

Gaining young children's perspectives on natural history collections



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Abstract

Young children are an important audience for natural history museums, and there is a general belief amongst the public and museum staff alike that these museums are particularly suitable for younger visitors. However, direct research with children under the age of six years is challenging and therefore scant, and without a proper understanding of our audiences, we risk producing exhibitions that are uninteresting, irrelevant or even off-putting. Over the course of 2011, I carried out research at the Oxford University Museum of Natural History, developing a method that uses children's digital photography as a focus for interviews with participants aged four and five years old, on everyday family visits. This has proven to be an extremely effective way of accessing the viewpoints of young children, and has demonstrated that certain aspects of their museum experience are often unknown to accompanying adults. The research project has the joint aims of developing an audience research methodology, and revealing the viewpoints of this important but under-researched audience. This paper will begin with a brief description of the method, before a summary of some of the elements of the museum, collections and displays that have proven to be particularly attractive to the children and suggestions of what significance this could have for museums.

Keywords: Education; Evaluation; Digital Photography; Children.

Introduction

There seems to be a general consensus, amongst museum staff, parents and teachers, that natural history museums are ideal for young children. For example, photographer Richard Ross states that:

Probably the first experience we all have as urban culture-seekers is the natural history museum. It is a must for kids. It's much more palatable than the art museum... The natural history museums are the starting point for many of us.

(Ross, 2010)

However, in spite of their importance as an audience, the voices of young children are largely absent from visitor research (Piscitelli & Anderson, 2001; Dunn, 2012). My own PhD research seeks to redress the balance by finding ways to gain the perspectives of young children, thus helping to reveal what it is actually like for them to visit a natural

history museum. I base this on the perspective that young children are experts when it comes to their own lives, and that, as visitors of today as well as (trainee) visitors of tomorrow, their views are worth listening to (Dockett, *et al.* 2011).

There are a number of reasons why young children are difficult to research within museums. One of these is that they are not yet able to read or write. Probably more significantly, research suggests that young children find it hard to recall specific events in unfamiliar contexts (Farrar & Goodman, 1990) or when questions are complex or abstract (Hatch, 1990). Thus, being questioned in the unfamiliar setting of the museum, using the unfamiliar method of being interviewed by a stranger, about abstract changes in feelings or knowledge, may be expected to pose significant challenges to younger museum research participants.



Fig. 1. Boy photographing a badger. (Copyright E.S. Kirk)

A number of researchers have begun to try to find ways of researching children in museums (Kelly, *et al.* 2006; Graham, 2009; Dunn, 2012). Unsurprisingly, various methods exist in the world of education – my own methods draw on the Reggio Emilia approach (Rinaldi, 2005) and the Mosaic approach (Clark & Moss, 2011), but it must be remembered that the research method needs to suit the *setting* as well as the *audience*. Some educational research methods simply will not work in museums, for example when they depend on a child using the same space on a daily basis. As well as ensuring that the method suits the audience *and* the setting, more importantly it needs to suit the audience *in* the setting. In other words, it is not just a matter of logistics, but of expectations, mood, context-based social behaviour and so on. After trialing a number of methods, I found that digital photography worked particularly well for young children within museums, for reasons I will elaborate on below (Fig. 1).

My research was carried out in the Oxford University Museum of Natural History, with four- and five-year-old children, visiting with their families. I recruited families as they entered the museum, and asked the child to borrow my digital camera during their visit and to take photographs of the things they liked or found interesting. I asked them to come and find me 15 minutes before they intended to leave so that we could look together at the photographs on my laptop and talk about what they had photographed. My data therefore consists of the photographs that the children took, plus the recorded interviews with the children about their pictures. In total, I worked with 32 children, both girls and boys, who took between them just under 1,600 photographs.

In the rest of this paper I will present a snapshot of some of the research findings that I think will be of most interest to natural history museum curators and educators. I will then go on to suggest some of the implications of these findings.



