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# Increased conservation marketing effort has major fundraising benefits for even the least popular species



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#### ABSTRACT

Conservationists often complain that their study species are ignored by donors. However, marketing theory could help understand and increase the profile and fundraising potential of these neglected species. We used linear regression with multimodel inference to analyse data on online behaviour from the websites of the World Wildlife Fund-US (WWF-US) and the Zoological Society of London's EDGE of Existence programme (EDGE), in order to understand how species traits and marketing campaign characteristics influenced flagship-based fundraising efforts. Our analysis accounted for species traits through variables such as appeal and familiarity, and marketing campaign characteristics through measuring the order in which the species were presented and the amount of information provided. We found that species traits were key for the WWF-US website, with appealing and threatened non-mammal species the most popular with donors. This was probably because WWF-US used well-known flagship species and so marketing had little impact. The EDGE website used a wider variety of species and in this case both species traits and the marketing campaign characteristics were important, so that appealing species and well-promoted species did best. We then predicted outcomes for a hypothetical EDGE fundraising campaign with varying degrees of marketing effort. We showed that additional marketing can have a large impact on donor behaviour, potentially increasing the interest of potential donors towards unappealing species by up to 26 times. This increase would more than equal the amount raised by campaigns using appealing species without additional promotion. Our results show marketing can have a large impact on donor behaviour and suggest there is scope for successful marketing campaigns based on a much wider range of species.

#### 1. Introduction

Patterns of conservation funding and research effort show strong biases towards some species (Bakker et al., 2010; Metrick and Weitzman, 1996). These biases are driven not only by the species traits but also by the nature of a species' interactions with people, the social and cultural context where these interactions take place and by the sensory nature of how humans perceive their surroundings (Lorimer, 2006; Lorimer, 2007). Marketing theory offers a new set of techniques that could help understand and increase the profile and fundraising potential of the neglected species (Jenks et al., 2010; Tisdell, 2006; Veríssimo et al., 2011). Despite this potential, we lack empirical

evidence on whether conservation marketing can change people's behaviour or whether the characteristics of some species make them inherently ineffective for fundraising. Thus, there is a pressing need to measure the potential power of marketing in conservation, especially as reversing the current rate of biodiversity loss depends on raising funds and support for a wider range of species (Bennett et al., 2015; Butchart et al., 2010; McCarthy et al., 2012).

There is no doubt that some species are more popular with the public and these species, generally large mammals and birds, are frequently used as flagships in conservation marketing campaigns (Clucas et al., 2008; Entwistle, 2000; Leader-Williams and Dublin, 2000). Much has been written on the drivers of this preference but a

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central concept is animal charisma, which is divided into three key components when related to non-specialist audiences: detectability and distinctiveness; aesthetics; and functional value (Lorimer, 2006; Lorimer, 2007). The first, and perhaps most fundamental component, conditions how people perceive a species, most often through sight and hearing, and reflects their ability to distinguish it from other species (Lorimer, 2006). The second component relates to the aesthetic characteristics of a species, such as shape and colour, and is often influenced by human social norms (Lorimer, 2006; Lorimer, 2007). The third, and last dimension, refers to the current or historical functional values of different species so that, for example, agricultural pests are generally seen as uncharismatic (Lorimer, 2006).

Yet, despite this widespread reliance on so called charismatic megafauna, the majority of published evidence for their popularity with the public is based on attitudinal data derived from questionnaire surveys (Gunnthorsdottir, 2001; Knight, 2008; Tisdell et al., 2007). These studies provide useful information but we need behavioural data to truly understand the relative popularity of different species (Schultz, 2011; Veríssimo, 2013). Fortunately, the increase in online donations makes information on such "revealed preferences" more available, so here we use species-specific online fundraising data from two conservation organisations to explore how the public respond to different species.

The broader goal of this study is to understand the extent to which marketing can play a role in raising the profile of flagships with different levels of public awareness and appeal, and how that role compares to the influence of more widely studied species-specific traits (e.g., body size, taxonomic group). In particular, we test the following hypothesise (1) species-specific traits influence a species' fundraising performance, (2) the marketing context influences a species' fundraising performance, and (3) increasing the marketing effort for less appealing species would reduce the current disparity in fundraising performance when compared to the most appealing species. Thus, our study uses linear regression and multi-model inference to identify the species- and marketing-based factors that best determine donation behaviour for two international Non-Governmental Organisation flagship online campaigns.

