLS path modelling (Esposito Vinzi et al., 2010). Dillon-Goldstein's rho (also known as Jöreskog's rho or composite reliability) was used to examine internal consistency (Wertz et al., 1974). Rho is considered a superior measure to other measures of reliability that assume parallelity or tau equivalence of the manifest variables in PLS path modelling (Chin, 1998). The reliability of all composite measures was above the recommended level of 0.7 (Wertz et al., 1974; Esposito Vinzi et al., 2010): Predicted positive affect (t1), ρ=0.777; Remembered positive affect (t2), ρ=0.848; and Remembered positive affect (t3), ρ=0.853.

Convergent and discriminant validity were measured using the methods prescribed by Fornell and Larcker (1981) and Chin (1998). All items loaded on their designated theoretical constructs at $p<.001$, with loadings ranging from 0.691 to 0.883. Table 2 further shows cross-loadings among constructs. As we can see, all items loaded clearly on their own constructs,

demonstrating discriminant validity (Chin, 1998). A further test of discriminant validity recommended by Fornell and Larcker (1981) compares the average variance extracted (AVE) for a construct with the squared intercorrelations. Applying this test to our data set we find that in all cases the AVEs for a construct are higher than the squared intercorrelations with other constructs, confirming discriminant validity. The results are shown in Table 3. In addition, the values of AVE in Table 3 range from 0.629 to 0.742, well above the recommended level of 0.5 (Fornell and Larcker, 1981), suggesting that the constructs also demonstrate convergent validity.

Table 2: Cross-loadings between constructs

	Predicted Positive Affect (t1)	*Remembered Positive Affect (t2)*	*Remembered Positive Affect (t3)*	*Revisit Intention (t3)*
Happy (t1)	**0.691**	0.406	0.303	0.138
Joyful (t1)	**0.883**	0.498	0.524	0.284
Happy (t2)	0.494	**0.841**	0.359	0.331
Joyful (t2)	0.487	**0.873**	0.528	0.295
Happy (t3)	0.385	0.349	**0.840**	0.451
Joyful (t3)	0.538	0.538	**0.883**	0.291
Revisit Intentions	0.281	0.364	0.424	**1.000**

Table 3: Squared-intercorrelations between constructs (AVE on diagonal)

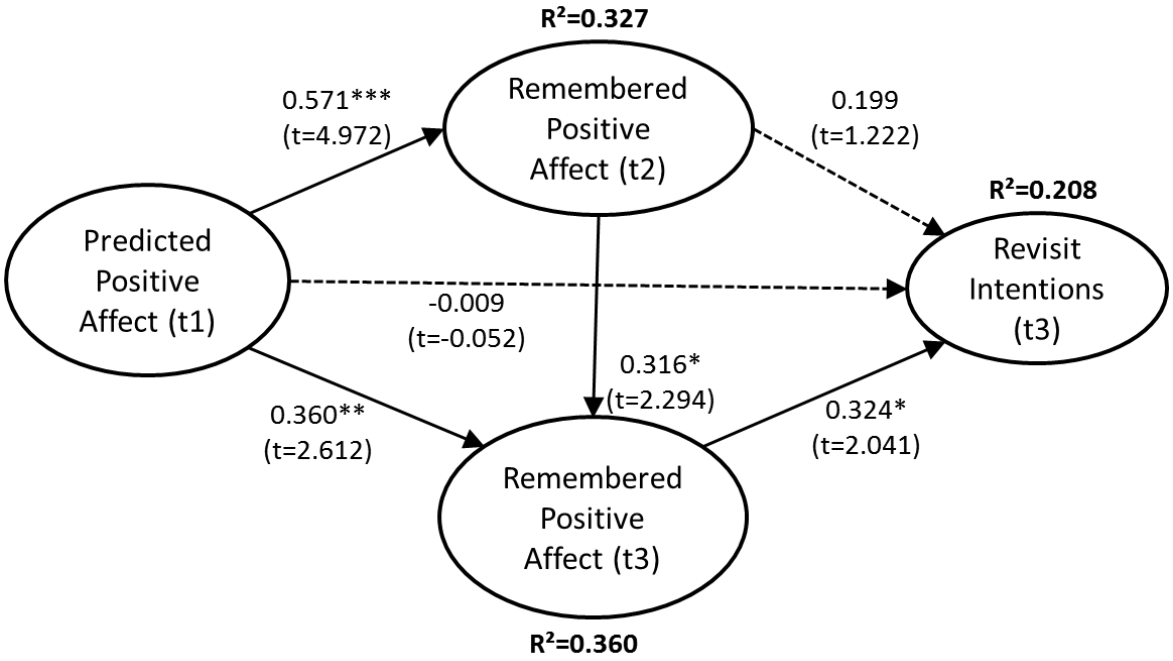
	Predicted Positive Affect (t1)	*Remembered Positive Affect (t2)*	*Remembered Positive Affect (t3)*
Predicted Positive Affect (t1)	**0.629**		
Remembered Positive Affect (t2)	0.327	**0.735**	
Remembered Positive Affect (t3)	0.293	0.273	**0.742**
Revisit Intention	0.079	0.132	0.180

