

Article

Reducing Plastic Bag Use Through Prosocial Incentives

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Abstract: While excessive plastic use has severe ecological consequences, the distant nature of these consequences may limit their effect on individual plastic use behavior. One possibility to address this problem is to link plastic use behavior to more direct consequences. Pro-environmental behavior researchers adopting this approach typically try to change people's behavior by providing them with monetary incentives. Here, we pursued an alternative strategy by linking pro-environmental behavior to prosocial incentives. Takeaway customers of a fast food restaurant were informed that, for every unused plastic bag, a small donation would be made to a charitable organization. In comparison to baseline and control conditions, the likelihood of using a restaurant-provided plastic bag was more than halved when plastic-bag refusal led to such prosocial incentives. In addition, we tested whether the effectiveness of prosocial incentives depended on their size and on the type of organization (prosocial vs. environmental) receiving the incentive. While these latter analyses revealed some promising trends, they did not allow for definitive conclusions about the effect of these parameters. Hence, while our field experiment provides support for the general effectiveness of prosocial incentives, more research is needed to determine which prosocial incentives are most effective in shaping plastic bag use and other environmentally relevant behaviors.



Citation: Lange, F.; De Weerd, L.; Verlinden, L. Reducing Plastic Bag Use Through Prosocial Incentives. *Sustainability* **2021**, *13*, 2421. <https://doi.org/10.3390/su13052421>

Academic Editor: Fanli Jia

Received: 15 December 2020

Accepted: 18 February 2021

Published: 24 February 2021

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Keywords: pro-environmental behavior; conservation (ecological behavior); plastic use; prosocial incentives; consequences; field experiment

1. Introduction

There are good reasons to reduce the amount of plastic waste we generate. Mismanaged plastic waste may end up in the environment, where it can kill animals, contaminate food chains, clog sewers, and block waterways [1–3]. A straightforward way to reduce the amount of mismanaged plastic waste is to reduce plastic use [4,5]. By refusing single-use plastic bags in stores and takeaway restaurants, consumers can contribute to this mitigation strategy and thus benefit their natural environment. However, for some consumers, this reason does not seem to be good enough to forgo the use of plastic bags; that is, the ecological consequences of plastic use have not gained sufficient control over their plastic use behavior.

This may not be very surprising given the substantial delay between, for example, using a plastic bag and causing the death of a turtle. Along the lines of other environmentally relevant behaviors, the ecological consequences of plastic use behavior only manifest (if at all) at a distant point in the future [6,7], and, in general, behavior is less affected by delayed consequences [8]. One possibility to address this problem is to link environmentally relevant behaviors to more immediate consequences. For example, providing people with monetary rewards for protecting the environment has generally been found effective in modifying environmentally relevant behavior [9]. However, such monetary rewards may also backfire; that is, they may cause more environmental harm than good (e.g., [10,11]). Perhaps most critically, paying consumers to reduce their plastic use may contribute to rebound effects [12]. Individuals equipped with additional monetary resources are likely

to invest those in further consumption, the environmental costs of which might exceed the environmental benefits of plastic use reductions. To ensure that intervention strategies have a net positive effect on the environment, it might thus be necessary to find a way to reduce consumers' plastic use without providing them with personal benefits [12].

One intriguing possibility to do so is the use of prosocial incentives. Prosocial incentives are rewards that are given to someone (e.g., a charity) other than the individual who performed the rewarded behavior. By linking a behavior to prosocial incentives, the behavior becomes functional in producing benefits for other people (i.e., it becomes a type of prosocial behavior, [13,14]). People who care about such benefits (i.e., who are motivated to behave prosocially) could thus be motivated to engage in behaviors in which they would not engage in the absence of prosocial incentives. In support of this notion, Imas has found prosocial incentives (i.e., performance-contingent donations to a charitable organization) to be effective in stimulating individuals to spend effort in a handgrip task [15]. In the present study, we examined if prosocial incentives can be used in a similar way to curb plastic use behavior.

We tested this idea in a restaurant whose takeaway customers are routinely offered a plastic bag with their meal. We reasoned that there will be a subgroup of customers who are not willing to forgo the immediate benefits of this bag (e.g., easier transport) for the environmental benefits of this behavior but who might be motivated to do so if the behavior produces prosocial benefits as well. Hence, we linked the refusal of a plastic carrier bag to small donations being made to a charitable organization, and we announced this contingency on a poster next to restaurant checkout. We hypothesized that customers would be more likely to refuse a plastic bag in the presence of such prosocial incentives in comparison to a baseline condition (that did not involve any poster, Hypothesis 1a) and in comparison to a control condition (that involved a control poster that did not mention any prosocial incentives, Hypothesis 1b).

