

Peer Review Comments

Article: Bowen H. J., & Kensinger E. A. (2017). Cash or Credit? Compensation in Psychology Studies: Motivation Matters. *Collabra: Psychology*, 3(1): 12, DOI: <https://doi.org/10.1525/collabra.77>

Article type: Original Research Report

Editor: Rolf Zwaan, Akira O'Connor

Article submitted: 24 January 2017

Editor decision: Accept Submission

Revision submitted: 11 March 2017; 01 May 2017

Article accepted: 02 May 2017

Article published: 11 May 2017

Responses for Version 1

Reviewer: Gary L. Brase

Affiliation: Department of Psychological Sciences, Kansas State University, United States

Competing Interests Statement: I have no competing interests to declare.

Review Completed: 07 February 2017

Recommendation: Resubmit for Review

1) General comments and summary of recommendation:

Describe your overall impressions and your recommendation, including changes or revisions. Please note that you should pay attention to scientific, methodological, and ethical soundness only, not novelty, topicality, or scope. A checklist of things to you may want to consider is below:

- Are the methodologies used appropriate?
- Are any methodological weaknesses addressed?
- Is all statistical analysis sound?
- Does the conclusion (if present) reflect the argument, is it supported by data/facts?
- Is the article logically structured, succinct, and does the argument flow coherently?
- Are the references adequate and appropriate?

This paper reports two experiments (really, one experiment and a follow-up of an additional condition), on the effects of cash versus course credit as inducements for research participation, including performance incentives (again, cash versus credit). Performance incentives appeared to be effective primarily for the cash payment/incentive condition. Overall, my assessment is that this is an interesting and potentially useful finding. There are some issues with the design and analyses, and it is possible that clarifications on those issues could either bolster or undercut the conclusions. I therefore recommend a major revision. Major points The hypotheses seem to be primarily based either on prior findings (Experiment 1) or intuition ("congruency" in Experiment 2), rather than theory-driven implications. For instance, in Experiment 2, why would one expect "congruency" of incentives to be important? Based on what principle of psychological functioning is that an implication? Methodology and Analysis: What is the purpose of the medical screening? There seems to be insufficient rationale for all or most of the particular measures used here. The depression scale is then apparently used to exclude participants, but it is unclear if the other measures were also used as exclusionary criteria. But then why is this scale in particular used for exclusion, and why are the others not? Later some of these measures are mentioned as covariates in an alternative analysis, but again the choices of the measures are not explained. In both studies participant responses on the 1-6 scale are collapsed into a binary classification (old/new). This discards potentially useful data on judgment confidence. Recoding would be sensible (e.g., to a -3 to +3 scale, or absolute values of certainty of judgment (1-3) on either old or new judgments), but there is no evidence of looking at these raw data at all. On the other hand, if the research is not interested in the confidence of these judgments, it should have just asked for old/new judgements rather than scale ratings. Sample sizes are very small (n=22/23 per condition in Experiment 1, n=23 in Experiment 2). Even as a repeated measures design, this may be underpowered, given that the target effect (differences on the same task, based on incentive variation) is likely to be small. The estimated effect sizes appear to be good sized, but the sample sizes may be making those estimates unreliable. For instance, in Experiment 1 the credit group shows no main effect of reward but the means were in direction consistent (high/low reward:

.55/.52) with the significant main effect found for the cash group (high/low of .61/.52). With the collapsed data and small samples, however, the high reward conditions of the two groups are not that different (.55 versus .61). Also, the significant main effect is reported twice, once in an analysis within the cash group and in a between groups analysis; this is redundant. Minor points Experiment 1, Stimuli & Apparatus subsection seems to have some missing/orphaned text: "Four stimulus lists at retrieval and assignment to . Assignment of specific stimulus" Experiment 2, Participants subsection grammar issue "a bonus 0.5 credit based on their performance the memory task" (add "on")

2) Figures/tables/data availability:

Please comment on the author's use of tables, charts, figures, if relevant. Please acknowledge that adequate underlying data is available to ensure reproducibility (see open data policies per discipline of Collabra here).

