The Speleotourist Experience: Approaches to Show Cave Operations in Australia and China

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Abstract

This article provides a comparative study of commercial cave tourism in Australia and China, focussing on the methods of site interpretation and presentation used by selected show caves. The key point of contrast between the commercial speleotourist experiences offered in Australia and China is in the relative priority given to site conservation and framing the cave as a spectacle for the enjoyment of visitors. The discussion draws on the authors' field research, visiting show caves as tourists to consider the significance of developments in ecotourism and geotourism for show cave management in Australia and China.

Keywords: Show caves Australia; show caves China; show cave management; ecotourism; geotourism.

Introduction

The International Show Cave Association (ISCA) defines a show cave-sometimes called a tourist caveas a 'natural occurring void beneath the surface of the earth that has been made accessible to the public for tours' (ISCA, n.d.). While some show caves offer 'wild' or 'adventure' caving, the vast majority of visitors walk in groups along well-lit concrete, gravel, steel-mesh, or even fibreglass pathways, pausing at intervals to listen to a guide's commentary about the cave's exploration or tourism history, its geological formation or significance, or the beauty and wonder of its features (Crane and Fletcher, 2015, pp. 159-87). Show caves, found on every continent except Antarctica, attract more than twenty million visitors globally every year (Lóránt, Lontai-Szilágyi, & Baros, 2010, p. 250) and can operate anywhere on the spectrum from theme park tourism to geotourism, from 'modern pleasure dome' (Davis 1996, p. 399) to 'natural underworld' (Barclay, McKeever, Humpage, Goodenough, & Lawrence, 2007, p. 42).

This article provides a comparative study of commercial 'speleotourism' in Australia and China, focussing on the methods of site interpretation and presentation adopted at selected show caves. Gillieson (2011) estimates that there are now more than 600 show caves open worldwide, but it seems likely that this figure does not include, or under-estimates, the number of show caves in China. Duckeck's (2015) show cave website lists 1256 show caves, including fifty-eight in Australia and sixty-two in China, but he has acknowledged that his records are partial due to a relative lack of information about Chinese show caves in English (Duckeck, 2012). According to Zhang and Zhu (1998) and Spate and Spate (2013), there are over 300 show caves in China. Further, Spate and Spate (2013) point out that 'Asian show caves ... have enormous visitor numbers relative to the rest of the world' (p. 68). For example, Spate (pers. comm., 2015) states that 'Hwanseongul Cave, South Korea, had nearly 18,000 visitors on one day in 2001'.

Caves pose a series of challenges to tourism operators with regard to presentation and visitor numbers because of the fragility and irreplaceability of the very formations that attract the tourists. There is, in other words, an inevitable conflict between the functions of entertainment (mass tourism) on the one hand, and protection (ecotourism and geotourism) on the other. The Australian examples of the Jenolan Caves in New South Wales, Buchan Caves in Victoria, and Newdegate Cave in Tasmania provide useful case studies of Australian approaches to show cave management, and the efforts being made to conserve as well as display and interpret. The examples of Stone Flower Cave near Beijing, and three caves in and around Guilin in Guangxi province, southern China, illustrate Chinese approaches, which stand in marked contrast to those employed by Australian tourist cave operators. Indeed, Sofield and Li (2007) suggest that caves offer the clearest example of the stark differences between western and eastern approaches to ecotourism.

Our study is an exploratory one, which examines the assumptions guiding the management of show caves in two distinct national settings. It considers show cave tourism in relation to ecotourism and geotourism, and emphasises the responsibilities of operators in achieving a balance between display and conservation.

Ecotourism, Geotourism, Speleotourism

Cigna (2005) traces the origins of show cave tourism to Vilenica Jama, in Slovenia, where the Count of Petac was charging an entry fee as early as 1633. However,

popular cave tourism as we know it today in the West, really only took off in the nineteenth century when some of the great show caves of the world-including Postojna Jama in Slovenia, the Cheddar Caves in Britain, Mammoth Cave in the United States, and Jenolan Caves in Australia-were opened to fee-paying visitors. By the end of the century the speleotourist experience, which began with basic guided tours through natural passages, had expanded to include formed tracks, electric lighting, and rail lines to carry tourists in comfort. Of course, physical modifications designed to improve access for visitors inevitably degrade the speleothems that are the stars of the show (Russell and MacLean, 2008). More broadly, facilitating the entry of large groups of people in caves 'has the potential for altering the local climatic and environmental conditions' (Baker and Genty, 1998, p. 165), especially when heat-producing lighting systems are installed.

