Interpretive layering in nature-based tourism: a simple approach for complex attractions.

Alexandra Coghlan^{1*}

Aise KyoungJin Kim².

¹**Centre for Tourism, Sports and Services Innovation.
Griffith University, Gold Coast, Australia**

²School of Management
University of South Australia
Adelaide, Australia

* Corresponding Author
Email: a.coghlan@griffith.edu.au
Telephone: +61 (0)7 55527368
Fax: +61 (0)7 55528895

To cite this article: Alexandra Coghlan & Aise KyoungJin Kim (2012): Interpretive layering in nature-based tourism: a simple approach for complex attractions, *Journal of Ecotourism*, 11(3), 173-187.

Abstract:

This paper considers the role of interpretive layering, i.e. combining multiple sources of interpretation in order to repeat the interpretive message, in nature-based tourism. We explore interpretive layering at an attraction (the Great Barrier Reef) that presents several challenges to tourists and operators. The Great Barrier Reef (GBR), Australia, represents a site where tourists' typically have a high level of unfamiliarity with the attraction, are encouraged to co-create their experience by choosing from a multitude of activities on offer and where focused interpretive activities are more difficult due to the (underwater) nature of the attraction. Using 775 visitors surveys distributed on the return trip from the Reef, we analyse the relationship between the number of interpretive types used and changes in visitors' knowledge levels, attitudes and behavioural intentions. The results highlight the important additive effects of a variety of interpretive sources on visitors' understanding of this attraction. We propose that interpretive layering may be particularly relevant at attractions that are harder to accommodate within visitors' existing frames of reference and might also be usefully applied in (post-Fordist) tourism that is characterized by a trend away from packaged mass tourism, towards products that favour flexibility, individuality, hybridity and activity.

Keywords: interpretation, sustainable tourism, marine ecotourism.

1. Introduction

This study builds upon growing evidence that the additive effects of interpretation exposure is equally important as the content, channel, theoretical underpinnings of, and audience for, interpretation. Using a layering technique, it is suggested that the use of multiple interpretive approaches combining non-personal and personalized channels can be useful to attract and to tailor to the different needs and preferences of a range of visitors at a right time and in a right place (Manning, 2003). In this research note, we present results from interpretive activities on the Great Barrier Reef (GBR), Australia, that indicate a positive relationship between the number of interpretive types used and changes in visitors' knowledge levels, attitudes and behavioural intentions.

1.1. Literature Review:

The use of interpretive layering is not new, but has not received substantial attention in its own right. For example, Moscardo's (1999) "mindful/mindless" model emphasizes the important role of different layers of interpretive experiences; she considered the importance of a variety of interpretation, reactions to new or unfamiliar situations which do not provide visitors with a known script (thus prompting mindfulness) and message repetition (when varied in presentation). In studying combinations of interpretive deliveries, Oliver, Roggenbuck and Watson (1985) indicated that the use of a brochure plus the personal contact with a ranger was significantly more effective than the brochure alone. Meanwhile, Ballantyne, Packer and Beckman, Madison and Fenton (2004), Weiler and Smith (2009) and Coghlan, Fox, Prideaux and Luck (in press) all found that the effectiveness of interpretation was related to participation in different activities and level of exposure to interpretation, irrespective of its format or content. Finally, Marion and Reid (2007) cite a study by Cole et al. (1997) which also suggested that higher exposure to interpretation increased its effectiveness up to a certain degree before message retention declined and information overload occurred.

It is proposed in this research note that multiple opportunities for interpretive exposure is particular effective for some attractions. The influence of the physical attributes of the setting or attraction was recognized by Curtin (2005); who argued that the attraction's attributes can facilitate or restrain the types of possible experiences. Thus, according to Curtin (2005), the place itself

structures the nature of the experience that tourists receive. Taking this view, it may be that interpretive layering is most effective at sites where there is a high level of unfamiliarity with the attraction, the tourist is a co-creator of the experiences (by choosing from a multitude of activities on offer) and where focused interpretive activities are more difficult to implement because of the nature of the environment. To investigate this proposition, the GBR is adopted as a case study representing an attraction with the above characteristics, and an analysis of interpretive layering was undertaken.

