# LEARNING EFFECT IN VISUAL SEARCH TASK

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- **Attention** is mainly studied using visual search task
- Visual search
  - Parallel
    - Searching for one feature
    - The target 'pops-out'
    - Pre-attentional process
    - Does not depend on elements surrounding the target
  - Serial
    - Searching for two conjunct features (e.g. colour and direction)
    - Attentional process
    - Attentional spot-light scans the visual scene
    - As the set size increases, more time is needed to complete the search

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- Parallel search
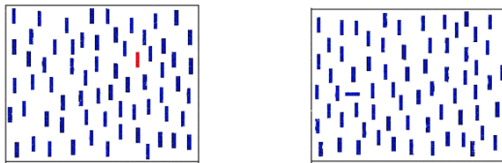
- Serial search
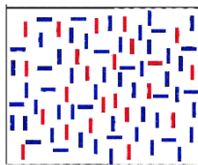
Vidyasagar, T.R. (1999) A neuronal model of attentional spotlight: parietal guiding the temporal. *Brain Res Rev. 30, 66-76.*
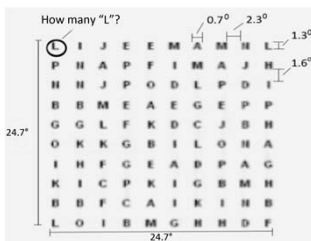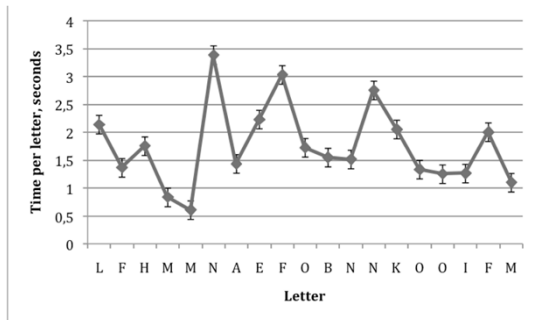

Letters that appear similar

E, F
O, C, Q, G
T, F
L, J, I
W, M, N
D, B, R
R, K
S, Z
A, V
Y, V, U

http://www.schoolsparks.com/early-childhood-development/letter-word-awareness

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Methods

- Ten participants (age 20-26 years)
- A participant sat 60 cm from a projection screen (89.7°x 64.9°)
- All the participants performed a visual search task with no peripheral noise for twenty consecutive times.
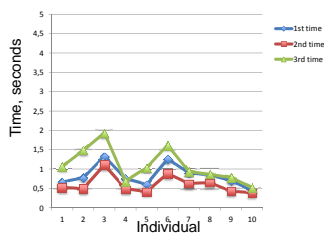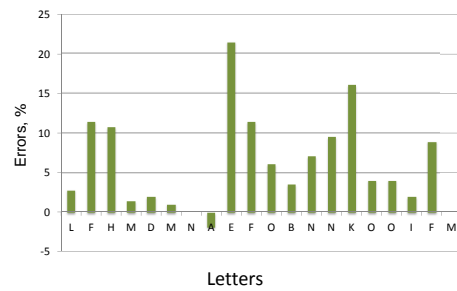

Time per letter to perform visual search task for twenty consecutive times and standard deviation.
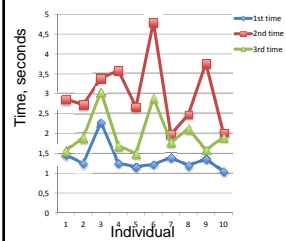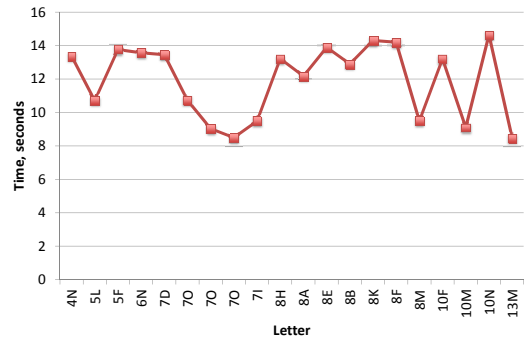
Searching for letter F (2, 10, 19) Searching for letter M (4, 6, 20)
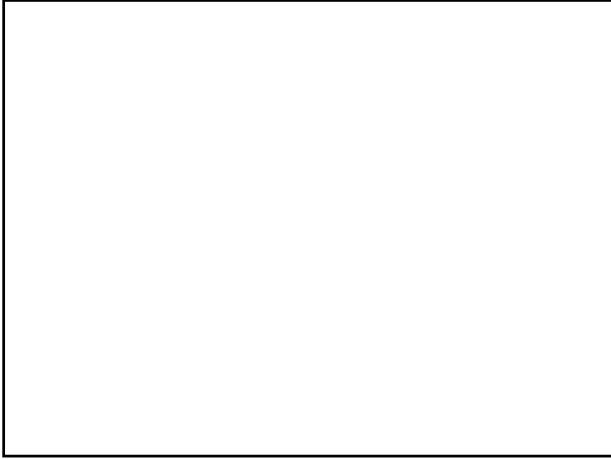

To conclude..

1. Up to five visual search tasks are sufficient in cases where short period of time should be used to keep participant's attention focused.
2. Less time is needed to find letters M, O, I, B, and more time is needed to find letters N, F, H, K, E.
3. Parallel search gives less errors comparing with serial search.

References

1. Cheng, A., Eysel U.T., Vidyasagar, T.R. (2004) The role of the magnocellular pathway in serial deployment of visual attention. *European Journal of Neuroscience, Vol.20, pp.2188-2192.*
2. Vidyasagar, T.R. (1999) A neuronal model of attentional spotlight: parietal guiding the temporal. *Brain Res Rev., 30, 66-76.*
3. Treisman, A.M., Gelade, A. (1980) A feature integration theory of attention. *Cogn. Psychol.,* 12, 97-136.

THANK YOU FOR ATTENTION!