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Applying visitor preference criteria to choose pro-wildlife behaviors to ask of zoo visitors

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Abstract

Many zoos now emphasize that their roles in conservation extend beyond breeding and species management to capitalizing on their potential to influence the behavior of their visitors for the benefit of wild animals. However, there is limited evidence of behavioral change to support this emphasis and one reason may be that requested behaviors are not viewed favorably by zoo visitors. The purpose of the present study was to involve zoo staff in a process of identifying and prioritizing pro-wildlife behaviors using a set of criteria that included what zoo visitors prefer. This approach engaged staff and capitalized on their expertise, and at the same time maximized the chances that planned campaigns to influence visitor behavior would be well received by visitors and even enhance their experience while at the zoo. This was achieved by replicating Smith's (2009) study but including visitor-preferred attributes identified in Smith, Curtis and van Dijk (2010). Across several zoos in Australia, 152 staff participated in seven Nominal Group Technique workshops. Initially over 500 behaviors were identified which were prioritized firstly by filtering behavior lists and then by participants voting on behaviors. When voting, participants tended to choose behaviors promoting wildlife-friendly consumerism and donations. The paper discusses the efficacy of this approach in moving the zoo industry toward recognizing and realizing the potential of collective visitor action.

Introduction

While some zoos have long engaged in conservation activities, ratifying conservation as the key function of zoos is a relatively recent event. Partially in response to criticism about the ethics of keeping animals in captivity (Jamieson 1985; 1995, Malamud, 1998), over the past 20 years zoos moved to define themselves primarily as conservation organizations. Manifestation of this shift can be found in the Conservation Strategies of International Union of Directors of Zoological Gardens in 1993 and World Association of Zoos and Aquariums in 2005 which emphasize conservation as core business. Indeed, conservation is now referred to explicitly in many vision and mission statements (Patrick, Matthews, Ayers and Tunnicliffe 2007). As part of this shift, zoos have become focused on influencing visitor behavior to aid the wild counterparts of captive animals (Conway 2003, Povey and Spaulding 2005; Rabb 1994; Smith 2009; Smith, Broad, and Weiler 2008; WAZA 2005).

Although this is a relatively new emphasis in the overall history of zoos, zoo visitors appear to support this focus, with studies showing that zoo visitors often have positive attitudes

toward pro-wildlife behaviors (Adelman, Falk, and James 2000; Smith 2009; Smith, Broad, and Weiler 2008) and, where suitable opportunities are present, they are willing to undertake them (Swanagan 2000; Stoinski, Allen, Bloomsmith, Forthman and Maple 2002). Indeed, visitors may enjoy being given the opportunity to participate in a solution (Smith, van Dijk, and Curtis 2010). While these factors seem to align, zoos have yet to fully capitalize on their potential to harness the collective action of visitors (Fraser and Wharton 2007).

A key way in which zoos differ from many other organizations seeking to influence behavior is that they have greater choice in the behaviors they target in comparison to, for example, organizations responsible for water or energy conservation. While this seems advantageous, choosing behaviors to target may be difficult, considering the number of species zoos hold, the number of human-induced threats to each of those species and the number of specific human behaviors that could be undertaken to reduce those threats. For example, under a behavioral category of responsible pet ownership, visitors could be asked to put a bell on their cats, keep their pets indoors at night, de-sex their pets, keep pets well-fed or to keep pets on leads when walking them. All of these behaviors can benefit wildlife. Extrapolating to other behavioral categories such as donating, volunteering, lobbying, eco-purchasing etc reveals a large list of pro-wildlife behaviors that could be asked of visitors, all of which will differ in their salience, impact, size of target audience and how hard or easy they will be to influence. As a result, it is important that the process for selecting behaviors that visitors are asked to undertake prioritizes behaviors that are not only highly effective at addressing a wildlife issues if undertaken en masse, but are also well-received by visitors. Choosing behaviors that are unlikely to be taken up by visitors or unlikely to benefit wildlife would seem unwise and a waste of zoo staff time and other resources.

