

Materialism, awareness of environmental consequences and environmental philanthropic behavior among potential donors

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ABSTRACT

We explored the relationship between materialism, awareness of environmental consequences and environmental philanthropic behavior with a web survey (n=2,079) targeted at potential donors living in Finland. Environmental philanthropic behavior comprise of donations of money and/or time to environmental charities. The awareness of environmental consequences was divided into egoistic, altruistic and biospheric concerns. Biospheric and egoistic concerns were positively, while materialism was negatively related to environmental philanthropic behavior. Materialism was related to preference of charismatic species when choosing a target for donation. The results have implications to conservation marketing emphasizing the importance of taking the different donor segments into account.

KEYWORDS

Environmental philanthropic behavior, biodiversity conservation, environmental concern, materialism, awareness of consequences

INTRODUCTION

Environmental philanthropic behavior can be seen as one form of pro-environmental behavior, which takes place either in monetary donations and/or voluntary work (ie. giving time) (Stern et al., 1999; Lee and Chang, 2007; Lee and Chang, 2008; Greenspan et al., 2012, Katz-Gerro et al., 2015). Donations from the private sector can constitute a substantial part of funding of environmental non-governmental organizations (hereafter ENGOs). In Finland, for instance, around

50 per cent of the total revenue of World Wide Fund for Nature Finland comes from private donors (WWF Finland, 2016). Nevertheless, this form of pro-environmental behavior has so far been neglected in the scientific literature and thus needs more attention as a specific type of pro-environmental behavior (Greenspan et al., 2012; Katz-Gerro et al., 2015). Our study aimed to fill this research gap and explore whether materialism and awareness of environmental consequences are associated with different types of environmental philanthropic behavior.

When making a donation decision, an individual confronts a choice situation where s/he has to choose the form of donating (time or money), the target for donation among competing options, and the magnitude of donation either in hours worked or in a currency. Donors can also join the ENGO and become ENGO-members or they can become regular donors, which both can be considered as 'long-term supporters'. They are in a sense more committed to support the ENGO than other types of 'supporters' or 'donors' (Bosso, 2003).

Personal values may affect which kind of charity type(s) the donor is willing to support, and the donors have been found to prefer causes that are associated with their membership in different groups (religious, political, societal) reflecting belonging to these groups (Bennett, 2003). For instance, donors who tend to support religious charities, donate less to environmental organizations (Dilmaghani, 2018), which also highlights the importance of surveying environmental philanthropic behavior from the perspective of individuals with an interest towards nature conservation. The awareness of environmental consequences or environmental concern has been found to explain why people engage in pro-environmental behaviors (Hansla et al., 2008). However, the existing literature on how values and beliefs affect environmental philanthropic behavior is still scarce and leaves the question unresolved.

Environmental concern and environmental philanthropic behavior

The value-belief-norm (VBN) theory suggests that individuals engage in pro-environmental behaviors because they believe in and are aware of adverse consequences of environmental problems for themselves (egoistic beliefs and concerns), other people (altruistic beliefs and

concerns) and biosphere (biospheric beliefs and concerns) (Stern, 1993; Stern and Dietz, 1994; Stern et al., 1995). Based on this theory, two scales: awareness of consequences scale (Stern et al., 1993) and environmental concern scale (Schultz, 2001) have been developed to distinguish egoistic, altruistic and biospheric dimensions (Ryan and Spash, 2012).

Thus far, only few studies (e.g. McDougale et al., 2011; Greenspan et al., 2012; Katz-Gerro et al., 2015; McDougale et al., 2015) have attempted to examine the connection between egoistic, altruistic and biospheric concerns and environmental philanthropic behavior using convenience samples of university students, but the results have remained inconclusive. While McDougale et al. (2011) did not find any association between these three types of environmental concerns and volunteering among students in Canada, McDougale et al. (2015), instead, found that only biospheric concern was related to volunteering in South Korea and in the US. Similarly, Katz-Gerro et al. (2015) found that biospheric concern explained volunteering for the environment, but this association was found only in two of five countries. Furthermore, biospheric concerns have been found to explain donating to environmental causes (Greenspan et al., 2012; Katz-Gerro et al., 2015). While all of these studies employed the environmental concern scale by Schultz (2001), Katz-Gerro et al. (2017), instead, used four value types (biospheric value, universalism, benevolence and conformity) to explain students' engagement in different forms of environmental behaviors including environmental philanthropic behavior. They found biospheric value to explain students' environmental philanthropic behavior better than other values. However, they studied environmental philanthropic behavior as a composite measure of donations of money and time, not as two separate forms of environmental philanthropic behavior.

