Paramecium Evidence of Non-Neurological Consciousness

By Edward J. Gordon

In 2002, I was taking a microbiology course in college. I will never forget this particular day, because it literally changed my life. It set me on an obsessive study of the nature of consciousness and the dynamics of afterlife survival. If you want, you can have the same experience I did, and if you end up seeing what I saw, and learning what I subsequently learned, it will change the way you define who and what you are.

It was an evening class, and I was there with my friend who was my lab partner. This particular class was not well structured. The professor was close to retirement, and she always struck me as particularly burned out on the whole notion of teaching. So for the most part we tried to do the experiments the way she briefly told us to do them, but for the most part we never had a clue what we were supposed to do on any given day with our microscopes. That evening was no different.

That evening, the instructor brought in a one-liter beaker of pond water from a pond she said sat on her property. There was a good amount of green algae in it, and the water was on the brownish side. We were told to put a drop of the water on a slide, and look at it under our microscopes. We were supposed to identify as many microorganisms as we could—or at least that's what most of us in the class thought we were supposed to do. We were then to draw pictures of those microorganisms on paper and hand in the paper. It was understood that any quality of artwork would get an A, so long as an attempt was made to draw the found organisms. From there, we were set loose to prepare our slides and make our observations. My friend and I both knew it was going to be a long boring class.

I prepared my slide, I brought my drop of pond water into focus, and fortunately I had gotten a pretty good sample. There were lots of protozoa swimming around, mostly paramecia.

Because of the quality of my slide, I let my friend look on as well as some fellow students, and everyone seemed to think it was at least mildly cool to see all the little creatures. Then I looked again, and with nothing else to do, I just watched the paramecia swimming around and feeding on the chunks of algae.

I saw one of the creatures feel around a bit of algae, turn, wander around another part of the algae, then turn and come back to the original spot it was feeding on and then turn and swim away from the algae altogether. Many of the paramecia were doing the same thing. Then a question popped into my head; it literally just sprang into my consciousness as if it had come from outer space: What made the paramecium turn?

You see, there is one thing we know about paramecia, and I knew this from high school biology even before I took the college class: We know everything.

We know down to a molecular level how their cilia move to propel them in their aqueous environment; we know all their innards, because for the most part, they're transparent creatures. They have all the things a cell has: mitochondria, Golgi bodies, organelles, vacuoles, a nucleus, DNA, ribosomes, a protein cell wall, etc. Almost everything there is to know about a paramecium, especially about the very common paramecia species known as *P. caudatum*. And that's the species I was viewing that evening in the class.

One thing we know, absolutely, is that they have no brain or nervous system whatsoever. They are only a one-cell animal. And yet I was watching these little creatures make decisions.

They were deciding to move this way or that, turn around, prod some algae, then swim away to another spot, and then come back to the exact original spot. How could they possibly choose to move at any given point in time? How could they choose to turn one direction or the other, how could they operate their cilia to propel them at greater or lesser speed through the water, and how could they remember the spots where they had been previously feeding?

I sat there in that lab with my medical microscope looking at these creatures, and it suddenly dawned on me that I was looking at an undeniable proof of external consciousness. Only by way of consciousness can will be displayed in mobile animals, and these creatures were without a doubt displaying will. In front of my very eyes, I was witnessing volition on the part of a mobile creature that had no brain or nervous system whatsoever.

After about twenty minutes, I'd told everyone in class what I was seeing. I told my friend; I went around to my fellow classmates and asked if they were seeing the same thing. I would have asked the professor

about it, but she'd already gone back to her office. Everyone I spoke to that evening, I asked the same question: "How can they move? How can they move if they have no brain?"

I would like to report that a revival broke out in the classroom and we all praised the heavens for this absolute scientific proof of external consciousness—consciousness that had nothing to do with a "brain," a miracle of nature that revealed once and for all that there is no reason to think our brains "generate" consciousness, super-strong repeatable evidence that we merely receive consciousness with the brain and use it to move our bodies, surety that our consciousness, all consciousness, resides external to the body. But that didn't happen. All I got was blank stares.

My friend just shrugged his shoulders and went back to amusing himself by watching paramecia die with the application of tiny drops of bleach added to the water on his slide. The other people in the class didn't seem to care at all. They just wanted the hour to end so they could go home, and I couldn't understand it.

I felt myself becoming irritated. I even wondered if I were in a dream and not actually awake at all. How could they not see what I was seeing—we all had the same experiment going on. It was right in front of them—but not one of the twenty-three other students that night joined me in my amazement. The paramecia convinced no one but me.