#### 2. Materials and methods

#### 2.1. Data

The first organisation we focused on was the World Wildlife Fund-US (WWF-US). Its flagship campaigns are based on "adopting" a wide range of charismatic species, including mammals, birds, reptiles and fish. This approach seeks to maximise fundraising for global conservation efforts, including work on species conservation, habitat loss and climate change. The second organisation was the Zoological Society of London (ZSL) which, in contrast to WWF-US, raises funds directly for particular species through their EDGE (Evolutionarily Distinct, Globally Endangered) of Existence programme. There are EDGE campaigns for amphibians, birds and corals but our study focused on the mammal campaign, which has been running the longest. These EDGE flagship species are more varied in terms of appeal and familiarity because they include species such as rodents and bats, which are generally seen as less appealing (Knight, 2008).

The data on donation behaviour were obtained from the WWF-US and EDGE websites, both of which made it clear that any donations would be spent directly on conservation. Both websites also contained a web page describing each of their flagship species using a standard organisation-specific template, but they differed in how links to these pages were presented. WWF-US offered adoption packages for mammal, bird, reptile, amphibian, fish and invertebrate flagship species and these were all presented simultaneously on a specific webpage. A photo of each WWF flagship species labelled with its name is listed by default on this page based partly on previous popularity and novelty. In

contrast, the top 100 EDGE mammal species were profiled ten per web page and the default order was fixed and depended on their EDGE score, which is based on their phylogenetic distinctiveness and conservation status (Isaac et al., 2007). Both of these ordering systems were designed to highlight the highest scoring species and so were also likely to influence donation levels (Buda and Zhang, 2000). Thus, we included variables related to this ordering in our models, "Alphabetic Order" for WWF-US and "Webpage Order" for EDGE, to ensure the influence of other factors was investigated effectively.

We used the available WWF-US data on the number of adoption packages for each of their 97 species, which covered the period of 2007 to 2011. These data were converted to ranks to preserve market sensitive information. For the EDGE data the available information was from 2008, and we used this proxy indicator to measure the ability of each of the top 100 EDGE mammals to elicit interest in donating, based on Google Analytics data on the number of clicks on the "Support EDGE" button on the online profile of each species. To understand the drivers of donations to WWF-US and EDGE we considered the characteristics of each marketing scheme, which we grouped into: (a) species traits, based on the species' biological traits that were identified as important in previous studies, and (b) marketing characteristics, based on how the species was presented on the website.

The species traits used for both WWF-US and EDGE were body mass, threat status, possession of forward-facing eyes, appeal and familiarity. We included body mass because previous research found that largerbodied species are preferred in fundraising campaigns targeted at nonspecialist audiences, by conservation Non-governmental Organisations (NGOs) when promoting their work and by politicians in the policy making process (Knegtering et al., 2011; Martin-Lopez et al., 2008; Smith et al., 2012). This is likely because these species are easier to detect and distinguish, making them more salient in human cultures (Lorimer, 2006). We included species conservation status because species seen at greater risk of extinction are commonly prioritized by non-specialist audiences and conservation NGOs, probably because their conservation is seen as more urgent (Bowen-Jones and Entwistle, 2002; Veríssimo et al., 2009). We included whether the species have forward-facing eyes because the importance of this trait has also been identified in previous studies (Smith et al., 2012), probably because it makes the species more anthropomorphic and species that resemble humans are often perceived as more charismatic and important (Lorimer, 2007; Root-Bernstein et al., 2013). We included species appeal as a proxy for the overall aesthetic attributes of a species, such as colour and shape, which are key elements of charisma (Lorimer, 2006). Aesthetics have been shown by previous research to drive human preferences, with appealing species receiving more attention (Knight, 2008; Stokes, 2007; Veríssimo et al., 2009). Lastly, we included a measure of species familiarity, as target audiences generally donate to species they already know (Frynta et al., 2013; Martín-López et al., 2007; Schlegel and Rupf, 2010). Based on similar cases in the marketing literature, this preference probably stems from familiarity being used as a choice heuristic, with consumers selecting a product simply because they already know it (Macdonald and Sharp, 2000). For WWF-US, we investigated the difference between mammals and other taxonomic groups. We used this typology because mammals are the taxa most commonly associated with human preference and flagship roles (Martin-Lopez et al., 2008).

Data on body mass in grams were collected from the PanTHERIA database (Jones et al., 2009), peer-reviewed literature (Briggs, 2008; Herman, 1988) and scientific online databases (Myers et al., 2013; Palomares and Pauly, 2013). For species with no available data (n=6 for the WWF-US dataset; n=16 for the EDGE dataset) we used the median for the genus or family (when the genus was monotypic). Following a previous study (Smith et al., 2012) the data were log transformed. We collected data on conservation status from the International Union for Conservation of Nature (IUCN) Red List (as of 2007) in the case of the EDGE dataset, and from the WWF-US website in

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