

FOREWORD

Welcome to the first “e-issue” of the KS Bull.

The essays collected here are not “perfect”. There is no such thing, nor is it something we expect students (or anyone) to achieve.

Rather, each essay represents a strong effort – under demanding exam conditions – to *Interpret* a given question insightfully, *organise* a response coherently, and *argue* a viewpoint persuasively.

There may be some blips – we’ve deliberately preserved them, save for some tweaks to address issues with grammar, spelling, punctuation and clarity. But overall, the opinion of the respective markers and of the KS Bull team is that each essay, as it stands, meets question requirements to a high degree.

We hope these noteworthy efforts will inspire you to keep working at your essay-writing skills, from question interpretation through writing the conclusion.

The Bull Team
Knowledge Skills
Raffles Institution Years 5-6

The views expressed in each essay are purely for the academic purposes of crafting a viable argumentative response. They do not necessarily reflect the personal opinions of any student or staff member, nor do they necessarily represent the perspective(s) of Raffles Institution.

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Do you agree that exploring space should not be a priority in today's world?

Daryl Goh Shao Yang | 15503N

Space – the final frontier. Indeed, the exploration of space is an endeavour that has captivated many over the past five or six decades, and not without good reason: space is one of the few places that still remains foreign to mankind, and the objects spotted in telescopes naturally tempt people to visit them, first with space probes, and perhaps eventually with people. Space exploration is also not without its practical benefits – technology originally developed to support the supposedly esoteric activity of space exploration has eventually found its way to our homes and lives. Nevertheless, space exploration is a costly undertaking, and I believe that while it is important and beneficial, it should not be a priority in today's world.

Firstly, space exploration is an important pursuit for humanity in today's world, not only because we depend on space for many things that have become great conveniences for us and our daily lives, but also because it can also reveal more about our world to us, helping humanity to anticipate and plan its future. For the former, space exploration has helped to create systems and technology that greatly benefit us, making our daily lives and seeming unrelated human activities much easier, more convenient, and safer. One case in point is the Global Positioning System (GPS), a constellation of satellites operated by the United States Air Force, which has had widespread applications in many areas of society. Aircraft, for example, now use GPS to navigate safely across the world, and can now be located more accurately by air traffic controllers, preventing many accidents. GPS is also used by ordinary human beings like you and I, to direct us in our commutes. Indeed, without the enabling of space exploration in the 1960s and 70s, the ability to locate oneself with just a few taps of a screen would be only a dream. For the latter, satellites like the Orbital Carbon Observatory 2 (OCO-2) are allowing scientists to track carbon emissions and identify places where carbon dioxide is being stored on a global scale with incredible precision, giving us the ability to make more accurate predictions about climate change and better informing our actions to slow or even reverse it. Modern space exploration has benefitted today's society and this continued desire to go further will drive the development of better rockets, which, in turn, can make our use of space cheaper and more efficient.

The benefits of space exploration are not limited to our home planet and the space around it. Another promising field of space exploration is the exploitation of the resources that space holds, a tantalising prospect when one considers the limited natural resources that humans appear to be consuming at a rather alarming rate.

Asteroids, for example, are thought to contain abundant mineral resources, some of which are quite scarce on Earth. Exploiting these could provide us with time to develop ways to make more sustainable use of what we have. The colonisation of other worlds – moons and planets, could also ease the future overcrowding predicted by some analysts. The continued improvement of humanity's ability to explore space will also help to protect our survival. The prospect of being hit by an asteroid is an unfortunately real one as some recent close passes have shown. However, as humanity's mastery of the ability to explore and work in space continues, it could translate into the ability to protect ourselves. Earth is not an 'island' in the environment of space, and so space exploration is necessary to allow us to have better control over how we react and use space.

It is clear that the exploration of space is something that humanity would do well to continue pursuing. However, it would be foolish to think that it is a goal that deserves a large fraction of our attention in terms of resource allocation. While space exploration is important, one cannot overlook the fact that there are still many problems left unsolved on Earth, and humanity cannot leave its home in disorder while going off to explore the world. There are many needs that remain more critical, and that cannot be ignored in favour of speeding up our quest for knowledge of the wider universe. A case in point is India, which received criticism for launching a probe to Mars at great expense, even though many of its people lacked access to basic needs like food, clean water and sanitation. This is a fact that many spacefaring nations are aware of, and some have taken steps to minimise the cost of developing rockets, spacecraft and the like by contracting them to the private sphere, allowing public money to be used on more pressing matters. For example, the costly space shuttles were retired by NASA in 2011 and are soon to be replaced by privately designed spacecraft such as SpaceX's Dragon, which was developed with funds from other clients for SpaceX's launch services, replacing the public cost. The fact that space exploration cannot be prized over more important uses of resources at home is a well-acknowledged one, and one which does influence the decisions made in space exploration.

In addition, while space might be a final frontier, it is not the only one, as we still have much to learn about our home planet, Earth. This is attested to by the sheer amount of valuable research still being done in fields, which are very much still grounded on Earth. Progress and very useful progress at that, is still being made in areas like biomedical science, which continues to benefit many people suffering from debilitating illnesses; telecommunications, which continues to find ways to transmit more data more quickly, and computing, as gadgets grow even faster and more efficient. Some of this research even goes on to aid space exploration, and not the other way around, as computers and transmitters on space probes become

more capable, and we become better at ensuring the health of our astronauts, especially those staying long-term on the International Space Station. Furthermore, in terms of exploration, Earth is far from being known like the back of humanity's proverbial hand, as much of the ocean is still unmapped, and many new species of organisms are as yet undiscovered, to name a few areas. Clearly, space is not something we have turned to for want of something else to study and explore, and it is unwise to make it a top priority when there is still plenty of important research to be done on Earth, with applications equally, if not more relevant to those derived from space exploration.

In conclusion, space is the proverbial final frontier, and I do believe that it is important to explore space, in view of what humanity can gain from it. Nevertheless, long term visions and goals aside, space exploration cannot, and should not be a priority, as not only are there equally important areas of research still to be pursued here on Earth, there are many more critical needs that must be met, and to sacrifice those in the name of progress and exploration would not only be extremely unwise, it would be unethical as well. Hence, while space exploration is a worthwhile and important undertaking for humanity's long-term survival and prosperity, in view of the other important factors, I agree that it should not be a priority in today's world.

Comments:

Thoughtful response, consistently well argued. Discussion reflects depth of evaluation. Wide range of illustration used. Clearly developed introduction. Organisation of ideas was very well handled throughout.

Do you agree that exploring space should not be a priority in today's world?

Ong Ming En, Darryl | 15S06R

With Yuri Gagarin's entry into space more than fifty years ago, mankind finally crossed over into the "final frontier". For decades, probes, manned missions and satellites with the purpose of peering ever deeper into the universe have been sent up by various nations. This push was started off by the West, and today it is increasingly prevalent among nations of the East such as China and India. Space exploration is a cauldron of opportunities and excitement, providing a potential chance to boost a nation's economic growth and international influence. Besides this, as the world becomes increasingly overpopulated in the 21st century, it is an open door to the possibility of mankind's expansion beyond our home planet. However, in view of our current technological state and the circumstances on Earth, there are far too many other pressing issues which require our attention and which should be placed ahead of space exploration on mankind's to-do list. Hence, though exploring space does have its benefits and allure, there are other more practical issues which have far more importance than it, and therefore it should be practiced in moderation. Thus, I agree that it should not be our utmost priority.

Proponents of the stand that space exploration should be a priority believe that it provides opportunities for national growth and international recognition. It does so on two fronts: economic and political. Vast resources are available in the boundlessness of space, with numerous sources of minerals and precious metals close enough for probes to reach. Should any nation be able to harvest and bring these resources back to Earth, they would receive a great boost economically from the sale of these resources. The age of extraterrestrial mining is not far away – just recently, a group of American entrepreneurs met to discuss how they could send a mining mission to a nearby asteroid. In the context of the 21st century, the prospect of procuring natural resources from space becomes even more tantalizing as Earth's natural resources dwindle. Oil is estimated to run out around 2050 – imagine what a country could do if it succeeds in drilling for oil on an asteroid and becomes the world's sole producer of oil in the latter half of this century. Politically, engaging in space exploration is an indication of technological prowess and engaging in space exploration is an indication of technological prowess and national strength. This increases the importance and hence level of priority which should be accorded to exploring space, as its benefits go far beyond simple advancement of economy and science and include increased international fame, respect and recognition for the involved nation. In today's context, the powerful Eastern nations of India and China are gaining international recognition for their missions to space, which includes

China's recent launch of a space station. Thus, the potential economic and political boons to be gained from exploring space increase its importance and hence its level of priority. In a world of depleting natural resources, this may seem to have never been so true.

However, though the potential benefits space exploration may bring are great, there is no guarantee that any results will be obtained. Space is largely unknown and the business of exploring space extremely risky and unpredictable, thus a nation may pump a lot of financial resources into space exploration and yet receive no benefit. This has been illustrated countless times by NASA, which has seen several probes fail or crash, including one multi-billion probe to Mars which burned up in the Martian atmosphere. On the political side, such failures could result in international humiliation instead of recognition for the involved nation. Thus, the high possibility of failure in space diminishes its importance as the benefits it brings may not match the resources that have to be invested in it. This reduces the level of priority which should be accorded to space exploration.