The focus of this paper is to outline and report on a process by which zoo staff were engaged to identify and prioritize pro-wildlife behaviors that can be targeted by zoos. This paper builds on two previous studies attempting to aid zoos in the process of selecting behaviors that will be received well by zoo visitors. The first paper (Smith, 2009) was a two-pronged critique of the zoo industry in relation to influencing visitors' behavior in Australia. First, there was a critique of the zoo industry because the staff and volunteer participants were unaccustomed to thinking in terms of behavior as an outcome, in contrast with more than 20 years of zoo rhetoric about zoos and pro-wildlife behavioral outcomes. Indeed, as Smith (2009) points out, when running the initial behavior identification and prioritization workshops, a significant amount of time was focused on moving zoo staff to a better understanding and appreciation of the potential of zoos to yield conservation outcomes through the collective action of zoo visitors. The second critique in Smith (2009) related to the behaviors identified, which were predominantly well-established behaviors such as donating, volunteering and recycling, meaning they were unlikely to engage visitors. In addition, other behaviors were also prioritized that did not directly lead to benefits for wildlife, such as 'talking to others' and 'spreading the message'. As Smith (2009) further points out, zoos have the opportunity to harness their visitors to achieve much more significant conservation outcomes.

The second paper (Smith, Curtis, and van Dijk 2010) sought feedback from zoo visitors on what they perceived to be desirable attributes of behaviors asked of them. In this study, zoo visitors were initially asked via a visitor survey about the sort of behaviors the zoo should or could ask and then probed further as to why their chosen behaviors were desirable. This study sought to elicit whether certain types of behaviors, when asked in the context of a visit to the zoo, would be more or less favorably received. Four strong themes emerged from visitors' responses. These were that behaviors should:

1 Be **new or novel (N)** or, if they are not, be based on new learning or understanding. As other research has shown, all other things being equal, it is easier to persuade individuals to undertake previously-unknown behaviors than those about which they are already aware (Hendee and Dawson 2002).

2 Be **easy (E)** to do, in terms of the time required and the mental and physical effort involved.

3 Be high in **response efficacy (R)**, or have the efficacy explained. That is, how does doing this behavior help this animal or its species?

4 Have an **on-site (O)** behavior either as the target behavior or to help facilitate an off-site behavior (e.g. take home a mobile phone recycling satchel).

Moreover, Smith, Curtis and van Dijk (2010) found that appeals for visitor donations were polarizing in the minds of visitors. Although the study did not seek visitor input on donation requests, many respondents voluntarily chose to voice their opinions about donations. Broadly speaking, these opinions were grouped into three categories: 1) the zoo should not ask for donations, 2) the zoo can ask for donations but not through pressure or guilt and 3) zoos should ask visitors to donate.

The present study replicates Smith (2009) in undertaking zoo staff workshops for the purpose of eliciting and prioritizing pro-wildlife behaviors that can be undertaken by zoo visitors both on-site and off-site, but introduces visitor preference criteria as a prioritization tool (Smith, Curtis, and van Dijk 2010). Apart from applying these filters, a second rationale for replication is that the Australian zoo industry has professionalized around the task of influencing visitor behavior. Two large zoos in Australia now employ a senior staff member whose primary purpose is to influence visitor behavior and successes of recent campaigns have provided evidence of the efficacy of the approach (R. Lowry, Community Conservation Manager, Zoos Victoria personal communication). For example, the "Don't palm us off" campaign asked zoo visitors to sign a petition asking Food Standards Australia and New Zealand to mandate labeling of palm oil on all products so consumers have a choice. This campaign resulted in 130,000 signatures at one zoo alone. Bringing the palm oil issues (palm plantations are the primary cause of deforestation in South East Asia) into the public arena led to one politician tabling a Bill in Australia's Upper House of Parliament which was passed. At the time of writing, the Bill is being debated in Australia's Lower House of Parliament. A second campaign, led by one participating zoo called "Fish 4 Life" (http://www.taronga.org.au/fish4life) asked visitors to purchase sustainably-harvested

seafood and the results showed positive changes in behavior in the sample (Smith, Angus, Ballantyne and Packer 2011). More details about the success of these and other campaigns are available at http://www.zoo.org.au/Conservation/Campaigns.

