

Brains!: A Neuroscience Comic Book for Kids

In *Understanding Media*, Marshall McLuhan divides forms of media into two categories, “hot” and “cold.” He states that “any hot medium allows of less participation than a cool one, as a lecture makes for less participation than a seminar, and a book for less than a dialogue.” A popular example for a type of “hot” media would be a movie where one can simply sit down and watch the story unfold in front of their eyes. To exemplify “cool” media, McLuhan uses a comic book. Comics are inherently “cool” because they often require the reader to participate fiercely with the pages the artist creates. One has to fill in the gaps between panels and hear the noises of the sound bubbles in order to fully appreciate and understand the content.

Although not consciously at first, I believe it was the comic book’s identity as a “cool” form of media that initially drew me in. When I was a child, I loved having to piece together the panels of a comic book and envision the story the artists were trying to tell. As an adult, this love is reflected in my passion for research. In a laboratory, one has to synthesize disparate pieces of knowledge to find a coherent story. One has to dream and imagine to be able to picture the workings of tiny cells and complicated pathways after reading a dry scientific paper. Science, like comic books, requires complete participation. This dual love of both science and comics is combined in my neuroscience comic book, *Brains!*.

The goal of *Brains!* is to teach younger children (around elementary school age) a little bit about what is going on in their nervous system, but it is also meant to help them learn about how fun science can be. By using comic books as a medium, they have to engage with the material to understand it, and they can let their imaginations run free as they picture the miniscule cells of their brains interacting with one another. They can give the characters their own voice, and relate the anthropomorphized cells’ personalities back to people they know in

their own lives. The comic aims to both increase the reader's knowledge of neuroscience and their overall interest in the brain. My hope was that by making neuroscience lighthearted and relatable, we could show younger children that everyone can understand science, and that the nervous system is a fascinating part of your body. Hopefully, this might even persuade some younger students to begin to consider neuroscience as a possible career.

With these goals in mind, it took me 6 months to complete the first installment of *Brains!*. With the help of my advisors, I began to understand how to create a compelling comic book. Professor Renita Schmidt, a specialist on elementary literature, gave me advice and showed me examples of the most successful comic books, and I began to realize that my comic could not simply be a restatement of the knowledge I learned in my classes and textbooks, simplified and portrayed in cartoons. It had to contain a story and characters. It had to have movement and action. Through this process of translating basic concepts into stories, my knowledge of neuroscience began to subtly change. It morphed from a simple collection of dry facts about different cell types into to a rich interplay of characters: a perspective that helps me today in my classes.

With these changes in mind, it only took one more month before the rough draft of the comic was ready. After I had met with my other advisors and finished fine-tuning the story and drawings, it was ready to go out into the world. I was first able to meet with Strong Girls Read Strong Books, an elementary school book club headed by Professor Schmidt. I introduced myself and gave them a brief description of why I made the comic, then I let them read through the comic itself.

The students had a couple concerns such as the fact that the words were hard to pronounce, and it was also a little too advanced for some of the much younger students.

However, overall the kids were excited about the comic, they loved the idea of being able to see into your brain. As I walked around the classroom I got the chance to talk to the students about their favorite jokes and their favorite characters, and a lot of them began asking me about my research. Getting the chance to talk to these young girls about my aspirations as a neuroscientist was an incredible experience, and I hope this interaction built in some students a desire to learn more about the brain and potentially pursue a career in science.

Currently, I am working on improving some of the issues the students brought up in the book club by adding some additional material to the comic book, such as pronunciation tips and character biographies. After that has been taken care of, I am going to distribute the comic more widely to local libraries and classrooms.

As this project has unfolded, I have realized that comics can be used not only to communicate science to the public, but also to help enrich the understanding of the author. Creating this comic deepened my understanding and appreciation of neuroscience. I believe that by making similar comics for their own work, other researchers can similarly enhance their own understandings of their projects. Comics could also be used to teach new concepts as well, and getting students to visualize, draw and explain difficult concepts makes these ideas much easier to process and retain.