In today's increasingly populated world, supporters of the view that exploring space should be a priority point to the possibility of mankind's expansion to other celestial bodies. This generation has become familiar with the theme of settlements on the Moon and even Mars, due to the numerous Hollywood science-fiction movies which include such depictions. Indeed, if mankind were to settle outside of Earth, it would greatly ease the strain of overpopulation on Earth (the world's population crossing the seven billion mark slightly more than a year ago) and perhaps improve the lives of both the people who leave and the people who stay on our home planet. The possibility of air-conditioned domes with greenhouses to cultivate vegetables and other sources of food has been mulled over several times by NASA. As the world gets increasingly crowded, the level of priority of finding another place for humans to go constantly increases. As the only way of achieving this mission is to carry on developing and carrying out space exploration, many feel that nations should make it their priority to explore space in the hope that, sometime in the near future, extraterrestrial expansion will indeed become a reality.

However, the current level of mankind's technology makes it impractical for exploring space to be our priority. Though it is possible for resources to be harvested from asteroids, the possibility of this being done on a large enough scale to be economically significant is still decades away. The possibility of human settlements on the Moon or Mars is similarly still a distant reality. Though the potential benefits both scenarios may bring are indeed great, they are not sufficient or attainable enough that the world should make exploring space a priority. Yet, the current facts speak for themselves: NASA is struggling to put together a plan to

send a small group of astronauts to Mars. It is estimated to come to fruition only many years from now, though admittedly partially due to financial constraints. Clearly, given the situation today, the possibility of reaping immense benefits from exploring space is still very far away, thus for now the level of importance and hence priority which we accord to exploring space should not be too high.

Lastly, and most importantly, in our present day, there are far too many pressing issues here on Earth that require our attention and resources. In the last decade, the world has tended towards war and has gone through a major economic slump. Right now, war is raging in Syria and Iraq, with major Western countries such as the USA, Britain and France being dragged back into Middle Eastern conflict. The economic giants of the West (including the USA, Britain, and France) have all begun to slow down economically, with annual growth dropping and sometimes even dipping into the red. Even in the East, in recent years the growth of India and China has been checked, with growth rates stagnating. Besides this, severe problems such as poverty and inequality persist in today's world. All these issues require the world's attention and resources in order to be solved, and they should have the highest priority, despite how noble or alluring space exploration seems. We cannot be like the Athenians and concern ourselves with the meaning of life while the battering rams are at the city gates. Clearly, issues such as the prevention of war and stimulating the global economy should be the priority of our world and not space exploration. However, this may only be applicable in our present-day context. Should there be a day where peace and prosperity are everywhere on Earth, perhaps it would be reasonable for our priorities to turn to space.

In conclusion, exploring space does provide opportunities for national growth and for the expansion of mankind. However, given mankind's level of technology and the state of world affairs, there are far too many other more pressing issues which should be accorded a higher level of priority than space exploration. Thus, exploring space should not be a priority in today's world.

Comments:

Your content is generally relevant, coherent and well-supported, with good scope of discussion. But consistency needs improvement: the first half of your essay was well-written, but the second half did not address 'priority' consistently and clearly. More development and evaluation are needed. Excellent command of language, with personal voice evident.

To what extent has popular culture destroyed traditional art forms?

Pan Yu Yu | 15S06D

When Andy Warhol first revealed his infamous Campbell Soup prints, critics and the public alike reacted with a mixture of horror and anger. The ordinary soup cans, a metaphor for the modern, technologically driven popular culture of that time, seemed to mock the entire institution of art and, in essence, the art form itself. Today, we see a similar reaction from the public with regard to the tense, contradictory relationship that popular culture – with its mass produced, commercial trends and symbols – has with traditional art, upheld as lasting forms of self-expression, requiring individualised time and thought to understand. In fact, the popularity and prevalence of popular culture appears to have led to the deconstruction and devolution of traditional art forms. I disagree. Popular culture may have changed and transformed traditional art forms to the extent that the latter are no longer being recognisable, but it does so in a way that can strengthen and preserve traditional art forms rather than destroy them entirely.

Still, some claim that popular culture reduces the cultural significance that traditional art forms reflect by simplifying them for mass production, thereby destroying the sanctity of traditional arts. Popular culture – what is welcome and embraced by the mainstream public – is often viewed as “thoughtless” or “superficial”, making it easy to market and enjoy. The types of symbols marketed as “art” in popular culture, such as simplistic paintings and representations of landscapes, are seen as lacking depth. This diminishes the role of traditional art forms in conveying cultural or personal messages, undermining the intellectual component of traditional art forms to being secondary to the aesthetic, superficial qualities of popular art. An example is the trend of “Native American tribal” prints and collections popular in the fashion industry in recent years. While the patterns, popularised by the appeal of the “exotic Native American” in literature and movies, are similar to those produced by Native American tribes, they are printed on cotton rather than woven by hand, and are repetitive duplicates rather than the personalised, handmade cloth. Furthermore, none of these designs sold and marketed by pop culture are actually designed or owned by actual Native Americans. This type of simplification and commercialisation of traditional art forms by popular culture can destroy its cultural and intellectual significance, especially when done in such a pervasive, profit-oriented manner.

However, popular culture can and does have the ability to strengthen traditional art forms. It enhances the latter’s relevance by modifying them so that they can be used to reflect modern values and be embraced by today’s general public. When using traditional art forms to reflect modern values, some modification and

modernisation of the traditional form must often be made. Hence, it is necessary to break down and adapt traditional art forms in order for them to be used to reflect contemporary sensibilities. For example, an adaptation of William Shakespeare’s “Romeo and Juliet” (retitled “Romeo + Juliet”), featuring Leonardo DiCaprio and Claire Danes, was widely criticised for its modernised setting and often cheesy costumes and acting, which portrayed the Montagues and Capulets as rival gang families in the modern-day city of Verona Beach rather than rival upper class houses in Renaissance-period Italy. The original theatre form was modified in favour of a feature film, but the adaptation is lauded for staying very close to the original Shakespeare script in lines and stage direction. The film went on to be a cult hit, making its mark on popular culture. It seems then, that popular culture, in the process of modifying traditional art forms for today’s audience, must compromise some elements of the traditional form in the process of commercialisation, but is still able to preserve other key elements in order to make the original more accessible to – and appreciated by – the mainstream public.

In addition, popular culture can in fact preserve traditional art forms by popularising seminal works, drawing public attention to dying art forms. Popular culture has been known for its uncanny ability to catapult even the most mundane of subjects into the international spotlight. This can be especially useful in launching and promoting the revival of traditional art forms to both consumers and producers. When a traditional medium is brought into popular culture, attention is focused on it and its counterparts, earning it publicity and even revenue to preserve it. The popularity of actors such as Adrian Pang in popular culture with their work in mainstream shows has also brought attention to their avid theatre work, helping to revive the Singapore theatre scene, which was generally limited to a more secular minority audience. Hence, popular culture is able to help preserve traditional art forms by raising it to a revered, more prominent platform.

In conclusion, popular culture has largely not destroyed traditional art forms, but has broken them down, re-imagined them, and contributed to their lasting success.

Comments:

Relevant, well argued and thoughtful on the whole, with apt, well evaluated examples. Addresses the requirements of the question. More breadth/scope would get you into the top tier of Content marks.

Effective structure and introduction. Well controlled and clear. While it was well written, the conclusion was underdeveloped and it lacks the strong personal voice of a Band 1 essay.

Is it foolish to be wary of scientific progress?

Tan Yi Chern | 15503N

At the advent of the Industrial age, when machinery started accelerating Man's progress to the credit of scientific innovations, the Luddites were a dissenting voice in a society so enthralled by the capacity for industrial growth. While their narrative has been lost to historical chauvinism in their portrayal as opposition to Man's progress, there is nevertheless a sense that their reservations on the rights of workers were justified. Even in modern society, as we ride on the heels of burgeoning scientific advancement through innovations in green technology, medicine, pharmacy and genetics, there have been calls to rethink our blinding faith in science. While it may seem irrational and unjustified to be cautious in our approach to science, there is definitely value in tempering our perspectives to consider the ethical issues and the problems science has created.

Proponents who trust scientific progress wholeheartedly argue that the rigorous scientific framework is a rational and empirical method of understanding the natural laws of the world, and that this will ensure the integrity of scientific knowledge and advancements. Without doubt, the Scientific Method as created by Francis Bacon is built on a strong foundation of observations, hypotheses, experimentations and inferences, with the result of scientific knowledge that can explain occurrences in real life. The very empiricism espoused in the Scientific Revolution's answer to the inconsistencies of knowledge in the Middle Ages may seem to produce a watertight system of knowledge that cannot and should not be questioned. Galileo Galilei's observations and proof of heliocentrism sparked a paradigm shift from geocentric theory, and the notion of heliocentrism has since been established and ingrained as unquestionable scientific knowledge. Even though scientific knowledge may be a theory that is constantly revised, as in the shift from Newtonian mechanics to quantum physics, this does not mean that the dynamism renders scientific knowledge untrustworthy. Rather, the constant revisions of a theory or the countless peer reviews to fact check scientific knowledge further strengthens the credibility of such knowledge. Given that the body of scientific knowledge that scientific progress is built on is established by such a steadfast empirical framework of the Scientific Method and is virtually unquestionable, it may seem irrational to be cautious of scientific progress.