Nevertheless, the proportion of students' engagement in environmental philanthropic behavior was quite low in these samples varying from less than 10 per cent to around 20 per cent (cf. Greenspan et al., 2012; Katz-Gerro et al., 2015; McDougale et al., 2015; Katz-Gerro et al., 2017). Although environmental concern did not explain students' intention to engage in environmental philanthropic behavior in every case, the result may be different if the number of donors in a sample is larger. It is also possible that the motivations of university students may differ

from individuals that have different educational background or age range. Moreover, university students are politically more left-wing than the general public, which has been found to be associated with pro-environmental (Vainio and Paloniemi, 2014) and philanthropic behavior (Bekkers and Wiepking, 2006).

The internet has recently become an increasingly important channel for non-governmental organizations to recruit new donors and volunteers (Hart, 2002; Jillbert, 2003; Shin and Chen, 2016). At present, numerous people are following ENGOs social media platforms, and thus form an additional cluster of potential donors. Using their followers' social networks, non-profit organizations can reach new potential donors, including those the organization cannot reach directly (Saxton and Wang, 2014). While ENGOs have extended their fundraising to the internet, it has also brought new possibilities for researchers to explore environmental philanthropic behavior (Verissimo et al., 2017), especially from the perspective of a new pro-environmental segment.

Materialism

Materialism is a consumer value (Richins and Dawson, 1992; Banerjee and McKeage, 1994), which has been found to be negatively related to pro-environmental beliefs (Kilbourne and Pickett, 2008), environmentalism (Banerjee and McKeage, 1994), and thus pro-environmental behavior (Tilikidou and Delistavrou, 2001, 2004). There is also evidence that materialism is directly associated with avoidance of pro-environmental behavior (Hurst et al., 2013). Materialism may affect the kind of environmental issues a person is interested in (Gifford and Nilsson, 2014). Furthermore, an individual can show high environmental concern and hold high materialistic values at the same time (Gatersleben et al., 2009), and there is also evidence that materialism and charitable giving do not necessarily have to be always exclusive (Mathur, 2013). Furthermore, materialism is positively related to green purchasing, i.e., purchasing eco-friendly products (Manchanda, 2014), and donating can be considered as one type of green purchasing behavior (e.g. Tilikidou and Delistavrou, 2004).

Materialism is generally related to the consumption of luxurious goods (Hudders and Pandelaere, 2012; Goldsmith and Clark, 2012), and materialistic individuals may use gifts (especially expensive ones) as a method to communicate their status or success in life (Richins and Rudmin, 1994). Moreover, in some cases donating may be perceived also as a status symbol (Bazilian, 2012). While materialism has been found to be associated with favoring exciting, competitive and adventurous charities (Bennett, 2003), little is known whether materialism is associated with the choice of the donation target and/or favoring conspicuous or aesthetically appealing targets as a kind of luxury product. Moreover, despite being one form of pro-environmental behavior, donating to environmental causes has so far received only little attention in the scientific literature. Since environmental philanthropic behavior is a combination of donation behavior and pro-environmental behavior, its association with materialism is still vague.

The present study

Our study attempts to increase the understanding of the less studied form of pro-environmental behavior: environmental philanthropic behavior. Moreover, only few studies have explored the associations between materialism and environmental concern to pro-environmental behavior simultaneously (Gatersleben et al., 2009). Yet materialism and awareness of environmental consequences may affect donor's decisions. Our main research question is: How, if at all, are materialism and awareness of environmental consequences associated with different types of environmental philanthropic behavior?

We explored five forms of environmental philanthropic behavior:

1. Membership of a ENGO (dichotomous y/n variable)
2. Participation in ENGOs volunteering work (dichotomous y/n variable)
3. Real-life donation of money to nature conservation (dichotomous y/n variable)
4. Sum of donation to nature conservation within preceding two years (continuous variable)
5. Choice of donation target (choice experiment with five conservation targets)

For materialism, we used the definition by Hurst et al. (2013: 259) to define it as '*individual differences in people's long-term endorsement of values, goals and associated beliefs that center on the importance of acquiring money and possessions that convey status*'.

