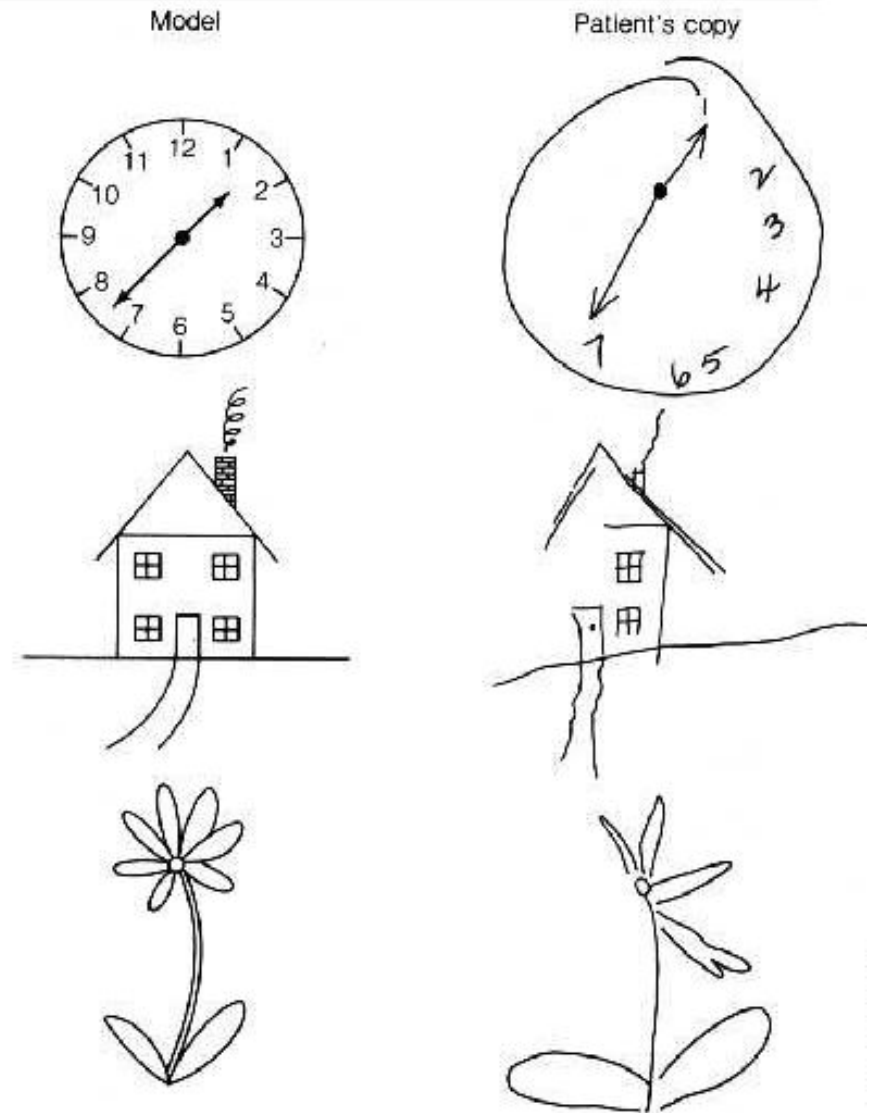


Neuroscience 100

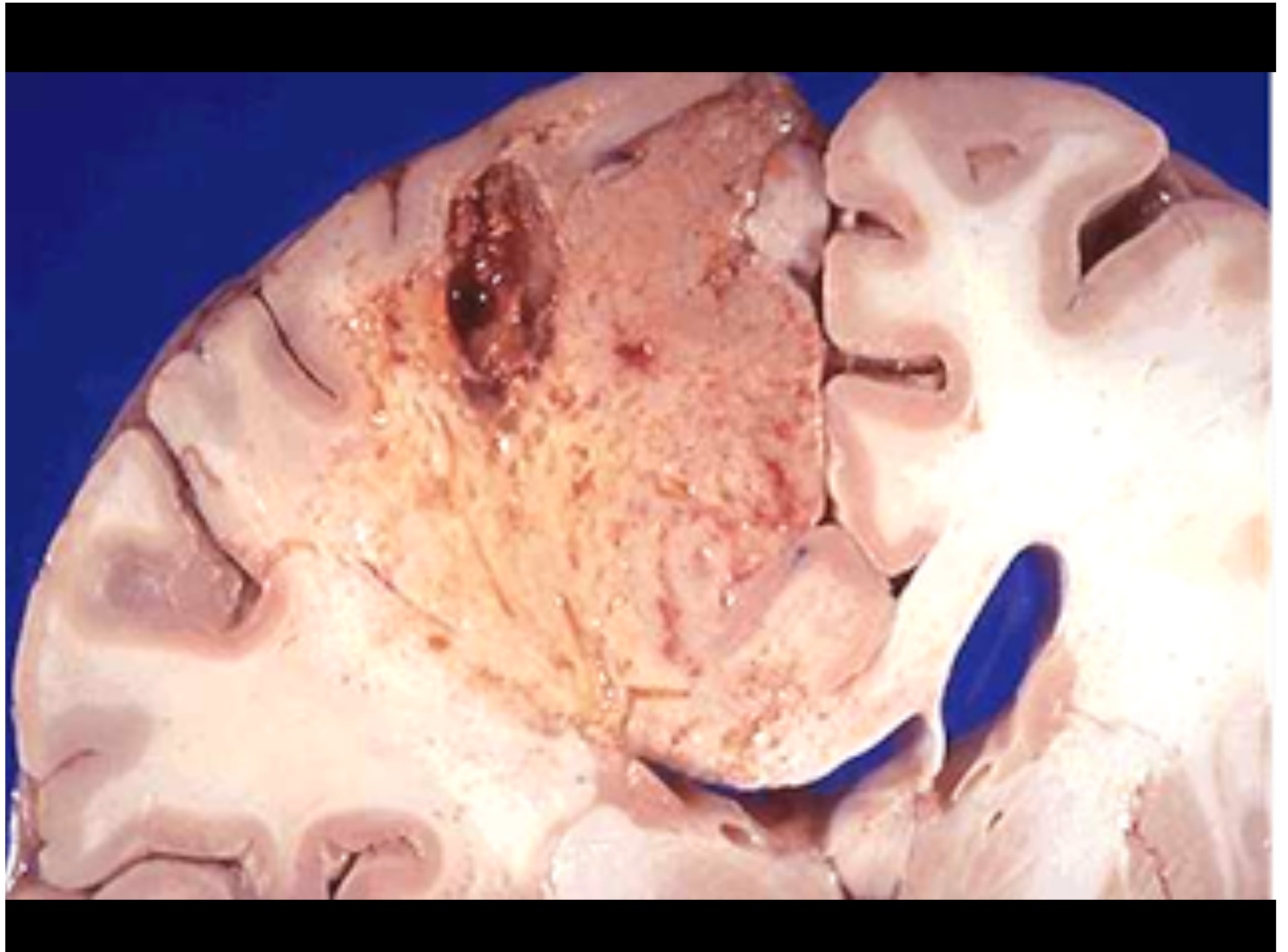
Week V: Attention November 3rd, 2015

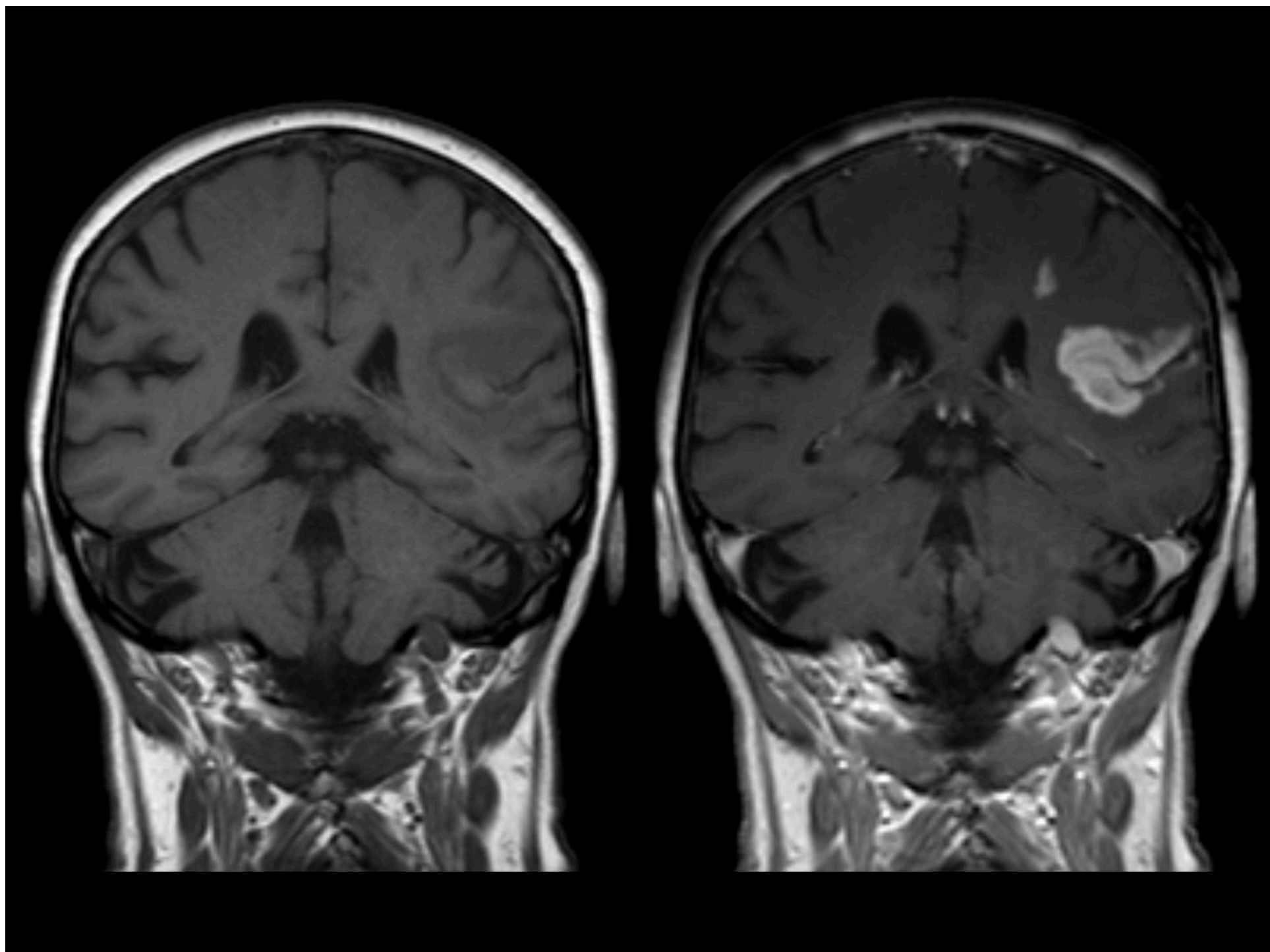
Condition: Neglect & Stroke
Topic: Attention
Technique: Patient Studies

Figure 13. Drawings by a patient with left-side neglect.