Beyond credible scientific knowledge, some cite the potential of scientific progress to benefit mankind in their logic of putting unquestioned trust in scientific progress. Scientific progress has immense power to solve Mankind's issues and it seems that

such potential should not be hindered by a view of caution. Indeed, throughout Man's development in history, advancements in technology brought by scientific progress have benefited us in the Green Revolution, the discovery of antibiotics, the untapped potential of human genetics, industrial machinery and even the humble wheel. Given how such scientific advancements can improve the lives of Man, it seems unconstructive and purposeless to be cautious of such scientific progress, which will be a boon to Man. Even beyond the sphere of technology, scientific progress in advancing our pool of scientific knowledge can seem only beneficial in our understanding of the natural world. Quantum mechanics has revealed to us a deeper perspective of our world that can feed our insatiable desire for knowledge in our complex world. Therefore, it may seem that the power of science to benefit Man renders it unwise to question scientific progress.

However, these myopic views must be tempered with a degree of nuance. It is simply untrue that scientific progress exists in a vacuum of good science and good virtues. More often than not, we should be cognisant of how scientific progress may create more problems, or even how scientific progress brings with it moral quandaries and ethical dilemmas.

Scientific progress does not always benefit Mankind – it can sometimes create more problems. This reality of science being harmful to Mankind gives merit to the caution that is required in approaching scientific progress. While many scientific endeavours begin with the good intentions of benefiting Mankind, the unpredictable nature of Man's creations can lead to more issues. While the discovery of antibiotics has been heralded as a panacea to Mankind's ills, the development of antibiotic-resistant bacteria that have adapted to our antibiotics reveals not only the unpredictability of our innovations, but also reveals how our innovations can create issues, to the extent of rendering our silver bullet of antibiotics gradually irrelevant. Beyond that, while science may seek to benefit Man, the use of technology brought upon by scientific progress by Man, can cause Man to inflict harm on others. Although the Green Revolution has been regarded as a boon to Man's agricultural yields through higher yielding seed varieties and greater technology in farming, oppressive large corporations have trapped small farmers in less developed countries in a cycle of dependency on huge firms for such expensive technology they may not be able to afford, shackling them in poverty. Therefore, scientific progress may lead to more problems for Man instead of solving them, and so must be treated with a degree of scepticism and caution.

More than scientific progress creating issues for Man, scientific progress can also bring with it moral quandaries that should be addressed. Certain scientific discoveries have proven to outpace our ethical understandings, such that it is only

right for us to stop in our footsteps, consider the ethical dilemmas, before coming to a consensus on scientific progress. The development of drugs capable of delivering a painless and quick death has sparked an important discourse on the acceptability of euthanasia. While euthanasia may seem beneficial in assisted suicides to end suffering, it brings with it a set of questions on Man's right to end life and the moral dimensions of involving family and friends in euthanasia. Given the complexities of such profound questions, euthanasia has divided society and the resulting discourse has led governments around the world to consider legislating euthanasia, as in Sweden. In addition, the rise of assisted life support machines that can prolong a patient's suffering leads to similar ethical issues, and social discourse in Singapore has led to the legislation of the Advanced Medical Directive, allowing patients to indicate their preference to not use such technologies. Considering these cases, it becomes far too evident that scientific progress must deal with ethical issues that can arise. It is only through caution and discourse can we reach a consensus on the acceptance or rejection of scientific progress. Therefore, when ethical issues are involved, it is entirely rational and even wise to be cautious towards scientific progress.

Finally, despite the foolproof scientific method, scientific progress should be treated with caution when the credibility of the scientific knowledge is questionable due to a breach in intellectual ethics. Even with the rigorous empiricism of the Scientific Method, the scientists themselves are not infallible and are subject to the same moral ills that can plague all of us. In a bid for fame, personal glory, achievement or research grants, scientists can be tempted to falsify results. In fact, a survey by the Public Library of Science revealed that 2% of scientists have intentionally manipulated experimental results before. The high profile case of Korean scientist Hwang Woo-suk comes to mind in his attempts to cheat the world by claiming he had cloned human embryos. The lie he fabricated was subsequently unwoven by the scientific community after it was revealed that he falsified results. The illusion of scientific progress was dispelled when cautious individuals rationally questioned the verisimilitude of such claims of scientific breakthrough. Therefore, with the thought that scientists, who are only human, can be prone to intellectual dishonesty, it is wise to question the credibility of scientific knowledge that scientific progress is founded upon. In fact, the aforementioned scientific peer reviews, in questioning and verifying scientific work, is a form of being wary of scientific progress to build a more credible pool of scientific knowledge.

In this final synthesis, although it may seem that rigorous empiricism of the Scientific Method and the potential of scientific progress can render a cautious perspective baseless and unfounded, it is only wise to question scientific progress without blinding faith due to the problems it may cause, the ethical dilemmas and

the intellectual dishonesty associated with scientific progress. To reconcile these two viewpoints, being wary of scientific progress only serves to further strengthen the empirical foundations of science by constantly verifying scientific knowledge. In addition, a cautious attitude towards scientific progress will ensure that Man remains ethical and that scientific progress truly benefits Man. With this view, it is only wise to be wary of scientific progress, as this will ensure that scientific progress truly meets its ultimate aim of benefitting Man. In this regard, perhaps we have undervalued the Luddites and we are better served becoming neo-Luddites in our attitudes towards scientific progress, albeit in moderation.

Comments:

Illustrations are apt though lacking in originality. Key issues were convincingly argued, with some depth of evaluation. Well-handled as far as organisation of ideas goes.



Is it foolish to be wary of scientific progress?

Nigel Nicholas Chew Kim Wee | 15S06R

Almost every day, the world is exposed to new scientific inventions and discoveries, ranging from nanobots that can navigate human bodies to cures for diseases previously thought to be untreatable. Science is progressing at breakneck speed and does not show signs of stopping any time soon. Some may argue that there is no necessity to take a cautionary view towards scientific progress simply because scientific progress has proven itself to be productive and beneficial, and being wary would only impede it. While it is true that scientific progress has indeed continuously benefitted mankind, a certain amount of wariness is nevertheless necessary. Scientific progress, especially at such a rapid pace, should always be carried out with caution in order to avoid unethical practices. Indeed, acknowledging the possible dangers of scientific progress can even serve to further improve science instead. Thus, being wary of scientific progress is far from foolish.

Firstly, some advocates of science may claim that being wary of scientific progress is foolish because science has proven itself to do more good than harm. Supporters of this claim would point to the unending list of examples of how scientific progress has benefitted mankind. Technological advancements such as the Internet, medical breakthroughs like the cure for smallpox, and even inventions that we may take for granted everyday like the light bulb – all have made possible through scientific progress. Even when scientific advancements have caused new problems, like in the case of carbon emission resulting in global warming, science has also proven to be able to curb and mitigate the harmful effect that it creates. Thanks to science, newer cars now produce less car emissions and nations now rely on more sustainable and renewable energy sources, reducing the harm that scientific progress may have previously inflicted. In view of the limitless possible benefits scientific progress has to offer us, coupled with the fact that science can solve problems it brings about, being wary of scientific progress is ostensibly a foolish thing to do.

Furthermore, being wary of scientific progress can impede it. If we were to always play on the safe side when it comes to scientific research and experiments, scientific progress would never be achieved. Should science always be accompanied by the fear of possible negative outcomes it may bring, we would never be able to take risks in science. This would effectively render all scientific advancements impossible. For example, should scientists have been totally wary and fearful of the possible implications of entering the uncharted waters of stem-cell research, we would never have made progress in new discoveries and treatments that we have today. Therefore, it is not difficult to see why some may view being wary of scientific progress as foolish, since it serves as an obstacle to future scientific development that would benefit us.

Nonetheless, a certain degree of precaution and wariness is vital when it comes to the way we make scientific developments. One cannot be blamed for being wary of scientific progress as it has shown to have gone out of hand in several instances. With the intense speed- and profit-driven intentions which scientific progress operates under today, unethical practices are common. Due to the fact that advancements in science are almost always linked to commercial interests nowadays, scientific progress can occur at the expense of important ethics and values. For example, no one can deny that the medical and pharmaceutical industry has brought us countless and life-changing benefits. However, these scientific and medical advancements have often been made with neglect for morals and ethics. For example, pharmaceutical giant GlaxoSmithKline was served hefty fines a few years back for having killed several babies during illegal testing in Argentina. As scientific progress stumbles over itself to advance faster and faster, morals may well take the backseat, which can result in severe and undesirable consequences. As the goals of scientific progress shift away from benefitting the general public and more towards gaining profit, there is a growing need to take a cautionary stance when dealing with scientific progress. Moral considerations need to guide scientific decisions more closely to prevent scientific advancements from veering further from their ideals.

Nevertheless, I do concede that being too wary of scientific progress can indeed greatly impede its continuation, which would ultimately be to our detriment. At the same time, allowing science to progress without any restraint can also lead to disastrous results. Therefore, what is important is for us to strike a good balance – being aware of the possible ramifications of scientific advancement, but not to give up science altogether. Being wary of scientific progress can serve to help us further improve science. For example, being aware of the dangers and possible disastrous outcomes of pursuing nuclear technology has fuelled us to create improvements and make new discoveries in other areas of renewable energy. Therefore, accepting scientific progress but also being aware of the possible negative impact it entails is far from foolish.

