

Spatial and Completion Memory

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Background

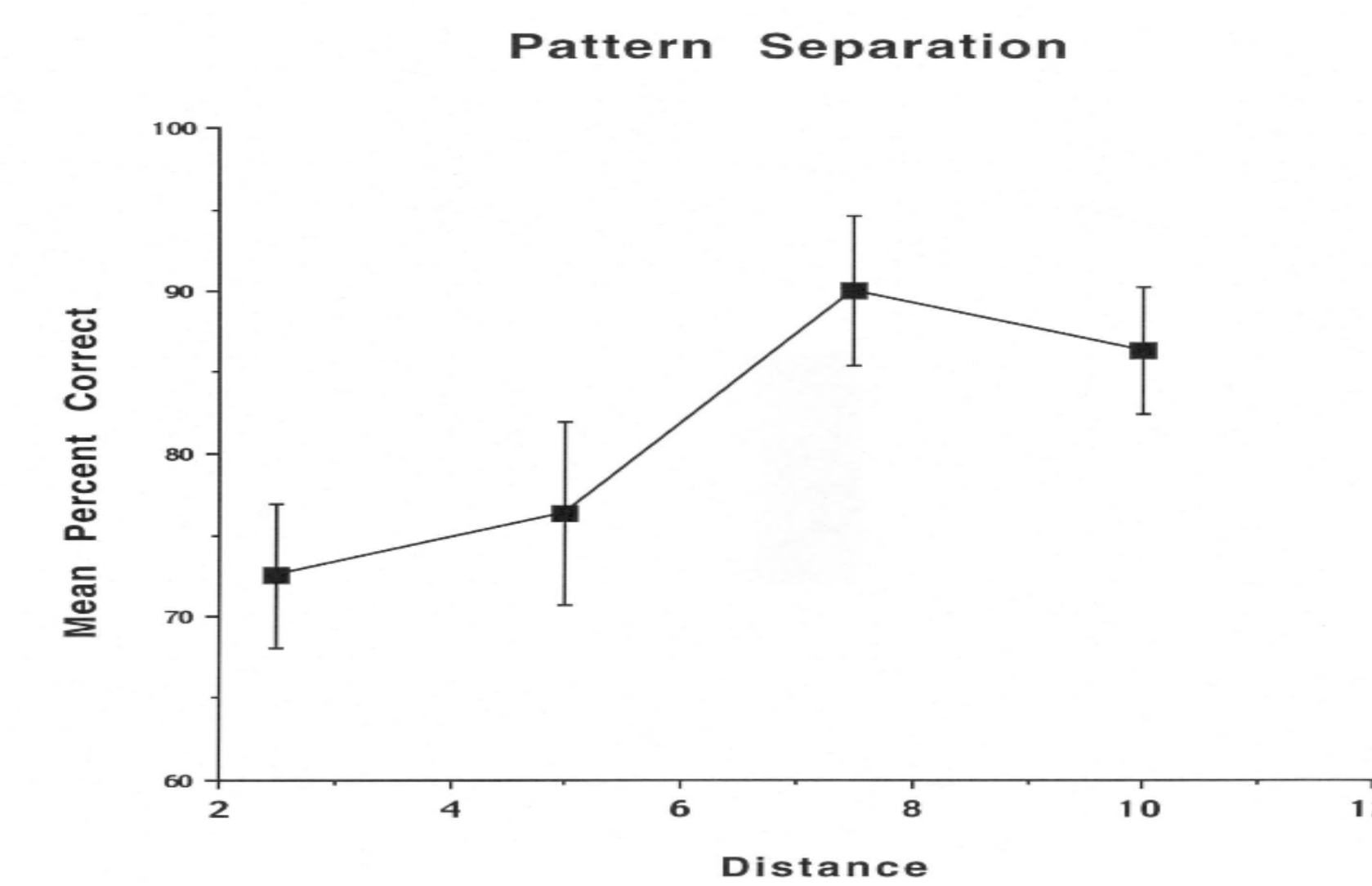
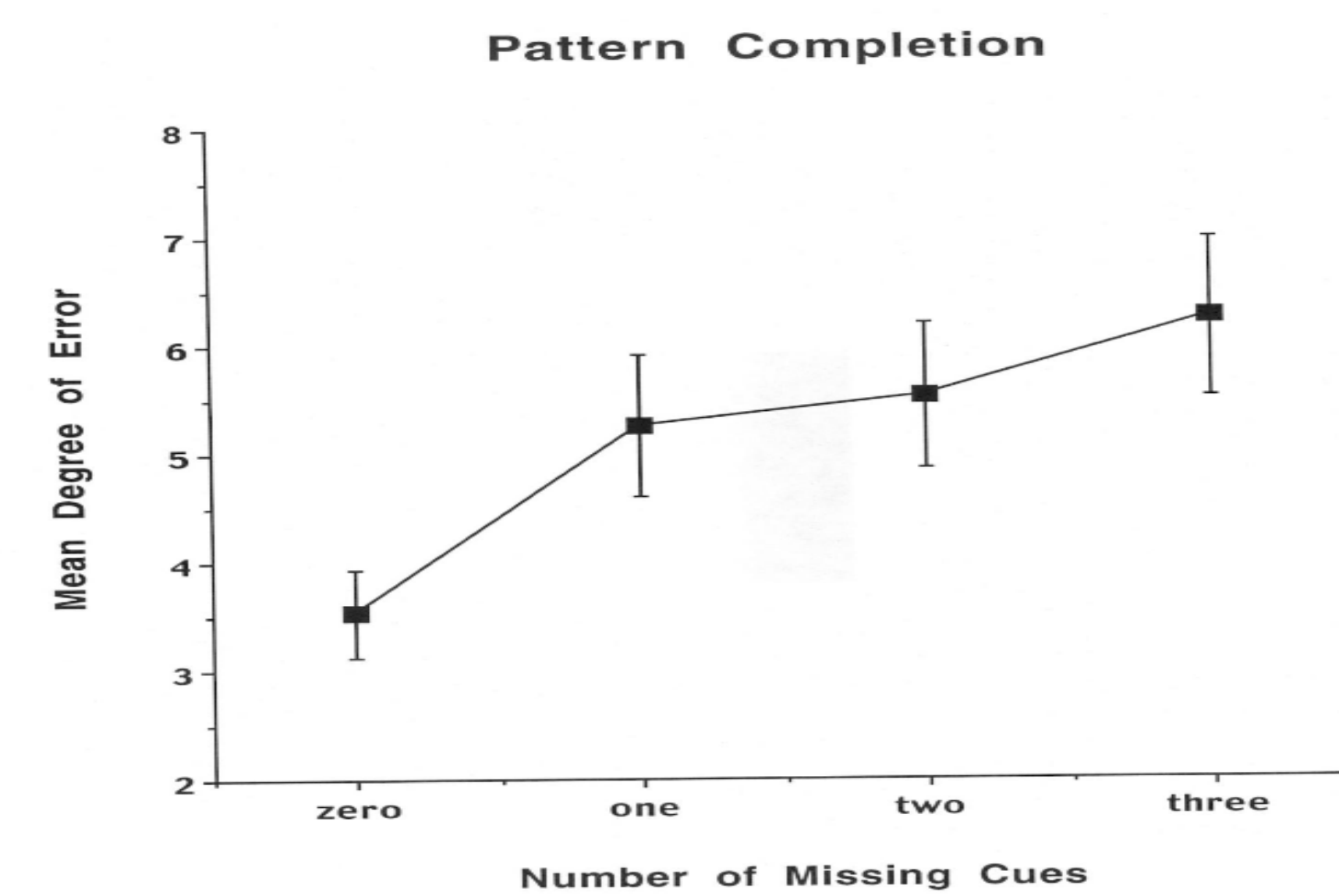
When at a gathering if you set down your drink close to another drink that is the same as yours, later it is difficult to determine which drink is yours. In this study the objective is to test memory based on where an object is and also test spatial distance, and how the further two objects are from each other the easier it is to identify which is which. This has to do with a part of the hippocampus called the Denate Gyrus

