

The Human Factor - Working with Users

Attention and Decision Making

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Relevant Learning Outcomes

- ❖ Understand:
 - ❖ The plethora of influences on decision making
 - ❖ The role of attention in information processing
- ❖ Remember:
 - ❖ Attention
 - ❖ Dual tasking
 - ❖ slips of action
 - ❖ sources of bias in decision making
- ❖ Apply:
 - ❖ Given a usage scenario, determine additional demands on a person's attention and check to what extent they might need to dual or multi task

Remembering Lists

- ❖ Y B C T Z I V X
- ❖ B B C I T V X Y Z
- ❖ BBC ITV XYZ
- ❖ two main UK TV stations followed by XYZ
- ❖ 6 1 4 9 1 5 7 0 1 5 6
- ❖ 61.491.570.156
- ❖ +61 (491) 57 01 56
- ❖ international code for Australia
mobile prefix
57 01 56

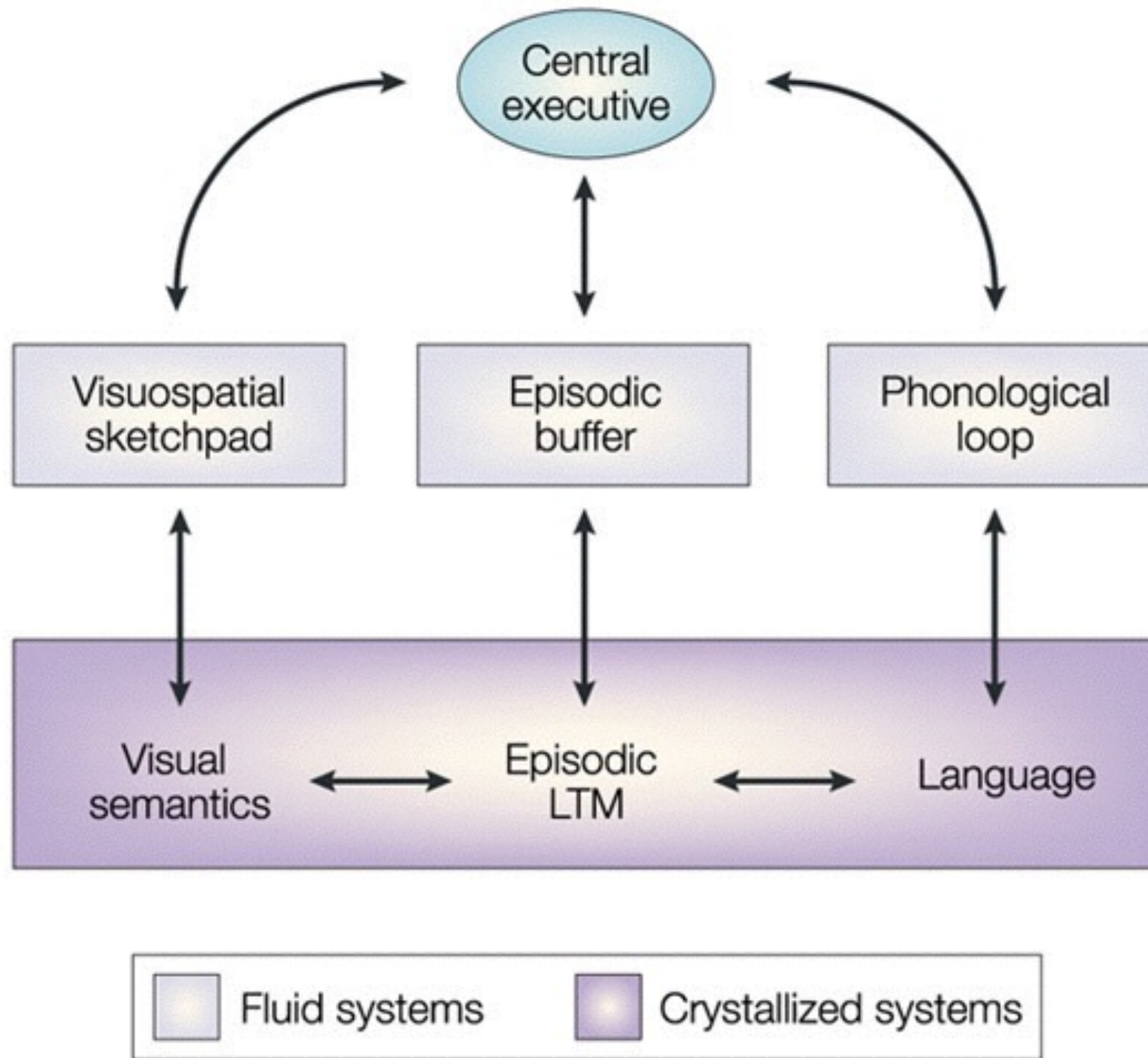
Attention and Working Memory

“working memory ... [can] act[s] as a global workspace that is accessed by conscious awareness” (Baddeley 2003)

attentional control is linked to conscious processing, as opposed to automatic or habitual control

Working memory: looking back and looking forward
Nature Reviews Neuroscience 4, 829-839 (October 2003)
[doi:10.1038/nrn1201](https://doi.org/10.1038/nrn1201)

Visual
input



Auditory
input

A model of Working Memory, from Baddeley (2003).
Fluid = short term, crystallised = long term

The Central Executive

- ❖ Attentional controller
 - ❖ focuses, switches, and divides attention
 - ❖ links working memory with long-term memory
- ❖ episodic buffer
 - ❖ workspace of attentional controller
 - ❖ where information is chunked together

Dual Tasking

- ❖ Requires switching attention
- ❖ Tasks are highly likely to interfere with each other, but easier when
 - ❖ different input buffers are used, e.g. looking for the bus (visuospatial) while listening to music (auditory)
 - ❖ one or both tasks are practiced / highly automatic
 - ❖ central executive functions well

Slips of Action

Slips of action occur when people act quickly and are not prepared to carefully think about actions and monitor the consequences of their behaviour.

Decision Making

- ❖ the result of problem solving
- ❖ often not rational
- ❖ faster when there are
 - ❖ fewer options
 - ❖ options are laid out to make deciding easier

Sources of Bias

- ❖ Existing Mental Models
- ❖ Existing understanding of the problem / the situation
- ❖ Overgeneralisation from one instance to all
- ❖ Availability (ease of recall / recognition)
- ❖ Framing (suggesting certain models / strategies)
- ❖ Feedback