In conclusion, scientific progress is a part of modern life that is here to stay. Instead of approaching it with a ten-foot pole, full of apprehension and uncertainty, we should embrace scientific progress. Most importantly, we must ensure that we never let go of the wheel but instead take into account moral considerations when dealing with science.

Comments:

Content is relevant, balanced, nuanced, and well-supported. Still, the quality of your illustration and evaluation could be more consistent and convincing. Excellent command of the language, with personal voice evident. Essay is coherent – a smooth and easy read. Effective introduction and conclusion. Some minor expression errors.

Is the world drowning in its own garbage?

Lee Shi Ya Claudia | 15S03N

"Buy And Throw Away", that is the common joke many Singaporeans share when referring to local shoe brand, "Bata". In this modern day and age where we are plagued by dangerous consumerist attitudes, apathy, and for some countries, insufficient financial means, adopting green management techniques may seem like a far-off ideal. Although there have been attempts by governments and organisations to encourage green waste management policies and attitudes, the impact of these efforts have largely been eclipsed by unscrupulous and irresponsible waste management practices still plaguing the world, such that the world is seemingly drowning in its own garbage.

The more sanguine amongst the global populace may argue that there have been efforts to raise awareness about proper waste management, such that the impending doom of the world drowning in its own garbage can be delayed. Although random dumping of garbage and sky high landfills reeking of poisonous, concentrated methane gas are not an uncommon sight, particularly in less developed countries like India and Cambodia, sustained efforts by governments and organisations have been rolled out to manage the problem. India's recently nominated Prime Minister Modi's government has pledged to educate students about greener waste management techniques. Furthermore, the government is investing in public latrines to discourage the populace from habitually dumping human faeces outdoors, a practice customary in India. In South Africa, the government recently allocated funding for an academic environmental institute commissioned to teach waste management techniques, amongst other green practices. Non-governmental organisations have played a significant role in raising awareness in the developed world as well, with organisations like the Land Fill Harmonic Orchestra inviting children from rural villages to play instruments they have ingeniously crafted out of scrap materials at public performances. Raising awareness about the pertinent problem of waste and educating the populace on green waste management techniques is the first of many steps towards preventing our world from drowning in its own garbage. Education is a long term measure, since time is required for people to learn new green environmental concepts, adjust their mindsets and adopt more environmentally-friendly lifestyles. Hence, the world is taking on measures to raise awareness and develop cognisant and responsible stewards of the environment, preventing itself from drowning in its own garbage in the long run.

Furthermore, the forward-looking may argue that the world may not be drowning in its own garbage as of yet, because there have been efforts by businesses to cut down on waste, given the rise of new-age "green consumers" who demand more environmentally-friendly products and services. For example, the concept of "pre-cycling" has emerged in businesses throughout Europe, with pre-cycling supermarkets springing up in Vienna, Berlin and Bordeaux, France. These supermarkets encourage customers to arm themselves with their own Tupperware and bottles, because dry foods like pasta and rice are sold in large jars on shelves, while wet foods like olive oil and wine come straight from heavy duty kegs and barrels. The concept of doing away with waste, in particular plastic waste, before it even had to be consumed and recycled, is a business model social entrepreneurs say stem from the changing tastes and preferences of consumers and their gravitating towards greener products. Consumers have the power of dollar notes in the economy, and they can very well be the catalyst of change towards greener consumption patterns, reducing the problem of garbage accumulation. I do concede that not all consumers have similar mindsets and consumerist attitudes at the moment, but I believe that they can evolve for the better. Consumers can exercise their power to shape green businesses in the future, thus denouncing the claim that the world is drowning in its own garbage in the long run.

Unfortunately, it does seem that the world may be drowning in its own garbage, because of dangerous consumerist attitudes and consumption patterns plaguing our first-world lives. The proliferation of new media and its aggressive advertising campaigns that persistently permeate our lives has bred a generation that constantly buys material goods only to throw them away, leaving them with a nagging feeling of inadequacy that can only be temporarily diminished with the wasteful purchase of yet another new material good. This dangerous "buy and throw away" consumption pattern is especially prevalent in the personal technology industry. The constant upgrading of smartphones is a common example, where users simply upgrade their iPhone 4 to an iPhone 5, and just recently, to an iPhone 6 or 6 Plus, even though there is no real, pressing need. Besides the ubiquitous advertisements, perhaps the notion of "one-upping" one's peers and the speed of innovation in consumer industries cause consumers to go through products rapidly without even flinching. The problem of wasteful consumption has gotten so deplorable that a group of Singapore students took it upon themselves to set up "technological devices recycling bins" alongside the typical glass, paper and plastic recycling bins. Hence, the world is arguably drowning in its own garbage, because of irresponsible consumption patterns and "buy and throw away" attitudes ever so prevalent and unprecedented in modern society.

In another light, we are drowning in our own garbage because we have inadequate measures in place to effectively and responsibly dispose of our garbage. In the case of less developed countries, it is more often than not that governments do not have the financial means to adequately manage garbage. In a ten year study of the recycling programme in Nova Scotia, researchers found that the government spent USD\$18 million more on recycling as compared to simply dumping the country's garbage in landfills. As a result, the programme was axed since the opportunity costs the Nova Scotia government was incurring was simply too high. In developing countries, the most pressing issues that demand national attention and funding may not be environmentalism. Instead, urgent issues such as education and healthcare must first be dealt with to support its rise to a first-world country. It is therefore unfair of us to expect all governments to fulfil their environmental responsibility, because their main duty is to act in their citizens' first and foremost interests, whilst operating under financial constraints. As such, the deplorable state of waste management in developing countries cannot be condemned, though of course, the global community hopes these governments can conscientiously work to reach the standards of Japan and Scandinavian countries. Therefore, in this current time, we may have to accept that indeed, some parts of our world are drowning in their own garbage.

The world may be drowning in its own garbage because of the attitudes and age-old habits of its intransigent inhabitants who are aloof and apathetic to the global environmental condition. In developed countries, the main hindrance in society's quest towards adopting green waste management techniques is what environmentalists coin as "ecological amnesia". Ecological amnesia is the state where people suffer a head to heart disconnect - knowing about the pressing need of sustainable consumption patterns and waste management habits to prevent the world from drowning in its own garbage, yet failing to make changes to their environmentally-irresponsible lifestyle and habits. In Singapore, it is not an uncommon sight to see litter strewn along streets after major events like Chingay Parade or National Day Parade, despite spanking new garbage bins on site. Also, the hoarding of free plastic bags that one does not necessarily need at the produce section is rampant throughout supermarkets in Singapore, and the fact that even the stereotypically stingy Singaporean is willing to fork out five cents per plastic bag on "Bring Your Own Bag" Wednesdays. Perhaps it is the over-exaggeration of our planet's dire condition that desensitises people, or that the drudgery of daily life prevents people from challenging themselves to take actions out of their comfort zone. However, I do acknowledge that these ecological amnesic symptoms are not prevalent in all societies, as one can see from the successful recycling programmes and waste management practices in countries like Japan and other Scandinavian countries, where citizens are enthusiastic about recycling. On the whole, the

outlook does seem rather bleak - the world seems to be drowning in its own garbage because of the obstinate refusal of significant portions of developed societies to change environmentally irresponsible consumption patterns and waste disposal practices for the better.

In conclusion, although there have been attempts to encourage environmentally-friendly consumption habits and waste management practices, these long-run efforts have been largely eclipsed by irresponsible waste management practices still plaguing both developing and developed societies today. Hopefully, these long run efforts will pay off in the future, to breed a generation of responsible and empathetic stewards of the environment. Societies, governments and individuals who are shamefully inert should be pushed to take action, be it through funding or interventions by international organisations. I sincerely hope that scientists' predictions - that the world is drowning in its own garbage to the extent that two more Earth-sized planets are required just to store the garbage - will come to naught.

Comments:

Evaluation is evident, though could be more thorough. Fully relevant, addressing the requirements of the question throughout. Lucid introduction and conclusion. Fluent writing style throughout, with vocabulary consistently appropriate for the task.

'The environment should be the responsibility of the individual, not the government.' Comment.

Sandy Ng | 14S03L

Global climate change is one of the defining challenges of the twenty-first century. The global demand for energy continues to rise, yet the need to drastically reduce carbon emissions has never been more pressing. As population figures surge, the threat of a resource depletion crisis looms in the horizon. By current estimates, we will require two Earths to sustain humankind by 2030 if nothing is done to combat climate change. While some environmentalists may argue that individuals, as global citizens, should be responsible for mitigating climate change, others argue for the responsibility to be pushed to governments of the world as they are better equipped to do so. Rather than pushing the full burden on any one party, I would argue for a more equitable and efficient way of tackling global climate change, in which we bring on board both the government and its people. In tackling the mammoth problem of global climate change, the people and governments should collaborate and take collective action.

First, it would be useful to acknowledge that part of the responsibility of environmental conservation falls on the individual. Individuals are responsible for causing much of global climate change today. In the developed world, the culture of crass consumerism has led to tons of waste being generated each year, and incredible amounts of energy being used to manufacture our products. The developed world depletes resources at an alarming rate. For instance, the average person in the US uses 600 litres of water a day, leading to "water stress" in the country. In poorer nations where as much as two-thirds of the population may live under the poverty line, the poor are forced to overuse the natural resources available to them to ensure food security. The poor are more likely to overgraze grasslands, clear trees for farming and carry out overfishing. Since a basic tenet of our judicial system is that the guilty must compensate, it seems only logical to conclude that we individuals must carry out environmental conservation. Thus, those that hold this view would argue that the environment should be the responsibility of the individual.

