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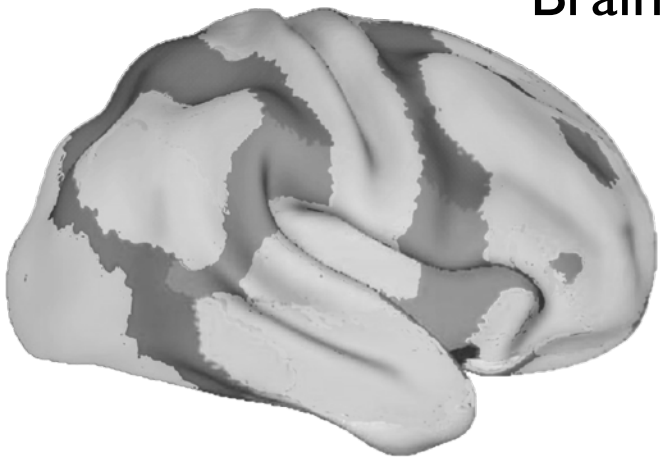
Ventral and dorsal networks of attention

CLINICAL NEUROPSYCHOLOGY

Brain damage and behavior

- Christopher Rorden
- Masud Husain
- Samuelsson H, et al.
- Hans-Otto Karnath



COGNITIVE NEUROCIENCE

Brain imaging and experimental studies

Brain networks of attention

Maurizio Corbetta
B. T. Thomas Yeo
Michael I. Posner

Neural mechanisms of conscious experiences

Geraint Rees
Stanislas Dehaene

COGNITIVE PSYCHOLOGY

Experimental studies of attention: -Attention blindness

Arien Mack and Irvin Rock

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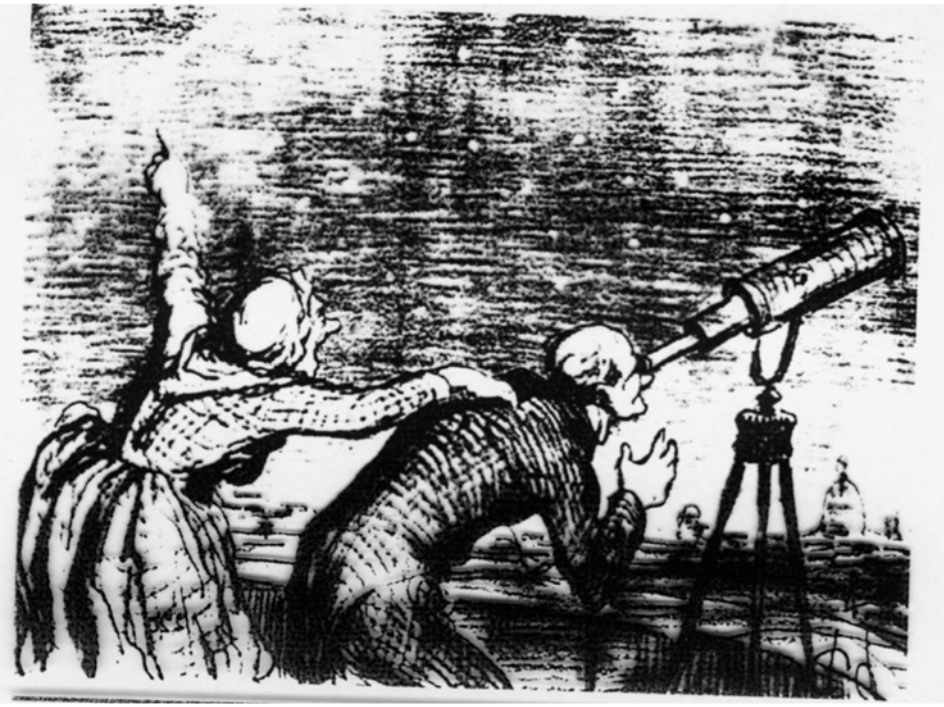
Neglekt - orsakat av en skada på två olika system för orientering av spatial uppmärksamhet

Varna för viktig information utanför fokus



Flytta fokus för uppmärksamheten

(Corbetta, Kincade et al., 2000; Corbetta & Shulman 2002)

