

University of Groningen

Plasticity of visual field representations

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DOI:
[10.33612/diss.128352681](https://doi.org/10.33612/diss.128352681)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2020

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):
De Oliveira Carvalho, J. (2020). *Plasticity of visual field representations*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen. <https://doi.org/10.33612/diss.128352681>

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Propositions

1. Methodological advances that increase our ability to capture neuroplastic changes are essential to unravel the foundations of vision and will be critical to assess the success of vision restoration therapies. (this thesis)
2. Micro-probing enables the visualization, analysis and modelling of the diverse and fragmented receptive fields of cortical neural subpopulations in health and disease. (this thesis)
3. The recruitment of neural resources in a visual cortical region depends on the stimulus and task, therefore using adapted retinotopic stimuli to a particular task is crucial for interpreting cortical function. (this thesis)
4. Predictive masking of scotomas is associated with a system-wide reconfiguration of neural populations, most likely guided by extrastriate signals. (this thesis)
5. fMRI-based reconstruction of the visual field provides an objective alternative to detect visual field defects, which provides useful details on the properties of the visual cortex and structure-function relationship. It may complement standard automated perimetry (SAP) and can provide VF information in patients unable to perform SAP. (this thesis)
6. The study of cortical reorganization can be ameliorated by using biologically plausible models that can be estimated without requiring visual stimulation, such as Cortical Circuitry Models (CCM). (this thesis)
7. Statistics do not lie, but they can put you on the wrong foot: “The per capita consumption of mozzarella cheese correlates with the number of civil engineering doctorates awarded.” (Spurious Correlations, Tyler Vigen)
8. Failure is the basis of scientific progress. (this thesis?)
9. Adaptability is the most valuable human skill and the greatest challenge in understanding physiology from disease.
10. Chaos is merely order waiting to be deciphered. (José Saramago/ 2nd Law of Thermodynamics)