Second, those who argue for the onus to fall on individuals would point out the fact that individuals can contribute significantly to environmental conservation efforts. In richer nations, a better educated population is getting increasingly more aware of environmental issues. In response, they are in fact making an effort to conserve the environment. For example, the Green Agenda is a movement that has received a

boost in support in recent years, with people showing support for practices such as "carbon-offsetting". Consumers are also displaying more awareness of "green labelling" of products and the "greening" of enterprises, which in turn incentivises multi-national corporations and small businesses to adopt environmentally-friendly production processes. In the developing world, individuals make up the manpower that conserves the environment. Global warming has seen the creation of a new sector in the economy, namely, the creation of "green-collar" jobs. "Green-collar" jobs refer to jobs dedicated to environmental conservation, including clean-ups, waste management and the recycling industry. The individual, when in a collective and organised group such as the "green-collar" industry, are certainly a force to be reckoned with in the uphill task of environmental conservation. A classic example is the massive clean-up of China's capital, Beijing, in anticipation of the 2008 Beijing Olympics. Thus, given the ability of individuals to contribute significantly to mitigating global climate change, some might falsely conclude that the onus must fall on the individual alone.

However, such arguments would not stand its ground in the face of facts. What the individual can do is limited unless the government actively plays a role in mitigating climate change. Given the power invested in the government, it has the ability to play an arguably larger role in tackling climate change. The government is able to regulate economic policies to respond to environmental issues, as the environment and economy are inextricably linked. The government can regulate business activities through legislation, thus reducing carbon emissions. The European Union Emissions Trading System is a prominent example of how the government can use rules and regulations to reduce emissions by firms, by capping the number of permits to pollute. Conserving the environment often requires large capital outlay; more often than not, only the government is capable of funding such efforts. For example, governments in Germany and France have sunk large amounts of tax revenue into alternative energy sources such as nuclear power and solar power. Now, entire cities such as Freiburg City in Germany run on carbon-free energy. Thus, it can be seen that the government is indeed well-equipped with the resources and power to tackle climate change, thus a large part of the responsibility must fall on them.

In a world where environmental events affect nations indiscriminately, regardless of national boundaries, tackling climate change on a global scale is arguably more important than on a local scale. After all, the two largest polluters, the US and China, are responsible for more than half of the global carbon emissions. Regional and foreign emissions affect a country greatly too, instead of just the emissions the country produces, which can be costly to the country in terms of health, waste management and clean-up costs. Shared water resources also cannot be clearly

separated by country; waste water produced by one country can cause stomach diseases in another country, as exemplified in the case of India. Individuals, with the exception of those working in supranational organisations, have little say in tackling climate change on a global scale. The government has a better negotiation position on a global scale, and thus can decide what direction to take in tackling climate change. Representatives from countries across the globe often come together to discuss addressing climate change as a global community. For example, the Kyoto Protocol had its participant countries agree, albeit ultimately failing to, reduce carbon emissions. Likewise, the United Nations for Climate Change (UNFCCC) saw representatives of developed and developing nations coming together to collectively decide how to tackle climate change. Thus, the government indubitably must play an active role in environmental conservation on a global scale as individuals are limited in their ability to do so.

Finally, it must be acknowledged that the most efficient way of tackling climate change would be for governments and individuals to make a concerted effort to save the environment. Climate change is complex and is indubitably a gargantuan task that can only be tackled should both parties cooperate and collaborate. The masses are often mobilised by the government into taking concrete steps in saving the environment, for example through the creation of a "green-collar" sector in the economy or by the creation of extensive educational campaigns that serve to inform the masses on the seriousness of climate change and what they can do to help. An example is the 'Save My World' campaign in Singapore. At the same time, the government might not have the incentive to conserve the environment unless the people express their wishes to do so, as governments across the globe must protect the interests of their people. The Environmental Kuznets Curve demonstrates how beyond a certain stage of economic development, the people prefer an increase in environmental quality to an increase in income. Conversely, the Chinese are willing to put up with smog and desertification if the government can deliver growth. 85% of Chinese nationals said they were "very satisfied" with the country's direction, giving the government no incentive to conserve the environment. Also, without the people's cooperation, the government's efforts at environmental conservation might well be futile, for instance, if the government's policies are met with resistance from the populace. For instance, the forceful eviction of thousands of people from their homes in the clean-up for the Beijing Olympics was met with resistance that protracted the process. Conversely, the Brazilian government's efforts to curb deforestation has been lauded and supported by its indigenous tribes living in the forest, aiding such efforts considerably. Thus, governments and individuals must cooperate to effectively and efficiently solve environmental problems in their own backyard.

Environmental degradation can no longer be ignored. Extreme environmental events have displaced thousands of people around the world, creating "climate change refugees", though these people tend to be the poorest who have contributed little to the problem. Thus, perhaps it is time to acknowledge that humankind shares a common fate on a crowded planet and must collectively take action, instead of pushing the responsibility to any one party. Should we continue pushing the burden of environmental conservation to governments or individuals alone, we would undermine current environmental efforts and saving Gaia might well be a futile pursuit.

Comments:

I enjoyed reading your essay. It is clear and well-developed. Keep up the good work!



'The Arts are nothing but mere entertainment.' Is this a fair assessment of the Arts in your society?

Zhu Yating Michelle | 15A01B

The Arts have always fascinated people through the ages. From the earliest cave men drawings to the age-old traditional songs of the Yoruba tribe, the Arts have defined our understandings of diverse societies and their cultures. Still, there has been a common criticism levelled at the Arts: that they offer nothing but mere entertainment and do not add any real value to the lives of people. Yet, even in a young nation like Singapore with a still-developing Arts scene, it is evident that they do hold value beyond entertainment, though its value is to some degree limited by our unique socio-cultural context. This essay will discuss the value that the Arts (music, visual art, literature, film, and the performing arts) bring to Singapore's society that goes beyond mere entertainment.

Most would agree that the Arts scene in Singapore is a fledgling one that cannot yet compare to its counterparts in Paris, London, and New York. Our government's focus on economic growth has caused our Arts scene to be neglected somewhat. The Arts in Singapore are also to some extent controlled by the Media Development Authority (MDA), which has the authority to censor any form of the Arts it deems inappropriate or potentially harmful to society. A recent example of this would be the banning of Tan Pin Pin's film "To Singapore, With Love", a documentary that tells the stories of our island nation's political exiles, who fled during the tumultuous pre-independence years to escape detention without trial. This illustrates how the Arts scene in Singapore has not been allowed the freedom of expression that those in more liberal societies have, restricting in some senses but not completely eliminating the value beyond mere entertainment that the Arts bring to our society.

Let us first acknowledge that one of the primary purposes of the Arts is to entertain. The Arts are often considered a non-essential pursuit that people typically only appreciate after their basic needs are met; they are often viewed as less vital to a society's economic development than other more obvious engines of growth (e.g. business, engineering). Countless songs, movies, and books, many eventually forgotten in the mists of time, exist primarily to entertain. Even Shakespeare's plays were originally performed as a respite from the tedium of everyday life, and one can hardly argue that each one of the hundreds of trashy novels that line the shelves of our libraries adds value beyond entertainment and temporary escape from the real world. The Arts definitely entertain, whether it be the awe derived from seeing an exquisite painting or a well-choreographed ballet.

Yet many forget that what entertains can also have value beyond the momentary pleasure it brings us. For starters, the Arts are a mode of self-expression and development, evident in the passion artists have put into their work over the ages. Despite the possibility of censorship in Singapore, our Arts scene has still been able to serve this purpose, more so in recent years. In the past two decades or so, groups such as the Singapore Repertory Theatre have sprung up and gained prominence in our society. Many aspiring artists from the various forms of art have been making use of these avenues to develop their artistic abilities, or where they perceive a gap in opportunities, to innovate and create. More recently, a group of aspiring young poets have come together under the mentorship of local poets like Joshua Ip and Pooja Nansi to form BARPo, or Burn After Reading Poetry, and actively try to develop their writing styles. An initiative started by the aforementioned poets, SingPoWriMo, where participants were challenged to write a poem a day for a month, drew hundreds of participants writing different poems about vastly disparate subject matters and multiple languages, illustrating the value that the Arts bring to our society by allowing people from various backgrounds to express themselves. Furthermore, the Arts as a form of self-expression are being seen less and less as an exclusive activity by the elite, and more people are joining the movement. Just weeks ago, SingJazz, an event where jazz musicians and enthusiasts could come together and showcase their work, also opened up a previously low-key art form to more people, allowing them to discover more ways of expressing themselves.

In addition, the Arts can also be used as social commentary. With a lack of civil space in Singapore to speak of political and social issues, they offer an alternative avenue for doing so. Poets like Edwin Thumboo and Alfian Sa'at, for example, have tried to explore what being Singaporean means. Although the MDA has the authority to censor any works they find inappropriate, very few are completely banned; even if they are, that very action can still drive social critique. The furor caused by the banning of "To Singapore, With Love" is extremely reflective of the disenchantment of citizens with the caution our government treats alternative perspectives of our history. Though the extent of truth this accusation contains is up for debate, the very act of banning the film and the response to it can be regarded as a social commentary.