In addition, we examined whether the effect of prosocial incentives depended on incentive size (i.e., the amount being donated to a charitable organization). While Imas did not find an effect of prosocial incentive size on handgrip performance [15], other studies suggest that individuals may be more willing to engage in behavior that produces larger benefits for others. For example, supermarket customers were more likely to be offered to jump the checkout queue if they could save a larger amount of time (i.e., if the customer lining up in front of them bought a larger number of items, [16]). Here, we tested whether plastic bag use decreases with increasing prosocial incentive size (Hypothesis 2).

Finally, we aimed to gain initial insights into the role of the organization receiving the prosocial incentives. While, in general, we followed Imas [15] in choosing a charitable organization with a social focus (i.e., Oxfam), we also included a condition linking the refusal of plastic bags to donations for an environmental organization (i.e., Greenpeace). By this means, we aimed to test whether prosocial incentives are more effective in reducing bag use behavior when they serve a social rather than an environmental goal (Hypothesis 3). We reasoned that this might be the case because donations to an environmental organization might particularly appeal to people who are motivated to protect the environment in general. Those people might already refrain from using plastic bags and the small pro-environmental donation might not have any incremental effect. In contrast, incentives benefitting a social goal may appeal to a subgroup of people who care less about the environmental consequences of plastic use but who are motivated to produce benefits for other people. In other words, linking the refusal of plastic bags to donations to a social cause may make this behavior attractive to a larger group (i.e., people motivated to benefit the environment *or* other people) than linking the behavior to pro-environmental donations. In addition, previous studies have found people to be more likely to donate to a social vs. environmental cause when these two behaviors were mutually exclusive [17,18], a preference that might manifest itself in the present experiment as well.

2. Materials and Methods

As a study setting for our field experiment on the effect of prosocial incentives, we searched for a highly frequented restaurant that offered takeaway food and the opportunity

to receive a plastic bag for free. We surveyed three restaurants in the Belgian city of Leuven until we found one that satisfied these criteria. The restaurant served Vietnamese fast food at low prices and appeared to target student customers in particular (e.g., by offering student discounts). Customers at this restaurant placed their order at the counter and were then asked by the restaurant staff whether they wanted a plastic bag with their food. Depending on their response, customers then left the restaurant with or without their food being packed into a plastic bag. The latter behavior (referred to as “bag use” in the following) served as the outcome variable for our study.

We analyzed customers’ bag use as a function of the prosocial incentives linked to the refusal of a plastic bag. On a poster placed next to the restaurant checkout, customers (in all conditions except the baseline and control conditions) were informed (truthfully) that for every unused plastic bag, a small donation was made to a charitable organization. While the amount and the recipient of these donations varied across conditions, all posters included 1) the same headline (“Want to save the environment? Say: ‘I don’t need a bag!’”) and 2) the same two-panel cartoon (depicting the increase of plastic waste in the ocean) below that headline (see Figure 1). Below the cartoon, customers could read that “For every unused plastic bag, we donate X cent(s) to Y.”

