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CONTENTS

2022 Year 6 GP Prelim | Paper 1

2022 Year 6 GP Prelim | Paper 2

2022 Year 6 KI Prelim | Paper 1

2022 Year 6 KI Prelim | Paper 2 | Question 1

2022 Year 6 KI Prelim | Paper 2 | Question 2

2022 Year 6 KI Prelim | Paper 2 | Question 3

2022 Year 5 GP Promo | Paper 1

2022 Year 5 KI Promo | Paper 1 | Section A

2022 Year 5 KI Promo | Paper 1 | Section B

2023 Year 6 GP TP | Paper 1

2023 Year 6 KI TP

2022 | Y6 | GP Prelim | Paper 1 | Question 2 **Eugene Teo Rui Xian | 22A01B**

'Obedience is a virtue.' Is this an accurate reflection of your society?

Singapore has widely been perceived by the external world to be an oppressive liberal democracy, one characterized by dominant state influence accommodated by a meek and obedient populace. From its tumultuous years as a newly independent nation state whose prosperity was predicated upon an extreme survival motif, Singapore's authoritarian flavour has seemed to have suffused a sense of obedience, in which citizens and communities have been insidiously co-opted to blindly accept what the state deems to be right for its people. This unquestioning, unthinking, and almost gullible society seems to have been accepted as the norm in which we operate on from day to day. An ideal citizen should be one that upholds cherished and sacrosanct social codes, values, and laws, thus ensuring peace and stability when orders are followed, and instructions are willingly accepted. Despite our reputation as a paternalistic state that has fostered a society of disciplined followers. I would posit that Singapore has largely shifted out of that monolithic narrative with the passage of time. In today's globalised world that heralds the proliferation of Western liberal ideas, and with increasing flexibility shown by Singapore's leaders to adapt to changing trends, I argue that my society has questioned the value of obedience by utilising civil opportunities and platforms to push for controlled change by improving on government policies and provisions, even taking the more extreme route of embracing more vocal positions and taking drastic actions to ensure that their dissenting voices are heard and that problematic state narratives are challenged.

Admittedly, detractors may point out that Singapore was, and still is, a society that prides itself in embracing its cultural and historical roots that champion social obedience. Power and control have been central themes throughout Singapore's history, which was especially pertinent with the arrival of the British in 1819. Hegemonic colonial rule sought to espouse order and obedience of its subjects, ensuring that other aims such as economic exploitation and the establishment of trade entrepots were achieved. Civil and loyal subjects who welcomed colonial hegemony, who thrived in colonial structures and institutions who obeyed without questions (that would have inevitably bred inefficiency or festered social disquiet – a problematic scenario for a vast overstretched Empire which had to maintain its structural integrity) were accordingly rewarded by the administration with high posts in the civil service. Independent Singapore largely preserved this system, then justified by a pressing survival narrative in which civil obedience, through the depoliticization of society and the extension of state control, was critical for unimpeded social progress and the pursuit of economic priorities. Dissent was promptly punished. The Barisan Socialis experienced the harsh end of the PAP-prescribed laws as they were effectively purged during Operation Cold Store in 1963, and subsequently vocal and suspected Marxists were suppressed in 1987 (with Operation Spectrum). The vilification of

disobedience, accommodated by an Asian Confucian culture that advocates hierarchical respect and the identification with clearly defined social roles and responsibilities. As a result, it is largely fair to presume that Singapore still holds this to be true – that we trust in what the state views as best for its citizens (as Hobbes' *Leviathan* proposes) and uphold our ingrained traditional Confucian values in order to uphold the status quo and ascribe a positive value to the importance of obedience, in which it is something to be revered and aspired towards. Vocal critics of the state such as Alfian Sa'at (whose Yale-NUS liberal arts course on "Dissent and Resistance in Singapore" was cancelled), and even farcical characters like Lim Tean and Charles Yeo, are still controlled by the state, and face substantial rejection and hostility from the general population. Apparently, Singapore is still unable to fully embrace a society that normalises the ruffling of the state's feathers, a concept that has been prevalent in the liberal West.