In fact, the Arts can also be used for a related purpose: to instil a common identity in a group of people. Our government recognises this, and has tried to make use of this to spread a sense of patriotism. Which of us does not fondly remember Kit Chan's famous National Day song "Home"? The Arts are valuable in that they can be utilised to bring people together. This is especially significant given that this year is SG50. The government's SG50 fund that sponsors projects that celebrate our common heritage is a prime example of how the Arts can be a unifying force, supporting multiple Arts-based projects such as photography exhibitions and films. The sense of solidarity and pride that singing a National Day song in a crowd of

thousands is one that is rarely found anywhere else, and is reflective of the power the Arts have to unite people.

The Arts are able to give a voice to minority or oppressed groups too. Historically, this was the case with jazz music that evolved from the music of freed slaves and Native Americans, and in the Russian novel "A Day in the Life of Ivan Denisovich", which speaks of the life of prisoners in Soviet gulags. In Singapore, this is arguably not as necessary because of our largely inclusive society, but as with any society, there exist minority groups who may feel discriminated against, who turn to the Arts for self-expression. This is seen recently by the publication of a collection of stories from the LGBTQ community, many of whom are frustrated by the lack of official recognition of an integral part of their identity and a degree of social stigmatization, and who have come together using literature as a way of sharing their stories. While it is not up to us to decide on the wisest course of government policy with regard to sexuality and gender, we cannot deny that the Arts have, in this case, been a liberating force for these people by letting them have a voice on an issue that is still largely taboo in mainstream media.

The Arts scene in Singapore may not yet be a flourishing one, but it still adds value to our society in a number of ways that go beyond mere entertainment. Despite the fact that we lack complete freedom of expression in the Arts and are more limited than many other liberal countries, the Arts as a whole have still managed to address what cannot otherwise be openly discussed in our society. Whether as a social commentary or a form of instilling patriotism, whether it is self-expression or with an added dimension of giving a voice to minorities, the Arts in our society have been valuable to a wide range of people for different purposes that go beyond entertainment. Though limits can be or are placed on what we can speak of through the Arts, it has not stopped it from fulfilling its purpose; Indeed, an argument can be made that a degree of censorship is beneficial and increases creativity. The increasing speed at which our Arts scene is developing and government patronage of the Arts is testament to its value in our society, and while they certainly entertain, they do much more than simply serve as a form of entertainment.

Comments:

Largely on-topic and coherent, with a number of insights and sufficiently wide scope of discussion. However, relevance and evaluation need to be more consistent. You need to show how and why something is relevant or crucial with close reference to the characteristics of Singapore society. Also, a more balanced view of the government's approach to arts regulation would make this a stronger essay.

'Laws are the most effective way to combat prejudice and discrimination.' How far would you accept this view?

Tan Yu Qing | 15A01D

Prejudice and discrimination have long shaped – and marred – society. Many governments have thus come up with laws to combat prejudice and discrimination. While laws may be seen as the most effective way to combat prejudice and discrimination – they instil fear in the masses and coerce citizens to comply – I believe that laws are not the most effective way to combat prejudice and discrimination, because the laws themselves might be biased. And even if they were not, it must ultimately be acknowledged that laws fail to address the root cause of the prejudice and discrimination present in society. Besides, the presence of laws might even result in greater backlash from the masses, even as the presence of social media makes law enforcement even more difficult than it may already be.

Proponents of the belief that laws are the most effective way to combat prejudice and discrimination would argue that legislation serves as a deterrent against showing prejudice to certain groups of people. Harsh punishment can instil fear, such that people would conform to the moral standard set by the law. For instance, the Sedition Act and Maintenance of Racial Harmony Act in Singapore is a set of laws that has been put in place to help ensure peaceful coexistence among a heterogeneous citizenry. Acts reflecting prejudice or discrimination, such as the posting of derogatory comments about the high divorce rates of the Malay community by former NTUC assistant director Amy Cheong, are considered illegal, with punishment meted out to whoever violates the Law. In this particular case, Ms Cheong was sacked by her employer the day after her online rant. Clearly, the implementation of such legislation can deter people from carrying out acts that reflect prejudice or are discriminatory by prompting people to think twice about the repercussions of their actions. On this basis, proponents of the belief argue that laws are the most effective way to combat prejudice and discrimination.

However, this argument does not always hold water. While the institution of laws help to combat prejudice and discrimination in the world today, the inherent flaws of legislation mean that laws are definitely not the most effective method. For one, not all laws are perfect. Instead of helping to combat prejudice and discrimination, some laws serve to engender prejudice and discrimination instead, thus completely going against their ideal function of eradicating bias from our world. For instance, to garner the support and political mandate of the masses, self-interested politicians put in place laws that favour the majority and unfairly discriminate against minority groups. Such laws are clear instances of the tyranny of the majority, where the will of the majority of the populace is imposed on the minority, thus

engendering prejudice and discrimination instead. The Bumiputera policy in Malaysia is a prime example of such a situation. Enshrined in the Constitution, the Bumiputera policy is a form of affirmative action for indigenous Malay Muslims in Malaysia, who are the "sons of the soil". These "sons of the soil" receive economic benefits when setting up their companies as well as a myriad of other privileges in the domains of education and work. Such a law can prevent minority groups such as the Chinese, Indians, Dayaks and Ibans from rising up the social ladder as they do not have a level playing field. It can thus be clearly seen that laws do not always combat prejudice and discrimination, promoting bias and inequality instead. Another key example of such a situation is with regard to the Lesbian, Gay, Bisexual and Transsexual (LGBT) communities. Singapore, for example, outlaws actions which are "gross indecencies" among men via Penal Code 377A. While it is often argued that Singapore is a conservative society that does not openly embrace the idea of LGBT, such a law can be argued to be prejudiced against a minority. Therefore, laws may not always be the most effective way to combat prejudice and discrimination.

Moreover, laws that fail to address the multifaceted root causes of prejudice and discrimination would not be very effective in combating such unfairness. It is myopic to consider prejudice and discrimination as clear, black-and-white issues of what is morally "right" or "wrong". Prejudice and discrimination often arise out of an amalgamation of different causal factors, such as a lack of understanding between different groups of people, the mindset of the people, and even the socio-economic conditions of the country. The discrimination of women in misogynistic and conservative societies such as Pakistan, for instance – where women are forced to stay home and do the domestic chores instead of venture out into society to work – is rooted in the traditional mindset of the society which has been entrenched for many generations. The majority or powerful may be unable to accept a sudden change in attitudes towards certain groups, and instead seek to entrench the status quo, thus perpetuating prejudice and discrimination in such societies. In countries like Singapore, a factor fuelling ageism is the high cost of living coupled with high healthcare costs which causes the elderly to become a heavy financial burden to their children. The fear and stress resulting from this economic problem fuels ageism in Singapore society, as clearly manifested through the Not In My Backyard (NIMBY) incidents in areas like Bishan and Ang Mo Kio, where residents did not want elder-care centres built in their neighbourhood. Similarly, prejudice and discrimination can also arise out of the lack of interaction among different groups of people, leading to a lack of understanding among them, which breeds distrust and culminates in prejudice. Laws are not all-encompassing, and the wielding of the rod of law cannot always fully address the issues of mindset, the lack of interaction among different groups of people, and socio-economic problems. Even if laws were enacted, the absence of the change in mindset, greater understanding among people, or help from the government would mean that bias would still continue to exist. Soft approaches cannot be replaced with hard approaches, else

the root of the problem would not be addressed, and this problem cannot be completely solved. Thus, the failure of laws to address the root causes of prejudice and discrimination would ultimately show that laws are not the most effective way to combat them.

In fact, laws, with the harsh punishment they entail, might lead to a backlash and instead result in more prejudice and discrimination in society. Not everyone in society has the maturity of thought to understand the rationale for laws to be put in place to safeguard the interest of minority groups. These people would feel that the enactment of such laws instead take away their entitlements of free speech and freedom of expression. This can be especially seen in countries with populations that are less highly educated, where the masses hold protests against the enactment of such laws. Thus, laws might not necessarily combat prejudice and discrimination and might lead to greater backlash instead.

Furthermore, the effectiveness of the law may be limited as prejudice and discrimination take on different forms with the advent and prevalence of social media. Social media has provided people with a cloak of anonymity to hide behind online so that they would not be caught, making it difficult to enforce existing anti-discriminatory laws. Moreover, social media has allowed for the perpetuation of stereotypes online, making it more difficult to stop the spreading of such stereotypical views of certain groups of people. For instance, a derogatory post about certain minority groups might receive thousands of views or even "Likes" in a day. It is difficult for laws to address these issues, as laws are only effective in deterring people but do not guarantee that such acts of prejudice and discrimination would not occur.

In conclusion, laws are effective insofar as they instil fear in the masses and deter people from committing acts of prejudice or discrimination. However, laws are ultimately not the best approach as they might themselves contain bias. Even if they are not discriminatory, they fail to address the root cause of the problems and might lead to backlash. Moreover, social media has made law enforcement even more difficult. One must understand that law enforcement only takes place after the offence is committed. It cannot completely prevent the offence from taking place. Thus, I believe that laws are not the most effective way to combat prejudice and discrimination.