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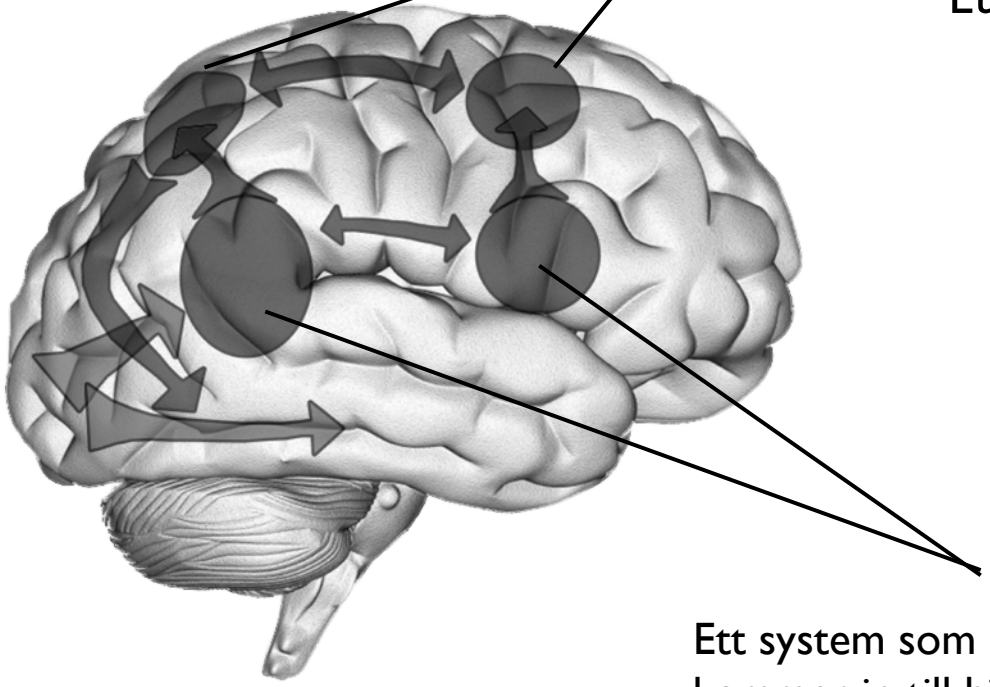
Spatial (rumslig) uppmärksamhet

Två system

Ett system för orientering av uppmärksamheten

Ett system i hö o ett i vä hjärnhalva



Ett system som i bakgrunden avläser stimuli som kommer in till hjärnan

Ett system för att automatiskt avbryta pågående inriktning

Hö hjärnhalva dominant

(Corbetta, Kincade et al., 2000; Corbetta & Shulman 2002)