4. Results

The results of testing the research model using PLSPM in XLSTAT are presented in Figure 2. The fit of the model was assessed using Esposito Vinzi et al.'s (2010) Relative Goodness-of-Fit Index (GoF_{rel}), designed and recommended as best practice for PLS path modelling

(Henseler and Sarstedt, 2013). We find that the fit of the model is above the level of 0.9 recommended by Esposito Vinzi et al. (2010) and is therefore acceptable (GoF_{rel}=0.906). The goodness-of-fit of the outer model and inner model were also high (0.988 and 0.917 respectively), providing positive support for the fit of the model.

Figure 2: Results of Testing the Research Model



The PLSPM results found that predicted positive affect (t1) was a significant determinant of remembered positive affect (t2) (R^2=0.327, F=24.724, p<.001), with a high path coefficient (β=0.571, SE=.115, t =4.972, p<.001).

Remembered positive affect in time period 3 was also significantly positively determined by the variables in our model (R^2=0.360, F=14.059, p<.001). In particular, there was a significant relationship between predicted positive affect (t1) and remembered positive affect (t3) (β=0.360, SE=.138, t =2.612, p=.012) and between remembered positive affect (t2) and remembered positive affect (t3) (β=0.316, SE=.138, t=2.294, p=.026).

Finally, our results showed that revisit intentions (t3), although having a reasonable variance explained by our model (R^2=0.208, F=4.278, p=.009), were only significantly determined by one construct in our model, remembered positive affect (t3) (β=0.324, SE=.159, t=2.041, p=.047), with neither remembered positive affect (t2) (β=0.199, SE=.163, t=1.222, p=.227) or predicted positive affect (t1) (β=-0.009, SE=.165, t=-0.052, p=.959) showing significant relationships. Thus, the research finds support for H1 and H3.

From an examination of Table 1, there appears to be a fall in positive affect over the time periods (t1, t2 and t3). In our study we were interested in examining the loss of memory over time and thus confined our attention to t2 and t3 for test purposes, which represents a gap of around 6 weeks. A t-test for differences in means between the two time periods found that the fall of 0.231 in positive affect was significant (t=2.160, p=0.35), thus supporting the hypothesis that there is a loss of long-term memory (H2).

5. Discussion

The results of our study support the findings from Wirtz et al.'s (2003) study. Indeed, we have confirmed that predicted positive affect influences remembered positive affect which in turn influences revisit intention (repeat experience in the original study). In line with Wirtz et al., our data shows that predicted positive affect does not influence revisit intention. We have also found support for a serial theory of memory and revisit intentions in the tourism context: not only are behavioural intentions more significantly determined by long-term remembered positive affect, the most recent period of remembered positive affect is the only determinant of intentions to revisit the attraction.

Our research has focused upon a particular kind of tourist attraction, zoos, which can be broadly be positioned within the category of theme parks. Although our research has focused upon positive affective experiences, in line with the aims of the study, it should be

noted that the broader context of the memory of experience will consist of many other factors. The richer orchestra of experience consists of a much broader framework (Pearce et al., 2013) including not just remembered affective experiences but relationship experiences, actual behaviours, cognitive understanding and learning, and sensory experiences (Schmitt, 2003). Revisits to theme parks, particularly family domestic revisits, as is typically the case for zoos, are different to other tourism contexts, such as long-haul international cities, in that they tend to be more frequent and the resource more accessible. Thus, we may speculate that remembered experiences between visit and revisit are less likely to change to the same degree than is the case for infrequent visit destinations. If so, there is perhaps relatively less of a need for tourist managers of zoos to provide remembered experiences that are as enduring. In terms of the typology of Hosany and Gilbert (2010), elements of joy and love may be more important than positive surprise. Notwithstanding, revisit intentions will be determined by the capacity of the positive aspects of the visitor experience to be remembered in the time between the visit and the decision to revisit. Focusing on providing a memorable and enjoyable family or group experience through attractions that are sensory, social and interactive would appear to be particularly important, along with opportunities to 'capture the moment' through audio-visual recording devices.

