**RadioLab Podcast - Neuroscience/Psychology**

1. Who is the scientist being interviewed? Explain the research that they perform.
2. Explain how the podcast connects to something that we have learned about it in class. BE SPECIFIC!
3. What is something that you have found interested discussed in the podcast? Be specific.
4. Summarize the key points of the podcast in 4-6 sentences
5. Discuss your podcast with a neighbor who listened to a podcast other than yours. What is the key idea(s) of their podcast?

## **Clive**

<http://www.radiolab.org/story/91578-clive/>

The story of a man who’s lost everything. Clive Wearing has what [**Oliver Sacks**](http://www.radiolab.org/people/oliver-sacks/) calls “the most severe case of amnesia ever documented.” Clive’s wife, [**Deborah Wearing**](http://www.radiolab.org/people/deborah-wearing/), tells us the story along with Oliver Sacks. And they try to understand why, amidst so much forgetting, Clive remembers two things: Music and Love.

Thanks to Uden Associates Productions for excerpts from the 1986 film about Clive Wearing, "Equinox: Prisoner of Consciousness."

## **Adding Memory**

<http://www.radiolab.org/story/91573-adding-memory/>

We start this section off with a question from writer Andrei Codrescu: ["where do computers get their extra memory from?"](http://books.google.com/books?id=q-tya64stmgC&pg=PA11&lpg=PA11&dq=adding+memory+codrescu&source=web&ots=fGjnpmPMr0&sig=4r2SoVlcmnj0y6v21024x06r5HI) And then we take it literally. Can you add memories? Dr. Elizabeth Loftus says yes. She’s a psychologist in the department of Criminology, Law and Society at the University of California at Irvine, and her research shows that you can implant memories -- wholly false memories -- pretty easily into the brains of humans. Her work challenges the reliability of eye-witness testimony, and is so controversial that she once had to call the bomb squad. Then, producer Neda Pourang brings us the story of finding a lost memory. Painter Joe Andoe incessantly paints huge canvasses of seemingly random images: horses, pastures, and -- more recently -- a girl with a particular about-to-say-something look on her face. He didn't realize until recently that he'd been painting a day from his past, a fragment of an afternoon 30 years earlier.

## **Eternal Sunshine of the Spotless Rat**

<http://www.radiolab.org/story/91570-eternal-sunshine-of-the-spotless-rat/>

What is a memory? Science writer [**Jonah Lehrer**](http://www.radiolab.org/people/jonah-lehrer/) tells us is it’s a physical thing in the brain… not some ephemeral flash. It’s a concrete thing made of matter. And NYU neuroscientist [**Joe LeDoux**](http://www.radiolab.org/people/joe-ledoux/), who studies fear memories in rats, tells us how with a one shock, one tone, and one drug injection, you can bust up this piece of matter, and prevent a rat from every making a memory. LeDoux’s research goes sci-fi, when he and his colleague [**Karim Nader**](http://www.radiolab.org/people/karim-nader/) start trying to erase memories. And Nader applies this research to humans suffering from PTSD.

## **Dreams**

<http://www.radiolab.org/story/91536-dreams/>

Astrologers and psychics, move over, labcoat scientists are getting in on the study of dreams. First up, Harvard Professor [**Robert Stickgold**](http://www.radiolab.org/people/robert-stickgold/) tells us about how he found a foothold into studying dreams, and published the first paper on the scientific study of dreams in 40 years with a little help from [Tetris](http://www.online-game.tv/play/tetris%3C/a%3E). Then, MIT Prof [**Matt Wilson**](http://www.radiolab.org/people/matt-wilson/) peers into sleeping rat brains. He’s learned to read the synaptic brain chatter in the rat brains, and—though he won’t quite say it himself—it seems pretty clear that he’s seeing their dreams.

