

**Revisiting simultanagnosia: new classification based on existing lesion studies  
and cognitive models**

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Simultanagnosia is a rare neuropsychological disorder which is a dysfunction of higher-level visual cognition expressed in an inability to apprehend more than one object at a time. This type of visual impairment is not associated with the reduction of lower visual functions or lesions of the optic nerve – in most patients peripheral vision is intact, and overall cognitive functioning remains at normal levels.

The history of research of this disorder throughout the 20<sup>th</sup> century has been indicative of two opposing approaches. One approach came from the initial neuropsychological analysis of the dysfunctions in patients with bilateral occipito-parietal lesions (e.g., Balint, 1909 [1]; Luria, 1959 [2]; Himmelbach, 2009 [3]). This approach focuses on behavioral responses and neurological characteristics of the disabilities in visual cognitive processing of the patients. The second approach concentrates on the cognitive understanding and models perceptual disruptions in simultanagnosics (e.g., Coslett and Saffran, 1991 [4]; Gilchrist, Humphreys, and Riddoch, 1996 [5]; Kim and Lynn, 2001 [6]; Duncan, 2003 [7]). Several attempts of classifying the types of simultanagnosia have been made, such as Farah's suggestion of dividing "dorsal" and "ventral" simultanagnosia (1990) [8] or Ohigashi's attempt of classifying existing cases as (1) semantic; (2) attentional, and (3) perceptual types of simultanagnosia [9]. However, both classifications fail to take the cognitive approaches into account.

The present work attempts to create a new comprehensive nomenclature of simultanagnosia, which would link together cognitive and neurological approaches to the research of this disorder.

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