



# The Unconscious

## Instructor Manual

**Editors:** Dr. Regan A. R. Gurung and Dr. Aaron Richmond

**Contributing Authors:** Dawn Albertson, Bethany Fleck, Travis Heath, Phil Kreniske, Linda Lockwood, Kristy Lyons, Aliza Panjwani, Janet Peters, Kasey Powers, Amanda Richmond, Anna Ropp, Jeremy Sawyer, Raechel Soicher, Sunda Friedman TeBockhorst, Courtney Rocheleau

The Unconscious starts with a historical overview of the brain-mind distinction that has plagued philosophers and scientists alike for centuries. This module will help your students understand that the unconscious is not only distinct, but also just as important (perhaps more) than conscious thought and behavior. You will have the opportunity to discuss exciting experiments on social psychological processes and delineate the distinction between attention and consciousness.

## Learning Objectives

- Relevant APA Learning Objectives (Version 2.0)
  - Describe key concepts, principles, and overarching themes in psychology (1.1)
  - Develop a working knowledge of psychology's content domains (1.2)
  - Describe applications of psychology (1.3)
  - Use scientific reasoning to interpret psychological phenomena (2.1)
  - Apply ethical standards to evaluate psychological science and practice (3.1)
- Content-Specific Learning Objectives: The Unconscious
  - Understand the logic underlying the assumption that unconscious processes are important.
  - Obtain a crude understanding of some important historical thoughts about unconscious

processes.

- Learn about some of the important psychological experiments on the unconscious.
- Appreciate the distinction between consciousness and attention.

## Abstract

Unconscious psychological processes have fascinated people for a very long time. The idea that people must have an unconscious is based on the idea that (a) there is so much going on in our brains, and the capacity of consciousness is so small, that there must be much more than just consciousness; and that (b) unless you believe consciousness is causally disconnected from other bodily and mental processes, conscious experiences must be prepared by other processes in the brain of which we are not conscious. Not only logic dictates that action starts unconsciously, but research strongly suggests this too. Moreover, unconscious processes are very often highly important for human functioning, and many phenomena, such as attitude formation, goal pursuit, stereotyping, creativity, and decision-making are impossible to fully understand without incorporating the role of unconscious processes.

## Class Design Recommendations

We recommend this class be taught over a single period.

Please also see the Noba PowerPoint slides that complement this outline.

First class period (50-75 min)

- Activity: How do you think about the mind, brain, and behavior?
- Provide a historical overview
- Talk about where action originates (in unconscious or conscious thought)

- Video: Subliminal perception
- Discuss the unconscious in social psychological processes
- Special Topic: How to make your unconscious work for you!
- Describe unconscious processing and the role of attention

## Module Outline

### A Little Bit of History

Philosophers and researchers are still exploring whether or not human behavior is conscious or unconscious. According to Rene Descartes' dualism, the body and mind are separate entities with the latter being responsible for all psychological processes, and thus consciousness. The Cartesian catastrophe refers to Descartes' idea that no mental processes can occur without conscious awareness, which we now know is untrue! Alternatively, philosophers like Norris and Kant posited that since there is so much activity occurring in our brain and it's not possible for us to be aware of all of it at once, something outside of consciousness must exist.

Sigmund Freud, best known for his ideas on psychoanalysis, was one of the most significant proponents of the importance of unconscious processes. Freud and others suggested a sound argument for the role of unconsciousness in psychological processes. People become consciously aware of many various experiences—the taste of wine, the beauty of the Eiffel tower, or hitting our funny bone – but it is likely that processes in the brain, which we are not aware of prepare these experiences. An experiment driving this point home was conducted by a German psychologist, Watt (1905), who showed that we are only consciously aware of the results of our mental processes, not necessarily the process itself. The participants in his study were repeatedly shown nouns (e.g., "oak") and were required to quickly respond with an associated word. Sometimes participants were requested to name a superordinate word ("oak"-"tree"), other times they were told to think of a part ("oak"-"acorn") or subordinate ("oak"-"beam") word. In this manner, participants' thinking was split into four steps: the instructions, the presentation of the noun, the search for an appropriate association, and the verbalization of the reply. Then, participants were asked to ponder all four stages in order to explicate the role of consciousness. The third stage (searching for an association) was of most significance as this could also be called "the thinking stage", yet participants could not report anything about it. In other words, the thinking itself was unconscious, and participants were

only conscious of the answer once it was borne out of that thinking.