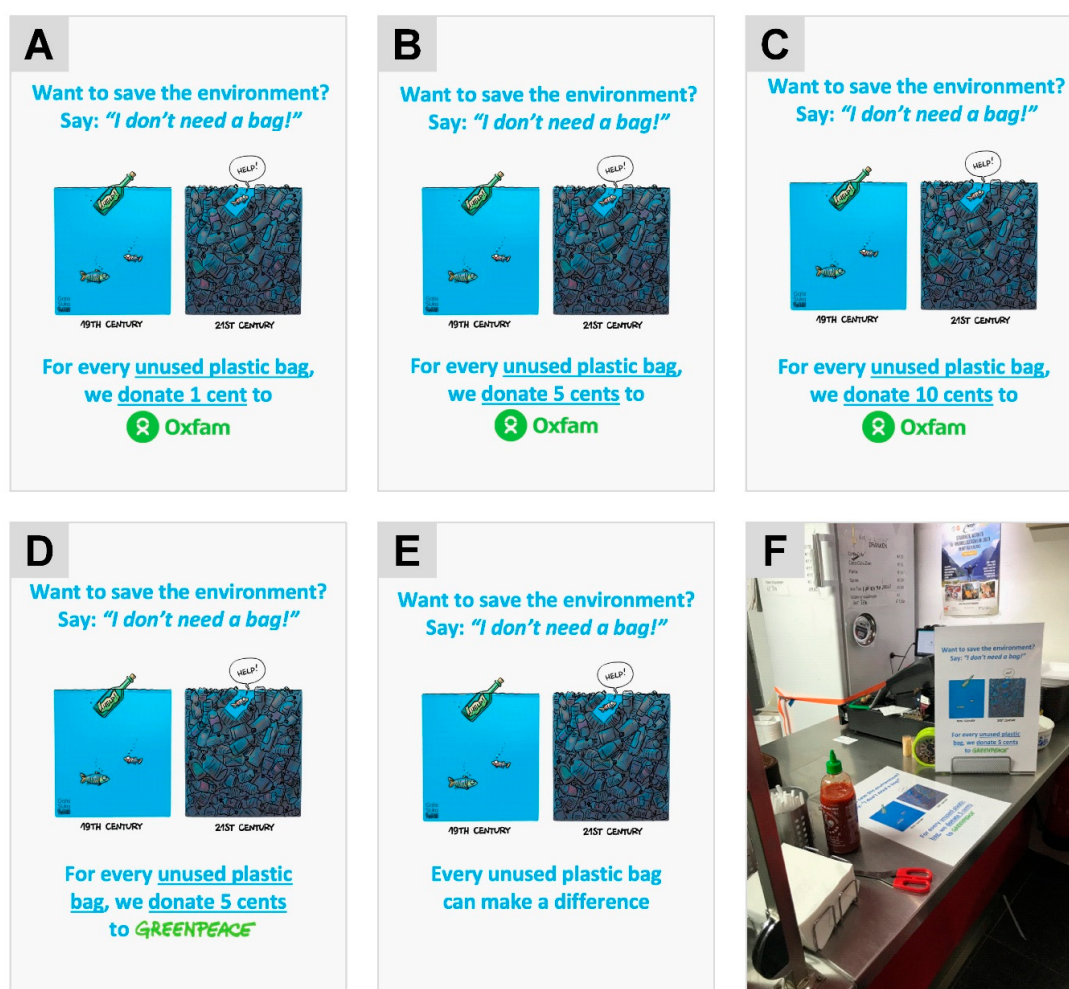


Figure 1. Poster-based intervention to link plastic bag refusal to prosocial incentives. (A): Poster used in the 1 cent social condition. (B): Poster used in the 5 cents social condition. (C): Poster used in the 10 cents social condition. (D): Poster used in the 5 cents environmental condition. (E): Poster used in the control condition. (F): Positioning of the poster next to the checkout of the restaurant. Cartoon in Figure 1 © Gatis Sluka, <https://gatisluka.com/> (accessed on 22 February 2021). Reuse not permitted.

The amount X to be donated was varied across three posters (1 cent, 5 cents, 10 cents) to study the effect of incentive size. The receiving charitable organization Y was constant across these posters (i.e., all these donations were made to Oxfam). On a fourth poster, we announced a donation of 5 cents to a different receiving organization (i.e., Greenpeace). By comparing the 5-cents-Oxfam condition and the 5-cents-Greenpeace condition, we aimed to analyze the effect of receiving organization. Oxfam was selected as a well-known charitable organization with a social goal (i.e., “fighting inequality”, <https://www.oxfam.org/en/what-we-do/about>, accessed on 22 February 2021), and Greenpeace was selected as a well-known charitable organization with an environmental goal (i.e., “a healthy and peaceful planet”, <https://www.greenpeace.org/international/explore/about/about-us/>, accessed on 22 February 2021). Both charities are active both in Belgium and worldwide.

In addition to these four incentive posters (1 cent social, 5 cents social, 10 cents social, 5 cents environmental), we designed a control poster. This poster was identical to the incentive posters with the exception of the final sentence, which was replaced with “Every unused plastic bag can make a difference.” All posters were designed in English to also address the large international student community in Leuven.

Prosocial incentives were manipulated by varying the poster placed in the restaurant across different observation sessions. We scheduled 18 observation sessions of two hours each. The number of observation sessions (and by extension the sample size of this study) was determined based on practical constraints. The first two sessions and the last scheduled session served as the baseline condition and did not involve the presentation of any poster. From the remaining 15 sessions, three sessions were assigned to each of the five poster conditions (1 cent social, 5 cents social, 10 cents social, 5 cents environmental, control). The order of poster conditions was arranged in a way that minimized differences between the conditions in terms of their position within the sequence of observation sessions (see Table 1). The control poster, for example, was scheduled to be placed in observation sessions 1, 8, and 15 (sum of positions = 24), while the 5 cents social poster was scheduled to be placed in observation sessions 3, 10, 12 (sum of positions = 25). By this means, we aimed to reduce the influence of potential order effects.

Table 1. Overview of observation sessions.

