Introduction

Effectively promoting pro-environmental behavior in zoo visitors and the wider community should be of utmost priority when formulating the educational strategy of a Zoo (WAZA 2005, EAZA 2008). As is laid out in Kollmuss and Agyeman (2002), many conflicting and competing factors may influence people’s decisions toward pro-environmental behavior and not one model can incorporate all the factors but when different factors act synergistically there can be the biggest positive influence. Of several factors identified we are presenting results from studies measuring knowledge gain and improving attitudes in our zoo-visitors following interactive interpretive experiences at our Park.

Visitor Learning Agenda & Knowledge Gain

Attica Zoological Park (AZP) provides a multitude of interpretive tools for our ~450,000 visitors annually including information panels, hands-on interactive sessions, guided tours and keeper presentations. Our studies show a slightly skewed gender ratio with more female visitors (F:M = ~1.5) with 31-45 year olds being the most represented age group (i.e., 74% of visitors surveyed excluding school groups). Typically 7 of 10 visitors surveyed were repeat visitors. Recent studies that AZP participated in, as well as our own unpublished data, demonstrate that over 70% of visitors come with a learning agenda, even if it is only to learn the name of the species, and that the high majority believe that the utmost priority of zoos is to be a place where people can come to learn about animals and their conservation (Roe et al., 2014; Roe & McConney, 2015). Non-AZP-visitors also hold these beliefs (unpublished data). It is thus essential to provide sufficient and interactive interpretive experiences (see photos) which are known to have a strong influence on visitor learning (Rajecki 1982 and references therein, Vischer et al., 2009, Weiler & Smith 2009, Pearson et al., 2014). Indeed, an AZP visitor study of knowledge gain (e.g., geographic distribution, morphology, diet and conservation) regarding the Pygmy Hippopotamus (*Choeropsis liberiensis*) showed a significant increase in the percentage of correctly answered questions (or knowledge gain) when visitors participated in the keeper presentation rather than just reading, in part or whole, the panel (Spyres et al., 2014).
Changing Visitor Attitudes with Interactive Experiences

With interactive experiences in mind, we chose to explore how the free-flight Birds of Prey presentation (BoPP) at the AZP (photos above) may impact visitor attitudes. The BoPP lasts ~20 minutes with up to 200 visitors seated in an amphitheater while avian trainers and educators fly owls, hawks, vultures and eagles and provide information on morphology, behavior and conservation. Assuming that a component of attitudes refers to the beliefs, thoughts and attributes that we would associate with something in particular (Breckler, 1984), we requested of visitors to spontaneously provide three words when thinking of birds of prey. Word clouds were created to explore attitudes in those that had never participated in the BoPP (before, figure top) and those that had (after, figure below). The most commonly quoted word in visitors before was “Talons” whereas after it was “Beautiful”. Words were then categorized into neutral (e.g., relating to biology), negative (e.g., emotional responses such as terror) and positive (e.g., emotional responses such as awe) and percentages of the total were calculated.

Table 1 shows the difference between those categories in before and after. Visitors that had never participated in the BoPP, showed that though naturally in awe of this group of birds, they were largely focused on their special adaptations (e.g., talons, beak, feathers) while less than 1% referred to conservation issues. Only a small percentage reacted emotionally and both negative (e.g., terror) and positive (e.g., beauty) responses were equally presented. However, following the BoPP, the percentage of positive attitudes increased by three-fold while neutral and adaptation-focused responses decreased. However, the percentage of negative attitudes was largely maintained and reference to conservation issues continued to be minimal.
Changes to our story-telling approach were adopted to increase the conservation impact of our message, especially for vultures, incorporating more elements of drama to visually demonstrate the threats, and a re-evaluation study is being carried out.

It is of interest to note that preliminary data from a similar survey conducted at the Dolphins presentation at the AZP did not demonstrate a significant change in visitor attitudes, most likely due to the fact that dolphins are already a well-loved group of animals. These different findings accentuate the fact that results from one interactive experience cannot be extrapolated to another and there is a need for measuring specific impacts following each interactive experience offered. This should assist in designing more a more effective educational strategy tailored to the zoo visitors.

Conclusions
The above aims to demonstrate the importance of:

a). Providing interactive experiences as tools for zoo visitors to fulfill their learning agendas and educational expectations and to help them improve their attitudes toward wildlife and conservation, b). Measuring in a robust scientific way the impacts of each specific interactive experience provided to determine what works and what needs changing to achieve the above in order to enable pro-environmental behavior.

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References


Table 1. Comparing words before and after