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# How spending decisions shape happiness in everyday life

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This study examines the emotional consequences of spending choices in everyday life across a diverse multinational sample. Based on a dataset of 200 participants across 7 countries who received \$10,000 USD, we analyzed how happy they felt from different types of purchases made with that money. Participants derived high levels of happiness from some types of purchases that have been examined in past research (e.g., buying experiences), but also from other purchases (e.g., education) that have not been the focus of previous work. We found some evidence that the emotional benefits of spending choices varied depending on whether participants lived in higher vs. lower-income countries; specifically, we found differences in the benefits of spending on gifts, housing, debt, and time-saving services. Around the world, people who spent money in ways that made them happy experienced greater improvements in overall subjective well-being 3 and 6 months later.

In a recent nationally representative survey, a majority of Americans reported believing that money can buy happiness<sup>1</sup>. Consistent with their intuition, a large body of research suggests that greater wealth is linked to greater happiness<sup>2-4</sup>. But how should people use their money in order to buy the most happiness with it?

Over the past two decades, researchers have begun to examine this question<sup>5-7</sup>. Many studies point to the conclusion that people derive more happiness from buying experiences, such as trips, concerts, and special meals than from buying material things, such as clothes, gadgets, and furniture<sup>8-10</sup>. For example, students at the University of Texas derived more happiness from buying an experience (e.g., playing a video game or watching a video) compared to buying a material goods (e.g., a keychain or picture frame)<sup>11</sup>.

While the previous research highlights the value of buying enjoyable experiences, other work points to the emotional benefits of using money to eliminate unenjoyable experiences<sup>6</sup>. For example, working adults in Canada derived more happiness from a \$40 windfall when they were instructed to use this money to “buy time” (e.g., by paying for grocery delivery or house cleaning) than to buy a material thing<sup>12</sup>.

More surprisingly, research also suggests that spending money on others makes people happier than spending money on themselves<sup>13-15</sup>. In one of the earliest studies on this topic, students in Canada were given a small amount of money (\$5 or \$20) and instructed to spend it by the end of the day<sup>16</sup>. Participants who were randomly assigned to spend the money on a gift for someone else or a charitable donation (“prosocial spending”) felt happier than those assigned to spend it on a bill, expense, or gift for themselves (“personal spending”).

Why does prosocial spending provide more happiness than personal spending? Because generosity is socially desirable, people may garner social approval from giving to others<sup>17</sup>. Indeed, research using fMRI has shown that people exhibit greater activation in a brain region linked to reward processing (the ventral striatum) when their charitable donations are observed by others<sup>18</sup>. However, other research suggests that people are more likely to derive joy from giving when they feel that their decision to give is freely chosen (i.e., autonomous)<sup>19,20</sup>, which may be undermined when decisions are made publicly.

Unfortunately, our ability to draw generalizable conclusions from the existing literature is severely limited because almost all of the studies on spending and happiness have relied on relatively homogenous samples, drawn from WEIRD (Western, Educated, Industrialized, Rich, Democratic) countries<sup>21</sup>. Moreover, due to the inherent limitations of research grants, most experiments examine the emotional benefits of spending very small amounts of money (e.g., \$5 or \$20), often in artificial lab contexts. Finally, while a few types of spending (e.g., experiential spending, prosocial spending) have received close attention, we know far less about the affective consequences of most other types of spending choices people make in daily life.