1.2. Study site:

The GBR is an iconic tourist destination within Australia. It receives two million visitors each year, primarily through commercial tour operators visiting offshore reefs on tours that last approximately nine hours (GBRMPA, 2007). Interpretation on reef tours is available at several points throughout the boat ride. The primary opportunity for interpretive activities occurs on the way to the reef, when tourists may browse through brochures, meet crew, listen to a marine biology presentation or watch interpretive slide shows or videos. Later, there are opportunities for informal interactions with crew, and some vessels offer another marine biology presentation during fish feeding sessions. More structured interpretive activities also occur during the guided snorkel tours (if available), and the semisubmersible and/or glassbottom boat tours. Lastly, opportunities for informal interpretation also exist on the return trip, as books and brochures available on board, and the crew, some of whom have specialized knowledge, may be available to answer questions.

The GBR is also characterised by a number of unique traits as an offshore attraction. For example, the open-water activities require a number of safety measures, including briefings to prevent water-based incidents, buoyancy vests, specialised equipment, rest stations/buoys, whilst the activities themselves may be hampered by waves, currents, seasickness, and potentially dangerous animals. In-water activities also reduce opportunities for communication between guests and between guests and staff, and for some out of water activities, the interpreter may not be viewing the same seascape as the guests. For guests not venturing into the water and/or who may not be able to access the semisubmersibles or glassbottom boat tours, there is relatively little visible wildlife. For these reasons and others, it is argued that the GBR represents an attraction with multiple and noteworthy interpretive challenges.

2. Study methods

Visitor surveys were distributed to tourists on commercial tours to the GBR, Australia, as part of a research program funded by the Australian Government's Marine and Tropical Sciences Research

Facility (MTSRF). The surveys were distributed by the crew of 10 tourism operators in the GBR region. The operators reflected a diverse range of tour options, activities and locations, to ensure that nearly all the activities offered on the Reef have been represented. The commercial tours focus primarily on three types of activities, diving, snorkeling and glassbottom boat/semisubmersible tours, and tourists may participate in all of none of these activities (Coghlan et al., in press).

The visitor surveys collected information on the socio-demographic characteristics of reef visitors, their travel patterns, motivations, and activities and their satisfaction with their reef trip (c.f. authors withheld, 2009). For this study, specific questions regarding the interpretive experience were included in the visitors' survey between September 2009 and February 2010. In this section of the survey, respondents were asked to (i) describe their use and evaluation of on-board interpretation, (ii) rate their knowledge of the Reef using both Likert-scale questions (where 1 indicated low knowledge and 5 indicated excellent knowledge), closed and open-ended questions, (iii) report their attention to and retention of, interpretive messages, (iv) indicate any changes in attitudes as well as current and future behavioural intentions as a result of being on the tour. The data were entered in SPSS 18.0, and analysed using descriptive statistics and comparison of means.

3. Results

The final samples included 850 surveys, of which 775 were usable for our analyses. The response rate was generally high, 80%, with some variance noted between operators and days. The respondents' profile indicated a slight bias towards women (56.3%) within the sample. The respondents were relatively young, with 52% in the 20-29 year old range and another 25% between 30 and 49 years of age. Domestic tourists represented the largest nationality group in the sample (29.2%), followed by respondents from continental Europe (25.2%), the UK and Ireland (22.0%) and North America (17.4%). A third of respondents were travelling with their spouse/partner, a quarter were travelling with friends, and a fifth were travelling with family. For the majority of respondents this was their first visit to the GBR (76.5%), although approximately half of the respondents (48.9%) had visited other reefs, e.g. those of the Caribbean, South Pacific or Red Sea prior to visiting the GBR.

To meet their interpretive needs, most respondents (75%) relied on informal chats with the crew, briefing (63%), and marine biology talks (51%). Given the variety of activities offered, many of which have an interpretive component, it is unsurprising that only a small percentage (8%) of respondents found that they did not use any of interpretation, and only 11.5% relied on only one source of interpretation. The remaining 81.5% found two (21.5%), three (26%), four (17%) or more (16%) sources of interpretation useful. Interestingly, no distinct patterns of interpretive preferences

could be distinguished, and over 100 combinations of useful interpretation were noted in the sample.