Method

- Testing was on a computer using a program. The setting was in an arena where there were four fractal images.
- In the Spatial Pattern Separation test, during the study phase the participants see a green square. They are to try and remember where it is located based on the fractals. In the test phase there are two squares and the participant is to pick which one is the one that was there before.
- The Spatial Pattern Completion differs in that in the test phase there is no square and they are to determine where it was. It also differs in that not all four fractals are there, the number present is randomized.

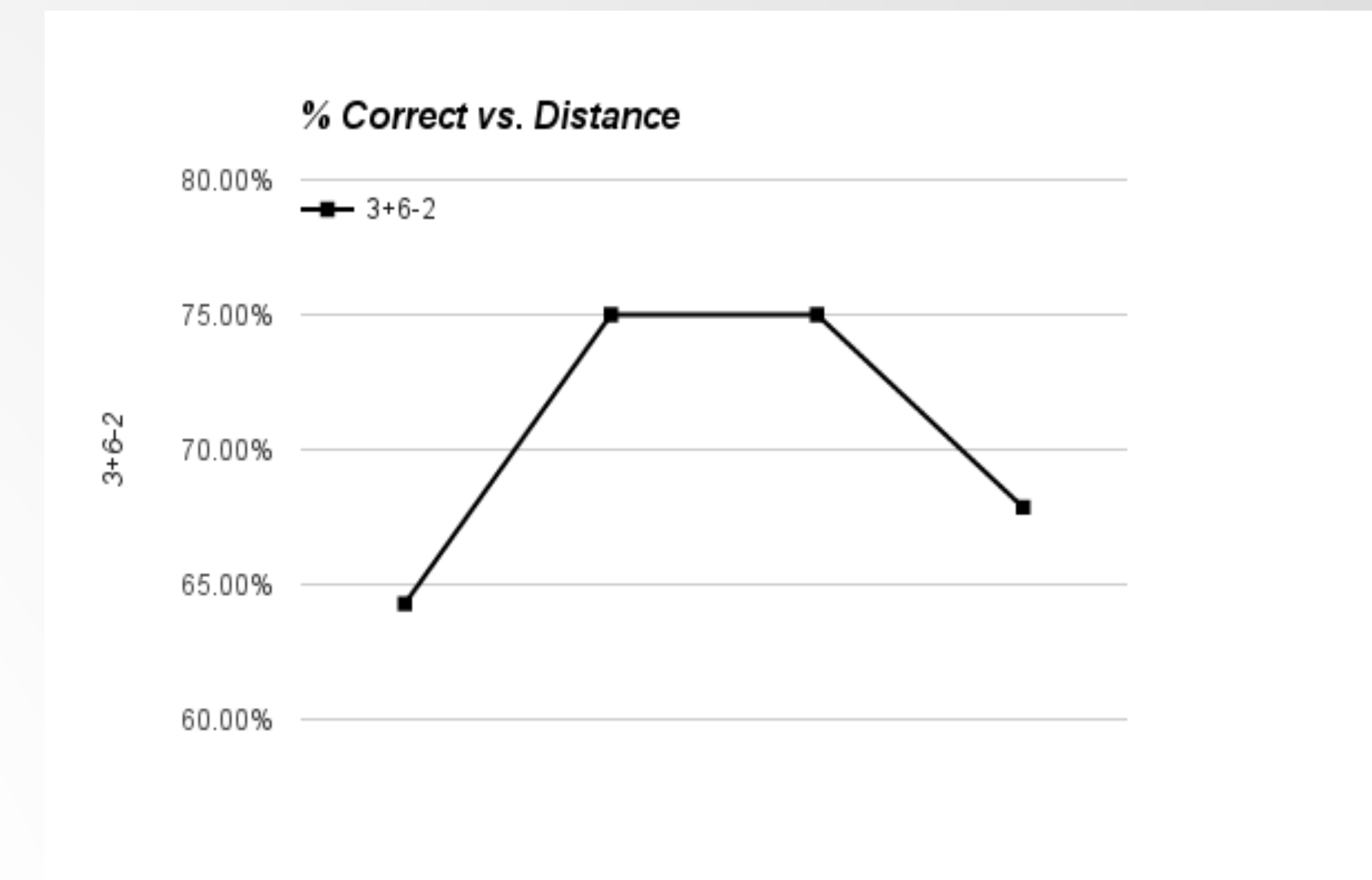
Results

Because there weren't enough testing sessions to get data getting results wasn't a possibility. If there were results we would hope they came out to be as a nice function that would look like the ones gotten from the younger participants that were tested.



