**CONSCIOUSNESS**

**Consciousness** “refers to moment-by-moment subjective experience” It is “one’s subjective experience of the world…”

**Quest:** Look back to the historical perspectives in psychology. How was this studied in the past? Based on the definition, what challenges or problems does the study of consciousness present?

We could break consciousness into three different levels. Some researchers refer to the mind as a duplex because behavior can be associated with one of the first two levels of consciousness.

1. The **conscious level** (or perhaps more clearly designated as the **controlled level**) is the relatively small *part of consciousness that is responsible for deliberate action.*
   - “The deliberate system is what seems to turn on when you wake up and turn off when you go to sleep.”

2. The **unconscious level** or **automatic level** refers to the relatively larger *part of consciousness that is responsible for routine and well-learned tasks.*
   - Unlike the way that Freud talked about unconsciousness, this system is not inaccessible to our conscious thought. It is better to think about this part of consciousness as a kind of ‘auto-pilot.’
   - You can read more about some of the astounding findings that show how ‘unconscious’ processes influence how we behave in *Psychological Science (4th ed)*, p. 193

3. The **lowered awareness** or **unawareness level** refers to the **part of consciousness that is in place when one is asleep or under anesthesia or in a coma.**
   - Psychologists are most interested in the **controlled** and **automatic** portions of conscious awareness in explaining behavior, but this recognizing this lowered awareness is necessary to discuss sleep and dreams.

**Quest:** To understand the difference between the controlled and automatic processes, can you explain how these processes would be involved in riding a bike?

### The Purposes of Consciousness

1. “Consciousness lets us perform complex actions that may require input from several different brain regions.”
2. “Consciousness helps us connect with one another by sharing out thoughts and feelings and even imagining ourselves in another person’s situation.”
3. “Consciousness is required for complicated thinking, such as understanding the development of a plot in a story, using logical reasoning, and performing mathematical calculations.”

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1 *Psychological Science (4th ed)*, p. 183
2 Baumeister, R. F. *The Cultural Animal*, pp. 74-81
3 Baumeister & Bushman, *Social Psychology & Human Nature*, p. 55
4 Quotes in this section are from *Psychological Science (4th ed)*, p. 184
Levels of Awareness

To understand variations in the levels of awareness in consciousness, psychologists use the electroencephalograph (or EEG), which is a device that measures brain activity, the electromyography (EMG), which is a device that measures muscle movement, and the electrooculography (EOG), which is a device that measures eye movements.

**Quest:** How or why are each of these devices used in sleep research?

The EEG shows that brain waves fall into different categories: B-A-T-D

<table>
<thead>
<tr>
<th>Beta Waves</th>
<th>13-24 cps</th>
<th>occur while in a normal waking thought and alert problem solving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Waves</td>
<td>8-12 cps</td>
<td>occur during deep relaxation, blank mind, meditation</td>
</tr>
<tr>
<td>Theta Waves</td>
<td>4-7 cps</td>
<td>occur during light sleep</td>
</tr>
<tr>
<td>Delta Waves</td>
<td>less than 4 cps</td>
<td>occur during deep sleep</td>
</tr>
</tbody>
</table>

**Circadian Rhythms** are a natural (roughly) 24-hour cycle that correspond to regular brain and biological activity, such as the brain activity in the sleep-wake cycle. Since this rhythm is not exactly 24-hours, the rhythms (or this ‘clock’) is reset by zeitgebers (“meaning timegiver”). Light is the “dominant zeitgeber.” Blind people’s ‘clocks’ are often off because they do not get this light. As the ‘clocks’ are ‘on track,’ people sleep better; as the ‘clocks’ get ‘off track,’ people sleep worse. 

Biologically speaking, the presence of light influences the secretion of melatonin, which is a hormone associated with sleep.

