

# Ackoff Doctoral Student Fellowship: 2014 Application

---

Paper, plastic, or penalty?  
The motivating force of carrot versus stick incentives

**Alixandra Barasch**

Doctoral Student  
Wharton Marketing Department

**Mailing Address:**

Suite 700 Jon M. Huntsman Hall  
3730 Walnut Street  
Philadelphia, PA 19104  
Office Phone: 215-573-7074  
Email: abarasch@wharton.upenn.edu

**Faculty Advisor:**



---

Deborah Small, Marketing Department

**Requested Support:**

\$ 3860.00

## **Descriptive Project Summary**

Since 2010, dozens of major cities have started imposing a surcharge on disposable paper and plastic bags commonly used at grocery and retail stores. Consumers now have a choice: bring their own reusable bags to the store or face a 5 cent tax for each bag they have to take home. Politicians and environmental leaders claim that the intent of the tax on plastic bags is not to generate revenue, but rather to change decision making and behavior. The hope is that through this incentive, shoppers will be encouraged not just to bring their own bags to the grocery store, but to be more environmentally conscious in general. However, in the face of this tax, some stores have turned the “stick” incentive into a “carrot.” For example, instead of charging consumers for bags, Whole Foods gives shoppers a 5-cent discount for each reusable bag they bring in. But which will be more effective at changing behavior, both at the point of purchase and subsequently in other environmental contexts? More generally, what is the influence of carrot versus stick (i.e., reward vs. penalty) incentives on prosocial decision-making?

Decades of work have investigated the effects of extrinsic rewards on individuals’ performance and actions. For some activities that provide their own inherent reward, the introduction of an external motivator can backfire by displacing the intrinsic motivation and making those same individuals less motivated to do the task (Deci, Koestner, and Ryan 1999). This phenomenon is known as *crowding out* and has been widely studied in psychology and, more recently, in economics. However, while much is known about the effect of rewards on people’s behavior, no work in the prosocial domain has directly compared *reward* incentives to incentives that *penalize* people for poor behavior. Because some behaviors, such as environmentally conscious ones, involve self-sacrifice to benefits others, incentives are often necessary to encourage good decisions. Thus, it is crucial for both researchers and practitioners to understand if some incentives are better than others at changing consumer behavior.

My collaborator Deborah Small (Associate Professor of Marketing and Psychology) and I seek to study the influence of carrot versus stick (i.e., reward vs. penalty) incentives on prosocial behavior. People often look to their own prosocial behavior to signal to themselves that they are good people, and tend to act accordingly in the future (Gneezy et al. 2012). In the context of motivating consumers to perform good deeds, we predict that carrots will outperform sticks due to their greater potential to enable people to signal to themselves that they are indeed good. Negative framing may reduce the warm glow that individuals derive from engaging in prosocial behavior (Andreoni 1995). Hence, people acting to avoid a punishment may be less likely to infer they are doing good because they are truly charitable. As such, we suggest that the controlling nature of sticks may impede people’s ability to make positive inferences about themselves.

In a series of preliminary studies, we have begun to test this theorizing. Three laboratory studies using actual behavior find evidence for the prediction that carrots are more effective than sticks at incentivizing prosocial behavior. In these studies, participants performed tasks for charity and were randomly assigned to either receive a monetary reward for each completed task, to incur a monetary penalty for each unfinished task, or no incentive. The minimum and maximum possible compensation was equivalent across conditions. Across studies, relative to stick incentives, carrot incentives led individuals to commit to perform more charitable tasks, actually perform more charitable tasks, and even perform more charitable tasks after incentives were removed. In addition, evidence supports a self-signaling mechanism: relative to sticks, participants working for carrots

rated themselves as more generous and reported greater willingness to perform a separate task for charity in the future.

Based on these results, we conducted another laboratory study to examine people's behavioral intentions regarding the introductory example. As expected, consumers are more likely to report that they would bring their own reusable bags to a grocery store if the store offered them a refund for every bag they brought than if the store charged them for every bag they had to use. While all of our laboratory findings are consistent and robust, an important next step is to extend our investigation into the field.

One persistent concern in establishing the value of laboratory findings is knowing how much influence they will exert in "noisy," real-world settings. Our next goal in this project is to confirm the real-world relevance of our findings by partnering with a store in Philadelphia. To do this, we hope to identify stores who might be interested in allowing us to randomly determine whether consumers face carrot or stick incentives for bringing reusable bags. We propose a research design in which we will randomly choose some days to implement a bag refund and some days to implement a bag surcharge over a two-week period. We will notify customers about the new bag policy on their way into the store, after which they will have the opportunity to shop and pay for their groceries as they normally would.

Consistent with how we operationalize charitable behavior in our lab experiments (by looking at self-ratings of generosity and good deeds after the incentive has been implemented), our primary measure will be consumers' decision of whether to purchase an eco-friendly reusable bag after they have already paid for their groceries. We will have a table set up near the exit with research assistants who will offer customers reusable bags (for a small fee of ~\$2) that can be brought on subsequent store visits. This measure is modeled on other research studying prosocial behavior in the field (Jung and Nelson, 2013). We will also collect information on whether the customers already brought reusable bags and control for this in our analyses. Further, we will survey customers on their way out of the store to ask them about their motivations for using (or not using) their own bags, their ratings of their own generosity, and their intentions to perform other environmentally conscious behaviors in the future.

I hope the Ackoff Fellowship will give me the opportunity to build on our findings and explore the relationships between incentives and prosocial behavior in a field setting. Showing that our results can be readily observed in the real-world is an important test that will underscore the importance of our contributions. The results of this research would help researchers and practitioners (for example, those who implement "nudges" in the real world) understand the significance of carefully considering which types of incentives to use in which contexts. Moreover, it will help shed light on consumer preferences regarding environmental consciousness, a growing trend. We eventually plan to submit this research to a top-tier marketing or psychology journal, such as the *Journal of Consumer Research* or the *Journal of Marketing Research*.

### **Budget of Anticipated Expenses**

The financial support of \$3860 that I am requesting will be used for two purposes: to fund data collection and to share the results of my research at two conferences. First, data will be collected using the help of at least 2 research assistants, who will be paid by the hour. Research assistants will help us recruit a partner organization, which will involve researching potential stores, reaching out to them, and coordinating the logistics. Then, the research assistants will help us run the study, which will involve surveying people shopping at the store after their purchase. To support the university-sponsored work-study program, we will give priority to research assistants that are enrolled in this program, which will also save research funds. We will also use the financial support to pay for study materials (e.g., flyers and surveys) and small thank-you gifts that we will hand-out to participants after they complete our survey.

In addition, we hope that this research will be of interest to psychology and consumer researchers, and I hope to present my results at two relevant conferences this year: the Association for Consumer Research conference in Baltimore and the Society for Consumer Psychology conference in Phoenix. While the Marketing Department allocates some funding for research and travel, it is sufficient to cover only a small portion of the research I intend to conduct over the course of my studies, and no more than two conferences over this entire period. Any incurred expenses that the Wharton Risk Center does not cover will thus be paid out-of-pocket or by any funds remaining in my departmental research budget.

I am grateful for the research support provided to doctoral students by the Wharton Risk Center through the Russell Ackoff Doctoral Student Fellowship. Please do not hesitate to contact me with any questions you may have related to my research. Thank you for your consideration.