

# How Spending Decisions Shape Happiness in Everyday Life

Corresponding Author: Dr S  de Stenlund

**This file contains all editorial decision letters in order by version, followed by all author rebuttals in order by version.**

Version 0:

Decision Letter:

**\*\* Please ensure you delete the link to your author homepage in this e-mail if you wish to forward it to your coauthors \*\***

Dear Dr Stenlund,

Thank you for your patience during the peer-review process. Your manuscript titled "How Spending Decisions Shape Happiness in Everyday Life" has now been seen by 3 reviewers, and I include their comments at the end of this message. They find your work of interest but raised some important points. We are interested in the possibility of publishing your study in Communications Psychology, but would like to consider your responses to these concerns and assess a revised manuscript before we make a final decision on publication.

We therefore invite you to revise and resubmit your manuscript, along with a point-by-point response to the reviewers. Please highlight all changes in the manuscript text file.

Editorially, we ask you to ensure that the referees' comments regarding the methodological approach are comprehensively addressed, including through further analysis where necessary. We also ask that - in line with journal guidelines - you remove all novelty claims (explicit or implicit) and refer to the sample as "multi-national" rather than "global".

I am attaching an Editorial Requests Table that details critical reporting requirements for the revised manuscript. Please attend to each item and ensure your manuscript is fully compliant. We are requesting that your manuscript aligns with these requirements as this facilitates the evaluation of your manuscript, reducing delays in re-review and potential future acceptance. If your revised manuscript is not aligned with these requests on major issues, such as those concerning statistics, it may be returned to you for further revisions without re-review. Additional information can be found in our style and formatting guide <https://www.nature.com/documents/commspsychol-style-formatting-guide-accept.pdf> Communications Psychology formatting guide.

Please use the following link to submit your

- revised manuscript,
- point-by-point response to the referees' comments,
- cover letter (as a separate document),
- the Editorial Policy Checklist (see below),
- the Reporting Summary (see below), and
- the completed Editorial Request Table (attached):

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We hope to receive your revised paper within 8 weeks; please let us know if you aren't able to submit it within this time so that we can discuss how best to proceed. If we don't hear from you, and the revision process takes significantly longer, we may close your file. In this event, we will still be happy to reconsider your paper at a later date, provided it still presents a significant contribution to the literature at that stage.

We would appreciate it if you could keep us informed about an estimated timescale for resubmission, to facilitate our planning.

We look forward to seeing the revised manuscript and thank you for the opportunity to review your work.

Best regards,

Marika

Marika Schiffer, PhD  
Chief Editor  
Communications Psychology

#### REVIEWER EXPERTISE:

Economics of happiness; Computational social science/social psych [all referees]

#### REVIEWER REPORTS:

##### Reviewer #1 (Remarks to the Author):

This manuscript explores the happiness that results from people's spending choices in daily life across seven different countries. Consistent with prior research, the results suggest that participants experienced high levels of happiness when engaging in prosocial spending and experiential consumption. The work further finds that how people spent a large windfall mattered as much as receiving it in the first place. The procedure involving randomly providing participants with \$10,000 USD is quite an ambitious endeavor, and I think this submission is very interesting. I especially appreciated that well-being was also measured several months after the spending period, as such follow-ups are relatively rare in this space. The response rates here were really incredible, although I suppose this makes sense given the context. I additionally appreciated the authors' generally cautious writing when reporting such an impressive study.

