Consciousness and Philosophy of Mind

Outline

- Consciousness & Sleep
- Philosophy of Mind
- Theories of Consciousness and Free Will

Consciousness

- Our moment-to-moment awareness of ourselves and our environment

- Characteristics of Consciousness
  - Subjective and private
  - Dynamic
  - Self-reflective and central to sense of self

Consciousness

- Consciousness is intimately connected with selective attention process
- Two notions of Consciousness
  - 1. General state of arousal (sleep vs. wakefulness)
  - 2. Attentional focus or current awareness (watching a game or listening to a friend)
- Measuring States of Consciousness
  - Self-reports
  - Physiological Measures
  - Behavioral Measures

Consciousness

- Levels of Consciousness (Freud)
  - Conscious
  - Preconscious
  - Unconscious
- Levels of C
  - Higher: Controlled Processing
  - Lower: Automatic Processing
  - Altered (Alternate) States of Consciousness (ASCs):
    - mental states, other than ordinary waking consciousness
    - These are found during sleep, dreaming, meditation, psychoactive drug use, hypnosis, etc.

TABLE 16.3 States of Awareness

Level or State	Description
CONSCIOUS STATES	
Delirium	Disorientation, restlessness, confusion, hallucinations, agitation, alternating with other conscious states; develops quickly
Dementia	Progressive decline in spatial orientation, memory, behavior, and language
Confusion	Reduced awareness, easily distracted, easily startled by sensory stimuli, alternates between drowsiness and excitability; resembles minor form of delirium state
Normal consciousness	Aware of self and external environment, well-oriented, responsive
Somnolence	Extreme drowsiness, but will respond normally to stimuli
Chronic vegetative state	Conscious but unresponsive, no evidence of cortical function
UNCONSCIOUS STATES	
Asleep	Can be aroused by normal stimuli (light touch, sound, etc.)
Stupor	Can be aroused by extreme and/or repeated stimuli
Coma	Cannot be aroused and does not respond to stimuli (coma states can be further subdivided according to the effect on reflex responses to stimuli)

Sleep and Dreams

- Circadian rhythm
  - the biological clock
  - roughly corresponds to 24-hour day/night cycle
  - cyclical bodily rhythms
    - wakefulness
    - body temperature

