MUST-C

Morris water maze **U**nbiased **S**tra**T**egy - **C**lassification

Free tools for spatial strategy classification

MUST-C is an automated method for machine-learning classification of Morris water maze searching strategies, compatible for AnyMaze and EthoVision users.

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Unraveling cognitive traits using the Morris water maze unbiased strategy classification (MUST-C) algorithm

Tomer Illouz [a b], Ravit Madar [a b], Yoram Louzon [b c], Kathleen J. Griffioen [d], Eitan Okun [a b]

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Please cite this article if you have used MUST-C in your paper.

MUST-C Manual

Morris water maze Unbiased Strategy Classification

A. Extract data from your tracking software:

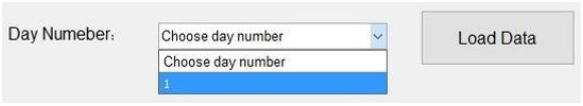
1. AnyMaze (*.slk files).
2. EthoVision (*.xls / *.xlsx files).

B. Order your files by day, strain, treatment etc. In different folders.

C. Insert the details of your project:

1. Project's name: in letters only (myProject).
2. Pool's diameters: in centimeters (150).
3. Select your tracking software:
   AnyMaze or EthoVision.

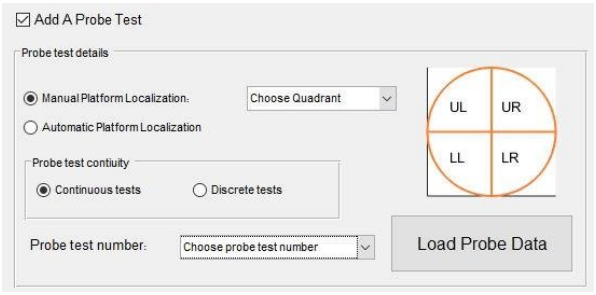
D. To add data to the panel, add a new day by choosing a day number. You can always add new trials to existing days. Click Load Data



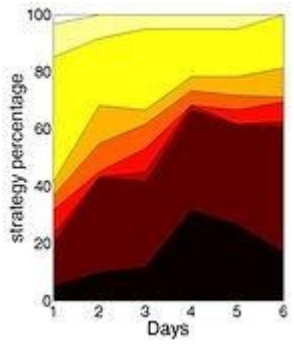
E. Browse and select your files for chosen day, .slk files for AnyMaze and .xlsx for EthoVision.

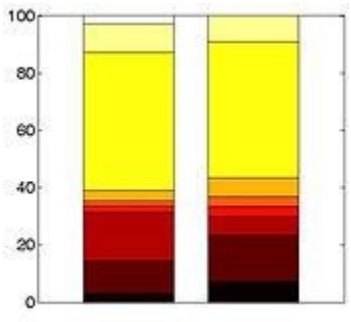
F. You can add a Probe test to your analysis, even without adding any acquisition phase data at the previous stage:

1. click Add a probe test.
2. choose manual or automatic
   platform localization.



3. Choose a continuous or disctrete analysis:





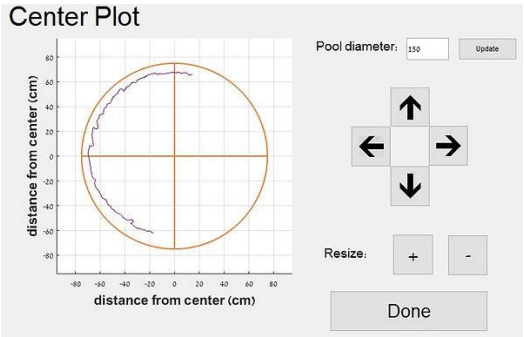
4. Load your probe data by day as described earlier.

G.On the Days panel, a list of days and probe days will apear.

H. By choosing a day and clicking on Show files you will be able to choose a file and Analyze a single trial.

I. By clicking on Analyze all, MUST-C will analyze all your data by days and probe tests.

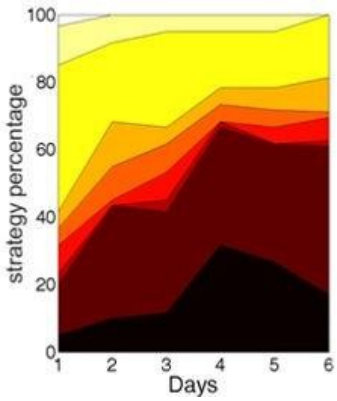
J. A panel will open, asking you to center 3 or less trials. You will be able to move and resize the plot. This stage repeats itself 3 times.



J. Now the analysis is taking place!
This might take a few minutes.

K. Once the graphs apear, you can save it by clicking on Export graph.

L. You can also save an excel file including trials details and cognitive scores.



To receive download instructions, please send an email to: Eitan.okun@biu.ac.il