

Brain in sight : probing the neural dynamics underlying conscious vision

Citation for published version (APA):

de Graaf, T. A. (2013). *Brain in sight : probing the neural dynamics underlying conscious vision*. Maastricht University.

Document status and date:

Published: 01/01/2013

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

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Propositions accompanying

Brain in Sight

probing the neural dynamics underlying conscious vision

Tom de Graaf, 15 March, 2013

1. Neural correlates of consciousness (NCCs), when identified in standard neuroimaging paradigms, can actually reflect three functional roles; neural prerequisites for, neural substrates of, and neural consequences of visual percept.
2. The disrupted rivalry phenomenon can be partially, but not completely, explained by mechanisms of binocular rivalry.
3. The disrupted rivalry phenomenon shows that transient offset signals are important in determining visual percepts.
4. Alpha oscillations in the human brain can be entrained by rhythmic sensory stimulation, which can have direct perceptual consequences.
5. Occipital TMS, administered in a time-specific manner to mask visual stimuli, can yet provide further insights into the role of early visual cortex in establishing vision.
6. Transcranial Magnetic Stimulation (TMS) remains the most useful tool to obtain chronometric insights into functional relevance of human cortical areas in perceptual, cognitive, and behavioural functions.
7. The disrupted rivalry effect can in future research usefully be implemented in neuroimaging paradigms to obtain a clean measure of conscious percept establishment in the human brain.
8. While an ongoing academic discussion revolves around the role of frontoparietal cortex in conscious vision, this network may be too broad and multifunctional to useful consider as one whole.
9. A bird's-eye view will be required to eventually understand how conscious vision is established in the human brain.
10. A new term should be invented: 'consciousness' raises too many eyebrows.
11. Whether we are or are not our brains, we should be pretty glad to have one.