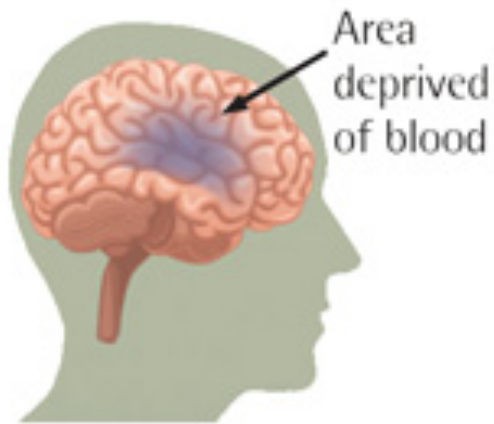


Stroke

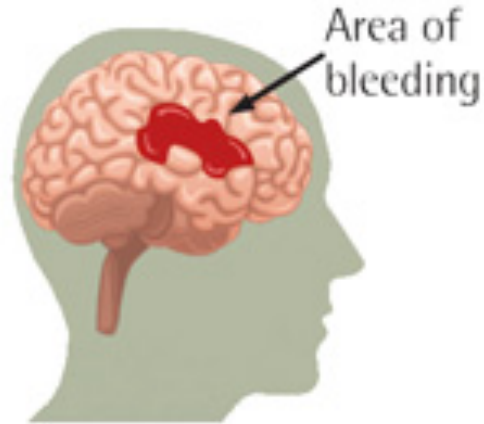




Ischemic Stroke



Hemorrhagic Stroke



Obstruction blocks
blood flow
to part of
the brain



Weakened vessel
wall ruptures,
causing
bleeding in
the brain



Accounts for 87
percent of all
stroke cases.

Neglect

Neglect

Attentional deficit

Ignorance of the left side of the world

“It just does not exist”

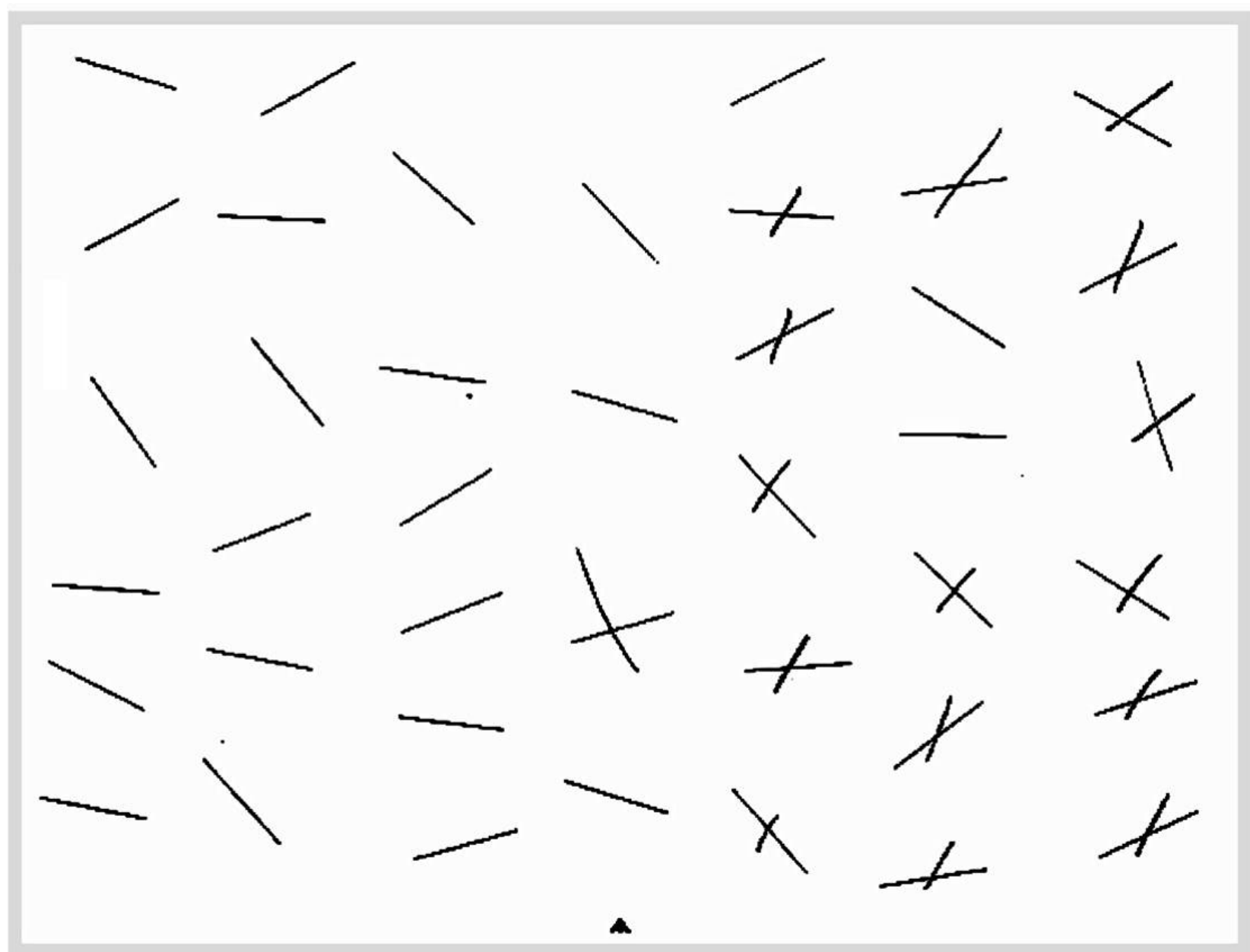
Figure 13. Drawings by a patient with left-side neglect.

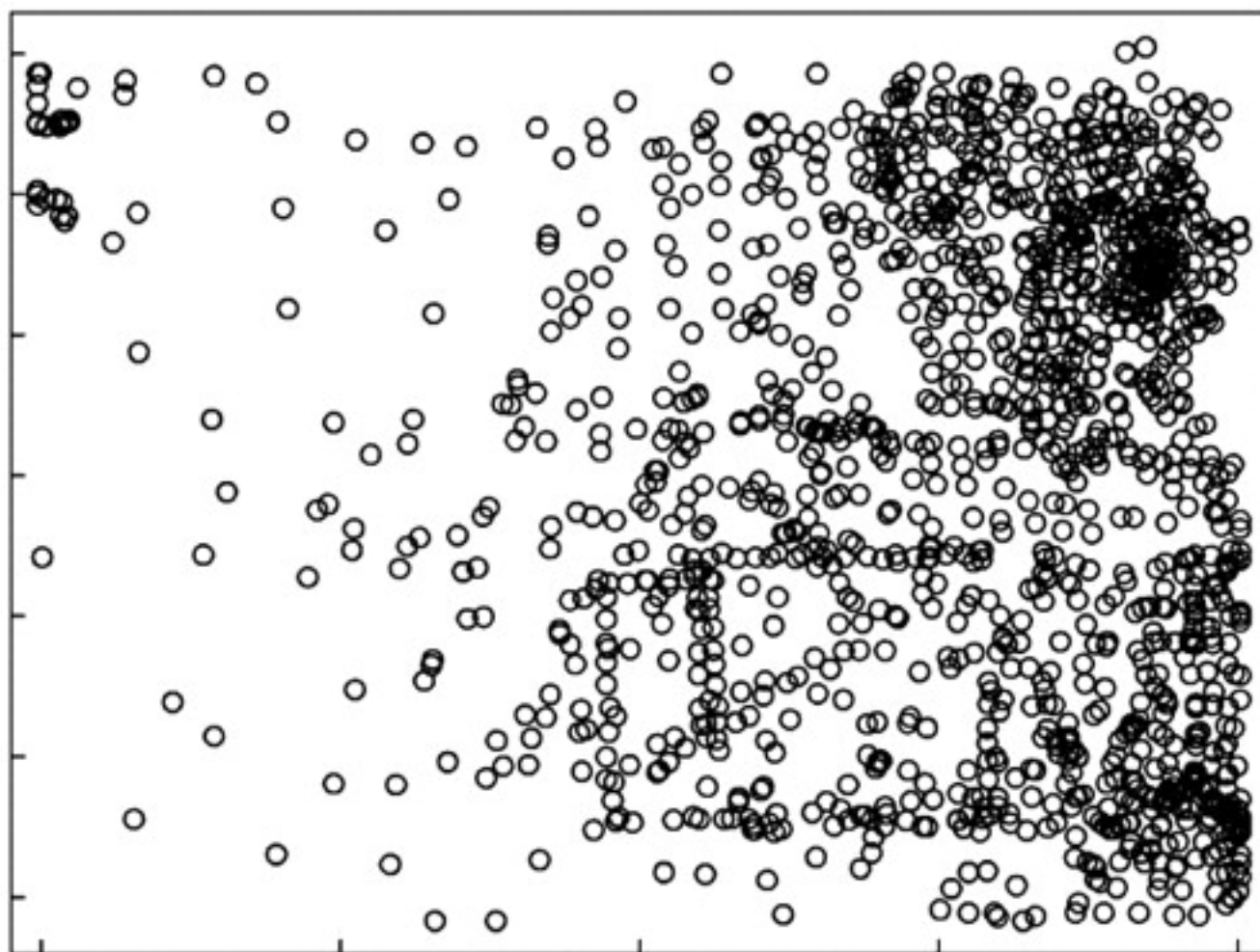
Model



Patient's copy







Neglect

In most instances, attention can be drawn left visual space via motion or other salient stimuli

