# Pretending to be ignorant, Exp.2: pre-registration document

Matan Mazor[1], Ian Phillips[2], & Chaz Firestone[2]

[1] University College London

[2] Johns Hopkins University

## Author Note

Enter author note here.

Correspondence concerning this article should be addressed to Matan Mazor, 12 Queen Square, WC1N 3BG London. E-mail: mtnmzor@gmail.com

Abstract

One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.

Two to three sentences of **more detailed background**, comprehensible to scientists in related disciplines.

One sentence clearly stating the **general problem** being addressed by this particular study.

One sentence summarizing the main result (with the words "**here we show**" or their equivalent).

Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.

One or two sentences to put the results into a more **general context**.

Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline.

*Keywords:* keywords

Word count: X

Pretending to be ignorant, Exp.2: pre-registration document

# Methods

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study.

## Participants

The research complies with all relevant ethical regulations, and was approved by the Research Ethics Committee of Johns Hopkins. Participants will be recruited via Prolific, and will give informed consent prior to their participation. They will be selected based on their acceptance rate (>95%) and for being native English speakers. We will collect data until we reach 500 included participants. The entire experiment will take 20 minutes to complete (median completion time in our pilot data: 17.45 minutes). Participants will be paid 3.15 usd for their participation, equivalent to an hourly wage of 9.50 usd, in addition to bonuses for good performance.

## Procedure

Participants will first be instructed about the visual search task. Specifically, that their task is to report, as accurately and quickly as possible, whether a target stimulus was present (press 'J') or absent (press 'F'). Then, practice trials will be delivered, in which the target stimulus is a rotated $T$, and distractors are rotated $L$s. The purpose of the practice trials is to familiarize participants with the structure of the task. For these practice trials the number of items will always be 3. Practice trials will be delivered in small blocks of 6 trials each, and the main part of the experiment will start only once participants respond correctly on at least five trials in a block (see Figure 1).

## Participants

## Material

## Procedure

## Data analysis

We used R [Version 4.0.5; R Core Team (2021)] and the R-packages *BayesFactor* [Version 0.9.12.4.2; Morey and Rouder (2018)], *brms* [Version 2.16.1; Bürkner (2017); Bürkner (2018)], *broom* [Version 0.7.9; Robinson, Hayes, and Couch (2021)], *coda* [Version 0.19.4; Plummer, Best, Cowles, and Vines (2006)], *cowplot* [Version 1.1.1; Wilke (2020)], *dplyr* [Version 1.0.7; Wickham, François, Henry, and Müller (2021)], *forcats* [Version 0.5.1; Wickham (2021a)], *ggplot2* [Version 3.3.5; Wickham (2016)], *jsonlite* [Version 1.7.2; Ooms (2014)], *lsr* [Version 0.5; Navarro (2015)], *Matrix* [Version 1.3.2; Bates and Maechler (2021)], *MESS* [Version 0.5.7; Ekstrøm (2020)], *papaja* [Version 0.1.0.9997; Aust and Barth (2020)], *purrr* [Version 0.3.4; Henry and Wickham (2020)], *pwr* [Version 1.3.0; Champely (2020)], *Rcpp* [Version 1.0.7; Eddelbuettel and François (2011); Eddelbuettel and Balamuta (2018)], *readr* [Version 2.0.1; Wickham and Hester (2021)], *reticulate* [Version 1.20; Ushey, Allaire, and Tang (2021)], *stringr* [Version 1.4.0; Wickham (2019)], *tibble* [Version 3.1.4; Müller and Wickham (2021)], *tidyr* [Version 1.1.3; Wickham (2021b)], and *tidyverse* [Version 1.3.1; Wickham et al. (2019)] for all our analyses.

# Results

# Discussion

## References

Aust, F., & Barth, M. (2020). *papaja: Create APA manuscripts with R Markdown*. Retrieved from https://github.com/crsh/papaja

Bates, D., & Maechler, M. (2021). *Matrix: Sparse and dense matrix classes and methods*. Retrieved from https://CRAN.R-project.org/package=Matrix

Bürkner, P.-C. (2017). brms: An R package for Bayesian multilevel models using Stan. *Journal of Statistical Software*, *80*(1), 1–28. https://doi.org/10.18637/jss.v080.i01

Bürkner, P.-C. (2018). Advanced Bayesian multilevel modeling with the R package brms. *The R Journal*, *10*(1), 395–411. https://doi.org/10.32614/RJ-2018-017

Champely, S. (2020). *Pwr: Basic functions for power analysis*. Retrieved from https://CRAN.R-project.org/package=pwr

Eddelbuettel, D., & Balamuta, J. J. (2018). Extending extitR with extitC++: A Brief Introduction to extitRcpp. *The American Statistician*, *72*(1), 28–36. https://doi.org/10.1080/00031305.2017.1375990

Eddelbuettel, D., & François, R. (2011). Rcpp: Seamless R and C++ integration. *Journal of Statistical Software*, *40*(8), 1–18. https://doi.org/10.18637/jss.v040.i08

Ekstrøm, C. T. (2020). *MESS: Miscellaneous esoteric statistical scripts*. Retrieved from https://CRAN.R-project.org/package=MESS

Henry, L., & Wickham, H. (2020). *Purrr: Functional programming tools*. Retrieved from https://CRAN.R-project.org/package=purrr

Morey, R. D., & Rouder, J. N. (2018). *BayesFactor: Computation of bayes factors for common designs*. Retrieved from

https://CRAN.R-project.org/package=BayesFactor

Müller, K., & Wickham, H. (2021). *Tibble: Simple data frames*. Retrieved from https://CRAN.R-project.org/package=tibble

