



Cyprus  
University of  
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Faculty of Health  
Sciences

**Master's Thesis**

**Understanding the nature of Visual Short Term Memory  
capacity limitations**

*Maria Mystakidou*

**Limassol, May 2018**



CYPRUS UNIVERSITY OF TECHNOLOGY

FACULTY of HEALTH SCIENCES

MSc in Brain & Cognitive Sciences

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# Approval Form

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## **ABSTRACT**

The Continuous vs. Fixed Visual Working Memory capacity limitations debate challenges research on the relevant field for more than a decade, while articles with titles such as “Clear evidence for fixed item limits in visual working memory”, and “No fixed item limit in visuospatial working memory”, are still published (Adam, Vogel, & Awh, 2017; Schneegans & Bays, 2016). Current study’s main goal is to understand the nature of capacity limitations, provide and assess potential explanations for the existence of the debate. The main hypothesis of this study is that both accounts apply, but each finds its application in different facets of the whole distributed network of Visual Short-Term Memory, namely the Visual Working Memory which is of a fixed nature and the Visual Sensory Memory, characterized by a continuous resources storing. Each system has its own, distinct characteristics, which are revealed by different task properties. The current study provided evidence, in a relatively initial state, that capacity could be extended; extra bindings could occur during retrieval, under specific task manipulations. Overall, the capacity is restricted by limitations that are both qualitative and quantitative in nature.

**Keywords:** Visual Working Memory, Visual Short-Term Memory, capacity limits, fixed resources, continuous resources, distributed network