However, LVS will be ignored if not drawn there

Attention

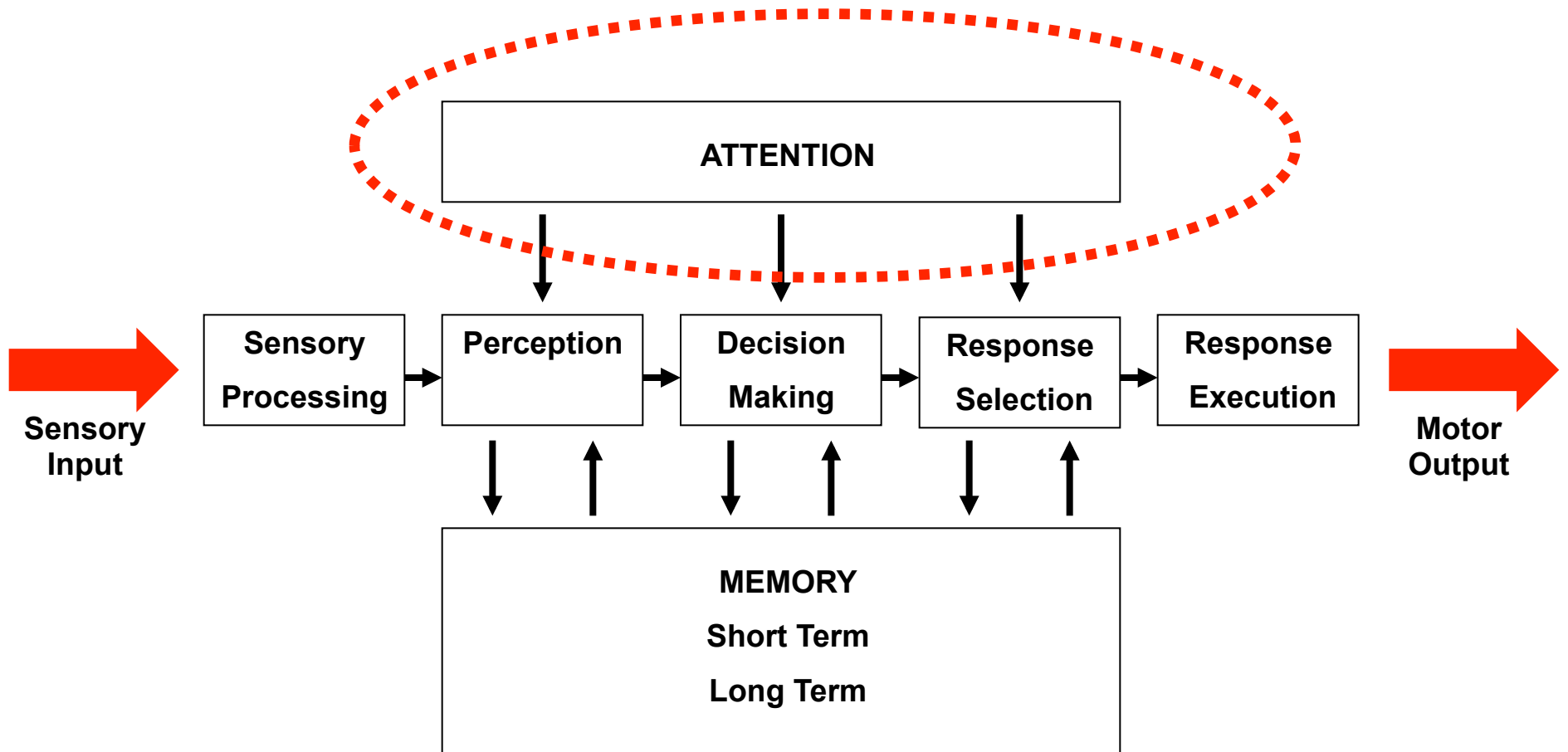






What is attention?