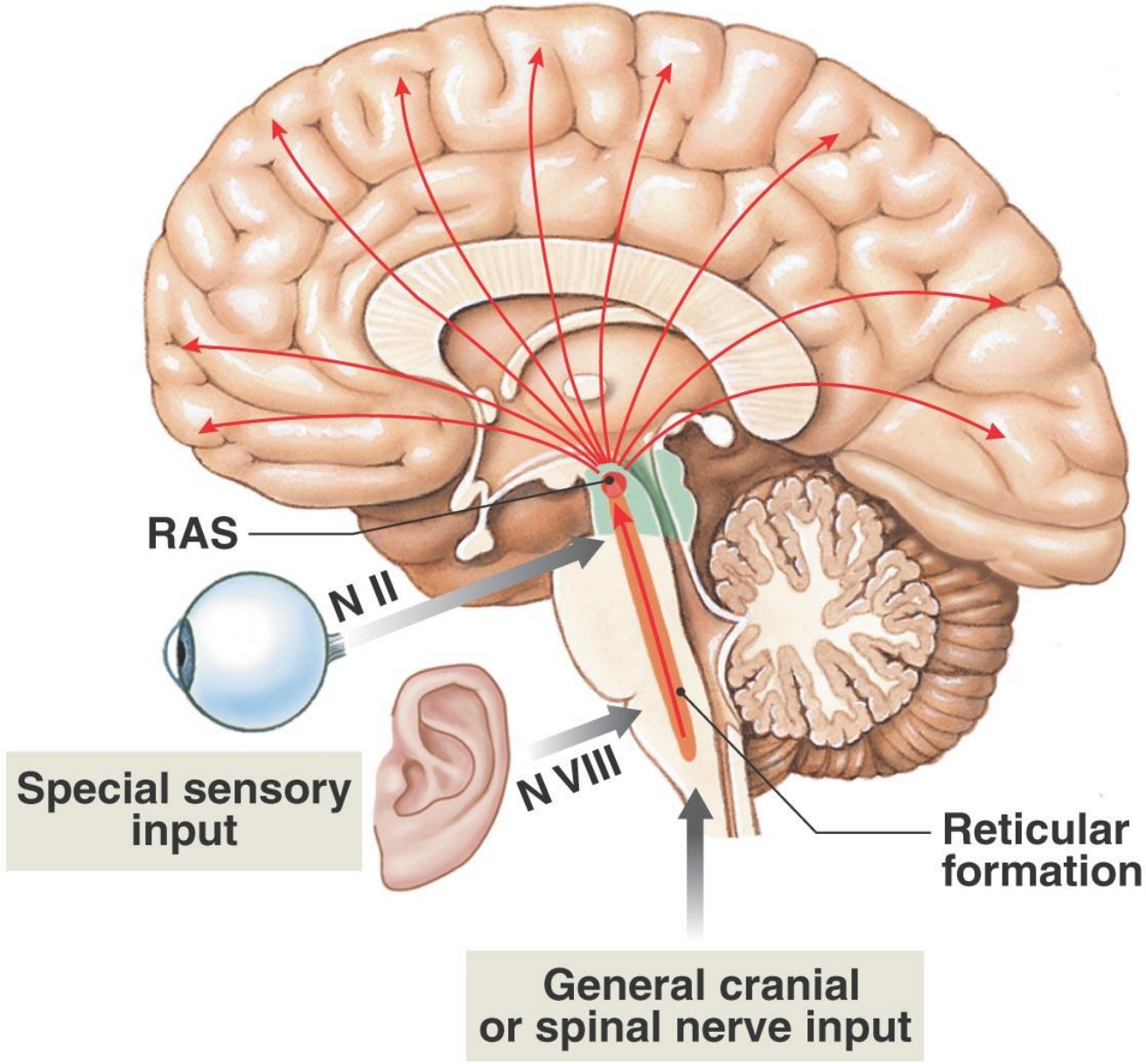
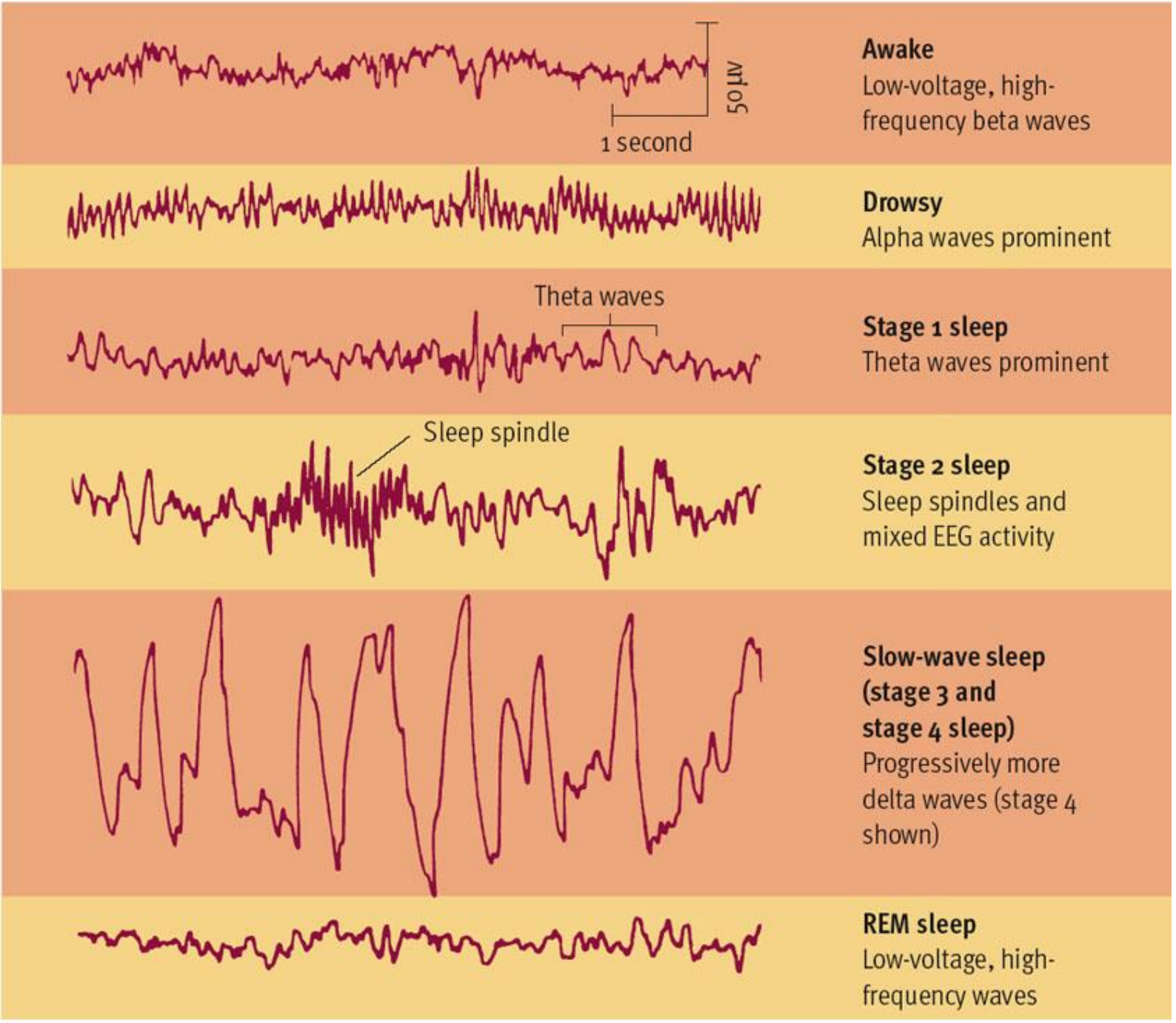


Fig 16.9

The Reticular Activating System

Sleep Stages

- Cycle through 5 sleep stages every 90 minutes
- Stage 1 Sleep
  - brief stage; sensation of falling
- Stage 2 Sleep
  - 20 minutes; spindles (bursts of brain activity)
- Stage 3 Sleep
  - brief; transitioning to deeper sleep
- Stage 4 Sleep
  - 30 min.; delta (large, slow) brain waves; deep sleep
- REM (Rapid Eye Movement) Sleep
  - 10 minutes; vivid dreams



β (13-24 Hz)

α (8-12 Hz)

θ (4-7 Hz)

δ (<4 Hz)

