

Peer Review Comments

Article: Johannes, N., et al. (2019). Social Smartphone Apps Do Not Capture Attention Despite Their Perceived High Reward Value. *Collabra: Psychology*, 5(1): 14. DOI: <https://doi.org/10.1525/collabra.207>

Article type: Original Research Report

Editor: William Chopik

Article submitted: 07 November 2018

Editor decision: Accept Submission

Revision submitted: 01 March 2019

Article accepted: 05 March 2019

Article published: 09 April 2019

Author Contact

Author: Niklas Johannes

Affiliation: Radboud University, NL

Contact Date: 18 February 2019

Dear editors,

It has been a while since we submitted our manuscript. We would just like to inquire what the status of the review process is and whether we can expect an editorial decision soon.

Thank you and kind regards,

Niklas Johannes

Responses for Version 1

Reviewer B:

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?:

See attached.

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):

NA

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.:

Yes

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.:

Well written

Reviewer C:

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?:

Overall, I'd recommend the paper for publication, with the following caveats discussed below.

Review – Smartphone Rewards

In reading this paper, there was a lot to like: it was clearly written, and tested a reasonable set of pre-registered hypotheses that are of both scientific and applied interest.

Of course, the big question is what we can learn from the null effect that the paper reports. I think there are a lot of uninteresting explanations: perhaps social notifications really are more distracting than non-social notifications, but only in the context of a person's phone (i.e., a realistic environment) and not in isolation on a computer screen. Or perhaps the instructions to do the visual task outweighed the potential for distraction here (which again could mean that social notifications could be more distracting than nonsocial distractions for tasks with a less clear goal). Or maybe the effect is under-powered (the authors themselves note that it is a conservative sample size). This is one of those instances where a higher-powered replication would be informative one way or the other (either solidifying the null effect, or suggesting that a small effect might exist).

Putting aside all of the obvious questions about what can be learned from a null effect, perhaps a more reasonable standard is just: have we learned more than nothing after reading this paper? I lean toward saying "yes" because 1) there were no obvious red flags in the conceptualization & design of the study and 2) at least this paper can be added into the small but growing literature on social media & distraction, to try to piece together a better understanding of the effects.

Beyond this high-level concern, here were a few more comments on the paper:

Theory section:

1. How do the authors conceptualize distraction? Would be nice to include a definition early in the paper.
2. What's the comparison point when they write that "smartphones are distracting" – more distracting than what?
3. Reward-seeking vs. punishment-avoiding: do the authors think of these processes as reciprocal or not? I think there is a reason to believe they are different processes, and I'm not sure why the authors advocate the former and ignore the latter.
4. Very nice consideration of alternatives on p. 6

Empirical data:

5. It would have been nice to include a manipulation check to see whether people really do associate social notifications with social rewards (e.g., do people feel happier when they get a social notification (vs. nonsocial notification)? Do they feel a stronger need to respond more to social vs. non-social notifications? Etc.) Actually, maybe a separate short MTurk survey could help to answer some of these basic questions, and this would supplement the main study in the paper.
6. Pre-registration: There were just a few tiny discrepancies between their OSF file and the manuscript, such as participants needing visual acuity (not mentioned in the manuscript) and euro compensation (pre-reg) vs. gift cards (manuscript). I'm not meaningfully concerned about any of the discrepancies, but it would just be easier if the manuscript exactly matched the pre-reg.

7. The Bayesian analysis is of limited utility for the reasons that the authors discussed

Other minor concerns:

8. There were a few typos throughout ("this mechanisms" p. 3)

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):

They were adequate

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:

Ethical approval was fine

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 was fine (but see a few typos that I noted in my review above)

Editor Decision for Version 1

Editor: William J. Chopik

Affiliation: Michigan State University, US

Editor decision: Revisions Required

Decision date: 18 February 2019

Dear Mr Niklas Johannes,

Thank you for submitting your manuscript, *Smartphone Apps are not Associated with Reward, but the Smartphone Itself may be Rewarding*, to *Collabra: Psychology*. We very much appreciate you considering us as an outlet for your work. I have now received two reviews for your manuscript and have read your paper carefully myself. Both the reviewers and I saw valuable aspects of the manuscript. The study uses a visual search paradigm that integrates social media applications (and notifications) in a creative way. It also includes several trials to make the tests of reward informative. The findings are also relatively straight-forward and provocative—that social apps and notifications might not interfere with visual search and serve as distractions. Both reviewers noted that the paper was also well written.

