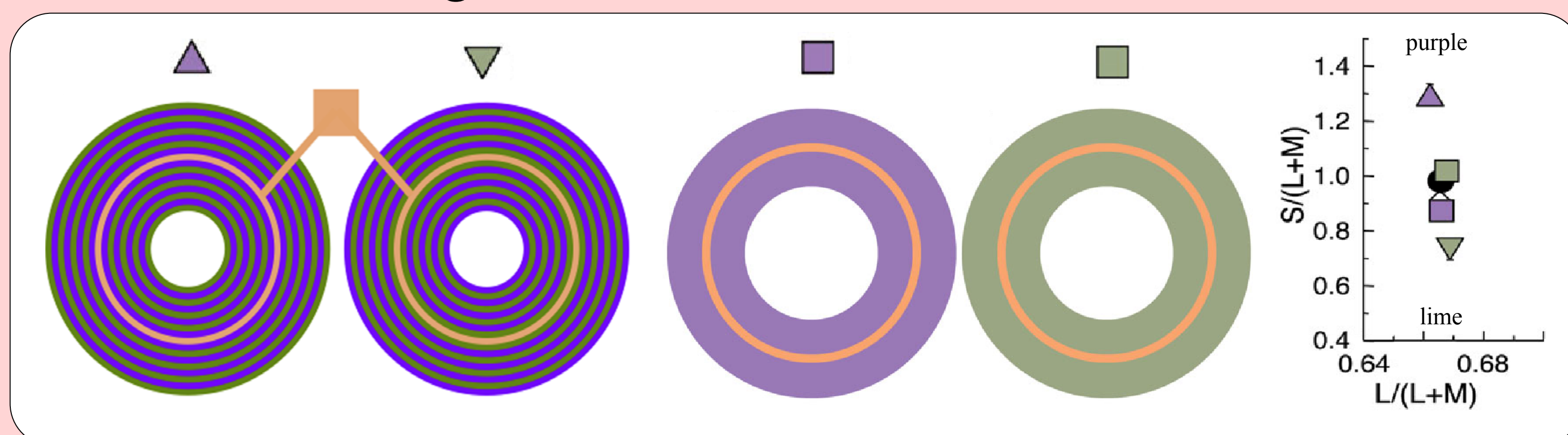
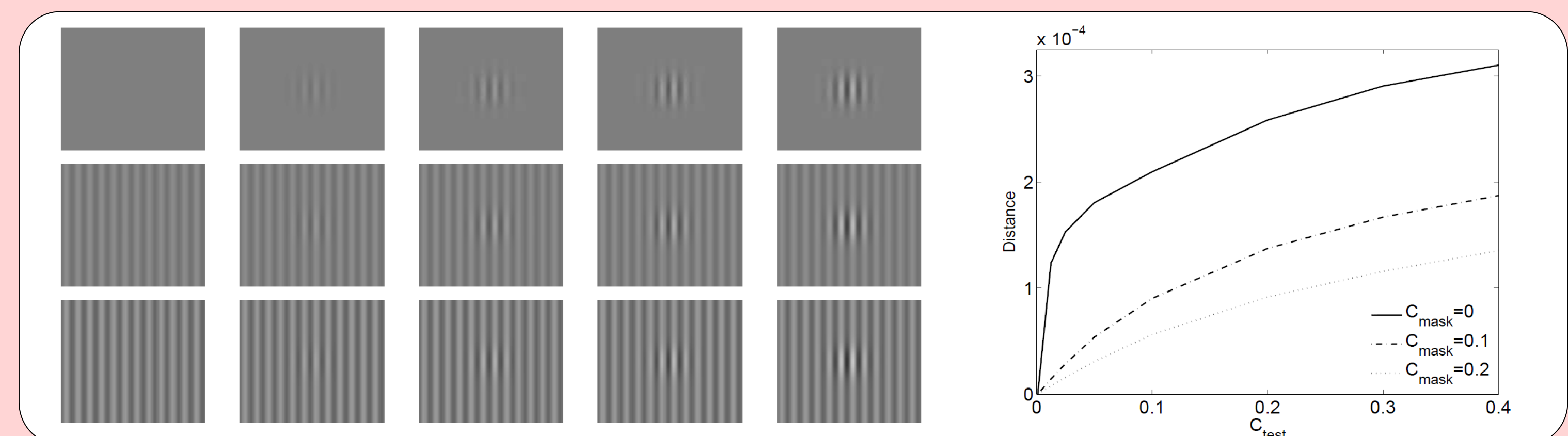


## 1. INTRODUCTION:

Local interaction between sensors tuned to a particular feature at certain spatial position and neighbor sensors explains a wide range of psychophysical facts.

