

BRAIN SCIENCE PODCAST

With Ginger Campbell, MD

Episode #14

Dr. Campbell Reviews the First Six Months of the *Brain Science Podcast*

Aired June 14, 2007

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INTRODUCTION

Hi. I'm Dr. Ginger Campbell, and this is the *Brain Science Podcast*—the podcast for everyone who has a brain. In this podcast we explore how recent discoveries in neuroscience are unraveling the mysteries of how our brains make us who we are.

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This is [Episode 14](#). Today we are going to look back on the last six months of the *Brain Science Podcast*. But first I need to make a few announcements.

You may have been having some problems with the feed in the last couple of weeks associated with my moving the podcast to [Podango.com](#). If you're a new subscriber or anyone else who's trying to get all the episodes, if you're using iTunes and you've noticed that the first six or seven episodes no longer seem to appear, the easiest way to get all the episodes now is to go to the website on Podango. The address for this is [brainscience.podango.com](#). There you should

see a player and a list so you can get any of the episodes that you might have missed that you might be looking for.

I apologize for any problems that have come up with this changeover to Podango. I'm hoping that eventually this will actually help me to get more subscribers and also attract other science podcasters so we can help each other build our audiences.

As usual you can send me feedback at docartemis@gmail.com. And please continue to visit the website brainsciencepodcast.com.

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After I posted [Episode 13](#)—which is when all the problems with the feed started—I realized that I had reached the six-month mark in my podcasting career. Now, I realize that six months really isn't that long. The pioneers of podcasting are at about the two-and-a-half-year mark and many of them, like [Mur Lafferty](#)¹ of *Geek Fu Action Grip*, have recorded 100 episodes. But still, many podcasts don't make it to the six-month mark, so I thought it was reasonable to take a look back.

Also I realized that I've covered a lot of material in the last six months. And I thought that it would be good to go back and think about what we talked about in the first 13 episodes and reflect on this, and also to give you a little taste of what I'm planning to cover in the next several months. If you are a new subscriber I hope you will go back and listen to the older episodes.

Hopefully by the time you hear this podcast the problems on iTunes will have been fixed and you'll be able to get all of the old episodes at iTunes. However, if the problem of only half the episodes appearing is still going on when you hear this episode, here are the options for getting all the old episodes.

¹ Mur Lafferty was interviewed in [Episode 17](#) of my other podcast, *Books and Ideas*.

You can go to brainsciencepodcast.com and click on 'Episodes' and you will see an episode listing along with links to get to downloads and the player. Or if you'd like to skip that step you can go straight to brainscience.podango.com. On that page there is a list of all the episodes and a nice little player where you can listen to the episodes or download them directly.

For those of you who have been with me for the last several months, I want to take this opportunity to thank you for all your support. Your emails have really kept me going. I hope today's episode will jog your memory a little bit and perhaps help to put some of the pieces together.

DISCUSSION

When I started the *Brain Science Podcast* six months ago I had been wanting to podcast for about a year-and-a-half. It took me about a year to come up with an idea, and about six months to turn that idea into the *Brain Science Podcast*. Since I started podcasting I've certainly learned a lot. It has given me a great opportunity to share what I've been learning about the brain with many people from around the world.

In fact, my biggest surprise has been how many people have written to me from other parts of the world. I am humbled by the fact that so many people are able to tackle such a challenging subject in a language that is not their first language—especially since I struggle with just asking simple questions in Spanish.

The great thing about the topic of brain science is we don't have to worry about running out of ideas and material. If anything, it's hard to keep up with all the new information. And that's the reason why I try to narrow it down to one specific subject in each episode.

So, let's look back on some of the topics that we have discussed in the first six months. And this is not going to be an exhaustive review of all the previous podcasts; just a sort of highlight tour.

One of the most important topics that we have talked about is memory. I have devoted two episodes so far to memory and I'm sure there will be more. And I have used two books so far by Dr. Eric Kandel—which is appropriate since he is a pioneer in the field and a Nobel Prize winner for his findings.