Session Number	Date	Time of Day	Condition	Number of Observations	Weather
1	Monday 17 Feb	dinner	baseline	40	dry
2	Tuesday 18 Feb	lunch	baseline	29	dry
3	Tuesday 25 Feb	dinner	control	43	rainy
4	Wednesday 26 Feb	lunch	1 cent social	17	rainy
5	Wednesday 26 Feb	dinner	5 cents social	62	rainy
6	Thursday 27 Feb	lunch	5 cents environmental	18	rainy
7	Thursday 27 Feb	dinner	10 cents social	62	dry
8	Monday 02 Mar	dinner	5 cents environmental	34	rainy
9	Tuesday 03 Mar	lunch	10 cents social	22	dry
10	Wednesday 04 Mar	lunch	control	12	dry
11	Wednesday 04 Mar	dinner	10 cents social	70	dry
(12)	Thursday 05 Mar	dinner	(5 cents social)	cancelled	
13	Monday 09 Mar	dinner	1 cent social	38	dry
14	Tuesday 10 Mar	lunch	5 cents social	16	rainy
15	Wednesday 11 Mar	dinner	5 cents environmental	33	rainy
16	Thursday 12 Mar	dinner	1 cent social	33	dry
(17)	Monday 16 Mar	dinner	control	cancelled	
(18)	Tuesday 17 Mar	dinner	baseline	cancelled	
(19)	Thursday 19 Mar	dinner	5 cents social	cancelled	

Note. Session 12 was cancelled due to observer unavailability. Session 19 was scheduled to replace session 12. Sessions 17, 18, and 19 were cancelled because the restaurant had to close in response to the COVID-19 pandemic.

Data were collected between 17 February and 12 March 2020. We restricted our observations to Mondays, Tuesdays, Wednesdays, and Thursdays as the restaurant was closed during the weekend and we assumed that most potential student customers would leave Leuven for the weekend on Fridays. The three observation sessions per poster condition took place on three different days of the week. For each condition, one observation session took place during the lunch period (12 h–14 h) and two observation sessions were scheduled for the dinner period (18 h–20 h). Three of the 18 scheduled observation sessions had to be cancelled. They were planned to take place after 12 March 2020, but due to the COVID-19 pandemic, restaurants had to close after this date. As a result, we only conducted two instead of three observation sessions for the 5 cents social condition, the control condition, and the baseline condition. We will return to this point in our discussion section.

For each customer who placed their order within the two-hour observation period, the observer recorded whether customers left the restaurant with or without a restaurant-provided plastic bag. Customers who brought their own bag were excluded from the observation (as we reasoned that bag use of these customers would not be sensitive to the incentive information that they only encountered after having entered the restaurant). The observer also estimated customers' age and gender and recorded the weather during the observation session (dry vs. rainy). Recordings were made from an unobtrusive observation point in the restaurant, and customers were not informed about the study. Observation sessions were equally distributed between the second and the third author. Customer behavior in one session (the first session of the control condition) was jointly observed by both authors to analyze inter-rater reliability. Observations converged for both customers' gender and bag use behavior ($\kappa = 1$), and observers' estimates of customers' age were strongly correlated, $r = 0.86$. We confirm that we have reported all measures, conditions, data exclusions, and how we determined our sample size. As the number of observation sessions, and thus our sample size, was determined by practical constraints, we did not conduct an a priori power analysis. Instead, we ran sensitivity analyses (using G*Power [19]) to see which effect sizes could have been detected (at $\alpha = 0.05$) at which power given the average number of observed cases per cell of our experimental design ($n = 88$). In comparison to the empirically determined base rate of bag use (i.e., 32%, see Results), reductions to 13%, 11%, and 10% could have been detected at 80%, 90%, and 95% power, respectively. The test of Hypothesis 1 was slightly more sensitive (e.g., 80% power for a reduction to 16%), given that we were able to pool data from multiple cells. All data and analysis scripts can be accessed at <https://osf.io/eby4z/>, accessed on 22 February 2021. The study has been approved by the local ethics committee (G-2020-1417).

3. Results

In total, we observed the behavior of 529 restaurant customers (70% male, 30% female). The mean estimated customer age was 21.64 years ($SD = 3.72$), with 88% of the customers having an estimated age of 18 to 24 years. As we did not track individual customers throughout the multiple sessions of this experiment, we cannot exclude the possibility that customers visited the restaurant multiple times during our observation period. In 21% of the observed restaurant visits, we observed the customer leaving the restaurant with a restaurant-provided plastic bag. Based on customers' bag use behavior, we donated EUR 17.22 to Oxfam and EUR 3.50 to Greenpeace.