We were able to address these fundamental shortcomings of past research by drawing on a unique study conducted across seven countries. Two hundred participants from three lower-income nations and four higher-income nations received a single cash transfer of \$10,000 USD each. Participants were instructed to spend all of this money within three months and to answer questions about each purchase they made with the money, enabling us to examine how much happiness people derived from a diverse

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**Table 1 | Examples and descriptive statistics for spending categories**

Spending type (kappa)	Examples	Number of purchases (n)	Number of individuals (n)	Purchase cost (mean, USD)
Gift to other individuals (0.923)	Family trip to Disneyworld, iPhone for mom, cash to a homeless person	1067	175	529
Durable goods (0.96)	Standing table, new washing machine, iPhone for mom	491	148	728
Donation to organization (0.97)	Non-profit start-up funding, plant a tree donation, construction of a junior high school	437	129	630
Experience (0.93)	Family trip to Disneyworld, stand-up comedy, surf-course, fancy dinner	273	106	384
Material goods for entertainment (0.87)	Games, Netflix subscription, Nintendo Switch, Lego	237	92	212
Clothes (0.95)	Maternity clothes, rainsuit for daughter, pants for work	214	82	183
Housing (0.96)	Rent, house mortgage, kitchen upgrade	169	81	1411
Education (0.94)	Masterclass subscription, brother's university fee, driving classes, college lab equipment	154	77	541
Essential food (0.89)	Grocery shopping, pizza, cotton candy for kids in the park	152	64	104
Household items (0.85)	Cleaning supplies, water bottles for kids, coffee mug for neighbor, reusable shopping bag	143	66	189
Medical (0.97)	Reading glasses, psychologist appointment, braces for my daughter, vaccines, covid test	126	65	636
Transportation (0.89)	Gas for the car, bus fare to school, flight tickets, cab fare, renewal of driver's license	124	65	702
Business items (0.97)	Photography equipment for work, renewing business license, Grammarly subscription	123	60	800
Debt (0.97)	Credit card debt, paid back a friend, mortgage loan	113	61	1652
Personal care (0.92)	Haircut, gym membership, nails for me and my closest girlfriend, face cream for my fiancé	99	50	205
Utilities (0.94)	Energy bill, family's wifi, airtime for cell phone, delayed utility bills, laundry	92	37	234
Time saving (0.86)	Take-away for the family, eyebrow embroidery to save my time, assistance with research	71	34	233
All spending types		3225	198	565

Kappa = The agreement in coding between the two original coders, the disagreements were recoded after the kappa calculation to produce the final dataset.

Number of purchases = Total number of purchases in the category in the dataset.

Number of individuals = Number of individuals who made any purchases in this category. Note that two participants did not report purchases in any category.

See Supplementary Table S3 for the same descriptive statistics separately for private vs. public conditions, Supplementary Table S4 for higher vs. lower-income countries, and Supplementary Table S5 for the total amount spent in each category.

array of purchases. Half the participants were randomly assigned to share their spending experiences with family, friends, and publicly on Twitter (public condition), while half were assigned to keep their participation in the study as private as possible (private condition); this enabled us to examine whether publicly sharing their experiences might alter the emotional consequences of spending money on others.

## Methods

The methods used in this study were pre-registered, and tests of our primary pre-registered hypotheses have been published elsewhere<sup>22,23</sup>. In the present paper, we focus on participants' open-ended spending descriptions, and we did not pre-register any analyses involving these free-response spending descriptions due to the expected complexity of these analyses, so all results should be treated as exploratory.

## Participants

Using Twitter and other platforms, the non-profit organization TED recruited 200 participants, drawn from Indonesia ( $n = 50$ ), Kenya ( $n = 39$ ), Brazil ( $n = 8$ ), the United States ( $n = 54$ ), the United Kingdom ( $n = 25$ ), Canada ( $n = 12$ ), and Australia ( $n = 12$ ). These countries were selected because they do not levy gift taxes, enabling participants to receive \$10,000 USD tax-free. The number of participants was determined by the size of the private donation funding the study<sup>23</sup>. To be eligible, participants had to have an active Twitter account and be at least somewhat fluent in English. They were excluded if they had a connection to TED or reported in the screening survey that receiving \$10,000 could cause them harm. The study also included a control group of 100 participants, who did not receive money or complete spending diaries but reported their subjective well-being (SWB) at baseline and in follow-up surveys (for further information on this control group, see ref. 22).

