

The social issues that arise as a result of my senior project are dependent on its particular application. A robotic arm could have a number of applications that give rise to different social and economic concerns. This robotic arm project is a great example of the socioeconomic issues from the merging between science, technology and society. This project was designed with a specific application towards simple assembly line work. The problem that exists in an assembly line is the risk of injury to workers who work with dangerous equipment. Replacing workers in these dangerous situations will eliminate injuries and workers compensation claims, and improve performance efficiency. This project has the potential to replace a worker that operates dangerous machinery and reduce their risk of injury.

But what are the effects of replacing a worker with a robotic arm? A few questions arise that are worth addressing. The first issue I would like to address is how the replacement will effect the worker's life. The worker's job will be replaced, and therefore becomes unemployed which could effect them and their family in negative ways, and also increase the unemployment rate, given they can't find another job. The initial application of a robotic arm focus's on simple repeatable tasks, which are typically accomplished by individuals of the lower socioeconomic class. Therefore and initial large scale application would the increase unemployment and in turn increase the gab between lower and middle class citizens. Such a result seems to have a net negative effect on the society in which we live in.

However, I wish to propose a different approach, one which explores the intrinsic value of a human life. I will assume the philosophy of Immanuel Kant, which holds that human beings are the only things that have intrinsic value, and immoral actions are those that violate the integrity of human value. I won't argue Kant's moral stance here, but I will use it as a way to look at the value of the worker. The fact of the matter is that humans have intrinsic value, and robots inherently don't. The only value robots have may be based on the amount of productivity they are capable of yielding; a simple utilitarian philosophy. However we should not define a human's value based on its output, because a human life is so much more than that. If a workers job could be done by a simple robot, then its almost as if we are accepting the equal standing in value between that robot and the worker; the worker assumes the worth of the robot through their job, a worth that is far less than what humans inherit intrinsically. Having people do tasks that a robot could do actually reduces the worth of the human to that of the robot, and thus demeaning the true worth and potential of human life. From this perspective, employers are almost obligated to replace workers with robots when possible, because not doing so is a threat to the integrity of human life.

Replacing workers with robots poses some benefits. Replaced workers now have the opportunity to seek another job, potentially (and hopefully) a better job, or possibly go to school. These workers are given the opportunity to advance their social standing and explore options that they wouldn't have otherwise if they were still limited to working in an assembly line. Replacing simple jobs also moves society's economic standing forward, allowing lower class citizens to pursue middle class jobs, middle class citizens to pursue upper class jobs, and upperclass citizens to retire or develop a higher level of socioeconomic standing. This ultimately could have a net positive effect on progressing society toward a better and more productive future.

Looking from the perspective of an employer, what is taken into account is if the overall outcome will produce profit. Replacement of a worker with a robot reduces a worker's wage to the cost of machinery operation and upkeep, resulting in money saved by the employer in the long run. All the employer has to do is make a more up front investment by buying the machine. Typical robotics are expensive, so some employers overlook the investment without giving thought to the money saved in the future. Another issue that is especially in the rise today, is the abuse of worker's compensation claims. The worker's compensation system is flawed and can be taken advantage of easily. It is common for workers of the lower socioeconomic class to take advantage of these opportunities in order to make some more money, at the cost of their integrity. The current system is not robust in detecting false worker's compensation claims, and it has happened so frequently that it is becoming a problem. I have heard of cases where employees will injure themselves on machinery willingly in order just to make some money from claims. This has become a rising issue for my father's company. As a small company, they do not have the gross fund to invest in automated robotics to replace assembly line workers. Because there are many cases where workers injure themselves willingly, surveillance systems are now required to monitor events. There are also lawyers that call workers attempting to persuade them to file workers compensation claims for absurd reasons. From an employers perspective, Replacing workers with robots seems to give huge gains: reducing the probability of workers compensation claims, increasing efficiency, decrease in idle operation times (breaks), long term savings from a short term investment, and also promoting the value of human life by enabling them to search for other jobs that are more fulfilling. I think that the number of positive effects of using robotics trumps the potential negative effects.

There is some fear in society about the progression of artificial intelligence and its immersion into society. Although this project only contains some simple attributes of AI and the mimicking of human life, It is a step towards further progression of more complex AI robots. Further progression in robotics and AI will also provide new discoveries and possibly new jobs in the future. But I think the main concern of society between the merging of science and technology, and specifically AI, is the threat it causes to humanity. If we eventually develop AI systems that are far more advanced than humans, then that poses a threat to human existence based on the survival of the fittest. If we are no longer the top-dogs, then we could be eliminated like many Hollywood movies portray. However I don't think this is realistic; I feel that as we further develop AI systems, we ourselves will also be evolving and developing, both by natural causes and technological enhancements that increase our human capabilities.

Overall, I think the use of robotics can actually develop an appreciation for life, promoting people from simple mindless jobs that can be accomplished by robots, and allowing them to pursue other interests and jobs. I think it is acceptable to say that the implementation of robotics in society pose little threat to the economy and human life when viewed with respect to the benefits that could potentially come about.