Supplemental Material 1

Manuscript title: Prospective memory in the rat

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We used a Bayesian analysis to test the null hypothesis (Gallistel 2009) that the correlation between slope and number of food-trough responses in the meal group immediately before the meal is zero, using the prior hypothesis that a small (Cohen 1988) negative correlation is expected (r = -0.1). The Bayes factor is the ratio of the likelihood of one hypothesis over another. The Bayes factor was 2.9, which suggests that the null hypothesis is almost 3 times more likely than the hypothesis that the correlation is small. The Bayes factors were 80 and 1386 when medium (r = -0.243) and large (r = -0.371) prior hypotheses were used, respectively. Using correlations that correspond to Cohen's (1988) small, medium, and large effect sizes provided some guidance for setting plausible prior hypotheses. However, the priors should be evaluated relative to the proportion of variance that they would explain, which is 1%, 6%, and 14% for small, medium, and large effect sizes, respectively. Overall, the weight of the evidence suggests that the null hypothesis of a zero correlation is a reasonably safe bet.

References

Cohen J (1988) Statistical power analysis for the behavioral sciences. Second edn. Lawrence Erlbaum Associates, Hillsdale, NJ

Gallistel CR (2009) The importance of proving the null. Psychol Rev 116 (2):439-453. doi:10.1037/a0015251