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## **Pinpointing the Placebo Effect**

<http://www.radiolab.org/story/91540-pinpointing-the-placebo-effect/>

All over the world, people say they are healed by things that turn out to be placebo. So it's easy to think that they must have been faking in the first place if all it took was a little sugar pill to assuage their ailments. But keep your scoffing at bay. That little white pill may be inducing some very real effects. We talk to placebo experts [**Fabrizio Benedetti**](http://www.radiolab.org/people/fabrizio-benedetti/) and [**Tor Wager**](http://www.radiolab.org/people/tor-wager/) who tell us about the well-stocked pharmacy in our brains, just waiting to be unlocked.

Then pain expert, [**Dr. Daniel Carr**](http://www.radiolab.org/people/dr-daniel-carr/), takes us to the WWII Battle of Anzio, where a puzzled young medic sees that the same bullet can create very different experiences of pain. And [**Daniel Moerman**](http://www.radiolab.org/people/daniel-moerman/) tells us how the color of a pill effects how well Italians sleep.

## **People Who Lie**

<http://www.radiolab.org/story/91616-people-who-lie/>

What's going on in the mind of a liar? Producer Ellen Horne tells the story of a con woman and the trail of mistrust she leaves in her wake. Then we delve into the brains of pathological liars with [**Yaling Yang**](http://www.radiolab.org/people/yaling-yang/), a psychologist at the University of Southern California. She tells us that pathological liars have a surprising advantage over normal people: they are better at making connections between ideas in different parts of their brain.

## **Head over heels**

<http://www.radiolab.org/story/217567-head-over-heels/>

Diane Van Deren is one of the best ultra-runners in the world, and it all started with a seizure.

For Diane, a charming mother of three, daily life is a struggle. But as soon as she steps outdoors, she's capable of amazing feats. She can run for days on end with no sleep, covering hundreds of miles in extreme conditions. Diane explains how her disability gave rise to such an extraordinary ability, and reporter Mark Phillips heads to Colorado to get to know Diane, and try to figure out what makes her so unstoppable.

## **Basal ganglia gone wild**

 <http://www.radiolab.org/story/217565-basal-ganglia-gone-wild/>

The basal ganglia is a core part of the brain, deep inside your skull, that helps control movement. Unless something upsets the chain of command.

Enter **Liza Shoenfeld.** After graduating from college in 2009, Liza got a job as a research associate in a [lab at the University of California, San Francisco](http://keck.ucsf.edu/neurograd/faculty/kreitzer.html). She was just starting her career in neuroscience, and though she was kind of at the bottom of the totem pole, she got to be a part of some really cutting-edge research. Her lab was zeroing in on how the basal ganglia worked by experimenting on mice, and had figured out a way to essentially switch different parts of the basal ganglia on and off, by shining a special laser into their little mouse brains.

So, armed with her lab skills and an interest in the basal ganglia, Liza started applying to grad schools where she could turn her experience with the mice into research questions of her own. And that's when things got really, really weird...and Liza got much closer to her subject then she'd ever intended.

You can watch a [video of the mice here](http://www.nature.com/nature/journal/v466/n7306/extref/nature09159-s3.mov) (it was posted to *Nature*, along with a [paper on basal ganglia pathways](http://www.nature.com/nature/journal/v466/n7306/abs/nature09159.html)).

Then: Meet Rosemary Morton. She had a little, um, trouble with gravity. Actress [Hope Davis](http://www.imdb.com/name/nm0204706/) helps us relive this mysterious case of the topsy turvies--a true story that was excerpted from an essay by Berton Roueché, and which first appeared in the *New Yorker* in 1958 and was later published by Dutton in a book called "[The Medical Detectives](http://us.penguingroup.com/nf/Book/BookDisplay/0%2C%2C9780452265882%2C00.html?The_Medical_Detectives_Berton_Roueche)."