Fig. 2. Small things: Anna's photograph of eggs, which we discussed during her interview. (Copyright E.S. Kirk)

Advantages of photography-based research

Often, when we carry out research or evaluations with everyday visitors who are not part of a bigger project, we might expect to find that what visitors remember are the more 'charismatic' objects in the museum – the large or superstar artifacts that the museum has chosen to highlight. When visitors use a camera, they take pictures all the way around the museum, and photograph whatever catches their attention at any one time. This gives a chance for the smaller objects to be featured in the research. These objects may not be as memorable by the end of the visit, but they have still caught the visitor's attention, they have still been significant to the visitor in some small way, and they still form part of the tapestry of the visitor's museum experience.

During my own research, the children took an average of 50 photographs each, ranging from a minimum of seven, to a maximum of over 200. Where children took more than 10 photographs, it wasn't possible to talk about every picture, so I asked the child to choose which ones they wanted to talk to me about (on average, the children talked about 8 photographs each). Many of the pictures they chose to talk about *were* of the more charismatic objects, such as the tyrannosauruses, crocodiles, or the taxidermy mammals that visitors are allowed to touch. But many other photographs, including those that were discussed in the interviews, were of less obviously memorable objects, such as small skulls, ammonites, eggs, beetles and pine cones (Fig. 2). The fact that some of this latter group of objects also makes it into the interviews suggests that photography is a useful aide memoire for understanding the meaning that visitors attach to objects of all types and sizes. We can also see the photographs themselves as an alternative, visual language that we can use to understand the children's perspectives, even where the pictures aren't actually discussed. My ongoing analysis of the data will reveal further patterns in children's choices of photographic subject matter.

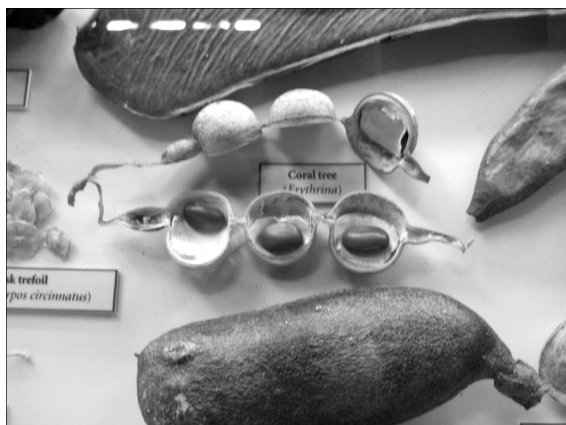


Fig. 3. Jack's photograph of a seed pod, taken without his dad's knowledge. (Copyright E.S. Kirk)

The social context

Although I did not observe the children during their visits, the photographs and interviews together also reveal some of the social aspects of the visits. In addition, I have carried out 90 observations of other family visitors in the museum. The combined data suggest that, while the children and adults do walk around the museum and talk about what they see together, this is not the whole picture. The young visitors were also very much their own people, exploring on their own, looking at things their parents hadn't seen, and understanding things from their own perspectives. For example, five-year-old Jack visited the museum with his dad. They stuck closely together and Jack's dad was important during the interview in filling in some of the gaps in the story of the visit, which Jack himself didn't think to tell me. However, one of the pictures that Jack wanted to show me was of a tiny pod, containing red beans (Fig. 3). Jack's dad was very surprised by the picture, telling me he had no idea what it was or where Jack had seen it. He seemed shocked that an element of Jack's visit was unknown to him, and that here was a photograph that he couldn't help to explain to me.

In other cases, children visited in large family groups, so that parents' attention was often with other members of the group, and the child – even if they were within sight of the adults – was essentially experiencing much of the museum on their own. For a number of groups it was also clear that siblings rather than parents had helped the young child to explore the museum. All of this calls into question research in which parents or teachers are asked to speak on behalf of their children, and shows the importance of finding ways to ask children directly about their museum visit.

Handling collections versus glass cases

Oxford University Museum of Natural History is a very traditional museum, with most of the collection in wood-framed glass display cases, interspersed with free-standing mammal skeletons, dinosaur

skeleton casts and dinosaur models. What sets this museum apart is the large number of objects (taxidermy, skeletons, fossils and other geological specimens) available for visitors to touch, both at designated handling tables and at various points around the museum.