Popular speleotourism is based on the natural resources of caves: on the beauty and otherness of formations created by geological and hydrological processes over millennia in underground passages and chambers: stalactites and stalagmites, helictites and cave coral, flowstone and drapery. Show cave management today assumes that people visit caves to see the beauty, and experience the 'mystery', of the natural underground environment, and/or to enhance their understanding of speleology, with an emphasis on hydrogeology. The 'implied tourist' of most show cave operations has little knowledge of the various cave sciences; is hoping to see (and photograph) adequately lit, richly decorated 'cavescapes'; and wants to experience, as safely as possible, the otherworldliness of the dark zone of a natural cave.

Some speleotourism might usefully be seen as a branch of geotourism, a form of tourism based on the appreciation and conservation of the geology and geomorphology of the landscape and natural landforms (Kim, Kim, Park, & Guo, 2008). Geotourism, in turn, can be treated as a distinct form of ecotourism, tourism based on the sensitive use of natural resources. Weaver and Lawton (2007) summarise the three core criteria of ecotourism: (1) attractions should be predominantly nature-based, (2) visitor interactions with those attractions should be focused on learning or education, and (3) experience and product management should follow principles and practices associated with ecological, socio-cultural and economic sustainability. (p. 1170)

In relation to show caves, Weaver and Lawton's criteria are aspirational and difficult to dispute; however, for many caves they are impossible to achieve as the impact of tourism has already compromised their 'natural state' to the extent that their attraction will inevitably be closer to theme parks than geosites.

Geotourism is typically framed as niche or specialty tourism. However, our experience suggests that the majority of tourists around the world who join show cave tours are casual or incidental tourists, usually family or social groups, rather than cave enthusiasts. Hose (2012), who first defined the term 'geotourism' in 1995, traces its appeal to the "Romantic" movement's greatest legacy to modern travellers and tourists': 'their preference to spend time appreciating aesthetically attractive "wild" or "natural" landscapes rather than the "controlled" and "brutal" spaces of mining and industry' (p. 8). This rings true whether geotourism is classified as niche tourism, or defined more broadly to include the full spectrum of people who choose to visit sites known or promoted for their geological or geomorphological distinctiveness. Thus, Kim et al (2008) refer to cave tourism as 'one genre of geotourism' (p. 301). Their choice of words, perhaps inadvertently, suggests the value of identifying and analysing the conventions that show cave operators employ to frame and interpret caves for visitors. The use of the term 'genre' chimes also with our experiences as participant-observers visiting show caves in Australia, China, America, Britain, Macedonia, and Slovenia between 2011 and 2014: the tourist experience of entering a show cave is remarkably consistent wherever one follows a guide underground. This consistency is both phenomenological – from the familiar subterranean smells to the absolute darkness of the inevitable moment when the guide shuts down the lighting system – and related to the content and structure of the guides' verbal commentary and the other textual elements of show caves, on tickets, brochures, and signage.

Show Caves in Australia

There are currently show caves open to the public in every state and territory of Australia, except the Australian Capital Territory. According to Spate and Spate (2013), there has not been reliable data of annual visitor numbers to Australian show caves for several decades (p. 57); however, their preliminary data sets from thirteen of Australia's twenty-four show cave operations (not individual caves) suggest that numbers have not fluctuated wildly over the last decade (p. 62). Field research for this section of the paper focused on caves in three states in southeast Australia: New South Wales, Victoria, and Tasmania.

Jenolan Caves

The Jenolan Caves in New South Wales—originally known as the Fish River Caves—are undoubtedly the birthplace of the show cave industry in Australia. While other caves, such as the Tasmanian caves around Chudleigh, were attracting visitors in the first half of the nineteenth century, as Hamilton-Smith (2003) argues, in Australia, 'the real development of cave tourism as an industry began at Jenolan' (p. 160).