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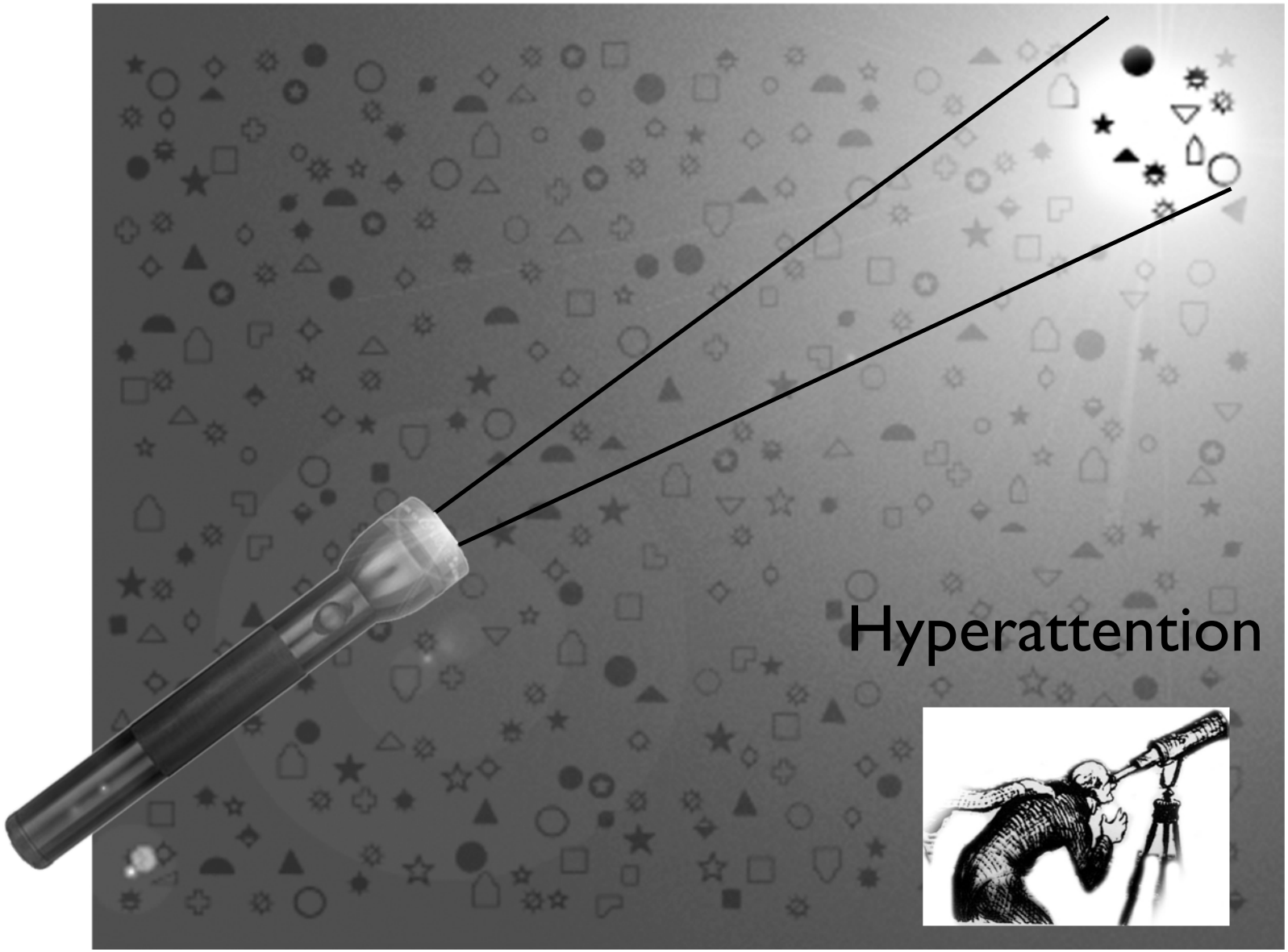
