

Background: Adrian Owen is a groundbreaking British scientist whose research has been reported in documentaries, on radio and television shows, and in newspapers and magazines. This article presents the remarkable discoveries Owen brought to light as he studied the brain activity of a special group of people.

Saving the Lost

By Reynaldo Vasquez

How can we understand what a person who cannot respond is thinking or feeling? People in a vegetative state are those who have come out of a coma and appear to be awake with open eyes and sleep patterns. However, they do not show any awareness of who they are or where they are. They cannot speak and do not respond to sounds, hunger, or pain. The actual condition of patients in a vegetative state mostly remained a secret until Adrian Owen made some startling discoveries. In the late 1990s, British scientist Owen realized that the technology of neuroimaging—producing images of brain activity without surgery—supported what scientists already knew. Different parts of the brain process different kinds of thoughts. Owen’s concern was that neuroimaging was breaking no new ground. He wanted to find a real use for it.

In 1997, Owen and his team began testing a patient who was in a vegetative state. They scanned her brain as they showed her familiar faces, and “it lit up like a Christmas tree.” Based on these results, the patient was given intense rehabilitation—whereas in many cases, people in a vegetative state are simply kept alive. She has since sent a letter to thank Owen, realizing that without the brain scan, she too would have been written off. Owen continued his research, and in 2006 he made another breakthrough. He took brain scans of a woman patient as he asked her to imagine playing tennis. Strange as it sounds, scientists know the part of the brain that shows activity in healthy people when they imagine playing tennis. It is always the same. It was the same in his patient, too. He asked his patient to imagine walking through her home. Her brain showed activity in the exact same spot as healthy people would if they thought of walking through the rooms of their homes.

Owen believed that this showed that the patient was conscious. Some researchers agreed with Owen, while others disagreed. They believed that the response was an involuntary reaction to the final words that Owen said to the patient. Owen did not give up. With a team from Belgium, he tested 54 other patients. Of these, five responded in the same way as his previous patient. Then they reached a huge breakthrough studying “patient 23.” He had been in a vegetative state for five years following a car accident. The scientists discovered that patient 23 was able to give “yes” and “no” answers by changing his brain activity. They asked him questions with answers that the technicians couldn’t know, and that weren’t given away by any clues.

“Is your father’s name Thomas?”

“No.”

“Is your father’s name Alexander?”

“Yes.”

“Do you have any brothers?”

“Yes.”

“Do you have any sisters?”

“No.”

When Owen published his discovery in 2010, there was an immediate response from the media and the scientific community. A Canadian university offered a huge amount of funding for Owen to continue his research there.

There are neuroscientists who do not agree with Owen’s conclusions and who argue about the point at which consciousness can be said to exist. Owen is not interested in such details. In the United States, there are tens of thousands of people in vegetative states. Owen thinks that perhaps one-fifth of these people could be able to communicate. He would like to see that possibility become a reality.