

Social Recycling Transforms Unwanted Goods into Happiness

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ABSTRACT Consumers are often surrounded by resources that once offered meaning or happiness but that have lost this subjective value over time—even as they retain their objective utility. We explore the potential for *social recycling*—disposing of used goods by allowing other consumers to acquire them at no cost—to transform unused physical resources into increased consumer happiness. Six studies suggest that social recycling increases positive affect relative to trash, recycling, and donations of goods to nonprofit organizations. Both perceptions of helping the environment and helping other people drive this increase in positive affect. We conclude that social recycling offers a scalable means for reengineering the end of the consumption cycle to transform unused resources into happiness. We suggest that further research should continue to enrich a general theory of disposition, such that we are able to maximize the ecological, interpersonal, and community utility of partially depleted resources.

Researchers are adept at identifying ways to extract maximal happiness from the consumption of physical, experiential, or temporal resources (see Dunn and Norton [2013] for a review). For example, acquiring experiences can produce greater happiness than acquiring material goods (e.g., Gilovich, Kumar, and Jampol 2015), ordinary experiences can result in greater happiness than extraordinary experiences (Bhattacharjee and Mogilner 2014), and spending money prosocially can yield greater happiness than spending money on oneself (Dunn, Aknin, and Norton 2014). In focusing on the acquisition and consumption of goods and services, however, researchers have devoted less attention to the final—but inevitable—step of the consumption process: disposition (e.g., Wells 1993). In this stage, individuals often simply see goods as depleted, devoid of any emotional benefit. Indeed, Marie Kondo's (2014) best-selling *The Life-Changing Magic of Tidying Up* suggests that items should be disposed of when they no longer bring joy. But can disposal choices themselves represent an opportunity to transform these otherwise unwanted physical resources into untapped emotional resources?

We argue that *social recycling* provides precisely this opportunity. Social recycling allows consumers to dispose of used goods by allowing other consumers to acquire them

at no cost. Unlike traditional recycling, the goal of social recycling is for a used resource to be acquired “as is” for continued use by a new owner. As an example, consider the pilot program recently launched by the city of Eindhoven in the Netherlands (<http://www.degoedzak.nl>): items to be socially recycled are placed curbside in see-through bags (called “Goedzak,” meaning both “good bag” and “do-gooder”) alongside trash and traditional recycling so that other community members can view the contents and decide if they would like to take any items. Any items not picked up by a community member are collected by a second-hand store to be either sold or recycled, depending on the item, thus keeping the good out of the waste stream even if it is not picked up by an individual. As another example, the Freecycle online community (www.freecycle.org) allows people to post information to an online bulletin board indicating possessions they would like to socially recycle; these possessions can then be left curbside for anyone to pick up at a designated time.

In this research, we demonstrate that social recycling confers (at least) two benefits: it transforms otherwise non-valued resources into happiness, and it reduces the percentage of these goods being allocated to trash. Although all possessions may eventually be trashed, social recycling offers possessions a chance to have a “second life” with a new

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owner while remaining out of the waste stream. Indeed, the increased happiness that consumers glean from social recycling is driven by their perception that social recycling offers both social benefits (to the new owner) and environmental benefits. We also demonstrate that because social recycling creates happiness via these two routes—perceptions of helping both others and the environment—it produces greater happiness than either traditional recycling (which primarily helps the environment) or donations to charity (which primarily help others).

Our studies provide one of the first empirical explorations of how the disposition of goods—rather than their acquisition and consumption—can enhance the emotional value from a given resource. We also bring together the emerging body of literature on disposition (e.g., Brough and Isaac 2012; Haws et al. 2012; Trudel and Argo 2013; Trudel, Argo, and Meng 2016) and research highlighting the benefits of prosocial behaviors (e.g., Weinstein and Ryan 2010; Aknin, Dunn, Sandstrom, et al. 2013; Aknin, Dunn, Whillans, et al. 2013), extending research on prosocial behavior into the novel domain of disposition. Practically, our investigation suggests a scalable intervention addressing a key environmental issue, while it addresses a common consumer struggle: how the often painful process of letting go of goods can become a source of pleasure.

HOW CAN DISPOSITION TRANSFORM UNWANTED RESOURCES INTO HAPPINESS?

Below, we posit two mechanisms by which consumers might extract happiness from disposition: if disposal options are perceived as beneficial for the environment and/or if disposal options are perceived as beneficial for others. We then apply this theoretical lens to social recycling and other modes of disposition—trash, traditional recycling, and institutionalized donation—to inform our hypotheses about the potential for each mode to influence happiness via these two mechanisms. We capture our theoretical framework in figure 1.

Happiness and Helping the Environment

People feel good about doing good things for the environment (Videras and Owen 2006). For instance, consuming environmentally friendly products, recycling and reusing goods, and conserving energy and water are positively correlated with life satisfaction (Welsch and Kuhling 2010; Xiao and Li 2011) and may increase feelings of self-competence through feelings of meaningful contribution to community activities (De Young 2000). Brown and Kasser (2005) sug-

gest that environmentally friendly behavior leads to greater happiness because these actions help consumers pursue and express values that are important to the self. Increased life satisfaction has also been linked to more general pro-environmental behaviors such as contributing time and money to environmental organizations and causes (Leonidou, Leonidou, and Kvasova 2010). Taken together, this research leads to our prediction that when consumers perceive a given disposal option to be beneficial for the environment, adopting that means of disposal will increase happiness.

Happiness and Helping Others

People feel especially good about doing good things for others. For instance, consumers express greater happiness after spending money on others relative to spending money on the self (Dunn, Aknin, and Norton 2008). The benefits of spending money on others are particularly likely to be realized when givers are aware of the positive impact made possible by their prosocial spending (Aknin, Dunn, Whillans, et al. 2013). In addition, giving time to others results in emotional rewards for the giver (e.g., Liu and Aaker 2008). For instance, individuals who volunteer report better health and greater happiness than those who do not (Borgonovi 2008), and giving time to others engenders a sense of self-efficacy (Mogilner, Chance, and Norton 2012). Taken together, this research leads to our prediction that when consumers perceive a given disposal option to be beneficial for others, adopting that means of disposal will increase happiness.

Given these two mechanisms by which disposal may influence happiness, we now review different modes of disposition via this lens, assessing their potential to transform unwanted resources into consumer happiness during the disposition process.

WHICH MODE OF DISPOSAL TRANSFORMS UNWANTED RESOURCES INTO THE MOST HAPPINESS?

Trash

The most common solution to the disposition question is simply to throw items in the trash. Although trash is seen as convenient, it can result in experienced guilt or ambivalence—particularly when consumers recognize that the good retains potential utility (e.g., Elgaaied 2012). While recycling and composting have significantly reduced aluminum, paper, and organic waste, durable goods waste has grown over 30% in the last decade, resulting in the need for expanded landfills (US Environmental Protection Agency 2012).

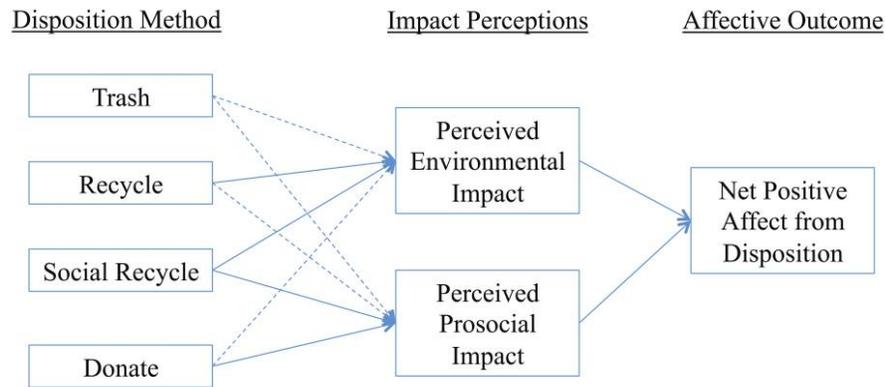


Figure 1. Transformation of disposition to happiness. Dotted lines indicate hypothesized negative or null relationships; solid lines indicate hypothesized positive relationships.

