Author's response to reviews

Title: Toward a new computer-based and easy-to-use tool for the objective measurement of motivational states in humans: A pilot study

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Author's response to reviews: see over
Dear Editor,

We are happy to have the opportunity to submit our revised manuscript (MS: 2034778144121030) entitled: "Toward a new computer-based and easy-to-use tool for the objective measurement of hedonic and motivational states in humans: A pilot study". We have addressed each concern of the reviewer in the point-by-point answers below and modified the manuscript accordingly. Changes in the revised text have now been highlighted in light blue.

We thank the reviewers for taking the time to review our manuscript, allowing us to substantially improve it.

Please do not hesitate to contact me if there are any other questions about our resubmission.

Sincerely,

Pr. B. Aouizerate
Responses to the reviewer 2

Minor Essential revisions

1. Under Abstract

‘functional neuroimaging techniques whose use...’ . ‘Whose’ does not appear appropriate as it is normally used for persons.

We have taken this comment into account in the abstract (page 2, line 4).

2. In results

The PSE and PSD for the two satiety sessions were combined. Nothing was mentioned about the second fasting session. What happened to those results?

As mentioned in the manuscript (page 8, line 8), participants underwent two experimental sessions in satiety but only one in fasting. In order to clarify this point, we have changed the sentence in the text (page 8, line 9).

3. In Discussion

‘Third, the PSD is a particularly appropriate measurement when obtained from the responses to a large number of trials where both stimuli.....lose its accuracy...when calculated individually for each participant on a smaller number of trials.....’

It is not clear from the methods how many trials were used for this study and the appropriate power calculation. Providing information on number of trials which is considered large and small will be useful for readers. We have taken this relevant point into consideration, as follows (page 16, line 3): “Third, the PSD is a particularly appropriate measurement derived from the reponses to a large number of trials (from 200 to 350) where both stimuli “F” and “D” are equal in terms of size and duration of presentation, as those responses obtained in our study for each experimental session at the level of the entire group sample. However, this experimental variable might partially loose its accuracy when calculated individually for each participant on a smaller number of trials (from 9 to 14) during each experimental session, thereby resulting in the absence of correlation with the hunger levels or the appetitive value of the food images”.

4 In Conclusion

a) The authors have done well in laying out the limitations of the study. However, as this is recognised as a pilot study, it will be useful to mention to readers how the authors feel the study design can be improved should the study be repeated to fully develop this computer-based test for use on subjects affected by mood, addictive disorders and obesity (e.g. increase number of trials, gender specific testing, will the VAS still be useful, use no colour food and geometric pictures?). At the methodological level, the major point primarily relies on the size of the step for the task A, which could be further reduced in order to show clear differences in the perception of food and control images in fasting when the PSE is considered. This is an important issue before extending the application of the task A to studies designed to compare the motivational status between patients and normal healthy controls. We have added a sentence in the limitation section, as follows (page 15, line 22): “Thus, it might be necessary to further reduce the size of the step in order to better differentiate changes in the size perception of the food pictures from those of control images by using the PSE.”
Otherwise, the VAS assessing hunger levels will be relevant also for future studies because we found correlations between the PSE calculated for either the food or control images and the hunger levels assessed by VAS in the fasting condition, as described in the results section of the present manuscript (page 11, line 16). Similarly, it will be important for future studies to recruit a greater number of subjects in order to assess the presence of gender effects. This latter point is now briefly mentioned in the discussion (page 17, line 5).

b) Conclusion – ‘this novel computer-based test in particularly relevant...’ . Can’t conclude this as it is currently not tested in people with diseased states. More appropriate to use ‘potentially useful’. This point has been considered, as follows in the abstract (page 3, line 2): “this novel computer-based test is potentially useful for” and in the conclusion section, as follows (page 17, line 7): “The present pilot study pleads for the potential usefulness of”.

5. Key words – ‘hedonic sensation’. This does not appear to be a key word for this paper. Hedonic sensation has been removed from the key words. Psychophysics has been inserted (page 3, line 5).