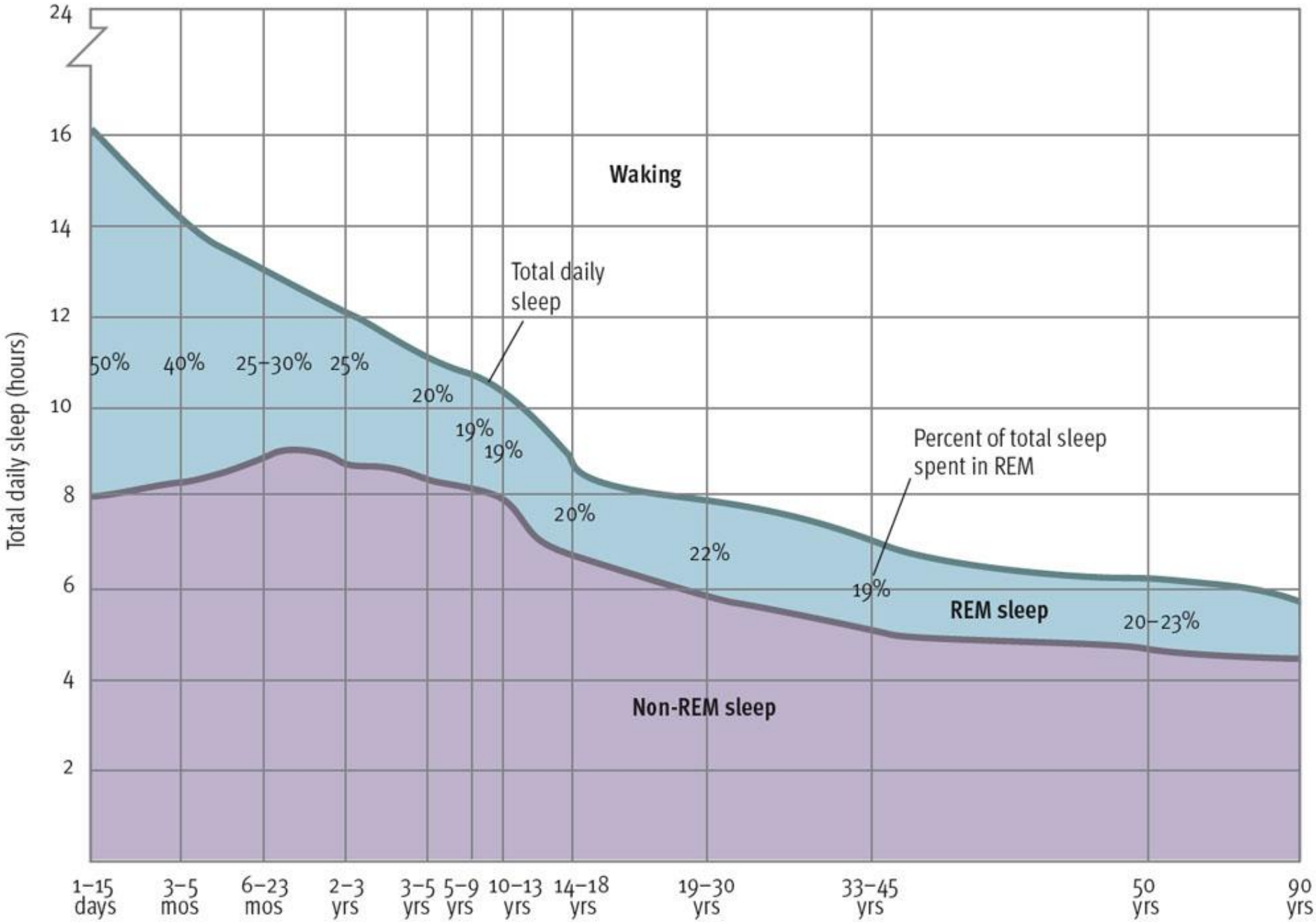
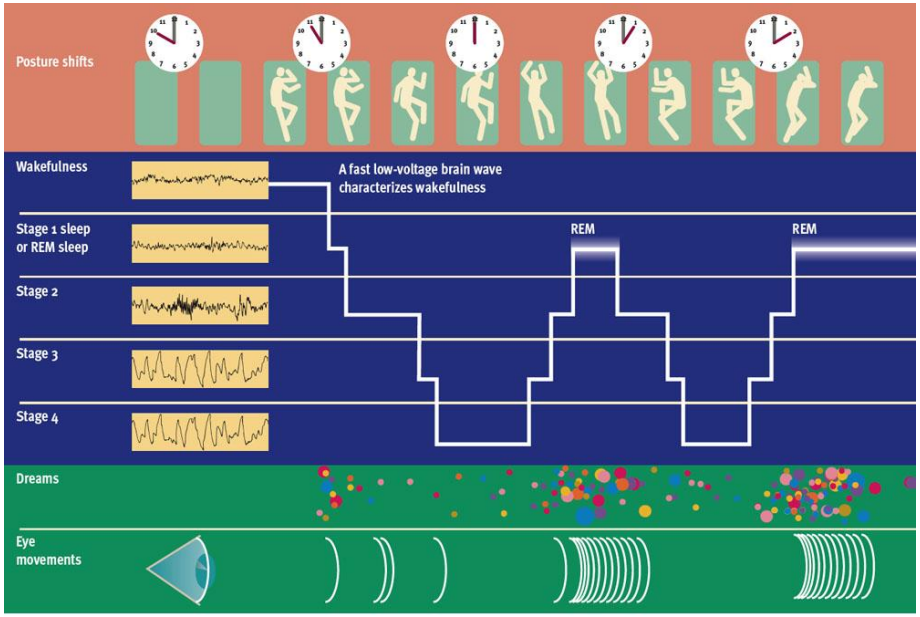


