

Bae and Luck 2019

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1 Introduction

This document contains the reanalysis of the following paper:

Bae, G-Y., & Luck, S. J. (2019) Reactivation of previous experience in a working memory task. *Psychological Science*, 30(4), 587-595.

Bae and Luck (2019) performed their analysis in Matlab using EEGLab. Matlab was also used for the reanalysis.

The code for the reanalysis is available at <https://github.com/ljcolling/odp-bae>. Due to the use of proprietary software, it is not possible to automatically build this document. To manually build this document, clone the git repository and run `make`. This makefile is currently only set up to work with MATLAB R2021 on MacOS. To use with a different version of Matlab on a difference OS, edit `./data/matlab` as appropriate before running `make`.

The code in repository depends on `eeglab2021.1`. This is included in the root of this repository.

R is required to build the documentation.

2 Results

2.1 Behavioural analysis

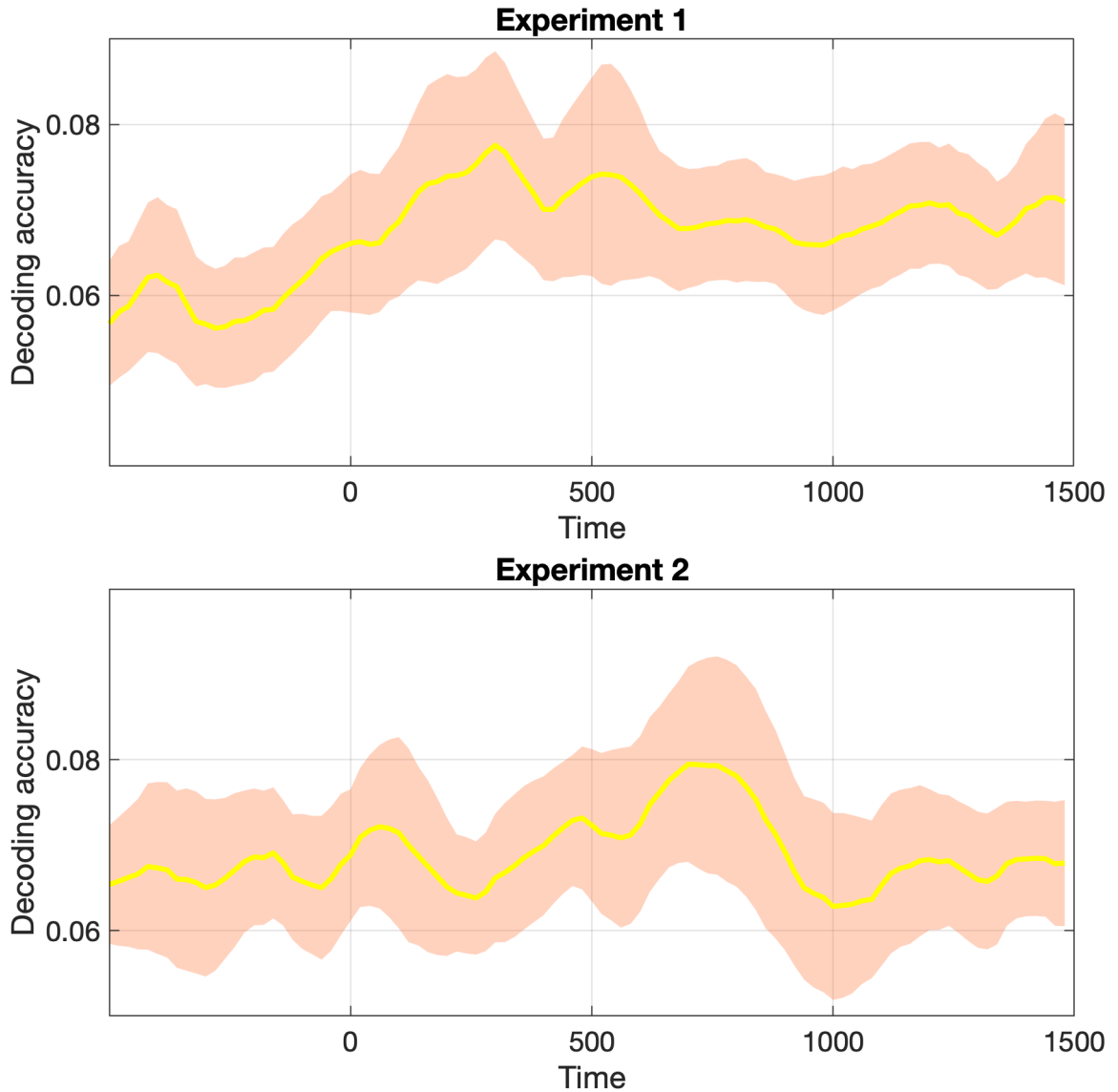
Although the supplied data files appear to contain the data needed for reproducing the behavioural analysis, the data files contain insufficient metadata to make this possible. Furthermore, some of the minimal metadata that does exist appears to be incorrect. Apart from the insufficient metadata, the description of the analysis in the manuscript is too brief to be able to re-create it with the supplied data.

2.2 Decoding accuracy

The decoding analysis could largely be performed with the code provided on the OSF repository. Only one minor edit was made to one of the files to fix an issue with the specified file path.

After the decoding analysis was performed, the plots for Figure 2c (Experiment 1) and Figure 2d (Experiment 2) could be reasonably reproduced (see below). Note, however, that it is not possible to reproduce the figure exactly

because the decoding analysis is dependent on a random seed that has not been fixed to a specific value (either in the original analysis or reproduction).



Judging from the references in the manuscript, it appears as if the statistical analyses were performed with the mass univariate toolbox (Groppe et al., 2011); however, again the analysis description in manuscript was too brief to easily reproduce the results.

References

- Bae, G.-Y., & Luck, S. J. (2019). Reactivation of previous experiences in a working memory task [PMID: 30817224]. *Psychological Science*, *30*(4), 587–595. <https://doi.org/10.1177/0956797619830398>
- Groppe, D. M., Urbach, T. P., & Kutas, M. (2011). Mass univariate analysis of event-related brain potentials/fields I: A critical tutorial review. *Psychophysiology*, (46), 1711–1725. <https://doi.org/10.1111/j.1469-8986.2011.01273.x>