The procedure overview in Figure 1 is missing the actual "Indoor/outdoor" judgment of the task. The associated data file only has collapsed Hit Rate / False Alarm rates; raw data is not provided. This could be important for resolving issues (see above) about the nature of the participants' actual ratings of the stimuli.

3) Ethical approval:

If humans or animals have been used as research subjects, and/or tissue or field sampling, are the necessary statements of ethical approval by a relevant authority present? Where humans have participated in research, informed consent should also be declared.

If not, please detail where you think a further ethics approval/statement/follow-up is required.

IRB approval is indicated.

4) Language:

Is the text well written and jargon free? Please comment on the quality of English and any need for improvement beyond the scope of this process.

Quality of writing is good

Reviewer: This reviewer has chosen to remain anonymous

Affiliation: --

Competing Interests Statement: No Competing Interests.

Review Completed: 13 February 2017

Recommendation: Decline Submission

This reviewer's comment file can be found here: <https://s3-eu-west-1.amazonaws.com/ubiquity-partner-network/ucp/journal/collabra/Collab 77 PR letter anon Rnd 1.doc>

Editor Decision for Version 1

Editor: Akira O'Connor

Affiliation: University of St. Andrews, UK

Editor decision: Resubmit for Review

Decision date: 20 February 2017

Dear Dr Bowen,

After review, we have reached a decision regarding your submission to Collabra: Psychology, "Cash or credit? Compensation in psychology studies: Motivation matters". Our decision is to request revisions of the manuscript. These revisions may then undergo further peer review prior to acceptance.

The full review information from two reviewers is included at the bottom of this email. In summary, Reviewer A raises concerns about how the data collected were used in the analyses (e.g. medical information, confidence judgements). Whilst I understand that it is not always possible to meaningfully present data from all measures taken, the motivation for their measurement should be clearly

stated. In the case of collapsed confidence judgements, I am happy for the results to be presented as old/new judgements, though there may be some value in reporting descriptive statistics for the confidence ratings.

Reviewer E raises a number of major concerns, including an important point about the equivalence of condition assignment, and therefore potential for between-subjects confounds in Experiment 1. This reviewer also notes a number of differences between Experiments 1 and 2 that make comparison across experiments particularly problematic. These concerns could be addressed with more experimentation or with a compelling evidence-based rebuttal. Additionally, I echo Reviewer E's recommendation that the key interactions be presented graphically.

Please consider and respond to these points alongside all the points raised in the full reviews below and revise the file accordingly.

To access your submission account, follow the below instructions:

- 1) login to the journal webpage with username and password
- 2) click on the submission title
- 3) click 'Review' menu option
- 4) download Reviewed file and make revisions based on review feedback
- 5) upload the edited file
- 6) Click the 'notify editor' icon and email the confirmation of re-submission and any relevant comments to the journal.

Please ensure that your revised files adhere to our author guidelines, and that the files are fully copyedited/proofed prior to upload. Please also ensure that all copyright permissions have been obtained. This is the last opportunity for major editing, therefore please fully check your file prior to re-submission.

If you have any questions or difficulties during this process, please do contact us.

If you decide not to conduct further experimentation, please could you have the revisions submitted by 11th March, 2017. If you choose to conduct more experimentation or you cannot make this deadline, please let us know as early as possible.

Kind regards,

Akira O'Connor

University of St. Andrews, UK

aoconnor@st-andrews.ac.uk

Author's Response to Review Comments for Version 1

Author: Holly Bowen

Affiliation: Boston College, Department of Psychology, Chestnut Hill, MA

Revision submitted: 11 March 2017

Dear Dr. O'Connor,

Please find our letter and responses to reviewers attached. Additionally, we have uploaded a separate abstract file, manuscript file, 4 figure files and 1 new supplementary .csv file with the raw data (uploaded to Figshare.com). All these files have been revised or updated in some way during the revision.

Please feel free to contact me if the files need to be uploaded in a different way.

Thank you.

