**Peer Review History and Communication**

**Ms Title:** “I remember having chicken pox at age 3”

How can age manipulations affect one’s earliest childhood memories?

**Author Names:** Katinka Dijkstra and Ineke Wessel

**Submitted:** Sept 3, 2020

Editor First Decision—Revise & Resubmit

Nov 30, 2020

Dear Dr. Dijkstra,

I have now received all reviews of your manuscript, ““I remember having chicken pox at age 3” How can age manipulations affect one’s earliest childhood memories?” from qualified researchers. I also independently read the manuscript before consulting these reviews. I agree that your manuscript has important strengths and also that there are some issues that need to be addressed. I therefore encourage you to submit a revised version for further consideration at Collabra: Psychology.

The reviewers did an outstanding job in their reviews. I will highlight issues I think are particularly salient here. In your resubmission, please include a document with a point-by-point response to both the points I list here and the reviewers’ comments, outlining each change made in your manuscript or providing a suitable rebuttal.

Both reviewers agree that the manuscript could be streamlined effectively in some places. The reviewers’ comments are specific and helpful, so I will not repeat them here in detail. Reviewer 1 points out that it must be made clear to the readers from the outset which interaction the study is addressing. Reviewer 2 mentions a couple of important methodological issues. Please address all of these issues in your point-by-point response.

Please also make sure that you explain in detail the reasons for deviating from the preregistration.

In summary, I think this is a promising manuscript and, I hope you will revise it for further consideration at Collabra: Psychology. I look forward to receiving your revision.

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 contact the editorial office at editorialoffice@collabra.org.

We hope you can submit your revision within the next six weeks. If you cannot make this deadline, please let us know as early as possible.

Sincerely,

Jan Philipp Röer

**Reviewer 1**

**Open response questions**

Please write your review here. The author(s) will see this review. Your identity will not be revealed to the authors unless you also include your name (i.e., sign your review) in this box. It is up to you whether to reveal your identity or not, either is fine.

This is a replication and extension of a prior study by the same authors. In the original study, university-aged individuals were asked to recall their earliest memory. Prior to that recall, they were prompted by reading about a memory from either age 2 or age 6. After the collection of memories, each memory was classified as describing an event or being a snapshot/fragment. The age condition or manipulation was successful, in keeping with other extant research. Namely, those individuals who had first read a memory from age 2 recalled earlier memories than did those participants who had first read a memory from age 6. However, the novel aspect of that study was that there was an age X memory type interaction. In the current manuscript, the authors did three studies to explore this condition (prior reading of a memory from age 2 versus age 6) X memory content (event vs. snapshot) interaction. In Studies 1 and 2, participants were explicitly prompted to provide either event memories or snapshot memories. Study 1 compared participants prompted with memories from age 6 with participants with no prior age-prompting (i.e., a control group). Study 2 compared participants prompted with memories from age 2 with those with no prior age-prompting (control group). In Study 3, there were 3 groups: age 6 prior prompting, age 2 prior prompting, and no prior age prompting. In the latter study, participants weren’t asked to provide specific types of memories; rather, the classification of memories into events or snapshots was done on a post-hoc basis (which is what was done in the original study). Overall, there was no clear support for an age of prompt (age 2 vs. age 6 memory) X content (event vs. snapshot). The authors conclude that the initial study probably reported a false positive finding. One of the criticisms of our field is that typically only positive, significant results are published. Null results are not. But they should be. In the current case, a published study clearly supported a content X age-of-prompt interaction, which could have significant effect on future research or theory-building. It is thus important that contrary research be added to the published record. In terms of the manuscript itself, I found it overly long and thought that it could be streamlined effectively in a number of places. The tables also can be trimmed. As well, the abstract and introduction do not make clear the actual interaction that you are addressing. For example, on page 7 (last sentence of top paragraph), the sentence is confusing. You state that ‘the age manipulation in the early condition was less effective than in the late condition.’ Yet you are not manipulating age within the early condition. Or within the late condition. Do you mean that the content manipulation (event vs. snapshot) was less effective in the early condition? Do be clear about the nature of the interaction. p. 5, line 5 from bottom: ‘may be contributed to’ should be ‘may be partly due to’. P 9, line 4: ‘dependent’ should be ‘depended’ p. 13, last line prior to the Table 1 label: Your sentence makes no sense to me. You state ‘the fragment examples yielded more fragment and snapshot memories than the event examples, which yielded more event memories. Then you state 59.8 and 70.1. What are these? Your label ‘for fragment and event examples, respectively’ doesn’t parse for me. In the fragment condition, participants produced 59.8 fragments but 70.1 events? That can’t be right. Is 70.1 the proportion of event memories in the event condition? So what is the proportion in the fragment condition? I’m totally confused about these numbers. p. 34, 2nd from last sentence: ‘smples’ should be ‘samples’ Overall, solid research. But this is a non-replication of a prior finding. Thoroughly investigated, it is true, but I really think that it could be presented more succinctly.