Information Processing



Movement of Muscles

Supplementary
motor area

Primary motor
cortex

Premotor
cortex

Parietal lobe

Perception of
space and
location of limbs

Plans for
movements

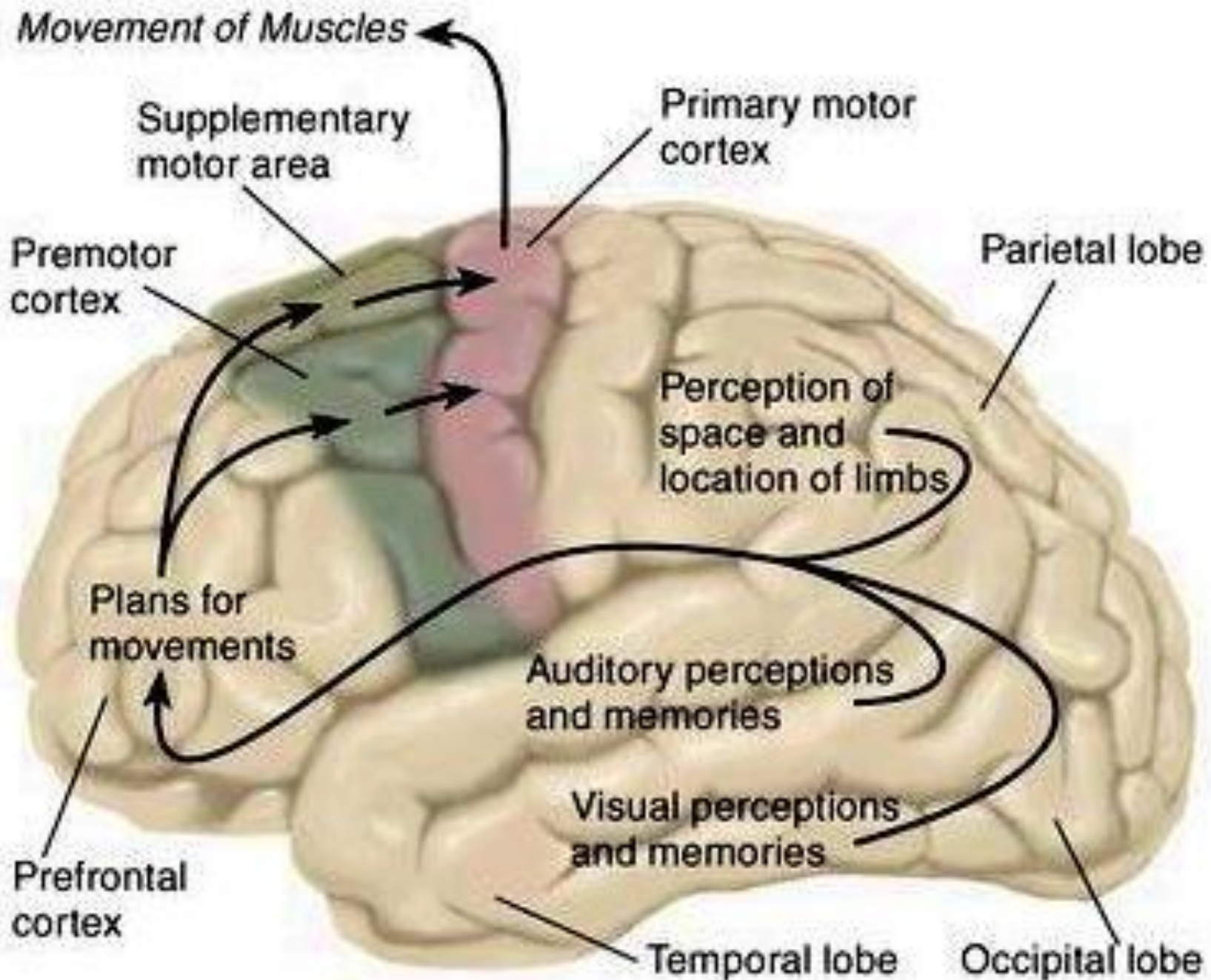
Auditory perceptions
and memories

Visual perceptions
and memories

Prefrontal
cortex

Temporal lobe

Occipital lobe

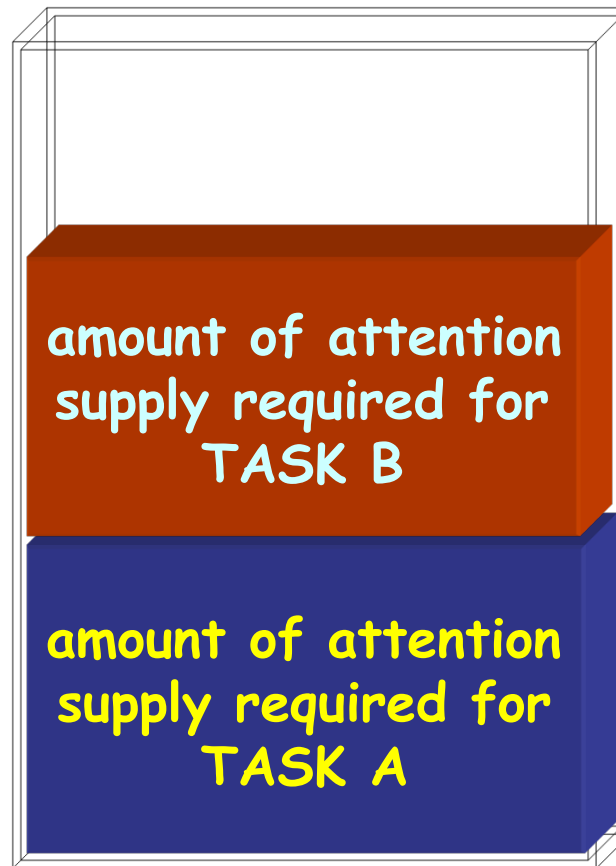


THE FOCALIZATION OF INFORMATION PROCESSING RESOURCES

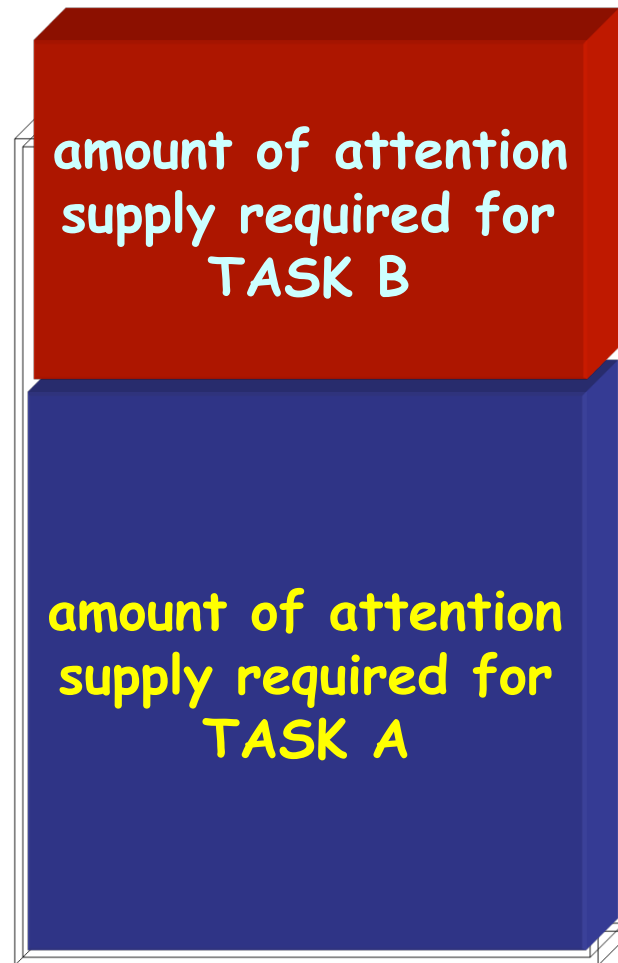
Cell phones are one of the most common distractions for drivers.

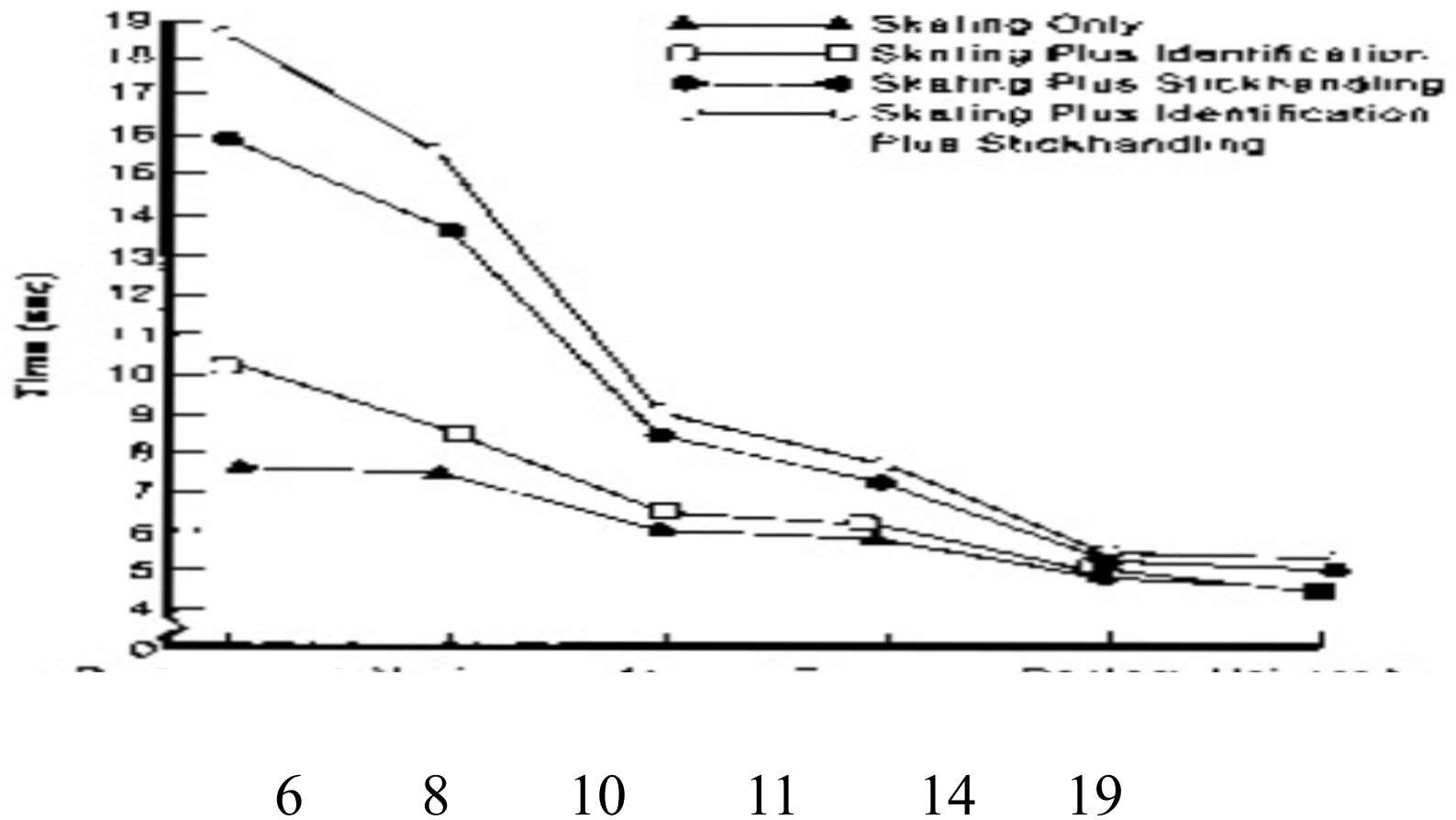
Drivers engaged in text messaging on a cellular phone are 23 times more likely to be involved in a crash or near crash event compared with non-distracted drivers.
(Virginia Tech Transportation Institute, 2010)

ATTENTION: TASK DEMAND



ATTENTION: TASK DEMAND



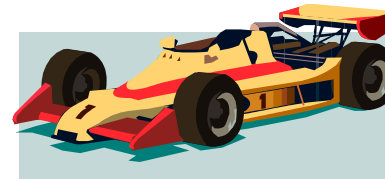
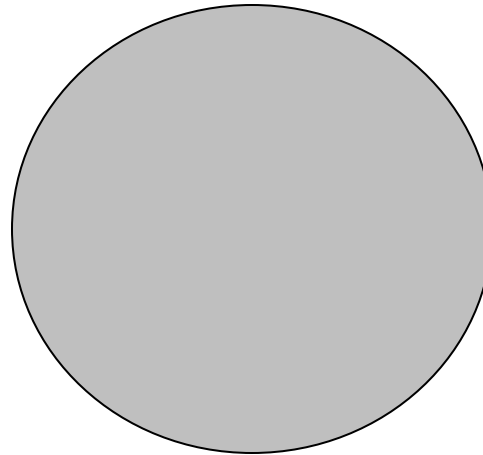


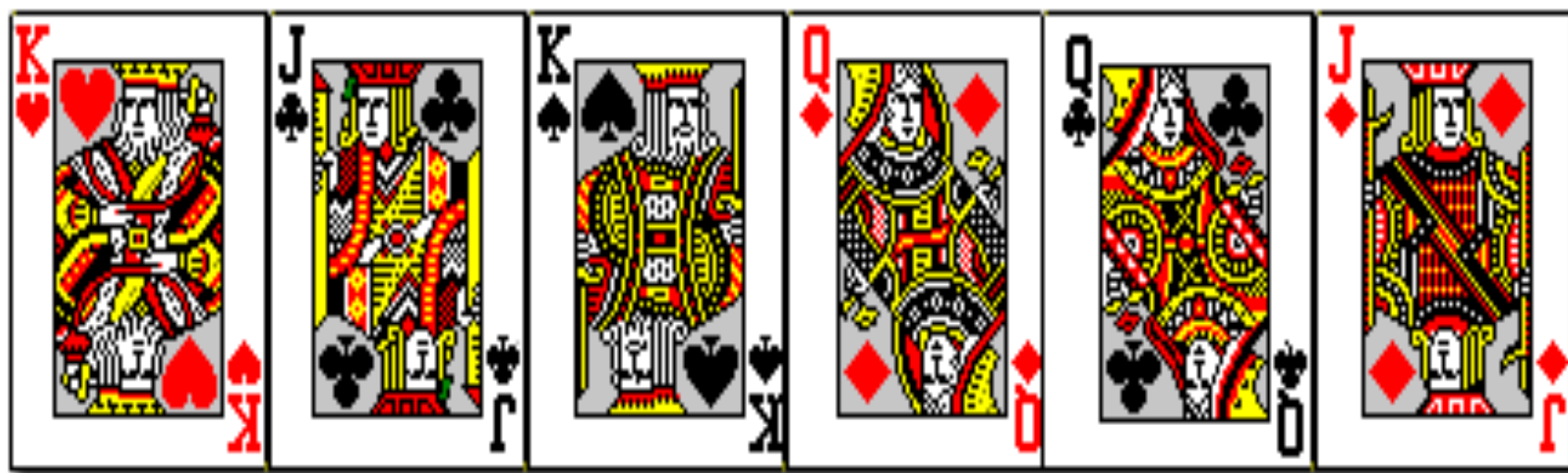
RESULTS:

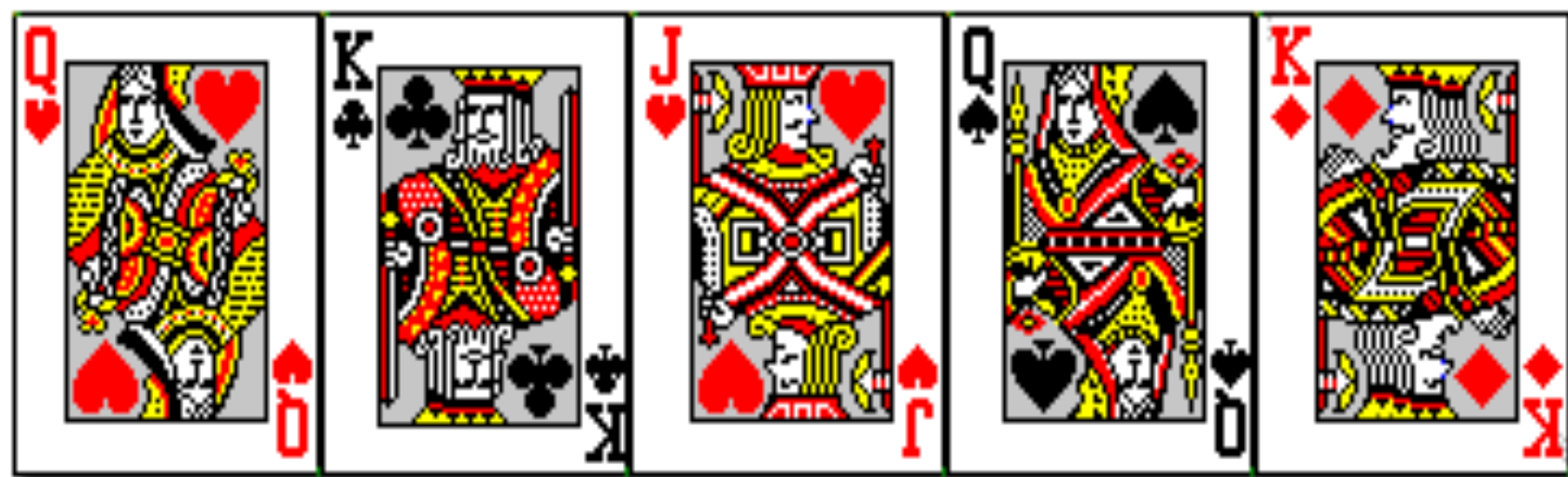
Age of Players

- Skating Speed impacted by Stick Handling task up to 14 yrs of age
- Thus, skating speed not automated

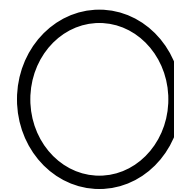
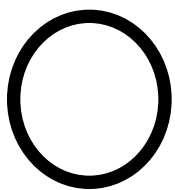
ATTENTION: SELECTIVITY

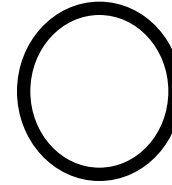
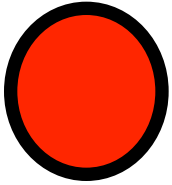


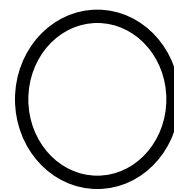
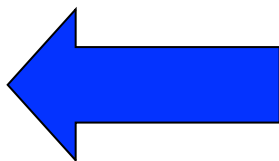
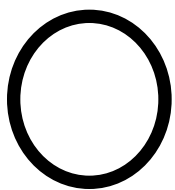


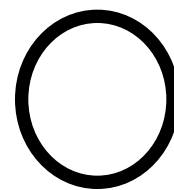
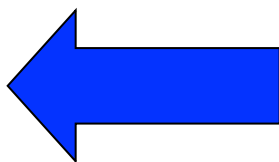
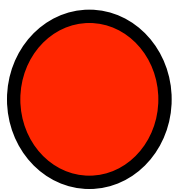


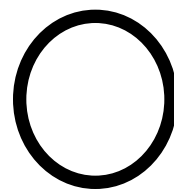
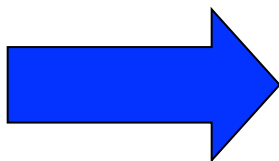
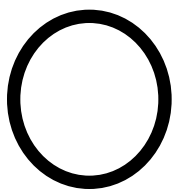
Researching Attention: The Posner Task

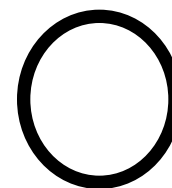
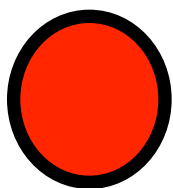