## Where Action Originates

In keeping with the idea that unconscious preparation has a lot to do with executing an action, Kornhuber and Deecke (1965) asked participants to do only one thing: flex a finger. Using electroencephalography (EEG), the researchers assessed the exact point in time the brain started to prepare the action. The results showed that unconscious preparation started 800 milliseconds before the action. Other researchers conducted similar studies in decision-making. In an experiment conducted by Soon and colleagues (2008), participants were asked to press one of two buttons (of their own free will) while their brain activity was measured. After the participants made the choices many times, the experimenters were able to predict 10 seconds in advance, which button a participant would next select based on his or her brain activity.

## The Unconscious in Social Psychological Processes

An example of how we don't always need consciousness for psychological processes revolves around attitude formation. The most basic process of attitude formation is through mere exposure. Mere-exposure effects and subliminal research experiments demonstrate that participants have a more positive attitude towards stimuli they are subliminally exposed to even if they have no recollection of seeing those stimuli.

Importantly, examining unconscious processes has bettered our understanding of prejudice. Devine (1989) demonstrated that cultural stereotypes can impact our categorization of people according to race even if this stereotype activation was unrelated to people's level of explicit prejudice. In other words, even if we are not explicitly prejudiced, we may still unconsciously activate cultural stereotypes.

## Unconscious Processing and the Role of Attention

Creativity is a three-step process. In step one, we consciously attend to the problem by thinking about it, discussing it, etc. Step two is unconscious – we put the problem aside for some time to direct thoughts and attention elsewhere. This process of unconscious thought can often lead to what's known as a 'Eureka' experience, in which creative thought enters consciousness. This third step is where consciousness again plays a role because the creative idea needs to be put into words.

Experiments on unconscious thought and decision-making have shown that when people have a goal involving further information processing at the outset, even if they stop consciously directing attention toward it, their mind may still be working at a solution (unbeknownst to them). This finding has been demonstrated both in experiments and through neuroscientific evidence. It is clear that attention and consciousness are correlated. For instance, when we pay attention to an object, there is an increased likelihood that we might then become consciously aware of this object. However, we need to remember that attention and consciousness are not necessarily the same process. We need attention to complete many tasks, but we do not always need conscious awareness.

A lot of researchers believe that the most logical way to study our brain's processes is to think of higher cognitive operations as unconscious, and then examine what or if consciousness enhances those operations. Nevertheless, many still have differing opinions about the relative significance of conscious vs. unconscious processes.

## Difficult Terms

Cartesian catastrophe

Conscious

electroencephalography (EEG),

Eureka experience

Mere-exposure effects

Unconscious

## Lecture Frameworks

## Overview

Whereas the previous module mostly focused on conscious thought and behavior, this module directs its attention towards uncovering the unconscious and the role it plays in our thinking and behavior. To generate discourse, we recommend you make use of the videos, discussion ideas, and activities below. Notably, we encourage you to share the various interesting experiments (both in the text and the manual) with your students in order to illustrate the significance of unconscious processes to our daily life.

## First Class Period

- Discussion/warm-up
  - To start, consider asking the students what the brain does while we think. Are students aware of when and how their brain is thinking? Are they able to visualize neurons firing or communicating with one another when they are in deep thought? Are there examples of things we do everyday that we may not be aware of? Ask students to think about a time they got lost in thought while driving, yet still indicated when they were turning, remembered directions, and even found themselves home. Did unconscious processes play a role in this example?
  - After a very brief discussion, tell the students that they have just touched upon the mind-body or conscious vs. unconscious problem. This is a great transition into the following activity that is sure to reveal more about their opinions on this topic.
- Activity: How Do You Think About the Mind, Brain, and Behavior?
  - This 15-20 minute activity tests students' beliefs about dualism. It will provide a good opportunity for discussion. Students might then be more invested when you discuss the historical overview section below.
- Lecture: Refer to the PowerPoint slides for the following:
  - Give a historical overview of conscious vs. unconscious behavior and thought.
  - Describe Rene Descartes' philosophy of dualism and the Cartesian catastrophe
  - Talk about researchers and psychologists that believe in the significant role of unconscious thought in psychological processes.
  - Describe experiments that demonstrate the above.
  - Talk about how unconscious processes occur before conscious action or verbalization.
  - Information on Libet (1985) and Soon and colleagues' (2008) experiments.
- Lecture: Refer to the PowerPoint slides for the following:
  - Discuss the unconscious and social psychological processes ex. mere exposure effect.
  - Describe how investigating unconscious processes bettered our understanding of prejudice.