**Rating scale questions**

|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| --- | --- | --- | --- | --- | --- |
| The study/studies in this manuscript have strong construct validity (good measures and/or manipulations of the constructs the authors wish to study). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  |  | ✔ |
| The study/studies in this manuscript have strong statistical validity (appropriate statistical tests, assumptions are clear and reasonable, no statistical errors, appropriate statistical inferences, etc.). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  |  | ✔ |
| The study/studies in this manuscript have strong internal validity (any causal claims or implications are well-justified, alternative explanations are thoroughly considered, etc.). (Choose “Neutral” if this is not an empirical manuscript, or no causal claims are made or even vaguely implied.) |  |  |  |  | ✔ |
| The study/studies in this manuscript have strong external validity (authors appropriately constrain their conclusions based on the limits of the generalizability of their findings to other contexts (including from lab to real world), other populations, other stimuli or measures, etc.) |  |  |  |  | ✔ |

**Reviewer 2**

**Open response questions**

Please write your review here. The author(s) will see this review. Your identity will not be revealed to the authors unless you also include your name (i.e., sign your review) in this box. It is up to you whether to reveal your identity or not, either is fine.

The authors attempt a replication of findings by Wessel on the malleability of age of memory and its interaction with the type of memory in three experiments. Their studies show that although the age at earliest memory can be a function of research instructions, the type of memory does not interact with age.

I find the research reported in the manuscript important and informative in affirming the malleability of the age reported by the participants. One question that is essential to answer in this line of research is whether the process influenced by the manipulation is the memory retrieval or age estimation. The authors address this issue in their discussion to a certain extent but it would be useful to indicate at the outset, possibly in the introduction, that this confounding is inherent in most of the research reported.

Below I will list my comments according to relevant pages (pdf file):

p 9 - Please explain SONA. p 10, 11 - What are waves 1, 2, and 3? p 11 - What are the prescreen questions and why were they used? p 12 - There is a mention that the participants were asked whether this event had pictures or videos but there seems to be no follow-up on that in later parts of the manuscript. Please indicate whether not analyzed or analyzed and found to be not significant. p 15 - The manipulation check, the coding of memories by independent raters seems to indicate that about 1/3 of the memories in the event conditions were not coded as events but rather snapshots or fragments. Does this mean the participants did not understand the instructions? There is a need to clarify this and possibly include only those participants whose memories are coded in congruence with the instructions. p 16 - Belief about whether people can remember memories before the age of 2 is used as a control variable. This question is asked after the age manipulation. Is it possible that the answer to this question is influenced by the manipulation? I tend to think that an analysis of the effect of condition on belief may show if such influence exists and if it can be justified as a control variable. Because, if there is an influence, it would be difficult to argue for its use. p 18 - The coding of the mamory types by independent coders seemed to be a good manipulation check. Why was it eliminated? p 19 - The procedures in Experiment 2 are somehat different than the first experiment. It may be useful to indicate why these changes were deemed necessary. p 24 - Please explain the reasons for deviating from the preregistration. p 24 - About the inclusion of the 7 participants. How do the authors conclude that these participants had memories although they did not indicate it? Can we assure comprehension of instructions if such a mistake was made? Finally if the participants did not write their memories how was the memory type coded? p 29 - In the third experiment, the memory type is coded rather than being part of the instructions. One can argue that the indeendent variables are not indeoendent of each other that is, age manipulation may be leading to a different type of memory. To assure that they were independent, I conducted chi-squre test and they were. It may help the authors to report this sort of independence. p 30 - It would be useful to see on Table 4 the uncorrected means as well.

