# BRAIN SCIENCE PODCAST

*With Ginger Campbell, MD*

## Episode #1

A Discussion of the Book, *Mind Wide Open: Your Brain and the Neuroscience of Everyday Life*, by Steven Johnson

Placed on-line: December 15, 2006

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### INTRODUCTION

This is the *Brain Science Podcast*, Episode 1, and I'm your host Dr. Ginger Campbell. On the *Brain Science Podcast* I explore how recent discoveries in neuroscience are helping us to understand how the brain makes us who we are.

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In this episode I'm going to talk about Steven Johnson's book, *Mind Wide Open*, and also share a few podcasts I've found in the last week that are relevant to brain science. One of my goals in this podcast is to share with you books I find that are aimed at general non-science readers and help us to understand all these exciting discoveries that are going on in neuroscience.

### DISCUSSION

For my first podcast I have picked the book, *Mind Wide Open: Your Brain and the Neuroscience of Everyday Life*, by Steven Johnson. Steven Johnson is a best-selling author. Some of his other books include, *Everything Bad Is Good for*

*You: How Today's Popular Culture Is Actually Making Us Smarter*; and, *Emergence: The Connected Lives of Ants, Brains, Cities, and Software*.

The idea for *Mind Wide Open* came to Johnson when he had an experience with biofeedback. He discovered that he was getting these huge adrenaline boosts from telling jokes. And this gave him the idea that understanding how our brains work might give us insight into who we are, and might even change how we experience the world.

Here's a quote from page five: "Your moods, and memories, and perceptions are themselves derived from electrochemical activity in your brain. What could you learn about yourself if you could catch a glimpse of that activity directly?" So, he set out to do just that, and this book is a uniquely personal chronicle of his experience.

Johnson observed that understanding more about the brain's structure and function can change how we see ourselves. For one thing, we'd become much more aware of how much multitasking is going on inside our heads. It's a lot more like an orchestra than a soloist. Every mood or feeling we experience turns out to be a combination of electrical activity in specialized brain regions and the chemical activity of neurotransmitters.

Everyday language captures both our intuitive sense of what is going on and the influence of older ideas about how the mind works. For instance, we might say that we're having a conflict between our head and our heart. Another way of talking about that would be to say a conflict between rational and irrational. When we start looking at the neuroscience we could say that we're having a conflict between our neocortex, which is the rational, and the limbic, which is the older, more emotional part of our brain.

There are two things that make *Mind Wide Open* different from most other books about the brain. First, he avoids complicated terminology and neuroanatomy and he concentrates on what he calls "the brain in action." Secondly, this is an intensely personal account. He makes the latest discoveries understandable, but he uses his personal experience to illustrate the principles.

These two characteristics of his book really support his goal, which is to show us how knowing more about how our brain works can change how we see ourselves. On page 17 he says, "Knowing something about the brain's mechanics—and particularly about *your* brain's mechanics—widens your own self-awareness as powerfully as any therapy or meditation or drug." He also says, "Brain science has become an avenue for introspection."

This book is an excellent introduction to the exciting discoveries of brain science. It is fairly easy to read, and it can even be enjoyed in audiobook format. In fact when I first read it I got it off of Audible.com.

In the next episode of the *Brain Science Podcast* I will continue the discussion of *Mind Wide Open*. One of the topics I plan to cover is what's left of Freud's unconscious in the light of neuroscience research; and also what is the relationship between emotion and memory. Johnson's experiences on 9/11 are very dramatic demonstrations of this principle. So, I hope you will tune in for the next episode.

In the past week I've listened to a couple of podcasts that I think you will enjoy. I am a big fan of all the TWiT—This Week in Tech—podcasts, and one of the newer podcasts in this family is called *Futures in Biotech*. Episode 10 of *Futures in Biotech* is an interview with Dr. Carla Shatz, Department Chair of Neurobiology at Harvard Medical School.

In this interview Dr. Shatz does a wonderful job of explaining one of the things that is a key to understanding why our brains are not just very complex computers. This has to do with our ability to learn; and even though they've made neuronets that can learn, the way we learn is very different. This interview is a really good introduction to that subject. I will put a link to the interview in the Show Notes, but if you're a TWiT fan the easiest way to get there is twit.tv/fib —and that's Episode 10.

There's also a podcast up from Princeton University's lecture series, which is a talk by Antonio Damasio of USC, entitled "Advances on the Neurobiology of Emotion: Taking Stock." Antonio Damasio is a pioneering researcher in the field of exploring the connection between emotion and consciousness. One of my favorite books by him is called, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*. And he has written several other books. Probably the best known one is called *Descartes' Error*.

Anyway, in this lecture he describes the state of research with regards to emotions and the brain. You do need to know that this is a lecture and he refers to slides you can't see. But if you're willing to put up with that small problem it's a very good lecture for getting an overview of the relationship between emotion and the rest of the brain. He also talks about the role of the body, and the interaction between the brain and the body as it relates to emotions.

This episode has been shorter than I planned, but I realized that if I was ever going to get it posted I needed to be willing to start small and work my way up. Eventually I'd like to make my podcast about 15-20 minutes long—maybe even 30 minutes long. But I'm realizing it takes a lot of effort to get this brain science material together.

Because of the amount of prep time required I'm going to try to post the *Brain Science Podcast* approximately every two weeks. Maybe when I get more

experience I'll be able to increase the frequency to once a week, but I think that every two weeks is a realistic goal for now.

I'm thinking about adding a section at the end of each podcast called 'Brain Science 101' where I'll put some basic material. For example, I was thinking about starting with just describing the neuron.

I do now have my *Brain Science Podcast* website up and running; and you can get there by going to brainsciencepodcast.com. That's where you go to see the Show Notes, and also for any blogging that I will do in between podcasts. You can go there to leave comments and suggestions. You can also send me email at docartemis@gmail.com.

In between I hope you will listen to my other podcast which is called *Books and Ideas*, which you can find at booksandideas.com. It's a more personal podcast, and covers everything that I can't fit into the *Brain Science Podcast*. I'm hoping it will actually be a weekly podcast.

Thanks for listening. I look forward to talking with you again soon.

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Transcribed by Lori Wolfson
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