Gain Without Pain: the Extended Effects of a Behavioral Health Intervention

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We examine the extended effects of an incentive-based behavioral health intervention that targeted self-control during grocery shopping. Our results show positive persistence of the intervention, and no negative substitution effects or effects on customer loyalty. These results offer some reassurance that unintended negative consequences of some interventions may be overstated.

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**The Greater Good: Behavioral Research with Social Value**

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**Paper #1: Setting the Record Straight on Sugary Drink Portion Caps**

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**Paper #2: Nudging to Increase Organ and Tissue Donor Registrations**

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**Paper #3: Gain without Pain: The Extended Effects of a Behavioral Health Intervention**

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**Paper #4: From Garbage to Gift: ‘Social’ Recycling Promotes Happiness**

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**SESSION OVERVIEW**

The objective of this session is to bring together research that contributes to better understanding and addressing important social problems. In keeping with the conference theme “Advancing Connections,” the four papers in this session not only advance our theoretical understanding of consumer behavior, but also generate practical and policy implications, each aimed at increasing consumer welfare:

- Sugary consumption is a major contributor to the societal problem of obesity. Therefore, some have argued for a restriction on the size of sugary beverages. In the first paper, John and Roberto examine the consequences of a possible firm response to a portion size cap: bundling products in order to continue to offer larger sizes. The authors conducted an incentive compatible experiment and found that bundling soda beverages (2 x 12 oz instead of 24 oz) caused people to order fewer ounces of soda, in line with the goals of proposed policy.

- In the second paper, Robitaille, Mazar and Tsai focus on the problem that the vast majority of individuals support organ donation yet many do not take action and register. The authors tested interventions aimed at increasing organ donation rates in a large-scale randomized control trial. These interventions aimed at counteracting psychological barriers that could discourage individuals from registering. The authors found that 1) providing information to satisfy the due diligence heuristic, 2) promoting cognitive perspective taking and 3) promoting first-person emotional perspective taking to induce a sense of social responsibility, each significantly increased actual donor registrations.

- While the first two papers show that interventions improve behavior while in place, less is known about extended effects, once interventions end. In the third paper, Mochon and colleagues examined the extended effects of a behavioral health intervention with a voluntary 6-month commitment contract. The authors found persistence of the positive behavioral change, no negative substitution effects and no effects on customer loyalty once the intervention was removed. These findings support the notion that incentives can drive long-term change, and therefore be valuable tools for improving health.

- In the fourth paper, Donnelly and colleagues examine an untapped source of consumer happiness, their disposal choices. They focus on ‘social recycling’ (disposing still useful items to be reused by others). Across four studies, they found that social recycling resulted in increased positive and reduced negative emotions. Moreover, social recycling encouraged people to reduce product retention (which may help alleviate hoarding), and significantly reduced the number of items placed into trash and recycling, which is important because the average American generates 4.5 pounds of trash daily.

Together, these papers highlight the impact of simple behavioral interventions and their positive influences on both individual and societal wellbeing. At the same time, from an applied perspective, they raise the questions when such interventions may and may not be ethically justified, and how they may be used to empower people to be able to regulate their own conduct rather than enforcing specific behaviors.

This session should facilitate connections among consumers, academics, practitioners, and public-policy makers alike – consumer research for the greater good.

**EXTENDED ABSTRACT**

We test the effect of portion size caps on people’s propensity to buy sugary drinks. This intervention stems from the behavioral economic notion of constructed preferences – that people have difficulty knowing what they want, and therefore turn to contextual cues to try to resolve this uncertainty. In food consumption, this translates into “mindless eating” – instead of relying on their bodies to tell them when they’re full, people rely on contextual cues, such as an empty plate, to tell them that they are full. Consistent with this perspective, Brian Wansink and colleagues have conducted a series of ingenious experiments in which, for example, people eat fewer chicken wings when the remnants of the eaten wings (i.e. bones) are left on the table, as opposed to when they are continually cleared away. The bones serve as a cue reminding people of how much they’ve eaten, in turn curbing consumption. Therefore, we thought that reducing the portion size of soda may serve to reduce consumption, while at the same time preserving individual choice – people are free to order as many sodas as desired.

Although there is reason to suspect a soda cap policy to reduce consumption, this intervention has been met with considerable public and political resistance. In 2012, the New York City Board of Health prohibited restaurants from selling sugary drinks (i.e. soda and juice) over 16 ounces. However the policy was never implemented because it was overturned by city council. Contributing to the opposition has been an influential piece of research concluding that limiting sugary drink sizes will have adverse unintended consequences (Wilson, Fantino, & Fantino, *PloS One*, 2013). Specifically, these researchers argued that in response to such a policy, firms will start to offer bundles. For example, banned from offering a large-sized 24 ounce soda, the authors contend, firms would offer the large size as 2x12
ounce sodas. Moreover, the authors argue that framing a 24 ounce soda as 2x12 ounce sodas will increase consumption.