Nevertheless, this intense historical precedent has been dampened with time. Singapore has long shed its siege mentality and has proven to adapt with liberalising global trends. The government has adopted a more flexible and tolerant stance, showing genuine concern and eagerness to hear from its people and learn from its potential mistakes, signalling a clear parallel shift in how we value obedience today. Citizens have accordingly responded by active participation in civil society channels, repudiating the notion that we voluntarily become mindless grazing sheep in a herd that displays blind obedience at our shepherd's command. We now enjoy avenues to enact change in society and have been utilising them to various degrees of success. Goh Chok Tong's S21 Committee in the 1990s was the first instance of a liberalising political space in post-independence Singapore, whereby views from 6000 ordinary Singaporeans were considered in the hopes of moulding a brighter future. Since then, platforms like Reach Singapore – targeting the public, and school citizenship surveys, disseminated through the education system – have been rendered available for citizens who may now offer more than just unthinking obedience. Media and arts platforms, once seen to be a threat to state primacy in domestic affairs and societal peace (with the detaining of prominent figures in the performing arts scene like the late Kuo Pao Kun), have been revitalised with the proliferation of local theatre companies like Wild Rice and The Necessary Stage that push the boundaries of civil discourse, serving as well-received pressure valves of discontent (albeit restricted to a more wealthy intelligentsia – a class distinction has emerged where obedience is still the comforting blanket that less well-to-do citizens religiously abide by, with relatively lower levels of access to more liberal and reformative ideas). However, despite a salient shift towards the acceptance of the plethora of differing perspectives, not necessarily dogmatically aligned to an overarching, all-encompassing ideal state narrative, there are still limitations to what we can consider as a clear subversion from the sacred societal pillar of civil obedience. Avenues like feedback channels, civil society organisations, publications and productions are still legally permitted platforms; a great deal of self-censorship and state suppressions still occur today when perspectives stumble outside of the ambit of accepted societal discourse. This is aptly evinced in the state's use of POFMA that blurs the line between outright falsehoods and differing perspectives. Opinions online that offer valid alternative views might be threatened and subject to correction or removal under

the act, on the basis that they have been perceived to be non-factual, deliberate falsehoods. The general mindset shift, nonetheless, still indicates a measured rejection of the status quo and the dampening of the prominence of obedience.

In more extreme cases, instances of civil disobedience have slowly been gaining traction in society where citizens do not accept certain concepts or policies, instead striving for a revolutionary change in how things work. Globalisation has ushered the propagation of ideas, concepts, and technologies over the world. Singapore is no exception to this trend; we have witnessed the proliferation of modern liberal mindsets and opinions relating to subjects like free speech and identity politics that have largely been absent from mainstream scrutiny and publicization before this millennium. This has been fostered by a technologically advanced society where social media channels have facilitated rapid and widespread communication, enabling a variety of ideas to spread across large distances to our sunny shores. Singapore has thus seen instances of its citizens completely rejecting valued social norms of order and obedience, evident in more extreme cases of radicalisation and extreme influence, with teenagers being detained for plotting religiously or racially charged terror attacks in our very heartlands, and the galvanisation of support over trends that directly oppose state values and institutions. The furore over the perceived oppression of homosexuality in Singapore demonstrates this, as the recent repeal of Section 377a, a law that criminalised sexual intercourse between males in the Penal Code, was fuelled not by increasing government flexibility but by autonomous efforts inspired by global precedents. These radical shifts in mindsets have effectively undermined the notion that obedience is an unquestioningly accepted virtue in Singapore today.

To conclude, obedience has been and should continue to serve as the stable foundation on which society stands upon; this is fundamentally accepted by both citizens and the state as a basic social contract that ensures efficiency and progress. Citizens will have to relinquish certain rights by investing their trust in the government as an honest, benevolent, and paternalistic figure with the people's best interests at heart. However, I would like to caution that this is not tantamount to blind faith, one that is unquestioning and fatally naive. While we accept and valorise obedience to some degree, in the sense that it is instrumental for the preservation of societal order and harmony, Singaporeans today have sought legal channels to complement and improve on existing national polices, even rallying to dismantle them altogether. This is not to say that civil disobedience is necessarily anarchic, revolutionary, and violent. After all, there is significant merit in escaping from our shackles and seeing the world outside of our dark and myopic environments, as Plato's Cave allegory describes. Admittedly, this could inevitably result in sizeable backlash and resistance from unconvinced and fearful would-be cave dwellers who still elect to cling on to the comforting societal milieu of the status quo. Change is desirable and arguably necessary given the volatile world today , and Singapore has displayed willingness in moving away from limiting narratives and systems, challenging the idea that blind obedience is an inviolable virtue. We can do more to ensure that more erstwhile marginalised and under-represented voices are heard and considered, along

with providing legitimate avenues for socio-political change that will better society at large.