Fig. 5-6, p. 182



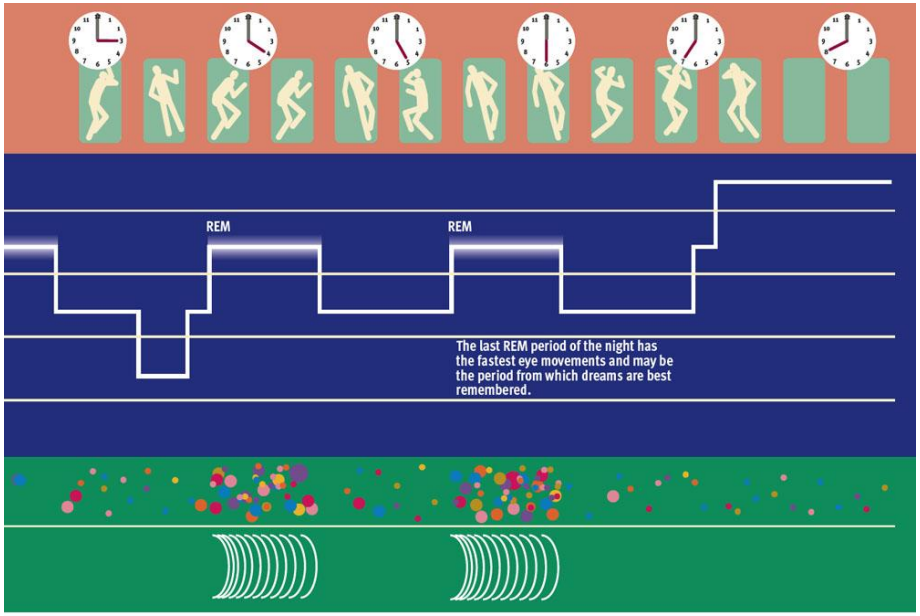


Figure 5.5 An overview of the cycle of sleep

Disorders of Consciousness

- Locked-in syndrome
  - The patient has awareness, sleep-wake cycles, and meaningful behavior (viz., eye-movement), but is isolated due to quadriplegia and pseudobulbar palsy -- cannot move or communicate verbally due to complete paralysis of nearly all voluntary muscles in the body except for the eyes.
- Minimally conscious state (MCS)
  - The patient has intermittent periods of awareness and wakefulness and displays some meaningful behavior.

Disorders of Consciousness

- Persistent vegetative state (PVS)
  - The patient has sleep-wake cycles, but lacks awareness and only displays reflexive and non-purposeful behavior.
- Chronic coma
  - The patient lacks awareness and sleep-wake cycles and only displays reflexive behavior.
- Brain death
  - The patient lacks awareness, sleep-wake cycles, and brain-mediated reflexive behavior.

Philosophy of Mind

"- What is Mind?

- No matter.

- What is Matter?

- Never mind"

Problems for PM

- **Philosophy of Mind (PM) Deals with**
  - **MIND-BODY PROBLEM**;
  - PROBLEM OF FREE WILL
  - WHAT CONCSIOUSNESS (MIND) IS?
  - HOW DOES CONCSIOUSNESS (MIND) WORK?

In some respect we can assume that three last problems are essential part of the first one.

Consc vs Mind

- MIND is more a psychological notion in cognitive or neuroscientific meaning
  - It refers to processes of thinking, processes which are running in brain and so on

- CONCIOUSNESS is more a phenomenological notion;
  - It supposes specific mental reality which presumably differs from physical reality.

Easy vs Hard Problems

- "How could a physical system be the sort of thing that could *learn*, or that could *remember*" (D. Chalmers) – **EASY PROBLEM**

- "How could a physical system be the sort of thing that could *experience* pain (*Qualia*)?" (D. Chalmers) – **HARD PROBLEM**

Mind-Body Problem (MBP)

- Generally Speaking PM covers two main problems:

1. **What is mind?**

and

2. **How is it connected with matter, namely a brain**?

PM

There **two general possible answers** to these questions:

1. **On the one hand**, we can assert that the mind it something material; therefore Mind is just a part of body.

    -- Ex. Physicalism, Eliminativism

2. **On the other hand**, it's possible to state that Mind is not a material or physical one; therefore, it's somehow connected with a body, but not reduced to it.

    -- Ex. Dualism

Theories of PM

- ***Physicalism,*** insists on a physical nature of the mind. Philosophers who support this theory try to prove that mental states and physical states are the same, but because of number of errors (for example of language), we face the delusion that there are two realities – physical and mental.

Theories of PM

- ***Dualism,*** rejects a physical nature of the mind and states that mental states are nonphysical. That means that these states are supposed to be independent and non-reducible to the physical processes. If so, we must admit two separate realities – physical and mental (nonphysical) and try to find out how they are connected and interacting.

