

Happiness Runs in a Circular Motion: Evidence for a Positive Feedback Loop between Prosocial Spending and Happiness

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Abstract We examine whether a positive feedback loop exists between spending money on others (i.e. *prosocial spending*) and happiness. Participants recalled a previous purchase made for either themselves or someone else and then reported their happiness. Afterward, participants chose whether to spend a monetary windfall on themselves or someone else. Participants assigned to recall a purchase made for someone else reported feeling significantly happier immediately after this recollection; most importantly, the happier participants felt, the more likely they were to choose to spend a windfall on someone else in the near future. Thus, by providing initial evidence for a positive feedback loop between prosocial spending and well-being, these data offer one potential path to sustainable happiness: prosocial spending increases happiness which in turn encourages prosocial spending.

Keywords Happiness · Well-being · Money · Prosocial spending · Sustainability · Feedback loop

1 Introduction

Can simple interventions lead to sustainable increases in subjective well-being? Much of the research conducted to date suggests that while happiness levels can be increased, these effects are often fleeting. Indeed, several strategies have been shown to boost well-being levels temporarily, but their positive emotional outcomes tend to fade over time if the strategies are not repeated regularly (e.g., Emmons and McCullough 2003; Seligman et al. 2005). While the benefits of these strategies may be transitory, it is possible that the well-being experienced after engaging in these behaviors might encourage people to engage in

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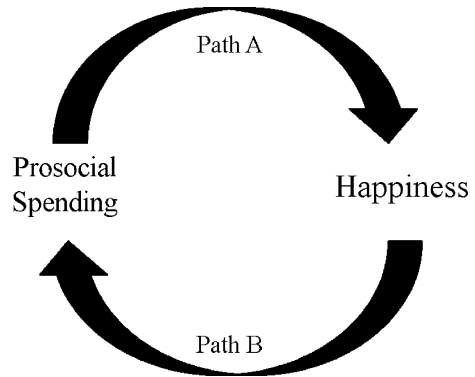
the same behaviors again. If this is the case, a positive feedback loop may occur, offering a potential path to sustainable happiness. Here, we test whether such a positive feedback loop exists between spending money on others and happiness.

The goal of increasing happiness over time is complicated by the fact that two distinct literatures point to the relative stability of people's level of happiness. First, happiness is shaped to a large extent by stable genetic predispositions, with estimates from twin and adoption studies suggesting that up to 80% of the variance in happiness levels can be attributed to genetic variation (Lykken and Tellegen 1996), although a more widely accepted figure is 50% (Lyubomirsky et al. 2005). Second, a complementary body of research on hedonic adaptation demonstrates that people adapt to most life changes, whether large or small (Frederick and Loewenstein 1999). Recent work, however, suggests that adaption is not inevitable—at least when it comes to negative events (Diener et al. 2009). For instance, divorce (Lucas 2005), disability (Lucas 2007), and unemployment (Lucas et al. 2004) have been shown to exert a lasting negative impact on well-being. Unfortunately, people appear to adapt more thoroughly to positive life changes, such as marriage (Lucas et al. 2003) and increased income (Helliwell 2002; Lykken and Tellegen 1996). Given the relative stability of happiness in the wake of positive life events, it is an open question as to whether increased happiness can be maintained in the longer term.

Although happiness levels appear to be relatively stable, several promising strategies have been shown to increase happiness. For instance, recent research has shown that spending money on others leads to higher levels of happiness than spending on oneself (Dunn et al. 2008). Specifically, participants assigned to spend a small windfall on someone else by purchasing a gift or making a donation to charity (*prosocial spending*) were significantly happier at the end of the day than participants assigned to spend the same size windfall by paying for a bill, expense, or gift for themselves (*personal spending*, see Dunn et al. 2008). Other strategies shown to successfully boost happiness over longer periods of time include using one's character strengths in new ways (Seligman et al. 2005) and keeping a gratitude journal (e.g., Emmons and McCullough 2003). Importantly, however, regular or repeated practice of these strategies is required to maintain long-term happiness gains. Thus, while several interventions have been shown to increase happiness in the short term or over elongated periods with intentional practice, it remains to be seen whether these strategies can provide a sustainable route to happiness.