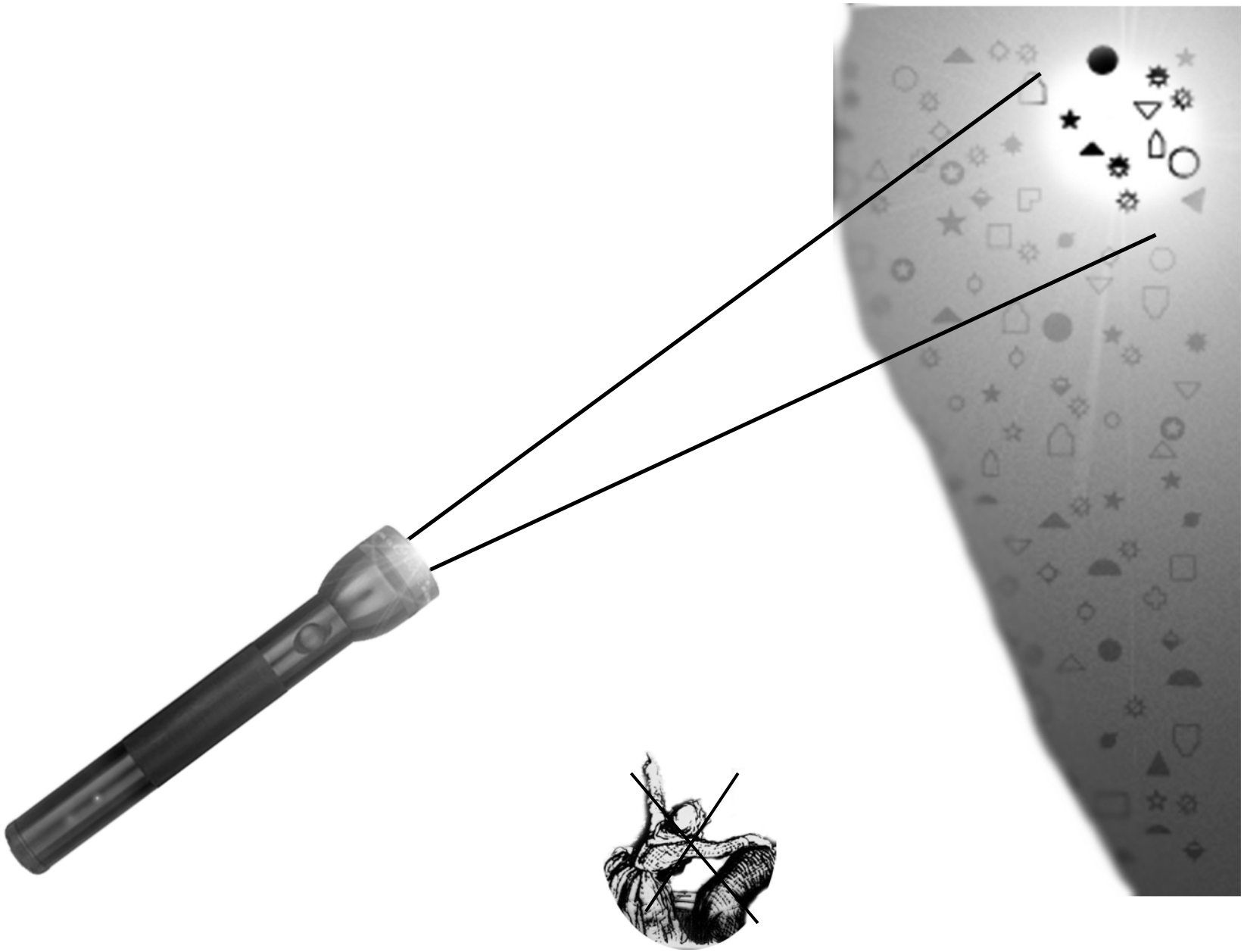
Vid neglekt 1

