

Reproducing analysis of: Unlearning implicit social biases during sleep (2015)

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Abstract

There is evidence by Hu et al. (2015) on the unlearning of social bias by reinforcing a counterbias behavior during slow-wave/REM sleep - the optimal time frame to consolidate new memories. The reproduced analysis pertains to the interaction of cued and uncued reduction bias before sleep (prenap), then, one week later (delayed). A power analysis shows that the original effect size may only be observed approximately half the time on average.

Keywords: social biases, slow-wave sleep

Word count: X

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The experiment on unlearning social bias shows the relevance of sleep playing a role in the dissipation of the pre-existing implicit bias, Hu et al. (2015). The rationale comes from auditory information reinforcing learning behavior during slow wave sleep, causing a targeted memory reactivation. As a result of the auditory cue, counterbias behavior in participants was expected to increase. In addition, the memory reactivation should result in a sustained reduction in social bias, in that the measured bias does not differ between prenap and delay. The implications of such an effect may be relevant for unlearning other unwanted habits. The original data was downloaded from <https://osf.io/b3k9a/>

second citation Muller and Barton (1989)

Methods

Participants

As stated in experiment, there were 40 participants recruited but only 38 were present for all groups.

Material

The details of the experiment can be found in Hu et al. (2015).

Procedure

The 38 participants experienced four conditions:

Data analysis

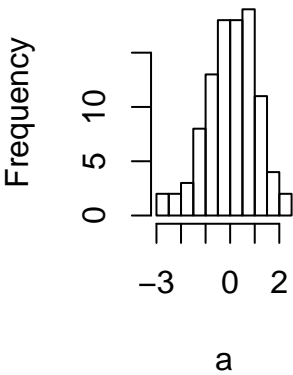
We used R (Version 3.5.0; R Core Team, 2018) and the R-packages *dplyr* (Version 0.8.0.1; Wickham, François, Henry, & Müller, 2019), *papaja* (Version 0.1.0.9842; Aust & Barth, 2018), and *xtable* (Version 1.8.3; Dahl, Scott, Roosen, Magnusson, & Swinton, 2018) for all our analyses.

Results

Figure 2: Results of 2x2 repeated measured ANOVA

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Residuals	37	9.4853844	0.2563617	NA	NA
cue_factor	1	0.0929324	0.0929324	0.3355098	0.5659427
Residuals	37	10.2485769	0.2769886	NA	NA
time_factor	1	0.8440958	0.8440958	5.7634410	0.0215060
Residuals	37	5.4189059	0.1464569	NA	NA
cue_factor:time_factor	1	0.3290260	0.3290260	4.6718467	0.0372022
Residuals	37	2.6058138	0.0704274	NA	NA

Histogram of a



From figure 1.

Discussion

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