The sustainability of these strategies may depend on the boost in happiness they produce; if people experience an initial rise in happiness, they may be more likely to practice the strategies in the future. Providing initial support for this idea, Cohn and Fredrickson (in press) have shown that individuals who experience positive emotions in the first few weeks after a loving-kindness meditation intervention are more likely to continue this practice as much as 15 months later. These findings are consistent with the broaden-and-build theory of positive emotions, which suggests that positive emotions serve to broaden an individual's thoughts and build enduring resources (Fredrickson 1998, 2001). Thus, we propose that a similar pattern may emerge for other happiness interventions, such as prosocial spending. Indeed, given that previous research has shown that spending money on others leads to higher levels of happiness than spending on oneself (Dunn et al. 2008, 2010), here we examine whether simply *recalling* memories of generous spending produces similar emotional gains. Most importantly, we explore whether these higher levels of happiness promote future acts of generous spending. In sum, the present study explores whether recalling a previous act of prosocial spending leads to an increase in happiness, and whether higher levels of happiness, in turn, lead people to want to spend on others again in the near future (Fig. 1).

Fig. 1 Model of positive feedback loop between prosocial spending and happiness. Recalled acts of prosocial spending lead to higher levels of happiness. Happiness, in turn, increases the likelihood of engaging in future acts of prosocial spending



2 Method

Fifty-one individuals (51% female, $M_{\text{age}} = 20.3$) on the University of British Columbia campus were asked to recall and describe in as much detail as possible the last time they spent either \$20 or \$100 on either themselves or someone else. That is, participants were randomly assigned to one of four recall conditions in a 2 (spending amount: \$20 vs. \$100) \times 2 (purchase target: self vs. someone else) design. Recall instructions were designed to elicit vivid reminiscence and modeled on those used by Strack et al. (1985). After describing this memory, participants reported their happiness on the Subjective Happiness Scale ($\alpha = .86$; Lyubomirsky and Lepper 1999).

Next, participants were offered a choice between two monetary windfall amounts (\$5 vs. \$20) and two different ways to spend this money. These four spending options were selected to map on to the conditions used in previous research (Dunn et al. 2008), enabling comparison across studies. Consistent with this previous research, participants were told they could spend the money on (1) a bill, expense, or gift for themselves (*personal spending*) or (2) on a gift for someone else or donation to charity (*prosocial spending*). Participants were told that they should choose whichever option would make them the happiest and that once their decision was made, they would receive the appropriate amount of money with a reminder of the spending guidelines. Importantly, this procedure was conducted in an anonymous fashion to mitigate social desirability concerns by giving participants cue cards labeled A, B, C, or D on one side with a condition description on the other side (Fig. 2). Participants were informed that all research assistants were unaware of which condition assignment corresponded to each letter, so the research assistants would never know which spending experience they had selected. Participants were given several minutes to read the spending descriptions on the cue cards and choose their spending experience. After deciding, participants informed the research assistant of their choice using the appropriate letter (A, B, C, or D) and then received an envelope with the windfall amount and a spending direction reminder.¹

¹ Although this procedure was carefully designed to minimize social desirability concerns, it is conceivable that some participants who selected the prosocial spending option actually intended to spend the money on themselves. This possibility is unlikely given that previous work has shown that the majority of participants are quite willing to express a preference for spending money on themselves, even when social desirability concerns are higher (Dunn et al. 2008). In addition, research suggests that making an initial commitment to engage in prosocial behavior does lead to longer term prosocial behaviour (Nelson and Norton 2005).