Holly Bowen

Attached document:

https://s3-eu-west-1.amazonaws.com/ubiquity-partner-network/ucp/journal/collabra/Collab_77_auth_resp_1.zip

Responses for Version 2

Reviewer: Gary L. Brase

Affiliation: Department of Psychological Sciences, Kansas State University, United States

Competing Interests Statement: I have no competing interests with this research

Review Completed: 20 March 2017

Recommendation: Accept Submission

1) General comments and summary of recommendation:

Describe your overall impressions and your recommendation, including changes or revisions. Please note that you should pay attention to scientific, methodological, and ethical soundness only, not novelty, topicality, or scope. A checklist of things to you may want to consider is below:

- Are the methodologies used appropriate?
- Are any methodological weaknesses addressed?
- Is all statistical analysis sound?
- Does the conclusion (if present) reflect the argument, is it supported by data/facts?
- Is the article logically structured, succinct, and does the argument flow coherently?
- Are the references adequate and appropriate?

Major comments This revision addresses most of the issues raised in my previous review, within the limitations of not having additional data. Specifically, there are now some elaborations (hopefully not entirely post hoc) about the psychological processes which might predict certain outcomes of the research (i.e., overjustification effect and mood congruency in memory). One of the largest changes is the more extensive results on the participant responses on the 1-6 scale (no longer just collapsed into a binary old/new classification. Thank you for this; it give a much more extensive view of the results. The methodological, sample size, and effect size issues are also covered a bit more thoroughly – these are the things that of course cannot be altered much without further studies and data collection. Minor comments The missing/orphaned text (Experiment 1, Stimuli & Apparatus subsection) is now corrected, but I think the “was” in that sentence now should be “were”. Also, in the introduction, “Often, research participants are motivated to participate to be compensated for their time with money” should be “Often, research participants are motivated to participate by being compensated for their time with money”

2) Figures/tables/data availability:

Please comment on the author’s use of tables, charts, figures, if relevant. Please acknowledge that adequate underlying data is available to ensure reproducibility (see open data policies per discipline of Collabra here).

Figure 3 has a y-axis range of 0.0-0.5, whereas Figure 4 has a range of 0.0-0.6. These should be the same to facilitate comparisons. IN particular, there appears to be a much higher correct selection of “Sure New” responses in Experiment 2, along with correspondingly lower proportions of other choices for the New_1 and New_2 conditions.

3) Ethical approval:

If humans or animals have been used as research subjects, and/or tissue or field sampling, are the necessary statements of ethical approval by a relevant authority present? Where humans have participated in research, informed consent should also be declared.

If not, please detail where you think a further ethics approval/statement/follow-up is required.

IRB approval is indicated

4) Language:

Is the text well written and jargon free? Please comment on the quality of English and any need for improvement beyond the scope of this process.

Language is fine.

Reviewer: This reviewer has chosen to remain anonymous

Affiliation: --

Competing Interests Statement: No Competing Interests.

Review Completed: 12 April 2017

Recommendation: Decline Submission

This reviewer's comment file can be found here: https://s3-eu-west-1.amazonaws.com/ubiquity-partner-network/ucp/journal/collabra/Collab_77_PR_letter_anon_Rnd_2.doc

Editor Decision for Version 2

Editor: Akira O'Connor

Affiliation: University of St. Andrews, UK

Editor decision: Revisions Required

Decision date: 24 April 2017

Dear Dr Holly J Bowen,

After review, we have reached a decision regarding your submission to Collabra: Psychology, "Cash or credit? Compensation in psychology studies: Motivation matters". Our decision is to request revisions of the manuscript prior to acceptance for publication.

The full review information should be included at the bottom of this email. A summary of the requested edits from the editorial team can be found below. Please consider these points and revise the file accordingly:

Editorial Revision Requests:

- Reviewer A makes a number of typographical and Figure suggestions that should be incorporated into the manuscript.

- To Reviewer A's list, I would add the following:

page 10. The sentence starting "There was no main effect of group nor a Delay x Group interaction..." should either be terminated with a '.', or the sentence should be modified to include both F statistics (if so, do this throughout).