To test whether linking the refusal of a plastic bag to prosocial incentives reduced plastic bag use (Hypothesis 1), we first compared the proportion of bag use between the baseline condition and all incentive conditions. That is, we pooled the data from the 1 cent social, 5 cents social, 10 cents social, and 5 cents environmental condition. Of the 405 customers in this pooled incentive condition, 18% used a plastic bag. This proportion was significantly smaller than the proportion of bag use in the baseline condition (32%), $OR = 0.45$, 95% $CI = [0.26, 0.80]$, thus supporting Hypothesis 1a. In support of Hypothesis

1b, bag use was also significantly less frequent in the pooled incentive condition than in the control condition (33%), OR = 0.44, 95% CI = [0.24, 0.81].

To examine the effect of incentive size on plastic bag use (Hypothesis 2), we first compared the proportion of bag use across the 1 cent social, 5 cents social, and 10 cents social condition using a two-sided chi-square test. While the proportion of bag use differed as a function of incentive size, $\chi^2(2) = 14.93$, $p = 0.001$, Figure 2 reveals that it did not do so in the predicted way. Bag use was less frequent in the 10 cents social condition (10%) than in the 5 cents social condition (31%), OR = 0.26, 95% CI = [0.13, 0.53], but it also tended to be less frequent in the 1 cent social condition (18%) than in the 5 cents social condition, OR = 0.50, 95% CI = [0.24, 1.03]. The difference between the 10 cents social and 1 cent social condition was in the predicted direction, but the odds ratio did not exclude 1, OR = 0.52, 95% CI = [0.25, 1.10]. In other words, rather than reflecting a monotonic decrease in bag use with increasing incentive size, the effect of incentive size was predominantly driven by a substantial increase in bag use in the 5 cents social condition. Closer inspection of Table 1 suggests a potential explanation of this increase. Both observation sessions of the 5 cents social condition (the third one had to be cancelled due to the COVID-19 pandemic) took place in rainy weather conditions. Across all observations of our study, we found the proportion of bag use to increase substantially when it was rainy rather than dry outside the restaurant, OR = 1.84, 95% CI = [1.21, 2.81]. This weather-related increase likely affected the 5 cents social condition (which only involved rainy sessions) more than the 1 cent social (one rainy session, out of three) and 10 cents social condition (no rainy sessions, out of three). Due to this unanticipated confound, the results of our analysis of the incentive-size effect should be interpreted with caution.

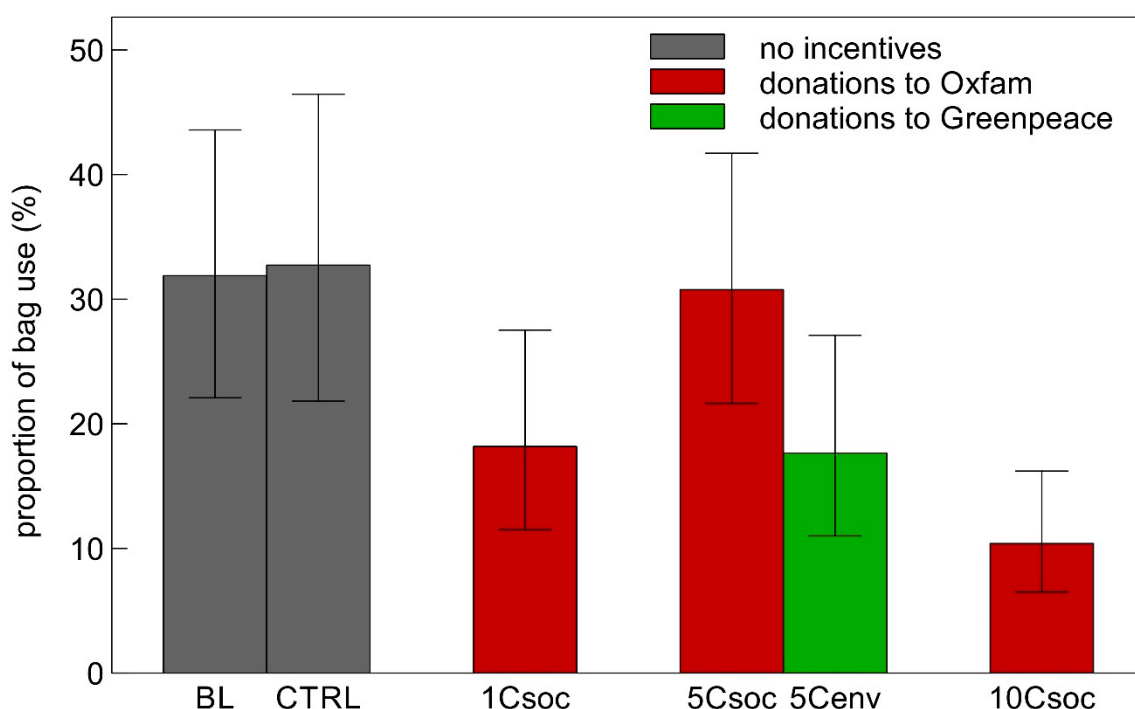


Figure 2. Plastic bag use as a function of experimental condition. BL = baseline (no poster), CTRL = control, 1Csoc = 1 cent social condition, 5Csoc = 5 cents social condition, 5Cenv = 5 cents environmental condition, 10Csoc = 10 cents social condition. Vertical bars are 95% confidence intervals.