Ena sidans orienteringssystem utslaget, intakta sidans system överaktivt = hyperattention



Vid neglekt 2

Inget system som signalerar
för stimuli utanför fokus



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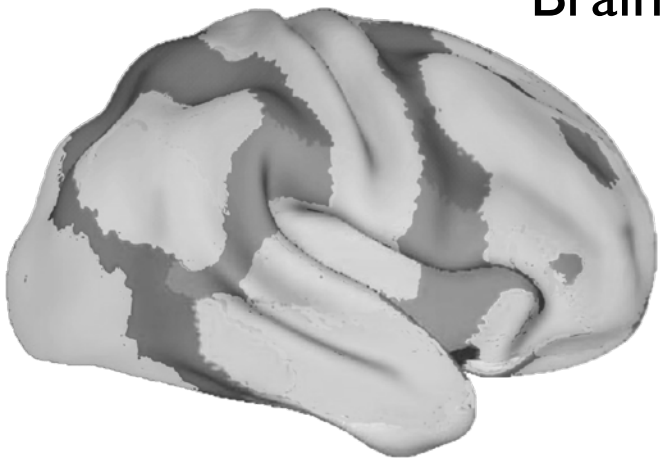
CLINICAL NEUROPSYCHOLOGY

Brain damage and behavior

Samuelsson H, Jensen C, Ekholm S et al.
Hans-Otto Karnath and
Christopher Rorden
Masud Husain



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Experimental studies of attention: - Inattentional blindness