However, the study design did not resemble the way in which this policy would actually be implemented, and thus, the authors’ conclusions are unwarranted. Specifically, the study was hypothetical, underpowered, and conducted online. Thus participants did not actually order drinks and hence, consumption was not measured. It would seem that giving participants the opportunity to actually buy drinks would be a minimal design requirement to test the effect of soda cap policies. Given that sugary consumption is a major contributor to the societal problem of obesity, assessing the true effect of this possible firm response is of critical importance.

We therefore conducted a large-scale, well-powered experiment in which we assessed the effect of soda caps on people’s propensity to order and consume soda. We also tested whether the effect of soda caps might depend on the type of restaurant: whether it is self-serve or full service. One could imagine that bundling might be particularly effective at curbing consumption in a self-serve context, for it capitalizes on the embarrassment and inconvenience people face in having to carry two sodas to their table. The study was therefore a 2x2 between-subjects design in which we manipulated bundling (single unit vs. bundled) and service style (self-serve vs. served).

Participants (N=297) were endowed with forty cents, which they could use to buy sugary drinks. All participants had the choice of purchasing either nothing (in which case they could keep all 40 cents), a medium (16 ounce) drink for 20 cents, or a large (24 ounce) drink for 30 cents. To encourage drink buying, we kept prices low and offered a choice between two different (sugary) drinks: iced tea or lemonade. In the single unit condition, the choice was simply between one 16 ounce cup or one 24 ounce cup. In the bundled condition, the large option was presented as two 12 ounce cups. Thus in the bundled condition, the medium size was presented as one 16 ounce cup, whereas the large size was presented as 2x12 ounce cups. In the served condition, the soda was delivered directly to the participant’s table; this condition mimicked a sit-down restaurant in which sodas are delivered to patrons by waiters. In the self-serve condition, participants had to walk over to a booth to pick up their order. Critically, at the time of making their purchase decision, participants were aware that they would either be served the soda (served condition) or would have to personally pick up the soda (self-serve condition).

Results indicated that regardless of service style, bundling caused people to order fewer ounces of soda: In the single unit condition, approximately 45% of participants ordered the large size, compared to only 20% of participants in the bundled condition (p=.03). There was no effect of service style, nor did service style interact with bundling. In ongoing research, we are testing other possible firm responses that could substantively impact the effectiveness of soda size cap policies; for example, offering free refills.

Nudging to Increase Organ and Tissue Donor Registrations

EXTENDED ABSTRACT

On average, 18 people in the United States die every day waiting for an organ transplant because of a growing shortage of donated organs (organdonor.gov 2014). Over 100,000 individuals are currently on the transplant waiting list and the gap between those needing transplants and those receiving them continues to widen. While the vast majority of individuals acknowledge the urgent need for more organ and tissue donors and support organ and tissue donation, it is puzzling that many of them do not take action and register.

Behavioral scientists have started to investigate the shortage of registered organ donors and explore ways to encourage individuals to register their consent. For example, Johnson and Goldstein (2003) demonstrated that countries with a presumed-consent default—individuals are automatically registered as donors unless they explicitly opt-out—have, on average, 60% more of the population registered as donors compared to countries with an explicit-consent default—their population is not registered as donors unless they explicitly register their consent. The takeaway of this research is that one way to address the low number of registered donors may be to change the organ donation policy default from an explicit-consent system to a presumed-consent system. In spite of the positive evidence for the presumed-consent default, ethical concerns have been raised with this approach. Further, recent empirical evidence showed that changing the default may be ineffective at increasing registrations (Ammann 2010). Therefore it is important to identify potential psychological barriers to donor registration in explicit-consent systems and develop corresponding countering interventions to increase the number of registrations in these systems.

The aim of this research is to apply theories from behavioral science to develop interventions to nudge individuals into action and increase organ donor registration rates in the field. By carefully examining the registration processes in explicit-consent systems and drawing on the literature from behavioral sciences we propose that there are at least three psychological barriers that are inherent in explicit-consent systems that are hard for people to overcome and that contribute to the low sign-up rates. These psychological barriers include hassle cost—the hassle of actually registering one’s consent (e.g., Betttinger et al. 2012; Bertrand et al. 2006), the due diligence heuristic—individuals may feel they have not put in adequate effort to make an informed decision (Tsai and McGill 2011; Schrift et al. 2011; Sela and Berger 2012), and low sense of social responsibility (Slovic 2007; Wallach et al. 1964). We propose that these psychological barriers are likely operating together, contributing to low sign-up rates. Therefore, we designed and tested a number of interventions in order to overcome these barriers, and in turn increase the number of registered donors.