Our test of Hypothesis 3 was probably less affected by the weather. It involved the comparison of the 5 cents social condition (incentives paid to Oxfam) and 5 cents environmental condition (incentives paid to Greenpeace) in order to examine the effect of the receiving organization on the proportion of bag use. Data for both conditions were exclusively collected in rainy weather conditions (see Table 1). In contrast to what we

hypothesized, bag use was not less frequent in the 5 cents social condition (31%) than in the 5 cents environmental condition (18%), $OR = 2.07$, 95% $CI = [0.99, 4.33]$. If anything, inspection of the odds ratio even provides tentative support for an effect in the opposite direction.

In a logistic regression analysis, estimated age (in years), $Exp(B) = 1.10$, 95% $CI = [1.04, 1.16]$, but not gender (0 = female, 1 = male), $Exp(B) = 0.74$, 95% $CI = [0.45, 1.20]$, was significantly related to the likelihood of using a plastic bag. Adding age and gender as covariates to logistic regression analyses of the condition effects described above did not markedly affect the results. Condition-related odds ratios that excluded 1 continued to do so after adding the covariates. Similarly, odd ratios that did not exclude 1 continued to do so after adding the covariates, except the comparison between the 10 cents social and 1 cent social condition. Here, the odds ratio dropped from 0.52 to 0.43, and the 95% confidence interval excluded 1 after the covariates had been added, 95% $CI = [0.19, 0.94]$.

4. Discussion

By linking the refusal of a plastic bag to prosocial incentives, we successfully reduced the number of plastic bags used by takeaway customers of a fast food restaurant in Belgium. In comparison to baseline and control conditions, the likelihood of using a restaurant-provided plastic bag was more than halved when unused plastic bags related to small donations to charitable organizations. While the proportion of bag use seemed to be affected by the size of these donations, the available evidence does not seem sufficient to conclude that larger prosocial incentives are more effective in reducing bag use (cf. Hypothesis 2). Similarly, we did not find incentives to be more effective when given to a prosocial rather than pro-environmental charity (cf. Hypothesis 3). Thus, while our field experiment provides support for the general effectiveness of prosocial incentives (Hypothesis 1), it does not allow for definitive conclusions about the parameters moderating their effectiveness.

Taken by itself, the observed difference in bag use behavior between the baseline condition and the pooled incentive condition can be attributed to several factors other than the presence of prosocial incentives. For example, the baseline condition occurred earlier in the experimental sequence, and if customers' tendency to use plastic bags declined over time (e.g., as part of broader societal developments), such a decline might have produced a similar pattern of results. We originally planned to address this possibility by scheduling an additional baseline session after the last incentive session, but in response to the COVID-19 pandemic, the restaurant had to close before this session could take place. In addition, prosocial incentives were announced using a poster that also featured other elements that could have motivated people to refuse a plastic bag (e.g., an explicit request to do so, a cartoon illustrating the issue of marine plastic pollution). The baseline condition did not involve any such poster, and thus there are multiple design differences that could explain the bag-use difference between the prosocial incentive conditions and the baseline condition. However, in light of the results from our control condition, we are more confident to attribute the observed reduction of plastic bag use to the implementation of prosocial incentives. The control condition involved a poster that did not differ from the prosocial incentive poster on any major dimension except for mentioning the prosocial incentives. In addition, the sessions of the control condition were dispersed across the observation schedule, thus limiting the risk of potentially confounding order effects. Unfortunately, the number of control observations was smaller than expected (again, due to the COVID-19-related premature termination of our experiment), but the overall pattern of results seems to support our hypothesis that prosocial incentives can help reduce the use of plastic bags.

Our findings regarding the role of incentive size are less clear. The smallest proportion of plastic bag use was observed in the condition featuring the largest prosocial incentives, but we also observed more bag use when refusing a bag led to a 5-cent donation rather than to a 1-cent donation. Our analyses indicate that the surprisingly high proportion of plastic bag use in the 5-cent condition may have resulted from weather differences between the conditions. To limit the influence of such accidental differences, we scheduled multiple

observation sessions per experimental condition. However, due to limited resources (and the COVID-19-related closing of the restaurant), the number of sessions was likely insufficient to adequately control for all possible confounders of the incentive-size effect. Hence, for the time being, the available data are insufficient to reject the null hypothesis that prosocial incentives are effective independent of their size (see also [15]). From a practical point of view, it is noteworthy that we found a substantial decrease in bag use even when incentives were as small as 1 cent (compared to baseline: OR = 0.48, 95% CI [0.23–1.00], compared to control: OR = 0.46, 95% CI [0.21–1.00]). This indicates that prosocial incentives might be a relatively inexpensive tool to shape bag use and other environmentally relevant behaviors (certainly in comparison to monetary incentives, which might be ineffective or even counterproductive in this magnitude range [20]).