In my discussions with museum professionals I have often encountered the view that young children will be more engaged with a museum if they can interact physically with objects, rather than simply looking at them behind glass. Black (2005: 68) states that museums should treat young children 'not as passive observers but as participants, with opportunities for active engagement; direct and immediate experiencing of objects, people and events'. My research confirms that the handling objects were certainly very attractive to the children – they account for about 16% of the photographs taken, and just over 20% of the photographs they chose to discuss in interviews. (I do not have data on the percentage of the displayed collections that are available for handling, but it must surely be less than 1%.) However, this means that 84% of the photographs taken, and 80% of those discussed, were of things that weren't part of the handling collection (although these do also include photographs of family members and the building). In fact, 68% of the photographs were of objects behind glass, and these also accounted for over half of the photographs that children wanted to talk to me about in the interviews. It certainly seems that simply putting an object behind glass is not necessarily as off-putting to young children as might be assumed. And while the presence of the handling collections may help to make the museum experience more stimulating, in this museum at least, this does not seem to be at the expense of the collections that are displayed in cases.

In addition to children's attraction to handling collections, it was interesting to discover that even where children photographed handling objects, they did not necessarily touch them. A number of parents suggested to me that this may at least in part have been because of the camera, which may have either provided them with an alternative activity to handling, or which may simply have acted as a barrier, as it was hung around their necks. However, many of the children did touch things, so it was obviously not an insurmountable barrier, and my subsequent observations suggest children without cameras sometimes choose not to touch objects at the handling tables, even when they do take time to look at them. It may be that there is something else about the handling collections that is attractive to the children. For example, all objects available to be touched are also at a particularly suitable height and location to be looked at very closely, which the children seemed to favour. It may also be that the types of objects displayed for handling are particularly attractive for young children, for example familiar animals like the taxidermy fox, pony, cheetah and owl, and the sparkly pyrite and huge ammonite. On this point my research can

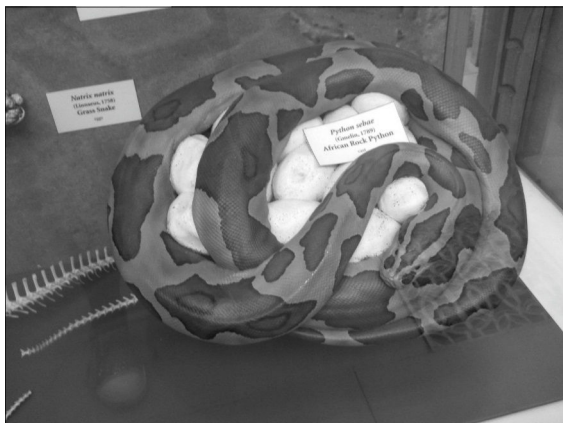


Fig. 4. Marie's photograph of a snake, which she discussed in terms of its patterning. (Copyright E.S. Kirk)

only reveal the patterns, about which I can speculate. But this does suggest interesting areas to be followed up by future research.

Observation skills

Museum education literature often talks about how visitors make meaning of objects depending on their prior knowledge (e.g. Falk & Dierking, 2000). This is certainly the case for the young children in this study who, for example, talked about what they knew of dinosaurs and extant animals. However, it was also clear that very often, children's knowledge of an animal was limited to its name and a general type, and sometimes not even that. This lack of knowledge did not stop children from noticing details, or from wanting to find out more. In fact, it was clear that the children were very observant, and frequently described to me the form, colour, pattern and texture of familiar and unfamiliar objects and animals.

One area in which children's observation skills were apparent was in the discussion of colour. They discussed the colours of not only bright or sparkly objects, as might be expected, but also objects with duller colours, particularly if the specimens in question were also patterned. For example Marie (5), said of a model snake that she liked its colours because 'brown and green go quite nicely together' (Fig. 4). This is consistent with Dunn's finding (2012) that children in a history museum talked about both bright and subtle colours. Children also used colour and pattern to draw comparisons between specimens. For example, Josh remembered the colours of a dinosaur from the BBC television show *Walking with Dinosaurs*, and noticed that a similar dinosaur in the museum 'didn't have any spots on it ... but it did have the blue edges around the eye ... it did have the stripes on the arms'.