As noted earlier in the paper, tourism research has emphasised the importance of positive psychology in garnering favourable responses from visitors. In this respect, and in terms of the specific nature of the context of the individual experience, tourism research represent a unique opportunity for psychological science, and can make a significant contribution to both. Pearce (2008), emphasising this point, calls for further research into positive psychology in tourism research, noting that "tourism research can offer insights into the operations of mindfulness and the assessment of authenticity in different ways from that conceived of by psychologists working in more constrained experimental settings" (p. 37).

A potentially fruitful avenue for future work in this area is that of the theory of savouring (Bryant and Veroff, 2007; Bryant et al., 2011). Bryant et al. (2011) suggest that individuals differ in their savouring beliefs, which reflect their perceptions of how much they are able to enjoy positive experiences. Savouring experiences refer to "sensations, perceptions, thoughts, behaviors, and feelings when mindfully attending to and appreciating a positive stimulus" (Bryant et al., 2011, p.108). Savouring processes refers to "mental or physical operations that unfold over time and transform a positive stimulus into positive feelings to which a person attends and savors,"; a savouring response is "specific concrete thought or behavior that amplifies or dampens the intensity, or prolongs or shortens the duration, of positive feelings. Examples [include]…taking "a mental photograph" [and]…closing one's eyes to focus ones attention" (*op. cit.*, p. 108). Thus, understanding the temporal process by which savouring is linked to memory may be key to understanding how events are remembered and construed in relation to future actions, such as revisit intentions to a zoo. This provides an alternative theory by which the longitudinal approach to visitor memory in tourism contexts could be examined, including the study of positive affective experiences of zoo visitors.

Since visits to zoos are inherently group or social outings, another lens that could offer possible explanations of the remembering of such events over time is social representations theory (Moscovici, 1963; 1984). Indeed, application of the theory can surface profound implications for tourism research (Pearce and Butler, 1999), including understanding individual revisit intentions to a destination. Social representations of a visit to a zoo are likely to be formed of shared knowledge, cognition and understanding, particularly through the linkages between people and the process that are used to comprehend the event. These collective systems of meaning are developed through the connectedness between the individual and the social, for example through behaviour and communication (formal and

information), of both the symbolic and the real (Moscovici, 1982; 1988). One explanation for the change in the nature of the remembered experiences an individual after a zoo visit is that the nature of social interactions following the event may work to this effect. Such interactions may work to affirm certain positive (or negative) remembered experiences between group members that make the determination of revisit intentions much more complex, dynamic and social. In the case of our research, social relations may have transformed the collective system of construal of positive affect to such an extent that it is the most recent remembered experience that is most important in influencing future behavioural intentions. We recommend this as an avenue for future research.

Our results have shown that respondents experienced a fall in long-term memory of positive affect in the six weeks following the visit to the zoo. Recent research in both psychology and neuroscience offer some possible explanations for this finding. Psychology has a long-standing body of research that has examined theory underlying serial position effects (SPE) upon memory, positing that there is a relationship between the order in which information is presented to a respondent and the probability of retrieving the information from memory (Murdoch, 1962). Primacy effects relate to the ease with which respondents are able to recall information at the beginning and recency effects refers to the tendency for individuals to remember items at the end of an experience (Goodman and Bennett, 2014).

Evidence from neuroimaging studies suggests that individuals experience temporal (recency) effects upon long-term memory, but that these effects are likely to have a number of other covariates. In particular, research has examined retrieval of autobiographical memory through activation in a key part of the brain involved in long-term memory, the hippocampus (Maguire and Frith, 2003; Maguire and Mummery, 1999; Piefke et al., 2003). Research has found that in addition to recency, other factors that affect hippocampal activation include temporal specificity / personal relevance, emotionality, and level of detail (Addis et al.,

2004). In terms of temporal specificity, specific event memories (such as “my son’s birthday visit to the zoo”) are more likely to be remembered than autobiographical facts (such “my aunt’s name is Doreen”) (Maguire and Mummery, 1999). Personally significant events are important for autonoetic consciousness and information is therefore more likely to be captured in long-term memory (Wheeler et al., 1997). The emotional arousal experienced during hippocampal activation (e.g. positive affect during a zoo visit) is also likely to contribute to recollection (Peifke et al., 2003), as is the level of detail (e.g. information relating to different types of animals in the zoo) (Maguire and Frith, 2003).