Landfills have significant costs to the environment in the form of greenhouse gas emissions (Rabl, Spadaro, and Zouhaib 2008) and land use costs (Dijkgraaf and Vollebergh 2004). Given that trashing increases the amount of material sent to landfills, we anticipate that consumers will not perceive trash as having positive environmental consequences and that trashing items will therefore not increase happiness via helping the environment.

Trashing items is also not perceived as helping others (Harrell and McConocha 1992). Indeed, although givers worry that “regifting” used items will be perceived negatively by receivers, receivers would prefer a gift to having the giver throw the item away (Adams, Flynn, and Norton 2012). Moreover, trash produces landfills, which not only lowers the property values of surrounding homes by 3%–7.3% (Reichert, Small, and Mohanty 1992) but also negatively affects the health of others in surrounding neighborhoods (e.g., Vrijheid 2000). As a result, we expect that designating an item for trash would be unlikely to be perceived as helping others, such that trash would be unlikely to transform an unwanted resource into an emotional boost.

Traditional Recycling

Traditional recycling involves systematically converting specified types of waste into useful resources by breaking down objects to be repurposed. Recycling may contribute to cleaner air, water, and land (US Environmental Protection Agency 2010). Further, recycling extends the life of existing landfills by diverting waste away from them (Mueller 2013). In turn, individuals are more likely to recycle when they both understand the environmental benefits (Saphores, Ogunseitan, and Shapiro 2012) and believe that their actions will make a positive impact on environmental problems (Pel-

letier et al. 1999). Thus, we expect that recycling will produce happiness via perceptions of helping the environment.

The mechanism by which recycling might increase perceptions of helping others is less clear, however, in part due to the disconnect between the act of recycling and the specific impact of that act. Whereas consumers can easily perceive the environmental benefits of recycling—less trash for landfills—no specific person receives a direct benefit when a consumer chooses to recycle. Perceiving direct benefits to others requires imagining a future consumer benefiting from a product that has been created from the recycled product, or even longer-view thinking about recycling-related job creation or additional revenue to city municipalities from recycled materials (Keramitsoglou and Tsagarakis 2013). As a result, we expect that recycling is less likely to produce happiness via the mechanism of helping others.

Institutionalized Donations

Traditional institutional donation opportunities involve giving unwanted items to unknown others in need via a nonprofit organization such as Goodwill or the Salvation Army. Consumers who donate to institutional donations generally feel they are helping others (Harrell and McConocha 1992), and charitable donations have been shown to increase happiness (see Dunn et al. [2014] for a review). As a result, we predict that donating will increase happiness via the mechanism of helping others.

Would charitable donations also increase perceptions of helping the environment? To the extent that unwanted goods can be allocated as easily to donation as to trash, donating could benefit the environment by reducing landfill-destined items. Critically, however, donating used durable goods is often a relatively inconvenient experience for con-

sumers compared to other forms of disposition (e.g., Laitala 2014). Consumers must often drive to a donation center that may not be located close to their home, and—perhaps most importantly—many donation centers have a long list of rules about what types of products they will accept with which consumers must familiarize themselves (e.g., Goodwill will not accept certain types of TVs, cribs, mattresses, etc.; <http://www.amazinggoodwill.com/donating/donor-guidelines>). As a result, although donation has the potential to transform an unwanted product into happiness via perceptions of helping the environment, we assessed whether such perceptions are lower than when consumers engage in social recycling—which allows more goods (including those TVs and cribs) to be kept from the trash.

Social Recycling

Social recycling is a prosocial behavior akin to giving gifts to others, which again research has shown to be associated with increased happiness (Dunn et al. 2014). Thus social recycling is likely to induce happiness via increased perceptions of helping others. In addition, as compared to institutionalized donations—which are also likely to induce happiness via increased perceptions of helping others—we suggest that social recycling is relatively more likely to increase happiness via increased perceptions of helping the environment, precisely because it is a hybrid behavior of donation (helping others) and recycling (helping the environment).

As noted above, social recycling may lead to greater perceptions of helping the environment than donation because items can be socially recycled that may not be accepted by traditional donation centers. (Indeed, we examine whether, compared to being given the opportunity to donate, social recycling leads to fewer items being trashed.) We suggest that social recycling simultaneously diverts items from being thrown in the trash and allows consumers to feel happy about giving those goods to others. Taken together, as shown in figure 1, social recycling holds unique potential to raise perceived environmental and prosocial impact. As such, we predict that it will offer greater happiness from disposition than will other means of disposal.

OVERVIEW OF STUDIES

We report results from a pilot study in the field and five experiments that assess the capacity of social recycling to transform unwanted physical resources into a valuable emotional resource: happiness (studies 1, 2A, 2B, 3, and 4). We measure our predicted dual drivers of the affective benefits

of social recycling—perceptions of helping others and helping the environment (studies 2A, 2B, 3, and 4)—and examine how one of these drivers (helping others) can be further augmented by increasing perceived needs of recipients, in turn increasing the happiness received from social recycling (study 3). Throughout, we differentiate the affective benefits and psychological underpinnings of social recycling from those of other forms of disposition, such as traditional recycling and trash (studies 1, 2A, 2B and 3), and traditional donations (study 4).

PILOT STUDY: SOCIAL RECYCLING IN THE FIELD

As an initial investigation of whether social recycling transforms unwanted goods into positive affect, we gained access to a Freecycle event at Harvard Business School. In anticipation of the end-of-the-year move-out process, all university students, staff, faculty, and general community members were invited to a Freecycle event where they could dispose of any unwanted items and take any items they wanted. Anyone interested in disposing of items at the Freecycle exchange was invited to drop off their items at a designated university building 1 hour before the start of the event. A research assistant was positioned at the drop-off location and asked givers ($N = 44$) to fill out a brief survey regarding their affective experience using items drawn from the positive and negative affect scale (Watson and Clark 1994). Positive attributes included *happy*, *efficient*, *proud*, *generous*, *content*, and *smart*; negative attributes included *conflicted*, *wasteful*, *frustrated*, *annoyed*, and *worried*. Negative attributes were reverse scored, and we created a positive affect composite variable ($\alpha = .81$). Givers were surveyed after dropping off their unwanted items. Given that research suggests that being the recipient of generosity can have negative affective consequences, including reduced self-esteem (Nadler and Fisher 1986), we assessed the affective responses of recipients of social recycling. When the event began, research assistants invited participants who took items (takers, $N = 67$) and participants in the nearby area but not participating in the event (control participants, $N = 61$) to complete the same affective measures. One hundred and seventy-two participants ($M_{age} = 33.74$, $SD = 13.21$; 65.1% female) completed our survey.

Results and Discussion

Affective Responses. Affective responses differed as a function of condition ($F(2, 169) = 3.04$, $p = .05$, $\eta^2 = .04$). Planned contrasts revealed that participants in the *control*

condition ($M = 3.77$, $SD = .62$) reported significantly less positive affect than *givers* ($M = 4.07$, $SD = .58$; $t(169) = 2.28$, $p = .02$) and marginally less positive affect than *takers* ($M = 4.00$, $SD = .75$; $t(169) = 1.90$, $p = .06$). There were no differences in positive affect between givers and takers ($t(169) = .59$, $p = .55$).