- Special Topic: How to Make Your Unconscious Work for You!
  - Students have just learned about how their unconscious might work against them when it comes to implicit attitudes and prejudice. Consider discussing this special topic to introduce some of the merits of unconscious thought.
  - Research shows that distracting oneself from the task at hand can help us resolve it more successfully. Dijksterhuis (2004) conducted a research study, in which participants read information about many cars (e.g., fuel-efficiency, seating, handling, exterior and interior design, etc.). Then, some of the participants were randomly told to sit and engage in conscious thought about the cars, thinking through the various details and specs. Other participants were asked to complete a task involving number-sequence memorization in order to stop this half of the participants from consciously pondering over the cars. Finally, both groups were asked to make decisions about the cars based on the information they were given (i.e., some cars were better than others) and their responses were evaluated.
  - Surprisingly, the results demonstrated that people who were engaged in the memorization task made better decisions than those who consciously sat and thought about the cars. The researchers hypothesized that while the former group of participants were engaged in distracting memory activity, their brains were still unconsciously (i.e., without awareness) evaluating the information about the cars. Perhaps in this case, unconscious thought was better suited to making the decision than conscious thought.
  - *Discussion:* Ask students what they think about this finding and if they've ever encountered similar experiences in their lives.
- Lecture: Refer to the PowerPoint slides for the following:
  - Describe how creativity can benefit from unconscious processing.
  - Describe the relationship between attention and consciousness, emphasizing that the two are not necessarily the same process. Refer back to the special topic and other examples to highlight this fact.

## Activities & Demonstrations

## How Do You Think About The Mind, Brain, And Behavior? In-Class Activity

### Time

15-20 minutes

### Materials

You will need copies of questionnaire for students to complete.

### Directions

- Give the questionnaire to students. Allow 10-15 minutes to complete the questionnaire. Allow a few minutes for discussion.
- Scoring instructions: Answers for items 3, 6, 7, 8, 10, 12, 15, 17, 20, 22, 24, 25, and 27 should be reversed. For instance, 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1. We recommend having this on the board once students have completed the survey. Students should then total the numbers for all the items. Higher scores signify a stronger conviction in dualism and scores can range from 27 to 135.
- Notably, American undergraduate students tend to subscribe to dualism, which interestingly enough is at odds with much neuroscientific and psychological research. Additionally, dualism scores were unrelated to religiosity, but positively related to acceptance of ESP (Stanovich, 1989).
- Discussion ideas:
  - One of the questions you can ask the students is if their opinion changed after the class discussion that preceded this activity. See Lecture Frameworks for more details.
  - If time permits, you can ask volunteers to share some of their responses with the class. Among others, some noteworthy question items are: 4, 19, 8 and 22. You can even ask the students which items they found interesting.
- Questionnaire on next two pages.
- Note: Feel free to adapt the survey to make it shorter.



This activity was adapted from Randy Smith's Instructor Manual for the David Myers' Introductory Textbook.

## How Do You Think About The Mind, Brain, And Behavior?

### Instructions

This is a questionnaire in which we are trying to assess how people think about mind, brain, and behavior. There are no right or wrong answers. Please read each statement and try to answer as accurately as you can; using the following scale, write the number that reflects your opinion on the line to the left. Remember, your responses to the questionnaire are anonymous, so please answer as honestly and accurately as you can. Please respond to the statements in order and do not look ahead in the questionnaire.

5 = always

4 = frequently

3 = occasionally

2 = seldom

1 = never

\_\_\_\_\_ 1. The mind is not part of the brain but it affects the brain.

\_\_\_\_\_ 2. When I imagine a scene in my mind, I am in a state that will forever be beyond explanation by science.

\_\_\_\_\_ 3. When I use the word "mind," it is just a shorthand term for the complicated things that my brain does.

\_\_\_\_\_ 4. The mind is a special form of energy (currently unknown to man) that is in contact with the brain and affects it.

\_\_\_\_\_ 5. Minds are, in principle, independent of bodies, to which they are only temporarily

“attached.”

\_\_\_\_\_ 6. Hundreds of years in the future when we know how brain states and thoughts are related, it might be possible for a physiologist to measure my brain states and know what I am thinking.