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Inattentional blindness

Arien Mack and Irvin Rock

The illusion of attention

Christopher Chabris and Daniel Simons

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Spatialt neglekt

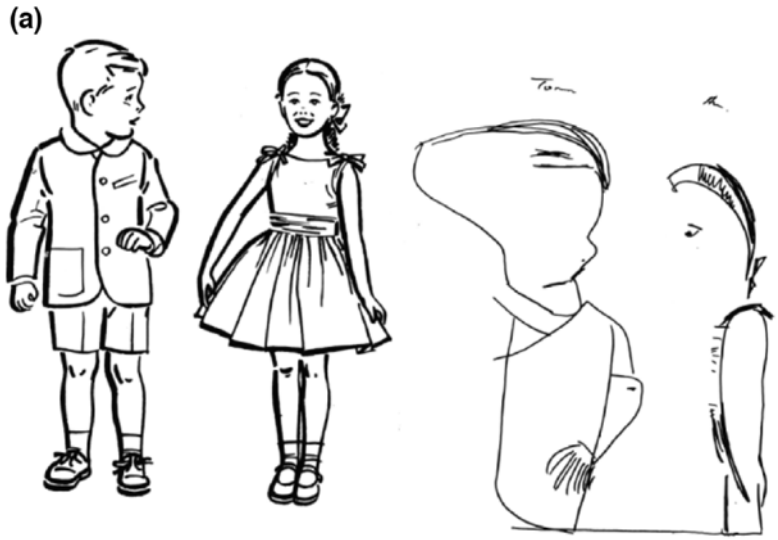
Kan visa sig på många olika sätt

I yttre rummet -vs- I inre föreställning
(”representational”)

Inom räckhåll -vs- Utom räckhåll
(”peripersonal”) (”extrapersonal”)

Kroppscentrerat -vs- Objektscentrerat
(egocentric) (allocentric)

”Perceptual -vs- Motor-intentional“



Allocentric neglect

Egocentric

Allocentric

Bägge

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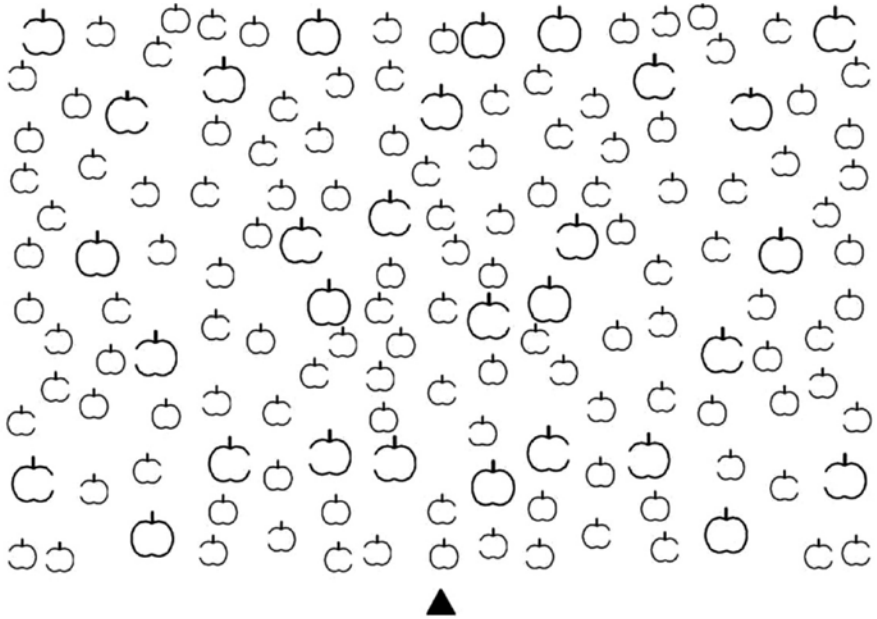
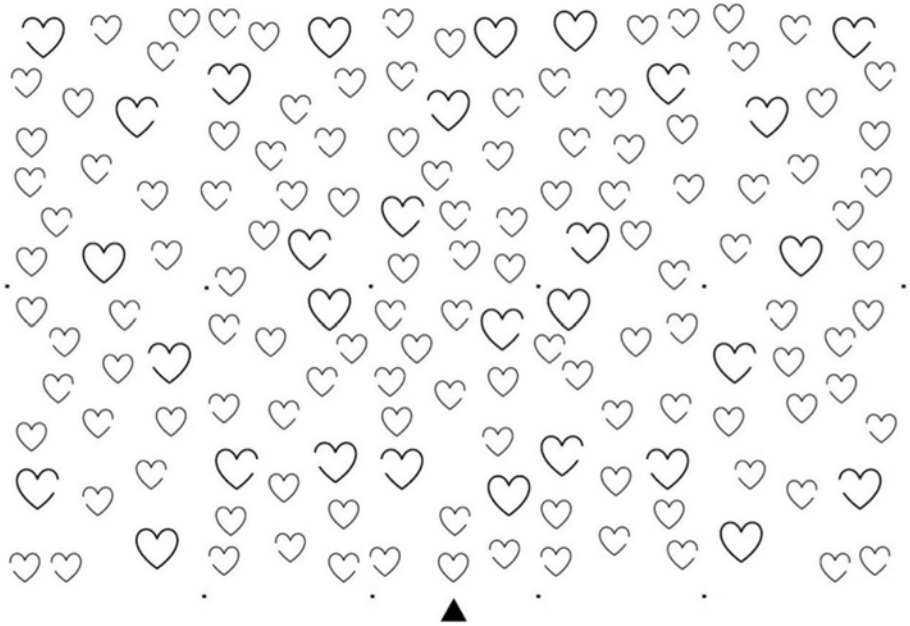
Test av egocentric och allocentric neglect

