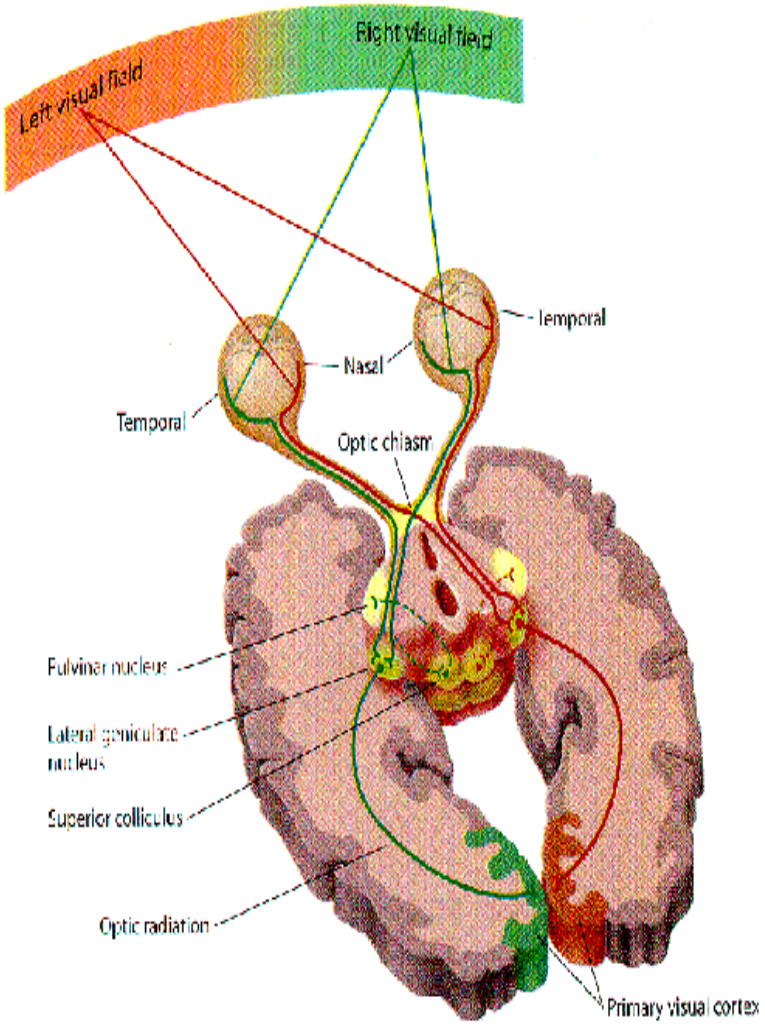
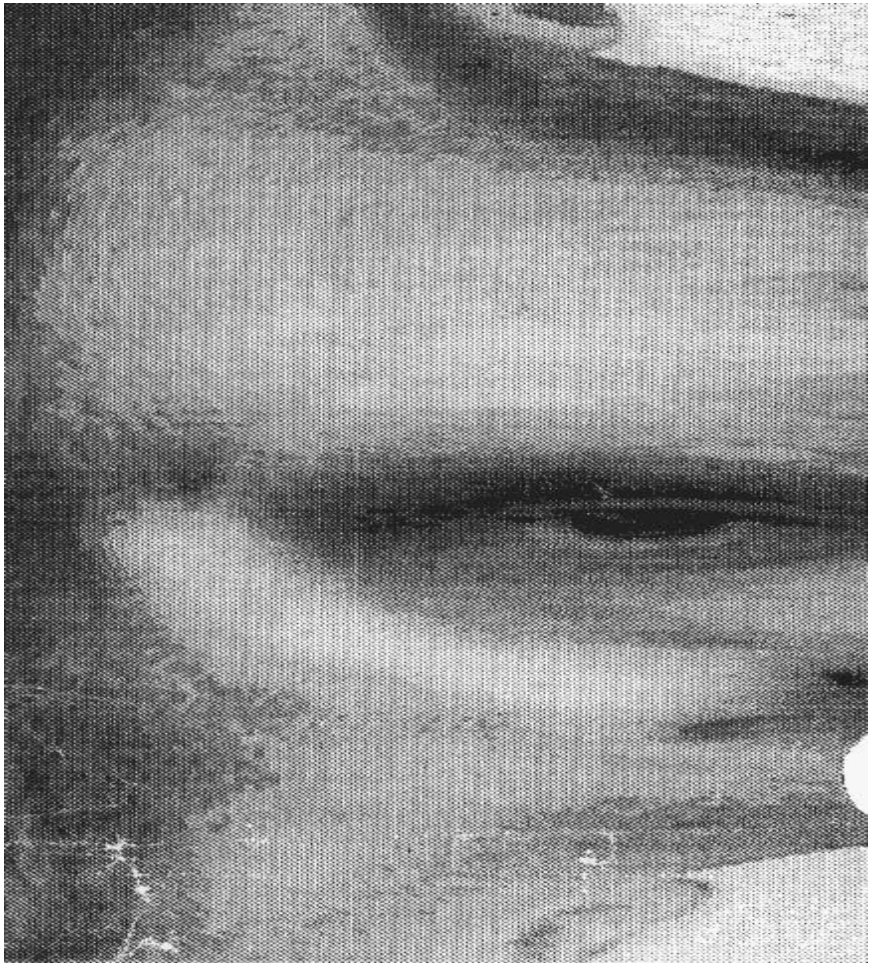
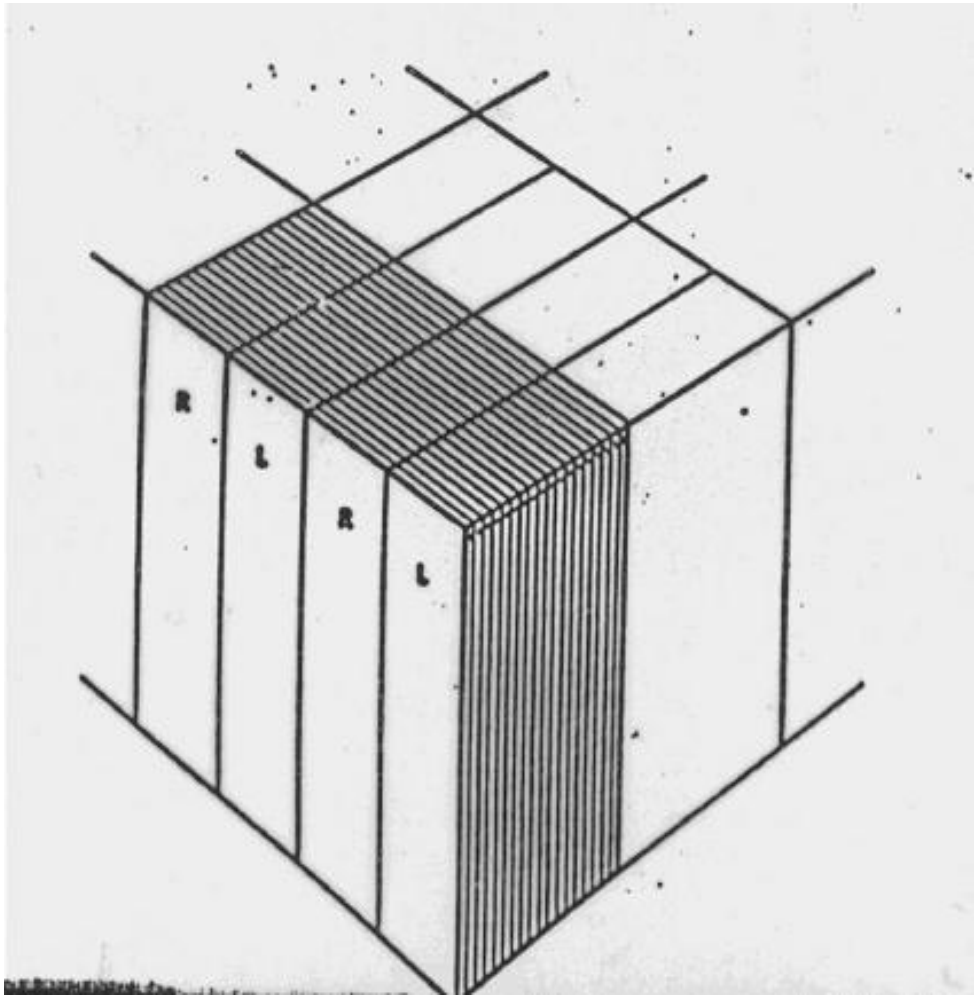
The Visual Pathway