Results from testing younger adults Pattern completion (top) and pattern separation (bottom)

Results Cont'd



Results for subjects the Spatial Pattern Separation when tested on older

These results suggest that:

- the task was too difficult for the older participants because the percent correct starts to go back down as the distance increases
- the program and the tasks should be simplified so it doesn't interfere with the results, which is what was done

Conclusion

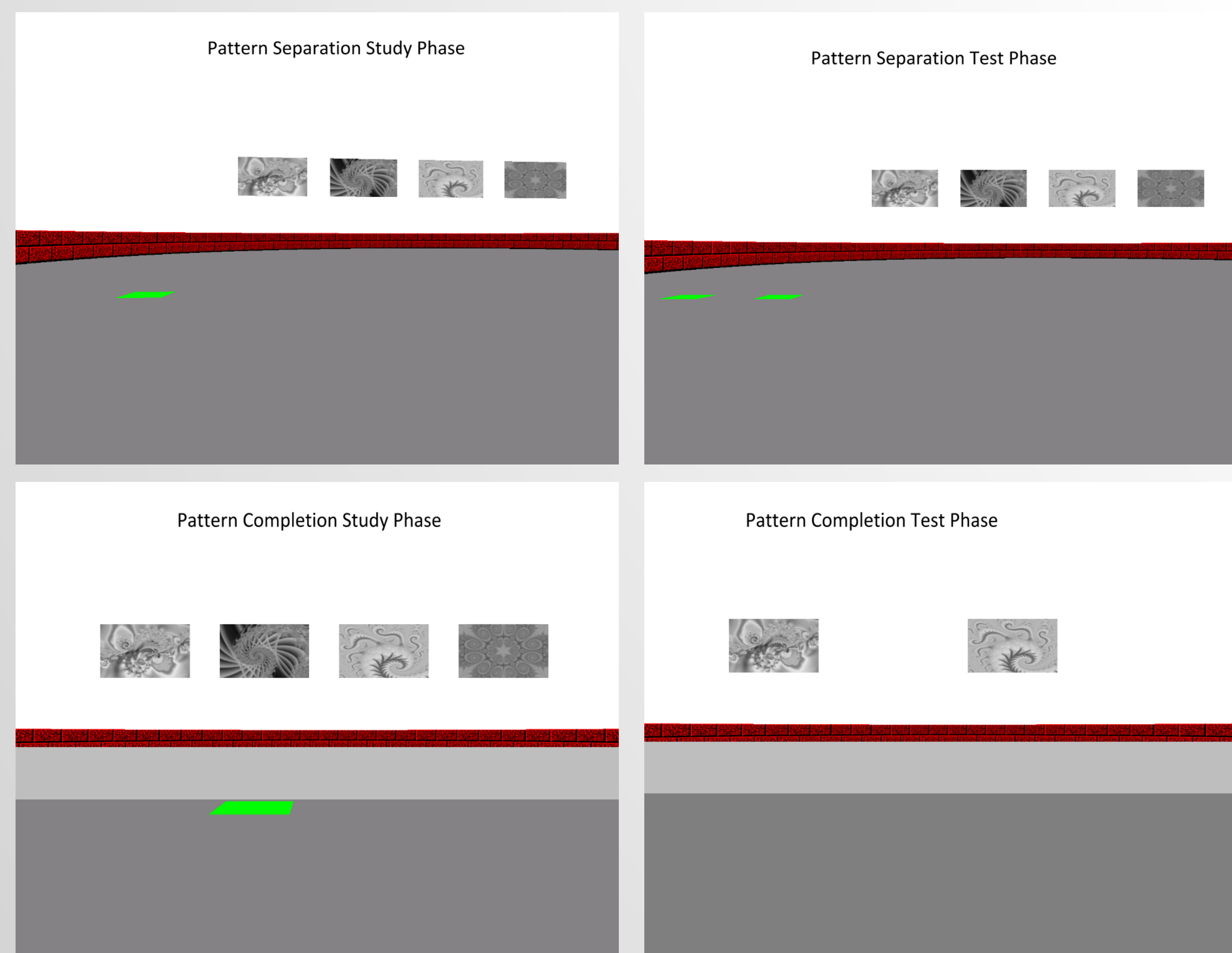
Because the program was modified to simplify it as to not have an affect on the results there wasn't as much time to test on older adults. Therefore not being able to get any results from the modified tests. The things that were modified were:

- changing it so perspective always facing fractal images
- no use of joystick
- allowing examiner to maneuver for examinee for the Spatial Pattern Separation since only needed to be told which of the two

What little testing was done it was found that further simplification may be required. In the future this is what is planned to do.

Acknowledgements

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The nice function would show in Spatial Pattern Separation:

- that the wider the distance between the two squared the

Spatial Pattern Completion:

- That the more fractal cues missing the harder it is to estimate where the square was.

Both of these things are to be expected, but during the first run in testing older subjects the program seemed to be too difficult and that affected the results. For example in the result of the spatial pattern separation.