To explore the role of egoistic (ACego), altruistic (ACalt) and biospheric (ACbio) concerns as well as materialism in explaining five forms of environmental philanthropic behaviors, we tested the following hypotheses. First, we expected to find that ACbio would be positively associated with environmental philanthropic behavior (behaviors 1–4 in the list above) (cf. Greenspan et al., 2012; McDougle et al., 2015; Katz-Gerro et al., 2017) (Hypothesis 1). Second, based on previous studies (Greenspan et al., 2012; Katz-Gerro et al., 2015; McDougle et al., 2015), we expected to find that ACego and ACalt would not be related to environmental philanthropic behavior (Hypothesis 2). Third, materialism has been found to be negatively associated with pro-environmental behavior (Tilikidou and Delistavrou, 2001; Tilikidou and Delistavrou, 2004) and therefore we expected to find that materialism would also be negatively associated with environmental philanthropic behavior (behaviors 1–4) (Hypothesis 3).

Charisma is one selection criteria for flagship species (Caro and Girling, 2010), and thus many flagship species are characterized as charismatic species. Furthermore, materialism is associated with the consumption of prestige products that reflect status (Goldsmith and Clark, 2012). Consequently, we wanted to test the hypothesis that charisma and materialism would be associated, and thus we expected to find that donating to charismatic species would be positively associated with materialism (behavior 5) (Hypothesis 4). Finally, because biospheric concerns focus on the intrinsic value of the biosphere (Rottman, 2014), we tested the hypothesis that ACbio would be associated with the choice of ecosystem or biodiversity as the donation target (behavior 5) (Hypothesis 5).

MATERIAL AND METHODS

Survey design

To reach our target group, the potential donors to environmental causes in charitable giving, we implemented our survey (see online Appendix) in cooperation with a Finnish ENGO. After pre-tests with two groups (n=22 and n=27) and small adjustments, the Finnish Association for Nature Conservation posted our survey to their Facebook page in May 2015. The questionnaire was in Finnish and the data were collected within 13 days. Our target group consisted of potential donors who were at least 18 years old and who had shown interest towards nature conservation by following the conservation organization's Facebook page. Being implemented as a web-survey, our sample is a self-selected web-sample, which does not represent the whole population, and therefore we do not make generalizations to the whole Finnish population.

Participants

Altogether 2,130 respondents answered to our survey, but we had to exclude 34 underage, 14 incomplete and 3 blank responses, totaling 2,079 responses for analysis. Majority of the respondents were women (81.9 per cent), academically educated (59.2 per cent), urban dwellers (85.6 per cent) with mean age of 35. Over half of them had donated to nature conservation within the preceding two years, one third were ENGO-members, and around one fifth had volunteered. According to a nationwide survey on willingness to help, 73 per cent of Finns have donated to charity and 35 per cent have volunteered to different causes of charity, but Finns in general tend to favor other causes than nature conservation when donating (Pessi, 2008). Furthermore, according to the same study the donors who tend to contribute to nature conservation are young (under 35 years), women, and live in the Helsinki metropolitan area. Thus, apart from the gender imbalance we consider that our online sample meets sufficient criteria to represent potential online donors interested in nature conservation in Finland. Although women in general tend to donate to environmental charities more likely than men, it is very likely that women were overrepresented in our sample.

Measures

Awareness of environmental consequences

We used the 9-item version of the general awareness of consequences (GAC) scale (Stern et al., 1995). Of these, three items represented egoistic (e.g. 'Environmental protection is beneficial to my health') (ACego), altruistic (e.g. 'Environmental protection benefits everyone') (ACalt) and biospheric (e.g. 'Over the next decade, thousands of species of plants and animals will become extinct') (ACbio) awareness of environmental consequences. The items were evaluated on a 5-point scale ('totally disagree' – 'totally agree'). The reliability for ACego was acceptable; for ACalt and ACbio the reliabilities were moderate (Table 1), but similar to the ones reported in previous studies (Gärling et al., 2003; Ryan and Spash, 2012). We used the mean values in the analysis.

Materialism

We used the 6-item version of the Material Values Scale (MVS; Richins and Dawson, 1992; Richins, 2004) including the following items ($\alpha = .77$): 'I admire people who own expensive homes, cars, and clothes', 'The things I own say a lot about how well I'm doing in life', 'Buying things gives me a lot of pleasure', 'I like a lot of luxury in my life', 'My life would be better if I owned certain things I don't have', and 'I'd be happier if I could afford to buy more things'. The participants evaluated the items on a 5-point scale ('totally disagree' – 'totally agree'). The scale is the mean score of the items and high values indicate a strong endorsement of materialism.