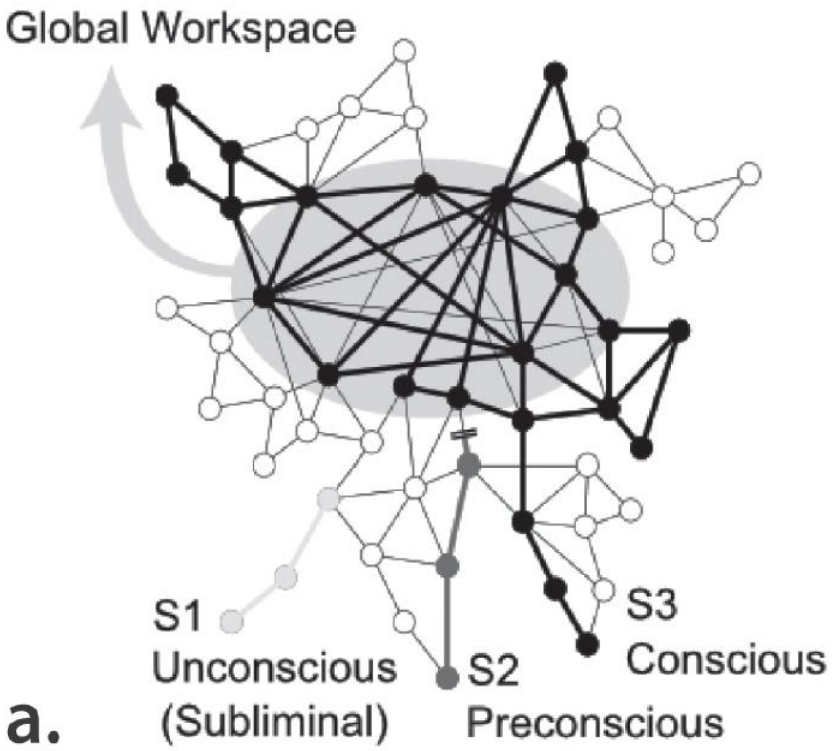
Theories of PM

- **Eliminativism:** Mind or mental states are the extra-linguistic essences which must be eliminated from the scientific dictionary as a Folk Psychology term.

Theories of PM

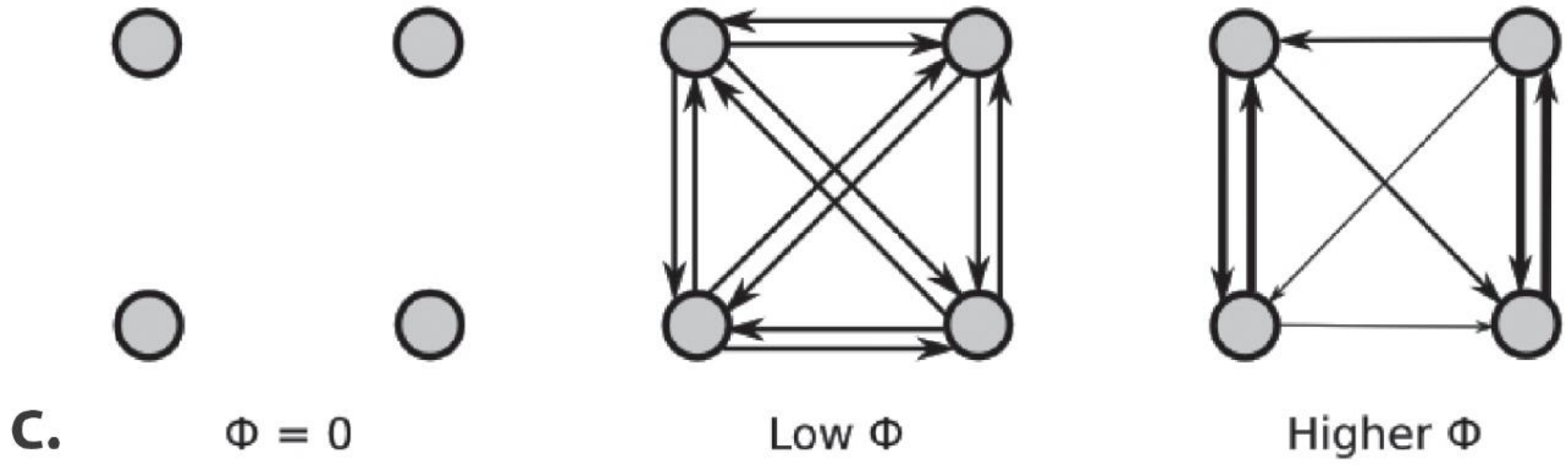
- **Functionalism:**
  - What makes something a tea-kettle or a vending machine is its ability to perform a certain function, not any specific physico-chemical structure or mechanism. Many concepts seem to be functional concepts (for example, catalyst, gene, heart) appear to have an essentially functional component.
  - Brain as a computer and Mind is Computation
  - Multiple realizability
  - AI view