Comments

Overall, this is undoubtedly well-written and substantiated, showing an above average level of engagement with the question's terms. The scope of discussion elects to commit to depth in favour of breadth, with extremely deep historical exploration of the origins of Singaporean attitudes towards disobedience, lending weight to the initial arguments. However, there are several junctures where this rumination (on both the argumentative and linguistic levels) becomes almost self-indulgent and does not directly serve to address the question.

2

2022 | Y6 | GP Prelim | Paper 1 | Question 4 **Samuel Benedict Silveries Mathias | 22S06G**

Big companies are concerned only with profits. Is this a fair assessment?

In 2013, news of the tragic and, honestly, appalling Rana Plaza textile factory collapse in Bangladesh sent shockwaves throughout the world given its scale, with the lives of over a thousand daily-wage workers working in sweatshop-like conditions being forfeited due to the blatant negligence of profit-driven textile companies such as H&M and Adidas. To confirm observers' most harrowing and concerning suspicions, investigations after the tragedy did indeed find that flaws in the structural integrity of the building had been identified well before the tragedy and that the accident could have very well been prevented if not for target-oriented factory managers choosing to pay no heed to such warnings and instead putting the lives of impoverished, voiceless workers at risk. This then raises the broader question- are big companies like H&M across fields such as manufacturing and technology, who have been able to capitalise on advancements in shipment technologies and globalisation to establish sophisticated Global Production Networks(GPNs), concerned only with profits and nothing else? While it has to be acknowledged that a number of these companies have made commendable and sustained efforts to make a genuine difference to the places they operate in and in the lives of the people they employ to show that they are not concerned just with making money, the harsh reality in today's world is that big corporations are ultimately overwhelmingly focused on maximising profits with little concern for any other factor.

The staunchest defenders of large-scale corporations and Trans-National Corporations often argue that these firms make a concerted effort to actively champion key causes and tackle key social issues that plague our world today in response to criticisms that they are concerned solely with profit-making. While I am of the opinion that such arguments have to be critically analysed with a high degree of nuance given the scale of the detriments such firms' business activity has engendered to society at large over a protracted timeframe, it has to be recognised that there is indeed some truth to such arguments. Over the years, large corporations have increasingly embarked on campaigns to improve the welfare of the communities around them and champion social causes under the banner of Corporate Social Responsibility (CSR) initiatives. The guiding philosophy behind such initiatives is the fact that companies have the moral responsibility to serve the community around them given just how much they profit, and the reality is that some of these initiatives have made a genuine difference in our society today. For example, the Development Bank of Singapore, or DBS in short, has partnered with countries in the ASEAN region and Nobel Peace Prize Winner Mohamed Younus' Grameen Bank in Bangladesh to make micro-financing schemes available to impoverished women living in rural areas, and these schemes have indeed made a difference in the lives of these women by enabling them to break out of male-dominated structures and achieve financial independence by having access to small business loans under such schemes. In addition,

such large corporations have also indirectly contributed back to society by treating workers at every level of the company with dignity and helping them improve their lives. One need to look no further than the Tata conglomerate in India which received applause from all quarters of society for extending extremely generous financial assistance to the families of its employees who had passed on during the Covid-19 pandemic, with Tata offering the widows of such employees jobs and taking on the burden of educating their children.

However, I am of the opinion that such CSR initiatives undertaken by large companies today are largely gimmicks which merely serve to deflect criticism of their obsession with profits, being a mere facade to convince increasingly socially-conscious consumers of their credibility as reputable and sustainable firms. While some of these initiatives undertaken by large firms are indeed genuinely meant to improve the state of the communities around them, it simply cannot be denied that this is largely outweighed by the sheer scale of the exploitative business practices of these very firms which only serve to prove just how profit-oriented they are.

