

Today in a Nutshell

- ACT-R 5.0? Cool.
- Christian Le(t-go-of-my-)biere
 - dem buffers is where it's at
- Mike the Hand-Eye Guy
 - take this buffer and stuff it
- Dan the Man
 - hey, you gotta problem with the environment??

Perceptions and Ramblings

- **Unification across architecture components!!**
- **Parameter simplification!!**
- **Potential to better model real-world tasks**
- **Hmmmm...**
 - is ACT-R a theory or a tool?
 - cumulative progress vs. scientific revolution?
 - why ACT-R? why a cognitive architecture?
- **Interesting...**
 - PGSS *started* with ACT-R/PM!

For the next issues of Glamour & GQ...

What's Hot

buffers

buffer stuffing

embodiment

syntax

lightweight tools

environment

act.psy.cmu.edu

What's Not

stacks

production stuffing

"time now"

sin-tax

Interbook

environment

www.vanilla-ice.com

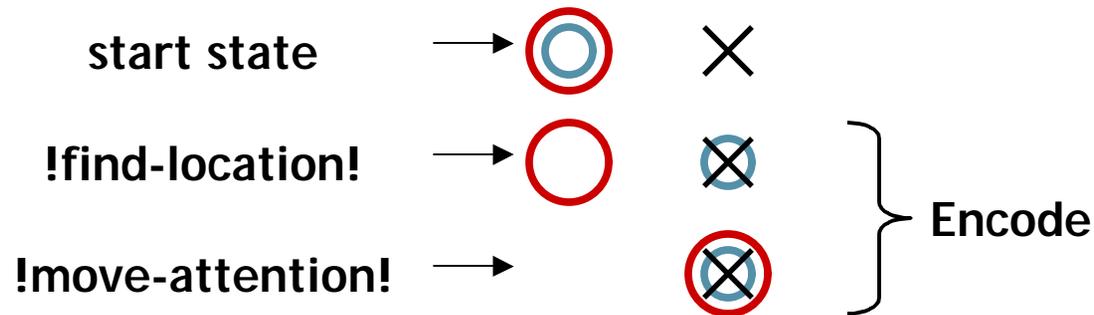
ACT-R 5.0 in the Real World

- **Seems well-suited (potentially) to handle real-world tasks**
- **Work in progress to 6.0**
- **A few points of discussion...**

Perception

- **Visual-location vs. visual-object**

- **two spotlights of attention??**

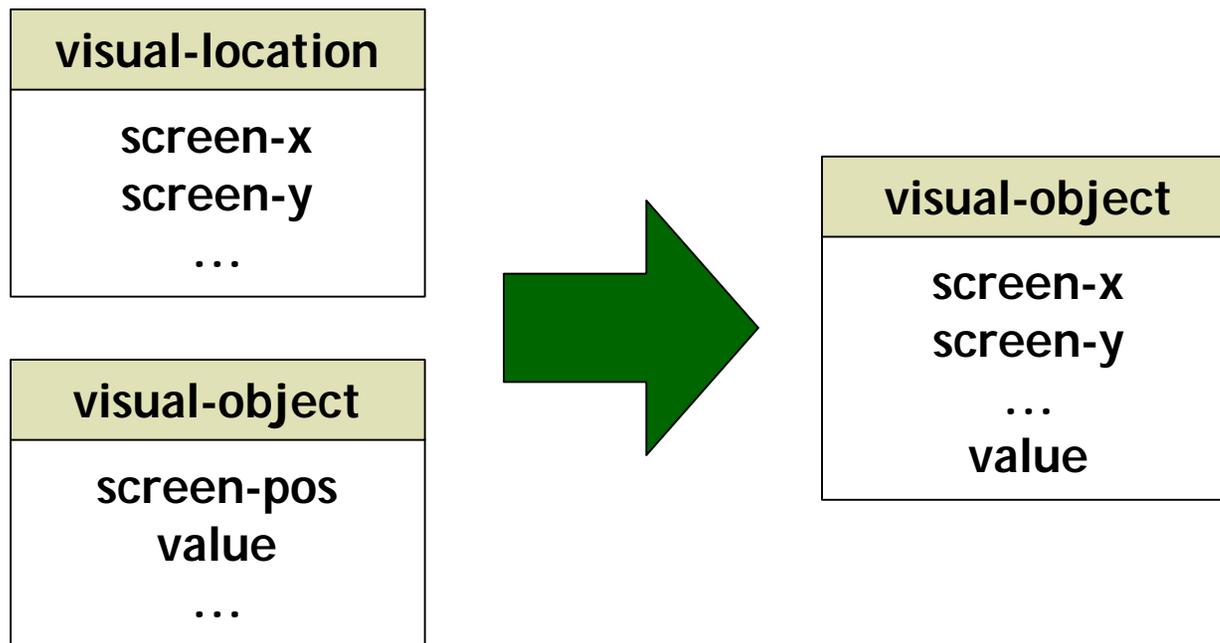


- **buffer stuffing**



Perception

- Combined visual object



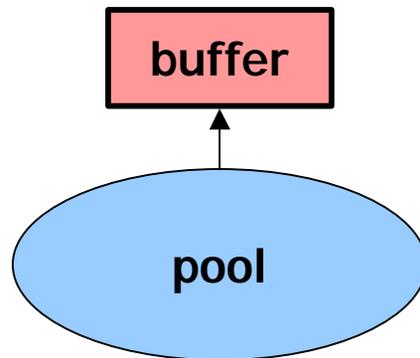
Perception

- Saliency map → what to attend, stuff, etc.
 - generalize to images, etc.