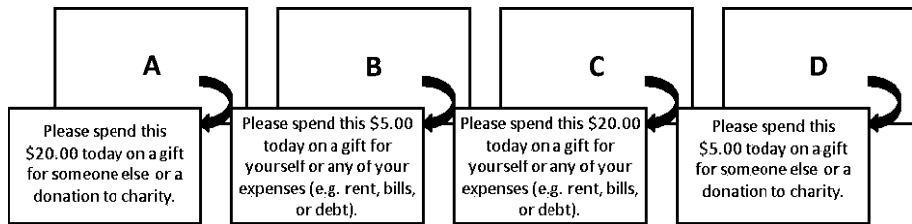


Fig. 2 Future spending type selection cue cards

3 Results and Discussion

3.1 Reflecting on Prosocial Spending Increases Happiness

We predicted that recalling a previous act of prosocial spending would make people happier than recalling a previous act of personal spending. To investigate this question, we analyzed happiness ratings with a 2 (purchase target: self versus someone else) \times 2 (purchase amount: \$20 vs. \$100) ANOVA. As expected, participants randomly assigned to recall a purchase made for someone else ($M = 5.59$, $SD = 0.72$) were significantly happier than participants assigned to recall a purchase made for themselves ($M = 4.94$, $SD = 1.33$), $F(1, 47) = 4.66$, $p < .04$, $d = .61$. Neither the main effect of purchase amount, $F(1, 47) = 1.03$, $p = .32$, nor the interaction between purchase amount and purchase target, $F(1, 47) = 0.11$, $p = .74$, approached significance. Thus, people felt happier when they thought about a time when they had spent money on others rather than themselves, and this effect was consistent across smaller (\$20) and larger (\$100) purchases (Path A in Fig. 1).

3.2 Higher Levels of Happiness Predict Future Prosocial Spending

Not surprisingly, when participants were offered the option of selecting between two windfall amounts, the majority of participants (though not all) opted to take \$20 over \$5, $\chi^2(1) = 32.96$, $p < .001$. Participants were more equally divided on whether to spend this money on themselves or someone else $\chi^2(1) = .18$, ns (see Table 1). Our critical question, however, was whether higher levels of happiness led participants to select a prosocial spending choice in the future. To investigate this question, purchase amount, purchase target, and happiness were entered into a logistic regression equation predicting future spending choice. Consistent with our hypothesis, happiness was the only significant predictor of future spending choice ($B = .95$, $p < .02$), such that participants who felt happier after the recollection task were more likely to choose to engage in prosocial spending in the future. Neither the main effect of purchase amount ($B = -.06$, $p = .94$) nor purchase target ($B = .24$, $p = .44$) approached significance. Interestingly, the positive effect of happiness on participants' preference for future prosocial spending emerged consistently across experimental conditions. When a Happiness \times Purchase Target interaction term and Happiness \times Purchase Amount interaction term were added to the logistic regression above, happiness remained the only significant predictor of future spending choice ($B = 1.03$, $p = .04$). The main effect of happiness was not significantly moderated by purchase target ($B = .33$, $p = .51$) or purchase amount ($B = -.79$, $p = .09$), indicating

Table 1 The number of participants selecting each of the four future spending choices

Future spending choice	Selection by personal spending recall	Selection by prosocial spending recall	Total selection frequency
\$20 Personal spending	14	11	25
\$20 Prosocial spending	9	12	21
\$5 Personal spending	2	0	2
\$5 Prosocial spending	0	3	3

that higher levels of happiness predicted a greater willingness to engage in prosocial spending across experimental recall conditions. In sum, the happier participants felt after the memory exercise, the more likely they were to choose to engage in prosocial spending when presented with a new windfall (Path B in Fig. 1).