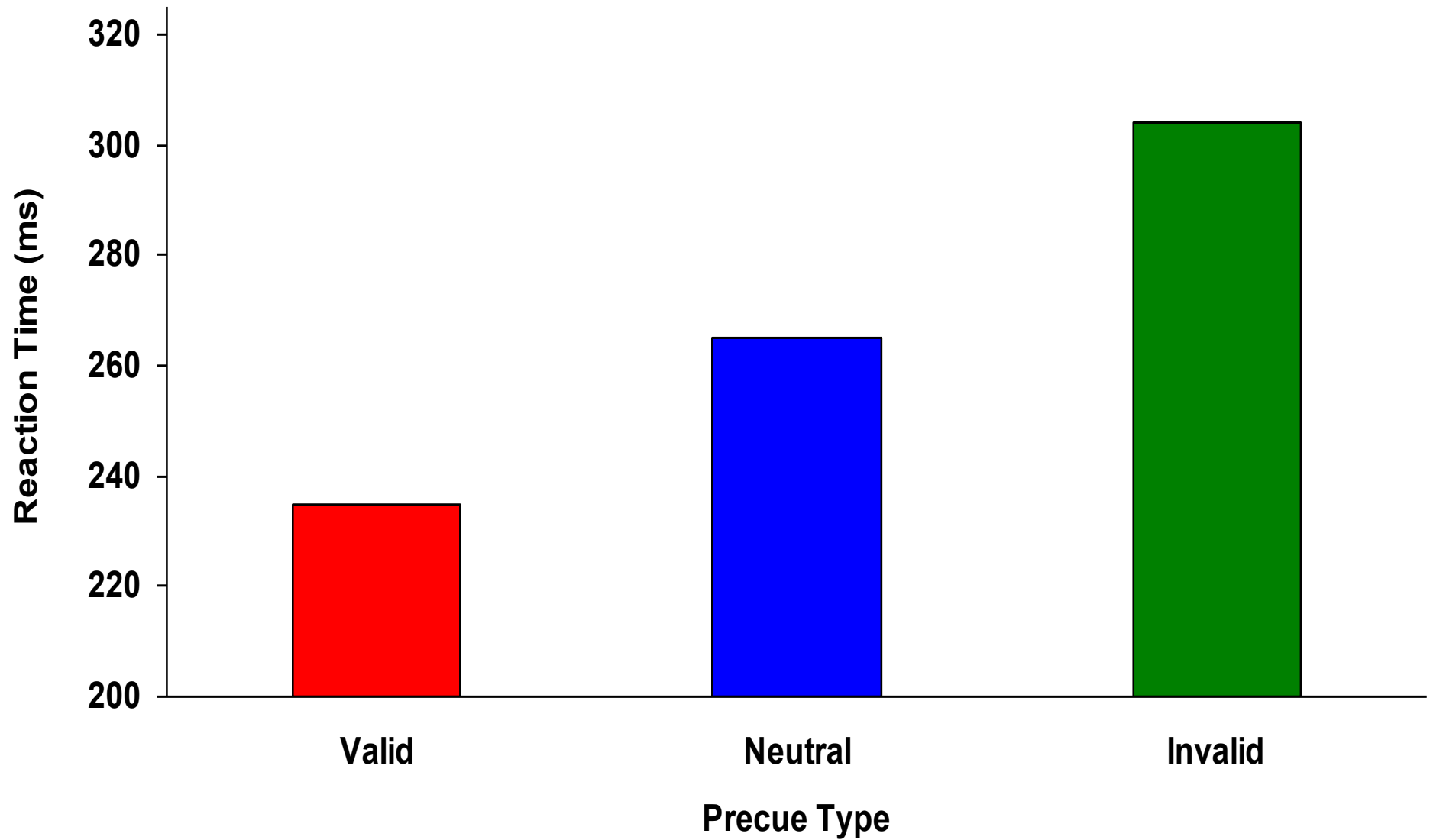


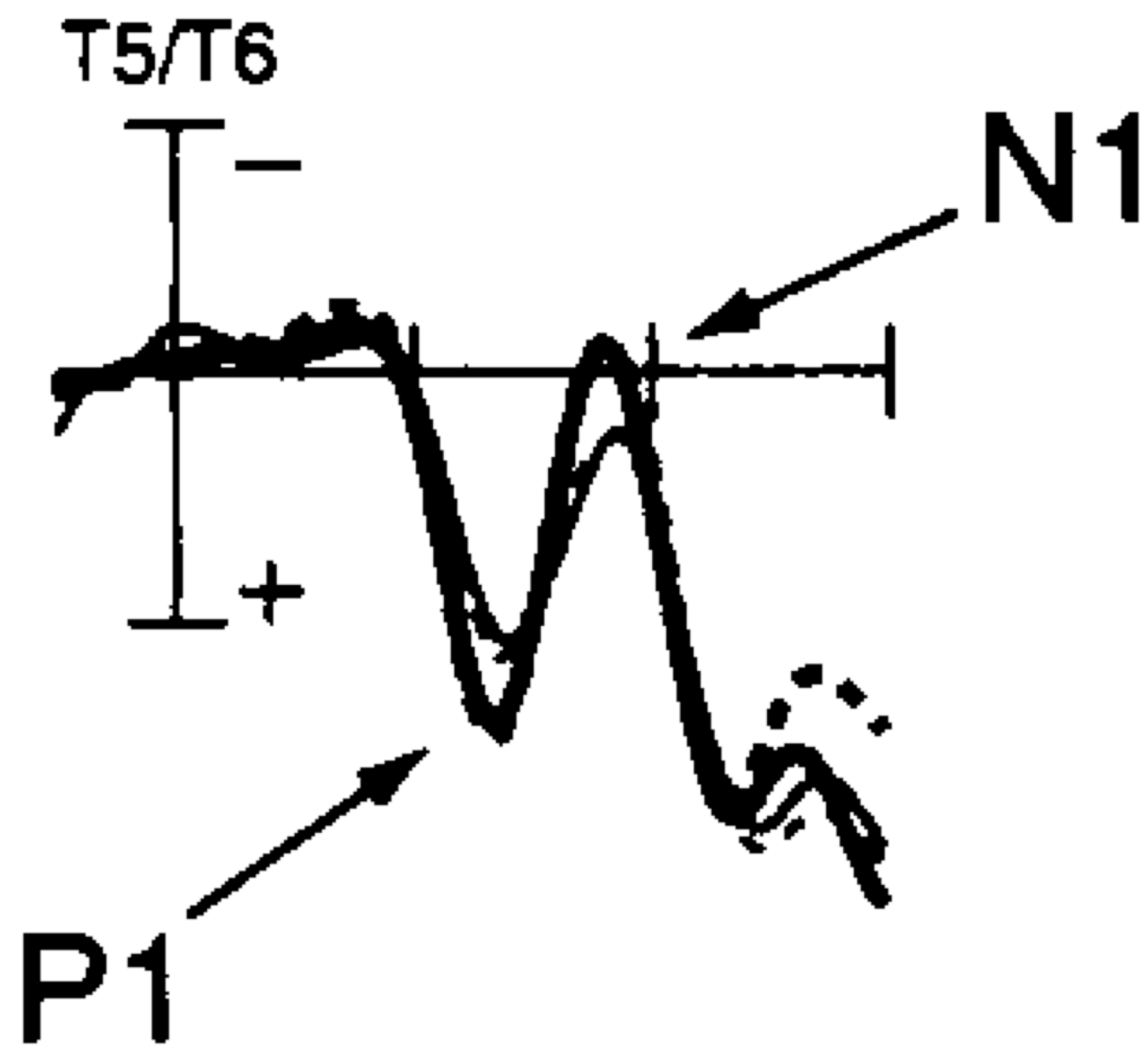






Posner, Missen, & Ogden (1978)



