Neuroimaging of visual perception

Published: 25-08-2009
Last updated: 04-05-2024

The main objective is to describe the interactions between physical sensory stimulations and high-level prior assumptions that give rise to visual perception. In our secondary objective, we will advance novel model-based neuroimaging methods by...

Ethical review	Not approved
Status	Will not start
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON33103

Source
ToetsingOnline

Brief title
Neuroimaging of visual perception

Condition

- Other condition

Synonym
Not applicable

Health condition

Niet van toepassing

Research involving
Human

Sponsors and support

Primary sponsor: Universiteit Utrecht
Source(s) of monetary or material Support: NWO VIDI (NL) & FP7 IRG (EU)

Intervention

Keyword: fMRI, Psychophysics, Visual Perception

Outcome measures

Primary outcome

Model parameters of neuronal populations estimated with functional MRI.

Secondary outcome

Not applicable.

Study description

Background summary

We infer our visual environment from both physical retinal stimulations and prior assumptions about the environment. We use a combined behavioural, computational and human neuroimaging approach to quantify local interactions between low-level sensory input and high-level prior assumptions that give rise to visual perception.

Study objective

The main objective is to describe the interactions between physical sensory stimulations and high-level prior assumptions that give rise to visual perception. In our secondary objective, we will advance novel model-based neuroimaging methods by linking it to human neuron properties other than *activations*, and validate the measurements with predictions derived from well-established animal neuronal properties.

Study design

Using functional MRI, subjects are scanned on while viewing various visual stimuli. The first kind of visual stimuli will be used to estimate the properties of the underlying neuronal population, whereas the second kind of visual stimuli will validate these models and test hypothesis about these models.

Study burden and risks

Scanning will take approximately 45-60 min in total per session for each subject. Functional MRI is a non-invasive technique, so there is no need for special preparation for the subject. There are no known risks associated with functional MRI acquisition. The data are used for research purposes only. However, severe abnormalities may be noticed, in which case a specialist (radiologist) may be asked for advice, upon decision of the research team. If the specialist confirms that medical treatment is indicated, then the subject will be notified. Besides financial remuneration, there are no benefits from participation in this study for the subjects.

Contacts

Public
Universiteit Utrecht

Heidelberglaan 2
3584 CS
Nederland
Scientific
Universiteit Utrecht

Heidelberglaan 2
3584 CS
Nederland

Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

age between 18 and 65

Exclusion criteria

- Ferrous objects in or around the body (e.g. braces, glasses, pacemaker, metal fragments)
- Drug or alcohol abuse over a period of six months prior to the experiment
- History of closed- or open-head injury
- History of neurological illness or endocrinological dysfunction
- Claustrophobia
- Major medical history
- Chronic use of medication
- History of epilepsy
- History of epilepsy in first-degree relatives
- Incapability of giving an informed consent
- pregnancy

Study design

Design

Study type: Observational non invasive

Masking:	Open (masking not used)
Control:	Uncontrolled
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Will not start
Enrollment:	128
Type:	Anticipated

Ethics review

Not approved

Date:	25-08-2009
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Utrecht (Utrecht)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL27591.041.09