The strongest argument proving how large companies have an inordinate focus on maximising profits at all costs would be that they are fundamentally exploitative in nature and have achieved these profits at the expense of millions of impoverished individuals in Less Developed Countries (LDCs), with the argument often being made that such exploitation is the singular largest driver of poverty in these countries. Fundamentally, large corporations spanning across fields such as manufacturing, resource extraction, and agriculture are all accountable to their shareholders and Boards of Directors to make profits and achieve "growth" year after year, meaning that they give little thought before turning a blind eye to the blatant, thorny moral and ethical issues their practices are embedded in. The outcome of this is that it is often the uneducated in LDCs who suffer, given that they are heavily dependent on the low-skilled employment these large firms provide and hence voiceless against their exploitation. This includes sweatshop-like conditions, extremely paltry wages, and long working hours, all of which are possible, to begin with, due to the fact that a majority of the governments of poverty-stricken LDCs are ultimately beholden to these firms to drive economic growth. For example, one need not look further than H&M, a world-renowned fashion brand, which has been accused of using violence to force its employees to work longer hours in Indian factories and has paid them such poor wages that they are unable to afford a single piece of the clothing they manufacture with their monthly wages. This example is testament to the stark reality that big corporations do indeed commit blatant human rights abuses in an attempt to cut manufacturing costs and maximise profit, with the victims of such exploitation having few means to protest.

In addition, large, profit-oriented firms have often been accused of inordinately hiking the prices of essential, day-to-day goods in an attempt to maximise profits, besides engaging in other predatory practices to the same end, which ultimately hurts consumers across the world. It has to be recognised that consumers have little choice but to somehow cough up the requisite money to purchase these essential goods and utilities such as food, medicine and electricity regardless of how expensive they are in order to get by life on a daily basis,

and this ultimately allows large firms to exploit this predicament to force consumers to pay exorbitant prices. For example, one need not look further than the pharmaceutical industry in today's world, with Pfizer being accused of raising the cost of more than 500 brand-name drugs used to treat critical illnesses such as Rheumatoid Arthritis since 2020. This has ultimately hurt the poor in LDCs and developed countries who have simply been unable to afford these drugs and continue to suffer in pain. Shockingly, such exploitative practices have not been confined to the pharmaceutical industry but have since extended to utility companies across the world today which is unprecedented, with it being reported that electricity suppliers in the United Kingdom have posted record profits of billions of pounds by taking advantage of the current energy crisis and leaving hundreds of thousands of households across the UK without access to heating in the upcoming winter months.

Lastly, it has to be recognised that the environment often has to bear the brunt of large firms' business activity, given that they give little thought before choosing to degrade the environment in an attempt to maximise profits. Fundamentally, these firms have a "not-in-my-backyard" mindset which enables them to exploit natural resources in the countries they operate in. Given their global foothold, they overwhelmingly tend to view environmental degradation as a negative externality even as they continue to release record carbon emissions and encourage deforestation in the appalling lack of and enforcement of environmental laws in the countries they operate in. It is often expensive and not in the financial interests of these firms to undertake actions that limit environmental degradation given how costly an affair this can become, and one can just scrutinise Shell as proof of this. Petroleum company Shell has been accused of flouting a plethora of environmental regulations in Nigeria in its attempt to cut operating costs, with it spilling 2.1 million barrels of oils in the Niger Delta due to its inability to adequately maintain oil pipelines running across Nigeria. This ultimately resulted in the severe degradation of agriculture and wildlife, besides hurting the livelihoods of local fishermen and farmers, and is testament to just how exploitative large firms can be in terms of degrading the environment to maximise profits.

In summary, while it has to be recognised that large companies have shown some inkling that they do look beyond profits to champion social causes, the stark reality is that such instances are few and far between and that they are overwhelmingly profit-oriented.

Comments
This was a thoughtful and engaging read with many sensible points raised across different contexts. You demonstrated nuance and maturity in your arguments. Just remember to consistently link back to the question so that you don't end a paragraph with an example. Your writing was confident and fluent, with many apt phrases. Keep up the good work!

2022 | Y6 | GP Prelim | Paper 1 | Question 5 **Gerald Nyeo | 22S06Q**

Will technology completely replace the role of humans in the future?