## Procedure

After signing up for the "Mystery Experiment" and completing a screening survey, 200 qualifying participants received an email and video greeting from Chris Anderson, the head of TED. Participants learned that they would receive a single cash transfer of \$10,000, and they completed a consent form. Participants were told to spend the money within 3 months, and at the end of each month, they completed a survey online. This survey asked them to describe each purchase they had made with Mystery Experiment money in the preceding month, and they reported how happy each purchase made them. On each of these surveys, participants also completed measures of their overall SWB (life satisfaction, positive affect, and negative affect). Finally, three months after the spending period ended (at the 6-month mark), participants completed measures of overall SWB again. The spending period extended from February to May 2021. Response rates were high across the surveys: 1 month (99%), 2 month (92%), 3 month (91%), and 6 month (86%).

## Measures

**Happiness with purchases.** For each purchase, participants answered the questions: "How happy does it make you?" and "How much does it contribute to your overall happiness in life?"<sup>7,24</sup> on a scale from "not at all" (1) to "extremely" (5). We averaged their responses on the two items to form a measure of their happiness with each purchase ( $M = 3.8$ , median = 4.0,  $SD = 0.96$ ). In addition, participants reported the cost of each purchase in their local currency, which we converted to USD and standardized (range  $-0.53$  to 8.84). We standardized the purchase cost due to the wide range of spending values compared to other variables in the model, which could affect estimation stability.

**Subjective well-being.** Subjective well-being (SWB) is defined as including three components: high life satisfaction, high positive affect, and low negative affect<sup>2,25</sup>. On each survey, participants completed the Satisfaction with Life Scale<sup>26</sup>, rating their agreement with statements such as "I am satisfied with my life" on a scale from "strongly disagree" (1) to

"strongly agree" (7). Participants also completed the Scale of Positive and Negative Experience<sup>27</sup>, reporting how frequently in the last month they experienced six positive feelings (e.g., "Happy") and six negative feelings (e.g., "Sad") on a scale from "very rarely or never" (1) to "very often or always" (5). The three components were standardized and combined to form a score for subjective well-being.

**Spending categories.** At the end of each of the three months, participants completed a spending diary, providing detailed descriptions of all purchases they made with the Mystery Experiment money. For every purchase, participants were told to "describe in detail what you spent the money on (please include details like what, where, when, and why)". By asking participants for free descriptions, we were able to avoid revealing our interest in specific spending categories we examined. Two independent coders then placed their open-ended responses into 26 spending categories (see Supplementary Methods for full coding details). We began with a set of basic spending categories created by a bank<sup>28</sup>, such as utilities, housing, transportation, and education. We then created additional categories to capture key constructs based on the scholarly literature<sup>6,8,29</sup>, including time-saving purchases and experiences. Coders evaluated whether each purchase did belong (1) or did not belong (0) to each of the 26 categories, and the two coders' evaluations were highly consistent in both higher and lower-income countries ( $\kappa = 0.83$ – $0.98$ , Supplementary Table S1). For example, the purchase of "Hamilton" tickets for the family was categorized as a gift and also as an experience. A third coder evaluated any disagreements between the initial coders and recorded any systematic errors. Of the 26 categories, 9 categories were rarely used (i.e., contained fewer than 50 purchases in the category). Leading scholars have argued that 50 is a minimum cell size to ensure statistical power<sup>30</sup>. Therefore we excluded these categories from analysis, leaving 17 spending categories (see Supplementary Table S2 for descriptive statistics of the eliminated categories).

**Ethical considerations.** The Mystery Experiment was carried out by the TED organization in accordance with ethical protocols and legal standards within the United States. The analyses reported in the present article were reviewed by the Institutional Review Board at the University of British Columbia.

## Reporting summary

Further information on research design is available in the Nature Portfolio Reporting Summary linked to this article.

