Negative Case: Human Flourishing

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Resolved: In the field of biomedical engineering, restraint ought to be prioritized over scientific advancement.

This case argues that advancements in biomedical engineering promote human flourishing. It focuses on the many accomplishments that the field of biomedical engineering has made to help people. It also contains analysis that may also be helpful to use in other cases—things are not static, and if we do not work to improve, diseases are not going to stop getting worse (see contention 2).

Imagine that it’s the year 1958. Your kidneys have stopped functioning, and your heart beat is no longer regular. You will most likely die very soon. Fast forward to 1961. Kidney dialysis has been invented. The pacemaker has been invented. You can now live.

The reason that people with kidney failures and irregular heartbeats can continue to live is because of biomedical engineering, and that is why I stand resolved: in the field of biomedical engineering, restraint ought to be prioritized over scientific advancement.

Definitions

“Biomedical engineering.” Merriam-Webster.com Dictionary, Merriam-Webster, <https://www.merriam-webster.com/dictionary/biomedical%20engineering>. Accessed 5 Aug. 2021.

“the application of engineering principles, practices, and technologies to the fields of medicine and biology especially in solving problems and improving care (as in the design of medical devices and diagnostic equipment or the creation of biomaterials and pharmaceuticals)”

Value: Human Flourishing

Especially in the field of biomedical engineering, we must promote human flourishing. Human flourishing is an important end in and of itself.

Human flourishing means that we ought to promote the overall wellbeing of our fellow humans.

CONTENTION 1: Advancement in Biomedical Engineering Brings Human Flourishing

Major advances in biomedical engineering have allowed people to not only live longer, but to be able to do more, create more, and learn more. We already discussed pacemakers and kidney dialysis, both of which were invented in 1960.

“The invention of the cardiac pacemaker” US Department of Veterans Affairs. August 2, 2018. Accessed August 6, 2021. <https://www.research.va.gov/research_in_action/The-invention-of-the-cardiac-pacemaker.cfm>

VA researchers invented the first clinically successful cardiac pacemaker, in 1960. This invention prevents potentially life-threatening complication for irregular heartbeats in many patients.

“Dialysis” National Kidney Foundation. Date Reviewed: 06-01-2021. Accessed August 6, 2021. <https://www.kidney.org/atoz/content/dialysisinfo>

Hemodialysis and peritoneal dialysis have been done since the mid 1940's. Dialysis, as a regular treatment, was begun in 1960 and is now a standard treatment all around the world. CAPD began in 1976. Thousands of patients have been helped by these treatments.

These inventions help people to live. The creation of these two treatments have saved hundreds of lives. There are many other biomedical engineering feats that have saved and improved lives.

For instance, the famed neuroscientist Dr. Paul Bach-y-Rita discovered ways to help people regain senses they have lost.

Michael Abrams and Dan Winters “Can You See With Your Tongue?” Discover. June 1, 2003. Accessed August 6, 2021. <https://www.discovermagazine.com/mind/can-you-see-with-your-tongue>

“After settling down as professor of rehabilitation medicine at the University of Wisconsin, Bach-y-Rita turned his attention back to the senses. He knew that victims of leprosy, for instance, can lose the sense of touch in their limbs, so he developed a glove with transducers on each fingertip that were connected to five points on the forehead. When his test subjects touched something with the gloves, they felt an equivalent pressure on their heads. Within minutes they were able to sense the difference between rough and smooth surfaces — and they quickly forgot that their foreheads were doing the feeling.”

Dr. Bach-y-Rita was able to help people with leprosy regain the ability to feel. This could make it possible for them to do many things they had been unable to do before—whether it be work, or even just making it easier to take care of themselves.

We could look at example after example of how biomedical engineering has improved people’s lives.

Jim Lucas “What is Biomedical Engineering” Live Science. September 25, 2014. <https://www.livescience.com/48001-biomedical-engineering.html>

“Biomedical engineers have developed a number of life-enhancing and life-saving technologies. These include:

Prosthetics, such as dentures and artificial limb replacements.

Surgical devices and systems, such as robotic and laser surgery.

Systems to monitor vital signs and blood chemistry.

Implanted devices, such as insulin pumps, pacemakers and artificial organs.

Imaging methods, such as ultrasound, X-rays, particle beams and magnetic resonance.

Diagnostics, such as lab-on-a-chip and expert systems.

Therapeutic equipment and devices, such as kidney dialysis and transcutaneous electrical nerve stimulation (TENS).

Radiation therapy using particle beams and X-rays.

Physical therapy devices, such as exercise equipment and wearable tech.”

Advancement in biomedical engineering have significantly improved and promoted human flourishing.

CONTENTION 2: Prioritizing Restraint Harms Human Flourishing

We still don’t have effective cures for cystic fibrosis, malaria, cancer, dementia, strokes, Ebola, and numerous other diseases.

We also need to realize that the state of diseases and medicine can get worse—more and more diseases continue to pop up. Further, old diseases become more prevalent

“South Africa: 78% increase in cancer by 2030” Health 24. June 21, 2012. Accessed August 6, 2021 <https://www.news24.com/health24/Medical/Cancer/Facts-and-figures/South-Africa-78-increase-in-cancer-by-2030-20120721>

A recent study published by medical journal Lancet predicts that South Africa could see an increase of 78% in the number of cancer cases by 2030. From a global perspective, a 75% increase is expected, increasing the total incidence of all new cancer-cases from 12.7 million in 2008 to 22.2 million by 2030.

Conclusion

We certainly should exercise some restraint. However, our priority needs to be on advancing. By advancing in biomedical engineering, we have been able to both save and improve the lives of many. As we continue to deal with many diseases that threaten human flourishing, lets move forward by advancing solutions. We must prioritize advancement above restraint.

HOW TO RESPOND

The following is advice on how to respond to the case. Don’t think that these are the only possible responses (or even the best responses—these are just a few ideas to help you get started in responding to the case.

I would focus on arguing that biomedical engineering can produce many good things, but if unrestrained, can also produce many bad things. This case has many examples of good things happening as a result of biomedical engineering advancements, and one strategy to counter this would be to bring up many bad things that happened because of biomedical engineering (or that could happen if we have less restraint. Remind the judge that without restraint, biomedical engineering can be harmful rather than helpful. In order to promote human flourishing, restraint is necessary.

You could also point out that this case relies on examples—which means that it has the potential to miss the bigger picture. If your case is more big picture or philosophy oriented you could point that out. You could even argue that it is a fallacy of composition (also known as a part to whole fallacy. See <https://en.wikipedia.org/wiki/Fallacy_of_composition#:~:text=The%20fallacy%20of%20composition%20is,some%20part%20of%20the%20whole>.). However, anytime you argue that something is a fallacy make sure that you actually know what that fallacy is and why it’s a problem.