Figure 3. Label upper and lower panels cash and credit so that this basic aspect of the figure can be understood without reference to the legend.

- Reviewer B (formerly reviewer E) continues to have concerns regarding the work reported in the manuscript. These concerns are articulated lucidly and comprehensively in the reviewer's original review. I consider Reviewer B's points important for the future development of this programme of research, and would advise you to take them very seriously in experiments you continue to conduct in this area. On a more specific point, I was generally satisfied with your response to many of Reviewer B's concerns, though I would caution against arguing that large effects are present 'despite' small samples--it has been established that small samples will often inflate estimated effect sizes (e.g. see <https://jimgrange.wordpress.com/2017/03/06/low-power-effect-sizes/> for a nice illustration of this). I would add to the list of revisions in this round, an acknowledgement of the limited power and the potential effects this could have had on your results over the two experiments.

- Reviewer B uploaded a Word document of their full review. This document, with metadata stripped by the publishing team, has been attached to this email.

To access your submission account, follow the below instructions:

- 1) login to the journal webpage with username and password
- 2) click on the submission title
- 3) click 'Review' menu option
- 4) download Reviewed file and make revisions based on review feedback
- 5) upload the edited file
- 6) Click the 'notify editor' icon and email the confirmation of re-submission and any relevant comments to the journal.

Please ensure that your revised files adhere to our author guidelines, and that the files are fully copyedited/proofed prior to upload. Please also ensure that all copyright permissions have been obtained. This is the last opportunity for major editing,; therefore please fully check your file prior to re-submission.

If you have any questions or difficulties during this process, please do contact us.

Please could you have the revisions submitted by 10th May, 2017. If you cannot make this deadline, please let us know as early as possible.

Kind regards,

Akira O'Connor

University of St. Andrews, Scotland

aoconnor@st-andrews.ac.uk

Author's Response to Review Comments for Version 2

Author: Holly Bowen

Affiliation: Boston College, Department of Psychology, Chestnut Hill, MA

Revision submitted: 01 May 2017

May 1, 2017

Dear Dr. O'Connor,

Thank you for the opportunity to make revisions to our paper. The editorial concerns as well as all the points from Reviewer A have now been addressed and we hope you find these changes satisfactory.

We acknowledge the points made by Reviewer B (formerly Reviewer E) and agree that in order to make claims about causality, a hypothetical study such as the one they propose would be necessary. In our reply to Reviewer B's comments we have tried to make it clear that addressing causality was never our intention, nor do we have the ability at our institution to run the hypothetical study they propose. Despite the limitations of our quasi-experimental design, we think it is important to present these results because they suggest that the method of compensation (either cash or partial course credit) should be considered in future research as a factor that can potentially interact with in-task incentives. In addition to addressing this in our response letter, we have added a few sentences to reiterate this point further in the paper and hope that we have now made this even clearer in our conclusions.

We have read the Transparency and Openness policy of the Editorial Policies and have no conflicts of interest to disclose.

Thank you in advance for your consideration.

Sincerely,

Holly Bowen, Ph.D.

Attached document:

<https://s3-eu-west-1.amazonaws.com/ubiquity-partner-network/ucp/journal/collabra/Collab 77 auth resp 2.zip>

Editor Decision for Version 2

Editor: Akira O'Connor

Affiliation: University of St. Andrews, UK

Editor decision: Accept Submission

Decision date: 02 May 2017

Dear Dr Holly J Bowen,

After review, we have reached a decision regarding your submission to Collabra: Psychology, "Cash or credit? Compensation in psychology studies: Motivation matters", and are happy to accept your submission for publication, pending the completion of copyediting and formatting processes.

As there are no further reviewer revisions to make, you do not have to complete any tasks at this point. The accepted submission will now undergo final copyediting. You will be contacted once this is complete to answer any queries that may have arisen during copyediting and to allow a final chance to edit the files prior to typesetting. If you wish to view your submission during this time, you can log in via the journal website.

Kind regards,

Akira O'Connor

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