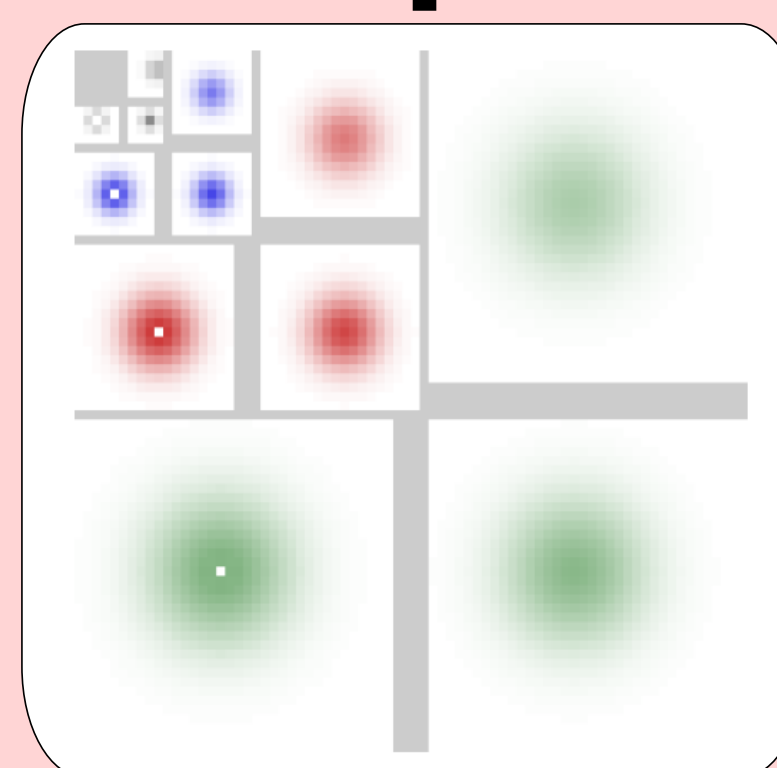
 Brightness and Chromatic Induction<sup>1,2,3</sup>

 Masking of Spatial Patterns<sup>4,5,6</sup>


The particular Induction<sup>1,2</sup> and Masking<sup>5,6</sup> models considered here have the same linear+nonlinear scheme:

$$\mathbf{x} \xrightarrow{\mathbf{T}} \mathbf{w} \xrightarrow{\mathbf{R}} \mathbf{r}$$

$$r_{s,o}^{\text{IND}} = \mathbf{R}(\mathbf{w})_{s,o}^{\text{IND}} = \alpha_{s,o}(\rho) \cdot w_{s,o}$$

$$\alpha(\nu, \rho) = \frac{\rho^2}{1+\rho^2} \exp\left(-\frac{(\log_2 \frac{4}{\nu})^2}{2\sigma_2^2}\right) + \exp\left(-\frac{(\log_2 \frac{4}{\nu})^2}{2\sigma_3^2}\right)$$



$$r_i^{\text{DN}} = \mathbf{R}(\mathbf{w})_i^{\text{DN}} = \left( \frac{|S_i \cdot w_i|^{\gamma-1}}{\beta_i^\gamma + \sum_{k=1}^n H_{ik} |S_k \cdot w_k|^\gamma} \right) \cdot w_i$$

## 2. OUR WORK:

Formal and qualitative similarities

¿ = ?