It would appear that the most helpful sources of information used by respondents' were the crew and the dive briefings, or what Munro, Morrison-Saunders and Hughes (2008) label "interpersonal interpretation". In fact, 75% found informal chats with the crew to be helpful or very helpful, whilst 62.8% found briefings helpful or very helpful, 51% found marine biology talks to be helpful or very helpful, and 30% found books, videos or guided tours to be helpful or very helpful. With regards to interpretive layering, combining one source of interpretation with another appeared to enhance its effectiveness; every type of interpretation was rated as more helpful when combined with other types of interpretation (Table 1).

INSERT TABLE 1 HERE.

Knowledge of the Reef also appeared to improve when several sources of interpretation were used. Specifically, mean knowledge scores for six different aspects of the Reef were significantly higher for those people had used several sources of information than for those respondents who considered no information useful or only one type of information useful (Table 2 and Figure 1).

INSERT TABLE 2 HERE

INSERT FIGURE 1 HERE.

Furthermore respondents who used several sources of information also reported significantly greater increases in their sense of overall knowledge about the reef (mean = 3.34), compared to the groups that found one types of information useful (mean = 2.54) and no type of information useful (mean = 2.33). An ANOVA test confirms the significant different between these means ($F=41.878$, $p<0.05$), whilst Figure 2 presents the changes in mean knowledge scores across the eight groups of respondents (those who found none of the interpretive material helpful to those who found all seven useful).

INSERT FIGURE 2 HERE.

Significant differences in recall of reef-related behavioural messages also existed between the three groups; up to three times more tourists in the multiple sources of interpretation remembered being instructed not to feed reef animals, whilst over twice as many remembered not to chase reef animals (Table 3). It must be noted, however, that simply remembering that they were told avoid a particular behaviour does not mean that they did so. For each of the behavioural intention questions, it was the respondents who had received more than one useful type of information who scored significantly higher on positive behavioural intentions and significantly lowest on negative behavioural intentions (Table 4). The results also confirmed that respondents who found multiple sources of information useful were more likely to feel that the information they received changed their appreciation of the Reef, awareness of marine conservation, and the desire to reduce their impact at the Reef (Table 5).

INSERT TABLE 4 HERE

INSERT TABLE 5 HERE.

The final survey question identified the most important information that respondents retained from their tour. As in the previous results, there were significant differences between the three groups of tourists (Chi-squared = 25.324); respondents who did not receive any helpful information cited “the Reef is slow growing” as the most important message of the tour, respondents who felt they received one type of useful information felt that not standing on or touching the Reef was the most important message, whilst respondents who found several sources of information useful felt that the “Reef needs protection” was the most important message of the day (Table 6).

INSERT TABLE 6 HERE.

4. Discussion and conclusion

This paper adds to the growing body of knowledge on interpretation in nature-based tourism by considering the role of interpretive layering at an attraction that presents several interpretive challenges to tourists and operators. One trend that is clear throughout the results is the important additive effects of exposure to a variety of interpretive sources on visitors’ understanding of this attraction. The results question of the issues of message repetition and fatigue reported by

Roggenbuck (1992) and the relative importance of interpretation intensity (Hughes & Morrison-Saunders, 2005). Indeed it appears that in the case of the GBR, there is a consistent trend towards “more is better”, regardless of visitor characteristics and needs, variables found to be important in other studies (Ballantyne et al., 1998; Hughes & Morrison-Saunders, 2005, Moscardo, Woods & Saltzer, 2004). We also found that greater exposure leads to a different kind of understanding of the Reef, suggesting that these results have important implications for public understanding of this world heritage site.

We propose that interpretive layering may be particularly relevant at attractions with certain attributes that make them harder to accommodate within visitors’ existing frames of reference. In her studies of interpretation at the GBR, Moscardo (1999) suggested that the new and unfamiliar characteristics of some sights might shape interpretation outcomes, and she recommended providing a variety of interpretation and encouraging personal choice and engagement with the different options. This proposal is supported by our findings as presented here.

Additionally it may be argued that reef tours represent what Saarinen (2005) calls post-Fordist nature-based tourism, i.e. tourism that is characterized by a trend away from packaged mass tourism, towards products that favour flexibility, individuality, hybridity and activity. In this case, tourists become co-creators of their experience, as they “pick and mix” their activities and choose to (dis)engage with the interpretation on offer throughout the tour. This is an important point as it represents a departure from many more structured attractions and interpretive settings where some of the on-site variables (e.g. activities, staff responsibilities/duties) are relatively stable. Under such circumstances, we conclude that interpretive layering might be the simplest solution effective interpretation in a complex setting.