Just this year, a software engineer at Google claimed that LaMDA, the artificial intelligence model he was working on, as part of Google's push to enhance search query results, was sentient. This spark massive debates, not so much on whether the program was indeed sentient, but about the exponential development of capabilities of technology in the world today, and their impact on the role of humans. Increasingly breakthroughs in medical technology, automation and other fields are threatening to replace humans in less rote tasks, both in the workplace and in our daily lives. However, there are many inherently human qualities which machines will not be able to emulate, even far into the future. Hence, I believe that while technology may replace the role of humans to some extent, it will not completely replace the role of humans.

Firstly, technology may replace the role of humans to some extent, as its capabilities continue to develop over the years. As research continues to be conducted, technology will be able to perform increasingly complex tasks. This is exacerbated by government funding for research and innovation – as more countries become economically developed, they have greater resources to spend on funding technology as a way to continue competing on the global stage. In the future, technology will continue to change the way tasks are conducted, reducing the need for humans to perform those tasks. For an example, a magnetic slime being developed by researchers could help remove foreign objects stuck in a person's gastrointestinal system, removing the need for surgery. By changing how certain tasks are performed, technology could replace certain job roles. Furthermore, with the advent of artificial intelligence, technology is increasingly being applied to more creative and less rote tasks. Developments in this area have allowed technology to perform some tasks which were originally thought to be unique to humans, such as composing music or painting a picture – OpenAI's DALL-E 2 is one such example of a program which can produce realistic images of many different subjects in various art styles. This shows that the complexity of skills required may no longer be a distinguishing factor which separates the abilities of humans and technology.

However, while breakthroughs in technology may be able to replace the roles of humans to some extent, by performing increasingly complex tasks more precisely, and hence replace the need for certain jobs or practices in life, technology will not be able to completely replace the role of humans. One reason for this is that no amount of development in technology will give technology, in the form of devices or automated systems or programs, the authority or responsibility to make decisions involving human issues. This is because the authority to make decisions is an inherent characteristic of humans, a factor which is separate from the ability to make decisions, or to weight benefits and costs. Take the example of self-driving cars. Self-driving capabilities have been

pursued by many technology companies such as Uber, and the technology for self-driving cars already exists. However, self-driving cars have not been implemented in many countries, due to ethical concerns over who the program should protect first in an accident, the passenger or pedestrians, and to whom to assign the blame. This is despite self-driving cars being much safer than human drivers, as they are less prone to error, do not get drunk, or sleepy, and so on. In this case, the role of a human driver to make the decision of who to protect first, and subsequently take responsibility for and suffer the consequences of that decision, cannot be replaced, even if the car can "decide" which option is safer. In this respect, the sector or area of life to which certain technologies are implemented can also affect the extent to which they can replace their human counterparts. While self-driving cars holding passengers may have ethical concerns, self-driving trucks, carrying only cargo, are being trialled in several countries, such as the United States, as the lack of any passengers reduces the need for there to be a human to take responsibility for any decision made. Hence, technology cannot replace humans in areas where inherent human characteristics such as the authority to make decisions are necessary.

Furthermore, rather than replace the role of humans, technology is more likely to complement the role of humans in the future, particularly in the workplace. In some areas, even where technology has the ability to replace humans, a combination of technology and humans result in better results than using only one, due to different approaches to the sane tasks which complement one another. In the area of medical diagnosis, research has shown that a combination of a panel of experts and automated systems results in a significantly more accurate diagnosis than either alone. Technology will also be able to complement humans by reducing the workload of humans by replacing their role in less important tasks, freeing up their time for more important tasks. For an example, artificial intelligence in being applied in law to help lawyers read through and compile information. While this may be true for jobs which require higher skills, it may not be the case for lower-skilled jobs, such as construction or manufacturing, and workers may have to reskill in order to pursue those more important tasks such as management. As a result, while technology can complement the role of humans, it is up to humans to upskill and become better at non-replaceable tasks, to ensure that they are not replaced.

In conclusion, the exponential development of technology – to the point where many people may not know how it works, may spark worries as to whether technology will replace the role of humans completely in the future. However, while technology will replace the role of humans to a certain extent, it will never completely eradicate the role of humans.

Comments

A consistently argued and thoughtful response on the whole. Clear understanding of the issue and ability to bring in context and current trends in AI/tech. Illustration generally apt and effective. Some parts of the essay could be more fully developed. Overall, good work.