**Sleep Cycle**

<table>
<thead>
<tr>
<th>Sleep Stage</th>
<th>Brief Description</th>
<th>Key Feature(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>This is a transitional stage of sleep dominated by alpha waves</td>
<td><strong>Hypnic Jerks</strong> are brief muscular jerks that occur as one falls asleep</td>
</tr>
<tr>
<td>Stage 2</td>
<td>A deeper stage of sleep than Stage 1, but is characterized by the type of brain activity that occurs during this stage</td>
<td><strong>Sleep Spindles</strong> (brief bursts of brain activity) and <strong>K-Complex</strong> (high amplitude, positive and negative brain activity) occur during this stage</td>
</tr>
<tr>
<td>Stage 3-4</td>
<td>This is known as <strong>slow-wave sleep</strong>, which is characterized by delta waves</td>
<td>---</td>
</tr>
<tr>
<td>Stage 5 (REM Sleep)</td>
<td>This is a stage of sleep that is marked by a relatively active brain</td>
<td>This stage is where most dreams occur and is marked by rapid eye movement.</td>
</tr>
</tbody>
</table>

- This cycle occurs about 4x during the night with longer REM activity occurring and less Non-REM activity occurring.

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5 Information on Zeitgebers is from Kalat, J. W. Biological Psychology (6th ed), p. 243-244.
**Why do we sleep?**

- **Repair and Restoration Theory** asserts that sleep is a way for the body and brain (or mind?) to rest and repair itself.

- **Circadian Theory** assumes an evolutionary framework and asserts that sleep is an evolved habit that protects animals (and humans) from the dangers that night—darkness—presents and keeps animals (and humans) inactive most of the time for survival purposes.

- **Facilitation of Learning Theory** asserts that sleep (especially REM sleep) facilitates the learning process through the strengthening of neural connections.

**Quest:** Can you think of a study or studies that might distinguish which of these theories are correct or would be supported by the findings of your study?

**Why do we dream?**

- Freud proposed that people dream to fulfill wishes (*Wish Fulfillment*). He suggested that people’s dreams are characterized by the **manifest content** (or the *plot of the dream*) and the **latent content** (the hidden or disguised meaning of the dream). The latter is seen characterized by symbolized content that represents the unconscious wishes, fears, motives, etc.

- The **Cognitive Problem-Solving View** asserts that dreams allow people to work through their problems because dream states provide a context or allow for creative thinking.

**Quest:** How is the facilitation of learning theory compliment this theory of dreaming?

- The **Activation-Synthesis Model** proposes “that the brain tries to make sense of random brain activity that occurs during sleep by synthesizing the activity with stored memories.”

**Quest:** How is the facilitation of learning theory complimented by theory of dreaming?

**Sleep Disorders**

- **Narcolepsy** is marked by a sudden and irresistible onset of sleep during normal waking periods.

- **Insomnia** is marked by “chronic problems in getting adequate sleep” (“difficulty in falling asleep, difficulty in remaining asleep, persistent early-morning awakening”)

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6 *Psychology: Themes and Variations* (9th ed), p. 204
8 These disorders and their descriptions are quoted from or slightly altered versions of the descriptions from Weiten’s *Psychology: Themes and Variations* (9th ed), pp. 198-200.
Sleep Apnea is marked by “frequent, reflexive gasping for air that awakens a person and disrupts sleep”

Nightmares is marked by “Anxiety-arousing dreams that lead to awakening, usually from REM sleep”

Night terrors (aka sleep terrors) is marked by “abrupt awakening from NREM sleep accompanied by intense autonomic arousal and feelings of panic”

Somnambulism (aka sleepwalking) is “when a person arises and wanders about while remaining asleep”

Other Altered States of Consciousness (?)

Hypnosis is “a social interaction during which a person, responding to suggestions experiences changes in memory, perception, and/or voluntary action.”

The Sociocognitive Theory of Hypnosis asserts that “hypnotized people behave as they expected hypnotized people to behave, even if those expectations are faulty”

The Dissociation Theory of Hypnosis “views the hypnotic state as an altered state of consciousness”

Meditation is a mental procedure that focuses attention on an external object or on a sense of awareness”

9 Quotes in this section are from Psychological Science (4th ed.), p. 205-207