That said, the manuscript claims that—as the abstract puts it—“this is the first study to examine the emotional consequences of spending choices in everyday life across a diverse global sample.” This could be seen as a bit of an overstatement. Although I think the scale of this method goes well beyond what has been done in the past, it seems like it would be worthwhile to at least refer to the uncited experience sampling studies of Kumar, Killingsworth, and Gilovich (2014, 2020). To their credit, these researchers do include a citation to the Gilovich and Kumar (2015) review article on the topic of buying experiences. But they contend on page 4 that “due to the inherent limitations of research grants, these studies nearly always examine the emotional benefits of spending very small amounts of money (e.g. \$5 or \$20), often in artificial lab contexts.” Although this is true of some studies, many of the experiments reviewed in the aforementioned Gilovich and Kumar (2015) paper in fact involve participants recounting purchases they had made in their everyday lives. Such purchases are not necessarily limited to “small ticket” items; participants often recall purchases that are more expensive than \$5 or \$20. The aforementioned experience sampling studies conducted by Kumar, Killingsworth, and Gilovich also investigate more meaningful purchases than those alluded to in this manuscript. Moreover, the authors assert that purchases like education and personal care have not been previously studied. In many of the studies reviewed in the referenced Gilovich and Kumar (2015) piece, participants are provided a definition of experiential purchases and asked to list an experiential purchase they had made. Given this definition (“made with the primary intention of acquiring a life experience: an event or series of events that one lives through”), participants who are free to report whatever they construe as an experience may indeed list a fee paid for a Masterclass or a one-hour therapeutic massage as an experiential purchase. Some of these categories may have fallen under the broad umbrella of buying experiences in existing research. To be clear, I believe the manuscript at hand does represent a significant contribution. I simply want to help ensure that these researchers are not overclaiming the uniqueness of their contribution with some of these arguments about the novelty of the present work. In my view, the current research can be acknowledged more appropriately as an impactful large-scale conceptual replication of earlier experimental efforts from Dunn, Aknin, Norton, and colleagues, as well as Gilovich, Van Boven, Kumar, and colleagues.

I also think that the discussion of the public versus private conditions would benefit from some additional exposition on the notion of this being tested in the context of Twitter posts. Posting on Twitter is not the only way word-of-mouth communications can happen about these spending decisions, and so there are some limitations associated with this paradigm. It could be intriguing to discuss the idea that such posts on social media represent communication that is solely text-based (see Kumar & Epley, 2021; Schroeder & Epley, 2015, 2016; Schroeder, Kardas, and Epley, 2017 for more on this topic). For example, Kumar and Epley (2021) find that people feel more socially connected when they actually talk to others compared to communicating via text alone. This could be important given that extant publications in the empirical record find that people benefit from talking about their experiential purchases with others (e.g., Kumar & Gilovich, 2015). I worry a bit that any public/private differences could really be more about Twitter specifically rather than sharing in general. In particular, posting about prosocial spending on social media could be conceived of as bragging (see, for instance, Berman, Levine, Barasch, and Small, 2015, on “the braggar's dilemma”). More careful writing could be useful here.

Finally, I think it is important that the authors more clearly distinguish this submission from any other papers that use the same “TED Mystery Experiment” dataset. It appears that this includes Dwyer and Dunn (2022) and Dwyer, Brady, Anderson, and Dunn (2023), although there might be others. This could be done by revising the manuscript to explicitly describe the other projects these data were used for, and what was found there, thereby differentiating them from this paper. Softening

some of the claims noted above could create space for such additional text. All of that said, I sincerely wish these researchers the very best of luck with their continued work.

Reviewer #2 (Remarks to the Author):

The current research examines the relationship between spending money and happiness. Specifically, the authors recruited 200 people from seven different countries and endowed them each with \$10,000 USD to spend within three months. Participants were randomly assigned to share their windfall and expenditures on Twitter or not (public vs. private consumption). Another 100 people in a control condition did not receive a windfall, nor did they rate their expenditures over three months. The authors replicate prior work showing that prosocial spending predicts greater happiness; they find similar effects for two relatively novel categories (i.e., education and personal care). There were also a few differences between low-income and high-income countries. The authors conclude "...that the ways people chose to spend the money mattered as much for their happiness as whether or not they received \$10,000."

Overall, I applaud the researchers for conducting such an ambitious, costly field experiment. The cost alone will likely prohibit future replication efforts. Because of this, readers will need to be confident in the results and subsequent conclusions.