## **A Head Full of Symphonies**

<http://www.radiolab.org/story/301427-head-full-symphonies/>

**Bob Milne** is one of the best ragtime piano players in the world, and a preternaturally talented musician -- he can play technically challenging pieces of music on demand while carrying on a conversation and cracking jokes. But according to Penn State neuroscientist **Kerstin Betterman**, our brains just aren't wired to do that. So she decided to investigate Bob's brain, and when she did, she discovered that Bob has an even more amazing ability... one that we can hardly believe, and science can't explain. Reporter **Jessica Benko** helps us get inside Bob's remarkably musical mind.

 UPDATE: Bob's opera is now done! You can check it out [here.](http://bobmilne.com/new/index.php/sleepy-hollow)

And check out the four symphonic pieces we use to illustrate Bob's musical abilities:

**Schubert**: Symphony No. 8 "Unfinished"

**Brahms**: Symphony No 2, First Movement

## **The Story of Me**

<http://www.radiolab.org/story/91498-the-story-of-me/>

We visit U.C. San Diego Neurologist, V.S.Ramachandran who tells us about the evolution of human consciousness…or the difference between the way we think of some abstraction, like love and the way a baboon thinks of a rear end. Something in the way our brain operates tells us about our ability to imagine and perceive ourselves. Paul Broks, author of [*Into the Silent Land*](http://www.amazon.com/exec/obidos/ASIN/0802141285/radiolabbooks-20/), invites us into his childhood dreams, inhabited by tiny little men whom he had no control over. Robert Louis Stevenson, famed spinner of dark tales, had his own little men in his head, that he exploited for fame and profit.

## **Where is that part that is "me"?**

<http://www.radiolab.org/story/91497-where-is-that-part-that-is-me/>

Looking into a mirror as a young child, Steven Johnson wondered, "How is that me?" We try to find that part of the brain that recognizes ones self with Montclair State University Professor Julian Keenan. Turns out: only half of your brain really knows who you are. Also, Independent radio producer [**Hannah Palin**](http://www.radiolab.org/people/hannah-palin/) tells about her mother, who, after suffering an aneurism, woke up with a completely different personality. She looks the same, and has the same memories, but where did her old mother go? One possible answer: Vietnam. Later, Paul Broks continues the discussion on the fragility of the self.

## **The Butcher's Assistant**

<http://www.radiolab.org/story/91526-the-butchers-assistant/>

There's a sense so essential to our everyday functioning, it is almost impossible to describe beyond... simply being. Or existing, physically. Called [proprioception](http://en.wikipedia.org/wiki/Proprioception), and sometimes referred to as the sixth sense, it is the sense that the body uses to detect itself. Radio Lab talks to one man and his doctor who have an interesting vantage point for explaining this sense. Ian Waterman (picture at right, seated, during a research trial) can describe this sense so accurately because he is one of the few people in the world to have lost it. Ian and his doctor, Jonathan Cole, pressed themselved into the world's smallest BBC recording booth to talk to us about what Ian doesn't feel.

## **Out of Body, Roger**

<http://www.radiolab.org/story/91527-out-of-body-roger/>

*I was there. But I, like, wasn't there. I was floating. I was looking at myself from outside of myself.*

If it hasn't happened to you, it's likely happened to somebody you know. And whether or not you believe it, about one in ten people report having had one. "Out of body" experience, it's a dirty word in many circles. Which is perhaps why pilots call it "G-LOC" (gravity-induced loss of consciousness, pronounced "G-lock" not "glok"). Turns out this kind of experience (call it what you want) occurs quite frequently among fighter pilots. Producers Ann Heppermann and Kara Oehler bring us the story. We'll hear from pilots Tim Sestak, and Col. Dan Fulgham on what it's like to lose yourself, unfortunately for us skiddish passenger-types, while flying a plane. Finally we'll hear from [Dr. James Whinnery](http://www.near-death.com/experiences/triggers06.html), who simulates G-LOC by placing pilots in giant centrifuges. His research monitors their brain activity as they accelerate to speeds inducing this loss of consciousness. But Doc Whinnery isn't just a scientist, he's a subject. And his research has taken him to some surprising places.