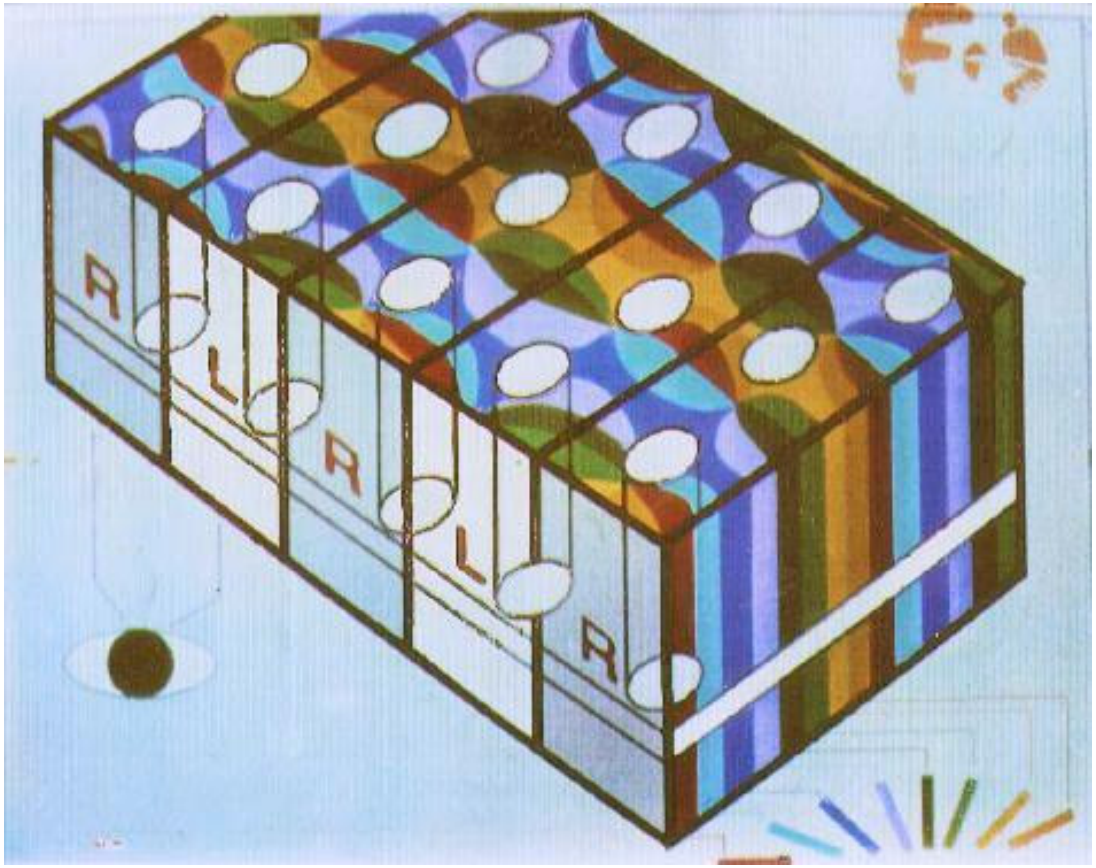
The Visual Pathway: log mapping



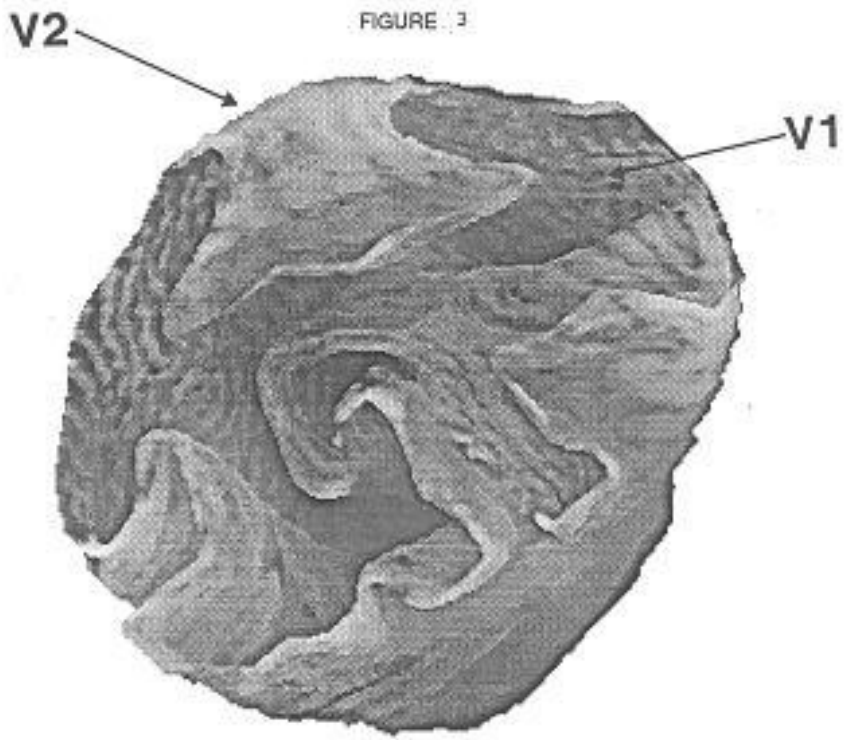
The Visual Pathway: functional columns



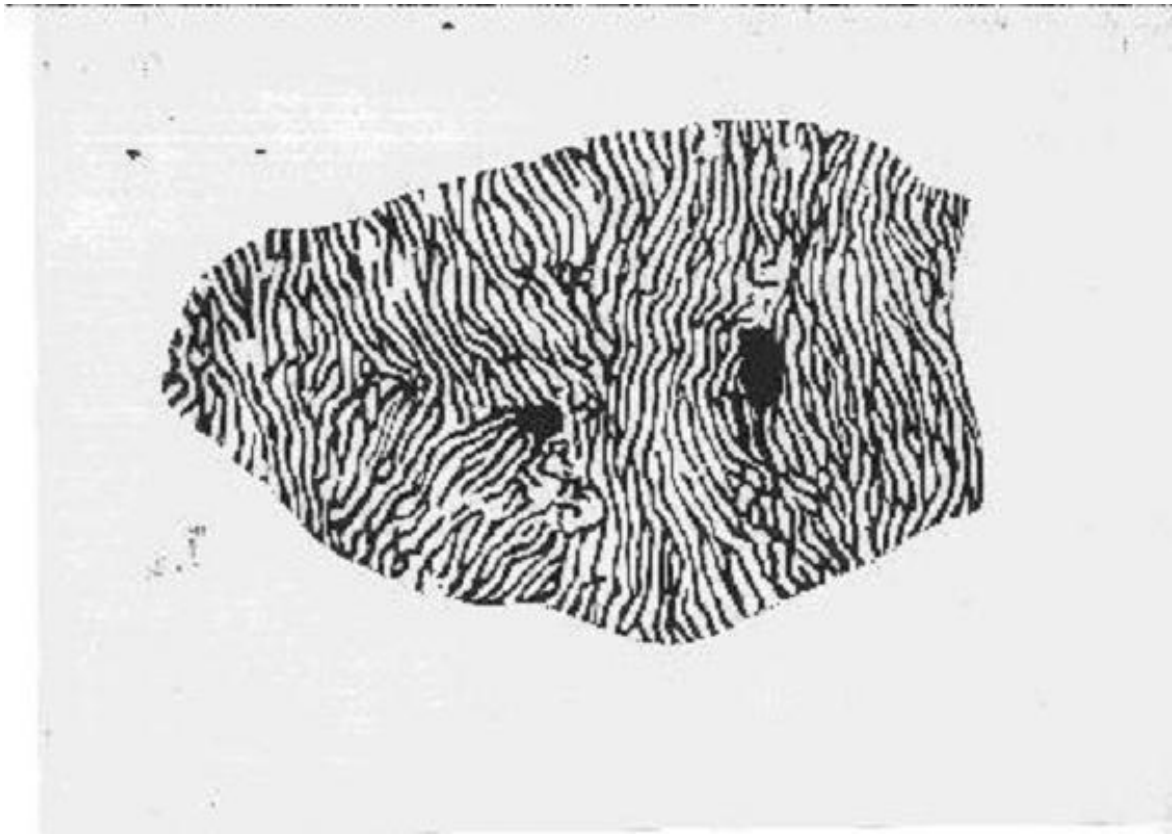
The Visual Pathway: functional columns



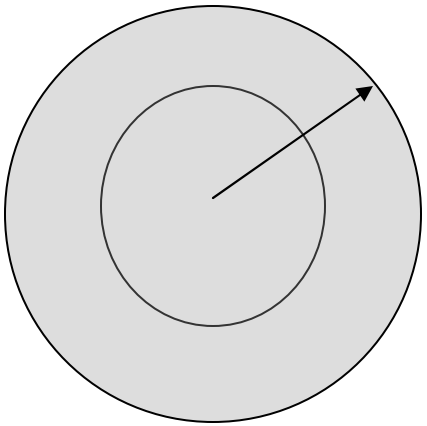
The Visual pathway: Functional Columns