My main reaction to the paper is a question of focus, as it currently reads like a series of findings. Below are a few comments, questions, and recommendations along these lines:

1. Is this paper primarily advancing theory or method? One could argue that the authors are replicating prior work with a novel method. I recommend emphasizing the points of differentiation even more. For example, the key manipulation (making this a field experiment, which is impressive!) is public versus private consumption. Unfortunately, very little attention is paid to this critical variable. Could this paper be framed as testing whether public versus private consumption moderates the benefits of prosocial spending on a global scale? Given the emphasis on public versus private consumption (and Twitter handles), what were the participants posting in the public condition?
2. Did participants spend money on fundamentally different things if they knew they had to advertise it? Table S1 reveals some interesting patterns. For example, people paid off more debt privately than publicly (which makes sense since carrying certain kinds of debt is potentially taboo).
3. Relatedly, could the authors push more on education and personal care? I find this fascinating, as these categories seem to reflect self-care. Is it possible that the benefits of spending money on others' gifts extend to spending money on self-gifts? Pushing more on these novel categories would help emphasize contribution.
4. Beyond the public versus private distinction, the paper is also positioned as being global. Statistically, are there supposed to be three levels of nesting such that purchases are nested within individuals who are nested within countries? Maybe not, as the authors ultimately tested whether the relationship between purchase type and happiness was moderated by country. (This is another potential contribution worth emphasizing further.)
5. The control condition seems critical to drawing meaningful conclusions. Why not ask these individuals to complete spending diaries at the end of each month? It would have been useful to know whether or not windfall cash enhances certain types of expenditures (e.g., does unexpected income boost prosocial spending?).
6. How does the coding scheme affect results interpretation? Several of the items belong to multiple categories, which leads to problems with multicollinearity (e.g., "iPhone for mom" was considered both a gift and a durable good). Could you also evaluate these categories in terms of the relative hedonic versus utilitarian value? Figure 1 suggests that relatively utilitarian purchases bring the least amount of happiness, which makes sense because they are – definitionally – not fun.
7. Did participants have recall or fatigue issues? Asking people to recall what they spent money on over the past month seems like a challenging task for most (maybe not for the person who made 98 purchases though!).

I wish the authors the best of luck with their work!

Reviewer #3 (Remarks to the Author):

This is a fascinating paper that examines the happiness that people experience when they receive \$10k as a windfall gain and are asked to spend the money in three months. I would like to see it published, but I have some comments and questions.

What was the distribution of SWB at the beginning, 3 months later and 6 months later?

Could you say more about the data transformation you did at the person level and what prompted that decision?

Did the initial distribution of SWB vary across country? Table 2 says it shows changes in SWB but I think that is not what the authors did. They included initial happiness as a predictor and then used 3 month or 6 month happiness as the dependent variable, I'd like to see them use the difference in happiness between SWB at 3 months and baseline or the difference in happiness between 6 months and baseline. Does happiness from spending predict these changes in SWB?

What about differences in happiness from purchases of men and women, lower and higher incomes or public or private? I recommend you show more of the data.

## EDITORIAL POLICIES

We ask that you ensure your manuscript complies with our editorial policies and reporting requirements.

To that end, we require revised manuscripts to be accompanied by two completed items: a reporting summary that collects information on study design and procedure, and an editorial policy checklist that verifies compliance with all required editorial policies.

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- <https://www.nature.com/documents/nr-editorial-policy-checklist.pdf>>Editorial Policy Checklist</a>

All points on the policy checklist must be addressed. Your revised manuscript can only be sent back to the referees if these checklists are completed and uploaded with the revision.

Notes: If you have submitted a Stage 1 Registered Report, Review, Primer, Comment, or Perspective you do not need to submit these forms. If you have already submitted these forms, you may disregard this request.

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Version 1:

Decision Letter:

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Dear Dr Stenlund,

Your manuscript titled "How Spending Decisions Shape Happiness in Everyday Life" has now been seen by our reviewers, whose comments appear below. In light of their advice I am delighted to say that we are happy, in principle, to publish a suitably revised version in Communications Psychology.

We therefore invite you to revise your paper one last time to address the editorial requests. At the same time we ask that you edit your manuscript to comply with our format requirements and to maximise the accessibility and therefore the impact of your work.

A high-level point I will emphasize is that the accessibility of the work is presently suffering from a lack of data display. I have left some comments to this effect on the Editorial Request Table and am happy to discuss it further.

EDITORIAL REQUESTS:

Please review our specific editorial comments and requests regarding your manuscript in the attached "Editorial Requests Table". Please outline your response to each request in the right hand column. Please upload the completed table with your manuscript files as a Related Manuscript file.

If you have any questions or concerns about any of our requests, please do not hesitate to contact me.

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We hope to hear from you within two weeks; please let us know if you need more time.