I believe that the manuscript can be published with the revisions I indicated above.

Sami Gülgöz

**Rating scale questions**

|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| --- | --- | --- | --- | --- | --- |
| The study/studies in this manuscript have strong construct validity (good measures and/or manipulations of the constructs the authors wish to study). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  | ✔ |  |
| The study/studies in this manuscript have strong statistical validity (appropriate statistical tests, assumptions are clear and reasonable, no statistical errors, appropriate statistical inferences, etc.). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  | ✔ |  |
| The study/studies in this manuscript have strong internal validity (any causal claims or implications are well-justified, alternative explanations are thoroughly considered, etc.). (Choose “Neutral” if this is not an empirical manuscript, or no causal claims are made or even vaguely implied.) |  |  |  | ✔ |  |
| The study/studies in this manuscript have strong external validity (authors appropriately constrain their conclusions based on the limits of the generalizability of their findings to other contexts (including from lab to real world), other populations, other stimuli or measures, etc.) |  |  |  | ✔ |  |

**Author Response**

Dec 16, 2020

December 16th, 2020

Dear Dr. Röer,

We want to thank you for the opportunity to revise and resubmit the manuscript. Below, you will find our responses to the reviewers and a description of what we changed in the manuscript.

In short, we made changes in the content by removing redundant text in the introduction, methods, and results sections (including the tables). We also described the actual interaction now both in the abstract and more clearly in the introduction. In addition, we addressed all of the comments that were raised by the reviewers. We very much appreciate their thorough reading and useful suggestions that in our opinion contributed to a better version of the manuscript.

We are looking forward to your response to the revised version of the manuscript and our reaction to the reviews.

Kind regards,

Katinka Dijkstra and Ineke Wessel

Responses to reviewer 1:

In Study 3, there were 3 groups: age 6 prior prompting, age 2 prior prompting, and no prior age prompting. In the latter study, participants weren’t asked to provide specific types of memories; rather, the classification of memories into events or snapshots was done on a post-hoc basis (which is what was done in the original study). Overall, there was no clear support for an age of prompt (age 2 vs. age 6 memory) X content (event vs. snapshot). The authors conclude that the initial study probably reported a false positive finding. One of the criticisms of our field is that typically only positive, significant results are published. Null results are not. But they should be. In the current case, a published study clearly supported a content X age-of-prompt interaction, which could have significant effect on future research or theory-building. It is thus important that contrary research be added to the published record.

*We entirely agree with the point that contrary research should be added to the published record. The purpose of this paper is exactly that.*

In terms of the manuscript itself, I found it overly long and thought that it could be streamlined effectively in a number of places. The tables also can be trimmed.

*We have eliminated redundant parts in the introduction and streamlined text where this was possible. The tables now only contain information regarding the manipulated variables. The deleted information has been added to the OSF page.*

As well, the abstract and introduction do not make clear the actual interaction that you are addressing.

*Point taken. The actual interaction is now stated explicitly in the abstract and stated more clearly in the introduction.*

For example, on page 7 (last sentence of top paragraph), the sentence is confusing. You state that ‘the age manipulation in the early condition was less effective than in the late condition.’ Yet you are not manipulating age within the early condition. Or within the late condition. Do you mean that the content manipulation (event vs. snapshot) was less effective in the early condition?