The Visual Pathway: functional columns

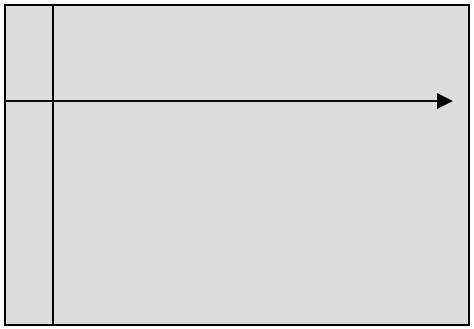


Log Polar mapping



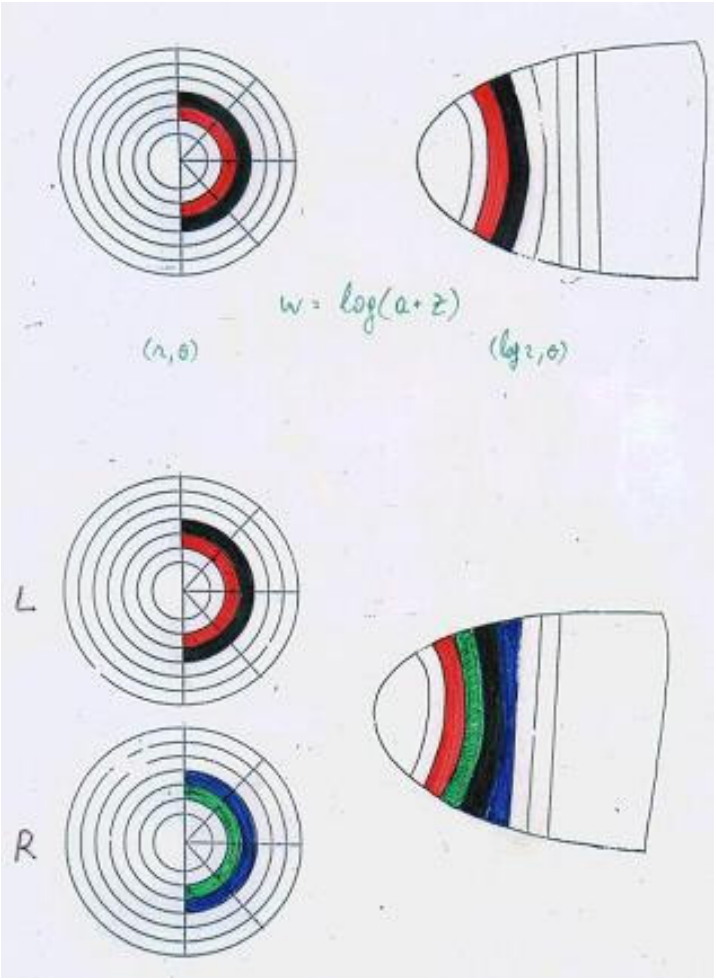
R , O

O

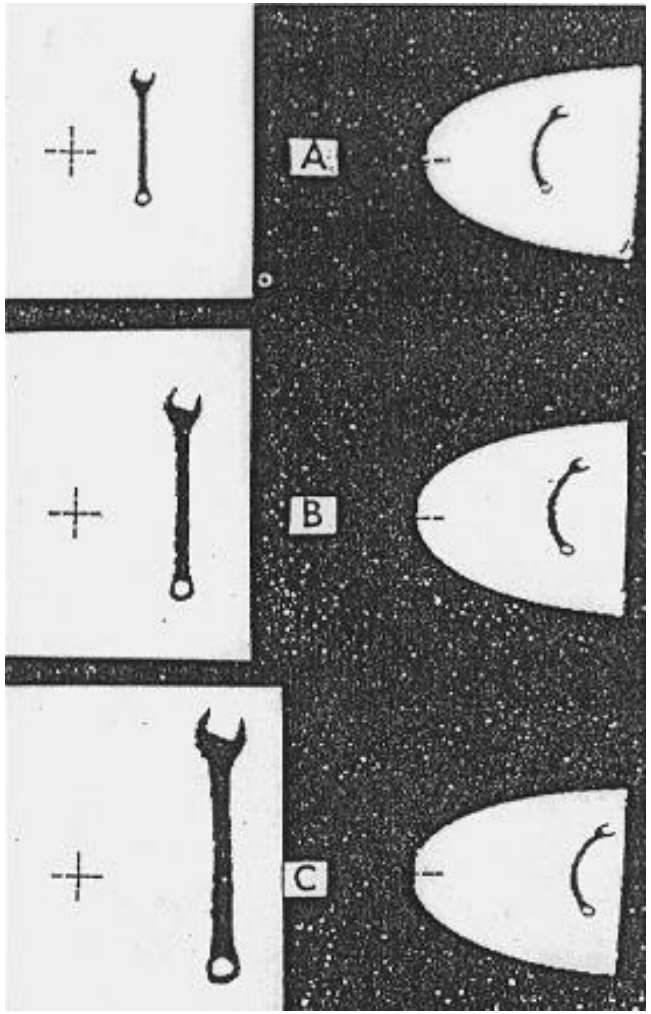


R

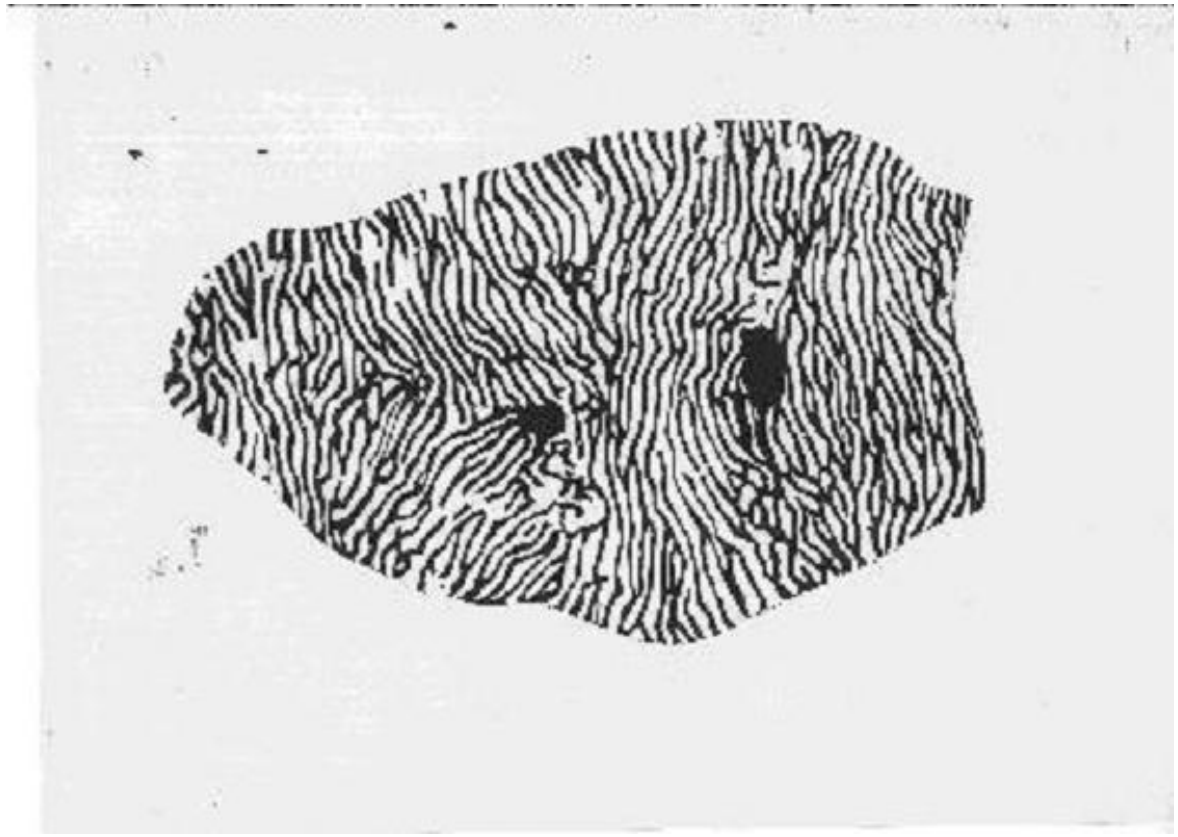
Log Polar mapping



Log Polar mapping: computational benefits