Best regards,

Marika

Marika Schiffer, PhD  
Chief Editor  
Communications Psychology

#### REVIEWERS' COMMENTS:

Reviewer #2 (Remarks to the Author):

I reviewed the original version of this manuscript, and am pleased by the authors' responsiveness to the review team's feedback. I particularly liked that the authors: 1) toned down claims of novelty (i.e., "we are replicating and simultaneously advancing prior work with a new method"), 2) clarified the public versus private manipulation (i.e., public is not only advertising expenditures on Twitter), 3) emphasized a diverse, inclusive sample rather than looking at between-country differences, and 4) expanded the web appendix with additional analyses.

My original review focused largely on bolstering contribution given related work in this space—I understand why the authors did not pursue many of my suggestions and, instead, toned down claims of novelty.

In terms of remaining questions and suggestions:

1. The authors explain why they focus on within-person effects, as their goal is to examine whether each type of purchase made a person happier compared to all the purchases they made in the other categories. I understand this point. However, it is unclear how the analyses under “Changes in Overall Subjective Well-Being over Time” help advance this goal. These analyses average across all purchases, regardless of type, and show that being happier with all purchases predicts being happier with life. I recognize the power of longitudinal data, so wonder whether these analyses would be more compelling if they looked at happiness from experiential purchases, education purchases, etc., specifically.
2. Relatedly, the authors claim, “People who spent money in happy ways experienced greater improvements in overall subjective well-being; in fact, our analyses suggest that how people spent the windfall mattered as much as whether they received it in the first place.” This is not exactly what the authors found. They find a positive correlation between average purchase happiness and SWB, which does not speak to spending the money in happy versus less happy ways (i.e., spending on specific categories).
3. There may be a word missing in the first sentence of the Discussion (“sample”).
4. There are also a few areas where the authors can enhance clarity further. For example, I would edit the sentence “By providing participants with \$10,000 USD and requiring them to track every purchase they made [insert: from this windfall]...”

I look forward to seeing this research published soon!

Reviewer #3 (Remarks to the Author):

I think the authors have addressed my concerns. I just have a few small suggestions.

Did gift to an individual include a gift to oneself and oneself only? Might those kinds of gifts be different from gifts to others? Please distinguish between these cases.

The authors say “We found some evidence that 30 the emotional benefits of spending choices varied depending on whether participants lived in 31 higher vs. lower-income countries.” Say what these were.

The authors say, “Around the world, people who spent money in happy ways 32 experienced greater improvements in overall subjective well-being.” This sounds sill because we don’t know what “happy ways” means.

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Thank you for reviewing our manuscript! Below is provided a point-by-point response (in blue) to reviewers' comments. The page and line numbers refer to the clean version of the manuscript.

**Reviewer #1 (Remarks to the Author):**

This manuscript explores the happiness that results from people's spending choices in daily life across seven different countries. Consistent with prior research, the results suggest that participants experienced high levels of happiness when engaging in prosocial spending and experiential consumption. The work further finds that how people spent a large windfall mattered as much as receiving it in the first place. The procedure involving randomly providing participants with \$10,000 USD is quite an ambitious endeavor, and I think this submission is very interesting. I especially appreciated that well-being was also measured several months after the spending period, as such follow-ups are relatively rare in this space. The response rates here were really incredible, although I suppose this makes sense given the context. I additionally appreciated the authors' generally cautious writing when reporting such an impressive study.

That said, the manuscript claims that—as the abstract puts it—“this is the first study to examine the emotional consequences of spending choices in everyday life across a diverse global sample.” This could be seen as a bit of an overstatement. Although I think the scale of this method goes well beyond what has been done in the past, it seems like it would be worthwhile to at least refer to the uncited experience sampling studies of Kumar, Killingsworth, and Gilovich (2014, 2020). To their credit, these researchers do include a citation to the Gilovich and Kumar (2015) review article on the topic of buying experiences. But they contend on page 4 that “due to the inherent limitations of research grants, these studies nearly always examine the emotional benefits of spending very small amounts of money (e.g. \$5 or \$20), often in artificial lab contexts.” Although this is true of some studies, many of the experiments reviewed in the aforementioned Gilovich and Kumar (2015) paper in fact involve participants recounting purchases they had made in their everyday lives. Such purchases are not necessarily limited to “small ticket” items; participants often recall purchases that are more expensive than \$5 or \$20. The aforementioned experience sampling studies conducted by Kumar, Killingsworth, and Gilovich also investigate more meaningful purchases than those alluded to in this manuscript.