Moreover, we did not find support for our hypothesis that prosocial incentives paid to an environmental organization might be less effective in stimulating the pro-environmental behavior of refusing a plastic bag than incentives paid to a charity with a social goal. We hypothesized that donations to a social charity would be superior because, in contrast to pro-environmental donations, they link bag use behavior to a second function (i.e., helping other people *in addition to* protecting the environment). However, linking an environmentally relevant behavior to multiple functions might also have detrimental effects [21], and behavior-consistent prosocial incentives (e.g., pro-environmental donations for a pro-environmental behavior) might be preferred for other reasons. Future studies are required to examine the influence of the receiving organization on the effectiveness of prosocial incentives for changing environmentally relevant and other behaviors. These studies may also benefit from drawing from a broader set of receiving organizations, thereby taking into account factors other than the charity goal, which might affect people's tendency to support the charity [22]. Due to the limited number of observation sessions, we focused on only two different charities, and thus our results cannot be generalized beyond the specific example charities of Oxfam and Greenpeace.

In addition to this constraint, our research comes with several limitations that are typical for field experiments [23]. *Ceteris paribus* comparisons between conditions were complicated by factors beyond the control of the experimenter. For example, assuming that a particular prosocial incentive poster was effective in causing some customers to refrain from using a bag, some other customers in the same observation session were possibly not only exposed to the same prosocial incentive poster but also to an increased number of models demonstrating the desired behavior (i.e., fellow customers not using a bag). Similarly, we could not make sure that every customer noticed the poster we used to inform them about the prosocial incentives, nor could we exclude carry-over effects from one experimental session to another (i.e., customers may have contributed data points in multiple sessions, with their response to one of our posters being affected by a previous encounter with a different poster). It should also be noted that the number of observations in some cells of our experimental design might have been too small to allow for high-powered comparisons and that we only examined one specific way of informing customers about the prosocial incentives (i.e., via posters). These posters featured additional elements (e.g., an appeal to refrain from plastic bag use), and the effect of prosocial incentives might be conditional on the presence of such elements. Finally, our experiment was limited to a particular restaurant with a particular customer population. While we were able to detect an effect of prosocial incentives on plastic bag use in this specific setting, further research is needed to examine if this effect generalizes to other (types of) restaurants, populations, and environmentally relevant behaviors.

Author Contributions: Conceptualization, F.L., L.D.W., and L.V.; methodology, F.L., L.D.W., and L.V.; investigation, L.D.W. and L.V.; data curation, L.D.W. and L.V.; data analysis, F.L., L.D.W., and L.V.; writing—original draft preparation, F.L.; writing—review and editing, L.D.W. and L.V.; supervision, F.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the FWO and European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 665501 and by an FWO postdoctoral fellowship (No 12U1221N, awarded to F.L.).

Institutional Review Board Statement: The study has been approved by the Social and Societal Ethics Committee of KU Leuven (G-2020-1417).

Informed Consent Statement: Not applicable.

Data Availability Statement: All data and analysis scripts can be accessed at <https://osf.io/eby4z/>, accessed on 22 February 2021.

Acknowledgments: We thank the owner and staff of Loempialand (Leuven) for enabling us to conduct this experiment in their restaurant.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