Discussion. Both givers and takers at a Freecycle event—a formalized group social recycling context—report greater positive affect than a group of individuals not partaking in the event. Further, negative affect is not generated among recipients of socially recycled goods, as suggested by some prior research (e.g., Nadler and Fisher 1986). Together these pilot field data suggest that social recycling may offer a means of creating positive affect for givers without undesirable consequences for takers. However, this study suffers from self-selection; individuals who engage in social recycling may be chronically happier than others. Studies 1–4 are a series of controlled experiments to assess the causal effect of social recycling.

STUDY 1: THE HAPPINESS OF SOCIAL RECYCLERS AND RECIPIENTS

Study 1 explores whether social recycling transforms goods into happiness to a greater extent than do trash and traditional recycling. We also continue to evaluate the affective responses of recipients of generosity. We examined disposition choices and assessed our primary dependent measure—happiness—while also measuring perceived task difficulty and enjoyment.

Participants and Procedure

One hundred and seventy-four individuals ($M_{\text{age}} = 22.57$, $SD = 3.74$; 48.3% female; 54.7% Caucasian) participated in a series of unrelated lab studies in exchange for \$20. After providing consent, participants were asked how happy they felt at the current moment on a 1 (very unhappy) to 5 (very happy) scale. After noting their happiness, participants completed filler tasks and then were asked to sort 18 items (e.g., an oven mitt, a T-shirt; see the full list in the appendix, available online) placed inside a plastic tub sitting on their desk.

Participants randomly assigned to the *trash and recycling* condition ($N = 56$) were asked to sort these items into a trash bin or a recycling bin placed on their desk. Participants in the *trash, recycling, and social recycling* condition ($N = 59$) were asked to sort the items into a trash bin, a recycling bin, or a social recycling bin; these participants

were further informed that the items they placed in the social recycling bin would be available for other participants to take for their own personal use and that they would be placing these items on a “share shelf” (a 31 1/2 inches by 79 1/2 inches bookshelf placed in the hallway adjacent to the study room). Finally, participants assigned to the *recipient* condition ($N = 59$) were asked to take an item from the share shelf to keep for themselves; recipients did not sort any items.

Participants assigned to the trash and recycling and the trash, recycling, and social recycling conditions first sorted items. Those in the trash, recycling, and social recycling condition were then instructed to place all items they sorted into the sharing bin onto the share shelf in the hallway adjacent to the study room. All participants were then asked to report how they felt on a 1–5 scale, where a range of line-drawing faces represented unhappiness (1) to happiness (5). Participants were then asked to report how difficult the sorting task was on a 1 (very difficult) to 7 (very easy) scale (reverse scored) and how enjoyable the sorting task was on a 1 (very unenjoyable) to 7 (very enjoyable) scale. In addition, we measured the amount of time participants spent reading instructions and the amount of time they spent sorting.

Participants assigned to the recipient condition were informed that other participants had placed items on the share shelf and were asked to go to the shelf and select an item to keep. Once participants had chosen their item, they were asked to report how they felt at the current moment and how difficult and enjoyable the task was (using the same scales); they also listed the item they selected and estimated its current value.

Results and Discussion

Affective Responses. Happiness at time 1 (measured prior to randomization to condition) was similar across the three conditions ($F(2, 171) = 1.22$, $p = .30$, $\eta^2 = .01$). However, after the sorting task at time 2, condition significantly predicted happiness ($F(2, 154) = 8.38$, $p < .001$, $\eta^2 = .10$). Whereas individuals in the trash and recycling condition did not experience a change in happiness from time 1 ($M = 3.66$, $SD = .69$) and time 2 ($M = 3.62$, $SD = .82$; $t(51) = .27$, $p = .79$), individuals in the trash, recycling, and social recycling condition (time 1: $M = 3.73$, $SD = .69$) reported a significant boost in happiness following the sorting task (time 2: $M = 4.22$, $SD = .67$; $t(50) = 3.13$, $p = .003$). Recipients did not experience a significant change in happiness from time 1 ($M = 3.84$, $SD = .55$) to time 2 ($M =$

3.80, $SD = .79$; $t(53) = .32, p = .75$), but, importantly, we did not observe evidence of any negative affective impact of being the recipient of generosity (Nadler and Fisher 1986). Thus, at time 2, social recyclers were significantly happier than participants who were recipients ($p = .02$) and those in the trash and recycling condition ($p < .001$).

Difficulty and Enjoyment. Participants in the trash, recycling, and social recycling condition spent a longer time reading study instructions than those in the trash and recycling condition ($t(108) = 7.49, p < .001$). However, there were no differences between the two conditions in the amount of time it took to sort items ($t(108) = 1.00, p = .32$). Participants in the trash, recycling, and social recycling condition felt that the sorting task was more difficult than those in the trash and recycling condition ($t(108) = 4.99, p < .001$). Importantly, however, participants in the trash, recycling, and social recycling condition also felt the sorting task was more enjoyable than those in the trash and recycling condition ($t(108) = 2.28, p = .02$), offering some evidence that social recycling may not be perceived as simply costly, which could decrease participation.

Disposal Decisions. Participants in the trash, recycling, and social recycling condition placed fewer items into the trash bin ($t(113) = -6.05, p < .001$) and fewer items into the recycling bin ($t(113) = -5.43, p < .001$) than those in the trash and recycling condition (see table 1 for all means and statistical tests). To evaluate which items were being diverted from the trash, we compared disposal conditions

on their tendency to trash each item. In line with research suggesting that accepting a wider range of items for recycling will reduce trash (Mueller 2013), we find that adding a social recycling option significantly reduced the tendency to place items not typically accepted for traditional recycling (oven mitt, vegetable strainer, T-shirt, coffee mug, and vase [all $p < .001$]) in the trash. Adding a social recycling option did not lead to a reduction in the tendency to trash (all $p > .17$) or recycle (all $p > .24$) items typically accepted for traditional recycling (folder, newspaper, magazine, empty food containers, and eating utensils). These results suggest that participants generally placed durable goods into the social recycling bin instead of the trash, such that social recycling reduced waste.

Next, we evaluated whether the observed increase in positive affect was driven by having fewer items placed into the trash bin or having more items placed in the social recycling bin. In a regression predicting happiness at time 2, the number of socially recycled items was a significant predictor ($\beta = .33, t = 4.28, p < .001$), and the number of trashed items was a marginally significant predictor ($\beta = -.13, t = -1.76, p = .08$). Reducing the number of items placed into the trash somewhat contributes, and increasing the number of items to social recycling significantly contributes, to increased happiness.

Discussion. When participants sorted a variety of goods, adding a social recycling option did appear to impose some cost compared to traditional trash and recycling: reading the instructions took longer, and the sorting task was rated

Table 1. Social Recycling Lab Study Results (Study 1)

	Trash and Recycling ($N = 56$)	Trash, Recycling, and Social ($N = 59$)	Recipients ($N = 59$)	Test Statistic, p
Time reading instructions (seconds)	15.69 (13.98)	39.46 (18.92) ^a		$t(108) = 7.49, p < .001$
Time sorting (seconds)	71.32 (32.99)	78.46 (40.96)		$t(108) = 1.00, p = .32$
Items trashed	6.19 (3.74)	2.66 (2.41) ^a		$t(113) = -6.05, p < .001$
Items recycled	9.44 (4.24)	5.76 (2.95) ^a		$t(113) = -5.43, p < .001$
Items shared		9.20 (3.86)		
Happiness time 1	3.66 (.69)	3.73 (.69)	3.84 (.55)	$F(2, 171) = 1.22, p = .30$
Happiness time 2	3.62 (.82)	4.22 (.67) ^a	3.80 (.79) ^b	$F(2, 154) = 8.38, p < .001$
Task difficulty	4.76 (1.48)	5.98 (1.05) ^a	3.97 (1.34) ^{ab}	$F(2, 166) = 34.52, p < .001$
Task enjoyment	4.49 (1.12)	5.04 (1.37)	4.44 (1.19) ^b	$F(2, 166) = 4.01, p = .02$

Note.—Standard deviations are in parentheses. Degrees of freedom differ slightly from analysis to analysis because some participants did not complete all dependent measures.