3.3 Indirect Effect

Finally, we predicted that reflecting upon a previous prosocial spending experience would lead to a future willingness to engage in prosocial spending by making people feel happier. To test for the presence of this indirect effect, analytic computations were conducted with Prodclin2 (MacKinnon et al. 2007; MacKinnon et al. 2002), which accommodated our dichotomous dependent variable. Supporting our hypotheses, the indirect mediation model $CI_{.95}$ [.02, .75] via happiness was significant (Fig. 3), providing evidence that past acts of generosity promote future acts of generosity to the extent that overall happiness levels are increased. In contrast, the direct path between recalled spending and future spending choice did not reach significance ($B = 0.44$, $p = 0.12$), suggesting that reflecting on past prosocial spending does not inevitably lead people to choose prosocial spending in the future. The absence of a direct path between recalled spending and future spending suggests that participants are not simply motivated by a drive for consistency between their past and future spending choices. Rather, the observed pattern of results suggests that reflecting on a past instance of prosocial spending facilitates future prosocial spending primarily by increasing happiness levels.

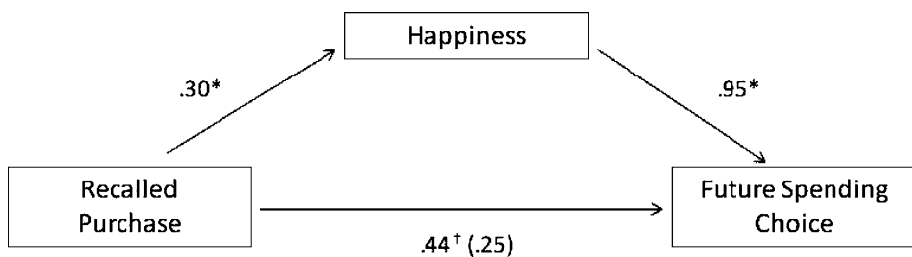


Fig. 3 Indirect mediation model of recalled spending behavior to future spending choice via happiness level. † $p < .13$. * $p < .05$

4 General Discussion

These results support the existence of a positive feedback loop between prosocial spending and happiness. Taken together, our results show that (a) recalling a past prosocial spending experience leads to higher levels of happiness, (b) higher levels of happiness increase the likelihood of engaging in prosocial spending, and (c) recalling a past experience of prosocial spending increases the likelihood of spending a new windfall on others to the extent that happiness levels are elevated in the interim. This suggests that spending money on others may be self-reinforcing as long as this prosocial experience provides happiness.

The present findings are consistent with classic research (e.g., Isen 1970; Isen and Levin 1972) demonstrating that happiness facilitates prosocial behavior. Indeed, our results show that people experiencing higher levels of happiness after recalling *either* a personal or prosocial spending experience were more likely to commit to spending a windfall on someone else. This suggests that people may act generously after experiencing *any* happiness inducing event – whether that be recalling a previous prosocial spending experience or indulging in a slice of chocolate cake. That said, in contrast to a fleeting pleasure like eating chocolate cake, prosocial spending may be particularly promising route to prosocial behavior because it has been shown to increase happiness immediately after spending (Dunn et al. 2008, 2010) and later upon reflection, as demonstrated here. This research also supports the broaden-and-build theory of positive emotions by demonstrating that higher levels of happiness may expand an individual's mindset to include thoughts of others. Finally, our findings also dovetail with those of Cohn and Fredrickson (*in press*) by demonstrating that initial happiness gains can cause a happiness intervention to become self-reinforcing. Therefore, to the extent that initial happiness gains predict continued practice and continued practice predicts sustained benefits, a positive feedback loop between practice and well-being may be essential for achieving sustainable happiness.