Later that year, however, after the class had finished, I found I was still obsessed with what I had seen. I went online and bought a medical microscope, so I could continue to watch paramecia swimming around whenever I wanted to. Believe it or not, high quality microscopes, even today, are not terribly expensive. I repeated my observations several times at home, but I eventually donated the microscope to a veterinary student, because by then there were several YouTube videos of paramecia swimming and feeding, and that was much easier to watch than setting up a slide every time. You can watch these videos for yourself by searching for "paramecia feeding" or "paramecia swimming." Here's a good link to check out:

http://www.youtube.com/watch?v=aBBHYjmix04

Throughout the years thereafter, I tried arguing this observation, and my resulting conclusion that consciousness exists without brains, with various atheists and skeptics online, but the response was always the same: “It only *looks* like volition, but it’s not. It can’t be. They have no brain.”

In all my debates and discussions, I never received any support for my observation. No one I talked with considered these little creatures to have the ability to exercise volition in their movements.

Eventually, I was even beginning to doubt it myself, and then another miracle happened thanks to the internet. I came across a scientific paper written by Harvard L. Armus, Amber R. Montgomery, and Jenny L. Jellison from the University of Toledo. The paper is titled, “Discrimination Learning in Paramecia (P. caudatum),” and was published in “The Psychological Record” (2006, Issue 56, pages 489-498). The paper detailed experiments they had done that confirm the validity of experiments that had been done going all the way back to 1911 where paramecia have been found to be capable of learning through classical conditioning.

Classical conditioning is also known as stimulus-response training. For instance, an animal can be trained to respond in a certain way each time a stimulus is given followed by a reward. For instance, you can train a dog to sit anytime it hears the refrigerator open. But such conditioning requires a mind. If a dog sits when it hears the refrigerator open, it must be deciding to sit as opposed to standing. You can’t train something that’s unconscious. You can only train something that possesses consciousness, and consciousness requires a mind.

The research by Armus, et. al., showed that paramecia can be trained as well. Not only did it prove that, but apparently we’ve been training paramecium for a century. Perhaps this isn’t such a big deal on the surface, but the implication is staggering: not only do paramecia have volition; they apparently have memory as well. You can’t train something that has no memory. Memory and will are the hallmarks of consciousness, but *P. caudatum* have no nervous system whatsoever. Where then is the consciousness coming from?

The research doesn’t venture a guess. It doesn’t make speculations about where the consciousness is coming from; it only shows that paramecium can be trained. The implication, the 800-pound gorilla in

the room, is the common knowledge that paramecium have no physical mechanism that can generate the mind that is required to do the training tasks.

You should read the research paper. Here is the link. Take as much time as you need to fully understand it. It is simply incredible. But if you can't do that for whatever reason, watch the YouTube videos and as you watch, realize that these creatures are not mysterious. We know everything about them. They are composed of only one cell, and they have no neurology whatsoever. Their consciousness, evidenced by their will, memory, and movement is not coming from a brain.

So what does this have to do with you, and what does it have to do with defining who you are?

Consider this: People look in the mirror, and they think that's who and what they are. They are their body, and their mind is up in their heads generated by their brains. And If the brain dies, the person dies. That's the common understanding of our nature.

But if paramecia, without any nervous system whatsoever, are obviously conscious, it is reasonable to assume your consciousness isn't a product of your brain. Why would it be? Apparently, consciousness exists in trillions of little creatures on the earth who have no brain at all.

There has always been a debate about the human mind. No one really knows where it comes from, but since the 19th Century, since the dawning of modern science, it has always been assumed it comes from the workings of the brain. After all, if you kill the brain of a person, they don't move anymore, and they die. But there are problems with that theory.

First, there is no explanation ever given for how the firings of neurons in the brain can produce the phenomenon of consciousness. It's just assumed that they do. Second, there is no way to know whether the consciousness is coming from the brain or just being received by the brain, the way a television doesn't produce a TV program but rather acts as a receiver of the TV signal that is broadcasting the program. There have always been these two possibilities existing side by side: either the brain produces consciousness or it receives consciousness.

But with paramecium, the question is answered: there is consciousness even when there is no brain.

And what then does that tell us? For one, it tells us there is absolutely no reason to think consciousness stops when the body and brain dies. In other words, the paramecium studies give clear and convincing evidence that consciousness is an external thing. Our bodies are not generating it. Our bodies are being used by it, just as the paramecium bodies are used by it.