## Results

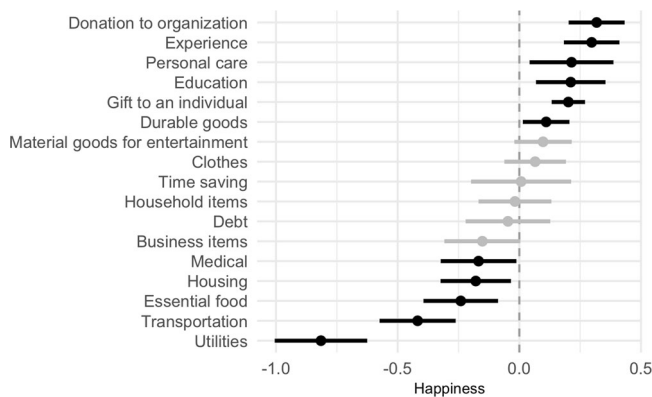
The 200 participants ranged widely in age ( $M = 34.2$ ,  $SD = 12.1$ , Range = 21 to 75) and income ( $M = \$56,800$ , median = \$26,900, Range = \$0 to \$400,000). Most participants were well-educated (85% had bachelor's degree or higher) and somewhat liberal-leaning ( $M = 34.6$ ,  $SD = 18.6$ , on a scale from 0 = "left" to 100 = "right"); in the baseline survey, 106 participants identified their gender as women, 93 as men and one as non-binary. On average, each participant made 16 purchases ( $SD = 13$ , range 1–94) during the study, with an average cost of \$565 per purchase (median = \$200,  $SD = \$1067$ ). Table 1 presents the average number and cost of purchases participants made in each category.

## Spending types and happiness

Participants reported how happy each purchase made them on five-point scales, and we analyzed their happiness ratings using random intercept multilevel models, with purchases (level 1) nested within individuals (level 2). We entered all of the dichotomous spending categories simultaneously as predictors of happiness, controlling for the cost of each purchase (because more expensive purchases provided more happiness). Our primary goal was to examine whether each type of purchase (e.g., experiences) made an individual happier compared to all of the purchases they made in other categories. By focusing on these within-person effects, we are

effectively eliminating between-person differences, which would otherwise cloud interpretation of our findings. For example, wealthier individuals might be more likely to buy experiences, while poorer individuals might be more likely to pay off debt. If we observed higher happiness ratings for experiences than for debt, this difference might reflect the fact that the individuals who are buying experiences are wealthier (and therefore happier) overall than those who are paying off debt. In order to remove between-person differences, we used person-mean centering<sup>31,32</sup> for all level 1 predictor variables; using this centering approach enabled us to examine purely within-person effects in our multilevel model (for details of the model, see Supplementary Table S6). To address possible multicollinearity among categories, we also tested each spending type in isolation in individual models. However, as these results were similar to those from the model including all spending types, we only present the latter. All analyses were performed in R. The variables were not strictly normally distributed, but generally linear models can tolerate such minor violations<sup>33</sup>.

As shown in Fig. 1, participants reported the highest levels of happiness from donating to charitable organizations and buying gifts, as well as from buying experiences, consistent with previous research (for details of happiness with purchases by subgroups, see Supplementary Table S7). Participants also reported high levels of happiness from spending money on personal care (e.g., gym memberships, face cream) and education (e.g., a writing course, driving school), two spending categories that have not been the focus of previous research.



**Fig. 1 | Spending categories predicting happiness.** This figure shows participants' happiness with their purchases in each spending category relative to the other categories; positive scores indicate that a category provided higher happiness when comparing to the other categories. Lines indicate 95% confidence intervals around the estimate (shown as a dot). Black bars (vs. gray) indicate that purchases in this category significantly differ from purchases that do not belong to this category (when controlling for the overlap in categories). The data include 198 participants and 3083 purchases. Supplementary Fig. S1 presents a graphical display of individual purchase ratings. Supplementary Figs. S2–5 present the model separately for participants in private vs. public conditions and higher vs. lower-income countries.

