

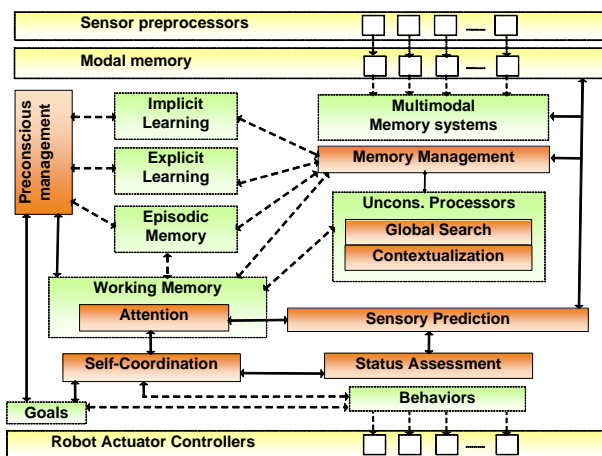
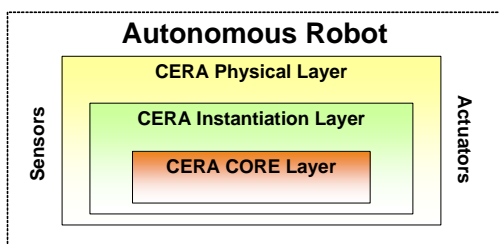
CRANIUM-CERA Cognitive Architecture

Raúl Arrabales, Agapito Ledezma, and Araceli Sanchis

CERA

(Conscious and Emotional Reasoning Architecture)

- Layered and Modular Design
- Layers:** levels of control: **Physical Inst Core**
- Modules:** key functionalities of consciousness.



CRANIUM

(Cognitive Robotics Architecture Neurologically Inspired Underlying Manager)

- Provides CERA with a brain system-level model
- Workspace:** global access to sensorimotor data.
- Specialized Processors:** *experts* that model different brain areas and form *coalitions*.

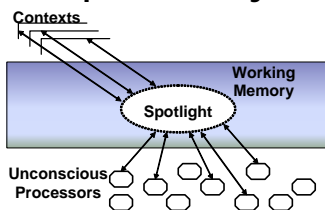
CERA Modules

- Attention
- Status Assessment
- Global Search
- Preconscious Management
- Contextualization
- Sensory Prediction
- Memory Management
- Self-Coordination

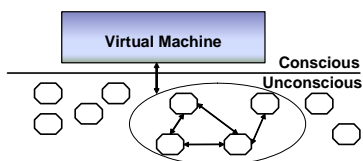
A-CONSCIOUSNESS

CRANIUM Model

- Based on Consciousness Theories
- Global Workspace Theory**



- Multiple Draft Model**



Application in Cognitive Robotics

- General Attention Mechanism
- Emotional Learning
- Robustness (inner state attention)
- Flexibility (generate new behaviors)