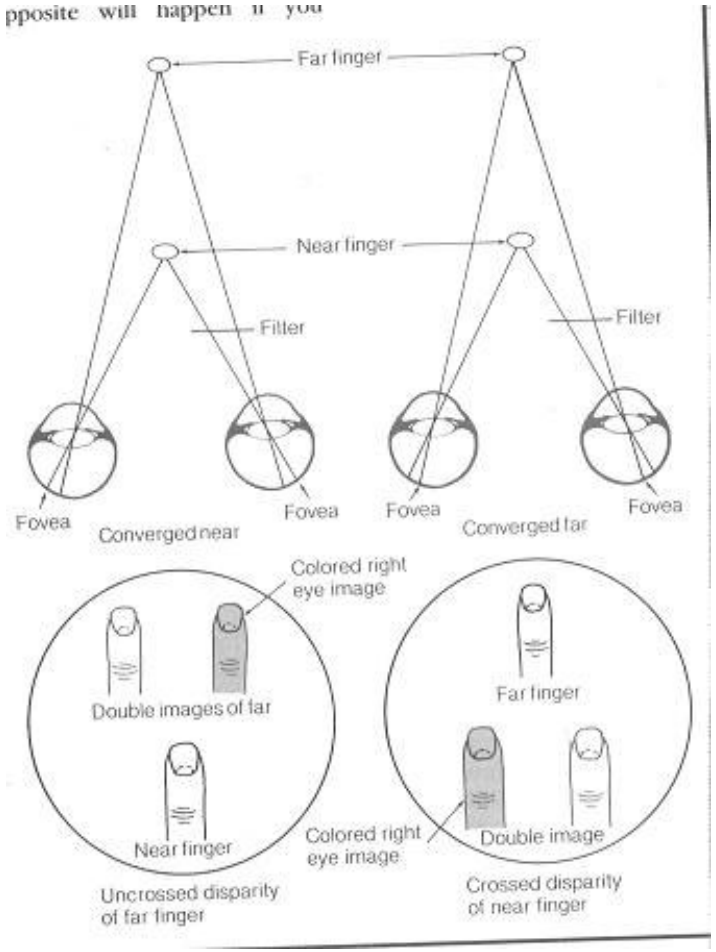
Columnar Organization: computational benefits



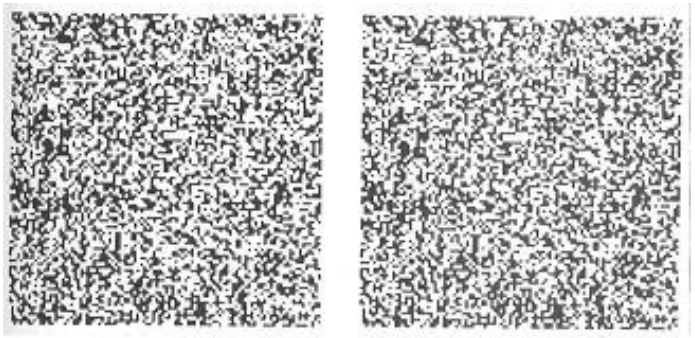
Columnar Organization: computational benefits

Panum's area:

10 arcmin

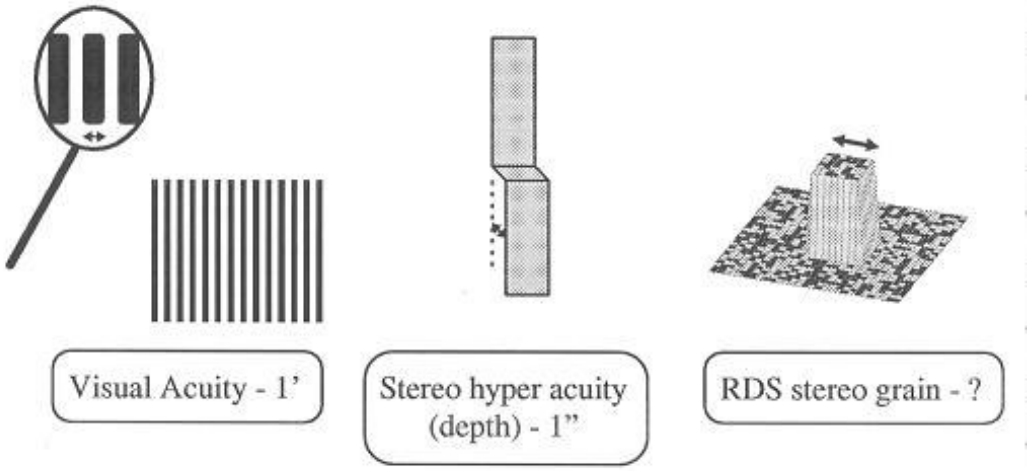


Columnar Organization: computational benefits



Tyler's limit:

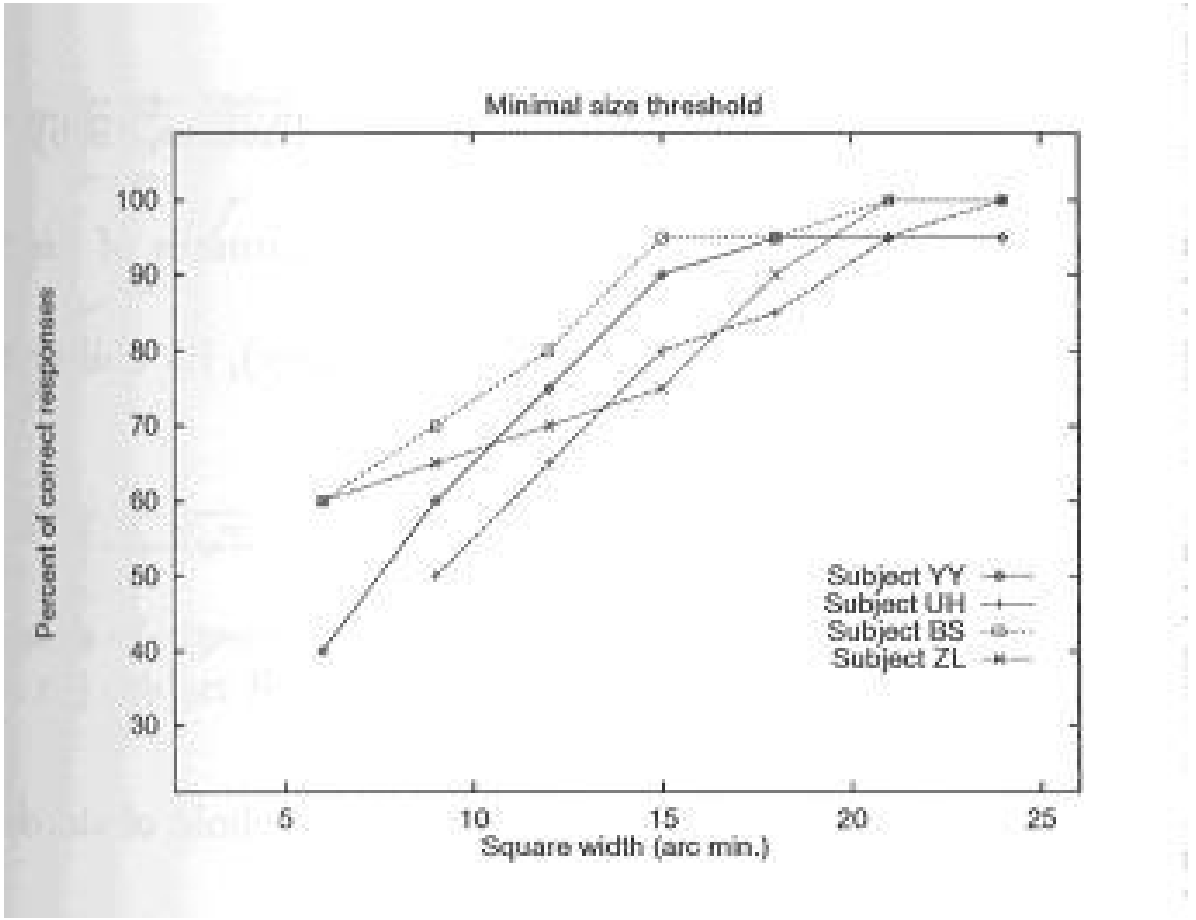
10 arcmin



Columnar Organization: computational benefits

Tyler's limit:

10 arcmin

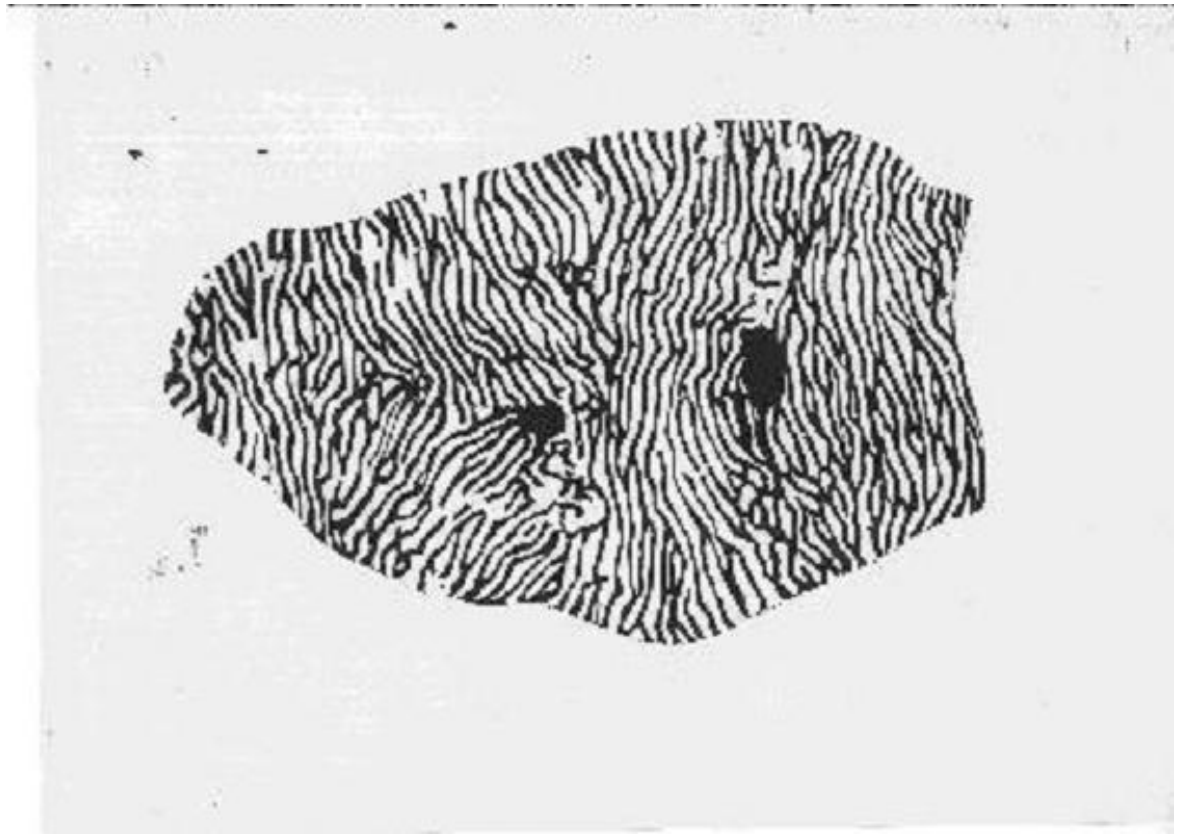


Computational benefits

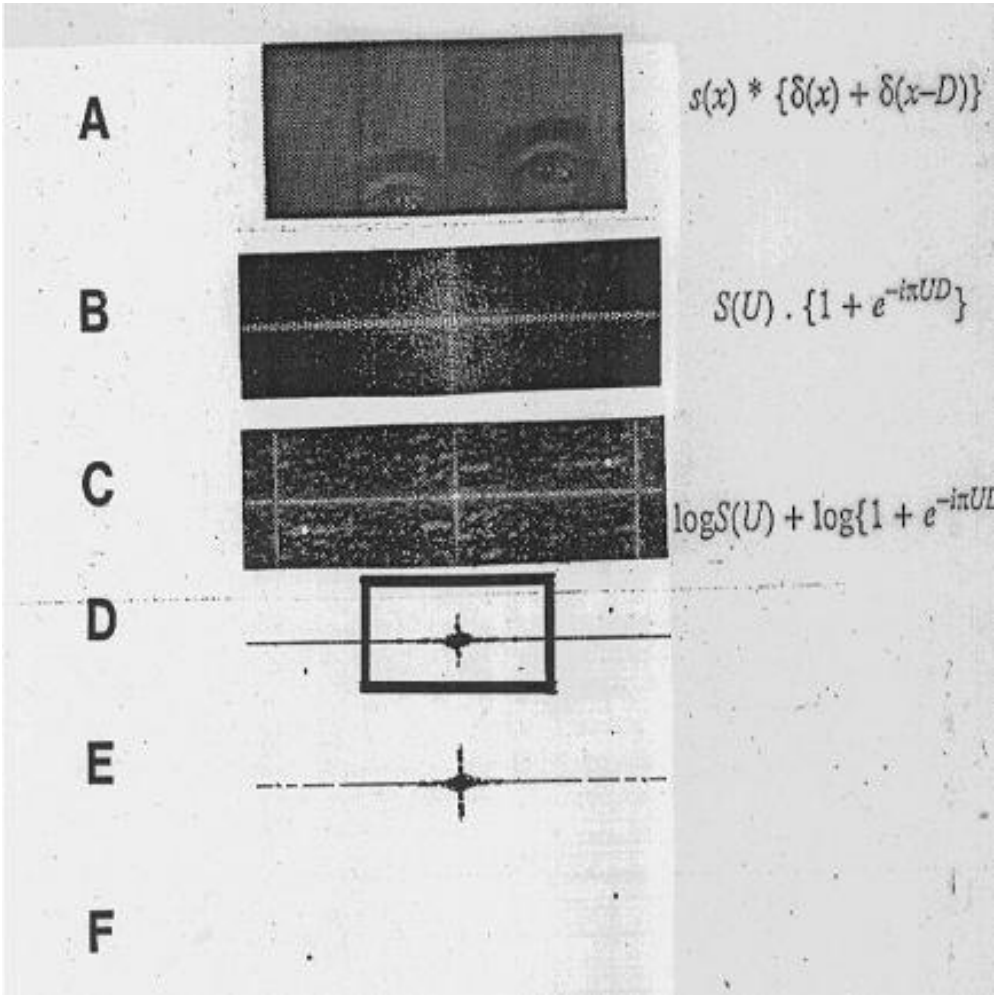
- Upper limit on disparity: 10 arcmin (Panum)