Next, we entered dummy-coded conditions (0 = private, 1 = public) into our model and tested whether condition interacted with type of spending in predicting happiness. We found significant Condition X Spending Type interactions for both gifts ( $b = -0.23, p = 0.001$ ) and donations ( $b = -0.32, p = 0.006$ ), indicating that participants in the public condition derived less happiness from these prosocial purchases compared to participants in the private condition (Supplementary Table S8).

To explore whether the relationship between purchase type and happiness differed for participants in higher vs. lower-income countries, we entered country-level income (lower = 0, higher = 1), spending type, and the Country Income X Spending Type interaction into a model predicting happiness. We found significant positive Country Income X Spending Type interactions for gifts ( $b = 0.15, p = 0.023$ ) and buying time ( $b = 0.40, p = 0.040$ ), indicating that participants in higher-income countries derived more happiness from buying gifts and buying time than did participants in lower-income countries (Supplementary Table S9). We also found significant negative interactions for housing ( $b = -0.28, p = 0.033$ ) and debt ( $b = -0.69, p < 0.001$ ), indicating that participants in higher-income countries reported less happiness from these expenditures compared to those in lower-income countries.

**Changes in overall subjective well-being over time**

As well as rating how happy each purchase made them, all participants completed measures of life satisfaction, positive affect, and negative affect, which we standardized and combined to create a measure of overall subjective well-being (SWB). We compared their SWB scores on the baseline survey (before receiving money) to their ratings at the end of the spending period (3-month survey) and again several months after they had spent the money (6-month survey). For SWB distributions, see Supplementary Table S10.

Did people who derived more happiness from their purchases exhibit larger gains over time in their overall SWB? To examine this question, we calculated the average amount of happiness each individual derived from all their purchases (mean = 3.92, SD = 0.62). We entered participants' happiness with their purchases into linear regression models predicting SWB at 3 and 6 months, controlling for baseline SWB. These models showed that individuals who made happier purchases exhibited greater gains in overall subjective well-being at the end of the spending period ( $b = 0.35, p < 0.001$ , Table 2) and several months later ( $b = 0.23$ , Table 2).

To illustrate these effects, we also divided participants in quintiles based on how much happiness they derived from their purchases on average. The participants in the lowest quintile improved their SWB by 0.31 points from baseline to 3 months, whereas the participants in the highest quintile improved their SWB by 0.78. This difference in SWB gains between the groups (0.47 points) was similar to the difference in SWB gains at the 3-month mark between people who received the \$10,000 gift versus those in the control group who did not receive money (0.44 points). This suggests that the ways people chose to spend the money mattered as much for their happiness as whether or not they received \$10,000.

**Table 2 | Average purchase happiness predicting changes in subjective well-being**

	Subjective well-being							
	3 months Estimate (SE)	95% CI	t statistic (df)	p-value	6 months Estimate (SE)	95% CI	t statistic (df)	p-value
Intercept	-0.98 (0.32)	-1.61—-0.35	-3.06 (179)	0.003	-0.64 (0.35)	-1.33—0.06	-1.79 (161)	0.075
Average purchase happiness	0.35 (0.08)	0.19—0.50	4.33 (179)	<0.001	0.23 (0.09)	0.05—0.40	2.55 (161)	0.012
Baseline subjective well-being	0.60 (0.07)	0.46—0.73	8.79 (179)	<0.001	0.66 (0.07)	0.51—0.80	8.92	<0.001

The averaged happiness a participant derived from all their purchases as a predictor of subjective well-being at 3 and 6 months, controlling for baseline subjective well-being. The data include 182 participants at 3 months and 164 participants at 6 months.

SE standard error, CI confidence interval, df degree of freedom, average purchase happiness average happiness a participant derived from all their purchases.