The history of managed tourism at Jenolan Caves dates back to the 1861 visit of the local politician John Lucas, after whom Lucas Cave is named. Despite souveniring a large formation for his own collection

(Stone, 2012, p. 133), Lucas was very concerned about the damage being done to the caves by unregulated visitors and lobbied parliament for the site to be protected and managed. In 1866, thanks largely to the efforts of Lucas, an area of 5,000 acres in the district around the caves was proclaimed a reserve; a development Sheail (2010) identifies one of the 'earliest and most significant' (p. 40) efforts in Australia to set aside 'natural amenities' for the recreation and instruction of public. On Lucas's recommendation, Jeremiah Wilson was appointed the first official 'Keeper of the Caves' in 1867, a position he held until 1896 (Low, 2005, p. 103). As more caves were discovered and visitor numbers grew so did the commercial development both outside and within the caves. In the 1880s accommodation was built for visitors, while inside the caves pathways were constructed, wire protection was introduced to prevent further damage to the already vandalized speleothems, and permanent electric lights were installed in 1887 (Figure 1). In 1886, the Sydney Morning Herald proclaimed, 'The Jenolan Caves contain some of the most remarkable and beautiful objects in Australian wonderland.' (Anon, 1886). By the end of the nineteenth century Jenolan was well established as a major tourist destination in Australia.

The Jenolan Caves, which attract over 230,000 visitors each year (Jenolan Caves, 2012), are an impressive example of the way tourism can sit



Figure 1. Electric lighting from the 1880s still in situ, *Off the Track* tour, Jenolan.

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comfortably alongside exploration, technical innovation, and scientific research in show caves. In 2013, Jenolan Caves achieved Advanced Ecotourism Certification from the not-for-profit organization Ecotourism Australia and promoted their recognition as 'one of Australia's leading and most innovative ecotourism providers, committed to best practice in using resources, conserving the environment and helping local communities' (Jenolan Caves, 2013). Ten caves at Jenolan have been developed and are open for regular guided tours: Lucas Cave; River Cave; Chifley Cave (known as the Left Imperial Cave until 1952); Imperial Cave; Orient Cave; Ribbon Cave; Pool of Cerberus Cave; Jubilee Cave; Temple of Baal Cave; and Nettle Cave. The Lucas Cave tour offers a traditional speleotourism experience in which large groups are guided through a series of passages and chambers; the centerpiece of the tour, the large Cathedral Chamber, is also used for weddings and regular concerts. Each Lucas Cave tour can accommodate up to 65 people, and is the most popular with visitors. At the other end of the spectrum, the Pool of Cerberus tour caters for a maximum of eight people on a tour. Professional guides conduct all Jenolan tours, except the Nettle Cave tour. Nettle Cave, which was closed to the public in 1932, was reopened for self-guided tours in 2006, with the commentary available in eleven languages (one of which is Klingon!). On the whole, however, like other Australian show caves, Jenolan caters mainly to an English-speaking market (albeit one which includes an increasing number of visitors for whom English is a second language).

The two-hour Off the Track tour, which is limited to groups of fifteen, falls somewhere between a show cave tour and adventure caving. Visitors are provided with a helmet and headlamp and taken through former show cave pathways no longer on the regular tour itinerary.

In common with several show caves around the world, Jenolan's tourism operation is supported by an historical society—the Jenolan Caves Historical and Preservation Society—which has its own website and publishes occasional papers and booklets as well as a quarterly newsletter. Research carried out by scientists from the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Australian Museum, and Sydney University, in cooperation with the Jenolan Caves Trust, has shown that the Jenolan caves date back more than 340 million years, making the complex the oldest known open cave system in the world (Osborne, Zwingermann, Pogson, & Colchester, 2006).

The number of visitors allowed on each tour raises the issue of the sustainability of a traditional marketdriven model in show cave management (Doorne, 2000). At Jenolan this is addressed through a balance between what are referred to in speleological circles as 'sacrificial caves', such as the passages and chamber visited by large groups on the Lucas Cave tour, the better protected areas visited by smaller groups on the Pool of



Figure 2. Orient Cave, Jenolan, showing the stainless steel railings.

Cerberus tour, and those cave sections not open to the public. Additionally, old iron rails are being replaced with stainless steel ones (Figure 2), and cave formations are carefully cleaned to remove the accumulation of lint left by visitors.