- Lower limit on disparity: 10 arcmin (Tyler)

- Cortical correlate?

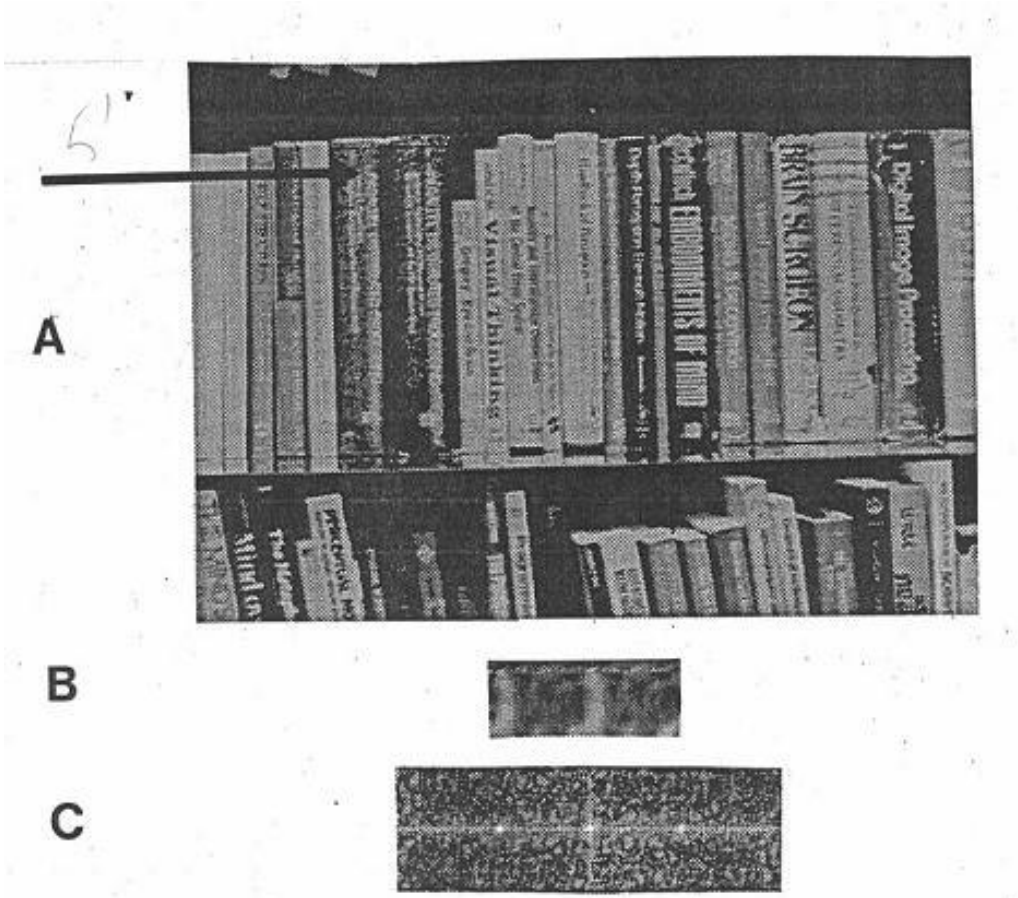
Cortical correlate of Psy data: Data Structure