The feedback loop between prosocial spending and happiness presented here may seem intuitive, but previous research on prosocial behavior has shown that one kind act does not always inspire similar behavior in the future. Specifically, research on moral licensing has shown that committing one kind deed may actually *decrease* the likelihood of committing a future kind act because knowledge of one's earlier generosity inflates one's sense of morality and permits self-interested acts in the future (see Merritt et al. 2010). For example, if someone gives money to a homeless individual one afternoon, they may be less likely to donate to a charity collector later that evening. This is because one's initial act of generosity boosts feelings of moral behavior, thereby freeing one to act less generously later. Thus, a moral licensing hypothesis might have predicted that recalling a previous act of prosocial spending would have decreased the likelihood that participants would choose to engage in prosocial spending when presented with the new windfall. The present data therefore add to our understanding of when prosocial behavior might be repeated, by suggesting that happiness experienced after the initial kind deed may be key to determining whether this initial kind deed leads to another.

Prosocial spending may increase happiness both immediately after spending and upon recollection, but does the amount of money spent influence the happiness returns? Replicating previous findings (Dunn et al. 2008), the data presented here suggest that *how* money is spent may matter more than *how much* money is spent. That is, participants who recalled spending on others felt happier than those who spent money on themselves, and the benefits of prosocial spending were the same regardless of whether they spent \$100 or just \$20. Recent work suggests that prosocial behavior leads to emotional gains by providing opportunities for positive social contact (Aknin et al. 2011b); therefore, prosocial

spending should promote happiness if the spending opportunity fosters positive relations with others, which may be largely independent of the specific amount of money spent.

Of course, this study is not without limitations. First, as mentioned above, these data were collected on a Canadian university campus, and recent research suggests that it is critical to look beyond Western, educated, industrialized, rich and democratic (“WEIRD”) samples in understanding human behavior (see Henrich et al. 2010a, b). Thus, these pathways are now being studied in other countries around the world. Initial research suggests that the emotional benefits of prosocial spending may extend well beyond the limited population studied in the present research (Aknin et al. 2011a).

A second limitation is that participants in this study were asked to recall a previous spending occasion, rather than actually going out and buying something for themselves or someone else. We chose this reminiscence-based methodology because it has been used successfully in previous research for studying the long-term emotional consequences of real world spending experiences (e.g., Carter and Gilovich 2010; Van Boven and Gilovich 2003). A final limitation is that participants’ future spending choices may have been influenced by social desirability concerns.² This possibility seems unlikely however, because past research has shown that most people are quite willing to report preferring to spend money on themselves, even when no special precautions are taken to minimize social desirability concerns (Dunn et al. 2008). Further, because there was no way for research assistants to know which spending experience participants selected, it is unclear who participants might have been trying to deceive by selecting the prosocial spending option.

These important limitations notwithstanding, this initial research has implications for both organizations and individuals. First, because these data suggest that past instances of prosocial spending lead to future acts of prosocial spending only to the extent that recollections of earlier spending produce feelings of happiness, fundraising organizations may benefit from making initial donation experiences as pleasurable and memorable as possible to encourage subsequent generous behavior. If initial donation experiences are positive, providing donors with the opportunity to reflect upon these donations may make them more receptive to providing continued support. Second, these findings have implications for individuals seeking to escape the hedonic treadmill. These data suggest that while the benefits of a happiness intervention may fade, higher levels of happiness may reinforce other happiness-increasing behaviors—as seen in the prosocial spending and happiness feedback loop we demonstrate. Therefore, to the extent that happiness-increasing strategies boost happiness in the short term and encourage the same behavior again, people may be able find a path to sustainable happiness.

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References

- Aknin, L. B., Barrington-Leigh, C. P., Dunn, E. W., Helliwell, J. F., Biswas-Diener, R., Kemeza, I., et al. (2011a). Prosocial spending and well-being: Cross-cultural evidence for a psychological universal. (Manuscript under review).

² One additional limitation is that we did not measure individual difference in social value orientations and typologies (McClintock 1978; Van Lange et al. 1997). Given that participants were randomly assigned to conditions, it is unlikely that these individual differences account for our findings. That said, future research should examine how such variables interact with the feedback loop presented here.