Buchan Caves

In 1897, a local newspaper, the *Bairnsdale Advertiser* and *Tambo and Omeo Chronicle*, reported that the 'great caves at Buchan, and the scenery in their neighbourhood ... are well worthy alike the attention of the geologist and tourist, the scientist and the mere lover of the beautiful in nature' (quoted. in Clark, 2014, p. 42). Five years later, the same newspaper published an article claiming that the caves had been 'almost completely stripped – denuded of almost the last stalactite' (Clark, 2014, p. 42). As with other Australian cave tourism developments there was an early tension in Buchan between visitors who collected souvenirs from the caves and those who recognised the importance of conservation and the need for careful management of the environment, if the resource was to bring economic benefit to the area in the future.

The Buchan Caves, now part of the Buchan Caves Reserve in Gippsland, are managed by Parks Victoria and are EcoCertified by Ecotourism Australia. Guided tours of two caves, Royal Cave and Fairy Cave, operate on a daily basis attracting over 100,000 visitors per year.



Figure 3. The outside of the excavated entrance to Royal Cave, Buchan.

Both are well lit, with good walkways and world-class decorations including large calcite rimpools in Royal Cave and ornate stalactites, stalagmites, and shawls in Fairy Cave. Additionally, historical tours of Federal Cave, closed to the public in 1970, are now offered several times a year.

After proceeding through a sixty-metre man-made entrance tunnel (Figure 3), the Royal Cave tour takes visitors through five chambers and 500 metres of the three-kilometre long cave. From 1913, when the first visitors were guided through the cave, to 1920 candles illuminated the passages and formations. These were replaced by electric lights, powered by a generator, which operated for the next fifty years until mains power (with wires fed inconspicuously through the handrails) was introduced in 1970.

The Fairy Cave was discovered by Frank Moon in 1907 and opened to the public later that year. Like the Royal Cave tour, the present-day Fairy Cave tour takes visitors along a 500-metre route through five highly decorative chambers. The largest of these, the Kings Chamber (Figure 4), was the site of the wedding of Fairy Moon (the daughter of Frank, who named her after the cave) and Frank Hansford on 14 April 1930.

Many of the formations in this cave are named from Shakespeare's *A Midsummer Night's Dream*, and

Figure 4. Kings Chamber in Fairy Cave, Buchan, the site of Fairy Moon's wedding.

consequently the cave interpretation provided by the guides previously focussed on fairies. For the last fifteen years, however, such non-scientific entertainment has given way to an informative, geology-based explanation of the formations. This cave is now lit by 12-volt LED lights, and is one of the few show caves in Australia to use a specially designed wheelchair to provide disabled access to part of the tour.¹

Tour sizes in both caves are limited by the morphology of the passageways, with Royal Cave able to accommodate tours of up to thirty, and Fairy Cave tours of up to twenty.

Federal Cave was also developed as a show cave, but was closed to tourists when mains power was connected to Royal Cave and Fairy Cave in 1970. Since 1988 the Friends of Buchan Caves group has been re-habilitating the cave, removing most of the old electrical equipment and handrails, installing a wash-water system and solarpowered pathway lights, laying fibreglass pathways, and restoring the calcite formations. It is now open to the public several times a year, usually during school holiday periods, with a maximum of ten people on each

tour, though occasionally, in particularly busy periods, consumer demand outweighs consideration of carrying capacities that would better aid conservation, and groups of up to twenty are allowed through. Visitors are provided with helmets and headlights, lending this historic tour a sense of gentle adventure. Like the more strenuous Off the Track tour at Jenolan Caves, this tour responds to a market for a differentiated approach to show cave tourism that provides a sense of daring without the challenge or risk associated with 'wild' caving.

Newdegate Cave

Newdegate Cave, in Tasmania's Hastings Caves State Reserve, is the largest dolomite tourist cave in Australia. Unlike Jenolan and Buchan, Hastings Caves has not been accredited by Ecotourism Australia. The Tasmanian Parks and Wildlife Service, a government agency, administers Hastings Caves. Cave sites are unusual in this respect as most other nature-based attractions in Australia are operated by the private sector (Weaver and Lawton, 2007).



Figure 5. Code of Conduct for visitors displayed at the entrance to Newdegate Cave.

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Tantanoola Cave in South Australia has been wheelchair accessible since 1983; like Fairy Cave, Jillabenan Cave (Yarrangobilly Caves) in New South Wales has limited wheelchair access using a specially adapted wheelchair.

As Higham (2007) explains, 'The viability of ecotourism operations clearly hinges on two fundamental requirements: (1) A resource base that demonstrates some degree of naturalness and (2) The infrastructure that is fundamental to commercial tourism operations' (p. 8).