*This sentence is confusing indeed, we have changed to wording according to your suggestion.*

Do be clear about the nature of the interaction. p. 5, line 5 from bottom: ‘may be contributed to’ should be ‘may be partly due to’. P 9, line 4: ‘dependent’ should be ‘depended’

*These sentences have been modified in the revised condition of the manuscript.*

p. 13, last line prior to the Table 1 label: Your sentence makes no sense to me. You state ‘the fragment examples yielded more fragment and snapshot memories than the event examples, which yielded more event memories. Then you state 59.8 and 70.1. What are these? Your label ‘for fragment and event examples, respectively’ doesn’t parse for me. In the fragment condition, participants produced 59.8 fragments but 70.1 events? That can’t be right. Is 70.1 the proportion of event memories in the event condition? So what is the proportion in the fragment condition? I’m totally confused about these numbers.

*These figures reflected the percentages for fragment and event memories regardless of age condition. To avoid confusion, we deleted the text in the results section. We added a comment in the discussion that addresses the issue of instructed versus post-experiment encoding (see our response to reviewer 2 on post-experimenter coding as a manipulation check).*

p. 34, 2nd from last sentence: ‘smples’ should be ‘samples’ Overall, solid research. But this is a non-replication of a prior finding. Thoroughly investigated, it is true, but I really think that it could be presented more succinctly.

*We corrected this typo and shortened the manuscript to make it more succinct. With regard to the description of the method section, however, we feel that in the interest of transparency, the information we provide is necessary to report in this type of replication study.*

Reviewer 2

I find the research reported in the manuscript important and informative in affirming the malleability of the age reported by the participants. One question that is essential to answer in this line of research is whether the process influenced by the manipulation is the memory retrieval or age estimation. The authors address this issue in their discussion to a certain extent but it would be useful to indicate at the outset, possibly in the introduction, that this confounding is inherent in most of the research reported.

*We added the following sentences to the introduction (p. 5): “It should be noted that typically, the design of studies in this field does not allow conclusions as to whether an anchoring or retrieval context mechanism provides the most likely explanation for the malleability of the reported age of earliest memories.”*

Below I will list my comments according to relevant pages (pdf file):

p 9 - Please explain SONA.

*This was an omission on our part. The SONA participant registration system has been clarified in the revised version of the manuscript.*

p 10, 11 - What are waves 1, 2, and 3?

*We collected the data in three waves, as detailed on the OSF. We see how mentioning the waves without reference in the manuscript is confusing to the reader. As this was not crucial for the description of participants, we removed all reference to the waves from the manuscript and refer to our explanation to the OSF page.*

p 11 - What are the prescreen questions and why were they used?

*See our point above, reference to these questions was removed from the manuscript and instead we refer to the OSF page. Also in the interest of space (see reviewer 1’s comments) we moved the description of the demographics variables to a new file on the OSF.*

p 12 - There is a mention that the participants were asked whether this event had pictures or videos but there seems to be no follow-up on that in later parts of the manuscript. Please indicate whether not analyzed or analyzed and found to be not significant.

*Only 12% of the sample said “yes” to this question. Therefore we refrained from including this variable in further exploratory analyses. We added a footnote on this issue on p. 11 of the revised manuscript.*

p 15 - The manipulation check, the coding of memories by independent raters seems to indicate that about 1/3 of the memories in the event conditions were not coded as events but rather snapshots or fragments. Does this mean the participants did not understand the instructions? There is a need to clarify this and possibly include only those participants whose memories are coded in congruence with the instructions.

