

# Research Project: Luminance and Colour Perceptual Organisation and Their Influence on Reading Speed

The perceptual organisation refers to the ability of the human cognitive system to parse visual stimuli into shapes based on their distinctive properties. One such property is colour, where the segmentation of the stimulus into distinct colours leads to a (chromatic) perceptual organisation. Pinna & Deiana (2014) showed that chromatic perceptual organisation is a powerful method for distinguishing shapes from one another. One particular result that they produced showed that reading speed increases when alternating colours were used to highlight individual words.

What needs to be clarified is how much this perceptual organisation is unique to colour, and whether we can reproduce the effect similarly by manipulating luminance. Furthermore, how does this effect change with the overall brightness level? In this project, we investigate different aspects of perceptual organisation with the goal of implementing a method using both luminance and colour. We aim to validate our results using reading experiments to test different colour and luminance variations.

If you are interested in this project, please contact the supervisor of this project! We can provide you with a more detailed description of the project and schedule a meeting to discuss potential approaches and roadmaps.

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## References

Pinna, B. & Deiana, K. (2014). "New conditions on the role of color in perceptual organization and an extension to how color influences reading." *In Psihologija* (47), 319-351. DOI: <https://doi.org/10.2298/PSI1403319P>

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Figure 1: Chromatic perceptual organisation can make reading a line of text easier or more difficult. Image reproduced from Pinna & Deiana (2014).