^a Significant difference from traditional disposal condition, $p < .05$ (Bonferroni post hoc reported for F -tests).

^b Significant difference from social recycling disposal condition, $p < .05$.

as more difficult. However, participants also reported enjoying this challenge, and—most importantly—we observed the predicted affective boost from social recycling unwanted resources compared to traditional disposal of the same items. Taken together, the results of study 1 suggest that social recycling may be a means of reclaiming emotional value from otherwise unwanted resources.

STUDY 2A: SOCIAL RECYCLING HELPS OTHERS AND THE ENVIRONMENT

Study 2A explores why providing a social recycling option extracts maximum positive affect from unwanted resources using an online sorting task. As in study 1, we examined disposition decisions and assessed our primary dependent measure, positive affect. In addition, we included measures to assess the two constructs we expected to mediate the impact of social recycling on happiness: perceptions of helping others and perceptions of helping the environment.

Participants and Procedure

Three hundred and forty-three individuals ($M_{\text{age}} = 36.04$, $SD = 11.33$; 51.9% female; 83.4% Caucasian) were recruited using Amazon's Mechanical Turk platform, and they completed the study in return for a nominal payment. Participants were randomly assigned to one of three conditions: *trash and recycling* ($N = 115$), *trash and social recycling* ($N = 111$), or *trash, recycling, and social recycling* ($N = 117$).

Participants first imagined that they had recently cleaned their home and amassed a pile of goods of which to dispose. In the trash and recycling condition, individuals were told that they could either designate items for the trash or for recycling by placing them in the appropriate bins. In the trash and social recycling condition, they were told that they could either trash the items or place them in a bin from which others could take them (i.e., they could socially recycle the items); they were informed that all items placed into this bin would be available for others to take the morning of garbage day and that all items not taken would be removed along with trash and recycling. In the trash, recycling, and social recycling condition, participants were given all three options: bins for trash, recycling, and social recycling.

Participants were then given a list of 20 household items (e.g., coffee mug, magazines; see full list in the appendix), and they were asked to imagine that they needed to dispose of these items by sorting them into the boxes onscreen, which corresponded with their disposal options. We captured time spent sorting.

Following the sorting task, participants indicated the extent to which they felt a variety of emotions on a 1 (not at all) to 5 (very much) scale. More specifically, we focus on positive and negative self-conscious emotions (e.g., pride, guilt) because these emotions have been found to influence pro-environmental thoughts and behaviors (Sun and Trudel 2016). Positive emotions included *happy*, *good*, *proud*, and *pleased with self*. Negative emotions included *guilty*, *bad*, *ashamed*, and *embarrassed*. Negative emotions were reverse scored and we created a positive affect composite variable ($\alpha = .86$).

Next, we asked participants to reflect on how their disposal decisions impacted the environment and other people. On a 1 (not at all) to 5 (very much) scale, participants stated how much their disposal decisions (*a*) made a significant difference in someone's life, (*b*) helped others in a meaningful way, (*c*) made other's lives better, (*d*) were good for the environment, (*e*) reduced waste in a meaningful way, and (*f*) protected the environment. We averaged the first three questions to create a composite score for "Helping Others" ($\alpha = .96$) and averaged the last three questions to create a composite score for "Helping the Environment" ($\alpha = .93$). Finally, participants provided demographic information.

Results

Affective Responses. Affective responses differed as a function of condition ($F(2, 340) = 8.66$, $p < .001$, $\eta^2 = .05$). Planned contrasts revealed that participants in the trash, recycling, and social recycling condition ($M = 4.25$, $SD = .59$) reported more positive affect than those in the trash and recycling ($M = 3.89$, $SD = .75$) condition ($t(340) = 4.13$, $p < .001$). Participants in the trash and social recycling ($M = 4.12$, $SD = .65$) condition also reported greater positive affect than those in the trash and recycling condition ($t(340) = 2.52$, $p = .01$). Note that the trash, recycling, and social recycling condition did not differ from the trash and social recycling condition ($t(340) = 1.56$, $p = .12$), suggesting that any affective boost derives from the presence of a social recycling option rather than from simply adding a third sorting option.

Perceptions of helping the environment also varied by condition ($F(2, 340) = 6.16$, $p = .002$, $\eta^2 = .04$). Participants in the trash, recycling, and social recycling condition ($M = 3.81$, $SD = .90$) saw their disposal decisions as helping the environment more than did those in the trash and recycling condition ($M = 3.40$, $SD = 1.04$; $t(340) = 3.11$, $p = .002$) and those in the trash and social recycling condi-

tion ($M = 3.42$, $SD = 1.07$; $t(340) = 2.95$, $p = .003$). Perceptions of helping others also varied by condition ($F(2, 340) = 20.15$, $p < .001$, $\eta^2 = .11$). Participants in the trash and recycling condition ($M = 2.39$, $SD = 1.24$) saw their disposal decisions as less helpful to others than participants in the trash and social recycling condition ($M = 2.99$, $SD = 1.09$; $t(340) = 4.06$, $p < .001$) and those in the trash, recycling, and social recycling condition ($M = 3.30$, $SD = 1.00$; $t(340) = 6.25$, $p < .001$; see table 2 for all means and statistical tests).

Mediators. We next examined whether the affective benefits of social recycling were mediated by consumers' perceptions that they had helped others and helped the environment. To test for mediation with a multicategorical independent variable, we followed the instructions outlined in Hayes and Preacher (2014), using the PROCESS Macro, and we tested our mediators simultaneously using model 6. Results are shown in the appendix, and they demonstrate that social recycling increases positive affect relative to traditional disposal (trash and recycling) because it increases perceptions of helping both other people (95% CI, .02 to .15) and the environment (95% CI, .00 to .12).

Difficulty. Using sorting time as a proxy for difficulty, we find significant variance by condition ($F(2, 340) = 16.36$, $p < .001$, $\eta^2 = .09$). The trash, recycling, and social recycling condition ($M = 75.69$, $SD = 31.46$) took longer than the trash and recycling condition ($M = 62.07$, $SD = 29.95$), $t(340) = 3.69$, $p < .001$) and the trash and social recycling condition ($M = 54.78$, $SD = 21.54$; $t(340) = 5.62$, $p < .001$). However, sorting in the trash and social recycling con-

dition took less time than in the trash and recycling condition ($t(340) = -1.95$, $p = .05$).

Disposal Decisions. The presence of a social recycling option significantly affected the number of items placed in the trash ($F(2, 340) = 86.04$, $p < .001$, $\eta^2 = .34$). The trash, recycling, and social recycling condition ($M = 4.74$, $SD = 2.79$) resulted in significantly fewer items placed in the trash than the trash and recycling condition ($M = 10.51$, $SD = 3.81$; $t(340) = 12.89$, $p < .001$); moreover, even the trash and social recycling condition ($M = 8.54$, $SD = 3.55$) led to fewer items being trashed than the trash and recycling condition ($t(340) = 4.35$, $p < .001$), suggesting that even when given just two options, participants preferred to socially recycle goods than to designate them for traditional recycling.