Methods

This section outlines the methods used to engage zoo staff to identify and, using the visitor preference criteria, prioritize pro-wildlife behaviors that can be targeted by zoos. Nominal Group Technique (NGT) sessions were held at five different zoos across Australia with the objectives of identifying and prioritizing behaviors that could be targeted at each zoo (Delbecq and Van de Ven 1971). The NGT is as an effective method to elicit the input and priorities of zoo staff in a time-efficient way. The ideal purpose of the NGT is to arrive at group consensus, thus encouraging the participation of all present. The NGT is a process that draws upon staff from all levels of an organization and seeks, through both group and open discussion, firstly to identify a broad-ranging list of outcomes to a given question and secondly to prioritize those outcomes (Delbecq, Van de Ven, and Gustafson 1975). A slight but key modification to the NGT process was made in that an extra activity was introduced in that the four visitor preference criteria that make up NERO were explained to participants as additional criteria to aid prioritizing. As part of this process, considerable time was given to discussing the merits and applications of each of these criteria. Consistent with Smith (2009), consensus was not sought and a vote was introduced instead, primarily due to time constraints.

It could be argued that senior zoo management could have been invited to apply visitor preference criteria to select and prioritize target behaviors without involving general zoo staff. This was not done for two reasons. The first is that staff have expertise and knowledge that management do not have to inform the process. A cross-section of staff was actively sought to capture differing expertise about the impact, political acceptability, difficulty to influence, and size of target audiences for the wide-ranging behaviors that were expected to be identified. As an example, husbandry staff and vets may be in a good position to know the effectiveness of uncontained pets on wildlife but probably do not carry expertise on whether pet owners will be receptive to these requests or if the zoo advocating the behavior will be politically or socially controversial. A CEO or public relations staff member on the other hand, is well-placed to judge the latter but won't necessarily carry the expertise on the impact of the behavior.

The second reason for engaging with a cross-section of staff was that there are organizational benefits. Since the Hawthorne experiments in the 1920s (cf Izawa, French and Hedge 2011) staff participation in decision making has been endorsed as a preferred method for improving employee involvement, psychological ownership of decisions and goals as a result of those decisions, as well as for informing staff of management's perspective of an organization's

functioning and challenges (Leana, Ahlbrandt and Murrell 1992). Organizations use employee involvement in decision making as a pathway to improved employer-employee relations (trust), productivity, employee motivation, positive employee attitudes, and as a source of intrinsic rewards (Lansing 1989; Leana, Ahlbrandt and Murrell 1992; Butts, Vandenberg, DeJoy, Schaffer, and Wilson 2009; Wright and Boswell 2002). Thus, while there is no guarantee that organizations will adopt the decisions reached, staff participation is widely used by zoos and other large organizations.

A total of 152 staff at five zoos participated in seven NGT workshops, each of which ran for between 2 and 2.5 hours. Staff were selected by the zoos themselves with a stated preference from the researchers for a wide cross-section of staff. Attendees included Board members, Chief Executive Officers and Senior Management (approximately 20 participants) as well as a large number of husbandry, veterinary, marketing and education staff.

After an introduction to behavior change and the purpose of the workshops, participants were divided into groups of between five and nine people and told the focus of the first activity. Under the guidance of a group facilitator (a researcher, a research assistant or a trained staff member within the organization), the group was asked to generate a list of possible target pro-wildlife behaviors to be considered. Participants were asked to provide examples of possible pro-wildlife behaviors visitors could undertake at any point (either on-site or off-site or both). Importantly, participants were told that there were no limits to the number of behaviors identified. Over 500 pro-wildlife behaviors were identified across the seven workshops during the first breakout sessions.

At this stage, filters were introduced to capture visitors' preferences with respect to behavioral requests. These filters were:

1 Preferred behavior attributes from the visitor's perspective. Since visitors prefer new, easy, high response efficacy and on-site behaviors, NGT facilitators suggested that behaviors which met these criteria should be prioritized.

2 The polarizing nature of donation requests from the visitor's perspective. NGT facilitators did not suggest that donation requests be removed, but rather that fewer donation / sponsorship behaviors be prioritized and, when doing so, that those meeting visitor preference criteria be selected.