*This was not intended as a manipulation check, but was included as part of the replication procedure of the Wessel et al, 2019 study. (See our more elaborate answer below)*

p 16 - Belief about whether people can remember memories before the age of 2 is used as a control variable. This question is asked after the age manipulation. Is it possible that the answer to this question is influenced by the manipulation? I tend to think that an analysis of the effect of condition on belief may show if such influence exists and if it can be justified as a control variable. Because, if there is an influence, it would be difficult to argue for its use.

*Thank you for pointing this out. We did not check whether the conditions differed regarding the belief in memories below the age of 2, because we entered it as a covariate to directly replicate the analyses in the Wessel et al. 2019 study. To see whether the covariate would make a difference, we also report the analyses without it.*

p 18 - The coding of the memory types by independent coders seemed to be a good manipulation check. Why was it eliminated?

*In studies 1 and 2 the key question was whether instructing participants to retrieve a certain memory type would result in differences in the reported age. When designing these studies, we reasoned that an a priori manipulation of memory type would be an improvement over the post-hoc experimenter coding used in earlier studies. Because these studies also compared the memory characteristics (MEQ or AMCQ scores) between events and snapshots, we carried out the post-hoc coding and report the summary statistics in order to contribute to the wider pool of findings on characteristics. However, as these comparisons detracted from the main purpose of the paper and, as the manuscript is already long (see reviewer 1) we decided to report this on the OSF page. It is mentioned in the paper for sake of transparency: we did it and therefore deemed it important to say that we did. We reported the distribution of different memory types across the conditions (in table 1) also in the interest of comparability with the previous work, We never scored the memory type in study 2 as it seemed less important for the key question.*

*Although we do see how we created confusion by reporting the memory type percentages across conditions (table 1), we find it important to note that we never intended the post-hoc coding to be a manipulation check. As said, we regarded the a priori instructions as a methodological improvement: a memory experience is predominantly an internal event and post-hoc coding depends on the quality of the participants’ description (which may be affected by lack of motivation, time, etc). Of course, as pointed out above (in reponse to reviewer 1), it could also be that participants do not understand the instruction (or missed it). The point is that we don’t know that either method is superior (participant-generated or experimenter-coded) and that therefore we doubt whether experimenter-coding can serve as an appropriate manipulation check.*

p 19 - The procedures in Experiment 2 are somewhat different than the first experiment. It may be useful to indicate why these changes were deemed necessary.

*The minor changes had to with the fact that the experiment was run in a different lab and the experiment itself could not be copied into Qualtrics which resulted in some minor changes in lay-out.* *The examples were a bit more elaborate to make sure the participants understood the difference between event and fragment memories. This information has been added in the revised manuscript.*

p 24 - Please explain the reasons for deviating from the preregistration.

*These reasons are now explained more clearly in the revised manuscript (see also comment above).*

p 24 - About the inclusion of the 7 participants. How do the authors conclude that these participants had memories although they did not indicate it? Can we assure comprehension of instructions if such a mistake was made? Finally if the participants did not write their memories how was the memory type coded?

*Rather than nonsense responses (that we also see in this type of study, see Klusmann & Wessel, 2019), these responses made sense in light of the instructions (pp had just been informed that they could answer the questions in their native language if they wished). We regarded these descriptions to be an honest mistake because the memory ratings they provided also appeared to make sense). Following the coding system, these responses were coded as no memory (see manuscript) and as such were not included in the analyses with the interactions.*

*Although we cannot assure that these age estimations referred to a genuine memory, we also cannot assure that these age estimations were not reliable. We therefore saw no reason to change the manuscript on this point.*

p 29 - In the third experiment, the memory type is coded rather than being part of the instructions. One can argue that the independent variables are not independent of each other that is, age manipulation may be leading to a different type of memory. To assure that they were independent, I conducted chi-squre test and they were. It may help the authors to report this sort of independence.