Next, we evaluated whether the increase in positive affect was attributed to a reduction in the number of items trashed or an increase in the number of items socially recycled. In a regression predicting positive affect, the number of items socially recycled was a significant predictor of positive affect ($\beta = .25$, $t = 3.41$, $p = .001$), while the number of trashed items was not a significant predictor ($\beta = -.02$, $t = -.25$, $p = .80$). As in our first study, we find additional support that social recycling leads to greater positive affect.

Discussion. Study 2A provides additional evidence as to why social recycling may lead to greater levels of positive affect. This effect does not appear to emerge simply because a third option makes disposal decisions easier, but rather because consumers see social recycling as a prosocial action. Most importantly, we offer evidence that social recycling produces greater positive affect than traditional disposal due to

Table 2. Descriptives and Significance Tests for All Dependent Measures (Study 2A)

	Trash and Recycling ($N = 115$)	Trash and Social ($N = 111$)	Trash, Recycling, and Social ($N = 117$)	Test Statistic, p
Items trashed	10.51 (3.81)	8.54 (3.55) ^a	4.74 (2.79) ^{a,b}	$F(2, 340) = 86.04$, $p < .001$
Items recycled	9.49 (3.81)		5.78 (2.31) ^a	$t(230) = -8.96$, $p < .001$
Items shared		11.46 (3.55)	9.47 (2.77) ^b	$t(226) = -4.73$, $p < .001$
Positive affect	3.89 (.75)	4.12 (.65) ^a	4.25 (.59) ^a	$F(2, 340) = 8.66$, $p < .001$
Sorting time (seconds)	62.07 (29.95)	54.78 (21.54) ^a	75.69 (31.46) ^{a,b}	$F(2, 340) = 16.36$, $p < .001$
Helped others	2.39 (1.24)	2.99 (1.09) ^a	3.30 (1.00) ^a	$F(2, 340) = 20.15$, $p < .001$
Helped environment	3.40 (1.04)	3.42 (1.07)	3.81 (.90) ^{a,b}	$F(2, 340) = 6.16$, $p = .002$

Note.—Standard deviations are in parentheses.

^a Significant difference from traditional disposal condition, $p < .05$ (Bonferroni post hoc reported for F -tests).

^b Significant difference from trash and social condition, $p < .05$.

two distinct drivers: consumers given the opportunity to socially recycle felt that they helped others and helped the environment, both of which drove increased happiness.

STUDY 2B: SINGLE-ITEM DISPOSAL AND POSITIVE AFFECT

Study 2B continues to explore the affective benefits of social recycling via perceptions of helping the environment and others. Studies 1 and 2A show that allocating multiple items to social recycling increases positive affect; in study 2B, we evaluate whether these benefits can be realized with a single disposal decision. As in study 2A, we assessed our primary dependent measure, positive affect (again using self-conscious emotions; Sun and Trudel 2016), and our two mediators, perceptions of helping others and perceptions of helping the environment.

Participants and Procedure

Two hundred and fifteen individuals ($M_{\text{age}} = 37.77$, $SD = 16.15$; 50.5% female; 50.5% Caucasian) participated in a series of unrelated lab studies in exchange for \$20. Participants had a plain white coffee mug on their desks when they arrived to the lab, and they were randomly assigned to one of two disposal conditions (i) *trash* ($N = 108$) or (ii) *social recycling* ($N = 107$).

Participants were first asked to evaluate the mug. Participants rated the mug on perceptions of value and usefulness on a 1 (not at all) to 7 (a great deal) scale, and they then estimated the retail cost of the mug. In the trash condition, individuals were then told to dispose of the mug by placing it into the trash can inside the lab. In the social recycling condition, individuals were told to dispose of the mug by placing it on the “share shelf” (the same shelf used in study 1). They were informed that all mugs placed on

this shelf would be available to other people in the lab to keep.

Following the disposal task, participants indicated the extent to which they felt the same emotions as study 2A ($\alpha = .91$). Participants then reflected on how their disposal decisions impacted the environment ($\alpha = .96$) and other people ($\alpha = .95$).

Results

Affective Responses. Affective responses differed as a function of condition ($t(213) = 9.14$, $p < .001$, $\eta^2 = .28$), with participants who socially recycled ($M = 4.15$, $SD = .57$) reporting significantly greater positive affect than those who placed the mug in the trash ($M = 3.14$, $SD = .99$). See table 3.

Perceptions of helping the environment also varied by condition ($t(213) = 10.46$, $p < .001$, $\eta^2 = .34$). As predicted, social recyclers ($M = 2.97$, $SD = 1.40$) saw their disposal action as helping the environment more than did participants who disposed of the mug in the trash ($M = 1.34$, $SD = .81$). Perceptions of helping others also varied by condition ($t(213) = 7.57$, $p < .001$, $\eta^2 = .21$), with social recyclers ($M = 2.43$, $SD = 1.27$) seeing their actions as more helpful to others than participants who disposed of the mug in the trash ($M = 1.35$, $SD = .77$). There were no differences in the perceived value of the mug ($t(210) = .50$, $p = .62$, $\eta^2 = .00$), perceived usefulness ($t(213) = 1.06$, $p = .29$, $\eta^2 = .01$), or estimated retail cost ($t(210) = -.56$, $p = .58$, $\eta^2 = .00$; please see table 3 for all means and statistical tests).

Mediators. We again examined whether the affective benefits of social recycling were mediated by consumers’ perceptions that they had helped others and helped the en-

Table 3. Descriptives and Significance Tests for All Dependent Measures (Study 2B)

	Trash ($N=108$)	Social Recycling ($N = 107$)	Test Statistic, p
Perceived value	2.56 (1.46)	2.66 (1.54)	$t(210) = .50$, $p = .62$
Perceived usefulness	5.22 (1.66)	5.46 (1.59)	$t(213) = 1.06$, $p = .29$
Estimated retail cost (\$)	4.03 (2.88)	3.82 (2.46)	$t(210) = -.56$, $p = .58$
Positive affect	3.14 (.99)	4.15 (.57)	$t(213) = 9.14$, $p < .001$
Helped others	1.35 (.77)	2.43 (1.27)	$t(213) = 7.57$, $p < .001$
Helped environment	1.34 (.81)	2.97 (1.40)	$t(213) = 10.46$, $p < .001$

Note.—Standard deviations are in parentheses. Degrees of freedom differ slightly from analysis to analysis because some participants did not complete all dependent measures.

vironment. To test for mediation we used the PROCESS Macro (Hayes and Preacher 2014) and tested our mediators simultaneously. Results are shown in the appendix, and they demonstrate that social recycling makes consumers happier than trashing because it increases perceptions of helping both other people (95% CI, .02 to .37) and the environment (95% CI, .11 to .56).

Discussion. Study 2B provides additional evidence that social recycling leads to greater positive affect because of impressions of helping others and the environment. Moreover, study 2B demonstrates that the emotional benefits of social recycling can be realized with a single disposal decision of a low-value item.

STUDY 3: RECIPIENT NEED INCREASES POSITIVE AFFECT FROM SOCIAL RECYCLING

Following the guidelines of Spencer, Zanna, and Fong (2005), study 3 demonstrates the role of helping others in increasing happiness via moderation. We manipulated the extent to which social recycling would help a recipient, in order to evaluate whether greater perceptions of helping others (recipients in greater need) would produce greater happiness. We based this logic on previous research suggesting that the happiness derived from prosocial behavior is enhanced when consumers feel that their actions are having an impact on recipients' lives (e.g., Aknin, Dunn, Whillans, et al. 2013).