However, both reviewers and I expressed a number of concerns about (a) features of the design (e.g., the features of the deprivation manipulation and the lack of a proper control condition) and (b) the interpretation of the null results (which are closely related). Based on the reviewers' comments and recommendations to me (and my own reading of the manuscript), I am recommending a "Revisions Required" decision.

If you elect to undertake a revision, I urge you to pay close attention to my and the reviewers' suggestions and to thoroughly address each issue that was raised. For example, although you were basing much of your theorizing on previous research, it would have been helpful to have some sort of manipulation check to show that indeed the presence of a notification was socially rewarding (more so than just the presence of an icon and the non-social icon). This would clear up some of the ambiguity of whether a single notification indeed provides a reward (see both reviewers). Some of these concerns could be sidestepped by having included a control that had no app presence. Then, you would have been on firmer ground with the assertion (from your discussion and the title) that apps are not associated with reward. It is important to acknowledge this limitation, either through text (if that can be done convincingly) or through collecting some additional data (see Reviewer C). Likewise, the deprivation conditions are not completely parallel (see Reviewer B). The deprivation condition had people first come to the lab and relinquish their phones, after which they killed an hour of time before coming back to complete the study. The control condition merely had participants complete the study upon arriving at the lab. A more thorough discussion of the differences between these conditions are warranted.

There are also a number of minor comments. Reviewer C found some discrepancies between your OSF files and the manuscript—it is important to make sure there are no discrepancies (or if there are, explicitly note this in the manuscript). It is also important to seriously entertain the reviewer's alternative explanations for the Discussion section—given the ambiguity of the null effects (and the limitations of the study design), I found these points reasonable to make. Regarding the inclusion of the Bayesian analyses (Reviewer C), I am comfortable with you retaining these for the manuscript as long as their strengths and limitations are more accurately communicated to readers. Finally, I advise you to amend the title to more accurately reflect what was found in the paper.—you technically examined whether apps were associated with distraction. The assumed process through which this happens is that they are rewarding, which causes the distraction. Because this process was not explicitly tested (and given the limitations of the deprivation condition), a more conservative, descriptive title is called for.

I laid out these suggestions above because I think the paper shows promise and has the potential to contribute to the literature on smartphone use; but the paper needs to be improved dramatically before it can be considered for publication in *Collabra: Psychology*. I would like to thank you again for sending your manuscript to us for consideration and wish you every success in developing this research program.

The full review information should be included at the bottom of this email. There may also be a copy of the manuscript file with reviewer comments available once you have accessed the submission account. A summary of the requested edits from the editorial team can be found below. Please

consider these points 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.

Please could you have the revisions submitted by [GIVE 2 WEEK DEADLINE]. If you cannot make this deadline, please let us know as early as possible.

Kind regards,

William J. Chopik

Michigan State University

chopikwi@msu.edu

Author's Response to Review Comments for Version 1

Author: Niklas Johannes

Affiliation: Radboud University, NL

Revision submitted: 01 March 2019

Dear Dr. Chopik,

Thank you for giving my coauthors and me the opportunity to revise the manuscript. We appreciate the helpful feedback you and the reviewers provided.

I now uploaded the revised manuscript. Please note that I also uploaded a response letter where we

detail each part of the revision. I added it as supplementary material (207-2887-1-SP.docx).

Looking forward to your response.

Best wishes,

Niklas Johannes

Attached document:

<https://s3-eu-west-1.amazonaws.com/ubiquity-partner-network/ucp/journal/collabra/207-2887-1-SP.docx>

Editor Decision for Version 2

Editor: William J. Chopik

Affiliation: Michigan State University, US

Editor decision: Accept Submission

Decision date: 05 March 2019

Dear Mr Niklas Johannes,

After review, we have reached a decision regarding your submission to Collabra: Psychology, "Social Smartphone Apps Do Not Capture Attention Despite Their Perceived High Reward Value", 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.

Thank you for submitting and considering Collabra: Psychology as an outlet for your work. I thought the changes you made were appropriate and I thank you for engaging in the process and collecting additional data. I am pleased that this is my first acceptance email to send as a recently named Editor at Collabra: Psychology. Have a wonderful week.

Kind regards,

William J. Chopik

Michigan State University

chopikwi@msu.edu