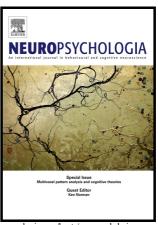
Author's Accepted Manuscript

Distinct preference for spatial frequency content in ventral stream regions underlying the recognition of scenes, faces, bodies and other objects

Nádia Canário, Lília Jorge, M.F. Loureiro Silva, Mário Alberto Soares, Miguel Castelo-Branco



www.elsevier.com/locate/neuropsychologia

PII: S0028-3932(16)30161-0

DOI: http://dx.doi.org/10.1016/j.neuropsychologia.2016.05.010

Reference: NSY5991

To appear in: Neuropsychologia

Received date: 1 September 2015 Revised date: 1 April 2016 Accepted date: 8 May 2016

Cite this article as: Nádia Canário, Lília Jorge, M.F. Loureiro Silva, Mário Alberto Soares and Miguel Castelo-Branco, Distinct preference for spatia frequency content in ventral stream regions underlying the recognition of scenes bodies objects, Neuropsychologia faces. and other http://dx.doi.org/10.1016/j.neuropsychologia.2016.05.010

This is a PDF file of an unedited manuscript that has been accepted fo publication. As a service to our customers we are providing this early version o the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

ACCEPTED MANUSCRIPT

Distinct preference for spatial frequency content in ventral stream regions underlying the recognition of scenes, faces, bodies and other objects

Nádia Canário^{a,b1}, Lília Jorge^{a,b1}, M.F. Loureiro Silva^a, Mário Alberto Soares^c, Miguel Castelo-Branco^{a,b*}

^aIBILI - Institute for Biomedical Imaging in Life Sciences, Faculty of Medicine, University of Coimbra, Azinhaga Santa Comba – Celas, 3000-548 Coimbra, Portugal. ^bICNAS - Institute for Nuclear Sciences Applied to Health, Brain Imaging Network of Portugal, Portugal.

^cCHUC - Coimbra University Hospital, Department of Ophthalmology, Coimbra, Portugal.

Abstract

The ventral visual pathway receives both inputs from parvocellular and magnocellular pathways, and combines information from distinct high and low spatial frequency channels (HSF and LSF). Using a random effects region of interest general linear model approach (n=21), we aimed to compare the selectivity to different spatial frequency channels in eight key areas involved in visual object recognition: FFA, OFA, and STS, for face processing; FBA, and EBA as body selective regions; (dorsal and ventral) LOC for object perception; PPA for processing information of places and VWFA as a region which responds to written verbal material. We found that face and body selective regions had significantly higher response to LSF, suggesting an important contribution of holistic processing favoring LSF channels, while other object responsive regions had a higher response to HSF, suggesting a more important role for detailed component processing. Both FBA and VWFA failed to reveal a preference to SF content. These findings apply in general to the preferred category, with the notable exception of PPA, which revealed a higher response to HSF for all categories of stimuli. Our results suggest that areas along the ventral stream have distinct spatial

_

^{*}Corresponding author: Professor M. Castelo-Branco, Institute for Biomedical Imaging in Life Sciences, Faculty of Medicine, University of Coimbra, Azinhaga Santa Comba – Celas, 3000-548 Coimbra, Portugal. E-mail: mcbranco@fmed.uc.pt

¹ these authors have contributed equally for the work

Download English Version:

https://daneshyari.com/en/article/7318984

Download Persian Version:

https://daneshyari.com/article/7318984

<u>Daneshyari.com</u>