4

2022 | Y6 | GP Prelim | Paper 1 | Question 10 **Matthew Lee Rei Herng | 22S06B**

'Workers today have never had it better.' Is this an accurate view?

The coronavirus pandemic has largely changed the way employees and employers alike approach the subject matter of work and employment. It represents a paradigm shift from a culture largely based on hard work, where many would work long hours overtime to demonstrate their dedication and zeal, to a culture focused on efficiency and output. Indeed, such shifts in mindset have changed the lives of workers for the better, in a way that benefits their physical and emotional well-being, as well as equipping them with skills to further enhance their employability. The statement that asserts workers today have never had it better is therefore largely accurate and applicable to modern society.

A common perspective is based upon the numerous strikes and instances of industrial action today. Detractors may claim that workers' dissatisfaction and mistreatment today are evident from how they are forced to turn to strikes to push for better working conditions. Perhaps this is most evident in the UK, where railway workers including drivers, guards and station staff regularly go on week-long strikes to push for higher pay, more humane working hours as well as better working environments, given that the UK is in the midst of a heatwave and many trains and stations are poorly ventilated and not air-conditioned. In fact, such dissatisfaction is not solely limited to the Northern hemisphere – Sydney's suburban railway network ground to a halt earlier this year as train operators went on strike to protest against their supposedly substandard remuneration package, and numerous timetable amendments which forced these drivers to work overtime. Indeed, the increasing dissatisfaction does stand testament to the fact that we cannot conclude workers today have ideal, perfect working conditions. It is therefore common and understandable for detractors to suggest that the prevalence of industrial action in today's world suggests mounting dissatisfaction of workers with their working conditions.

However, it is necessary to recognise that workers today who go on strike have never had it better, especially when compared to the context of the past. This can be credited, in no small part, to the formation and amalgamation of unions, which pool together the power of individual voices, to use the collective as a bargaining chip. Strikes and demonstrations in the past often turned unruly as they morphed into heated exchanges or even riots – think the Hock Lee Bus Riots in Singapore in the 1970s, where armoured trucks and water cannons were called to the scene after a demonstration in a bus depot turned unruly. Arguably, unions are not the antidote to strikes and demonstrations – they merely equip workers with the bargaining chip of the collective. Therefore, it is simply too parochial a viewpoint to conclude that workers are suffering today as evinced by the numerous strikes they have staged – on the contrary, workers who go on strike are protected by their unions and industry bodies, which is already a more favourable outcome compared to the strikes

of yesteryear. We must also recognise the fact that employers do take heed of industrial action and actively placate the affected employees, perhaps not acceding completely to their demands but attempting to reach a middle-ground through negotiations with the trade unions. In fact, following the Sydney Trains industrial action, a nationwide reform of employment standards and remuneration packages for train operators was introduced, especially so to honour the role of transport staff as frontline workers during the pandemic. Workers today therefore have comparatively more comprehensive protection and a greater voice to their employers, due to the protection and collective power that unions offer them.

Additionally, today's society has placed great focus on mental wellness and psycho-emotional health, and workers today therefore enjoy unparalleled work-life balance. We can see the stark contrast in company culture between past and present from the mindsets of employees and employers alike – whilst many employees went to work with a "do-your-work-and-get-out-of-here" mentality in the past, companies and employers nowadays focus on building a homely, welcoming office culture such that the office can function as a venue for employees to unwind and relax too. On top of that, companies worldwide from SMEs to MNCs are making a concerted effort to protect employees' welfare – on a smaller scale, this could include "burnout breaks", when employees are given time off amidst peak seasons to prevent burnout, or, on the larger scale, events such as corporate retreats or family days such that colleagues can forge friendships and get to know each other on a more personal level. In fact, Grab's new headquarters in one-north, Singapore, was designed from an employee-centric perspective: the facility boasts a gym, pool tables and dart machines, and even nap rooms for employees to use during their breaks at work. This underscores the paradigm shift in employers' mentality from the past as they recognise that mere retention of employees is simply insufficient to keep the cogs and wheels of the company running smoothly – on the contrary, happy employees are the key to hitting KPIs. From a more pragmatic perspective, working hours in the current day and age are shorter than ever, with some companies boasting four-day work weeks and 10-to-4 working hours as opposed to the traditional 9-to-5. Ultimately, this translates into more personal time for employees to spend on themselves and their loved ones, a luxury that was absent from the brutal, traditional 5.5-day work week where employees had to work half-day on Saturdays. Most notably, such a shift is not exclusive to the white-collared corporate workers – a Japanese tempura restaurant in Singapore recently switched to a four-day work week for all staff, and both employee and customer satisfaction increased exponentially after the change. Therefore, given the fact that such concessions were virtually unheard of in the past, we can conclude that workers today have never had it better in terms of working hours and working hours.