>> On page 2, line 44,, we have added references to these important experience sampling papers. In addition, we removed the claim of this being the first study stating now the following (page 2, line 24 and similar in discussion page 15, line 265): *This study examines the emotional consequences of spending choices in everyday life across a diverse multinational sample.*

Moreover, the authors assert that purchases like education and personal care have not been previously studied. In many of the studies reviewed in the referenced Gilovich and

Kumar (2015) piece, participants are provided a definition of experiential purchases and asked to list an experiential purchase they had made. Given this definition ("made with the primary intention of acquiring a life experience: an event or series of events that one lives through"), participants who are free to report whatever they construe as an experience may indeed list a fee paid for a Masterclass or a one-hour therapeutic massage as an experiential purchase. Some of these categories may have fallen under the broad umbrella of buying experiences in existing research. To be clear, I believe the manuscript at hand does represent a significant contribution. I simply want to help ensure that these researchers are not overclaiming the uniqueness of their contribution with some of these arguments about the novelty of the present work. In my view, the current research can be acknowledged more appropriately as an impactful large-scale conceptual replication of earlier experimental efforts from Dunn, Aknin, Norton, and colleagues, as well as Gilovich, Van Boven, Kumar, and colleagues.

> > Thank you for the comment on the lower grade of novelty as the editor also outlined. We have now removed or toned-down claims such as (page 2, line 24): "This is the first study to examine..." to "This study examines..."

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 agree that there can be some overlap in what participants have identified previously as experiential purchases and categories such as personal care and education. Because of the large number of purchases, which ranged widely in cost, the current study provides increased granularity into the diversity of types of spending in which people engage in everyday life. In contrast, out of necessity, past research (including our own) has tended to lump different types of spending into broad categories.

I also think that the discussion of the public versus private conditions would benefit from some additional exposition on the notion of this being tested in the context of Twitter posts. Posting on Twitter is not the only way word-of-mouth communications can happen about these spending decisions, and so there are some limitations associated with this paradigm. It could be intriguing to discuss the idea that such posts on social media represent communication that is solely text-based (see Kumar & Epley, 2021; Schroeder & Epley, 2015, 2016; Schroeder, Kardas, and Epley, 2017 for more on this topic). For example, Kumar and Epley (2021) find that people feel more socially connected when they actually talk to others compared to communicating via text alone. This could be important given that extant publications in the empirical record find that people benefit from talking about their experiential purchases with others (e.g., Kumar & Gilovich, 2015). I worry a bit that any public/private differences could really be more about Twitter specifically rather than sharing in general. In particular, posting about prosocial spending on social media could be conceived of as bragging (see, for instance, Berman, Levine, Barasch, and Small, 2015, on "the braggart's dilemma"). More careful writing could be useful here.

>> We agree that communication by Twitter can differ from in-person communication. Thus, we have provided an important clarification that the participants in the public condition were encouraged to discuss their windfall and spending choices not only on Twitter, but also with friends and family (see page 4, line 78 and page 15, line 287). The participants in the private condition in contrast were encouraged to keep it private to reduce the influence of others on their spending choices. Consequently, sharing with friends was three times more common in the public condition, and also sharing with family was more common in the public condition compared to the private condition. Both were more common than sharing purchases on Twitter in the public condition. We clarified this in the text i.e. that the public vs. private conditions were not only about Twitter (e.g. page 4, line 78): "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)."

Finally, I think it is important that the authors more clearly distinguish this submission from any other papers that use the same "TED Mystery Experiment" dataset. It appears that this includes Dwyer and Dunn (2022) and Dwyer, Brady, Anderson, and Dunn (2023), although there might be others. This could be done by revising the manuscript to explicitly describe the other projects these data were used for, and what was found there, thereby differentiating them from this paper. Softening some of the claims noted above could create space for such additional text. All of that said, I sincerely wish these researchers the very best of luck with their continued work.

