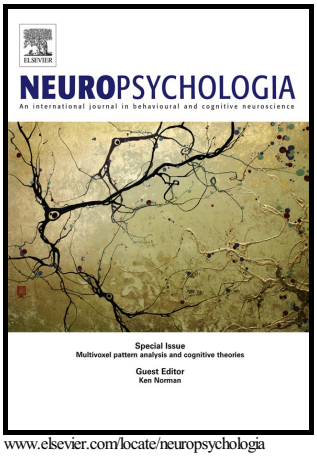

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PII: S0028-3932(16)30158-0
DOI: http://dx.doi.org/10.1016/j.neuropsychologia.2016.05.007
Reference: NSY5988

To appear in: *Neuropsychologia*

Received date: 18 January 2016
Revised date: 2 May 2016
Accepted date: 8 May 2016

Cite this article as: Xiaoying Wang, Marius V. Peelen, Zaizhu Han, Alfonso Caramazza and Yanchao Bi, The role of vision in the neural representation o unique entities, *Neuropsychologia* http://dx.doi.org/10.1016/j.neuropsychologia.2016.05.007

The role of vision in the neural representation of unique entities

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Running title: Unique entity representation without sight

Keywords: congenitally blind, visual experience, precuneus, anterior temporal lobe, unique entity

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Abstract

Famous places and famous people are different from their common counterparts in that we have unique knowledge about individual items, including specific knowledge about their visual appearance and other sensory properties. Previous studies have shown that the processing of unique entities selectively activates a network of brain regions that includes the bilateral anterior temporal lobes (ATL), posterior cingulate cortex and adjacent medial precuneus (PCC/medPrec), medial prefrontal cortex (medPFC), and temporal-parietal junction (TPJ). The degree to which these regions represent visual properties associated with famous people/places is unknown. Here we compared fMRI responses in congenitally and sighted individuals to test whether visual experience contributes to the development of unique-entity responses in these regions. Names of unique entities (famous places, famous people) and generic items (daily scenes such as “bridge”, face parts) were presented aurally to 13 congenitally blind and 16 sighted participants. Sighted participants additionally viewed