These two requirements are evident in the tourism infrastructure at Hasting Caves. After purchasing tickets (which include use of the thermal pool and barbeque facilities) at the Visitor Centre, there is a five kilometre drive followed by a five-minute walk to the cave entrance, where visitors congregate in a wooden shelter prior to the commencement of their tour. Signage in the shelter clearly sets out the ethics visitors must observe while in the cave (Figure 5), which aim to minimise the damage to the fragile subterranean environment.

Show Caves in China

Based on the number of caves open to paying visitors, the Chinese show cave industry is roughly six times the size of Australia's; and if reliable figures of annual visitor numbers were available, the distinction between show cave tourism in the two countries would probably be even greater. The authors' experience conducting show cave field research lends weight to this assumption. On their visits to the three Australian sites discussed above-all during off-peak periods-they never queued to purchase a ticket and were rarely on full tours. In contrast, experiencing show cave tourism in China involved standing in very large, noisy queues of visitors waiting to join tours, endeavouring to stay with the party as different tour groups overlapped, and losing sight of guides who use individual microphone systems to compete with each other for attention in the crowded caverns. Many of China's show caves are in the karst areas of Guizhou, Guangxi, Hunan, Jiangsu, Szehuan, Yunnan, and Zhejiang provinces-though there are tourist caves visited predominantly by locals in many other regions, too. Field research involved visiting four caves: Stone Flower Cave in the Fangshan District near Beijing; and three caves located amidst the stunning karst topography around Guilin in Guangxi province, Reed Flute Cave, Crown Cave, and Silver Cave.

The development of show caves in China has followed the global pattern of guided tour groups being led along concrete pathways through brightly lit caves, with some, like the Reed Flute Cave close to Guilin, offering additional events such as underground dinners. In the majority of show caves in Australia, Europe, and the United States electric lights are operated only intermittently and dimmed to minimize the growth of algae and display the caves in as natural a way as possible (given that there is no natural way to see a deep cave as its natural state is absolute darkness). In China, however, show caves invariably feature bright coloured lights and neon signs.

Stone Flower Cave

The Stone Flower Cave—ninety kilometres from Beijing and twelve kilometres from the Peking Man Cave at Zhoukoudian—is one of the biggest show caves in China, and a remarkable cave by any world measure. Yet, perhaps because of its proximity to the more famous tourist sites of Beijing, including the Forbidden City and the Great Wall, the cave is not promoted to overseas visitors. Getting to the cave involves the would-be speleotourist negotiating either a series of local buses or a combination of the subway and a shuttle bus, or opting for a full-day sightseeing tour, which includes the cave as one of several attractions outside the capital. Even hiring a tourist car (the best option) is likely to involve frequent stops for directions, as the attraction is off the beaten track for international tourists.

Four of the eight mapped levels of the cave system are now open to visitors, who descend 150m beneath the surface and walk 2.5km through sixteen halls during their two-hour underground tour. The well-preserved speleothems include huge stalactites and stalagmites, two stone shields, a stone flag, and a large stone curtain. The whole breathtaking experience is illuminated by a fairyland of coloured lights that lends a surreal atmosphere to the spectacle (Figure 6).

Despite the abundance of coloured lighting, which is frequently used to emphasise non-scientific interpretation



Figure 6. Coloured lights, Stone Flower Cave.



银旗幔卷——由片状流 水和滴水沉积形成

Waving Silvery Flag Cave Flag: Formed by sheetlike flowing water sedimentati onand dripping water sedime ntation, as if a waving silvery flag.

銀旗幔卷——層狀の流水と水 滴が沈積して形成

은기만권(銀旗幔卷)-펀상으 로흐르는물과친정에서떨어지 는물이침직되어형성.

> Figures 7a and 7b. (above) Stone Flag formation and accompanying signage, Stone Flower Cave.

Figure 8. (left) Signage at Stone Flower Cave.

of the formations as flora or fauna, common in Chinese caves, there is a degree of scientific interpretation (in both Chinese and English) to educate visitors as well as entertain them (Figures 7a and 7b). There is also a firm awareness of the need to protect the formations in the cave, which is reinforced by the guide and by regular signage along the tour route (Figure 8).