>> Only two publications use this new dataset: One of the papers explores how happiness is affected by just receiving the windfall (CITE), whereas the other one tests whether participants in the public condition use more money to benefit others (CITE). We have now devoted a considerable amount of time to conducting fine-grained coding of every purchase that participants made, and the current paper is the first time that these data will be presented. If this paper is accepted for publication, we will strive to make this valuable dataset available to qualified researchers. We have ensured that the two publications using the dataset are cited appropriately in various parts of the manuscript (see page 4, line 86; page 5, line 100; page 16, line 289).

## **Reviewer #2 (Remarks to the Author):**

>>Overall, reviewer 2 suggested that we enhance the novelty and contribution of this work whereas the editor recommended removing claims of novelty. Therefore we did not follow a number of the below suggestions.

The current research examines the relationship between spending money and happiness. Specifically, the authors recruited 200 people from seven different countries and endowed them each with \$10,000 USD to spend within three months. Participants were randomly assigned to share their windfall and expenditures on Twitter or not (public vs. private consumption). Another 100 people in a control condition did not receive a windfall, nor did they rate their expenditures over three months. The authors replicate prior work showing that prosocial spending predicts greater happiness; they find similar effects for two relatively novel categories (i.e., education and personal care). There were also a few differences between low-income and high-income countries. The authors conclude "...that the ways people chose to spend the money mattered as much for their happiness as whether or not they received \$10,000."

Overall, I applaud the researchers for conducting such an ambitious, costly field experiment. The cost alone will likely prohibit future replication efforts. Because of this, readers will need to be confident in the results and subsequent conclusions.

My main reaction to the paper is a question of focus, as it currently reads like a series of findings. Below are a few comments, questions, and recommendations along these lines:  
1. Is this paper primarily advancing theory or method?

>> The primary additions are methodological. However, we view this paper as advancing theory by incorporating strong methodological aspects, particularly a more diverse sample, which is important for building generalizable theory in psychology.

One could argue that the authors are replicating prior work with a novel method.

>> We do agree that we are replicating and simultaneously advancing prior work with a new method and thus have toned down claims of novelty.

I recommend emphasizing the points of differentiation even more. For example, the key manipulation (making this a field experiment, which is impressive!) is public versus private consumption. Unfortunately, very little attention is paid to this critical variable. Could this paper be framed as testing whether public versus private consumption moderates the benefits of prosocial spending on a global scale? Given the emphasis on public versus private consumption (and Twitter handles), what were the participants posting in the public condition?

>> Based on the editor's comments we have toned down statements of novelty and instead acknowledge that this paper advances and strengthens prior work on spending and happiness. Consequently, we are not pursuing a changed focus for the paper at this time.

2. Did participants spend money on fundamentally different things if they knew they had to advertise it? Table S1 reveals some interesting patterns. For example, people paid off more debt privately than publicly (which makes sense since carrying certain kinds of debt is potentially taboo).

>> These observations were accurate, and we created a table (Table S5) showing the average total amount of money spent in each category and whether these amounts differed between groups in Table S5. We refer to this table in the caption of the descriptive Table 1: ... *table S5, for the total amount spent in each category.*

However, as this paper focuses on which types of spending made people happiest rather than how the money was spent, we did not include these observations in the manuscript to maintain focus.

3. Relatedly, could the authors push more on education and personal care? I find this fascinating, as these categories seem to reflect self-care. Is it possible that the benefits of spending money on others' gifts extend to spending money on self-gifts? Pushing more on these novel categories would help emphasize contribution.

>> "Emphasizing contribution" seems to counter the suggestions made by the editor and reviewer 1, and therefore, we have not pursued this further.

4. Beyond the public versus private distinction, the paper is also positioned as being global. Statistically, are there supposed to be three levels of nesting such that purchases are nested within individuals who are nested within countries? Maybe not, as the authors ultimately tested whether the relationship between purchase type and happiness was moderated by country. (This is another potential contribution worth emphasizing further.)

>> Our goal is to be inclusive of a diverse sample rather than test for moderation by specific countries, which would require a larger sample for sufficient power. However, we initially tested three levels of nesting and found that the intraclass correlation (ICC) of our outcome variable at the country level was very small ( $ICC_{country} = 0.04$ ). Therefore, we chose not to include country-level random effects to ensure valid convergent results. We also present the moderation effects of country-level variables (e.g., country-level income \* spending category), which serve as an examination of country-level characteristics. Additionally, some countries had a very small number of participants, and some participants could be identified through Twitter, which would raise anonymity concerns if we focused on specific countries.