BUCS
Birmingham University Cognitive Screen



The apple cancellation test

The Oxford Cognitive Screen (OCS)



The broken hearts test

https://innovation.ox.ac.uk/outcome-measures/the-oxford-cognitive-screen-ocs/

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Cognitive rehabilitation for spatial neglect following stroke

A Cochrane review

Bowen A, Hazelton C, Pollock A, Lincoln NB
Published in The Cochrane Library, 2013, Issue 7

"Our review of 23 studies involving 628 participants with stroke found

- *Insufficient evidence*

- *some limited evidence* but the quality of this evidence was poor and more research is needed

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Några metoder som ser lovande ut

- Systematic visual scanning training
- Prism adaptation
- Transkraniell magnetstimulering (TMS)
- Eventuellt: Datoriserad virtual reality-träning

Rehabilitation interventions of unilateral spatial neglect based on the functional outcome measure: A systematic review and meta-analysis
Abdul Chalik Meidian et al.
Neuropsychological rehabilitation 2020

Visuo-spatial neglect: A systematic review of current interventions and their effectiveness
Jacques Luaute´ aq et al. Neuroscience and Biobehavioral Reviews 30 (2006) 961–982

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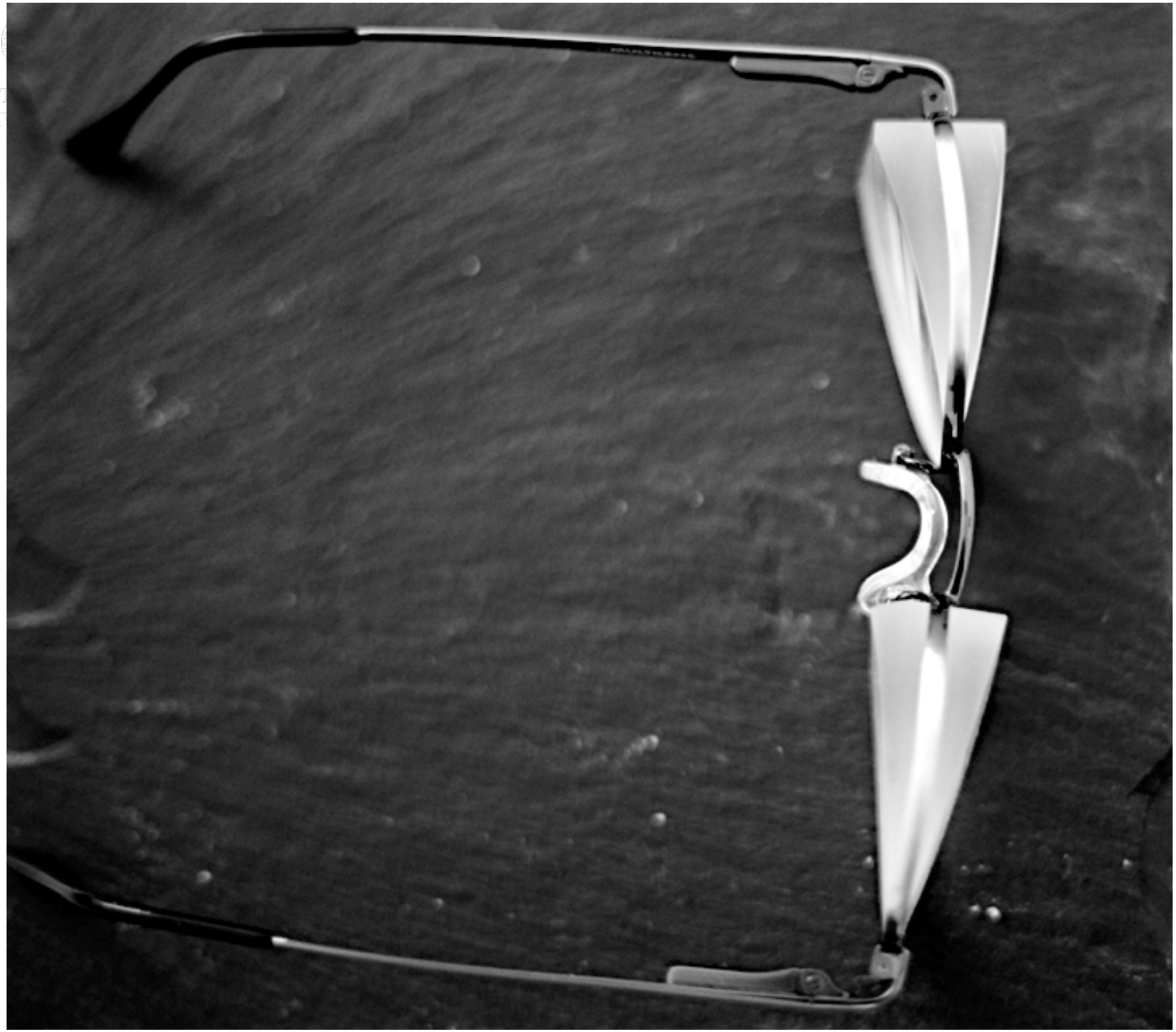
Systematic visual scanning training

Pizzamiglio L. et al., Cognitive rehabilitation of the hemineglect disorder in chronic patients with unilateral right brain damage. J Clin Exp Neuropsychol. 1992 Nov;14(6):901-23.

Antonucci G. et al., Effectiveness of neglect rehabilitation in a randomized group study.
J Clin Exp Neuropsychol. 1995 May;17(3):383-9.



Prism adaptation

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Rehabilitating Patients With Left Spatial Neglect by Prism Exposure During a Visuomotor Activity

Paola Fortis et al.
Neuropsychology, 2010, Vol. 24, No. 6, 681–697

Conclusions: Daily life visuomotor activities, associated with prism exposure, are a useful tool for rehabilitating USN patients. This new treatment may widen the compliance with prism exposure treatments and their feasibility within home-based programs.

Paola Fortis et al.
Cortex 122 (2020) 61-80
A home-based prism adaptation training for neglect patients

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RehAtt – scanning training for neglect enhanced by multi-sensory stimulation in Virtual Reality, Helena Fordell et al. (2016)

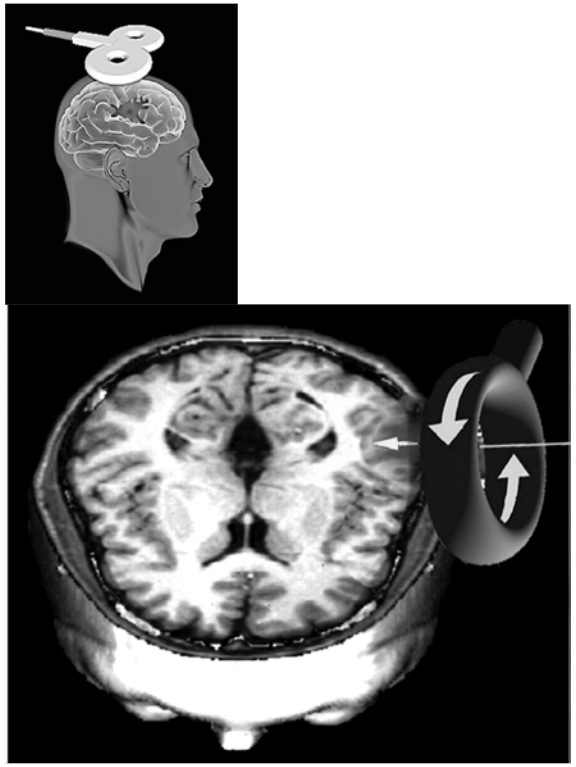
Fordell et al. RehAtt – scanning training