From another perspective, Helkkula et al. (2012) suggest that the values derived from experiences are in essence constructed and reconstructed and affected not only by lived, but also by imagined experiences, past and future experiences, as well as by individual and – not least – by social interpretations of the experience. Thus, over time, the memories of experiences and revisit intentions are shaped by complex individual, psychological and collective forces.

6. Conclusions

This study has provided support for the effect of recent remembered experiences on behavioural intentions to revisit a tourist attraction. The study has both confirmed the research model of Wirtz et al. (2003) and provided a contribution by extending the model to a more general theory of serial remembered positive affect and behavioural intentions. Due to the factors impacting on the transformation of memory over time (forgetting), revisit intentions are determined not by previous memory of positive affect or predicted positive affect, but by the most recent remembered positive affect. We believe that this is the first study to test such a model in the tourism context. The research is important in demonstrating that although positive emotional experiences are important in driving behaviour, they are also

temporally unstable and will change over time as a result of various memory effects that are partly idiosyncratic and partly open to various external stimuli.

Positive affect is a powerful psychological driver for tourism behaviour (Hosany et al., 2015). Other elements of the remembered orchestra of the tourist experience (Pearce et al., 2013) that deserve further examination include relationship experiences, sensory experiences, actual behaviours, cognitive understanding and learning. The uniqueness and the personal nature of an event may be particularly important. According to Wixted (2004), "a novel situation that involves unfamiliar activities, strange sights, and unusual sounds may elicit the most hippocampal activity … and, therefore, the greatest rate of new memory formation." Recent tourism research has also shown that behavioural outcomes are most significantly determined by destination brand experiences that are sensory (Barnes et al., 2014). Tourism managers should therefore seek to develop novel, multisensory experiences in order to make them memorable and to drive future revisit intentions. Additionally, if recent memories are more important for revisit intentions it will be crucial for companies to intervene with the intent to affect customers' emotions and memories of experiences – and to use strategies to reinforce them – when revisit decisions are expected to be made.

Future research should seek to examine the impact of the aforementioned additional factors in determining the retention of affective memory and thereby behavioural intentions of visitors to an attraction in a tourist setting. In particular, future research should examine more aspects of the context of an individuals' own personal experiences of their visit to an attraction. The particular contextual factors that could usefully be captured include the order in which exhibits are visited at an attraction and subsequent remembered experience of those exhibits in order to examine primacy and recency effects. Further examination of the emotionality experienced by specific exhibits could also shed some light on the elements of remembered experience, as could an assessment of the personal significance of the overall

visit to an attraction for individuals, and level of detail of the experience. Furthermore, while attractions are a core element of tourism and a core determinant of tourism memories, many other elements and other involved businesses are responsible for shaping the memories of a complete vacation experience. Questions to be answered in future research thus also include the role of emotions and memories for revisit intentions in other tourism businesses across the horizontal tourism value chain (including hospitality and transport) as well as at the overall destination level.

Our study could be considered limited in a number of respects. Our sample size could be considered small. However, this is a rare and difficult to collect sample, since respondent attrition over time makes data collection very challenging. Furthermore, our sample size (n=55) is in fact larger than the original study published in Psychological Science (n=35). Further, in collecting our longitudinal data sample, we used repeated measures. This is in line with Wirtz et al. (2003). However, this approach could create bias through sensitizing respondents to the questions. An alternative design for future studies with sufficient resources could be matched sampling. Our study has also focused on positive affective experiences and other aspects of the orchestra of the remembered tourist experience (Pearce et al., 2013), as discussed above, may shed further light on longitudinal remembered experiences. Another possible limitation is that we have not measured intentions to revisit at each point in time during the study. Examining how the strength of the relationship between affective memory and revisit intentions changes over time would provide an alternative research design to track the effect of the decline in remembered affective experiences. We encourage future studies to use a similar research design to capture more longitudinal data across additional areas of the tourism value chain.

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