Theories of Consciousness



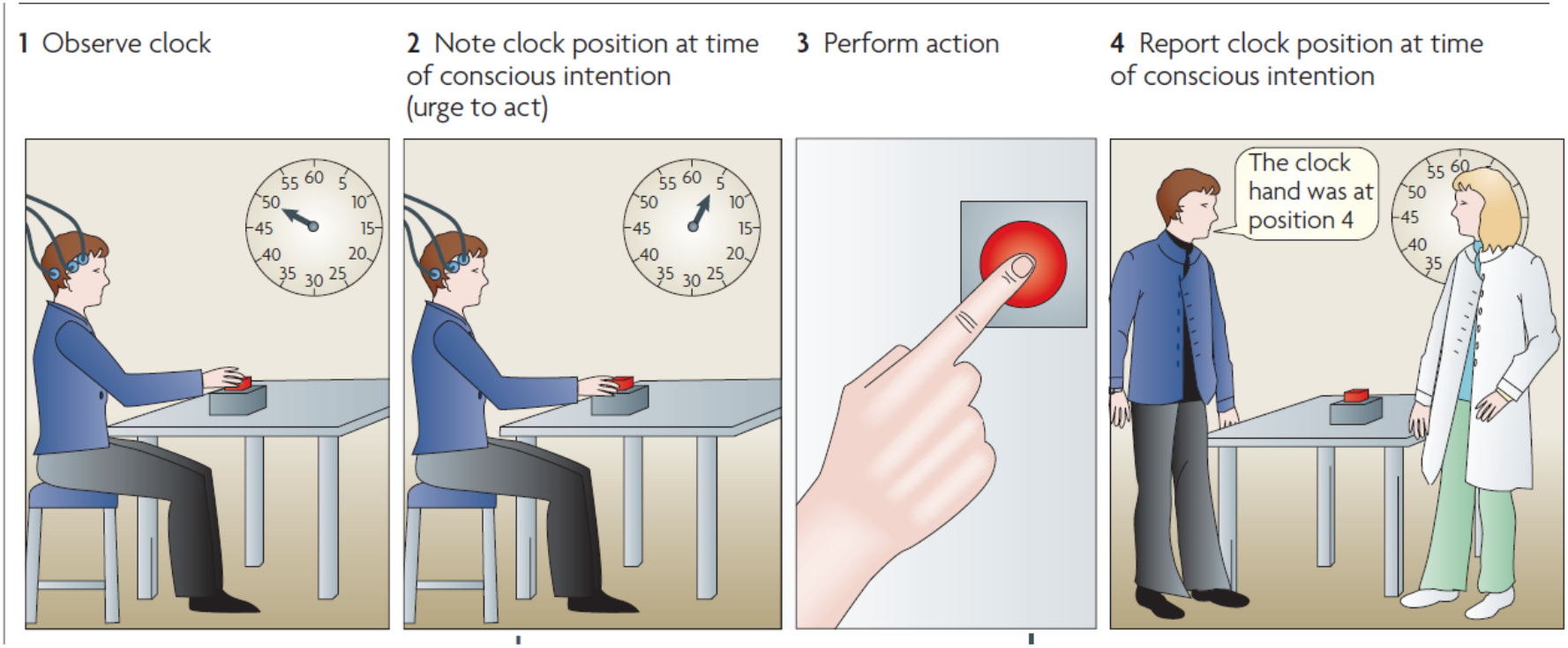
Global Workspace Theory: Baars 1988; Dehaene et al (2003)

Theories of Consciousness

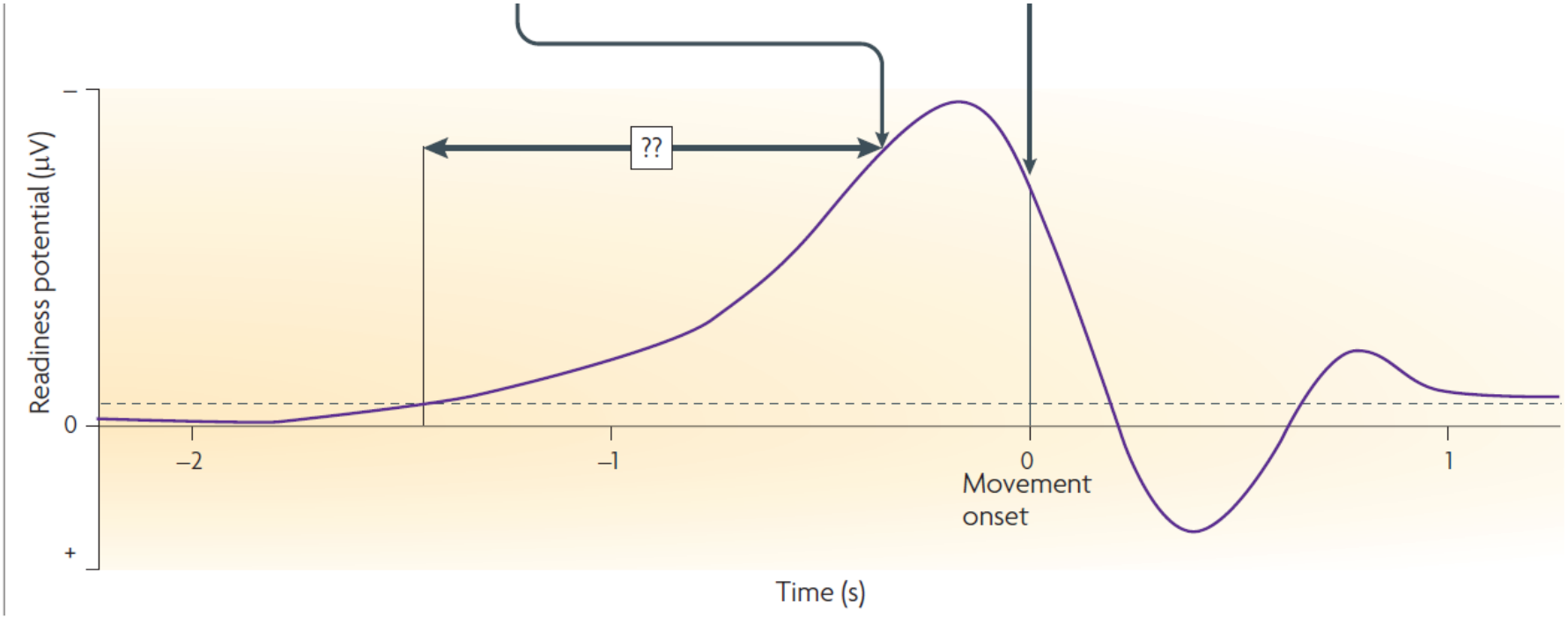


Information Integration Theory (IIT): Tononi & Koch (2008)