3 In later sessions, the size of the target audience was introduced and another criterion to consider. This latter filter was introduced because some behaviors identified in some early sessions were only relevant to a small number of visitors and it was felt by both the researchers and some participants that considering this in selecting behaviors was important. Examples of behaviors for which the target audience was small only relevant to a small number included abstaining from throwing items at animals and putting cigarette butts in bins.

These filters (new, easy, on-site, response efficacy, wariness regarding donations and size of target audience) were presented to participants as tools that could be used in reducing the initial list of behaviors identified in the first breakout session.

The second breakout sessions asked groups to apply the filters to the pool of behaviors they had identified in the first breakout. After reducing the list, groups were asked to identify up to five behaviors they agreed were good potential target behaviors. All participants then reconvened and a member of the group presented the prioritized behaviors from each group. The group-prioritized behaviors were pooled and numbered from one to, in one instance, twenty-two, depending on the size of the workshop and the number of groups.

The final task required all participants to individually and confidentially prioritize up to five pro-wildlife behaviors (from the list) that they personally believed should be priorities of their zoo's visitor experience programs. They did this by voting for five behaviors from the list of prioritized behaviors. The votes were gathered from participants and tallied, with no consideration for the order in which they were written.

Throughout the NGT sessions, researchers took notes on the deliberations taking place and engaged in peer debriefing after each session.

Website audit

Prior to presenting results, an audit of Australian zoo websites was undertaken for the purpose of formulating categories of behavior. Although zoo websites represent only one way in which communication occurs and behaviors listed on websites may be biased toward behaviors zoos want, or are comfortable with, the broader public seeing, categorizing behaviors provides a framework for aggregating and presenting the results in a way that is more digestible to the reader than a long list of individual behaviors. In order to determine which behaviours were being asked of zoo website visitors, all publicly available pages of each participating zoo's website were accessed (26 November 2009) and behaviours identified and categorised. Rather than using a prescribed set of behavioural types, the category types were developed based on the behaviours identified.

In total, 126 different behaviors were identified and they were placed into three broad categories of behaviours were inductively derived through inductive categorisation and peer review (Miles and Huberman 1994): support zoo efforts, help protect wildlife and their habitats, and help protect the environment in general. Using the same methods, each broad category was further divided into sub-categories and specific behaviours. A summary of the behavioural classifications identified are presented in Table 1.

Table 1: Pro-wildlife behaviors specifically asked of zoo website visitors

SUPPORT ZOO OPERATIONS	HELP PROTECT WILDLIFE & THEIR HABITATS	HELP PROTECT THE ENVIRONMENT IN GENERAL
Donation / sponsorship General zoo fund Onsite zoo projects (e.g., exhibit construction, equipment) Breeding/conservation programs Adopt/Sponsor an animal/ become a zoo parent Bequests/ in memoriam Buy 'Friends' membership Salary deductions Donate from gift registry/ wish list Buy a product/ participate in a fundraiser for zoo programs	***Conserve & create wildlife habitats*** Clean outdoor gear to prevent transport of plants, fungi, etc. Plant local native plants Always keep to the bush tracks Donate old mobile phones (*They're calling on you* campaign) Engage in community-based wildlife monitoring Respect/ obey quarantine regulations	***Do the right thing with waste*** Dispose of rubbish appropriately (e.g., in the bin) Rethink, reduce, reuse, recycle Say 'no' to plastic bags
	Be a responsible pet owner De-sex dogs and cats Bin/compost dog poo Keep pets inside or on leash when/where there is wildlife	***Reduce your carbon footprint*** Buy local Use energy efficient light bulbs Use the phone rather than flying Plant trees (to off-set carbon) Switch off lights/appliances when not needed Use less heated water (e.g., for showers, laundry) Use low impact transport Use renewable power
Volunteer Become a volunteer/ docent Become a fundraiser (on behalf of the zoo)	***Be a wildlife-friendly driver*** Drive carefully at dawn and dusk Check pouches of dead animals for joeys Remove dead animals from the road Engage in first aid for injured animals Safely transport injured animal to a wildlife carer	
Keep informed Join the mailing list/ subscribe to our publications	***Be a wildlife-friendly consumer*** Choose sustainable timber Don't buy wildlife products (don't contribute to wildlife trade) Do not buy products containing palm oil	
	Speak out, lobby Tell ministers that you want actions taken to protect wildlife Sign a petition for palm oil labeling (*Don't palm us off*)	

