Chapter 8: Control of Movement

General Principles of Motor Behavior

Skeletal Muscle Anatomy and Physiology

Proprioception and Reflexes

Control of Movement by the Brain

Movement Disorders

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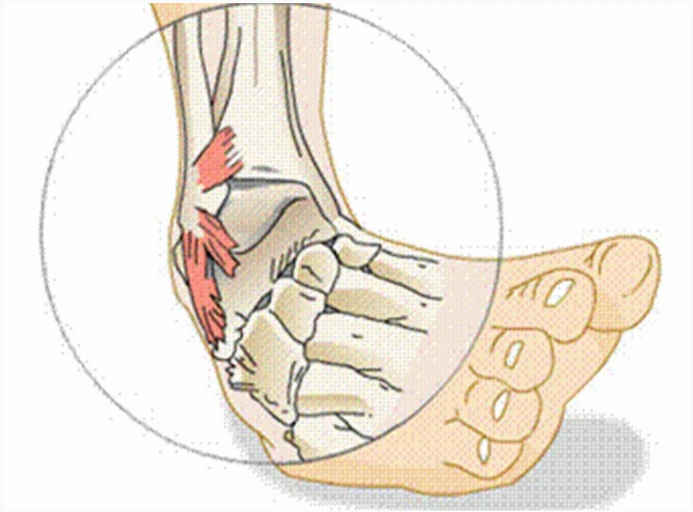
General Principles of Motor Behavior

Sensory Inputs Modulate Motor Behaviors.

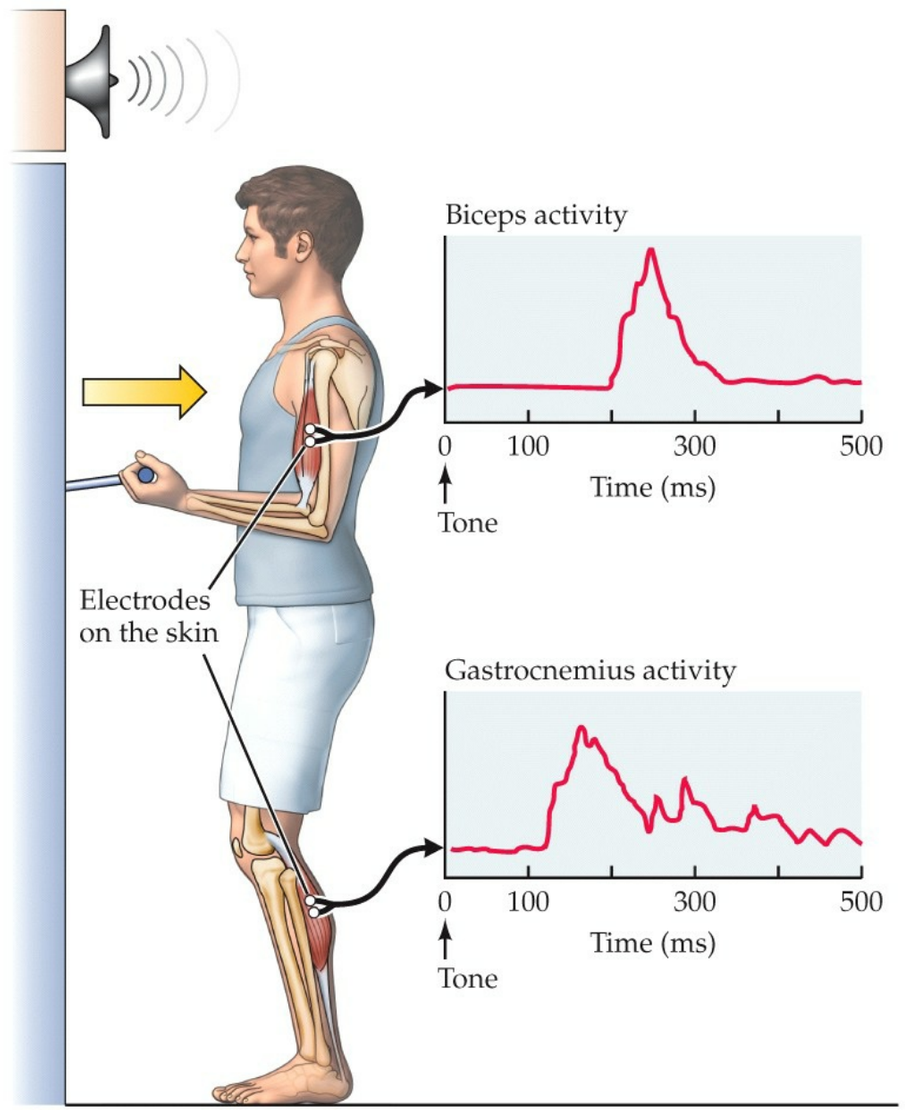
- walking along bumpy road, posture easily adjusted without thinking about it
- complex tasks require sensory feedback
- sensation ≠ awareness