\_\_\_\_\_ 7. Sometimes when I give reasons for my behavior, those reasons are wrong. That is, my behavior can be affected by things that I am not aware of. When this happens I might give a “reason” for my behavior that is wrong.

\_\_\_\_\_ 8. Perhaps it will never make sense to talk about computers having emotions, but sometime in the future it may be the case that computers will think as well as humans.

\_\_\_\_\_ 9. Mental processes cause changes in brain processes.

\_\_\_\_\_ 10. When people talk about their minds they are really just talking about what their brains seem to be doing. Talk about the “mental” is really just shorthand for brain processes that we are not aware of.

\_\_\_\_\_ 11. The fact that I can know my own thought processes (that I can introspect) means that my thought processes cannot be just brain processes.

\_\_\_\_\_ 12. Just as we no longer talk of witches, in the future when we know in detail how brains work, we may not talk about minds anymore.

\_\_\_\_\_ 13. My mind is the thing that causes me to behave as I do.

\_\_\_\_\_ 14. Knowledge of the mind will forever be beyond the understanding of sciences like physics, neurophysiology, and psychology.

\_\_\_\_\_ 15. For each thought that I have, there exists a certain state that my brain is in.

\_\_\_\_\_ 16. The mind is a nonmaterial substance that interacts with the brain to determine behavior.

\_\_\_\_\_ 17. Hundreds of years in the future, when we know much more about the brain and behavior, we might change the way we talk about our behavior and our minds. That is, we might find better ways to talk about our thoughts, feelings and emotions.

- \_\_\_\_\_ 18. The “self” that I introspect about controls both the mind and the brain.
- \_\_\_\_\_ 19. Minds are inside brains but are not the same as brains.
- \_\_\_\_\_ 20. When we say that a person has a “creative mind,” this just means that the person tends to produce things that people judge as creative. The statement really has nothing to do with the person’s mind.
- \_\_\_\_\_ 21. Some mental processes have no connection to brain processes.
- \_\_\_\_\_ 22. In a hundred years or more, it might make sense to refer to a computer as having a mind.
- \_\_\_\_\_ 23. My consciousness will survive the disintegration of my physical body.
- \_\_\_\_\_ 24. Not much would be lost if we dropped the word “mind” from our vocabularies. For example, rather than say “I made up my mind,” a person might say, “My brain decided.” Although this might sound funny at first, no meaning would be lost.
- \_\_\_\_\_ 25. Mental processes are the result of activity in the nervous system.
- \_\_\_\_\_ 26. The mind and the brain are two totally separate things.
- \_\_\_\_\_ 27. We talk of the sun rising, but we all know that the sun does not rise but instead the earth turns. This is a case of our language not responding to changes in physical knowledge. Some neurophysiologists think this might also be the case for our language about the mental. For instance, if we had adequate physiological knowledge it might be possible to say “My C-fibers are firing!” instead of “I’m in pain!” Just as phrases like “The sun is rising” are expendable (not needed, since the sun really doesn’t rise) some mental terms may be eliminated or drastically changed in the future when we have better physiological knowledge.

Source: Stanovich, K. E. (1989). Implicit philosophies of mind: The dualism scale and its relation to religiosity and belief in extrasensory perception. *Journal of Psychology*, 123(1), 5–23. Reprinted with permission of the Helen Dwight Reid Educational Foundation. Published by Heldref Publications, 1319 Eighteenth St., NW, Washington, DC 20026-1802. Copyright © 1989.

## Outside Resources

**Book:** A wonderful book about how little we know about ourselves: Wilson, T. D. (2002). *Strangers to ourselves*. Cambridge, MA: Harvard University Press.

**Book:** Another wonderful book about free will—or its absence?: Wegner, D. M. (2002). *The illusion of conscious will*. Cambridge, MA: MIT Press.

**Video:** An interesting video on attention

<http://www.dansimons.com/videos.html>

## Evidence-Based Teaching

Adams, V. H., Devos, T., Rivera, L. M., Smith, H., & Vega, L. A. (2014). Teaching About Implicit Prejudices and Stereotypes A Pedagogical Demonstration. *Teaching of Psychology*, 41(3), 204–212.

Teachers from various universities in California examined the impact of adding the implicit association test (IAT) in a social psychology teaching module on students' perceived knowledge of implicit biases. The findings showed an increase in students' perceived knowledge of implicit biases - the more students displayed implicit prejudice against African Americans compared to European Americans, the more likely they were to be engaged in course material and motivated to control prejudice. Notably, IAT could serve as an essential teaching tool especially for those who showed marked implicit biases.