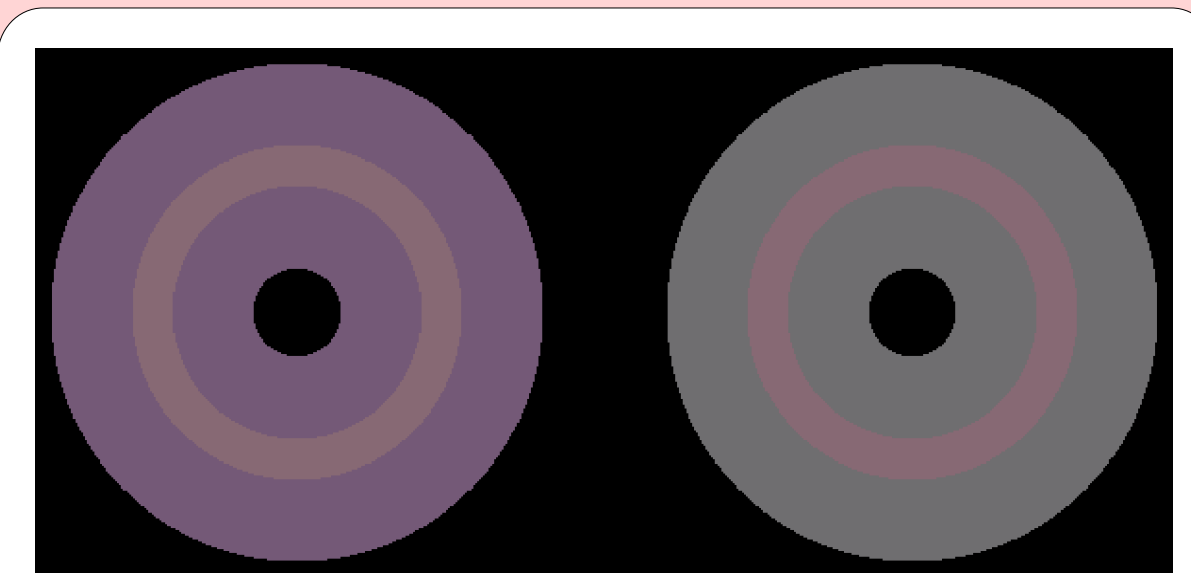
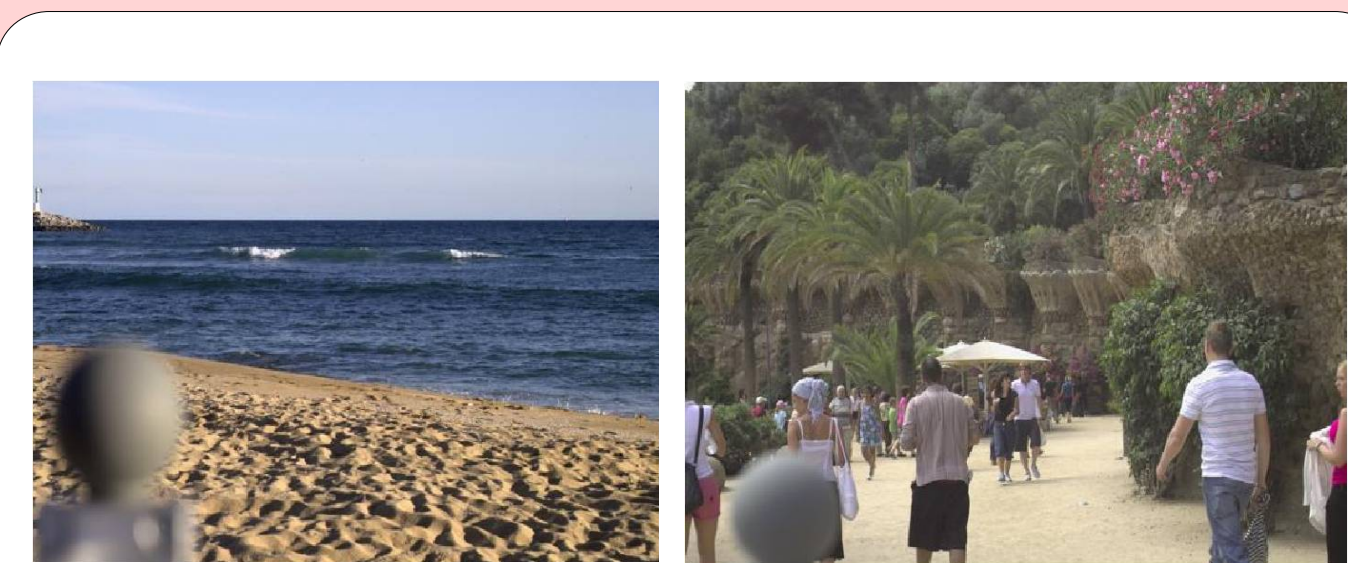
Same statistical goal