We conducted a large-scale (N = 10,043) randomized controlled trial on organ and tissue donor registrations in order to test the effectiveness of our behavioral interventions, each aimed at countering a psychological barrier that could discourage individuals from registering. Our field experiment was conducted in collaboration and consultation with several participating government agencies and departments within one North American jurisdiction. The experiment itself was conducted at one of their service center locations. During the experiment, we measured the daily number of new donor registrations at this location over an eight-week period.

The experiment had nine conditions in total: two control conditions (one pre-experiment and one post-experiment), two acclimation conditions that served to expose the staff to our new forms and process as well as examine the effect of giving the staff specific instructions, and five focal treatment conditions designed to establish the most effective interventions to increase organ and tissue donor registration rates. These interventions sought to reduce the hassle cost (through simplifying the registration form; treatment condition 1), increase feelings of due diligence (through handing out a brochure; treatment condition 2), and induce a sense of social responsibility (through using nudge statements that prompted emotional and/or cognitive perspective taking; treatment conditions 3-5). All interventions were accompanied with more time for the individuals to think about the donation.
In order to examine the effect of condition on an individual’s likelihood of registering as an organ and tissue donor, we employed a logistic regression analysis with each of the conditions and business days dummy-coded, and fixed-effects for the customer service representatives. The dependent variable was whether or not an individual registered as an organ and tissue donor. To test the effectiveness of our interventions, we examined the odds ratios of individuals registering as organ and tissue donors in each of our five focal treatment conditions and compared them to the pre-experiment control condition, with a donor registration rate of 3.04%.

We find that three of the five focal treatment conditions significantly increased the likelihood of an individual registering as an organ and tissue donor (overall model: \( \chi^2 (DF=13) = 106.89, p < .001 \): handing out a brochure, handing out the registration form with a cognitive perspective taking nudge statement that has been successfully used online in the UK (Behavioral Insights Team 2013) and handing out the registration form with a first-person emotional perspective taking nudge statement. Individuals’ odds of registering as organ and tissue donors were more than two times higher when visiting the service center during these three treatment conditions than during the pre-experiment control condition.

Together these findings contribute to our understanding of how to motivate individuals to act for the greater good. In our field experiment, we significantly increased registrations by: 1) providing more information to satisfy the due diligence heuristic, 2) promoting cognitive perspective taking and 3) promoting first-person emotional perspective taking. Each of these interventions more than doubled an individual’s likelihood of registering. In addition, our paper demonstrates the power of relatively costless nudges, grounded in behavioral science research, and their profound influence on behaviors significant to economic and individual wellbeing.

**Gain without Pain: The Extended Effects of a Behavioral Health Intervention**

**EXTENDED ABSTRACT**

Financial incentive programs are increasingly employed to improve people’s health (Gneezy, Meier, and Rey-Biel 2011). While research shows that many incentive-based interventions can effectively improve a specific health behavior while in place, less is known about the extended effects for both the participants and the host firms once the intervention ends. These effects are essential to understand from both a theoretical and policy perspective because an intervention that has positive effects on a targeted behavior during the intervention, but leads to negative consequences once the program ends, or shows negative substitution effects in other domains, may not be a sustainable marketplace product.

This research begins to address this question by examining the extended effects of a behavioral health intervention: a voluntary 6-month commitment contract that significantly improved the health of grocery purchases (Schwartz et al. 2014). Member households who were already receiving a 25% discount on healthy food grocery purchases, put that discount on the line by precommitting to a 5-percentage-point increase above their household healthy food baseline. Those who met the goal kept their discount, those who did not forfeited it.

Since this precommitment intervention was run within the context of an overall health rewards program, we were able to examine the commitment device’s impact beyond the specific time period and targeted behavior (nutrition). Specifically, we examined whether the effect persisted once the penalty was removed, whether the program lead to substitution effects while the incentives were in place (i.e., healthier nutrition behavior leads to less exercise) and, finally, the impact of the intervention on the overall relationship between the customers and the firm running it.

Persistence effects: For the committed households we specifically tested whether the intervention led to habit formation (Charness and Gneezy 2009) or whether the penalty associated with the precommitment led to crowding out effects whereby less healthy purchases re-emerged once the penalty was removed (Benabou and Tirole 2003; Lepper, Greene, and Nisbett 1973). Consistent with the habit formation prediction, the committed group continued to make healthier grocery purchases during the 6-months post-intervention (β = 2.84, SE = .95, p < .01). This persistence effect was strongest for the most loyal customers, as well as for participants who had the most money to lose during the commitment period. This result demonstrates that incentives can be catalysts to long term change, and therefore be valuable tools for improving health.