Environmental philanthropic behavior

We measured environmental philanthropic behavior using five variables: (1) ENGO-membership, (2) participation in voluntary work, (3) donations, (4) donation amount, and (5) choice of a target for donation. First, we used a dichotomous variable indicating whether the respondent was a member of an ENGO, and to which ENGOs s/he belongs to. Second, to study volunteering, we asked whether the respondent had participated in the activities arranged by ENGOs (e.g. bird

counts, voluntary mowing of meadows). Third, we asked whether the respondent had donated to wildlife conservation within the two years preceding the survey, and if the answer was affirmative, we asked the respondent to estimate the total sum of donations. Because some of the respondents may consider member fees as donations while the others do not (cf. Greenspan et al., 2012), we instructed our respondents to report both donations and membership fees.

Finally, we conducted a choice experiment aiming to find out which kind of donation target the respondent would choose in a real donation situation, and to study possible associations between the choice of the donation target and egoistic, altruistic and biospheric concerns as well as materialism. This was carried out as an incentive gift: after filling out the questionnaire, the respondent chose a conservation target where a 10 cent donation from a Finnish chocolate company was to be addressed. We had altogether five conservation targets, and thus the donations were directed to five ENGOs. Our sponsor Oy Fazer Ab chose three of five ENGOs for donation and two other ENGOs operating in Finland were chosen by the researchers. The actual conservation targets for the choice experiment were chosen from among real life conservation projects of these five ENGOs, and as a result we had two species representing different taxa (Siberian jay and Amur leopard), two ecosystems (peatlands and the Baltic sea) and a general donation to biodiversity conservation. As felids are generally considered as charismatic species (Clucas et al., 2008; Loveridge et al., 2010; Ferreira and Hofmeyr, 2014; Macdonald et al., 2015), we chose the Amur leopard which is characterized as '*charismatic flagship species*' (e.g. Wang et al., 2017: 48) for the choice experiment aiming to test whether materialism is associated with favoring a charismatic species over other targets. We did not convey which ENGO was going to receive the donations, thus only the conservation targets were shown in the choice experiment (cf. online Appendix).

Socio-demographic variables

Certain socio-demographic characteristics, such as age, gender, education, residential area and income level have been found to be associated with environmental philanthropic behavior (McFarlane and Boxall, 1996). Therefore, we included all these variables in our analysis (Table 1). We measured age in years, and gender was coded 0=male, 1=female. We had three categorical

variables: monthly income level that consisted of ten categories ranging from less than €500 to over €10,000, educational level that consisted of six categories ranging from elementary school/comprehensive school to doctoral degree, and three categories for residential area ranging from city center to rural areas.

Data analysis

We used logistic regression analysis for the three dichotomous dependent variables (donating, volunteering and ENGO-membership), and the censored regression model (Tobit model) to analyze factors affecting self-reported donation amounts to ENGOs in real life. Because roughly half of our respondents had not donated to ENGOs, there were a large amount of zeros in the response variable. Tobit model is frequently used in similar situations involving a high frequency of zero responses (e.g. Adams et al., 2008; Bhandari and Heshmati, 2010; Einolf, 2011). Large number of zeros in the response variable indicates that the data may be left-censored. We used the function *tobit* from the package AER (Kleiber and Zeileis, 2017) in R to conduct the Tobit regression.

Next, we conducted multinomial logistic regression to analyse factors affecting the choice of donation target. We used the function *multinom* from the package nnet in R (Ripley and Venables, 2016) in our analysis. In order to test the Hypotheses 4 and 5 we classified the five donation targets in the choice experiment (that were described in Materials section) into four categories (see Table 2): (1) less charismatic species, (2) ecosystems, (3) biodiversity, and (4) charismatic species (reference category). Because flagship species are often charismatic species (Caro and Girling, 2010), the charismatic species was used as a reference category.

We included materialism, as well as egoistic, altruistic and biospheric concerns, age, gender, income, educational level and residential area type as covariates in every model. Because the distribution of the age variable was skewed to the right, we log₁₀-transformed it for analysis. There was no collinearity between independent variables (VIF<3).