References

1. Barnes, D.K.; Galgani, F.; Thompson, R.C.; Barlaz, M. Accumulation and fragmentation of plastic debris in global environments. *Philos. Trans. R. Soc. B* **2009**, *364*, 1985–1998. [\[CrossRef\]](#) [\[PubMed\]](#)
2. Gregory, M.R. Environmental implications of plastic debris in marine settings—entanglement, ingestion, smothering, hangers-on, hitch-hiking and alien invasions. *Philos. Trans. R. Soc. B* **2009**, *364*, 2013–2025. [\[CrossRef\]](#) [\[PubMed\]](#)
3. UNEP. Single-use Plastics: A Roadmap for Sustainability. 2018. Available online: <https://stg-wedocs.unep.org/handle/20.500.11822/25496> (accessed on 20 November 2020).
4. Jambeck, J.R.; Geyer, R.; Wilcox, C.; Siegler, T.R.; Perryman, M.; Andrady, A.; Narayan, R.; Law, K.L. Plastic waste inputs from land into the ocean. *Science* **2015**, *347*, 768–771. [\[CrossRef\]](#) [\[PubMed\]](#)
5. Heidbreder, L.M.; Bablok, I.; Drews, S.; Menzel, C. Tackling the plastic problem: A review on perceptions, behaviors, and interventions. *Sci. Total Environ.* **2019**, *668*, 1077–1093. [\[CrossRef\]](#) [\[PubMed\]](#)
6. Joireman, J. Environmental problems as social dilemmas: The temporal dimension. In *Understanding Behavior in the Context of Time: Theory, Research, and Application*; Strathman, A., Joireman, J., Eds.; Lawrence Erlbaum: Mahwah, NJ, USA, 2005; pp. 289–304.
7. Lange, F.; Dewitte, S. Cognitive flexibility and pro-environmental behaviour: A multimethod approach. *Eur. J. Pers.* **2019**, *33*, 488–505. [\[CrossRef\]](#)
8. Rachlin, H. *The Science of Self-Control*; Harvard University Press: Cambridge, MA, USA, 2000.
9. Maki, A.; Burns, R.J.; Ha, L.; Rothman, A.J. Paying people to protect the environment: A meta-analysis of financial incentive interventions to promote proenvironmental behaviors. *J. Environ. Psychol.* **2016**, *47*, 242–255. [\[CrossRef\]](#)
10. Bolderdijk, J.W.; Lehman, P.K.; Geller, E.S. Encouraging pro-environmental behaviour with rewards and penalties. In *Environmental Psychology: An Introduction*; Steg, L., de Groot, J., Eds.; John Wiley & Sons: Oxford, UK, 2012; pp. 233–242.
11. Bolderdijk, J.W.; Steg, L. Promoting sustainable consumption: The risks of using financial incentives. In *Handbook of Research on Sustainable Consumption*; Reisch, L.A., Thøgersen, J., Eds.; Edward Elgar: Cheltenham, UK, 2015; pp. 328–342.
12. Otto, S.; Kaiser, F.G.; Arnold, O. The critical challenge of climate change for psychology. *Eur. Psychol.* **2014**, *19*, 96–106. [\[CrossRef\]](#)
13. Hinde, R.A.; Groebel, J. *Cooperation and Prosocial Behaviour*; Cambridge University Press: Cambridge, UK, 1991.
14. Penner, L.A.; Dovidio, J.F.; Piliavin, J.A.; Schroeder, D.A. Prosocial behavior: Multilevel perspectives. *Annu. Rev. Psychol.* **2005**, *56*, 365–392. [\[CrossRef\]](#) [\[PubMed\]](#)
15. Imas, A. Working for the “warm glow”: On the benefits and limits of prosocial incentives. *J. Public Econ.* **2014**, *114*, 14–18. [\[CrossRef\]](#)
16. Lange, F.; Eggert, F. Selective cooperation in the supermarket. *Hum. Nat.* **2015**, *26*, 392–400. [\[CrossRef\]](#) [\[PubMed\]](#)
17. Klein, S.A.; Hilbig, B.E.; Heck, D.W. Which is the greater good? A social dilemma paradigm disentangling environmentalism and cooperation. *J. Environ. Psychol.* **2017**, *53*, 40–49. [\[CrossRef\]](#)
18. Klein, S.A.; Heck, D.W.; Reese, G.; Hilbig, B.E. On the relationship between Openness to Experience, political orientation, and pro-environmental behavior. *Pers. Individ. Differ.* **2019**, *138*, 344–348. [\[CrossRef\]](#)
19. Faul, F.; Erdfelder, E.; Lang, A.-G.; Buchner, A. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* **2007**, *39*, 175–191. [\[CrossRef\]](#) [\[PubMed\]](#)
20. Heyman, J.; Ariely, D. Effort for payment: A tale of two markets. *Psychol. Sci.* **2004**, *15*, 787–793. [\[CrossRef\]](#) [\[PubMed\]](#)
21. Edinger-Schons, L.M.; Sipilä, J.; Sen, S.; Mende, G.; Wieseke, J. Are two reasons better than one? The role of appeal type in consumer responses to sustainable products. *J. Consum. Psychol.* **2018**, *28*, 644–664. [\[CrossRef\]](#)
22. Katz, H. The impact of familiarity and perceived trustworthiness and influence on donations to nonprofits: An unaided recall study. *J. Nonprofit Public Sect. Mark.* **2018**, *30*, 187–199. [\[CrossRef\]](#)
23. Lange, F.; Dewitte, S. Measuring pro-environmental behavior: Review and recommendations. *J. Environ. Psychol.* **2019**, *63*, 92–100. [\[CrossRef\]](#)