Multitasking

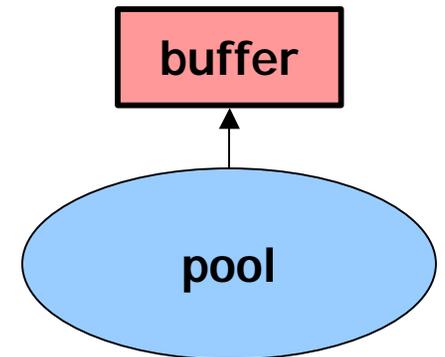
- Q: How can ACT-R perform multiple tasks?
- A/Q: What do other modules imply?
 - retrieval: set criteria, order by match score
 - goal: set criteria, order by priority



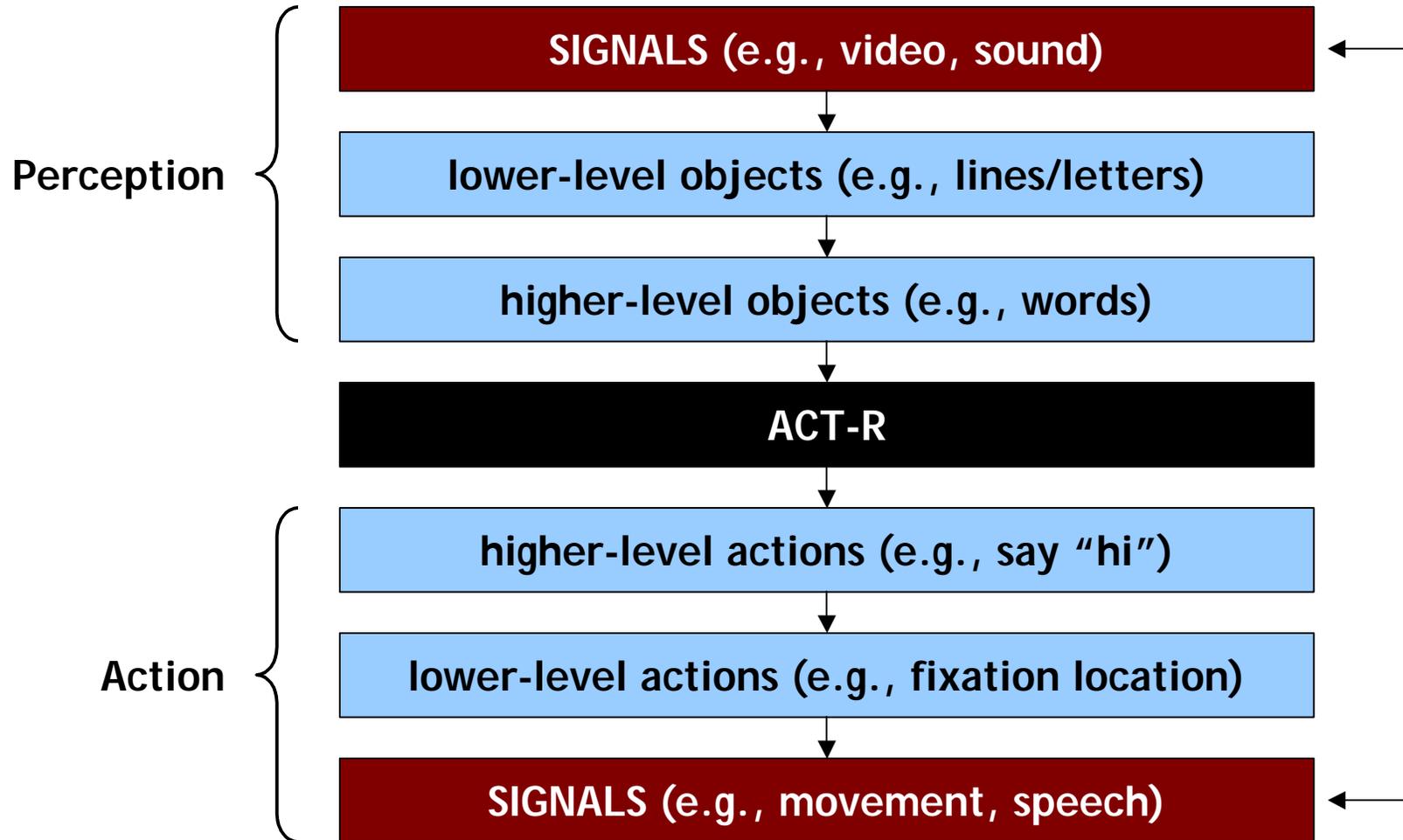
A Generalized View

- Top-down processes dictate criteria (if any)
- Bottom-up processes act on criteria (if any)
 - idle-time buffer stuffing for retrieval?? goal??

Buffer	Ordering	Criteria
retrieval	match score	variables
goal	priority	recency, etc.
visual-object	saliency	left/right, etc.



Embodiment



Individual Differences

- Real-world industry cares about individuals(' money)
- Sample differences:
 - age (young vs. old)
 - strategies (wander vs. ask)
 - personalities (passive vs. aggressive)
 - physical state (sleepy, drunk)
- Hardware & software differences !!

Education / Environment

- **Who is the user base?**
 - psychologists? programmers? engineers?
- **Programming language**
 - to most, LISP is dead
 - alternate versions? (non-ACT-R syntax?)
- **Environment is too heavyweight**
- **Why write a cognitive model at all???**
- **Selling ACT-R is difficult and brand-name-ish; selling *cognitive architectures* works!**