Although Table 1 reveals that the zoos involved in this study were already requesting many behaviors of website visitors, the list in Table 1 is not exhaustive because it does not include on-site behavior requests. It does, however, provide a framework for presenting the results of the NGT sessions.

Results

From the 500+ behaviors initially identified, 121 behaviors were prioritized by groups during the second breakout session of the workshops. Table 2 lists the number of times behaviors were prioritized by groups (i.e. they were in their top five) and individuals (by voting) after the second breakout sessions. For manageability, the 121 results are reported using the ten behavior categories as outlined in Table 1 rather than as individual behaviors. While clarification from the NGT session facilitators generally made behavior categorization easy,

four of the 121 behaviors fell into more than one category, and in these cases the votes were split. For example, the wildlife-related motivations for "buying second-hand clothes" could be reducing carbon footprint as well as wildlife-friendly consumerism due to issues of habitat loss associated with the production of new clothes. The donation and sponsorship category of behaviors was the most varied, where many suggestions were made about ways in which visitors could give money to the zoo.

Table 2: Categories of prioritized behavior

Category of behavior	No. of behaviors prioritized by groups	No. of individual votes	% of votes
Wildlife-friendly consumerism	25	92	21
Speak out, lobby	17	62	14
Donations / sponsorship	16	80	18
Do the right thing with waste	13	38	9
Reduce carbon footprint	9	56	13
Responsible pet ownership	9	25	6
Conserve and create wildlife habitat	8	41	9
Volunteer	8	4	1
Reduce waste	7	23	5
Keep informed / learn more about wildlife	3	14	3
Respect wildlife in situ	2	1	0
Be a wildlife-friendly driver	2	0	0
Don't harm wildlife	2	0	0
TOTAL	**121**	**436**	**99**

While it is not possible to list all behaviors prioritized in the present paper, the most frequently-prioritized behaviors from each of the sessions and their categories (in brackets) are listed below. It should be noted that the last two behaviors on the list were at open-range zoos.

1. Buy a wildlife-friendly product in the zoo shop in a "choose this, don't choose that" display (wildlife-friendly consumerism)
2. Buy a square meter of habitat for honeyeaters (donate / sponsorship)
3. Eat vegetarian once a week (reduce carbon footprint)
4. Buy wildlife-friendly products with a zoo-endorsed label (wildlife-friendly consumerism)
5. Donate items to the zoo via a zoo registry (donate / sponsorship)
6. Buy a habitat tree either for the visitor or for the zoo to plant on-site (conserve and create habitat)
7. Volunteer to work on projects at the zoo (volunteer)

A final point to consider from Table 2 is that the behavior categories in this study contained both on-site and off-site behaviors. However Smith (2009) divided behaviors into those that would be undertaken on site and those that would be undertaken off site. To be able to directly compare results between the two studies, a division was made between on-site and off-site behaviors post-facto, and voting percentages were recorded. These comparisons can be found as Table 3.

Table 3: On-site and off-site behavior comparison with Smith (2009)

On-site behaviors			
This Study (number of votes = 176)		Smith (2009) (number of votes =231)	
Category of behavior	**% votes**	**Category of behavior**	**% votes**
Speak out, lobby	22	Reduce / reuse / recycle at the zoo	23
Donations / sponsorship	21	Donations / sponsorship	23
Wildlife-friendly consumerism	17	Volunteer with the zoo	14
Reduce carbon footprint	11	Talk about conservation at the zoo	12
Off-site behaviors			
This Study (number of votes = 269)		Smith (2009) (number of votes =414)	
Category of behavior	**% votes**	**Category of behavior**	**% votes**
Wildlife-friendly consumerism	24	Reduce / reuse / recycle	21
Donations / sponsorship	16	Join / support / volunteer with conservation group	20
Reduce carbon footprint	14	Conserve and create wildlife habitat	12
Speak out, lobby	11	Spread the message	12

Where the context of the behavior was not identified (for example "don't buy bottled water at the next opportunity" and "buy zoo-endorsed products at the next opportunity") votes were split between on-site and off-site. This was relevant to only six of the 121 behaviors.

