

INTRODUCTION TO  
COGNITIVE SCIENCE

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Diego Rivera

“Sleep is the golden  
chain that ties health  
and our bodies  
together.”  
Thomas Dekker

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# Review of Week 1

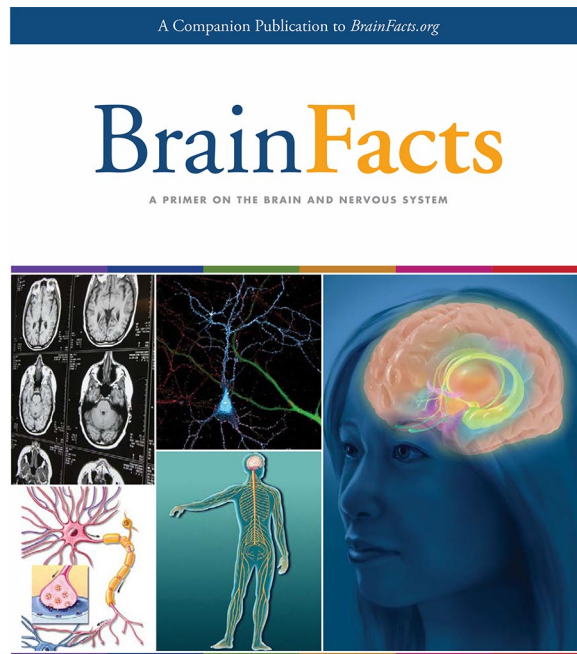
COGS1 – SPRING 2019

# Boyle-Introduction to Cognitive Science

- What is Cognitive Science –
  - How are the disciplines related and
  - What are the main objectives of the field?
- The ability to learn and understand language is an extremely complex process. Is there something intrinsic in the human brain that enables language or is it experience?
- What does it mean to “read the mind?” What is BCI?
- What was special about the robotic hand?
- How does cognitive science differ from computer science, neuroscience, philosophy, psychology and linguistics?

# Readings – Week 1

## ○ Sleep – Chapter 6



## CHAPTER 6: SLEEP

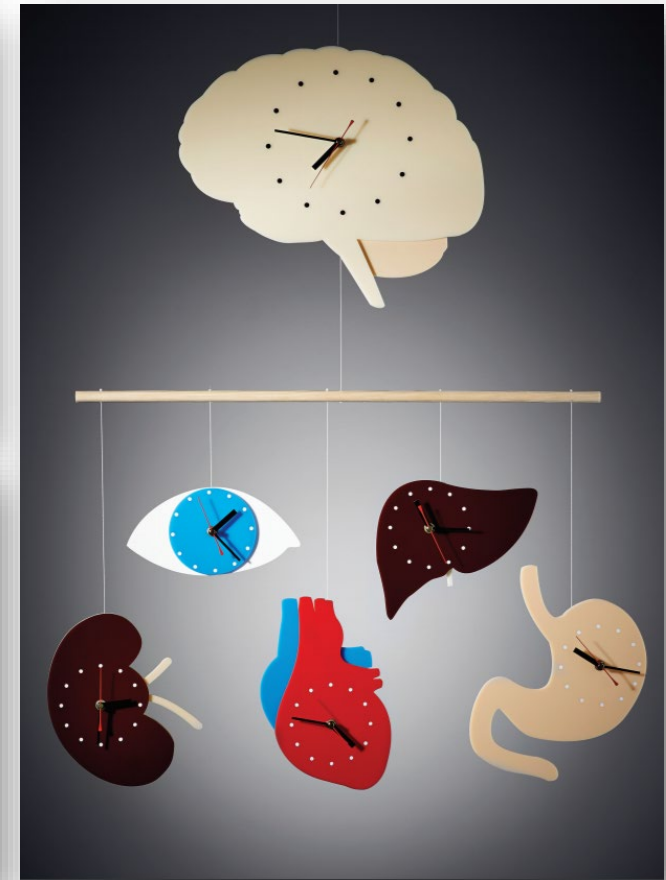
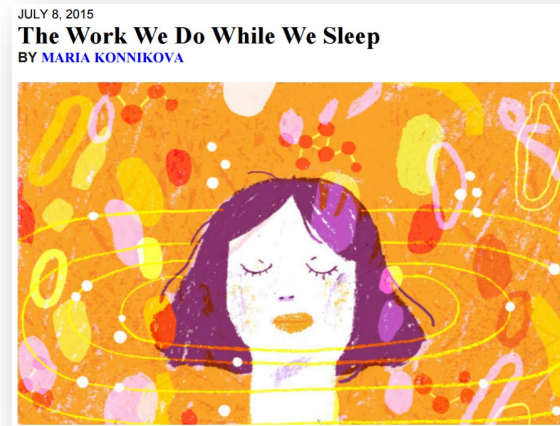
### IN THIS CHAPTER

- Brain Activity during Sleep
- Sleep Disorders
- How Is Sleep Regulated?
- The Sleep-Wakefulness Cycle

• The Sleep-Wakefulness Cycle

# Readings – Week 1

- Why Can't We Fall Asleep
- The Work We Do While We Sleep
- The Walking Dead
- Clocks Within US



# Boyle– Sleep, Cognition-Lecture/Readings

- What are the consequences of sleep deprivation
- What is the role of melatonin and light in regulating circadian rhythms?
- What is the SCN? What does it do?
- How do (human) circadian rhythms work?  
What does it do?  
What will happen when this rhythm is disrupted?
- What are the other internal clock systems that we've talked about in class?

# Boyle-continued

- How is blood sugar regulated in our body?
- Every cell has its own clock, for example, skin cells.  
What is the clock of the skin cells?  
What does this tell us about the importance of circadian rhythms?
- What factors are associated with our ability to go to sleep?
- What is “social jet lag”?
- What is so important about blue light?
- What are the effects of chronic sleep deprivation?  
(REM sleep behavior disorder, sleep apnea, etc.)

# Boyle-continued

- What is sleep inertia?
- What is the cognitive and physical performance of someone who has not slept in a 24 hour period?
- What is sleep hygiene?  
Compare the effects of good and bad sleep hygiene.  
What are the components of good sleep hygiene?
- Can sleeping aids overcome the effects of poor sleep hygiene?  
Why? Why not?