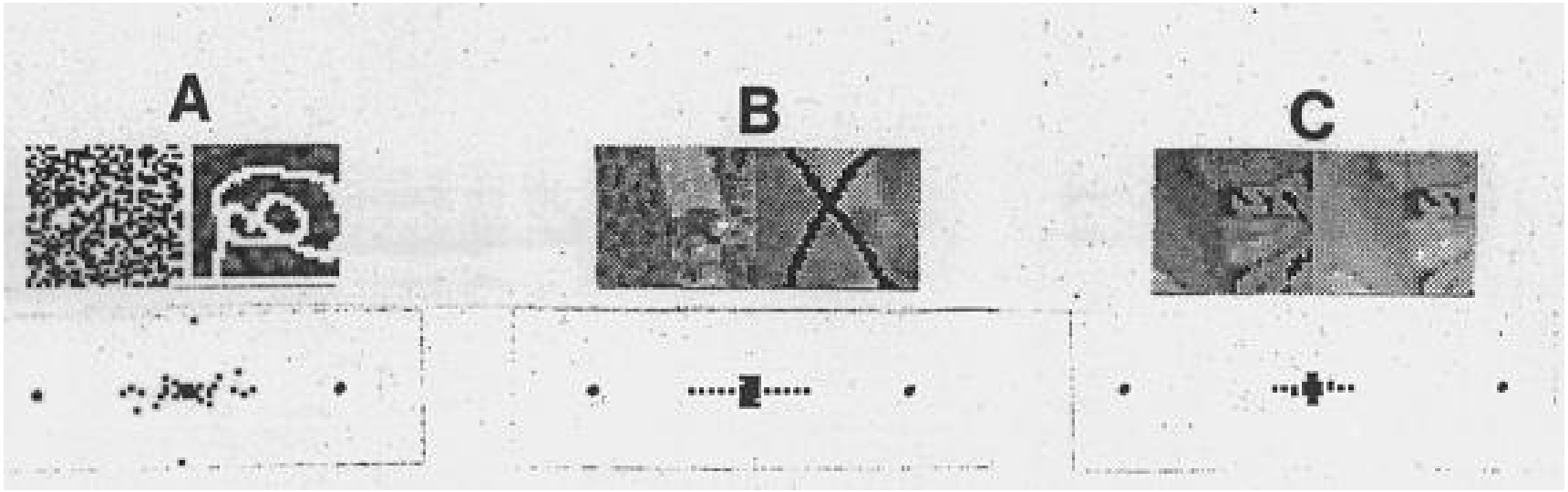
Stereo Algorithm



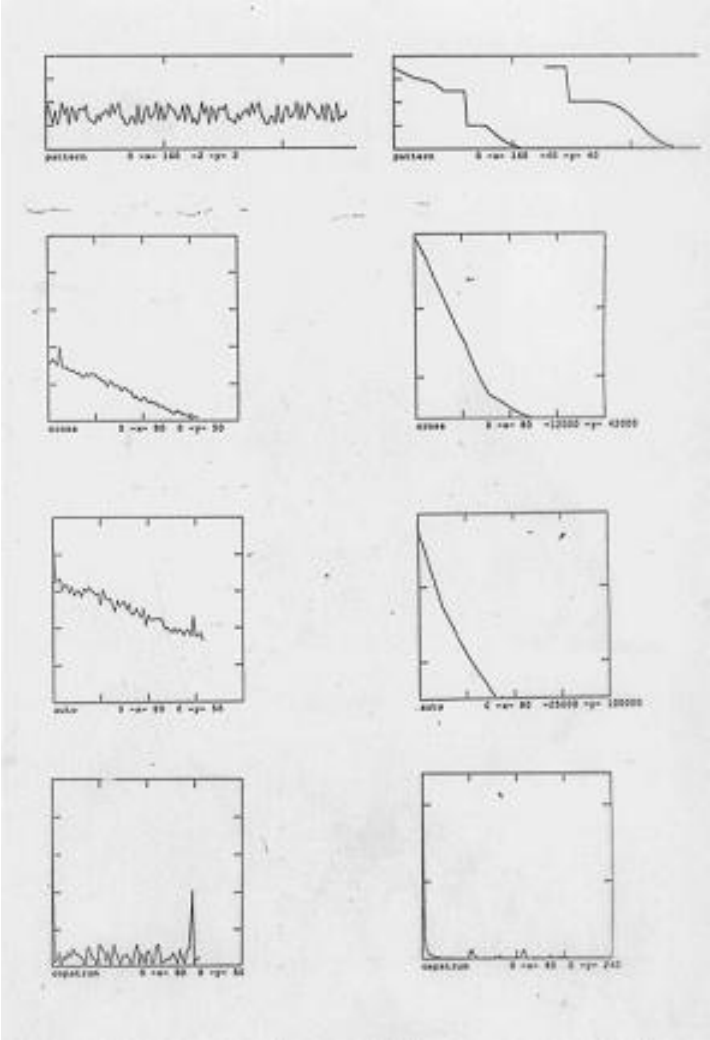
Stereo Algorithm



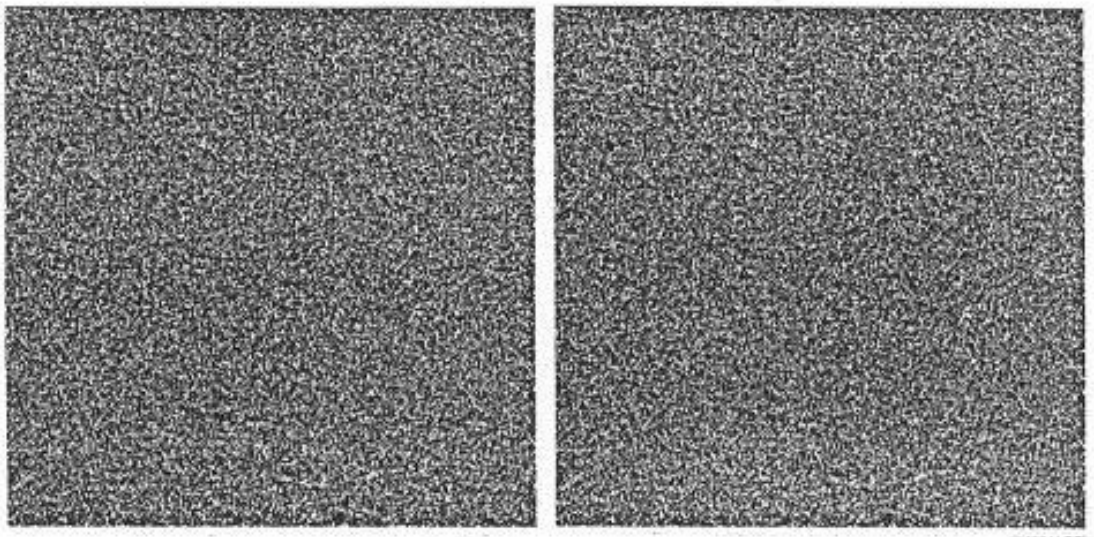
Stereo Algorithm



Stereo Algorithm



Stereo Algorithm



Comutational Aspects of Cortical Anatomy

- Networks vs. Maps
- Cortical structures are bearing computational meaning
- Implementation of Log-Polar transform
- Columnar interlacing as efficient data structure for stereo segmentation