RESULTS

Donating, volunteering and ENGO-membership

ACbio was positively associated with donating to environmental causes and ENGO-membership, but not with volunteering (table 3), and therefore Hypothesis 1 was only partially confirmed. ACego was positively associated with donating and volunteering whereas ACalt was not associated, and therefore Hypothesis 2 was partially confirmed for ACalt but not for ACego. Materialism was negatively associated with the all three forms of environmental philanthropic behavior covered in our study, and thus the Hypothesis 3 was confirmed (Table 3).

Moreover, a high level of education and age were positively related to all forms of environmental philanthropic behavior measured in our study (see Table 3). Income was positively associated with donating and ENGO-membership, but negatively associated with volunteering. Females were less frequently ENGO-members than males, and we found that respondents living in rural areas were more inclined to volunteer than their urban counterparts.

Donation amount in real life

We used the Tobit-model to assess the effect of different factors on self-reported donation amounts to ENGOs (Table 4). Materialism was negatively related to the donation amount, while the association with ACbio and the donation amount was positive, as expected. Therefore both Hypotheses 1 and 3 were confirmed with respect to the extent of donation amount. We did not find associations between ACalt or ACego and the donation amount, confirming Hypothesis 2. Moreover, age, income and high education were positively associated with the donation amount (see Table 4).

Choice of conservation target

In the choice experiment, biodiversity was the most popular conservation target, and ecosystems (the Baltic Sea and peatlands), were favored over single species (Table 1). When comparing individual species, the charismatic Amur leopard attracted more votes than Siberian Jay.

As compared to the charismatic species, other conservation targets were negatively associated with materialism, as expected (Hypothesis 4) (Table 5). ACbio was not associated with any conservation target, and therefore Hypothesis 5 was rejected. ACego was negatively associated with choosing a less charismatic species, but we did not find any association between ACalt and the choice of donation target. Furthermore, we found a negative association between being female and choosing biodiversity. Living in rural areas was negatively associated with choosing ecosystems and biodiversity.

Limitations

Some limitations should be kept in mind when drawing conclusions from the results. The survey was implemented online through a social media channel and therefore it is a self-selected web sample. In our view, the results can be generalized to individuals who are interested in conserving nature but not to the whole population. However, our sample represents the social media followers of ENGOs that is an important and unexplored segment of potential donors (Saxton and Wang, 2014). Most of our respondents were women, which may mirror women's tendency to express greater environmental concern than men (McCright and Xiao, 2014). Moreover, the general awareness of consequences scale has been reported to suffer from poor reliabilities and ambiguous dimensionality (e.g., Ryan and Spash, 2012), which may have potentially affected the results. Apart from the choice experiment, we analyzed self-reported donation behaviors, which may be subject to social desirability bias, meaning that the participants might have exaggerated the frequency of socially desirable responses (cf. Chung and Monroe, 2003). Finally, there may be order effects in the choice experiment. All five donation causes were presented to the respondent at the same time (see Online Appendix), but because the popularity of the choices did not follow the same order, the order effect probably was limited.

DISCUSSION

Donating and volunteering

In this study we explored the association between awareness of environmental consequences to self, other people, biosphere, materialism and environmental philanthropic behavior. ACbio was associated with an inclination to donate money to environmental causes. Our results are consistent with the findings of previous studies (e.g. Greenspan et al., 2012; Katz-Gerro et al., 2015), which found biospheric orientation and donating to environmental causes to be positively related among university students. However, ACbio was not associated with volunteering in our study, which is inconsistent with previous findings of McDougale et al. (2015) and Katz-Gerro et al. (2015). However, when comparing associations between environmental concern and environmental philanthropic behavior, Katz-Gerro et al. (2015) found that biospheric concerns explained students' tendency to volunteer only in two of five countries. Thus, inclination to volunteer for environmental causes may not be driven only by biospheric concerns, and there is also variation between countries and charity cultures (Laufer et al., 2010; Lee and Chang, 2007; Nelson et al., 2008), which need to be taken into account when interpreting the results.