In the above cases, children were already familiar with the animals in question. However, they also talked about form and colour in cases where they did not understand what the specimens were, or

the reasons for these specimens looking the way that they did. A significant number of photographs were taken of ammonites, which were described in terms of their 'swirly' shape, although most children could not identify them. The children also very naturally attempted to put their observations into context. Seeing colour and pattern as significant aspects of the specimens, some children attempted to draw further inferences from these features. For example, Eloise (5) told me that she thought that the red colour of the salmon was blood (a conclusion that her older sister was keen to refute). It appears that colour and form are seen as important aspects of the objects, which children are using to categorise and make sense of the familiar and unfamiliar things that they encounter in the museum.

Phobias and fears

I have found it particularly interesting that the museum seems to be a space in which some children encounter things that are actually or potentially scary. In one case, four-year-old Greg was very keen to show me his photograph of rocks glowing under UV light, which he saw in a dark booth. His mother explained that, although they had been to the museum many times before, this was the first time that he had been into this booth, as he had previously been 'unhappy' about the dark. Greg agreed that this time he had been brave enough to go in, and, unsurprisingly, given the intensity of emotions associated with overcoming a phobia, this seemed to make the experience particularly meaningful, and he spent a significant amount of time discussing this picture. It also transpired that, for Greg and for Harvey (5), parental phobias added to the excitement of certain exhibits. In both of these cases the mother's arachnophobia provided a particular attraction to the live tarantula. It seemed that the museum was a safe space in which children could encounter their own and their parents' fears.

However, much more common than actual phobias was an excited, play-acting sort of fearful response to the various large predators that the children encountered in the museum. I discovered that the children referred particularly frequently to the teeth of animals such as predatory prehistoric reptiles and crocodiles. During the interviews, these sorts of teeth were talked about by 18 of the 32 participating children. Words and phrases used include 'sharp', 'spiky', 'big', 'zig zag', 'scary', and 'lots and lots of teeth'. They also talked about their semi-fearful encounters with the model *Tyrannosaurus* head, which not all of them had been brave enough to touch. Josh (5) told me, "I stuck my head in its mouth ... I thought it would bite my head off!", and, when I asked if that was scary, he enthusiastically agreed that it was.

The two points of significance that I want to raise here are the types of teeth that elicit these responses, and also the nature of the responses. Firstly, from looking at the photographs that elicit children to say the words 'teeth' or 'tooth', it becomes apparent that in every case these are



Fig. 5. Amar's photograph of the model *Tyrannosaurus* teeth. (Copyright E.S. Kirk)

spiked, predatory teeth (Fig. 5). They were almost all large, and they were all either in skulls or in model or taxidermy animals which didn't have fur, and in which the teeth were clearly visible, and many of them were in animals that would be big enough to eat the child, were the animal alive. When I analysed the photographs, including those which hadn't been talked about, I found that 8% of the photographs included teeth of this kind. To put this into more real terms, this means each child took, on average, 4 photographs of predatory teeth. And only three of the 32 children didn't take any photographs of this type of teeth.

The second point of interest is the type of response that the children were displaying. They clearly knew that the owners of these teeth were 'scary' – they often used this word to describe these animals. Yet their responses were not phobic in the same way that we saw with Greg's fear of the dark or the adults' arachnophobia. They made no particular attempt to avoid the animals, and did not seem to be upset by them. Instead, the children seemed to combine fascination, fear and excitement, which often led to them laughing, bouncing in their seat, bearing their own teeth, or making the shape of snapping jaws with their hands as they told me about the scary animals they had seen.

Edward O. Wilson has written about what he calls 'biophilia': the love that humans have for various elements of nature, including landscapes and animals. This, he argues, stems from our evolutionary history within certain environments, and selection pressures from the need to find food and shelter (Wilson, 1984). He also talks about biophilia's flip-side: 'biophobia', which is the natural aversion that people tend to have to things that were threatening to our ancestors – particularly dangerous animals. In the museum, I suggest that the children's behaviour can be seen as 'biophobophilia', in other words, an enjoyment of, or fascination with, certain fearful aspects of nature. Evolutionary psychologist H.C. Barratt has suggested that we would expect

to see young children being both fearful of and interested in predators, as this would help to ensure that they would stay safe, whilst also learning about potentially dangerous animals (Barrett, 2005). He also suggests that this behaviour may be in response to a 'minimal set of prespecified cues to dangerousness (e.g. size, sharp teeth)' (Barrett, 2005: 217). It is interesting to see a similar pattern of behaviour being played out in the museum, although of course the relationship between such an 'instinctive' response and the cultural context in this case is not clear.