Navarro, D. (2015). *Learning statistics with r: A tutorial for psychology students and other beginners. (Version 0.5)*. Adelaide, Australia: University of Adelaide. Retrieved from http://ua.edu.au/ccs/teaching/lsr

Ooms, J. (2014). The jsonlite package: A practical and consistent mapping between JSON data and r objects. *arXiv:1403.2805 [Stat.CO]*. Retrieved from https://arxiv.org/abs/1403.2805

Plummer, M., Best, N., Cowles, K., & Vines, K. (2006). CODA: Convergence diagnosis and output analysis for MCMC. *R News*, *6*(1), 7–11. Retrieved from https://journal.r-project.org/archive/

R Core Team. (2021). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from https://www.R-project.org/

Robinson, D., Hayes, A., & Couch, S. (2021). *Broom: Convert statistical objects into tidy tibbles*. Retrieved from https://CRAN.R-project.org/package=broom

Ushey, K., Allaire, J., & Tang, Y. (2021). *Reticulate: Interface to 'python'*. Retrieved from https://CRAN.R-project.org/package=reticulate

Wickham, H. (2016). *ggplot2: Elegant graphics for data analysis*. Springer-Verlag New York. Retrieved from https://ggplot2.tidyverse.org

Wickham, H. (2019). *Stringr: Simple, consistent wrappers for common string operations*. Retrieved from https://CRAN.R-project.org/package=stringr

Wickham, H. (2021a). *Forcats: Tools for working with categorical variables (factors).* Retrieved from https://CRAN.R-project.org/package=forcats

Wickham, H. (2021b). *Tidyr: Tidy messy data.* Retrieved from https://CRAN.R-project.org/package=tidyr

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., ... Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software*, *4*(43), 1686. https://doi.org/10.21105/joss.01686

Wickham, H., François, R., Henry, L., & Müller, K. (2021). *Dplyr: A grammar of data manipulation.* Retrieved from https://CRAN.R-project.org/package=dplyr

Wickham, H., & Hester, J. (2021). *Readr: Read rectangular text data.* Retrieved from https://CRAN.R-project.org/package=readr

Wilke, C. O. (2020). *Cowplot: Streamlined plot theme and plot annotations for 'ggplot2'.* Retrieved from https://CRAN.R-project.org/package=cowplot

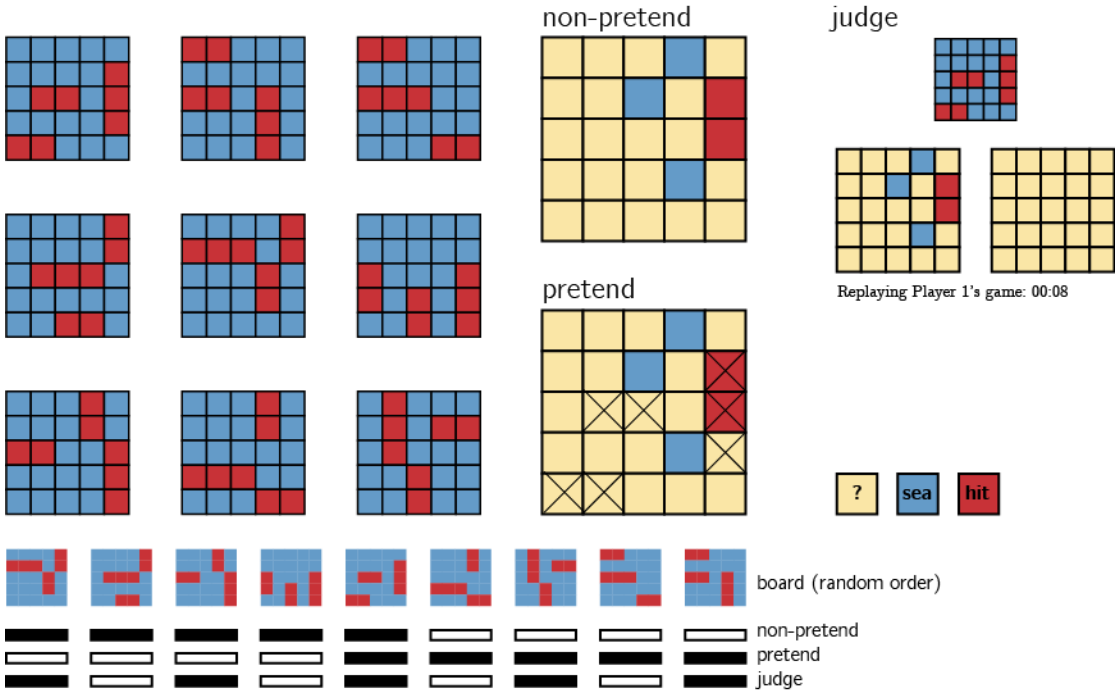


*Figure 1*. Experimental Design: players will play 10 games of the game Battleships (on a 5x5 board) in two conditions presented in two blocks of 5 games. The order of blocks will be randomized between players. In non-pretend games, players will start the game not knowing where the ships are, and will try to sink all ships with as few clicks as possible. In pretend games, ship locations will be marked with a cross such that players will know where they are hiding, and their task will be to play the game as if they do not have this information. Lastly, in judge trials, players will observe a replay of the games of two previous players - one pretender and one non-pretender, and their task will be to identify which was which. Lower panel: we created nine different boards, each containing two 2-square patrol boats and one 3-square ship. The assignment of boards to conditions will be randomized across participants in the following way: first, the order of boards will be permuted randomly for each participant. Then, the first 5 boards in this permuted order will be used for non-pretend games, the last 5 boards wil be used for pretend games, and boards 1,3,5,7 and 9 will be used for judge trials. This means that one board ("the common board") will be used in all three parts of the experiment. The identity of the common board will be different for each participant.