Instead, ACego was related to volunteering in our study. This may be because the statements in the GAC-scale that measure egoistic concerns (e.g. *'Environmental protection will provide a better world for me and my children'*) may reflect concern towards local natural environment. Potential donors with higher ACego may therefore be more prone to participate in ENGOs' activities that will improve the quality of nearby nature, because it will benefit themselves as well. Because our survey was distributed in cooperation with an ENGO that concentrates mainly on conserving Finnish nature, their followers in the social media may be interested in supporting Finnish conservation projects and thus express greater egoistic concerns. ACbio, instead, can reflect concern towards nature in a more broad sense. Additionally, ACego was positively associated with having donated in the past, but not with the self-reported donation amount in real life

ACalt was not related to any type of environmental philanthropic behaviors in our study, which is in line with previous studies on environmental philanthropic behavior (ie., McDougale et

al., 2011; Greenspan et al., 2012; McDougle et al., 2015). There is also evidence that altruistically oriented people have a mixed motivation towards pro-environmental behaviors, as they are motivated to behave pro-environmentally when they identify the benefits for the environment, but also for themselves (De Dominics et al., 2017). Another possible explanation for the lack of association between ACalt and environmental philanthropic behavior may be due to our specific target group that consisted of potential donors who follow ENGOs' Facebook pages. It may be possible that they are more concerned about the biosphere itself than about the adverse consequences of environmental problems to other people. Furthermore, it is also possible that ACalt is associated only with charities with a humanitarian focus. De Groot and Steg (2008), using different measures (the NEP scale by Dunlap et al., 2000), found that the altruistic value orientation was associated with the tendency to choose a humanitarian organization for donation, while the biospheric value orientation was related to choosing an ENGO. Thus, further research is needed to provide a more comprehensive conclusion.

Furthermore, our results indicate that materialism and environmental philanthropic behavior are negatively related: materialism diminished the inclination to donate, being an ENGO-member or volunteering, as well as the donation amounts in real life. Our results are in line with previous findings on other forms of pro-environmental behavior (e.g. Banerjee and McKeage, 1994; Kilbourne and Pickett, 2008; Tilikidou and Delistavrou, 2001; Hurst et al., 2013), although materialism and charitable giving may in some cases exist also side-by-side depending on the cultural values. For example, in the US both materialism and generosity co-exist as highly important values (Mathur, 2013).

Moreover, some background characteristics were associated with environmental philanthropic behavior. Higher income was positively associated with donating money (via donations or membership fees), but negatively with donating time (volunteering). This suggests that respondents with larger disposable income contribute rather money than their time, which may represent a trade-off between time and money and is consistent with previous studies (e.g., McFarlane and Boxall, 1996; Lee and Chang, 2007; Bekkers, 2010).

Age and the level of education were positively associated with environmental philanthropic behavior. Our findings are consistent with the Finnish study where age was positively related to the willingness to volunteer and a high level of education was associated with donating to charity (Pessi, 2008). Furthermore, our findings are also partially similar to a study conducted in Taiwan where younger respondents preferred to donate time, while older respondents preferred to donate money, and individuals with a high level of education were likely to contribute both their time and money (Lee and Chang, 2007). A high level of education and intention to donate have also been positively associated with charitable giving in other studies (McFarlane and Boxall, 1996; Bekkers, 2010).

A large majority of our respondents were female, but surprisingly only some gender differences were found. Gender was related to the ENGO-membership: more men than women were ENGO-members. Also Piper and Schnepf (2007) found only small differences between genders regarding donating to ENGOs. McFarlane and Boxall (1996) did not find any gender differences when examining birders' participation in wildlife conservation activities including membership, time spent in voluntary activities, donations or expenditure on habitats. Instead, studies on other charity sectors have found differences between genders in charitable giving (Mesch et al., 2006; Piper and Schnepf, 2007; Bekkers, 2010; Mesch et al., 2011; De Wit and Bekkers, 2016), and thus it is possible that environmental philanthropists differ from other philanthropists.

Respondents living in rural areas were more likely than urban dwellers to engage in volunteering. These results are in line with the official statistics reported by Statistic Finland, where rural residents were found to participate actively in volunteering work (Hanifi, 2011). Furthermore, our results are analogous to McFarlane and Boxall's (1996) findings among birdwatchers in Canada, although they also found a positive association between rural residence and other forms of donating.

The choice of donation target

Materialism determined the choice of donation target more than the awareness of environmental consequences did. Materialistic values were associated with the preference of charismatic species over other targets. Rather similarly, Bennett (2003) discovered that materialism was associated with 'exciting' or 'adventurous' charities. While materialism has been found to be associated with the consumption of prestigious or luxurious goods (Andersson and Nässén, 2016), these results suggest that rare, beautiful or otherwise charismatic species may appeal to individuals with materialistic values. Bock et al. (2016) suggest that materialism could be used as a segmentation strategy to identify potential donors who could be targeted differently.