Early on in [Episode 3](#), when we were talking about his autobiography, we learned that the molecular basis for memory is similar from the simple *Aplysia* up through humans. This was something of a surprise at the time of the discovery. More recently we returned to the subject of memory and we learned that there are many different kinds of memory, and that memory seems to be distributed throughout the brain.

Another topic that we have devoted several episodes to is the topic of emotions. One of the things that most interests me about the recent discoveries in neuroscience is the realization that emotions are a key part of our intelligence. And that was the main theme of [Episode 11](#). It turns out that our emotional make-up is a fascinating mixture of innate basic emotions that we share with all other mammals, and the more complex emotions that are unique to humans.

One of the things that makes people unique is language, and in Episode 6 we explored how emotional signaling may provide the foundation for more complex communication, including language. Also in [Episode 6](#) we considered the controversy over whether language is hard wired, and the growing evidence that while the capacity for language is at least partially innate, experience is a key determinant. Obviously language is a topic that we will talk about more in the future.

Probably the toughest topic that we've tackled so far was brain chemistry. This was [Episode 8](#). And many of you wrote to me that you felt that this episode might be a little too difficult. I actually had one person write to me and say it was their favorite episode. It turns out that the neurochemistry of the brain is quite a challenging topic. It's unlikely that I will try to go into this level of detail in the future.

On the other hand, [Episode 10](#), which was about neuroplasticity, was probably one of the most popular episodes. Most people are excited to know that their brains can continue to grow and adapt throughout our lives. And since the discovery of neuroplasticity is a relatively new one, I'm sure we're going to be learning a lot more about this topic in the future also.

One of the most challenging questions facing neuroscience is trying to explain consciousness. We talked about this briefly in [Episode 5](#). I introduced some of the basic philosophical ideas about the study of consciousness, because until recently consciousness was considered a question for philosophers, not neuroscientists.

But now it really is a question at the intersection of philosophy and science, which is probably why it's so fascinating and elicited so many emails. I have several people who have written me emails that could be described as almost essays; which I hope that they will post when we get the Discussion Forum up later this month.

So, that's just a brief review of the topics that we have talked about so far on the *Brain Science Podcast*. I think one of the overwhelming themes that has been coming out from episode to episode is that there are a lot of functions going on in our brain that we do not have conscious access of, or control over. Another important theme that I haven't really explicitly emphasized is the fact that our brain is a combination of the brains that we have inherited from earlier life forms

and our own uniquely human brain. We will be exploring both of these topics in more detail as the podcast continues.

There are a couple of other topics that I want to mention because of their glaring absence so far. One is the topic of perception. One of you wrote to me asking me to discuss vision—and that's just one of the topics under the subject of perception. Vision has been studied probably more than anything else that the brain does. It's actually amazing how much of the cerebral cortex is devoted to vision.

But I haven't tackled perception or vision yet because, to tell you the truth, it's really pretty complicated. And I haven't found a good book on this yet. So, if somebody has an idea of a good book about perception—one that would be at the sort of general reader level—please send me email about that at docartemis@gmail.com.

Another topic that we've alluded to but haven't talked about in detail is the role of the frontal lobes—especially the prefrontal lobes, which seem to be very important in making us human, since they have somewhat of an executive function. So, we will definitely be talking about the prefrontal lobes in the next few months.

Another topic that I want to talk about in the near future is how evolution has shaped our brains, because as we study the function of our brain it becomes clear that it is a structure that consists of parts that are very old, and then the new parts that only humans have. And this relates to evolution. We'll talk more about this in an upcoming episode.

Another topic that I haven't really tackled yet is artificial intelligence. This is an issue that stands at the boundaries between neuroscience and computer science, and an area that is becoming increasingly relevant. If anyone has any ideas of a

good book on this subject that's pretty much at a beginner level, please let me know.