Libet experiment



Libet, Behav. Brain Sci., 1985

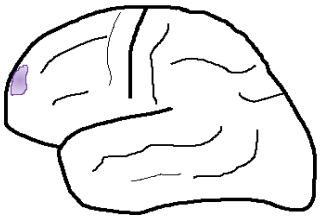


On average, participants reported the conscious intention to act **206 ms before the onset of muscle activity**. By contrast, **preparatory brain activity could begin 1 s or more before movement**. Therefore, the brain clearly prepared the action over a considerable period before the participant became aware of the intention to act.

fMRI variant of Libet experiment

x a r h q e f g y t u

Preparation



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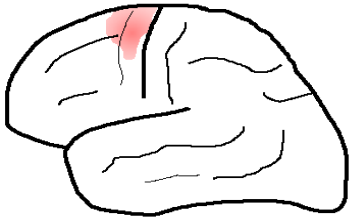
Decision and Movement

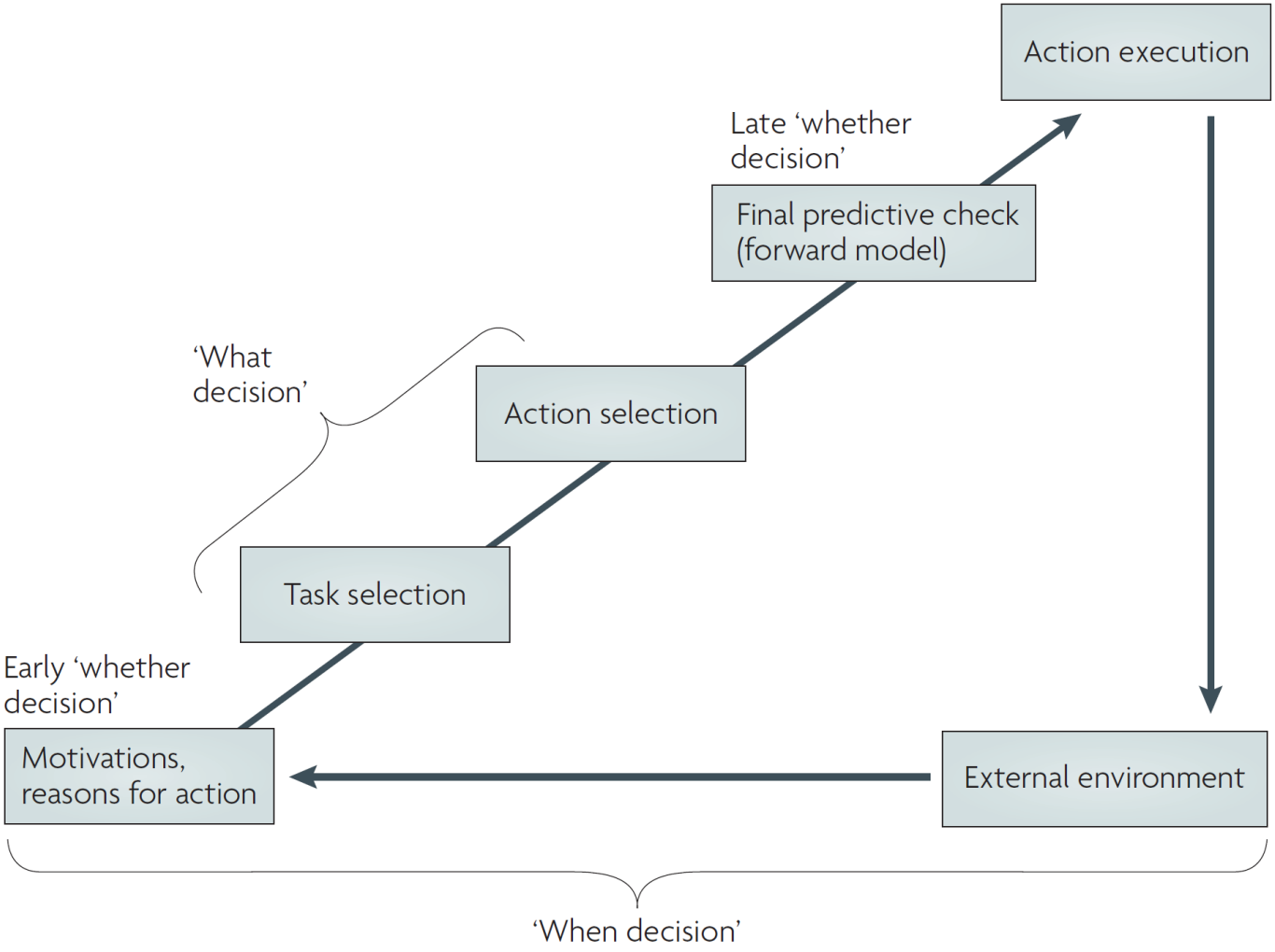


-Subject decides spontaneously
to move left or right hand
- report when they made their decision