References

- Ballantyne, R., Packer, J. & Beckman, E. (1998). Targeted interpretation: Exploring relationships among visitors’ motivations, activities attitudes and information needs and preferences. *Journal of Tourism Studies*, 9(2), 14-25.
- Coghlan, A., Fox, F., Prideaux, B. & Luck, M. (in press). Full immersion: Examining the links between activity type and successful interpretation in Great Barrier Reef tourism. *Tourism in Marine Environments*, X:xx-xx
- Curtin, S. (2005). Nature, Wild Animals and Tourism. *Journal of Ecotourism*, 4(1), 1-15.

GBRMPA (2007).

http://www.gbrmpa.gov.au/corp_site/info_services/media/media_archive/2007/2007_01_30.html (accessed March 2009).

Hughes, M. & Morrison-Saunders, A. (2005). Influence of On-Site Interpretation Intensity on Visitors to Natural Areas. *Journal of Ecotourism*, 4(3), 161-177.

Madin, E. & Fenton, D.M. (2004). Environmental interpretation in the Great Barrier Reef: an assessment of programme effectiveness. *Journal of Sustainable Tourism*, 12(2), 121-137.

Manning, R.E. (2003). Emerging principles for using information/education in wilderness management. *International Journal of Wilderness*, 9(1), 20-27.

Marion, J. & Reid, S. (2007). Minimising visitor impacts to protected areas: the efficacy of low impact education programs. *Journal of Sustainable Tourism*, 15(1), 5-27.

Moscordo, G. (1999). *Making visitors mindful: Principles for creating quality sustainable visitor experiences through effective communication*. Champaign, IL: Sagamore Publishing Inc.

Moscordo, G., Woods, B. & Saltzer, R. (2004). The role of interpretation in wildlife tourism. In K. Higginbottom (Ed.) *Wildlife Tourism*. Gold Coast: CRC Sustainable Tourism.

Munro, J., Morrison-Saunders, A. & Hughes, M. (2008). Environmental interpretation evaluation in natural areas. *Journal of Ecotourism*, 7(1), 1-14.

Oliver, S.S., Roggenbuck, J.W. & Watson, A.E. (1985). Education to reduce impacts in forest campgrounds, *Journal of Forestry*, 83(4), 234-236.

Roggenbuck, J.W. (1992). The use of persuasion to reduce resource impacts and visitor conflicts. In M.J. Manfredi (Ed.). *Influencing Human Behaviour: theory and application in recreation, tourism and natural resources management*. Champaign, IL: Sagamore Pub. Inc.

Saarinen, J. (2005). Tourism in the northern wildernesses: Wilderness discourses and the development of nature-based tourism in northern Finland. In C.M. Hall and S. Boyd (eds.), *Nature-Based Tourism in Peripheral Areas – Development or Disaster?* (pp. 36-49). Clevedon: Channel View Publications.

Weiler, B. & Smith, L. (2009). Does more interpretation lead to greater outcomes? An assessment of the impacts of multiple layers of interpretation in a zoo context. *Journal of Sustainable Tourism*, 17(1), 91-105.

Table 1. Comparison of respondents' mean rating of each source of information (on a scale of 1, not at all helpful, to 5, very helpful), where the information was used on its own or in combination with other information.

		Mean	Std. Dev.
Presentation	<i>Alone (n=30)</i>	3.23	.774
	In combination (n= 584)	4.12	.784
Dive briefing/ debriefing	<i>Alone (n=54)</i>	3.87	1.010
	In combination (n=608)	4.39	.720
Video on board	<i>Alone (n=16)</i>	3.19	.655
	In combination (n=419)	3.80	.936
Guided snorkel tour	<i>Alone (n=23)</i>	3.30	.876
	In combination (n=376)	4.16	.978
Semi-sub/ glassbottom boat	<i>Alone (n=17)</i>	3.06	1.249
	In combination (n=400)	3.97	1.063
Books on board	<i>Alone (n=20)</i>	3.25	.910
	In combination (n=485)	3.83	.895
Informal chats with crew	<i>Alone (n=57)</i>	3.77	.824
	In combination (n=736)	4.40	.659

Table 2. The effect of different levels of helpful interpretation on knowledge of the reef.