Azzopardi, P., & Cowey, A. (1997). Is blindsight like normal, near-threshold vision? *Proceedings of the National Academy of Sciences*, 94(25), 14190–14194.

This article talks about the phenomenon of blindsight, in which patients have a damaged striate cortex and lose the ability to 'consciously' see objects visual field. However, when forced to make choices among different options, they can often detect the stimuli presented in their clinically blind visual field. Skeptics have argued that there is no difference in the behavior of people that have poor conscious vision and may also detect objects correctly during clinical and forced-choice tests. Using two different paradigms (i.e., yes/no vs. forced choice), a hemianopic patient, and a control group, Azzopardi and Cowey found that people with blindsight process stimuli in an extraordinary and unusual way.

Bonneh, Y. S., Cooperman, A., & Sagi, D. (2001). Motion-induced blindness in normal observers. *Nature*, 411(6839), 798–801.

Bonneh and colleagues present the phenomenon of motion-induced blindness in normal-sighted observers under natural conditions. They demonstrate that slowly moving stimuli disappear (and then reappear after a few seconds) when superimposed over a faster moving patterned background. The authors suggest that this disappearance may be a result of interrupted attentional processing, revealing the complex interplay between different object representations in our visual system.

Dijksterhuis, A. (2004). Think Different: The Merits of Unconscious Thought in Preference Development and Decision Making. *Journal of Personality and Social Psychology*, 87(5), 586–598.

Dijksterhuis evaluated unconscious and conscious thought as it pertains to decision-making in multiple experiments. He hypothesized that conscious thought would be ill-suited to making decisions due to its limited capacity. On the other hand, unconscious thought would be much better suited. In the first three experiments, participants had to choose among many options, each had distinct and multiple attributes. Some participants were asked to consciously think about the choice for a few minutes before making their decision, while others were asked to engage in a distractor task before offering their choice. The findings supported the hypothesis that unconscious thought led to better decisions. The final two experiments provided further evidence of the merits of unconscious thought in decision-making.

Monti, M. M., Lutkenhoff, E. S., Rubinov, M., Boveroux, P., Vanhaudenhuyse, A., Gosseries, O., ... Laureys, S. (2013). Dynamic Change of Global and Local Information Processing in Propofol-Induced Loss and Recovery of Consciousness. *PLoS Comput Biol*, 9(10), e1003271. doi:10.1371/journal.pcbi.1003271

Monti and colleagues used brain-imaging techniques to examine information flow in 12 healthy participants as they underwent anesthesia and lost consciousness. The researchers analyzed the various properties of participant brains with a complex mathematical theory that is used to study air-traffic patterns and social media activity. They found that communication between various brain areas becomes increasingly difficult and ineffective when we are not conscious, making it complicated for neural signals to travel from one brain area to another. The results also suggest that there is no single consciousness center in our brain. Instead, we have a network, in which an uncountable number of neurons talk to one another. These findings shed light on the neural biology of the experience of consciousness.

Ramachandran, V. S., & Hirstein, W. (1998). The perception of phantom limbs. *Brain*, 121, 1603–1630.

Amputees often experience phantom limb, a sensation in which they feel the amputated limb is still there and can actually experience pain. Using non-invasive imaging techniques, Ramachandran and Hirstein investigate how neural plasticity operates in our brains and examine the relationship between sensory neurons and conscious experience. The researchers offer a phantom limb theory, demonstrate how phantom limb can be induced in non-patient populations, and make comments about how our brain creates body image.

Siegel, J. M. (2003). Why we sleep. *Scientific American*, 289, 92-7.

In his informative article, Siegel discusses how research on sleep has advanced in the past few decades. The author continues on to reviews the concept of sleep, how it evolved, and its hypothesized functions. He also discusses findings on the mysterious stage of sleep, called REM, its characteristics and neurobiological bases.

