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The Thinking Behind What Drives Creativity at Neuroscience 2013

As Ed Catmull, Ph.D., began his talk at [Neuroscience 2013](#) at the San Diego Convention Center, SfN staffers were outside the massive ballroom re-directing attendees to an overflow room with about 500 seats and three projection screens, each the size of house. It seemed an appropriate way to hear Catmull, president of Disney and Pixar Animation Studio, someone with the pioneering influence of Steve Jobs, Bill Gates, or Mark Zuckerberg.

Once a computer scientist who thought about a career as a physicist, Catmull was instrumental in founding Pixar and had a hand in all of the largest grossing, animated films in history: *Little Mermaid*, *Lion King*, and the Toy Story films and, more recently, *Wall-e* and *Up*. Among his boatload of honors are five Academy Awards.

Catmull's body language and tone suggested Yoda of *Star Wars* rather than a character from one of his Pixar films. He spent a few minutes talking about the creation of Pixar and its relationship with Disney, but he focused mainly on the forces that drive creativity and what experience has taught him about what he called his greatest challenge: making creativity sustainable. Honesty, candidness, collaboration, and self-evaluation were all concepts he endorses, although there are subtle nuances that come along with each.

He talked about acknowledging problems and obstacles and having the courage and foresight to remove them. Seeing enormously successful Silicon Valley peers subtly lose their edge helped him avoid the same mistakes at Pixar. He called "braintrust" a concept he came to accidentally, explaining that is what he called the five-person team that had perfect chemistry in creating *Little Mermaid*, *Beauty and the Beast*, and *Aladdin*. Following their success, he said, Pixar began adding people to creative teams as new projects took on more size and scope. As a result, candor and trust were compromised. "People want to be honest, but they also want to not offend and be respectful," he said. The way "notes" about the films were dispensed—anonously and without hierarchical influence—helped put the creative process back on track.

In some fields, such as aviation or surgery, there is no room for error, he pointed out. But in the creative process, a certain degree of failure is not only acceptable but should be expected. Beware of making the creative process smooth, perfect, or cost-effective, he warned. "The goal should be to make a great movie, not anything else," he said. He has also learned to be careful about not handing the creative reins over to people who have led successful technical projects, the folks he called "good at getting things done."

This is what happened at Disney, he said. "As a result, the quality fell, dramatically." In contrast, *Up* went through four separate stories with all kinds of convoluted details, a messy, non-linear process that ended in a successful movie.

Catmull turned mystical in addressing "things that can never be fully understood," specifically the role of randomness. He told a harrowing tale of how he and his family narrowly experienced almost certain death in a car accident, making the point that Pixar would never have existed. "Many of us dodge bullets or take bullets, it's just that we don't know it," he said, adding that our brains have to simplify certain events in order to function.

No matter how hard we look or how smart we are, he said, we can never know about how interdependencies shape our lives. If we can step back and realize the full complexity of events, we can better appreciate others and be a little more careful about the conclusions we draw.

Following his talk, many of the attendees moved down the corridor for a second program on creativity. The symposium was moderated by Dana Alliance member Antonio Damasio, Ph.D., and featured Dana Alliance member and noted psychiatrist Kay Redfield Jamison, Ph.D., NPR's Bruce Adolphe, Brazilian artist/photographer Vik Muniz, and inventor Daniel Hillis.

"How does the brain work to produce such extraordinary results?" asked the promotional literature for the symposium. After sitting through both programs, I didn't fully have the answer, but I was certainly left thinking that some extraordinarily gifted people had given keen insight into the creative process.

—*Bill Glavin*

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