Substitution effects: One concern with health interventions targeting a specific behavior, is that they may lead to negative substitution effects in other domains, either because exerting self-control is depleting (Baumeister et al. 1998) or because of licensing effects (Khan and Dhar 2006). We tested for substitution effects by examining all logged exercise activity (e.g. going to the gym) during the precommitment period. In other words, we tested whether eating healthier food lead consumers to exercise less. Our results show no evidence of substitution effects. Committed households exercised slightly more (though not significantly more) than the control group (β = .07, SE = .05, n.s.). Interestingly, we found a significant positive effect on exercise when examining participants who had the most money on the line during the commitment period, (β = .23, SE = .07, p < .01). These are important findings since data limitations have prevented previous research from examining this important question about substitution effects. Our results further reinforce the value of incentives as a tool for improving health, by suggesting that they do not lead to negative consequences in other domains, and may even lead to positive spillovers for at least a subset of the population.

Loyalty effects: While penalty-only commitment contracts may improve targeted health behaviors, this may come at the cost of customer loyalty and thus make it difficult for private firms to offer such programs. We test the effect of the intervention on customer loyalty by examining involvement with the health rewards program during the year after the commitment contract ended. We do this by testing the participants’ change in status level in the program relative to the prior year. Positive numbers indicate higher status, and therefore a better relationship with the firm. Our result show that committed households showed a positive (though non-significant) change in status during the year after the intervention ended (β = .07, SE = .12, n.s.). This is an important finding since most committed households forfeited their discount at least once, which could have translated into negative firm reactions. Consistent with this finding, the results of a follow-up survey suggests that committed households did not blame the firm for failures. Indeed, 68% assigned more blame to themselves than to the firm for failing to meet the precommitment goal (only 15% assigned more blame to the firm). This suggests that consumers took responsibility for their own actions, and consequently for their own failures, which mitigated any negative feelings towards the firm. Interestingly, when asked whether they would be willing to participate if the precommitment was offered again, a full 66% said that they would put their discount on the line as a means of improving self-control while grocery shopping.
From Garbage to Gift: ‘Social’ Recycling Promotes Happiness

EXTENDED ABSTRACT

Researchers are becoming adept at identifying ways to extract maximal happiness from the consumption process. For example, research has demonstrated that acquiring experiences make us happier than acquiring goods (Goodman, Nicolao & Irwin, 2009), and that spending money on others can yield greater happiness than spending money on oneself (Dunn, Aknin & Norton, 2008). While important, such work focuses primarily on acquisition and consumption.

In the present research, we argue that disposal choices represent an untapped source of consumer happiness. As such, we focus on social recycling, a relatively new form of ‘recycling’ one’s possessions to others, which happens when consumers allow used goods to be acquired by an unspecified other.

As a first study, participants (N = 279) were given a list of 20 household items (i.e., a coffee mug) to sort into different boxes that represented disposal options. Participants were randomly assigned to: (a) trash and recycling bin, (b) trash, recycling, and social recycling bin, or (c) trash and social recycling bin. The social recycling bin was described as a bin to ‘place things you no longer want, but others might. All items placed into this box will be taken to the street on trash day, and made available to your neighbors. All untaken items will be removed.’ This design allowed us to test the potential benefit of a social recycling bin, and to see if differences exist because of a third disposal option. Following the sorting task, participants reported their affective states, and impressions of how their disposal decisions impacted the environment and other people.

The presence of a social recycling bin significantly reduced the number of items placed in the trash (p < .001), and recycling (p < .001) bins, increased positive affect (p = .08), reduced negative affect (p < .001), increased feelings of helping the environment (p < .001), and others (p < .001) regardless of the number of disposal options. Perceptions of helping mediated the relation between social recycling and positive affective benefits.

Given that perceptions of helping others influenced positive affect, we ran a second study (N = 298) to evaluate the significance of the recipients of socially recycled items. We followed the same design as Study 1, however all participants sorted items into: (a) trash bin, (b) a recycling bin or (c) social recycling bin. We manipulated the recipients of the socially recycled items. Participants learned that socially recycled items would be made available to participants that had been socially recycled by others. When arriving to our lab, participants rated how happy they felt on a 1 (not at all) to 5 (very much) scale. They then were asked to sort 18 items placed on their desk into the available bins. Participants in the social recycling condition then took items placed in the social bin to a ‘share shelf’ which made the items available to participants assigned as ‘takers’. Sorters then rated their current happiness after this task, while takers took an item and then reported their happiness.

Participants in the social recycling condition sorted fewer items into the trash (p < .001) and recycling (p < .001) bins. While there were no significant differences in happiness between conditions at time 1 (p = .23), at time 2 social recyclers were significantly happier (p = .003). Traditional disposers and takers did not experience any differences in happiness from time 1 to time 2 (p = .35). Across four studies, we find support for our hypothesis that social recycling can boost consumer happiness, likely because of increased feelings of helping.

REFERENCES