Comments:

Good essay – thoughtful analysis and evaluation. A range of examples are provided, though some paragraphs would benefit from stronger support. Perhaps you could have included a short paragraph on other or complementary ways to combat prejudice and discrimination.

Consider the view that flexible work arrangements should be encouraged in your society.

Nicole Chan Shu Wei | 15A01B

For an employee's work arrangements to be deemed flexible, he ought to have a certain extent of autonomy about the working hours of his job and the place from which he works. While there are significant benefits to having stipulated work arrangements such as the possibility of increased productivity and the ability of bosses to monitor employees, to discourage flexible working arrangements would be blithely overlooking the many advantages this confers upon society. Especially in the context of Singapore's ageing population and poor work-life balance, I feel that flexible work arrangements should be encouraged.

First, flexible working arrangements should be encouraged as it allows employees to allocate their time according to their preferences, and might be a step in the right direction towards Singaporeans achieving a better work-life balance. The prominence of the "work" part of the equation has seldom been in doubt. With Singapore being ranked by the Worldwide Cost of Living Survey as the sixth most expensive country to live in in 2013, it comes as no surprise that the populace would be motivated to perform well at their jobs in the aim of achieving greater financial security. However, this has come at a cost, as Singaporeans are clocking in more working hours than many of their Western counterparts; a National Youth Council Survey (2013) showed that older survey respondents were spending less time with loved ones. Flexible working arrangements could come not only in the form of flexible working hours, but also in terms of the work venue as well as greater autonomy for employees to take sabbaticals or short vacations to engage in activities such as picking up new hobbies or doing some soul-searching. For many office workers seated at a desk job from 9 to 5, working in the same environment and clocking in the same hours every day could lend them a sense of routine and stability; however, there is reason to worry that the stress of performing well could bring about negative impacts to the individual. Without good work-life balance, individuals could develop feelings of depression or loneliness and even become susceptible to critical medical conditions. A look at South Korea, another highly successful economy and Singapore's fellow "Asian Tiger" shows us that pressure from the workplace could manifest in serious problems. While the reasons for this trend are numerous and complex, pressure to perform well in the workplace is a significant factor in explaining the phenomenon of suicide being the most common cause of death for people aged 24 to 34 in South Korea. Similarly, in Japan, "karoshi" or "death from overworking" is alarmingly prevalent amongst salarymen,

and happens suddenly as a result of exhaustion. Perhaps these deaths could have been avoided if employees had better working hours. While Singapore is fortunate not to be in circumstances as dire as these, flexible working arrangements could go a long way in reducing stress and stress-related problems, and in achieving a healthier work-life balance.

Second, a closer look at Singapore's demographics reveals a need for more flexible working arrangements, especially with our ageing population. Singapore's Population White Paper showed that the nation needed to prepare for the "silver tsunami" that would happen over the next few decades. In 2030, an estimated one out of five Singaporeans will be over the age of 65, with around 900,000 elderly residents – nine times the size of Toa Payoh today. The working population to elderly population ratio would decrease to 4.5:1, which would cause great strain on our labour force. It is in light of this that the government has, in recent years, raised Singapore's retirement age to 65. Still, not taking foreigners into account, more people will be leaving than entering the workforce in the very near future. To encourage the nation's elderly population to stay in the workforce, concessions about working arrangements must be made. While we want senior citizens to stay employed for a longer time, we cannot expect them to work under the same conditions as younger folk.

In addition to the benefits that flexible working arrangements would bring to older workers, there would also be a positive impact on caretakers of the elderly. Old age brings a plethora of chronic conditions such as diabetes and hypertension, often affecting the mobility of the elderly and requiring greater attention from those who care for them. In an article published by The Straits Times in 2014, it was reflected that there were over 200,000 caregivers to elderly people in Singapore, many of whom were children of these elderly people, juggling their obligations at work and obligations to their parents. A survey showed that, on average, respondents spent 38 hours a week attending to the needs of their ailing elderly relatives – akin to being employed at a second job. For many of them, hiring a domestic helper is not an option due to their tight financial situation; similarly, the cost of senior care centre services has been rising with the increased demand for places in these centres. These caregivers who rush down after work every day to cook, clean and care for the elderly would stand to benefit from flexible work arrangements, as it allows them more freedom to choose which to attend to first – their job or relative – and cuts down their stress levels which arise from fear that they are unable to devote themselves to either. This argument also stands for parents who may have young children and children with special needs in particular, as it allows them to fulfil duties at work without fearing that they may not be giving due attention to family obligations. Despite the increase in childcare leave and the increasing trend

of hiring house help, a parent's care for their children is irreplaceable. Working from home, for example, would be a good alternative.

However, there are also compelling reasons for discouraging flexible working arrangements. Without a conducive environment and stipulated time for productivity, employees might grow complacent and slack, compromising their efficiency and productivity levels. Without a boss at the workplace to monitor how much work they get done, employees may find instead that their time is wasted as they become distracted and are unable to stay on task. Also, while working from home may sound like good in theory, it may be difficult for parents and caregivers to focus on attending to their children or relatives, resulting in them achieving neither objective. Much of Singapore's economic success has hinged on the mentality that productivity is key; this legacy leaves us no room for error and any wastage of resources. In many lines of work, time is indeed of the essence, and flexible working arrangements may not necessarily be in synch with this mindset, resulting in poor economic productivity.

Furthermore, whether flexible working arrangements should be encouraged depends on the nature of the job in question. For many professions, such as teaching, the job requires the employee to be present at the job and to be able to commit to showing up for work every day according to the school calendar. Flexible arrangements should thus only be encouraged in jobs that allow for this flexibility, or if the flexibility would reap better results for the task at hand.

In conclusion, flexible working arrangements ought to be encouraged, though the extent depends on the nature of the job in question and the results it may reap for the employee and employer, taking into account positive benefits such as reduced stress levels, a better work-life balance and a better ability to fulfil familial obligations. However, due to the problems it may present for productivity, Singapore should adopt this practice with due caution.

Comments:

There are a number of valid points and insights which are relevant to Singapore's context. However, exemplification needs improvement, with more detail with regard to specific industries/jobs and flexi-work arrangements. Excellent command of English. Effective introduction and conclusion.

'We should only fund scientific research that improves our quality of life.' Discuss.

Wong Qi Hui | 15S03N

As the classic adage goes, "the end justifies the means". Through decades of continual advancements in science, humanity has reaped tremendous benefits as we evidently see an improvement in our quality of life. While it is a common perception that scientific research should be funded only if it increases our standard of living, I believe that we should still devote financial support to scientific research that may ostensibly seem to be unable to improve the welfare of the global community.

The main reason many feel that scientific research should be funded only if it has the capacity to improve our quality of life can be attributed to the indubitable fact that scientific research is extremely costly and can only be justified by improvements in our quality of life. The sheer massive cost of scientific research disallows individuals and small businesses from participating in such endeavours. Consequently, only large corporations and governments of developed countries have the financial ability to support such research activities. In Singapore, a significant proportion of the government budget is allocated for Research and Development (R and D) funds. More notably, the government-managed Agency for Science, Technology and Research (A*STAR) received approximately SGD5 billion in the year 2013. Reasons for such huge expenditure include obscene amounts of money required in the initial capital outlay used to acquire research facility equipment where lasers used in protein studies may cost up to SGD1.5 million each. Also, the uncertainty associated with the failure to produce useful results and products further drive costs up. In a Forbes report published in 2014, pharmaceutical companies like Bayer AG, Wyeth and Glaxo Smith Kline spend an average of USD5 billion per drug that is finally approved by the Food and Drug Administration (FDA) in America for marketing. This accounts for the fact that after successfully passing the animal trials, only a meagre 4% of drugs actually make it to the pharmacy shelves successfully. For both the public and private sector, it only makes sense for scientific research to be funded only if it improves our quality of life. This is because for the public sector, the government budget is derived from taxes levied on its citizens such as income taxes and the goods and service tax. As such, the government should be accountable to its citizens by spending the limited tax revenue on scientific research that actually improves our lives. Furthermore, as expenditure on scientific research is extremely huge, it represents huge opportunity costs as governments could have utilised the funds in alternative projects that benefit society such as building more amenities like public parks and hospitals.

Thus, the notion of inevitable trade-offs make it imperative that our governments only fund scientific research that improves our quality of life. In the perspective of the private sector, it is only sensible that scientific research they fund will improve our quality of life. This can be explained using simple economic theory. By producing products that improve our quality of life, people would demand for such products as the purchase of such products would lead to the betterment of their lives. For instance, the development of prosthetic limbs allows the disabled to lead life with less difficulty and more convenience. There is only a market and thus only an avenue to make profits when products meet the needs of the people and consequently improves their lives. As such, we see how some may believe that scientific research should only be funded if it improves our quality of life as it justifies the sheer costs incurred in the pursuit of scientific research.

