

Substituted Sammy

Sammy was a normal, healthy boy. There was nothing in his life to indicate that he was any different from anyone else. While working his way through college, he obtained a job in a factory, operating a press. On this job, he had an accident and lost his hand. It was replaced with an artificial hand that looked and operated almost like a real one.

Soon afterward, Sammy developed a severe intestinal difficulty and a large portion of his lower small intestine had to be removed. It was replaced with an artificial elastic silicone tube.

Everything looked good for Sammy until he was involved in a serious auto accident. Both of his legs and his good arm were crushed and had to be amputated. He also lost an ear and an eye. Artificial legs enabled Sammy to walk again, and an artificial arm replaced the real arm. Plastic surgery and the use of a cochlear implant enabled doctors to rebuild the ear so he could hear again. The eye was replaced with a life-like glass eye that moved in synchrony with his good eye.

Over the next several years, Sammy was plagued with internal disorders. First, he had to have quadruple bypass surgery to replace blocked cardiac arteries. Next, his kidney's malfunctioned, and he had a kidney transplant. But, the new kidneys failed and he had to be placed on dialysis (no new donor could be found). Later, the remaining part of his digestive system became cancerous and was removed. He had to be fed intravenously. Finally, his heart failed. Luckily, for Sammy, a donor was found and he had a heart transplant.

It was now obvious that Sammy had become a medical phenomenon. He had artificial limbs. Nourishment was supplied to him through his veins; therefore, he had no solid wastes. All waste material was removed through dialysis. The heart that pumped his blood to carry oxygen and food to his cells was not his original heart.

Sammy's transplanted heart soon began to fail. He was immediately placed on a heart-lung machine. This supplied oxygen and removed carbon dioxide from his blood and circulated blood through his body. Fortunately, Sammy was a computer programmer. With his brain still functioning at a high level, Sammy was able to carry out his work on his new voice-activated computer terminal and send his work to the office via a modem. His programs were invaluable to the continued success of his company (and he was a wealthy man).

As Sammy's case became known, bioengineers became interested in Sammy's artificial body. Because all of his life-sustaining functions were being carried on by machines, it might be possible to compress all of these machines into one mobile unit which could be controlled by impulses from Sammy's incredible brain. This unit could create a flow of air over Sammy's vocal cords that could enable him to speak. The new unit could be equipped with robotic arms so that he could perform manipulative tasks. Sammy even agreed to become an experimental subject for a new technology called visual reality. Through this technology, another person could perform keyboarding tasks wearing a specially designed glove. This glove would in turn program Sammy's robotic hands and allow him to do complex computer tasks...like programming on his computer.

The bioengineers decided that they would have to amputate Sammy at the neck and attach his head to this new machine which would supply all the needed nutrients to Sammy's brain. Sammy consented and the operation was a success.

Sammy functioned well for a few years. However, slow deterioration of his brain cells was observed and diagnosed as terminal. The bioengineers that had been studying Sammy, began, with Sammy's help, to program Sammy's computer to replace Sammy's lost brain functioning.

As the computer was installed, Sammy's brain cells stopped functioning. Sammy's computer was placed inside Sammy's robotic body and was so well programmed that no one could tell that Sammy was not operating his robotic arms. There was no change in Sammy's intellect or personality.

Sammy was now able to leave the hospital with complete assurance that he would not return with any biological illnesses. At this time, Sammy has been programmed to teach others about the many advances in bioengineering and offer words of hope and encouragement for those who fear the future.



Substituted Sammy Discussion Questions

Group Names _____

1. List all of the replaced body parts donated or engineered for Sammy. After each part, decide whether the part is science (S) or science fiction (SF)!

2. Was Sammy alive at the beginning of the article? _____ Give 3 reasons for your answer.

3. Was Sammy alive throughout the entire article? _____ Give your reasons for your decision.

4. If Sammy died, at what point in the story did he cease to live? Why did you select that particular point.

If Sammy lived, how is Sammy different from a man-made robotic system?

5. What does being alive mean?