General Principles of Motor Behavior

Motor Plan.

- complex set of motor commands prior to start of behavior



***BIOLOGICAL PSYCHOLOGY 7e*, Figure 11.2**

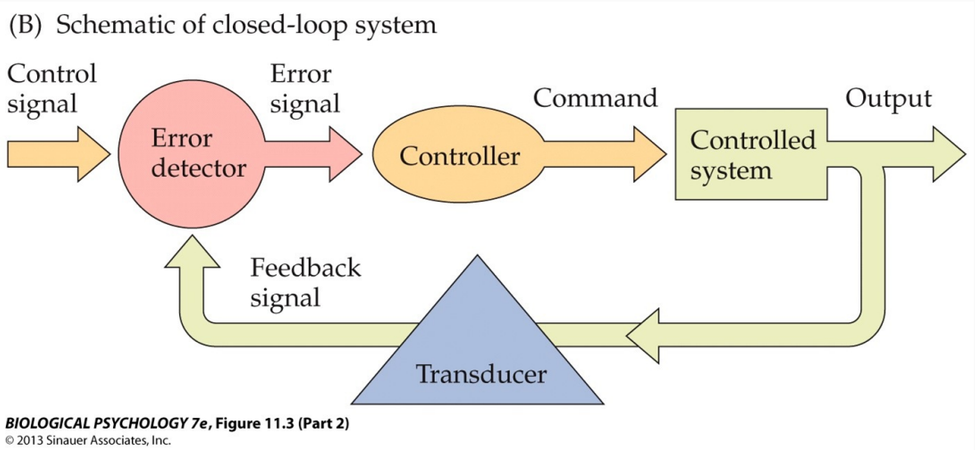
General Principles of Motor Behavior

Speed-Accuracy Tradeoff.

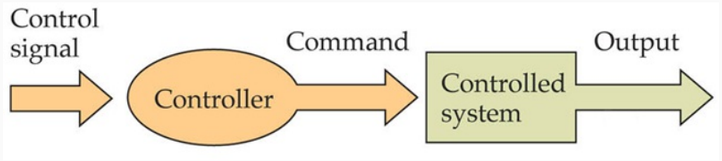
- higher speed = lower accuracy

General Principles of Motor Behavior

Feedback Control of Movement.



BIOLOGICAL PSYCHOLOGY 7e, Figure 11.3 (Part 2)