## Suggestions from the Society for Teaching's Introductory Psychology Primer

Stiegler-Balfour, J. J. (2013). Consciousness. In S.E. Afful, J. J. Good, J. Keeley, S. Leder, & J. J. Stiegler-Balfour (Eds.). *Introductory Psychology teaching primer: A guide for new teachers of Psychology 101*. Retrieved from the Society for the Teaching of Psychology web site: <http://teachpsych.org/ebooks/intro2013/index.php>

## POSSIBLE ASSESSMENTS (Out of Class)

Student Paper: (*Instructor should ask students to read the article prior to class and to be prepared to discuss it. Allow 20 minutes for article discussion in class*) Ask students to read an article about the neural basis of biological rhythms (e.g., Kolb, B., & Whishaw, I.Q. (2006). *An introduction to brain and behavior* (2nd ed.). New York: Worth) and discuss whether or not there is a biological basis to our circadian rhythm.

Student Paper/Project: (*This is a fun activity that students can complete outside of class. It allows them to apply what they learned in class to their own lives, which will make the material more relevant and thus improve their retention*) Ask students to assess their level of daytime sleepiness

by calling the national Sleep Foundation hotline at 1-877-BE-AWAKE. The screening uses the Epworth Sleepiness Scale used by health-care providers to determine the quality of sleep a person experiences. Once students determined their own level of daytime sleepiness ask them to write a short paper about steps they can take to improve their sleeping habits.

Student Paper: *(The instructor should ask students to read the article prior to the class meeting and provide students with a list of discussion questions ahead of time so they can prepare answers at home. This could also be done as a classroom debate. Instructor should allow 30 minutes for class discussion/debate)* Ask students to read an article such as Goldberg, R. (Ed.) (2005). *Taking sides: Clashing views on controversial issues in drugs and society* (7th ed). Guilford, CT: McGraw-Hill and critically think about drug use and misuse. Students should develop arguments for and against the following topics: "Should marijuana be legalized for medicinal purposes?", "Are drug treatment programs effective?", or "Do drug addicts choose to be addicted to drugs?"

### (In Class)

Student Paper: *(This demonstration only take about 5-10 minutes of class time and is very effective because students can experience the concept of suggestibility first-hand).* Start out with the following classroom demonstration: "Tell your students to close their eyes and imagine they are cutting a lemon...a large... sour... bitter lemon...so full of juice that it drips over their fingers onto the floor. Imagine how sucking the juice from the same fruit" (Bolt, M. (2007). Psychology instructor's resource manual to accompany David G. Myers Exploring Psychology (7th ed.). New York: Worth Publisher). Once you completed the demonstration ask students to write a short paper about what happened to them during the demonstration. "Where they salivating? Could they taste the sourness of the lemon juice in their mouths? "What does this tell you about suggestibility?" Instruct students to relate this experience to what they have learned about hypnosis and suggestibility. (LO 3.1, 9.2)

Infusing diversity into the classroom *(The instructor should ask students to read the article prior to the class meeting and provide students with a list of discussion questions ahead of time so they can prepare answers at home. This could also be done as a classroom debate. Instructor should allow 30 minutes for class discussion/debate):* Ask students to read articles about consciousness as they relate to aging, culture, ethnicity, race, disability, gender, or sexual orientation. Possible topics to cover include: changes in REM sleep over the lifespan, trans-like states that are induced through religious beliefs (see video clip about the whirling dervishes), the use of mind altering drugs for religious purposes (Trimble, J. E., Stevenson, M.R., & Worell, J. P. (2003). Toward an inclusive psychology: Infusing the introductory psychology textbook with diversity content).

## Possible article:

Jones, P. N. (2005). The American Indian church and its sacramental use of peyote: A review for professionals in the mental-health arena. *Mental Health, Religion & Culture*, 8(4), 227-290. doi: 10.1080/13674670412331304348.

The authors describe how the use of peyote is an essential part of the Native American Church ceremony and theology, and discusses reasons why the use of peyote under the 'bona fide religious ceremonies of the Native American Church act' should be allowed.

## ACTIVITIES & TECHNIQUES (In Class)

Classroom Exercise (*Instructor should allow 15-20 minutes for students to complete the test and discuss the outcomes with the class*): Introduce the topic of sleep with the National Sleep Foundation's Sleep IQ test (<http://www.allegiancehealth.org/content.aspx?id=12...>

Psychology in the News (*Instructor should ask students to read the article and be ready to discuss it. Allow 20-25 minutes for discussion*): New York Times article about the nature of free will (<http://opinionator.blogs.nytimes.com/2011/10/19/wh...>

## Videos that can be used as discussion starters:

## RELEVANT TOP ARTICLES (Annotated Bibliography)

Bristow, A. R., Provost, J., & Morton, K. (2002). Attending step meetings as a course requirement: A preliminary investigation. *Teaching of Psychology*, 29(2), 125-128.