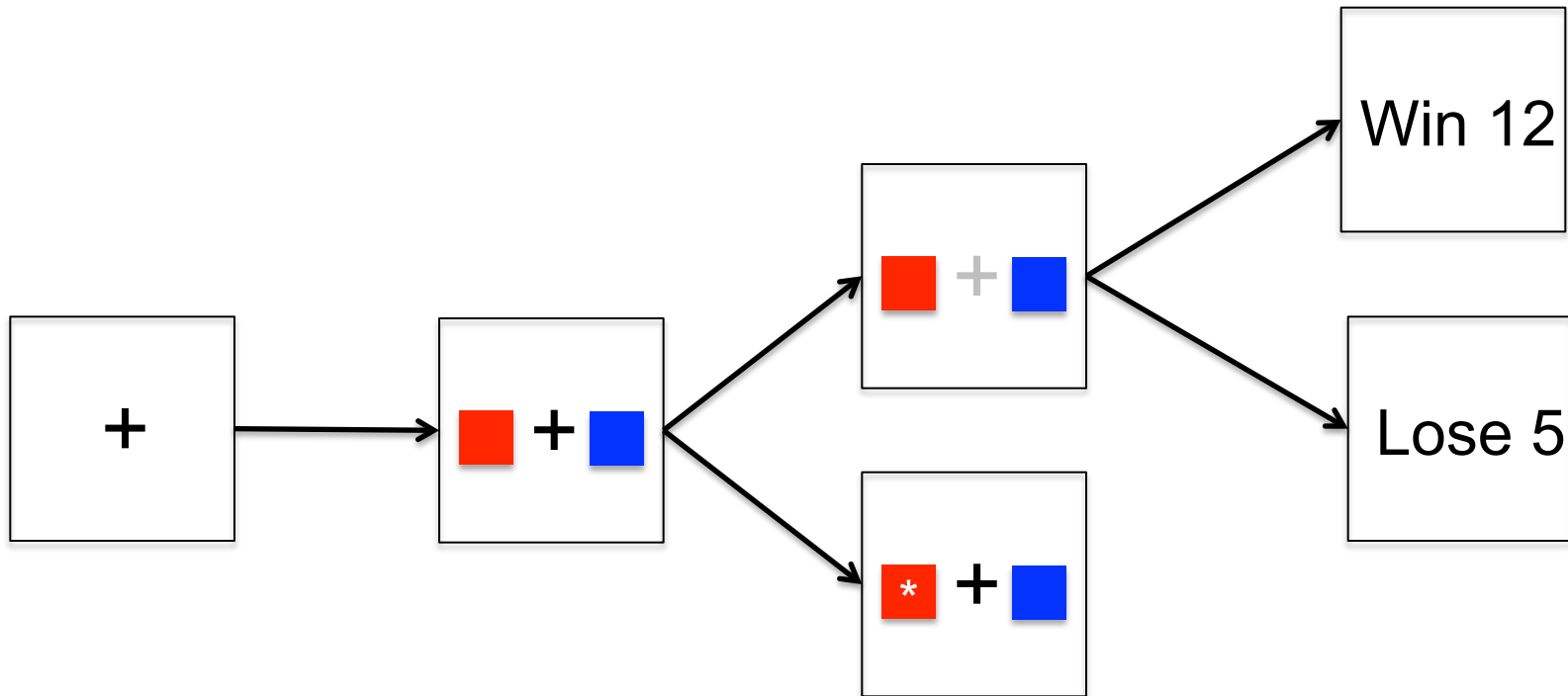


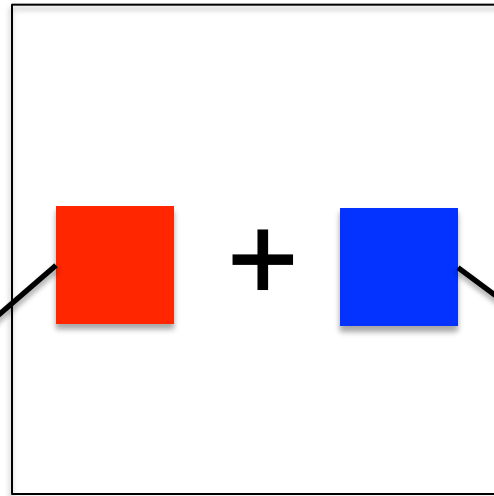
Attention and Learning



+

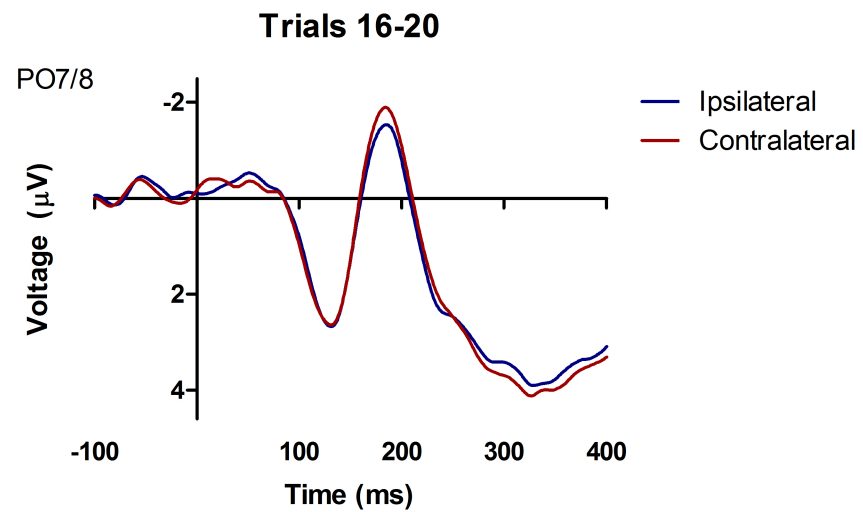
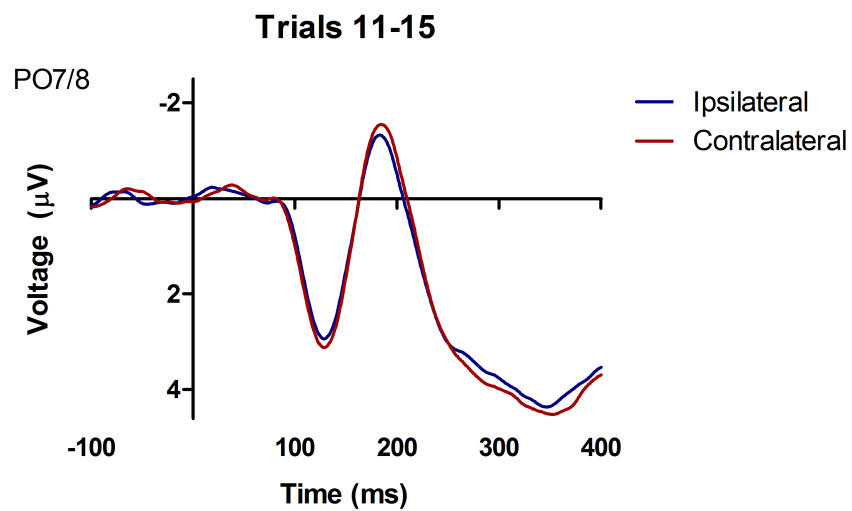
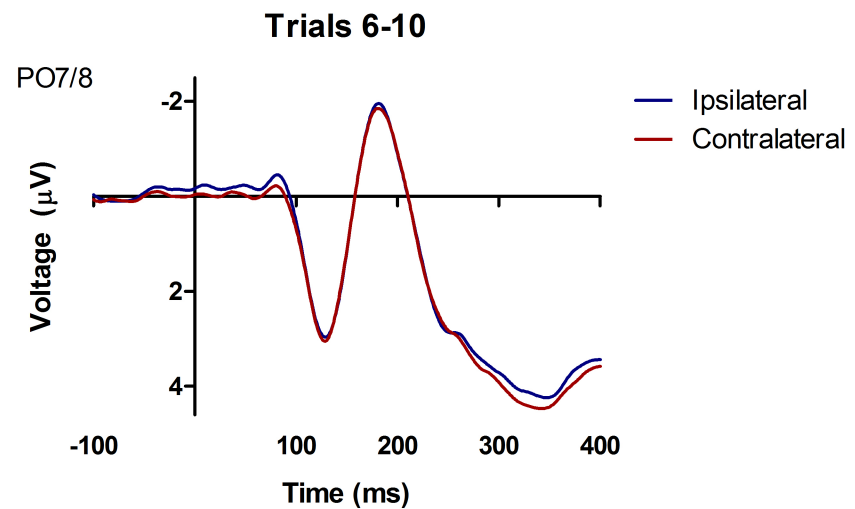
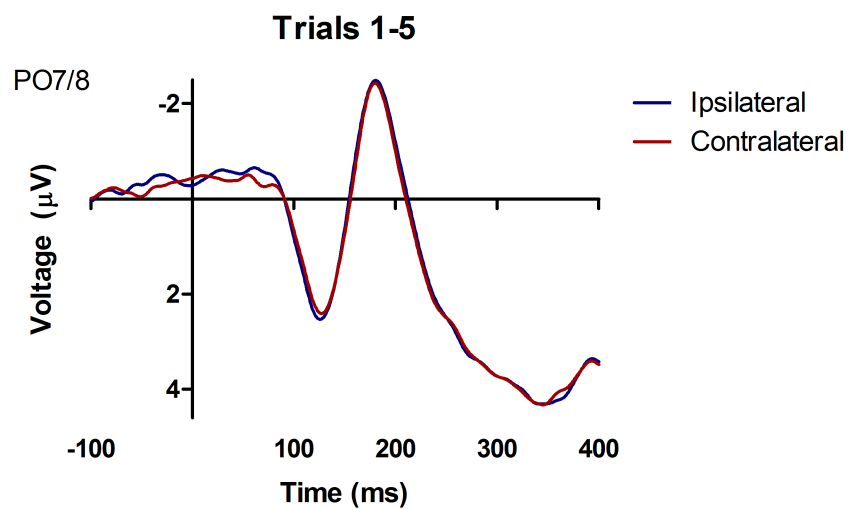






HIGH Value
-e.g. pays
out 12 most
of the time

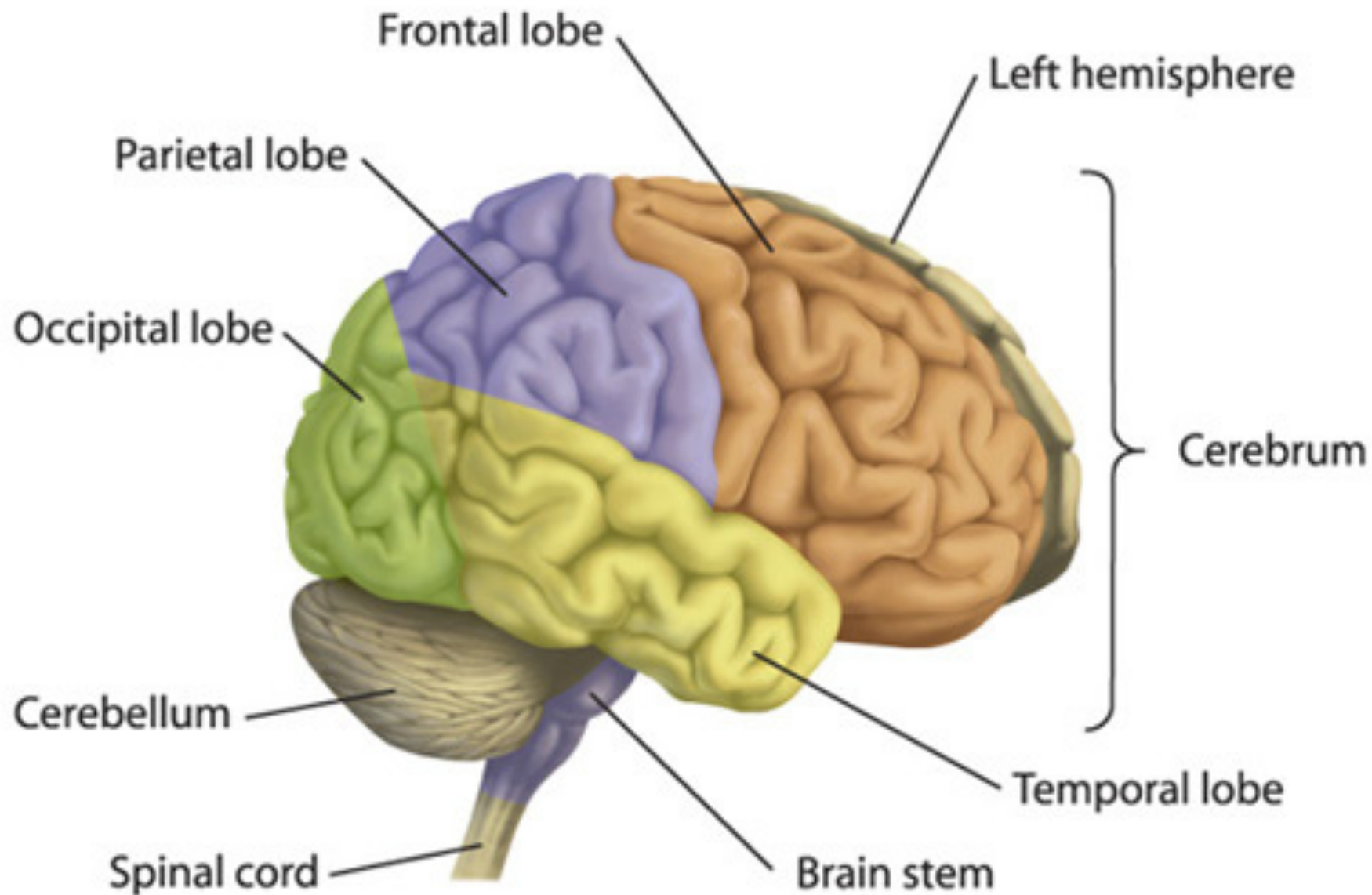
LOW Value
-e.g. pays
out 6 most
of the time

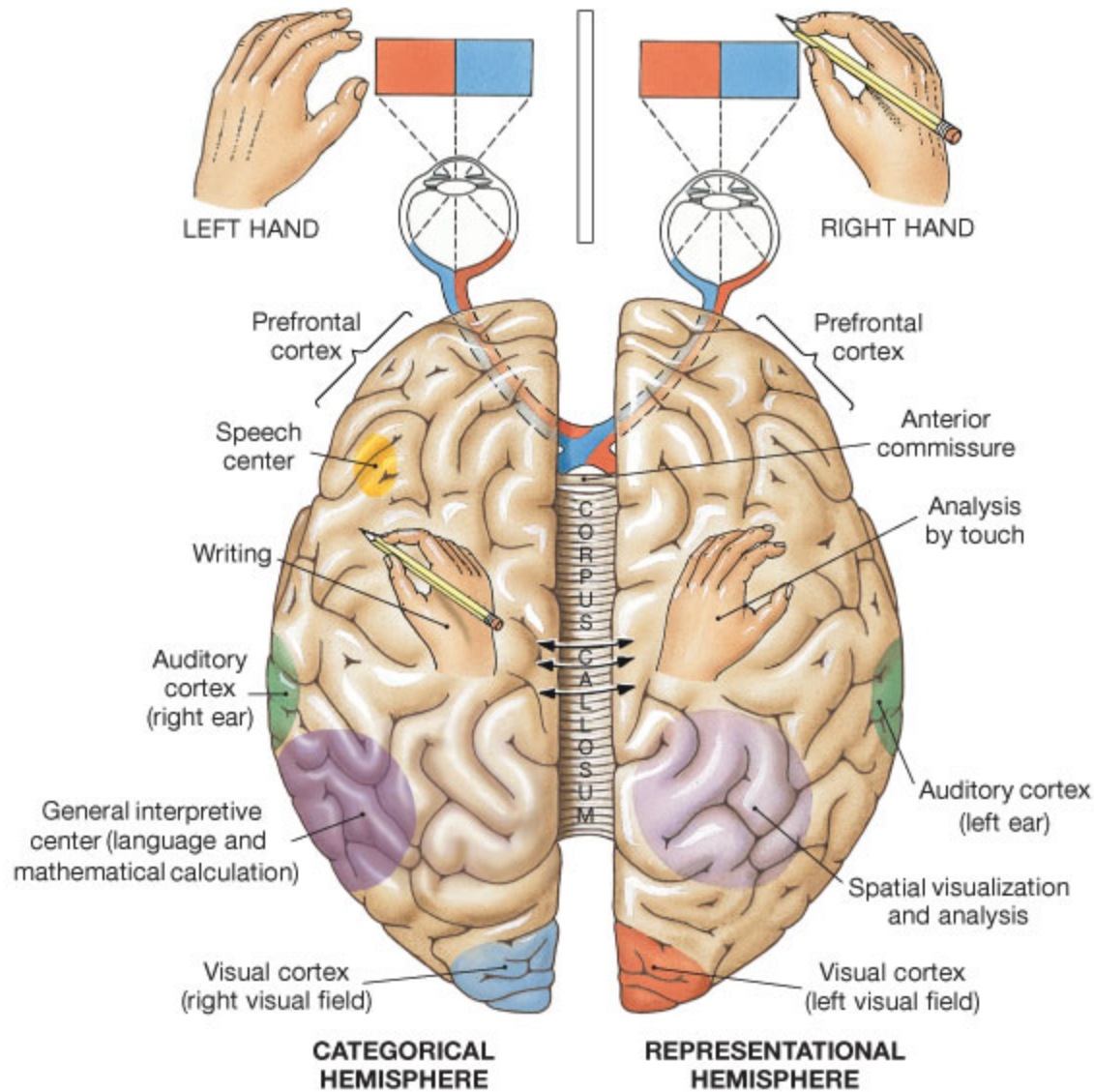


But what is the Neural basis of
attention?