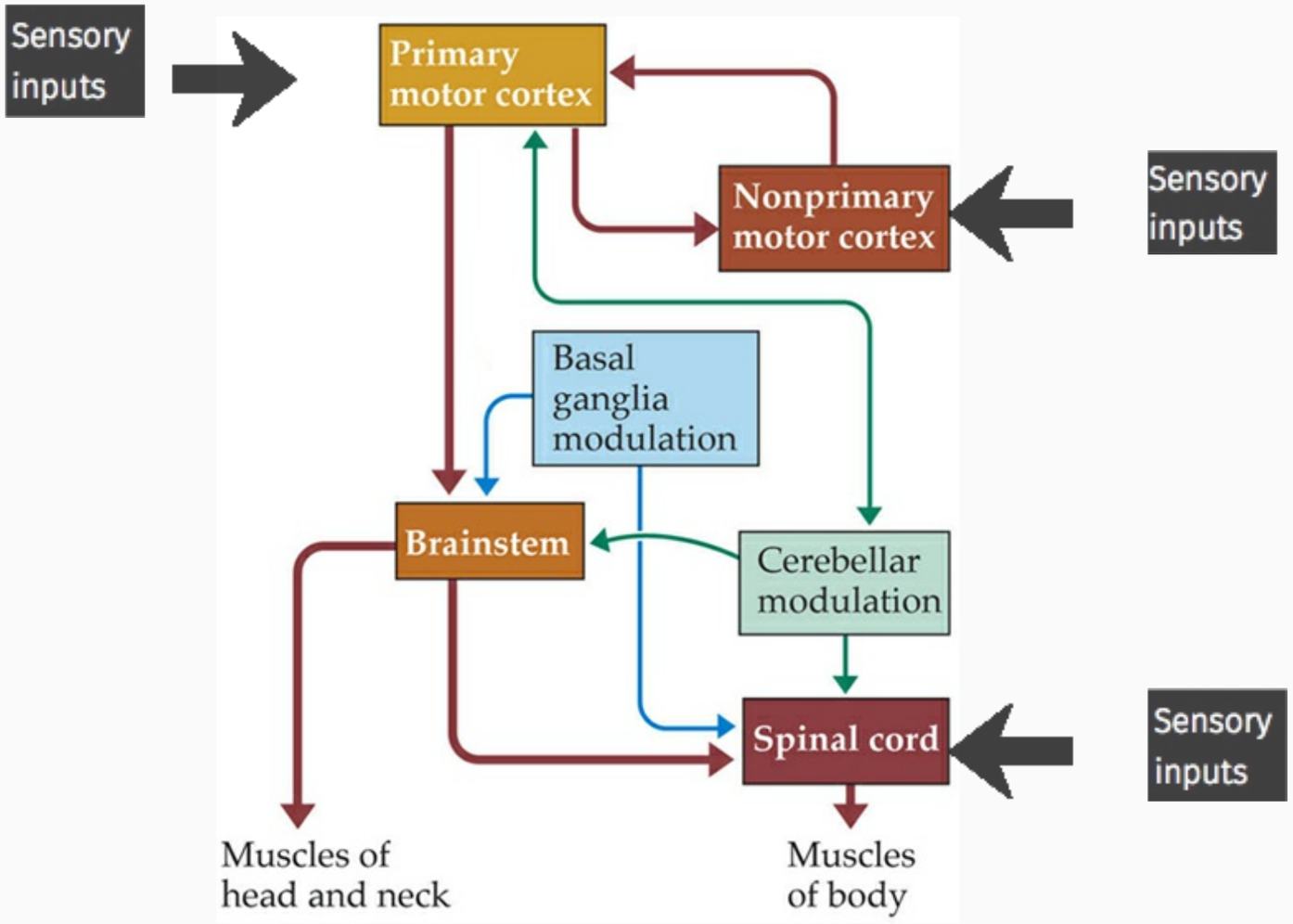
- **closed loop systems**:
- maximize accuracy
- continuous CNS and peripheral feedback allow corrections to regulate and adjust behavior

- **open loop systems**:
- maximize speed
- no external feedback
- no corrections or adjustments
- behavior is pre-programmed
- ballistic movements

General Principles of Motor Behavior

Feedback Control of Movement.