*Thank you for pointing this out. Indeed, we initially expected (in the Wessel et al., 2019 study) that a late manipulation would yield more event memories and an early manipulation would result in more snapshot memories. This turned out to be a null finding in both studies in Wessel et al. (2019) as well as in the community study reported by Klusmann & Wessel (2019). Because of these three consecutive failures to reject the null hypothesis, we did not consider this comparison in preregistered analysis plan for study 3 and thus, refrained from adding it to the current manuscript. We doubt whether adding a chi square analysis would be meaningful, given that a non-significant result would reflect an inconclusive result rather than firm evidence for independence.*

p 30 - It would be useful to see on Table 4 the uncorrected means as well.

*We have included the uncorrected means in Table 4.*

I believe that the manuscript can be published with the revisions I indicated above.

**Editor Final Decision—Accept**

March 2, 2021

Dear Dr. Dijktra,

after consulting with the managing editor, I have stepped in as a reviewer to avoid further delays. I have now read over your manuscript "“I remember having chicken pox at age 3” How can age manipulations affect one’s earliest childhood memories?“, along with the letter describing the changes you made.

Thank you for your responsiveness to the concerns that the reviewers raised. I am happy to say that your paper is now officially accepted for publication in Collabra: Psychology. Congratulations on this excellent work, I think it will make an important contribution to the literature and I look forward to seeing it published!

There is only one remaining issue which should be taken care of before we can move on. I suggest you make the necessary changes and send the manuscript directly to Liba Hladik, who oversees the pre-production of the article (lhladik@ucpress.edu).

Reviewer 1 recommended that you should indicate the directions of the differences when referring to statistically significant tests. I also think that it should be immediately clear to the readers of Collabra: Psychology what the directions of the differences are, not just after looking at the table.

Our managing editor will contact you in case there are any further pre-production file related questions. You will have an opportunity to check the page proofs before we publish your article.

Thank you again for publishing in Collabra: Psychology.

Sincerely, Jan Philipp Röer

**Reviewer 1**

**Open response questions**

Please write your review here. The author(s) will see this review. Your identity will not be revealed to the authors unless you also include your name (i.e., sign your review) in this box. It is up to you whether to reveal your identity or not, either is fine.

As I said before, this is solid research. I appreciate the way that the authors attended to the comments of myself and the other reviewer.

I only have one issue with the current version. Perhaps among the other things I was attending to, I didn’t point it out earlier, but I really do think that this needs to be addressed prior to publication. If the authors make these changes, the manuscript is fine for publication in my opinion.

The issue is one that really annoys me, and probably I am not the only reader to feel this way. The authors state that some particular contrast/analysis was significant. And that is all they say. PLEASE state the direction of difference! It is not that hard! Otherwise, the reader has to remember the means from the tables (often not done), or has to go to the tables to search. This is totally unnecessary! For Experiment 3, on p. 25, first paragraph under Results, you do state the direction of difference. (e.g., …was statistically significantly older than in the early age condition…). Plus the next sentence gives this information on direction of difference. But please look at p. 26 in study 3, the second-to-last sentence on the page – the direction of difference is not specified. For Experiment 1, Look at the page 14. There are several places where you state that there was a statistical difference without saying what it was. For experiment 2, ditto on page 18. Please add this information. It doesn’t take much to do so. Other than that, insert ‘than’ in the 3rd to last line of the abstract: …late condition were older [than] snapshot …

**Rating scale questions**

|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| --- | --- | --- | --- | --- | --- |
| The study/studies in this manuscript have strong construct validity (good measures and/or manipulations of the constructs the authors wish to study). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  |  | ✔ |
| The study/studies in this manuscript have strong statistical validity (appropriate statistical tests, assumptions are clear and reasonable, no statistical errors, appropriate statistical inferences, etc.). (Choose “Neutral” if this is not an empirical manuscript) |  |  |  |  | ✔ |
| The study/studies in this manuscript have strong internal validity (any causal claims or implications are well-justified, alternative explanations are thoroughly considered, etc.). (Choose “Neutral” if this is not an empirical manuscript, or no causal claims are made or even vaguely implied.) |  |  |  |  | ✔ |
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