

Emotion in Language: Role of the right and the left brain-Causal relations in hemispheric asymmetry in right-handed healthy subjects investigated with transcranial magnetic stimulation

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In the present study we propose two TMS experiments, in which we want to examine the brain areas crucially involved in the processing of emotional prosody in healthy right handed subjects.

Ethical review	Approved WMO
Status	Pending
Health condition type	Other condition
Study type	Observational non invasive

Summary

ID

NL-OMON30645

Source

ToetsingOnline

Brief title

Emotion in language: Role of the right and the left brain

Condition

- Other condition
- Cognitive and attention disorders and disturbances

Synonym

processing of emotion in spoken language

Health condition

bij gezonde mensen

Research involving

Human

Sponsors and support

Primary sponsor: Academisch Medisch Centrum

Source(s) of monetary or material Support: NWO

Intervention

Keyword: emotion, language, lateralisation, prosody, semantics, transcranial magnetic stimulation

Outcome measures

Primary outcome

reaction times and accuracy percentages will be analyzed and compared between the different TMS conditions.

Secondary outcome

niet van toepassing

Study description

Background summary

One of the fundamental principles in neuroscience is the dominant role of the left hemisphere in most language functions. In processing information of spoken language, the left hemisphere is responsible for the analysis of the meaning of a sentence. The right hemisphere is however, responsible for the analysis of paralinguistic features of a sentence. like intonation, loudness and accents in speech, which are crucial for the understanding of the emotional state of the speaker. The term emotional prosody has been introduced to describe these non-linguistic aspects of spoken language.

Study objective

In the present study we propose two TMS experiments, in which we want to examine the brain areas crucially involved in the processing of emotional prosody in healthy right handed subjects.

Study design

Repetitive TMS will be used with a coil centered over the right frontoparietal operculum, which has been shown to be involved in affective prosody in lesion studies and in a previous pilot study conducted in Utrecht (van Rijn et al., 2005) to which our study is a sequel and an extension. In the present study, we will also stimulate the same area in the left hemisphere, to allow for conclusions regarding lateralization of language functions. Studying these homotopic areas will also give us the possibility to study the relation of these two areas that have both been associated with emotion in language. The superior parietal lobule is included as an active control condition (i.e. real TMS will be performed to this area but we don't expect effects on the task, because this area is not related to emotion in language). In experiment 1 the online-TMS approach will be applied; tasks will be completed during stimulation. Subjects are asked to perform an emotional language task, in which they are required to focus on either emotional semantics or emotional prosody and decide which emotion is expressed. In experiment 2 the offline approach will be applied, with the same tasks and the same areas of stimulation.

Study burden and risks

The effects of TMS are subtle and temporary. the TMS pulse feels like a little tickle on your skull, the results of muscle contraction in the skin. The sensation is like a tickle with your finger of the skull. Some people experience this as a little uncomfortable. Except for this tickle, subjects will experience no disadvantages from the experiment. MRI scans are proven to be safe.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

Adults (18-64 years)

Elderly (65 years and older)

Inclusion criteria

right handed, physically healthy, aged between 18-45

Exclusion criteria

left-handedness or ambidexterity, drug or alcohol abuse, (history of) significant medical, psychiatric or neurological conditions, history of head injury with loss of consciousness, metal in cranium, epilepsy or family history of epilepsy, cardiac pacemaker, infarctions, implanted medication pump, intracardiac lines, history of psychiatric illness (Axis 1, DSM -IV),

Study design

Design

Study type: Observational non invasive

Masking: Single blinded (masking used)

Control: Uncontrolled

Primary purpose: Other

Recruitment

NL

Recruitment status: Pending

Start date (anticipated):	01-02-2007
Enrollment:	28
Type:	Anticipated

Ethics review

Approved WMO	
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Groningen (Groningen)

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	NL15917.042.06