Discussion

The prioritized behaviors in this study are very different to those found by Smith (2009). Specifically, behaviors focused on wildlife-friendly consumerism and speaking out via political lobbying (see Table 2) were prioritized above recycling, volunteering and donation behaviors. Table 3 reveals these differences in the types of behaviors prioritized by zoo staff both on-site and off-site. Participants voted for speaking out via lobbying as their top on-site behavior for visitors and wildlife-friendly consumerism as their top off-site behavior. In contrast, Smith's (2009) participants voted for the three Rs (reduce, reuse, recycle) as the top priority both on-site and off-site.

While critics of participatory decision-making processes may point to the fact that often decisions that emerge from the process are not enacted, two counterpoints can be made. The first is that, as discussed in the introduction of the paper, there are other positive outcomes that can result such as trust, productivity, motivation and attitudes. Although a causal link cannot be concluded, two campaigns emerged after this process which target eco-purchasing and lobbying, the two behaviors identified as top priorities in the NGT.

The possible reasons for differences between the new priorities and those found in Smith (2009) are many but two are discussed here: changes in the zoo industry in Australia and the application of filtering criteria. The first is that the zoo industry, at least in Australia, has changed in the past few years such that the zoo industry now allocates significant resources to the specific task of influencing behavior. Rhetoric surrounding the potential for zoos to achieve conservation outcomes through their visitors has been prevalent for a while, but there

appears to be a more concerted effort in recent years to realize and ratify this goal. Australian zoos, including the zoos involved in this study, have become increasingly focused on harnessing the collective action of visitors to create political pressure and more sustainable consumption choices to yield better wildlife outcomes. This shift is evidenced by the recruitment of staff whose focus it is to influence behavior, the engagement with universities to undertake research on behavior change, publicly espousing behavior change on zoo websites and in Corporate and Strategic Plans (e.g. http://www.zoo.org.au/about_ZV/publications and http://www.taronga.org.au/sites/default/files/tcsa5052_strategic_plan_2010_fa_v2a.pdf) and the execution of several coordinated large scale behavior change campaigns across multiple zoo organizations and properties such as "They're calling on you" for mobile phone recycling, "Don't palm us off" and "Wipe for wildlife" asking visitor to purchase 100% recycled toilet paper.

A second explanation for the change in prioritized behaviors is the filtration processes introduced as part of this study. Many traditionally-targeted behaviors were listed in the identification phase but most of these were not prioritized and when they were, did not receive many votes. By way of example, participating staff recognized that behaviors such as recycling and proper disposal of litter were not new or novel and were low in response efficacy when considering their effectiveness at addressing a wildlife issue. While they are easy and could be undertaken on-site, other behaviors that met more of the criteria were prioritized. The list of top priorities from each of the NGT sessions reveals many behaviors that meet the criteria.

Ostensibly applying filters to behaviors based on what visitors prefer, may have limited the creativity in the NGT process. However, as mentioned under methods, facilitators observed and discussed elements of the sessions that appeared to stimulate discussion and creativity and three of these observations are reported here.

First, there was considerable discussion in the NGT groups about whether particular behaviors met the criteria, which proved productive for other reasons. Facilitators noted discussion around both the importance of new or novel behaviors and the provision of on-site options appeared to stimulate creativity. For example, the potential for donation requests to polarize visitors was discussed, but many participants still felt the need to prioritize donations as a target behavior. As a result, several ways to ask for donations emerged such as using supermarket reward points and sticking coins on a model cheetah. Thus, while the behavior category was not novel, new individual behaviors emerged.