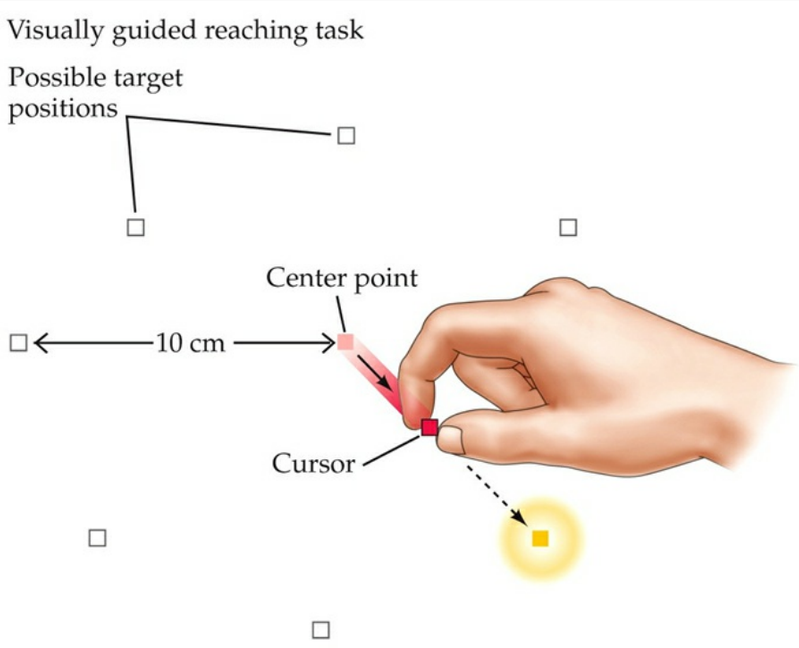
- combination of closed loop and open loop systems

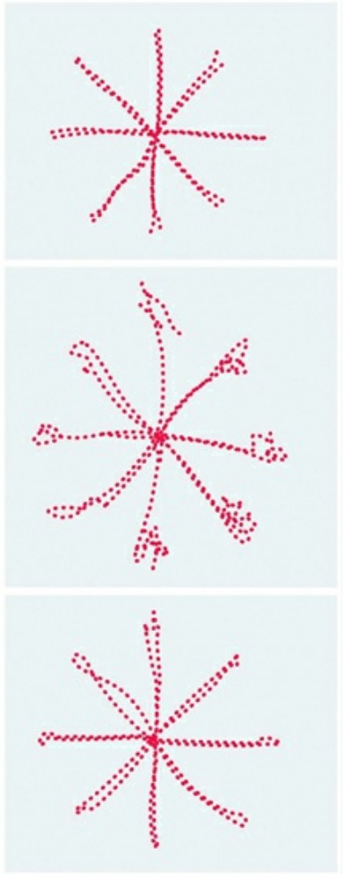


General Principles of Motor Behavior

Motor Plan.

- complex set of motor commands
- prior to start of behavior
- feedback fine-tunes the plan

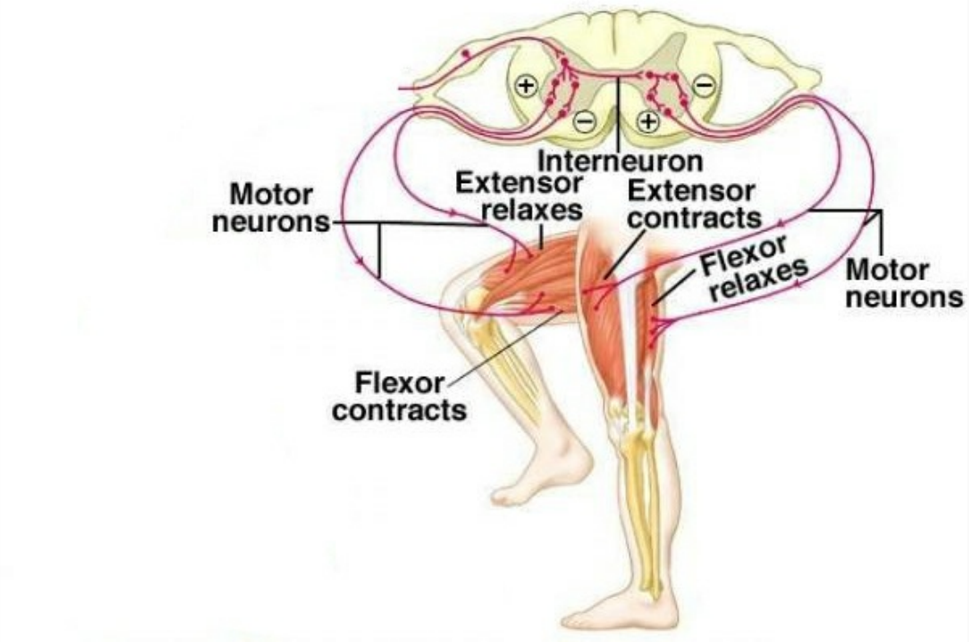




General Principles of Motor Behavior

Central Pattern Generators.

