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# The Impracticality of Consent

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Famous Florentian strategist Niccolo Machiavelli once proclaimed that "the end justifies the means." Today, this quote stirs up images of barbarous practices done in the name of advancement. We hear horror stories of doctors who have knowingly injected their patients with cancer in order to study the effects, all in the name of science. However, in comparison to the aforementioned experiments, a lack of legal consent does not appear to be so hazardous. Cells, such as HeLa, have revolutionized fields of medicine with no harm done to the patient. HeLa was acquired from a poor African woman by the name of Henrietta Lacks, who was dying from cervical cancer. Virology, space travel, and other fields would have been possible without these cells, which were taken without Henrietta's knowledge. Thus, scientists are acting ethically in acquiring tissue samples from patients without consent for the purpose of advancing scientific knowledge and saving lives.

In the cases where doctors have retrieved human cells, there has been no permanent harm done to the patient. In the HeLa cells, a nurse anesthetized Henrietta Lacks prior to Dr. Lawrence Wharton removal of her cells to prevent injury. According to *The Immortal Life of Henrietta Lacks*, Henrietta "tolerated the procedure well and left the operating room in good condition" (Skloot 33). There was no permanent harm done to Lacks. Today, doctors implement a similar process of acquiring medical samples. Surgery is a convenient method as nurses have already anesthetized the patient. In a typical procedure, anesthesia is given either intravenously or in gaseous form in order to prevent pain (Desai). Cells are then removed from the patient and are typically classified as discarded by the patient. For example, in an appendectomy, the appendix is removed as part of the surgery. As the patient no longer requires his appendix to live, a slice of the infected tissue is often stored for later medical research. This is part of standard operating

procedure. The organ in question is scheduled to be removed anyway, meaning no unnecessary harm was done to the patient. This bears a close resemblance to the case of Henrietta Lacks. In order to properly diagnose Henrietta's cancer, TeLinde obtained a biopsy of the tissue. These tissues were implemented in research with results that would astound scientists for decades.

Many medical advances would not have been possible without human cells acquired without legal consent. In February, 1952, Jonas Salk developed a possible vaccine for poliomyelitis, but needed "[to test] it on a large scale to prove that it was safe and effective" (Skloot 93). Polio is a virus that paralyzes its victims by destroying motor neurons in the spinal cord. In addition, it is a highly contagious virus, with several outbreaks during the major world wars. "In the 1950s, 38,000 Americans were stricken with polio annually; by the twenty-first century, the disease had been virtually eliminated in the United States" (Thompson). Salk was worried that his vaccine could be dangerous to humans. He required a test subject, HeLa cells, to verify the safety of his vaccine. HeLa cells were used because they grow rapidly in the culture medium and are not anchorage dependent (i.e. do not require a surface to grow), allowing for rapid growth with minimal labor. These attributes allowed for mass production in a relatively short period of time. Furthermore, HeLa cells are more "susceptible to the virus than any cultured cells had ever been", making it the best candidate for testing (Skloot 95). In April 12$^{th}$, 1955, Jonas Salk went down into history as the inventor of the polio virus after two million children were inoculated. This accomplishment would not have been possible without HeLa cells. Yet, critics may pose another question: Why not use animal cells instead of obtaining human cells by questionable means?

The reason why animal cells are not used is because impossible to predict the effect of a vaccine without the use of a human test subject. Animal cells are biologically different from

human cells. For example, unlike most animals, human blood cells lack nuclei (Foster and Bronwyn). In humans, blood cells lose their nuclei and other organelles in order to transport additional oxygen. Other animals use hemocyanin, while humans use hemoglobin to transport oxygen. This means they possess a much shorter lifespan (120 days) than their animal counterparts as they have no way of obtaining energy or replenishing damaged organelles (Tamarkin). Nonetheless, a lack of nuclei prevents viruses from replicating through blood cells. Other animals are susceptible to viruses that use this method for infection. In this case, a vaccine that works on an animal will have no such effect on a human. On the other hand, certain ailments only affect humans. Genetic mutations (e.g. Down syndrome, Huntington's disease) are one such case as other animals possess a different number of chromosomes. In such cases, researchers may only test cures on human cells. However, legal consent for such actions is often difficult to obtain.

In majority of cases, it is impractical for doctors to acquire legal consent for the removal of human cells. Making consent a requirement may have the effect of slowing research:

> One survey found that 53 percent of laboratories had stopped offering or developing at least one genetic test because of patent enforcement and 67 percent felt patents interfered with medical research. Because of patent licensing fees, it costs $25,000 for an academic institution to license the gene for researching a common blood disorder […] and up to $250,000 to license the same gene for commercial testing. (Skloot 324-325)

As with any other institution, paperwork tends to slow down research. Due to a noticeable lack of surplus of funding, many laboratories choose to cut down on experiments that result in a

substantial loss of profit. Critics may argue that it is unethical for the patient to not receive any monetary benefit from the tissues. However, if the patient receives monetary benefit, the end costs of medicine will also rise. It would be impossible for research to continue otherwise as profit is dependent on two things: lowering costs and increasing revenue. When costs rise, revenue must also rise in order to compensate. Prices for medicine would rise, while research would grind to a standstill.

It is ethical for cells to be taken without legal consent as they continue to play a major role in science. In doing so, millions of people have benefited at no cost to the patient. Polio has almost been made extinct and the growing field of virology has exploded due to the availability of test subjects. These accomplishments and countless others would have been impossible without the use of HeLa and other immortal cells. And thus I would like to pose a question to critics: How can saving human lives be considered unethical?

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