# A Model of Self-organizing Head-Centered Visual Response in Primate Parietal Areas

Bedeho Mender[1], Simon Stringer[1]
**1 Department of Experimental Psychology, University of Oxford, UK**
∗ **E-mail: bedeho.mender@psy.ox.ac.uk**

## Abstract

We investigate how head-centered visual responses in parietal areas V6 (parietal occipital area) and LIP (lateral intraparietal area) may self-organize through a bioligally plausible learning mechanism exploiting temporal coherence and local synaptic learning rules. We find that V6 head-centered neural responses do self-organize. however head-centered responses in LIP fail to self-organize properly when based on classical planar eye position modulation neurons found in LIP and througout parietal areas. This failure is explored and we find that it is due to the high degree of spatial overlap between patterns in the eye position dimension, and the failure is invariant to a wide range of countermeasures. This sheds new light on how head-centered neural responses may self-organize and be computed, and contradicts the widely held assumption due to previous classical models like Zipser & Andersen that . We discuss in detail the short comings of previous investigations in this regard, and find that the critical short ocming is that past work has not taken self-organization seriously and hence ...

## Author Summary

## Introduction

## Results

### Subsection 1

### Subsection 2

## Discussion

## Materials and Methods

## Acknowledgments

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