While such a view may seem logical, it is upon consideration of other equally pertinent factors when we realise such a view is parochial and myopic in nature. Firstly, I believe that scientific research is an endeavour that is highly unpredictable and it is quite evident that society has reaped tremendous benefits from serendipitous discoveries. Scientific research is often classified into basic science research which delves into comprehension of the natural world and applied and developmental science research where scientists strive to develop solutions to problems that we face. While it is true that funding applied and developmental science research would be quicker to produce visible improvements in the quality of our lives, investing in research of the basic science often builds the foundation upon which more scientific research can be carried out to improve our lives. A pertinent example would be the space exploration program by NASA in America. While the exploration of space itself has no apparent benefits to our lives, the process that NASA undertook to make space exploration possible in the first place has developed several beneficial technologies we get to enjoy now. For instance, the Magnetic Resonance Imaging (MRI) technology which was designated as a tool to scrutinise spacecraft for structural defects is now widely used in hospitals to detect health problems such as tumours that are invisible to the naked eye. More recently, many have criticised government investment in the quest to discover the Higgs Boson particle as a colossal waste of money. While understanding how the universe originates may seem to be unable to benefit our quality of life, many quantum physicists have expressed their expert opinion that the mathematical breakthroughs required for the discovery may be applied in future technology that can improve our lives. More intuitively, the invention of the light bulb and many electrical appliances may have been delayed should we have not pursued the discovery of electricity. As such, it is evident that it is of paramount difficulty to analyse the societal benefits of carrying out research. Also, it is possible that research in the basic sciences may lead to future benefits that outweigh those

produced by applied and developmental scientific research that are perceived as the priority which governments should focus on due to the more palpable prospective benefits to society. Furthermore, basic science research extends the knowledge base of certain fields of science which can be applied in subsequent research projects to develop technologies which benefit society. If the height of a skyscraper is analogous to our quality of life, applied and developmental science research builds more floors while basic science research builds support pillars that allow for more floors to be built without a collapse of the building.

Secondly, while basic science research may not entail obvious augmentations to our standard of living, it is inherently a common good which everyone is able to benefit from so governments should fund basic scientific research. Basic scientific research provides the fuel for private corporations to pursue further applied and developmental knowledge. For instance, the understanding of physiological principles and the mechanisms with which the human body operates is extremely crucial in the process of drug discovery and development. This aids in reducing the total costs of R and D for pharmaceutical corporations, allowing consumers to benefit in terms of cheaper medicine as less costs need to be passed onto consumers. While this may not always be the case, government intervention may ensure improvements in our quality of life. For example, the cancer drug Nexavar manufactured by Bayer AG was sold at USD10,000 per patient per year. This was unaffordable to many less privileged people living in developing countries. The Indian government awarded a compulsory license to a domestic company to produce a generic version of the drug which only costs USD400 per patient per year, 4% of that produced by Bayer AG. This translates into huge improvements in the lives of cancer patients in India. We thus see that while funding scientific research that does not improve our quality of life as in basic sciences may lead to inequitable distribution of the fruits of science when corporations charge exorbitant prices for their products, government intervention is necessary to safeguard society's welfare.

In conclusion, while it is tempting to solely fund scientific research that yields benefits for our standard of living, it is imperative that governments devote a fraction of their R and D funds toward research that may not seem as beneficial. While corporations may fund scientific research that does not improve our lives due to the high costs at which they avail their products at, government intervention may correct such instances of injustice and inequity.

Comments:

Mature and fully relevant discussion. Mastery of content areas is shown. An interesting read.

'We should only fund scientific research that improves our quality of life.' Discuss.

Dean Su Diyang | 15S06B

It has been said that a scientist's greatest headache is not the discrepancy between his results and his hypotheses. Nor is it what caused the spectacular explosion in what was once his lab. What he worries about day and night is where he gets the funding to continue his line of research. Ours is a world of scarce resources, and it is impossible to expect every line of research to get the funding it deserves. Some claim that because of this, and the generally unsatisfactory quality of life of people around the globe, we should only fund scientific research that improves our quality of life. I beg to differ. While funding only scientific research which improves our quality of life is pragmatically justified, it is inadvisable as it risks censoring important but not immediately beneficial fields of study which have no practical application to humanity whatsoever.

On the surface, the argument presented by those who would advocate funding only life-improving research seems justified. With the world plagued by social, economic and political problems, and with our resources running scarce, it makes very little sense to fund research which does not in any way address these problems and improve our quality of life. Instead, our priority should be on fixing our most basic existential problems, such as providing everyone with consumables, shelter, and security, before we explore more esoteric fields of science. This criticism was recently levelled upon India following its successful Mars mission. Commentators sarcastically remarked that India would be better off spending money to address the poverty and inequality within its borders than for a ten-kilogram hunk of metal making its lazy way to a far off planet. In several ways, they are right. It is important to find ways to improve our quality of life before we begin to ponder less essential questions such as the meaning of our existence, as the situation of physical needs at the bottom of Maslow's Hierarchy of Needs clearly shows.

However, upon closer scrutiny, it can be seen that it is hard to determine what is or is not beneficial to humanity's quality of life. Hence, evaluating fields of research for their usefulness to improving the quality of life may preclude research with no immediate benefits but immense hidden potential. It is unreasonable to expect anyone to predict with uncanny foresight the fields of research that will benefit humanity in the decades to come. The best governments and research institutions can do is to consider which fields of research bring immediate benefit to human quality of life if pursued. While achievable, this runs the risk of extreme myopia in our research policies. Many historically useful lines of research take decades of

development, trials and marketing to reveal their benefits to humanity. These benefits cannot be seen by even our finest policy-makers, and will invariably result in such fields of study being taken offline or denied funding. Take the laser as an example. When it first debuted on the technological stage, it was described as "a solution looking for a problem" – there was as of yet no pressing need for concentrated, synchronised beams of light in daily life or industry. Today, it is hard to find an appliance which does not rely on lasers in some aspect of its operation or construction. From the barcode scanner which accelerates item purchase at your local supermarket, to the chasses of vehicles, scanned and cut down to sub-millimeter precision by laser rangefinders and cutters, to the ocean-spanning fiber optic cables that bring the Internet and the benefits of connectivity to billions of users across the globe in the form of lightning-fast laser pulses, the laser has wormed its way into almost every aspect of our daily lives. I hope I am justified in claiming we would have been worse off if those intrepid laser pioneers had been denied grant money due to a lack of immediate application opportunities.

Furthermore, the argument that scientific research should only serve to advance human life quality betrays a misunderstanding of the purpose of science. Scientific research is not purely dedicated to material improvement of our lives and to force it to do so is to stifle an important part of human culture. Humans are by nature curious. When the first cavemen started fire, they probably were not considering how it would be able to light their homes, cook their food and scare away predators. In all likelihood, they got bored and decided to smash pieces of flint and iron together, thereby inventing the tool with which man would conquer the world. Indeed, scientific research is a messy, haphazard series of serendipities and discoveries held together by the fires of our curiosity and our burning need to, channeling William Shatner, "go where no man has gone before". To restrict scientific research to only consider material aspects of our well-being is to extinguish the hundred-thousand-year-old flame that distinguishes us from lesser animals, and we will only be the worse for it. But are there even still fields of research with no practical application whatsoever? If one is willing to travel far and wide for the answer, it lies halfway around the world in Geneva, Switzerland. Here lies CERN, the nexus of particle physics research today. In a fitting display of the puritanical excess scientific research engenders, the power of an entire city is channeled into particle accelerators which proceed to slam subatomic particles into each other. Scientists there hope to tunnel further into the abysses of time, to peer at the beginning of the universe and uncover its laws. Practical purpose? Little or none. Yet the tenacity with which these scientists pursue their seemingly pointless goal is shining testament to the human thirst for knowledge, and our desire to stop at nothing for answers.

Finally, banning impractical scientific research lessens the variety of ways educators can reach out to young minds, who will be the future innovators of society. As our government frequently points to education as the means by which anyone, regardless of background, can use to climb the social ladder and, hopefully, give back to society. Scientific education naturally rides on the heels of scientific research, which it depends on for examples and inspirations. To stamp out the less useful yet more colourful aspects of scientific research is to risk making scientific education a dull, unglamorous affair for a whole generation of children, endangering the scientific world's long-term future. Hence, there is a need for us to continue such research, if only for the educational purpose it provides. A prime example lies in Britain. There, members of the Thrust team are putting together a jet-and-rocket-powered car, the Bloodhound, which will, they hope, reach a top speed of one thousand miles per hour. An endeavour with no practical use for the betterment of humanity it might be, but the program is also reaching out to students in Britain, inspiring the next generation of engineers and scientists. It is easy to see why this is a winning strategy. Your average British child might not be interested in the finer details of molecular biology with all its real-world healthcare applications. But letting that child watch a car race across the Nevada Desert at one and a half times the speed of sound is sure to have him or her contemplating the possibility of being an engineer. Scientific research with no material benefits to human life quality, owing to their often quirky and interesting nature, are thus a must-have for the inspiration they provide the next generation with and the future scientists they will help nurture.

In conclusion, we can see that the view that scientific research is most appropriately conducted solely for the betterment of our quality of life is not only myopic, but risks science of the essential aspects of curiosity and inspiration that it cannot do without. If we are to continue to nurture a race of thinkers, leaders and pioneers, we must cling on to these "inessential" aspects of scientific research. As the revised saying goes, "Give a man a fish, and he'll thank you for that day. Teach his child to fish, and he'll thank you for a lifetime."

Comments:

What an interesting read! Insightful, witty and well-organised. You have used your examples to incorporate your flair for a style that allows your analysis to be accessible yet thought-provoking.