		Fish	Coral	History	Threats	Management	Research
None	Mean	2.03	1.71	1.89	2.38	1.76	1.63
(n=62)	<i>Std. Dev.</i>	<i>.782</i>	<i>.869</i>	<i>.900</i>	<i>.984</i>	<i>.875</i>	<i>.829</i>
One	Mean	2.02	1.79	1.84	2.34	1.78	1.70
(n=91)	<i>Std. Dev.</i>	<i>.846</i>	<i>.857</i>	<i>.867</i>	<i>.980</i>	<i>.894</i>	<i>.887</i>
Several	Mean	2.40	2.19	2.17	2.71	2.14	2.05
(630)	<i>Std. Dev.</i>	<i>.877</i>	<i>.918</i>	<i>.943</i>	<i>1.058</i>	<i>.960</i>	<i>.904</i>
ANOVA	F	10.755	13.249	6.653	6.902	9.032	10.422
	P	0.00	0.00	0.001	0.001	0.00	0.00

Table 3. The effect of different levels of helpful interpretation on message retention of behaviours to avoid.

	Do not stand	Do not touch marine life	Do not remove	Do not feed	Do not touch coral	Do not chase
None (n=57)	85.7%	46.4%	67.9%	16.1%	62.5%	21.4%
One (n=73)	85.0%	45.0%	80.0%	22.5%	71.3%	33.8%
Several (n=592)	89.7%	59.5%	88.7%	47.2%	84.7%	53.1%
Chi-squared	2.153	8.817	21.591	34.682	23.296	28.587
P value	0.341	0.012	0.00	0.00	0.00	0.00

Table 4. The effect of different levels of helpful interpretation on behavioural intentions towards the reef

		Tell friends about the reef	Seek more information	NOT remove litter	Involve in env. issues	NOT make donations	NOT stand on the reef	NOT remove anything	NOT feed marine life	Not touch marine life	Adopt Env practices
None	Mean	4.03	3.05	2.32	2.63	2.82	4.46	4.48	4.12	4.04	3.65
(n=58)	<i>sd</i>	1.04	1.05	1.50	1.019	1.25	1.05	.960	1.18	1.295	1.27
One	Mean	4.39	3.25	2.68	2.75	2.80	4.74	4.75	4.22	4.25	3.72
(n=81)	<i>sd</i>	.782	1.00	1.61	.967	1.19	.648	.560	1.13	1.14	1.09
Several	Mean	4.48	3.44	2.30	3.00	2.53	4.69	4.75	4.39	4.28	4.07
(n=612)	<i>sd</i>	.782	1.02	1.57	.973	1.18	.778	.616	.980	1.04	1.01
ANOVA	F	8.19	4.64	2.01	5.776	3.02	2.54	4.757	2.57	1.346	7.54
	P	0.00	0.10	0.13	0.003	0.04	0.07	0.009	0.07	0.261	0.00

Table 5. The effect of different levels of helpful interpretation on attitudinal change.

		Made me want to reduce my impact on the reef	Changed my appreciation of the reef	Increased my awareness of marine conservation
None	Mean	2.91	3.04	2.98
(n=57)	<i>Std. Dev.</i>	<i>1.272</i>	<i>1.239</i>	<i>1.217</i>
One	Mean	3.25	3.36	3.25
(n=73)	<i>Std. Dev.</i>	<i>.940</i>	<i>1.059</i>	<i>1.024</i>
Several	Mean	3.83	3.92	3.83
(n=592)	<i>Std. Dev.</i>	<i>1.089</i>	<i>1.011</i>	<i>1.016</i>
ANOVA		25.452	26.411	25.172
		0.00	0.00	0.00

Table 6. The most important message for respondents in the three different groups.

	Reef need protection	Reef is very diverse	do not stand on or touch reef	The reef is fragile	The reef is very big	The reef is slow growing
None (n=57)	22.0%	12.0%	16.0%	14.0%	10.0%	26.0%
One (n=80)	26.2%	8.2%	24.6%	18.0%	13.1%	9.8%
Several (n=688)	31.5%	19.3%	9.2%	15.7%	9.2%	15.1%

Figure 1. The effect of combined interpretation on respondents' knowledge of the reef.

Figure 2. Mean knowledge scores of respondents who found no interpretation useful to those who found all seven types of interpretation useful.