5. The control condition seems critical to drawing meaningful conclusions. Why not ask these individuals to complete spending diaries at the end of each month? It would have been useful to know whether or not windfall cash enhances certain types of expenditures (e.g., does unexpected income boost prosocial spending?).

>> We agree that this would be a valuable contribution. However, as noted in comment 7, creating spending diaries is challenging. We made it feasible and motivated participants through the donation. Therefore, those who did not receive the money were not asked to fill out spending diaries.

6. How does the coding scheme affect results interpretation? Several of the items belong to multiple categories, which leads to problems with multicollinearity (e.g., "iPhone for mom" was considered both a gift and a durable good). Could you also evaluate these categories in terms of the relative hedonic versus utilitarian value? Figure 1 suggests that relatively utilitarian purchases bring the least amount of happiness, which makes sense because they are – definitionally – not fun.

>> The coding scheme is provided in the supplementary materials and some items may belong to multiple categories. Overall, the categories do not significantly overlap. The highest correlations observed were as follows: time save and food (0.336); experiences and gifts (0.191); time save and transport (0.124); goods and business items (0.087); and material entertainment and gifts (0.057). In our initial analysis, we examined both the presented model that included all the different spending types together and separate models for each spending type, which demonstrated consistent findings. We have added the following comment on this to the methods section (page 10, line 191): *"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."*

We did not ask research assistants to code spending choices on a utilitarian vs. hedonic dimension, in part because the underlying intention of the purchase may have been difficult for them to infer based on the descriptions participants provided.

7. Did participants have recall or fatigue issues? Asking people to recall what they spent money on over the past month seems like a challenging task for most (maybe not for the person who made 98 purchases though!).

>> Participants were unusually motivated to report their spending due to the windfall. Furthermore, participants would only report the purchases they made with the money they had received as the \$10,000 windfall. Therefore, they were not reporting all of their spending. On average, people reported 5.87 purchases per month with an average cost of \$565 per purchase.

I wish the authors the best of luck with their work!

>> Thank you for the feedback!

Reviewer #3 (Remarks to the Author):

This is a fascinating paper that examines the happiness that people experience when they receive \$10k as a windfall gain and are asked to spend the money in three months. I would like to see it published, but I have some comments and questions.

What was the distribution of SWB at the beginning, 3 months later and 6 months later?

>> A table with the Subjective well-being (SWB) values at baseline, 3 months, and 6 months was computed and added to the supplementary as table S10. The following

addition was made to the main manuscript on page 12, line 235: *"For SWB distributions, see Supplementary Table S10."*

Could you say more about the data transformation you did at the person level and what prompted that decision?

>> We added the following sentence regarding the standardization of purchase cost (page 8, line 6): *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.*

All other relevant person-level data transformation is described in the manuscript such as deriving spending categories from free descriptions of purchases (including coding scheme in the supplementary), person-mean centering of the categories, conversion of purchase cost, creating the happiness composite score for each purchase, creating the subjective well-being score from its three components, the grouping of participants into higher and lower-income countries. We chose not to describe the principles of person-mean centering in more detail as we referenced the publications presenting these.

Did the initial distribution of SWB vary across country?

>> We added the SWB values by country-level income groups into the new Table S10 but because some countries had relatively low numbers of participants and some participants can be identified through Twitter we cannot present data by individual countries.

Table 2 says it shows changes in SWB but I think that is not what the authors did. They included initial happiness as a predictor and then used 3 month or 6 month happiness as the dependent variable, I'd like to see them use the difference in happiness between SWB at 3 months and baseline or the difference in happiness between 6 months and baseline. Does happiness from spending predict these changes in SWB?

>> Based on input from the quantitative psychologists on our team, we included the baseline as a covariate rather than using difference scores, due to concerns about the appropriateness of assuming that the difference score follows a normal distribution. The we used approach is expected to produce less biased results (see reference below). We acknowledge that discussing "change" might be interpreted as using the difference score, but conceptually, controlling for baseline effectively captures change. Thus, to ensure the text remains readable for general readers, we used terms such as "change", "gains", and "improved" instead of "higher levels controlling for baseline". However, we made sure to specify the statistical method used in the text. We tested our models both ways and obtained consistent results.