However, it is important to estimate the overall costs and benefits of marketing biodiversity conservation to materialists who may be reluctant to engage in it. We suggest that marketing strategies that focus on the need for self-expression and personal well-being through consumption, could be used for attracting potential donors with materialistic values. Furthermore, more research is needed to assess to what extent messages that involve materialistic views are currently used as a marketing strategy in the context of donating to biodiversity. For example, materialism has been described as the importance given to possessions (e.g., Cleveland et al., 2011). Moreover, materialists appear to define themselves through consumption (Shrum et al., 2013; Shrum et al., 2014), with the objective of enhancing one's own well-being (Kilbourne and Pickett, 2008).

Respondents with awareness of egoistic concerns were more likely to choose a charismatic species than a less charismatic species. Altruistic and biospheric concerns were not associated with the choice of donation targets in our study. Being female was negatively associated with choosing biodiversity instead of Amur leopard, which is surprising because females usually have been found to be more pro-environmental than men. Therefore it is possible that some species attract different genders irrespective of environmental concern, which is an issue that could be explored in future research. Rural residents chose a charismatic species as donation target more likely than ecosystems or biodiversity. In previous studies (e.g. Manfredo et al., 2003), rural residence has been associated with a utilitarian value orientation toward wildlife which, in turn, has been associated with a

negative attitude toward biodiversity protection. These results reflect traditional wildlife values and emphasize human benefit in wildlife management (Manfredo et al., 2003).

Conclusions

Our results support previous findings that conservation marketing should be tailored more specifically to reach different potential donor groups. Traditional charismatic flagships species seem to appeal especially to materialistically oriented individuals. Instead, donors with higher biospheric concerns are more committed to support an environmental organization. Individuals with egoistic concerns contribute both money and time, and they appear to prefer charismatic species over other targets. Egotistically oriented potential donors would be a good target group for volunteering that is specially related to their close environments. Similarly, potential donors who live in rural areas seem to be more interested in voluntary work as they donate time rather than money. Therefore, for them different forms of volunteering could be offered, for instance, bird counts, bees, and other activities that help to maintain and cherish biodiversity in the surrounding natural settings.

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Table 1. Description of the variables used in the analysis.

	α	M	SD	Minimum	Maximum	%
Continuous variables:						
Materialism	.77	2.30	.79	1	5	
Altruistic concerns	.48	4.56	.52	1	5	
Biospheric concerns	.46	4.48	.58	1	5	
Egoistic concerns	.76	4.76	.49	1	5	
Donation amount (€)		106.78	185.89	0	2,000	
Age (years)		34.72	12.12	18	79	
Binary/categorical variables:						
Member of ENGO						33.98
Volunteered in ENGOs activities in past 2 years						22.50
Donated to conservation within past 2 years						53.47
Choice of donation target:						
• Biodiversity						41.93
• Baltic sea						26.99
• Peatlands						17.11
• Amur leopard						10.12
• Siberian jay						3.86
Gender: female						82.75
Level of education:						
• Basic education						2.89
• Vocational education						12.81
• Upper secondary education						24.11
• Bachelor's degree						31.83
• Master's degree						25.97
• Doctoral degree						2.40
Monthly income:						
• Below €500						5.67
• €500–999						12.70
• €1,000–1,499						11.14
• €1,500–1,999						8.73
• €2,000–2,499						10.89
• €2,500–2,999						9.39
• €3,000–4,999						20.03
• €5,000–7,499						14.66

• €7,500–10,000	4.92
• €Over 10, 000	1.86
Residential area:	
• City	46.76
• Suburb	39.35
• Countryside	13.89

Table 2. Coding of donation targets for testing hypothesis 4 and 5.

<i>Donation target</i>	<i>Category</i>
Siberian jay	Less charismatic species
Amur leopard	Charismatic species*
Peatlands	Ecosystem
Baltic sea	Ecosystem
Biodiversity conservation	Biodiversity

*reference category in multinomial logistic regression analysis.

Table 3. The association between materialism, awareness of consequences and socio-demographic variables and donation of money, ENGO membership and participation in ENGOs activities using logistic regressions.