I have the next several episodes of the *Brain Science Podcast* basically planned out. But I want to say just a word about the format of this podcast. If you've been listening to it for awhile you know it's usually a discussion based on a specific book, and the book is usually a book that is aimed at general audiences. The way that I choose the topics is that I'm always reading several books, usually concentrating on one primary book.

So, the topics that I pick reflect what I am currently reading. Any of you that have taught yourself a subject on your own know that the way you learn, once you get out of school, is you read about what you're interested in and you follow the ideas where they go. And that's what I'm doing with the *Brain Science Podcast*. I enjoy sharing what I'm learning with you.

I've done a few interviews on the podcast, and some of you may be wondering why there aren't more interviews. The biggest obstacle to doing more interviews is lack of time; because, although doing an actual interview is not particularly time-consuming, tracking down the people to interview and making arrangements to record at a time that works for them gets pretty time-consuming. And I do still have that other job.

My plan for the future is that when I have the opportunity to do an interview, even if it's related to brain science, I'm going to go ahead and put it on *Books and Ideas*, which is my other podcast, which I've been kind of neglecting recently because of the fact that the *Brain Science Podcast* is a time-intensive podcast.

I'd like your feedback on how you feel about interviews and anything else—especially if you want to tell me a topic you would like me to cover if I haven't

mentioned it, or any other kind of feedback. It's very much appreciated. You can write to me at docartemis@gmail.com.

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Now, what's coming up? The next episode is going to be about choice. It's going to be something of a continuation of [Episode 13](#), except that it's going to be at a much deeper level because we're going to be considering Read Montague's book, *Why Choose This Book? How We Make Decisions*. This is an introduction to the computational model of the mind. [Note: [Episode 15](#) is an interview with Read Montague.]

It's a little bit heavier than the material of the book, *Blink*. But I'm currently working on bringing this material into a form that will make sense in the podcast. So, I look forward to talking to you about this topic. It's kind of related to artificial intelligence, but not exactly.

Other episodes that I have planned for the near future are an episode about aging based on a book called, *The Wisdom Paradox*². In this episode we will, of course, return to the issue of memory once again, but from another angle. We will also be having an episode soon on the prefrontal lobes³, and possibly an episode about the role of evolution in the formation of our brains⁴. A little further down the line I hope to return to the topic of consciousness and possibly the question of free will.

Before I close I would like to remind you as always that you can see the Show Notes and listen to episodes at brainsciencepodcast.com and send me feedback at docartemis@gmail.com. I especially appreciate it when people share their

² *The Wisdom Paradox* is discussed in [Episode 17](#).

³ The prefrontal lobes are discussed in [Episode 16](#).

⁴ Brain Evolution is discussed in [Episode 47](#), [Episode 48](#), and [Episode 51](#).

favorite books on neuroscience with me. I've gotten some great leads from several listeners and that is much appreciated.

Another thing I'd like to remind you of is the fact that now that the *Brain Science Podcast* is on Podango.com it's on the station called Science for Everyone, which I am in charge of. I'm looking for other good science podcasts, especially independent science podcasters who would like to have access to advertisers so they can make a little money, because this is very hard to do as an independent podcaster.

If you know a great podcast let me know what it is and I will write to the person, or if you have a science podcast that you think would fit on Science for Everyone, please let me know. The more good podcasts we get on the station the more we will be able to help each other get more listeners.

[Note: Podango went out of business at the end of 2008, but I later started my own site to promote science podcasting at <http://sciencepodcasters.org> and I am still recruiting podcasts for this site.]

I hope that you're not too disappointed that I didn't introduce any new topics this week. I thought that it might be a good idea for us to give our brains a chance to consolidate all the interesting ideas we've been discussing over the last six months. I'm looking forward to getting back with you soon and getting into more about how our brains make us who we are.

Thanks again for listening.

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Transcribed by [Lori Wolfson](#)

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