



*Individual Differences in Visual Perception and Memory*

O.D.L. Colizoli

## **Summary**

**PhD Thesis:** Individual Differences in Visual Memory and Perception

Olympia Colizoli  
Brain and Cognition  
Department of Psychology  
University of Amsterdam  
Weesperplein 4, Room 305  
1018 XA Amsterdam  
O.Colizoli@uva.nl

### **Summary of research:**

There is substantial variation in perception and memory in humans. There are individuals who cannot see red at all, and there are individuals who hear colors and taste words. What determines the differences and similarities between individuals' perception and memory? Can we characterize the neural and genetic bases as well as the environmental causes of variation in perception and memory? This thesis aimed to explore the range of variation in perception and memory, the neural basis of this variation and whether training can alter perception and memory, focusing on *visual* perception and memory. The overall conclusion from the research presented in this thesis is that individual differences in both visual perception and memory ability are reflected in brain function and structure in related networks to a certain degree. In addition, the results suggested that perceptual training paradigms have behavioral benefits and genes can influence the effect of perceptual training on brain function. To what extent differences in perception and memory abilities can be reliably predicted from brain function and structure at the individual level remains an open question for future research.