Reed Flute Cave

Reed Flute Cave is one of the most popular tourist destinations around Guilin, and the tour is included on almost all local tour itineraries. The principal formations are stalactities, stalagmites, and pillars in a series of huge chambers, all brightly and colourfully lit. As is frequently the case in China, there is only limited English-language signage at Reed Flute Cave, and little attempt is made to cater for foreign tourists, perhaps because this cave, like others in the area, attracts so many domestic tourists. Tours are conducted only in Chinese, though foreign tourists can arrange a private tour with an English-speaking guide, and package tour groups are accompanied by their own guides. The one-hour tour takes visitors on a simple U-shaped route of about 250m. Tour groups are very large in number, and times are not



staggered, meaning that groups often overlap, and visitors are able to wander off by themselves or switch from one group to another. Sofield and Li (2007) note that 'the Chinese worldview privileges literary and cultural heritage before the sciences' (p. 378). This perhaps explains the emphasis of the commentary at Reed Flute Cave on human interpretation of the speleothems-their resemblance to silhouettes of animals (particularly lions), or plants, or vegetables-rather than on the geology of the formations. The Aboriginal poet Oodgeroo Noonuccal (Kath Walker) references this non-scientific interpretation in her poem 'Reed Flute Cave'-inspired by her visit in 1984-when she writes 'Mushrooms and every type of fruit, / Vegetable, animal and fish / Are on display' (Walker, 1988, p. 53). The formations-with names such as Crystal Palace, Dragon Pagoda, Flower and Fruit Mountain, Snowman-are colourfully lit to the point of detracting from their natural beauty. The cave walls carry inscriptions dating back to the Tang dynasty. The guides are well rehearsed, and frequently have their groups laughing out loud. They also entertain their flock with folk songs from the local Dong minority tribe, and there are numerous commercial photo opportunities during the course of the tour. Surprising to the western tourist, little or no attempt is made by the guides to discourage visitors from touching the formations within their reach, and consequently there is visible evidence of the considerable damage that has been done (and continues to be done) to the cave by visitors.

Crown Cave

Crown Cave, which opened to tourists in 1995, is located in Caoping village, 29km south of Guilin. Taking its name from the crown-like crag that rises above the cave, it is a popular stop for tourists on Li River cruises or bus excursions from Guilin. Large tour groups travel in different directions from a series of starting points. There appears to be no staggering of groups and there is considerable focus during the onehour tour on commercial photo opportunities and stalls selling everything from jewellery made from the cave formations to chilli products (Figure 9).

The anthropocentric Chinese worldview (Sofield and Li, 2007) encourages cave tourism operators to alter the natural environment to facilitate the 'improvements' expected by their visitors. This is particularly evident in Crown Cave, which, apart from the usual concreted paths and bright coloured lights, proudly claims to have been listed in the *Guinness Book of World Records* as the cave with the most ways of travelling. Apart from walking, the visitor can journey through the cave aboard a sightseeing slide, a boat, a train (Figure 10), and a glass-fronted 'sightseeing elevator' which carries tourists up or down the side of the largest chamber on the tour: or as the China Odyssey Tours website grandly puts it, 'a combination of sea tour, land tour and air tour' in a single cave (China Odyssey Tours, n.d.).

This is a cave that largely serves the domestic tourism market. When one of the authors visited the cave he did not see another non-Asian visitor among the more than 1000 people he counted in his and several other large groups encountered during the three-kilometre route. This is in contrast to Reed Flute Cave which is popular with foreign tourists, probably because it is only seven kilometres from the centre of Guilin and thus easy to access.

Silver Cave

Visitors to Silver Cave in Lipu County, 85km south of Guilin, follow a two-kilometre trail that encompasses two levels of the extensive cave system. The hour-long tour is divided into three sections: the lower cave; the grand hall; and the upper cave. The groups at this cave are smaller and more organised than at Crown Cave, and on the tour taken by one of the authors, the guide clearly had the attention of the whole group throughout. The



Figure 9. Souvenir stall inside Crown Cave.



Figure 10. Train 'station' inside Crown Cave.

formations in this cave are very impressive; however, the focus is again on what they resemble rather than on the geology of the cave.

The coloured lighting which is predominantly used to enhance non-scientific interpretations of the formations, such as their resemblance to vegetables (Figure 11) does not facilitate education or help promote the type of visitor behaviour that will preserve the cave resources in the long term.