Evidence from Neglect







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Specific Attention

General Attention

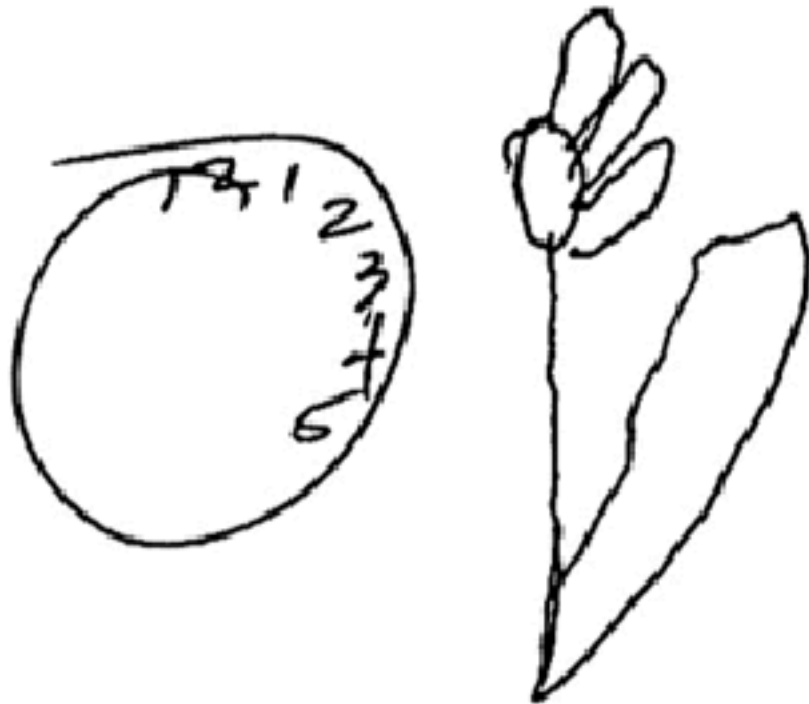
Neglect

Attentional deficit

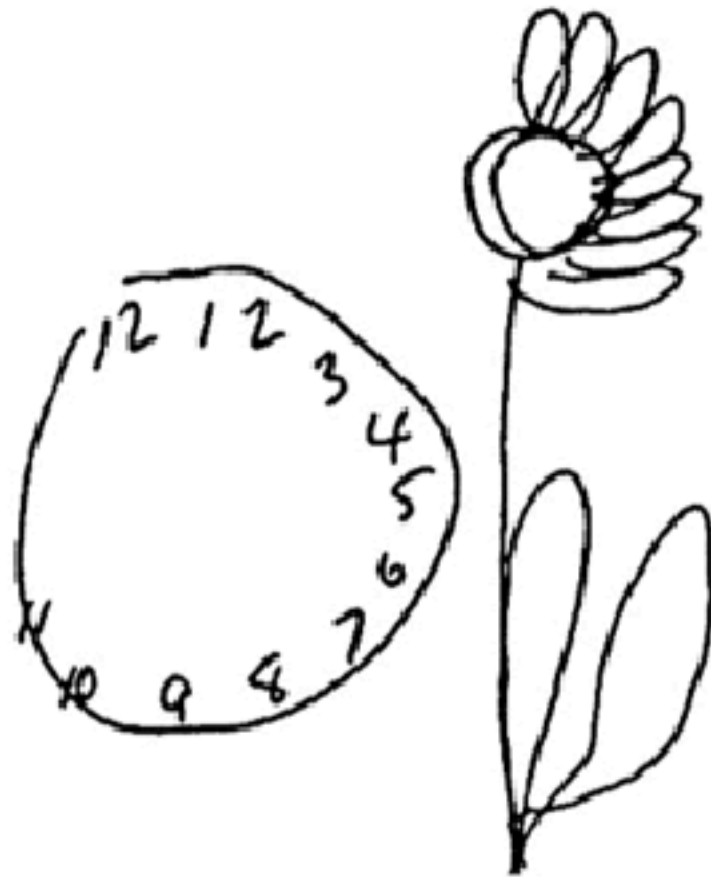
Ignorance of the left side of the world

“It just does not exist”

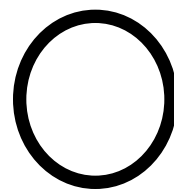
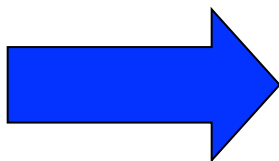
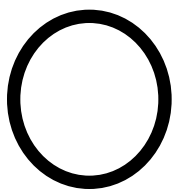
Patient A

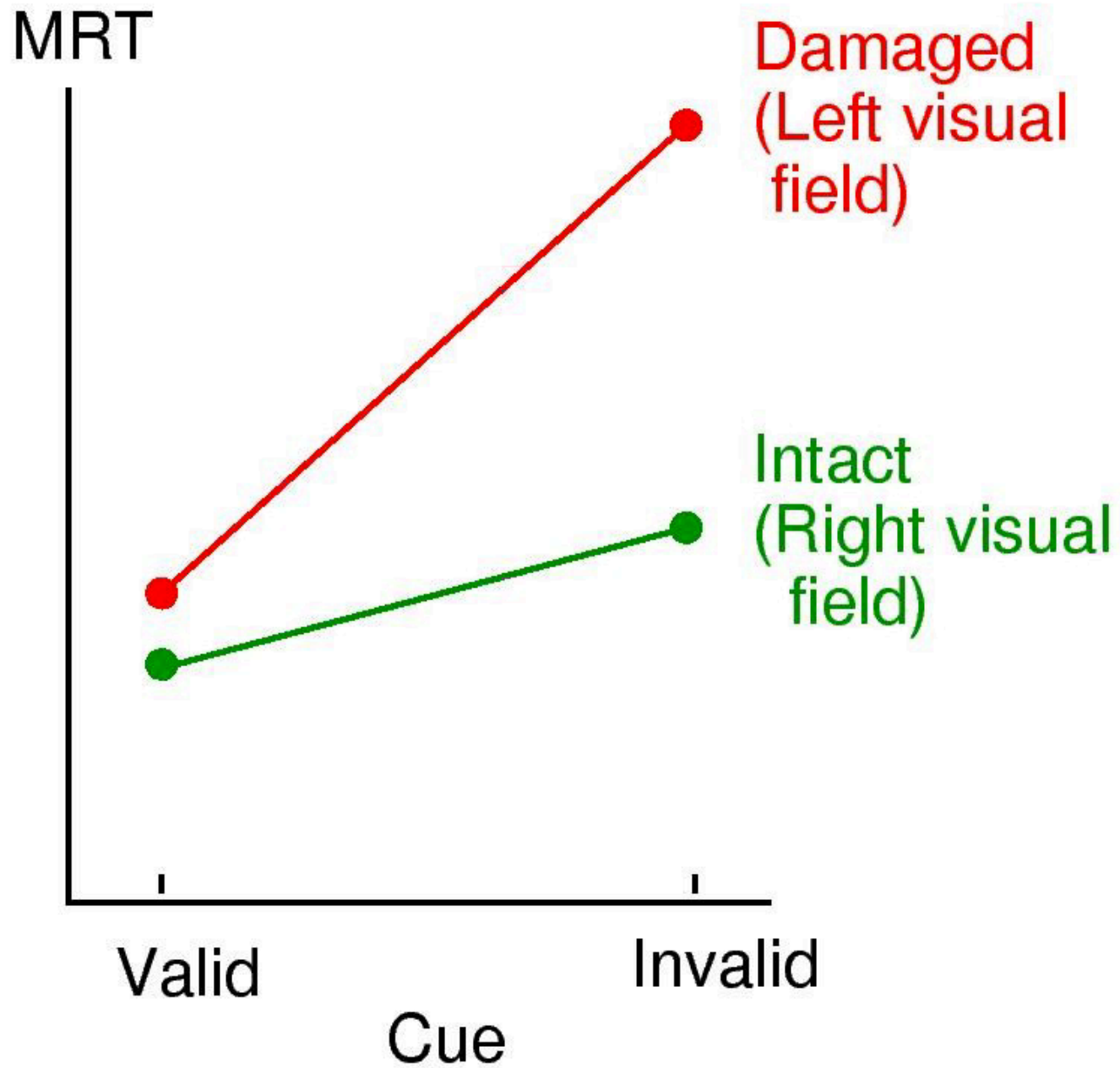


Patient B



Copies of a clock and a daisy





Anosognosia

Anosognosia

- typically presents as a lack of awareness of left side lack of function (the clapping test)
- also associated with denial or confabulation (excuses)
- lack of knowledge of left side of the world (the mirror test)

Blindsight