doi:10.1093/brain/aws182 Brain 2012: Page 1 of 14

BRAIN
A JOURNAL OF NEUROLOGY

Theta burst stimulation reduces disability during the activities of daily living in spatial neglect

Dario Cazzoli,[1,2] René M. Müri,[2] Rahel Schumacher,[2] Sebastian von Arx,[2] Silvia Chaves,[2]



rTMS - repetetive
Transcranial Magnetic
Stimulation

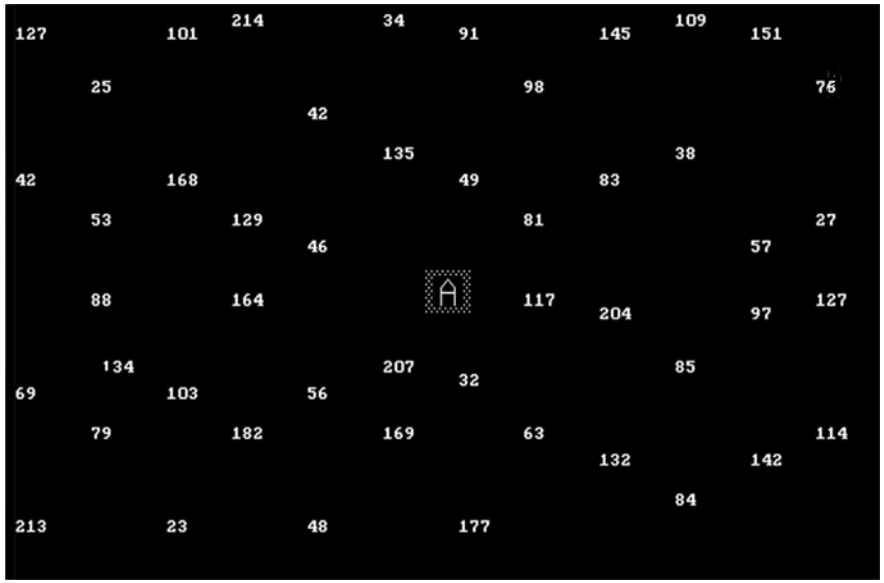
Slow rTMS (≤1 Hz) reducerar excitabilitet
Fast rTMS (10 Hz) ökar excitabilitet i hjärnan

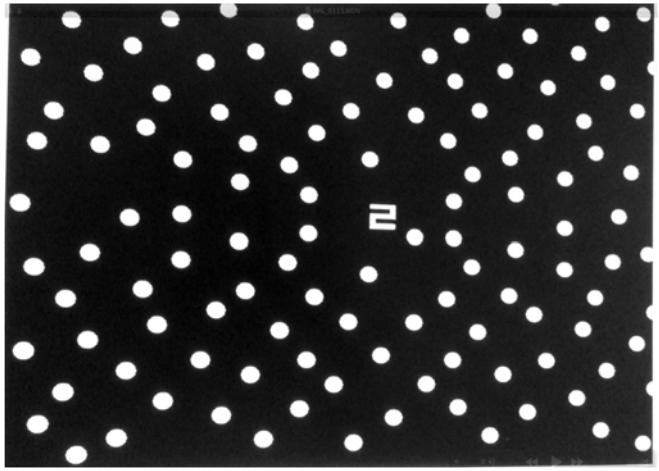
Long-term potentiation/
depression (LTP, LTD)

Exempel på ytterligare test av visuospatial neglekt och avsökning:

Deltest ur TAP - Test of Attentional Performance (datoriserat testbatteri)

Neglect test i TAP





Active Visual Field - TAP-M

https://www.psytest.de/index.php?page=Produkte&hl=en_US

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The SAHLSIS and stroke research group

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