This article describes a study in which students in a drug and behavior course were asked to attend a 12-steps meeting (i.e., Alcoholics Anonymous) and evaluate its effectiveness in treating alcoholism based on what they had learned in class. Students in this study reported that attending the meetings significantly increased their understanding of addiction treatment, especially when they felt comfortable attending the meetings. Following the visit of a 12-steps meeting, students are asked to write a short paper about their experience. This activity could be incorporated into the course and would allow students to see first-hand how addiction can be treated.



Palladino, J. J., & Carducci, B. J. (1984). Students' knowledge of sleep and dreams. *Teaching of Psychology*, 11(3), 189-191.

This article presents data from a study assessing students' knowledge about sleep and dreaming prior to lectures covering this topic in class. The study illustrated that students have many misconceptions about sleep and dreaming. To identify misconceptions and correct them instructors may use either the Sleep and Dreams Information Questionnaire (SDIQ) or the National Sleep Foundation's Sleep IQ test (<http://www.allegiancehealth.org/content.aspx?id=12...> to gauge students' understanding of sleep and dreaming. The surveys can also lead to a discussion about sleep disorders such as night terrors and sleep apnea.

## ADDITIONAL REFERENCES

Chalmers, D. (1995). The puzzle of conscious experience. *Scientific American*, 273, 80-86.

This paper by one of the leaders in the field of consciousness provides the reader with an overview of the history of the teaching of consciousness and how it has changed over the years. It describes the concept of consciousness and why consciousness is such a mysterious topic to study. It also explains why neuroscience alone cannot explain our conscious experience and why we have to also look to more subjective ways of studying consciousness to increase our understanding of the topic. Instructor may choose to read this article to prepare for class and/or ask students to read and discuss this article in class.

## PowerPoint Presentation

This module has an associated PowerPoint presentation. Download it at [https://nobaproject.com//images/shared/supplement\\_editions/000/000/315/The%20Unconscious.pptx?1576425113](https://nobaproject.com//images/shared/supplement_editions/000/000/315/The%20Unconscious.pptx?1576425113).

## About Noba

The Diener Education Fund (DEF) is a non-profit organization founded with the mission of re-inventing higher education to serve the changing needs of students and professors. The initial focus of the DEF is on making information, especially of the type found in textbooks, widely available to people of all backgrounds. This mission is embodied in the Noba project.

Noba is an open and free online platform that provides high-quality, flexibly structured textbooks and educational materials. The goals of Noba are three-fold:

- To reduce financial burden on students by providing access to free educational content
- To provide instructors with a platform to customize educational content to better suit their curriculum
- To present material written by a collection of experts and authorities in the field

The Diener Education Fund is co-founded by Drs. Ed and Carol Diener. Ed is the Joseph Smiley Distinguished Professor of Psychology (Emeritus) at the University of Illinois. Carol Diener is the former director of the Mental Health Worker and the Juvenile Justice Programs at the University of Illinois. Both Ed and Carol are award-winning university teachers.

## Acknowledgements

The Diener Education Fund would like to acknowledge the following individuals and companies for their contribution to the Noba Project: The staff of Positive Acorn, including Robert Biswas-Diener as managing editor and Peter Lindberg as Project Manager; The Other Firm for user experience design and web development; Sockeye Creative for their work on brand and identity development; Arthur Mount for illustrations; Chad Hurst for photography; EEI Communications for manuscript proofreading; Marissa Diener, Shigehiro Oishi, Daniel Simons, Robert Levine, Lorin Lachs and Thomas Sander for their feedback and suggestions in the early stages of the project.

## Copyright

R. Biswas-Diener & E. Diener (Eds), Noba Textbook Series: Psychology. Champaign, IL: DEF Publishers. Retrieved from <http://noba.to/uzdcfp9b>



Copyright © 2020 by Diener Education Fund. This material is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. To view a copy of this license, visit [https://creativecommons.org/licenses/by-nc-sa/4.0/deed.en\\_US](https://creativecommons.org/licenses/by-nc-sa/4.0/deed.en_US).

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a Website does not indicate an endorsement by the authors or the Diener Education Fund, and the Diener Education Fund does not guarantee the accuracy of the information presented at these sites.

### Contact Information:

Noba Project  
[www.nobaproject.com](http://www.nobaproject.com)  
[info@nobaproject.com](mailto:info@nobaproject.com)