Participants and Procedure

Two hundred ninety-eight individuals ($M_{\text{age}} = 28.33$, $SD = 8.16$; 29.2% female; 73.8% Caucasian) were recruited using Amazon's Mechanical Turk platform and completed the study in return for a nominal payment. The study followed a three-group between-subjects design, where the income of social recycling recipients was varied.

Participants were given the same disposal instructions as the trash, recycling, and social recycling condition from study 2A; however, prior to sorting items, participants were told that socially recycled items would be made available to a family with an annual income of either \$20,000 (*high-need*), \$40,000 (*moderate-need*), or \$100,000 (*low-need*). We based the manipulated recipient income values on a pretest ($N = 192$; $M_{\text{age}} = 24.14$, $SD = 4.57$; 42.8% Caucasian), which showed that a family making an annual salary of \$20,000 was perceived as more needy (on a 7-point scale) than a family making \$40,000 ($t(191) = 18.22$, $p < .001$), who were in turn perceived as more needy than a family making \$100,000 ($t(191) = 23.40$, $p < .001$). (Note as well that given

our sample's average income of just over \$32,000, the \$20,000 family was earning substantially less and the \$100,000 family substantially more than our participants).

Following the sorting task, participants indicated the extent to which they felt the same emotions as our pilot study on a 1 (not at all) to 5 (very much) scale; as before, negative emotions were reverse scored, and we created a composite measure of positive affect ($\alpha = .86$). Following these questions, participants completed the same set of questions from study 2A and 2B assessing the extent to which they perceived their disposal decisions as helping the environment ($\alpha = .89$) and helping others ($\alpha = .93$). Participants were then asked how much they agreed, on a 1 (strongly disagree) to 7 (strongly agree) scale that sorting the items was difficult, and they provided demographic information.

Results and Discussion

Affective Responses. Participants' positive affect varied as a function of recipient need ($F(2, 295) = 3.88$, $p = .02$, $\eta^2 = .03$). Individuals who were told that their socially recycled items would go to a high-need family ($M = 4.12$, $SD = .57$) reported significantly greater positive affect than those who were led to believe that their items would go to a low-need family ($M = 3.90$, $SD = .63$; $t(295) = 2.63$, $p = .009$), and those who were told their items would go to a moderate-need family ($M = 4.08$, $SD = .57$) fell in the middle, but they reported greater happiness than those led to believe their items would go to a low-need family ($t(295) = 2.12$, $p < .04$). There were no differences in positive affect between participants who were led to believe that their items would go to a moderate-need or a high-need family ($t(295) = .48$, $p = .63$).

Mediation. As in studies 2A and 2B, feelings of helping others were affected by condition ($F(2, 295) = 9.65$, $p < .001$, $\eta^2 = .06$); relative to when items were going to a low-need family ($M = 3.22$, $SD = 1.04$), participants reported significantly greater feelings of helping others when the items were going to moderate- ($M = 3.56$, $SD = .89$; $t(295) = 2.59$, $p = .01$) and high-need families ($M = 3.79$, $SD = .81$; $t(295) = 4.36$, $p < .001$). There was a marginal difference in perceptions of helping others when participants believed their items were going to a moderate-need family and a high-need family ($t(295) = 1.73$, $p = .08$). Because we varied the need of recipients in study 3—and not environmental impact—feelings of helping the environment did not vary by condition ($F(2, 295) = .11$, $p = .89$, $\eta^2 = .00$).

We tested whether perceptions of helping others mediated the affective differences observed between recipient groups using the PROCESS Macro (Hayes and Preacher 2014). As shown in the appendix, perceptions of helping others mediated the impact of targeting socially recycled items to higher-need recipients on consumer happiness (95% CI, .05 to .22).

Difficulty. Sorting difficulty varied as a function of condition ($F(2, 294) = 2.93, p = .05, \eta^2 = .02$), with participants in the moderate-need condition reporting the greatest difficulty.

Disposal Decisions. We totaled the number of items placed in the trash, recycling, and social recycling bin for each condition (see table 4 for all means and statistical tests); social recycling was marginally affected by condition ($F(2, 295) = 2.35, p < .10, \eta^2 = .02$); when participants knew their shared items would go to families with moderate or high need, they placed more items into the social recycling bin.

We again evaluated whether positive affect was driven by an increase in items socially recycled or a reduction of items trashed. In a linear regression, the number of socially recycled items positively predicted positive affect ($\beta = .23, t = 3.01, p < .01$), while the number of trashed items was a marginally significant predictor ($\beta = -.14, t = 1.81, p = .07$). As in our previous studies, positive affect is more strongly driven by the number of items designated for social recycling.

Discussion. Study 3 adds to our understanding of prosocial giving to disadvantaged groups (Freeman, Aquino, and McFerran 2009), and it demonstrates that social recycling produces affective benefits, particularly when the recipients of the items are perceived as high in need. From a theoretical perspective, these findings further support our contention that social recycling is a form of prosocial behavior. From a practical perspective, these findings suggest that the affective resources reclaimed by social recycling may be most likely to emerge when consumers are helping other consumers at or below their own income level.

STUDY 4: SOCIAL RECYCLING VERSUS DONATION AND TRADITIONAL RECYCLING

Certainly social recycling, traditional recycling, and traditional donation have much in common: all three have the potential to reduce the likelihood that used goods end up in landfills, and both traditional donations and social recycling are prosocial in that items diverted from landfills may benefit others. In study 4, we therefore further differentiate social recycling from these other behaviors. In particular, we expected that consumers would allocate fewer goods to donation (and therefore more to the trash) than they would to social recycling: we suggest that whereas traditional donation tends to prompt consumers to think about what is acceptable as a donation or not, social recycling may allow for a broader range of resources to be allocated to nontrash disposal. Indeed, as noted earlier, Goodwill does not accept certain types of TVs, cribs, and mattresses, but consumers frequently leave exactly these goods on the

Table 4. Manipulating Recipient Need (Study 3)

	Low Need (<i>N</i> = 100)	Moderate Need (<i>N</i> = 97)	High Need (<i>N</i> = 101)	Omnibus <i>F</i> , <i>p</i>
Items trashed	4.44 (3.08)	3.75 (2.54)	3.83 (3.05)	$F(2, 295) = 1.66, p = .19$
Items recycled	5.96 (2.75)	5.83 (2.27)	5.55 (1.94)	$F(2, 295) = .78, p = .46$
Items shared	9.60 (3.44)	10.41 (3.13)	10.50 (3.14)	$F(2, 295) = 2.35, p < .10$
Positive affect	3.90 (.63)	4.08 (.57) ^b	4.12 (.57) ^a	$F(2, 295) = 3.88, p = .02$
Sorting difficulty	2.07 (1.18)	2.34 (1.50)	1.92 (.97) ^c	$F(2, 294) = 2.93, p = .05$
Helped others	3.22 (1.04)	3.56 (.89) ^a	3.79 (.81) ^a	$F(2, 295) = 9.65, p < .001$
Helped environment	3.94 (.87)	3.92 (.75)	3.97 (.72)	$F(2, 295) = .11, p = .89$

Note.—Standard deviations are in parentheses.

^a Significant difference from low need (annual household income of \$100,000), $p < .05$ (Bonferroni posthoc reported for *F*-tests).

^b Moderately different from low need (annual household income of \$100,000), $p = .09$.

^c Significant difference from moderate need (annual household income of \$40,000), $p < .05$.

street when moving for others in their neighborhood to take. Compared to donating, therefore, we predicted that social recycling would decrease the number of items allocated to trash and increase perceptions of helping the environment and that this mechanism would drive the extent to which unwanted resources are converted to greater positive affect via social recycling than via donation.