Second, the emphasis on on-site options appeared to stimulate creativity. Where off-site behaviors were the target, participants invariably also identified on-site catalysts or commitment behaviors visitors could undertake to increase the likelihood that they would do the behavior off-site. The most frequently mentioned on-site catalyst behaviors were making pledges, taking information leaflets or brochures and taking product samples. Respondents also had ideas for creating on-site behaviors that would normally be undertaken off-site such

as using zoo shops and cafés as places to make wildlife-friendly purchases (e.g. sustainable coffee, sustainably-harvested seafood, 100% recycled toilet paper and palm oil free products).

Third, and perhaps the greatest area of debate with the most discussion, was response efficacy. To recap, response efficacy is the perceived effectiveness of a behavior at achieving the motivating outcome. For example, the behavior of buying a square meter of habitat for honeyeaters is likely to be higher in response efficacy than donating money to the zoo if the motivation for the behavior is protecting honeyeater habitat. Debate around whether particular behaviors met this criterion centered on whether or not the zoo would have the opportunity to explain how doing the behavior would address a wildlife-related issue. There was also debate about whether, as suggested in Smith, Curtis and van Dijk (2010), low response efficacy could be used as an advantage through mechanisms such as dissonance resolution (i.e. visitors wanted to know why behavior X helps species Y). The end result of these discussions was that regardless of the behavior, zoos should always include some explanation of response efficacy and thus the assessment on this criterion was more about the ease with which this explanation could be made rather than the effectiveness of the behavior itself. Some groups used a rating system or percentage to gauge response efficacy.

Limitations and Conclusions

Zoo visits represent a unique opportunity for large numbers of people to be engaged with conservation issues and be given an opportunity to act in support of wildlife. To this end, it is important to select pro-wildlife behaviors that visitors are receptive to but also, when undertaken en masse, can lead to real outcomes for wildlife and this paper sought to, via staff input through a Nominal Group Technique, identify and prioritize behaviors that zoo staff endorse that may be better received by visitors. Apart from insights into the NGT process and the utility of filtering criteria, this paper has documented what appears to be a shift in the types of on-site and off-site behaviors that this sample of zoo staff felt the zoo should ask of their visitors. Regardless of why this shift occurred, if staff preferences are accepted into practice (noting that this isn't always the case), it is likely that visitors to Australian zoos will be asked to lobby politicians and change their purchasing behaviors to act in support of wildlife.

The NGT sessions fell short of their full potential in that there was inadequate time to reach a full consensus. However, if discussing and reaching some level of agreement about the type of behaviors a cross-section of zoo staff should target was the aim, the NGT process and the application of filtering criteria proved to be a sound approach. Presenting criteria arguably equipped zoo staff to select behaviors that are more likely to be acceptable to visitors. Nonetheless, on-going dialog and follow-up with all participants, and annual or biennial repetition of the workshops would add further rigor to the process and enhance buy-in by staff. The introduction of visitor preference criteria into the application of the NGT provided

insights into what stimulated discussion and creativity. Of note the preference criteria that visitors prefer new, on-site and high response efficacy behavior appeared to achieve this, with a particular emphasis on how the response efficacy of behaviors could be improved.

There is no way of knowing, based on the current study, the extent to which changes in the ways behaviors are selected has enhanced visitors' actual willingness to act in support of wildlife, but further research could examine this more specifically. In the case of the zoos that were the subject of this study, there have been several changes in their communication campaigns such that target behaviors that meet the visitor preference criteria are prioritized and these campaigns have resulted in large numbers of people engaging in the target behaviors.

If informed by the theory and methods as outlined in the present paper, zoos elsewhere should feel confident that they can request behaviors of visitors and that these visitors will be largely receptive to being asked, in small but collectively significant ways, to assist the wild counterparts of animals on view. The design and evaluation of the efficacy of these requests is the subject matter of other papers. Further research is needed to ascertain whether this visitor behavior focus will have an impact on the profiles, expectations and experiences of zoo visitors in the future.

This study was undertaken in a single country and in a western context. The organizational culture of the participating zoos is progressive, in that staff input into decision-making is considered normal and good business practice. While this may not be the case for all zoos, replication of the study's methods in organizations that do not have similar profiles would be valuable, to ascertain whether the methods are effective or need to be adapted for other contexts.

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