Soon et al., Nat. Neurosci., 2008

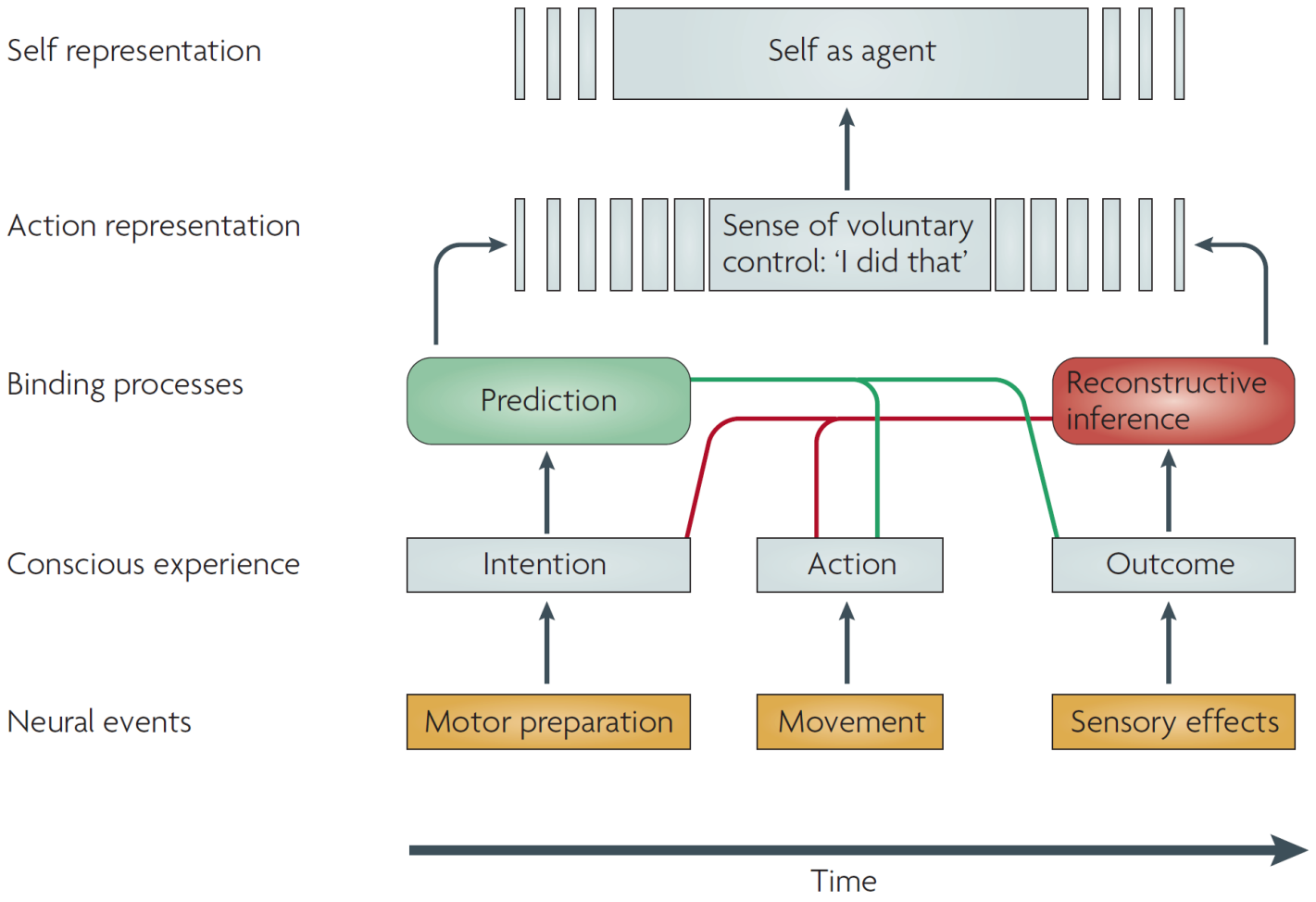
Haggard (2008):

A naturalized model of human volition.



Haggard (2008):

Cognitive processes that underlie the experience of voluntary action



What decides? Who decides?

'Your brain decides what you want or what you prefer … '

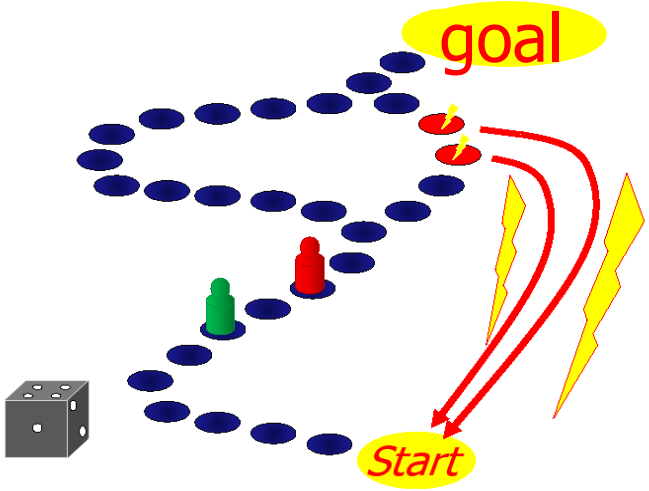
' … but your brain – this is you!!!'

-Your experiences are memorized in your brain

-Your values are memorized in your brain

-Your decisions are reflected in brain activities

'We don't do what we want, but we want what we do' (W. Prinz)



The philosophical problem of

Free Will

(see e.g. Wikipedia article)