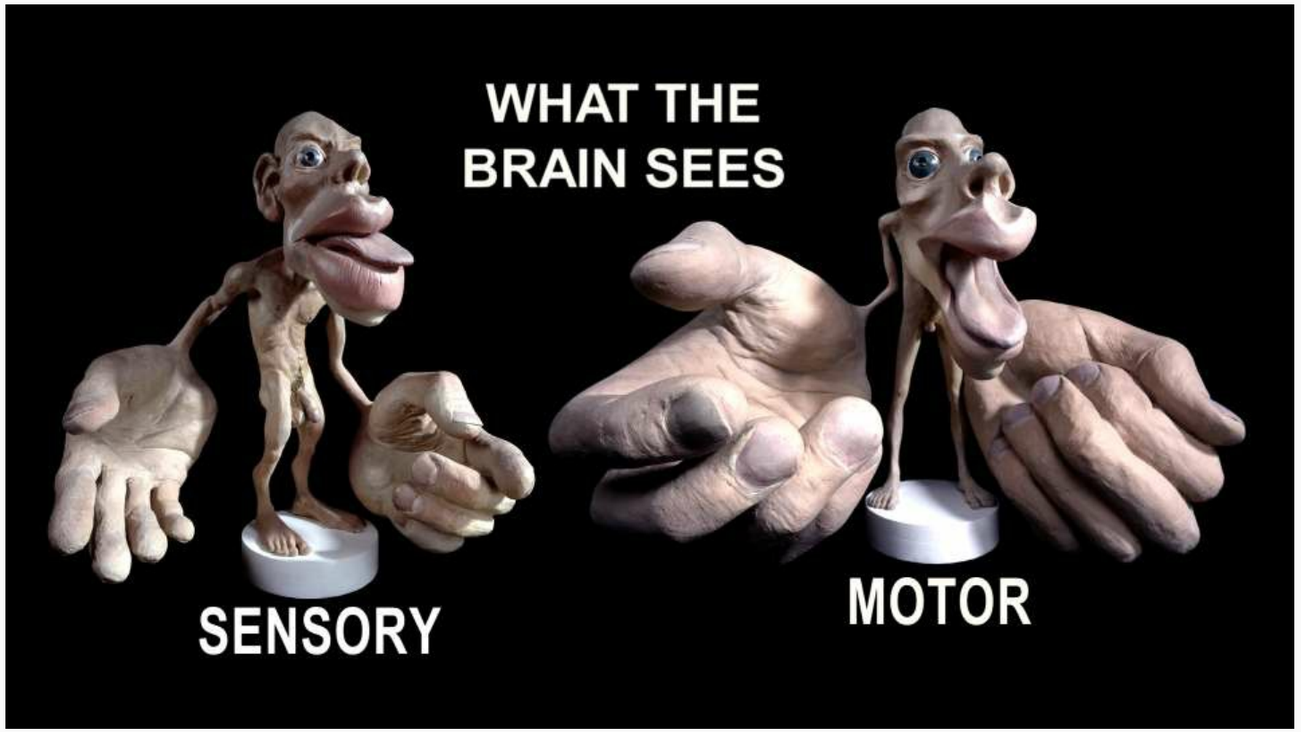
- rhythmic activity initiated and modulated by brain
- rhythmic activity fine-tuned by sensory input



General Principles of Motor Behavior

The Brain is a Sensorimotor Processor.

- rhythmic activity initiated and modulated by brain
- rhythmic activity fine-tuned by sensory input



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