As in the previous studies, we assessed our primary dependent measure—positive affect—as well as the two constructs we expected to mediate the impact of social recycling on happiness: helping others and helping the environment. Given that convenience has been found to increase traditional recycling and traditional donation behavior (e.g., Sidique, Lupi, and Joshi 2010), we also investigated a potential third mediator—convenience—in explaining consumer happiness from different forms of disposal.

Participants and Procedure

Three hundred and seventy three individuals ($M_{\text{age}} = 33.88$, $SD = 10.22$; 47.5% female; 81.0% Caucasian) were invited to take a short survey on Amazon's Mechanical Turk. Participants were paid a nominal amount for completing the survey. Participants first listed 10 possessions that they no longer wanted but that other people may want or benefit from. These items were then presented on the following page. Participants were asked to rate how valuable their items were on a 1 (not at all) to 7 (a great deal) scale.

Participants were randomly assigned to one of three conditions; in each, they dragged each item into one of three boxes that corresponded with what the participant would most likely do with the item. In the *donation* condition ($N = 122$), participants sorted items into (a) I would take this item to a donation center, (b) I would keep this item, and (c) I would put this item in the trash. In the *social recycling* condition ($N = 125$), participants first were introduced to the idea of social recycling. They read, "Imagine that your neighborhood has a 'social' recycling program. In addition to your trash and recycling bin, your neighborhood offers a 'sharing' bin." Participants were informed that all items placed into this bin would be available for others to take the morning of garbage day and that all items not taken would be picked up along with trash and recycling. Participants in this condition then sorted their items into (a) "I would put this item in my sharing bin," (b) "I would keep this item," and (c) "I would put this item in the trash." In the *traditional recycling* condition ($N = 126$), participants first were introduced to the idea of curbside recycling. They read, "Imagine that your neighborhood has a curbside recycling program that is picked up along with the trash on garbage day." Participants were informed that all recyclable materials could be placed in this bin and that these items would be broken down and the raw materials would be used to make new items. Participants in this condition then sorted their items into (a) "I would put this item in my recycling bin," (b) "I would keep this item," and (c) "I would put this item in the trash."

Following the sorting task, participants indicated the extent to which they felt the same emotions used in study 3 ($\alpha = .84$). We again asked participants to reflect on how their disposal decisions impacted other people ($\alpha = .97$) and the environment ($\alpha = .92$). Finally, participants indicated how convenient it would be to donate/socially recycle/recycle (depending on their condition) their items, on a 1 (very inconvenient) to 7 (very convenient) scale.

Following the sorting task, participants indicated the extent to which they felt the same emotions used in study 3 ($\alpha = .84$). We again asked participants to reflect on how their disposal decisions impacted other people ($\alpha = .97$) and the environment ($\alpha = .92$). Finally, participants indicated how convenient it would be to donate/socially recycle/recycle (depending on their condition) their items, on a 1 (very inconvenient) to 7 (very convenient) scale.

Results and Discussion

Affective Responses. Positive affect varied by condition ($F(2, 370) = 3.93$, $p = .02$, $\eta^2 = .02$), with social recyclers ($M = 3.89$, $SD = .64$) reporting greater positive affect than donators ($M = 3.69$, $SD = .66$; $t(370) = 2.50$, $p = .01$) and traditional recyclers ($M = 3.71$, $SD = .61$; $t(370) = 2.35$, $p = .02$). There were no observed differences in affect between traditional recyclers and donators ($t(370) = .18$, $p = .86$).

Perceptions of helping the environment also varied by condition ($F(2, 370) = 7.98$, $p < .001$, $\eta^2 = .04$). As predicted, social recyclers ($M = 5.48$, $SD = 1.32$) saw their actions as helping the environment more than did donators ($M = 4.76$, $SD = 1.54$; $t(370) = 3.85$, $p < .001$) and traditional recyclers ($M = 4.96$, $SD = 1.55$; $t(370) = 2.82$, $p < .005$), likely because social recyclers allocated the fewest items to the trash. Perceptions of helping others also varied by condition ($F(2, 370) = 14.46$, $p < .001$, $\eta^2 = .07$). Donators ($M = 4.25$, $SD = 1.49$) saw their actions as marginally more helpful to others than traditional recyclers ($M = 3.91$, $SD = 1.80$; $t(370) = 1.63$, $p = .10$), but most importantly, social recyclers ($M = 4.97$, $SD = 1.47$) saw their actions as even more helpful to others than did donators ($t(370) = 3.59$, $p < .001$), likely because social recyclers allocated more items to other people than did donators. There were no differences by condition in the perceived value of the items listed ($F(2, 369) = .14$, $p = .84$, $\eta^2 = .00$), but perceived convenience varied by condition, $F(2, 370) = 25.85$, $p < .001$, $\eta^2 = .12$, with the social and traditional recycling bins deemed more convenient relative to taking items to a donation center (see table 5 for all means and statistical tests).

Table 5. Social Recycling versus Donations and Traditional Recycling (Study 4)

	Donation (<i>N</i> = 122)	Social Recycling (<i>N</i> = 125)	Traditional Recycling (<i>N</i> = 126)	<i>F</i> -Test, <i>p</i>
Items trashed	1.24 (1.45)	.72 (1.24) ^{a,b}	1.15 (1.75)	$F(2, 370) = 4.32, p = .01$
Items kept	2.41 (1.88) ^b	1.85 (2.03) ^b	3.54 (2.83)	$F(2, 370) = 17.77, p < .001$
Items donated/recycled	6.35 (2.25)	7.42 (2.38) ^{a,b}	5.29 (3.01) ^a	$F(2, 370) = 21.45, p < .001$
Positive affect	3.69 (.66)	3.89 (.64) ^{a,b}	3.71 (.61)	$F(2, 370) = 3.93, p = .02$
Helped others	4.25 (1.49)	4.97 (1.47) ^{a,b}	3.91 (1.80)	$F(2, 370) = 14.46, p < .001$
Helped environment	4.76 (1.54)	5.48 (1.32) ^{a,b}	4.96 (1.55)	$F(2, 370) = 7.98, p < .001$
Convenience	4.55 (1.58)	5.70 (1.46) ^a	5.83 (1.59) ^a	$F(2, 370) = 25.85, p < .001$
Value of items	3.05 (1.02)	3.11 (.90)	3.06 (.87)	$F(2, 369) = .14, p = .84$

^a Significant difference from traditional donation condition, $p < .05$ (Bonferroni post hoc reported for *F*-tests).

^b Significant difference from traditional recycling condition, $p < .05$.

Mediation. We examined whether perceptions of helping others, helping the environment, and convenience mediated the affective differences observed between social recycling and donating and traditional recycling using the PROCESS Macro (Hayes and Preacher 2014), and we tested our mediators simultaneously using model 6. We found social recycling to be a significant predictor of helping others (i.e., path a_1 ; $\beta = .89, p < .001$). Helping others (i.e., path b_1 ; $\beta = .10, p < .001$) was a significant predictor of positive affect and was a significant mediator (95% CI, .05 to .16). We also found social recycling to be a significant predictor of helping the environment (i.e., path a_1 ; $\beta = .63, p < .001$). Helping the environment (i.e., path b_1 ; $\beta = .08, p < .001$) was a significant predictor of positive affect. Helping the environment was a significant mediator (95% CI, .01 to .10). We also found social recycling to be a significant predictor of convenience (i.e., path a_1 ; $\beta = .51, p < .01$). Convenience (i.e., path b_1 ; $\beta = .04, p < .05$) was a significant predictor of positive affect. However, convenience was not a significant mediator (95% CI, $-.06$ to $.00$). Overall, the direct effect of social recycling on positive affect (i.e., path c ; $\beta = .20, p < .01$) was attenuated by the mediators entered into the model (see the appendix).