Independent variables	Donated			ENGO-membership			Volunteered		
	Estimate	(SE)	RRR ^d	Estimate	(SE)	RRR ^d	Estimate	(SE)	RRR ^d
(Intercept)	-5.530***	(.905)	.004	-5.403***	(.970)	.005	-5.377***	(1.080)	.004
Materialism	-.307***	(.065)	.735	-.351***	(.070)	.704	-.220**	(.078)	.803
Egoistic concerns	.289*	(.119)	1.336	.282*	(.131)	1.325	.341*	(.154)	1.407
Altruistic concerns	.082	(.116)	1.085	-.076	(.123)	.926	-.154	(.137)	.857
Biospheric concerns	.407***	(.100)	1.502	.400***	(.109)	1.492	.194	(.120)	1.214
Age ^a	1.250**	(.340)	3.493	1.250**	(.401)	3.491	1.400***	(.451)	4.035
Gender (1=female)	-.171	(.130)	.843	-.400**	(.133)	.670	-.223	(.146)	.800
Income	.043*	(.022)	1.044	.077***	(.023)	1.080	-.006*	(.026)	.942
Education level ^b	.168***	(.046)	1.183	.143***	(.047)	1.154	.198***	(.053)	1.219
Residential area ^c	.117	(.072)	1.124	.128	(.074)	1.137	.269**	(.081)	1.309
McFadden	.118			.116			.094		

*** p < .001, ** p < .01, * < p .05

^a log10-transformed

^b Education level, 6 categories ranging from elementary/comprehensive school to doctoral degree.

^c Residential area: 1=densely built city, 2= suburb, 3= rural areas

^d RRR=Relative risk ratio

Table 4. The association between materialism, awareness of consequences and socio-demographic variables and donation amounts in real life (dependent variable) using Tobit-model.

<i>Independent variables</i>	<i>Estimate</i>	<i>p</i>	<i>(SE)</i>
(Intercept)	-762.854***		(116.781)
Materialism	-45.134***		(8.443)
Egoistic concerns	8.440		(15.189)
Altruistic concerns	21.846		(15.465)
Biospheric concerns	53.753***		(13.167)
Age ^a	89.368***		(21.802)
Gender (1=female)	-31.067		(16.501)
Monthly income	11.380***		(2.855)
Education level ^b	25.378***		(5.815)
Residential area ^c	10.148		(9.082)

McFadden Pseudo-R² .069

*** p < .001, ** p < .01, * < p .05

^a log10-transformed variable^b Education level, 6 categories ranging from elementary/comprehensive school to doctoral degree.^c Residential area: 1=densely built city, 2= suburb, 3= rural areas**Table 5.** The effect of materialism, awareness of consequences and sociodemographic variables on the choice of donation target. Results of multinomial logistic regression model: unstandardized coefficients (standard errors in parentheses). Charismatic species was used as a reference category

<i>Independent variables</i>	Less charismatic species			Ecosystems			Biodiversity		
	<i>B</i>	<i>(SE)</i>	<i>RRR^b</i>	<i>B</i>	<i>(SE)</i>	<i>RRR^b</i>	<i>B</i>	<i>(SE)</i>	<i>RRR^b</i>
Materialism	-.617**	(.193)	.540	-.358***	(.108)	.699	-.552***		.576
Egoistic concerns	-.544*	(.253)	.580	.083	(.202)	1.086	-.067	(.204)	.935
Altruistic concerns	-.273	(.305)	.760	-.107	(.198)	.898	.078	(.202)	1.081
Biospheric concerns	-.075	(.258)	.928	-.060	(.166)	.941	.214	(.171)	1.239
Age ^a	2.481*	(1.102)	11.955	.790	(.678)	2.204	.572	(.682)	1.772
Gender (1=female)	-.423	(.371)	.655	-.239	(.240)	.788	-.541*	(.239)	.582
Monthly income	.096	(.065)	1.100	.016	(.037)	1.016	.019	(.037)	1.019
Education level	.020	(.124)	1.020	.022	(.075)	1.022	-.044	(.075)	.957
Residence: city	.057	(.314)	1.058	.058	(.185)	1.060	.159	(.187)	1.172
Residence: rural areas	-.739	(.402)	.477	-.953***	(.238)	.386	-.687**	(.237)	.503
Intercept	.668	(2.339)	1.950	1.728	(1.485)	5.629	1.473	(1.510)	4.366
McFadden pseudo R ²	.092								

*** p < .001, ** p < .01, * < p .05

^a log10-transformed variable^b RRR=Relative risk ratio