What does seem to be the case is that the museum provides a safe space in which children can encounter animals and objects which are scary and fascinating to them, that it stimulates their powers of observation, and that this is done both within a social context and on a very individual level.

Significance for museum research

Although at the time of writing this research is still in the process of being completed, it already has a number of implications for museums and museum research. Firstly, it confirms that it is both possible and worthwhile to find ways of listening to the young children who visit museums. It also shows that, at least for this age group, digital cameras are a useful research tool; providing a visual voice to those who find it harder to express themselves verbally; helping the participants to record and remember their visit; and focusing the research on both charismatic and less charismatic objects. The fact that cameras are used by all ages of visitors suggests that this methodology may be worth testing with other age groups.

In addition, it should not be immediately assumed that the research findings are only relevant to four- and five-year-old children. Future research could explore whether these patterns are also found in other visitors and also other museums. It may be that listening to young children helps raise our awareness to aspects of the experiences of older visitors. David Unwin, of the University of Leicester, suggested to me in conversation that pre-literate children are, in a way, 'ideal audiences' to help understand responses to exhibition design, as they are neither as self-conscious as older visitors about giving the 'correct' response to the researcher, nor is their response to the exhibition design affected by reading text panels. It would be fascinating to know if the impacts of colour, form, touch, ferociousness and so on were similar in adults to the patterns seen in these children.

Significance for museums

There are also some suggestions of the implications of this research for museum practice, both for working with young children and for visitors of other ages. Firstly, the children's interest in handling collections and small objects suggests that they appreciated being able to get close to things, and to look at things that are relatively low down. Museums need to remember that children are an important

audience, but that, in practical terms, small children have a very different viewpoint from adults. So we need to be wary of restricting children's view in displays, either by using high table-top cases or by blocking the view with signage in the lower parts of cases.

Secondly, by taking the child's perspective, this research is also helping to reveal the types of objects that children are drawn to, and the ways in which they talk and think about and interact with these objects. A deeper understanding of children's preferences, the aspects of objects that they focus on and use to make sense of them, and their physical and social patterns of behaviour in museums, can help museum professionals to make displays more engaging for a wider range of audiences. While this paper only hints at some of these patterns, for example children's fascination with predatory teeth, the research project as a whole will add to a growing literature in this area (for example Piscitelli & Anderson, 2001; Anderson, *et al.*, 2002; Kelly, *et al.*, 2006; Dunn, 2012).

Thirdly, we should keep in mind the potential impact of photography for visitors' own meaning-making in the museum. This research suggests that photography may help visitors both to focus on elements of the exhibitions as well as providing a way of remembering and discussing the visit at a later date. The issue of the impact of photography in museums was discussed in a recent edition of the *Museums Journal* (Atkinson, 2012), suggesting that this is a timely subject for research, for example into the possible pedagogical or personal meaning-making benefits of photography.

For me, one of the most significant implications of this work is an imaginative one: it very quickly became apparent that every child I interviewed experienced the museum in a totally individual way. While, of course, there were patterns and trends in the data, the children remained steadfastly different from one another. Each experience was not only individual because of the personality differences of the children, but also because of who they happened to be visiting with on that day, what they had recently watched on TV or done at school or during the holidays, and so on. For me, this showed that, while we can go some way towards understanding our visitors, almost all of what is experienced in the museum is, and will remain, invisible to us (Kirk & Buckingham, 2013). And most importantly, that is ok. We should be proud of being places where people are emotionally and intellectually stimulated in ways that we can never know. This personal significance is clearly something that is valuable to our visitors of all ages, and therefore we must, ourselves, remember to value it too.

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