We also conducted a mediation model directly comparing social recycling to traditional recycling. Relative to traditional recycling, social recycling results in greater positive affect because of significantly greater impressions of helping others (95% CI, .03 to .24) and the environment (95% CI, .01 to .18). Convenience was not a mediator of the relation between social recycling and happiness (95% CI, $-.06$ to $.01$).

In addition, we ran a mediation model directly comparing social recycling to donations. Relative to donating, social recycling results in greater positive affect because of greater impressions of helping others (95% CI, .04 to .17) and greater impressions of helping the environment (95% CI, .01 to .13). Convenience was not a significant mediator in this model (95% CI, $-.03$ to $.09$).

Disposal Decisions. We totaled the number of items placed in the “to trash,” the “to keep,” and the “to donate/to social recycle/to recycle” (depending on condition) bin. The number of items that participants reported they would designate to trash varied by condition ($F(2, 370) = 4.32, p = .01, \eta^2 = .02$), with social recyclers designating fewer items to trash than either traditional recyclers ($t(370) = -2.32, p = .02$) or donators ($t(370) = -2.72, p < .007$). Social recyclers did not place fewer items in the trash because they simply kept more: the number of items kept also varied by condition ($F(2, 370) = 17.77, p < .001, \eta^2 = .09$), with social recyclers reporting that they would keep fewer items than traditional recyclers ($t(370) = -5.85, p < .001$) or donators ($t(370) = -1.89, p < .06$). As a result, social recyclers designated more items to be socially recycled than either recyclers designated to be recycled ($t(370) = 6.55, p < .00$) or donators designated to be donated ($t(370) = 3.72, p < .001$). Thus social recycling reduces both keeping and trashing, increasing the number of items allocated prosocially—again mirroring social recyclers’ increased perceptions of helping others.

Next, we evaluated if the boost in positive affect was driven by increased prosocial exchange or a reduction in

the number of items trashed. In a linear regression predicting positive affect, the number of items prosocially exchanged was significant ($\beta = .30$, $t = 5.47$, $p < .001$), while the number of trashed items was not ($\beta = -.02$, $t = -.43$, $p = .67$).

Discussion. These results suggest that social recycling is both theoretically and empirically distinct from standard donation and traditional recycling opportunities in its capacity to extract positive affect from unused resources. Moreover, although social recycling results in perceptions of greater convenience than donating or traditional recycling, convenience does not serve as a significant mediator of the impact of social recycling on happiness. Instead, and consistent with our account, social recycling produces greater affective benefits than either traditional recycling or donating due to increased perceptions of both helping others and helping the environment.

GENERAL DISCUSSION

Five experiments and one pilot field study demonstrate that greater emphasis on a prosocial form of disposal—*social recycling*—may offer an additional mainstream disposal option that optimizes the conversion of physical resources into emotional resources: social recycling not only reduces trash but also transforms unused goods into consumer happiness. Further, we show that this transformation is facilitated by consumers' beliefs that socially recycling unwanted resources benefits both others and the environment.

Our studies used primarily lab and online experimental paradigms, raising the question of whether implementing social recycling in everyday life would offer the same affective benefits. While our pilot study conducted at a one-time Freecycle event held on a university campus suggests that even small acts of real social recycling produce affective benefits, social recycling in practice (as with Goetzak) frequently involves allocating goods directly to others in the social recycler's immediate community on a repeated basis. The theoretical framework presented in figure 1 suggests that these factors may influence the positive affect received from social recycling: not only does increasing the connection between individuals result in greater willingness to help (e.g., Small and Loewenstein 2003), but both the feeling of having a specific impact with a donation and making a donation face-to-face are associated with even greater affective benefits from prosocial behavior (e.g., Aknin, Dunn, Sandstrom, et al. 2013; Aknin, Dunn, Whillans, et al. 2013). Compared to designating unwanted used goods to large in-

stitutions like Goodwill and the Salvation Army, social recycling may increase feelings of impact or lead to more face-to-face giving, driving greater happiness. As a result, it is possible that our results may, if anything, underestimate the affective potential of social recycling, though of course further research is needed.

It is also possible that our theoretical framework can be enriched by considering other outcomes beyond consumer happiness. Indeed, an additional study also suggests that the benefits of social recycling may extend even further to influence perceptions of the social recycler's surrounding community. Participants ($N = 114$; $M_{\text{age}} = 20.68$, $SD = 1.90$; 45.6% female; enrolled in an introductory marketing class) were asked to test three pens that would purportedly be used in future lab studies. Participants then were asked to dispose of the pens in either a trash, recycling, or social recycling bin ($N = 56$) or a trash and recycling bin ($N = 58$): anything placed in the trash would be thrown away, anything placed in the recycling bin would be recycled, and anything placed in the social recycling bin would be put in the hallway for anyone in the business school to take. Participants then responded to two questions designed to assess their feelings about their "community"—their school and their fellow business school students—on a 1 (dislike extremely) to 7 (like extremely) scale: (i) "How much do you like your marketing class this semester?" and (ii) "How much do you like the other students in your marketing class?" Participants in the social recycling condition reported that they liked the students in their class more ($t(112) = 2.11$, $p < .04$), and they liked the class itself better than participants in the traditional disposal condition ($t(112) = 2.05$, $p = .04$).

Finally, our theoretical model may also be extended by shedding new insight into the problem of people retaining unneeded resources. We have suggested that the perceived environmental and prosocial impact of disposition methods drive the positive affect that they generate in consumers. In the case of compulsive hoarding, individuals experience environmental and social disutility (Tolin et al. 2008). As such, our model's mediators might be useful in designing interventions that prompt behavioral change. Specifically, it is possible that an emphasis on the prosocial nature of disposal—allocating goods to family members or community members—could motivate hoarders to divest themselves of items and provide affective benefits for doing so. Indeed, our introduction of a social recycling option and the clear willingness of participants to use this option for disposal suggest that responses to disposal options are not

always governed by stable personality traits—not only compulsive hoarding (Frost and Hartl 1996) but also traits such as frugality (Lastovicka et al. 1999)—but rather can be influenced by external interventions. At the same time, certain personality traits may lead to different levels of acceptance of such interventions: individuals with weaker product retention tendencies (Haws et al. 2012) or an interest in voluntary simplicity (Leonard-Barton 1981) are likely to be more open to social recycling interventions.

More generally, we suggest that social recycling may encourage people to reconsider the value of their unwanted resources—to find value in items that are typically deemed as “trash.” Such decisions may contribute to the reduction of items sent to the landfill. Of course, social recycling can only be successful—at least for recipients—if goods that are socially recycled actually prove to be of use to recipients. The introduction of a social recycling bin without clearly defined guidelines of what items are acceptable may encourage disposers to put items in it that may not be appropriate. Given that consumers do not like to feel wasteful when disposing of items (Okada 2001), they may seek to alleviate feelings of guilt (Elgaaied 2012) by placing even inappropriate items into the social recycling bin. In our studies, however, the vast majority of items placed into the social recycling bin had likely future benefit to others, with only very few items that likely had no benefit. These results suggest that social recycling may indeed lead people to contribute goods that are useful to recipients—leading to increased utility for both social recyclers and recipients, while reducing the amount of trash in landfills. Our results offer one input into a larger research program examining the outcomes of different modes of disposition to build a broader theory of disposition—allowing people to make the most of resources across the entire product life cycle.

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