GP Model Essay - Science and Technology
Science and ethics should not mix. Discuss.

We should qualify that this discussion is only relevant when ethics is involved with science. Certain branches of science such as theoretical physics and organic chemistry, do not overlap with ethics at all, so there is no reason for them to mix. Other branches however, such as biology and biomedicine, raise ethical issues and we have seen various regulatory bodies being set up to oversee such matters as society. This shows how Science has affected the moral conduct of modern society. On the other hand, scientists and technocrats that share the view that science ensures the survival and progression of human civilization argue that mixing ethics with science is a drawback to our progress. In view of these polarising opinions, this essay takes the stand that science and ethics should not mix.

The primary reason why science and ethics should not mix is because ethical considerations tend to slow down scientific progress. Researchers have met many dead ends due to ethical concerns and the laws or guidelines that follow such concerns. Certain scientific and technological inventions that show much promise face ethical opposition that negates progress and advancement of human civilisation. Consequently, the impact on poverty, famine and starvation are not resolved due to our excessive concerns, setting excessive regulations on scientific development. For example, Genetically modified food creates resistant crop species that promise to address global food shortages. However, strident opposition by people who feel such endeavours are akin to “playing God” has resisted much progression in this area of research and widespread ban on GMO products. These examples clearly pose obstacles to otherwise promising scientific explorations and this in turn hinders the potential of science to humanity.

However the above view holds a modicum of truth. In many instances, it has been proven that science and ethics should mix, with ethical code of conduct in place among scientists to prevent fraud and other dishonest deeds, which would have severe repercussions in the scientific and social communities. Humans are imperfect creatures that are bound to make lapses in judgment and engage in wrongful actions. Consequently, there is a need to enact ethical boundaries in the field of Science. Earlier this decade, there was a huge controversy involving South Korean scientist Hwang Soo Wuk who fabricated the results of his cloning experiments. In addition, he coerced the female scientists or personnel in his laboratory to donate their eggs for cloning purposes. This dealt a huge blow to the credibility of scientists and tarnished the reputation of South Korea. If science is allowed to advance without any ethical

guidelines, the manner in which science advances will not only be questionable but detrimental, with scientists not knowing which papers and findings they can base their own research on subsequently.

From a political angle, science and ethics should mix as it regulates the nuclear development of countries and ensures global peace and security. With more and more nations turning to nuclear technology as a viable alternative to non-renewable fossil fuels to generate cleaner, more sustainable energy, scientific advancements in nuclear technology is becoming a very real concern. If these scientists at the forefront of these advancements are not bound by ethical obligations, we may find rogue nations like North Korea or Iran buying them over to manipulate them, making use of these technologies to create nuclear weapons for political dominance. On a less extreme level, but almost equally alarming, in the case of a leak in any radioactive plants such as the infamous Chernobyl incident where there was an unethical cover-up, it would lead to horrific ramifications on the surrounding communities.

Furthermore, from an economic perspective, Science and ethics should mix to prevent financial frauds and commercial exploitations, safeguarding the financial interests of individuals. At times there are clashes between economic profits and ethics. Without ethical boundaries in place, individuals may face the prospect of being swindled. An instance would be the terminator technologies where scientists genetically programme seeds such that the genetically modified crops are unable to generate offspring. In this way, farmers have to continually buy new seed stock in order to grow genetically modified crops (e.g. with pesticide-resistance or drought-resistance). This definitely ensures continual economic profit, but if these crops are meant to aid the development of agricultural third-world nations, the purpose of this scientific endeavour is defeated. Thus, ethical guidelines are needed to safeguard the interests of the financially needy farmers.

Lastly, science and ethics should mix as it guarantees the protection of personal data obtained through scientific experiments which builds trust between scientific companies and individuals. At other times, we are unsure as to how to use new information that is obtained from scientific research and experiments. In some cases, such data may contain intimate information concerning the individuals. Without barriers and regulations in place, individuals may be exploited by science and technological companies who harvest such big data for selfish interest. For example, the phenomenon of biopiracy is the theft of biological resources from indigenous communities by unscrupulous researchers. Scientists and biotechnologists trek to Saudi Arabia, Ghana, Nigeria, and Mongolia in search of genes for glaucoma, diabetes and

congenital deafness for instance. However, rarely are such indigenous communities informed of the full range of possible commercial uses for their genetic information, nor are they part of the multimillion-dollar agreements between research institutions and pharmaceutical companies. Biopiracy is thus unethical, where the indigenous populations are manipulated and, actually, swindled. Therefore, science and ethics should mix.

Ethical considerations do seem to slow down scientific advancements; however, speed is rarely all that matters. Based on both hypothetical scenarios and actual cases in recent history, there indeed seems to be a role for ethics in the realm of science, and at times, inevitably so. We should carefully navigate our scientific endeavours and continue to resolve ethical issues so that humanity may progress and flourish in a secure environment.