Conclusion

Australian show caves have two main things in common with their counterparts in other parts of the world including Britain, Europe, the United States, and New Zealand: first, environmental and conservation concerns influence the nature of the speleotourist experience, and how the caves are managed; second, the interpretation offered will be geologically based. In show caves in all these areas pathways are designed to allow visitors to see the cave features, while rails or occasionally caging limit the potential damage to formations. Interpretation in these caves, whether in the form of signage, or the commentary of the tour guide, is intended to inform visitors about the geology and history of the site. It is primarily educational, with an emphasis on historical popular science. Lighting is invariably white, and low-level. In our experience,



Figure 11. Coloured lighting, Silver Cave, highlighting non-scientific interpretation.

once underground the show cave tourist loses a certain sense of place when infrastructure and tours are based on shared cultural norms, which is increasingly the case across Australasia, Europe, and North America: a show cave is a show cave whether the visitor is in Australia or America, Britain or Slovenia.

Mass cave tourism in Australia, particularly as it was practised in the nineteenth century, has caused significant and irreversible damage to the very features that visitors now wish to see. However, sites such as the Jenolan Caves complex have put in place measures to conserve the remaining natural cave resources. Specifically, significant efforts have been made in recent years to reduce the pollution caused by visitors—including lint from clothing, skin flakes, hair, mud brought in on shoes, and increased levels of condensation and carbon dioxide gas—and to reduce the negative effects caused by the installation of visitor facilities such as concrete pathways and steel rails (Russell and MacLean, 2008).

Tour guides also routinely include snippets of environmental awareness education with the standard geological or biological commentary. Thus cave tourism in Australia operates increasingly within the broad definitions of ecotourism and geotourism, a trend which is bound to continue as more cave sites become involved in Ecotourism Australia's Geotourism Forum, launched in 2013 at the Global Eco Asia Pacific conference. The

Geotourism Forum brings together Ecotourism members with the stated purpose of 'working to "add value" to Australia's nature-based tourism offering' (Ecotourism Australia, n.d.). It remains to be seen how effective the forum will be in exploring 'how best geotourism can be promoted' and furthering 'Ecotourism Australia's interest in inspiring environmentally sustainable and culturally responsible tourism'. More pertinently for the topic of this article, the Forum's statement of member benefits begins with the opportunity to join 'a networked grouping dedicated to the development and advocacy of emerging links overseas, particularly China'. According to Ecotourism Australia's 'Blueprint for a Sustainable Future' 'Geotourism is a well established form globally, and particularly in China' (Ecotourism Australia, n.d.).

As long ago as 1985, Chinese geologists proposed 'the establishment of geoparks in geologically significant territories in order to enhance their conservation and improve geoscientific research' and China was one of the first countries to actively support the UNESCO Geopark programme (Dowling and Newsome, 2006, pp. 141-142). Nevertheless, in China, the enormous popularity of show cave tourism (measured by visitor numbers and the number of caves that are open to the public) is not vet matched by a universal awareness of the need for environmental protection, or a limit to visitor numbers based on the assumption that overcrowding reduces the quality of the visitor experience (Doorne, 2000; Hamilton-Smith, 1994). In part this may be because, as Doorne (2000) has shown, cave visitors from north Asia have a higher tolerance of crowding compared to Australian visitors. Further, the space in caves is finite and therefore it is reasonable to conclude that the risk of damage to the caves is likely to increase with the size of the group. While there is awareness of the value of the natural cave resources and the need to protect the delicate environment in Stone Flower Cave, in the majority of Chinese show caves visited during our research little or no real effort had been made to protect the formations, and unless there is a significant shift in attitudes and practices damage to the caves will continue. Apart from the accumulations of lint and lampenflora, there is also an accumulation of litter in Chinese caves; these all contribute directly to the deterioration of the environment on which the industry ultimately depends.

Show cave tourism in China, then, currently operates outside the definitions of geotourism and ecotourism despite evidence that there has been some growing adoption of the concept of practice of geotourism in China for some decades—focussing instead on socioeconomic benefits for the region through exploitation of geo-resources. If China is going to become a world-class cave tourism destination that attracts foreign tourists and creates wealth for the region it will need to address the conflict between mass tourism on the one hand and nature-focussed on the other, which has already altered the ways caves are developed and managed for tourism in Australia.

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