Ref: Fu, R., & Holmer, H. K. (2015). Change score or follow-up score? an empirical evaluation of the impact of choice of mean difference estimates.

What about differences in happiness from purchases of men and women, lower and higher incomes, or public or private? I recommend you show more of the data.

>> We have computed the average happiness scores by gender, country level income, and condition and added that into the supplementary as table S7. We made the

following addition to the main text (on page 11, line 213): "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)."

Please find below in blue responses to reviewers' comments.

## REVIEWERS' COMMENTS:

Reviewer #2 (Remarks to the Author):

I reviewed the original version of this manuscript, and am pleased by the authors' responsiveness to the review team's feedback. I particularly liked that the authors: 1) toned down claims of novelty (i.e., "we are replicating and simultaneously advancing prior work with a new method"), 2) clarified the public versus private manipulation (i.e., public is not only advertising expenditures on Twitter), 3) emphasized a diverse, inclusive sample rather than looking at between-country differences, and 4) expanded the web appendix with additional analyses.

My original review focused largely on bolstering contribution given related work in this space—I understand why the authors did not pursue many of my suggestions and, instead, toned down claims of novelty.

>>> Thank you for further reviewing our work.

In terms of remaining questions and suggestions:

1. The authors explain why they focus on within-person effects, as their goal is to examine whether each type of purchase made a person happier compared to all the purchases they made in the other categories. I understand this point. However, it is unclear how the analyses under "Changes in Overall Subjective Well-Being over Time" help advance this goal. These analyses average across all purchases, regardless of type, and show that being happier with all purchases predicts being happier with life. I recognize the power of longitudinal data, so wonder whether these analyses would be more compelling if they looked at happiness from experiential purchases, education purchases, etc., specifically.

>>> The paper's main focus was on purchase specific happiness gains from purchases in everyday life. The analysis of longitudinal data was an additional demonstration of the value of these happiness gains over time. To retain the focus of the paper, we did not include further analysis of the longitudinal data.

2. Relatedly, the authors claim, "People who spent money in happy ways experienced greater improvements in overall subjective well-being; in fact, our analyses suggest that how people spent the windfall mattered as much as whether they received it in the first place." This is not exactly what the authors found. They find a positive correlation between average purchase happiness and SWB, which does not speak to spending the money in happy versus less happy ways (i.e., spending on specific categories).

>> It is true that when we refer to ways of spending the money that made people happy, we don't talk about the specific categories but rather what boosted the person's happiness regardless of specific categories. We reformulated this slightly: "People who spent money in ways that made them happy experienced greater improvements in overall subjective well-being..."

3. There may be a word missing in the first sentence of the Discussion ("sample").

>>> Thank you for this note. "sample" was added.

4. There are also a few areas where the authors can enhance clarity further. For example, I

would edit the sentence “By providing participants with \$10,000 USD and requiring them to track every purchase they made [insert: from this windfall]...”

>>> We added this into the sentence as suggested.

I look forward to seeing this research published soon!

Reviewer #3 (Remarks to the Author):

I think the authors have addressed my concerns. I just have a few small suggestions.

Did gift to an individual include a gift to oneself and oneself only? Might those kinds of gifts be different from gifts to others? Please distinguish between these cases.

>>> The gifts were purchases for other persons as the coding scheme in the supplementary outlines: "if primary beneficiary includes family or another individual, purchase is labeled as an individual donation." Therefore, gifts for oneself do not belong to this category. We modified the category title in Table 1 to: "Gift to other individuals"

The authors say “We found some evidence that 30 the emotional benefits of spending choices varied depending on whether participants lived in 31 higher vs. lower-income countries.” Say what these were.

>>> Due to word limitations in the abstract we were unable to add these. These countries are specified in the methods section.

The authors say, “Around the world, people who spent money in happy ways 32 experienced greater improvements in overall subjective well-being.” This sounds sill because we don’t know what “happy ways” means.

>>> We rephrased this as follows: "ways that made them happy".