## 3. EXPERIMENTS:

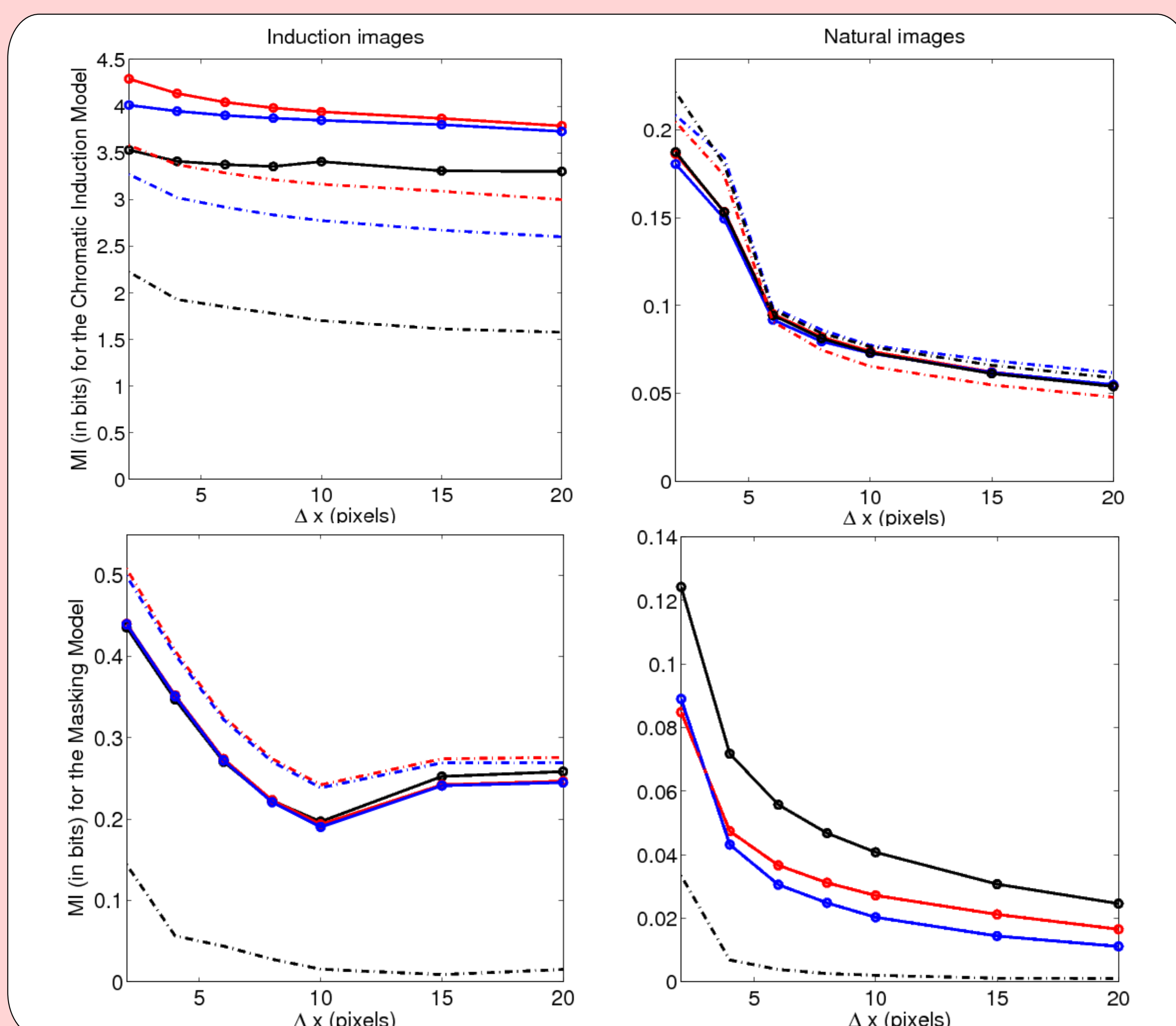
- Empirically assess the reduction in mutual information<sup>6,7</sup>:

- (1) After the wavelet transform
- (2) After the non-linear interaction stage

- Stimulus:

 Induction Images<sup>2</sup>

 Natural Images<sup>8</sup>


## 4. RESULTS:



## 5. DISCUSSION:

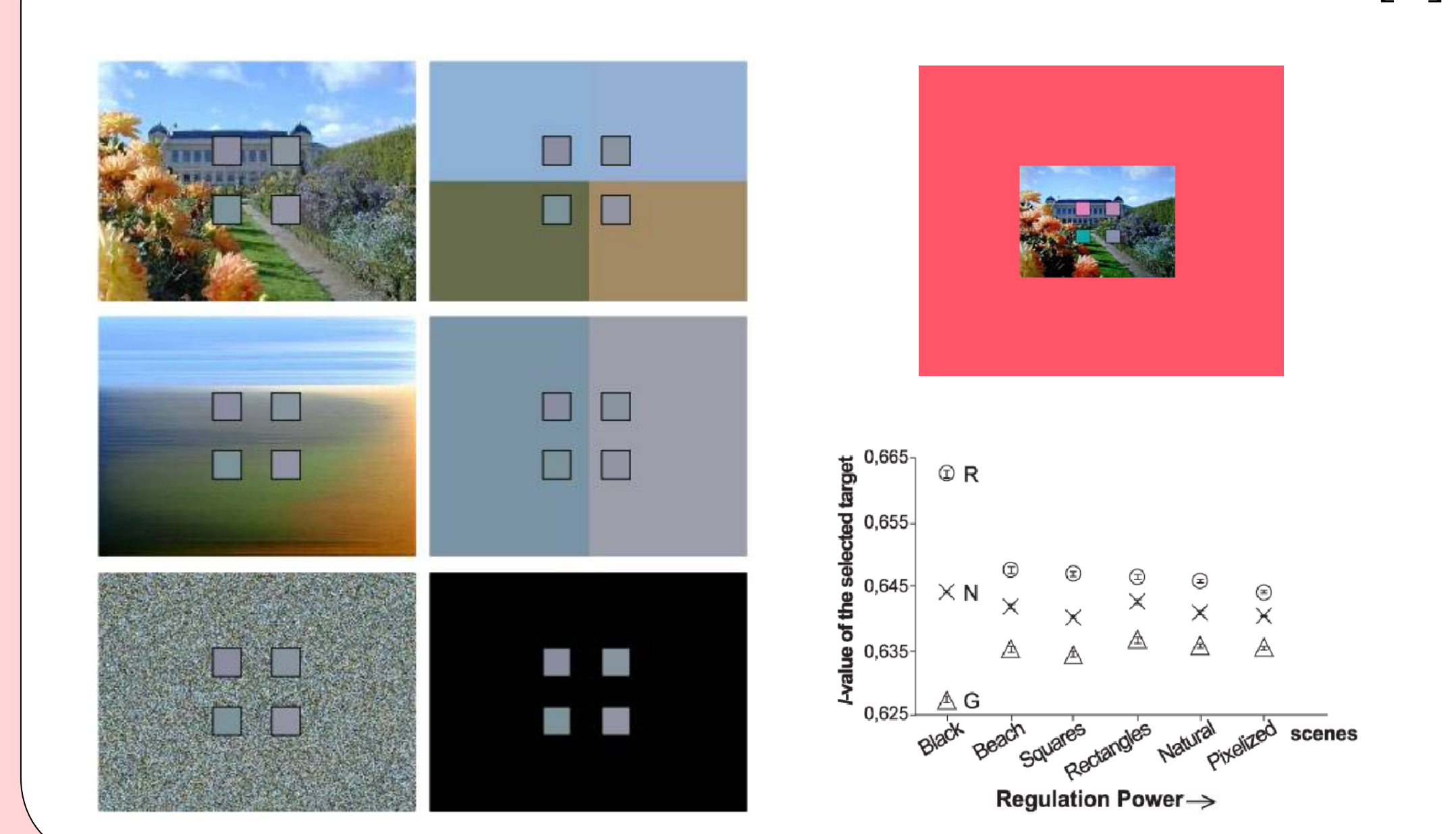
- **Efficient coding skeptics:**

The organization of mechanisms responsible for induction is not guided by redundancy reduction principle.

- **Efficient coding lovers:**

The models differ mainly in the values of their parameters, so one could think that the same spatio-chromatic sensors change depending on the environment to attain the same efficiency goal.

Results from [9]



## 6. REFERENCES:

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