## Discussion

This study examines the emotional consequences of spending choices in everyday life across a diverse multinational sample. By providing participants with \$10,000 USD and requiring them to track every purchase they made from this windfall, this unique study captures the relative benefits of a wide range of purchases, from washing machines and iPhones to gym memberships and charitable donations. Consistent with past research, we found that buying experiences and spending money on others provided high levels of happiness. That said, we also found considerable emotional benefits stemming from some types of spending categories that have not been the primary focus of past research, including education and personal care. People who spent money in ways that made them happy experienced greater improvements in overall subjective well-being. How people spent the windfall mattered in regard to descriptive statistics as much as whether they received it in the first place.

While the links between spending choices and happiness were similar across higher and lower-income countries, we did find some notable differences. Past research conducted in WEIRD countries has documented the happiness benefits of buying time and buying gifts, but we found that these spending categories provided less happiness for people living in lower-income (vs. higher-income) countries. Meanwhile, those in lower-income countries got more happiness from paying off debt and spending money on housing, compared to those in higher-income countries. Given that the vast majority of past research on spending has been conducted in higher-income countries, the present findings point to the need for caution in providing spending recommendations for people around the world.

Another unique feature of the present research was that some of the participants were randomly assigned to share news of their windfall and their spending choices with family, friends, and publicly on Twitter, while others were assigned to keep this information as private as possible. This manipulation had no effect on the amount of money participants spent on others as reported elsewhere<sup>23</sup>, but we found that people in the private (vs. public) condition derived more happiness from prosocial spending, including both charitable donations and gifts. In the private condition, people may have felt free to buy gifts or make donations when they wanted to do so, given that news of their windfall was not public knowledge. This finding is consistent with past research suggesting that people experience more happiness from prosocial spending when they perceive their choices to be voluntary<sup>19,20</sup>.

## Limitations

Because people were not randomly assigned to spend the money in specific ways, caution is necessary in drawing causal conclusions about the effects of their spending choices. That said, an important strength of the present research lies in the fact that each participant made many different purchases (16 on average), enabling us to compare how much happiness each individual derived from each type of purchase, relative to all the other types of purchases they made. Thus, these within-subject differences in happiness cannot be readily explained by differences between people on dimensions such as income, gender, or personality. It is also important to note that participants were not selected to form representative samples of their respective nations or the global population. To complete the study, all participants had to be active Twitter users who were “reasonably fluent” in English. Most participants were relatively young (with an average age of 34), educated, and somewhat liberal-leaning.

Our sample was highly diverse, however, in terms of cultural background and wealth, with annual incomes ranging from \$0 to \$400,000 USD (median = \$26,900). Whereas foundational research on spending and happiness examined very small expenditures, on the order of five dollars, participants in the present study spent over \$500 per purchase, on average. Thus, the present research provides a unique window into the emotional consequences of major spending decisions in a diverse global sample.

## Data availability

The study materials including full surveys can be found online at the OSF. A subset of data containing the main outcome and the spending categories is available on OSF. To protect participant privacy, the full data are not available publicly. The research team at the University of British Columbia maintains the cleaned datasets and is prepared to share them confidentially with permission from TED organization. Researchers can request data access by emailing E.D. at [profdunn@gmail.com](mailto:profdunn@gmail.com).

## Code availability

The analysis code is available online at the OSF: <https://osf.io/z4nfv/>.

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## Author contributions

Conceptualization: S.S., R.D., and E.D.; data curation, investigation: R.D. and E.D.; formal analysis: S.S., Y.G., R.D., and J.R.; funding acquisition: E.D.; methodology: S.S., Y.G., J.R., R.D., and E.D.; project administration: S.S., R.D., and E.D.; supervision: J.R. and E.D.; visualization: S.S. and Y.G.; writing—original draft: S.S., E.D.; writing—review and editing: S.S., Y.G., J.R., R.D., and E.D.

## Competing interests

The authors declare no competing interests.

## Additional information

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