- Aknin, L. B., Sandstrom, G. M., Dunn, E. W., & Norton, M. I. (2011b). Putting the “social” in prosocial spending: Social contact as a catalyst for turning good deeds into good feelings. (Manuscript in preparation).
- Carter, T., & Gilovich, T. (2010). The relative relativity of experiential and material purchases. *Journal of Personality and Social Psychology*, 98, 146–159.
- Cohn, M., & Fredrickson, B. L. (in press). In search of durable positive psychology interventions: Predictors and consequences of long-term positive behavior change. *Journal of Positive Psychology*.
- Diener, E., Lucas, R. E., Schimmack, U., & Helliwell, J. F. (2009). *Well-being for Public Policy* (pp. 95–118). New York: Oxford University Press.
- Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science*, 319, 1687–1688.
- Dunn, E. W., Ashton-James, C., Hanson, M. D., & Aknin, L. B. (2010). On the costs of self-interested economic behavior: How does stinginess get under the skin? *Journal of Health Psychology*, 15, 627–633.
- Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology*, 84, 377–389.
- Frederick, S., & Loewenstein, G. (1999). Hedonic adaptation. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 302–329). New York: Russell Sage Foundation.
- Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology*, 2, 300–319.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218–226.
- Helliwell, J. F. (2002). How’s life? Combining individual and national variables to explain subjective well-being. *National Bureau of Economic Research, Working Paper No. W9065*.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010a). The weirdest people in the world? *Behavioral and Brain Sciences*, 33, 61–135.
- Henrich, J., Heine, S., & Norenzayan, A. (2010b). Most people are not WEIRD. *Nature*, 466, 29.
- Isen, A. M. (1970). Success, failure, attention and reaction to others: The warm glow of success. *Journal of Personality and Social Psychology*, 15, 294–301.
- Isen, A. M., & Levin, P. F. (1972). Effect of feeling good on helping: Cookies and kindness. *Journal of Personality and Social Psychology*, 21, 384–388.
- Lucas, R. E. (2005). Time does not heal all wounds: A longitudinal study of reaction and adaptation to divorce. *Psychological Science*, 16, 945–950.
- Lucas, R. E. (2007). Long-term disability is associated with lasting changes in subjective well-being: evidence from two nationally representative longitudinal studies. *Journal of Personality and Social Psychology*, 92, 717–730.
- Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2003). Re-examining adaptation and the set point model of happiness: Reactions to changes in marital status. *Journal of Personality and Social Psychology*, 84, 527–539.
- Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2004). Unemployment alters the set point for life satisfaction. *Psychological Science*, 15, 8–13.
- Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science*, 7, 186–189.
- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46, 137–155.
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, 9, 111–131.
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7, 83–104.
- MacKinnon, D. P., Fritz, M. S., Williams, J., & Lockwood, C. M. (2007). Distribution of the product confidence limits for the indirect effect: Program PRODCLIN. *Behavior Research Methods*, 39, 384–389.
- McClintock, C. G. (1978). Social values: Their definition, measurement, and development. *Journal of Research and Development in Education*, 12, 121–137.
- Merritt, A. C., Effron, D. A., & Monin, B. (2010). Moral self-licensing: When being good frees us to be bad. *Social Personality Psychology Compass*, 4(5), 344–357.
- Nelson, L. D., & Norton, M. I. (2005). From student to superhero: Situational primes shape future helping. *Journal of Experimental Social Psychology*, 41, 423–430.

- Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist*, 60, 410–421.
- Strack, F., Schwarz, N., & Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, affect and mode of thinking. *Journal of Personality and Social Psychology*, 49, 1460–1469.
- Van Boven, L., & Gilovich, T. (2003). To do or to have? That is the question. *Journal of Personality and Social Psychology*, 85, 1193–1202.
- Van Lange, P. A. M., Otten, W., De Bruin, E. M. N., & Joireman, J. A. (1997). Development of prosocial, individualistic, and competitive orientations: Theory and preliminary evidence. *Journal of Personality and Social Psychology*, 73, 733–746.