Thirdly, workers today have access to plenty of upskilling opportunities to enhance their employability and aid in career progression. In today's knowledge-democratised economy, there are a plethora of resources and grants available to workers for them to hone their competency in their craft, or even pick up new skills to take on more responsibilities. Arguably, knowledge has never been as accessible as it is today – in the past, taking a part-

time degree would have simply been out of reach of the average blue-collar worker. With the rise of the Internet and overall advances in technology, the entry barrier to acquiring knowledge has been greatly lowered, both in terms of cost and convenience as these online courses can be completed at one's own pace. It is therefore fair to conclude workers today have never had an easier time acquiring knowledge and new skills. Perhaps a more prominent example would be Coursera, which provides online courses at low to no cost across a variety of domains from business to finance and logistics. In fact, it is wholly possible to attain an accounting certification online through Coursera. In the local context, the Government's SkillsFuture programme provides subsidised courses for local employees or those in-between jobs to upskill and remain relevant. Given the context of a VUCA world, the ease of acquiring knowledge and new skills allows workers to keep up with the times and bolster the potential volatility of the job market by continually elevating themselves to suit the demands of the workforce.

When discussing workers, it is important to consider an oft neglected but especially important subset of workers: low-income workers. These workers are arguably the most vulnerable as their finances are often stretched thin, and job security to them is of paramount importance. Today, it is heartening therefore to see such low-income workers empowered by the gig economy, providing a sustainable alternative for this group of workers to supplement their income. The flexibility provided by such platforms such as Uber Eats, Deliveroo, Lalamove or even Grab allows workers to work around their schedule, while being able to tend to other commitments such as family or personal matters. The advent of a gig economy has therefore greatly improved the lives of the low-income group by providing an alternative income stream with enhanced flexibility. Additionally, governments around the world have enacted legislation to protect low-income workers from exploitation, through the enactment of a minimum wage in some countries and, in the local context, a progressive wage model.

This runs in tandem with stipulated monthly contributions to a savings account, to ensure that even low-income workers have sufficient funds for retirements. Governments worldwide have recognised the enhanced vulnerability of low-income workers to exploitation and job instability, and efforts are made to head in the direction of providing financial stability and flexibility to these workers. That said, there is room for improvement in protecting gig economy workers' welfare, as workers in a tight spot financially often overwork themselves on these platforms to make ends meet, leading to exhaustion or even death in certain cases where several delivery riders in Singapore passed away on the job after fatigue from 14-hour shifts. We must therefore recognise the importance of striking a delicate balance between flexibility and over-working oneself.

The last idea to discuss is perhaps one close to the hearts of many: remote working. Such a phenomenon was extremely rare prior to the pandemic, with less than 10% of firms worldwide adopting such practices. Yet, now, over 80% of firms surveyed are retaining remote working options for employees even after restrictions are lifted and employees can return to the office. We must be careful not to paint too rosy a picture of remote

working while discussing its benefits, of which admittedly there are many: reducing traffic congestion, enhancing employee efficiency, less commuting time or simply being able to not make unnecessary trips to the office… the list goes on. If not for the pandemic, we would not have realised that many tasks previously done in the office can actually be completed at home, without compromising quality or efficiency of the end-product. It comes as no surprise to see the rise in hot-desking arrangements, where employees have no fixed desk and office hours, and only return to the office when their physical presence is needed. Such arrangements provide unparalleled flexibility and freedom to workers today, who are no longer chained to rigid 9-5 working hours. The popularisation of web hosting servers and telecommuting started out as a precautionary health measure to curb the spread of Covid-19, but it is evident that the benefits extend far beyond that, as it liberates many office workers who would otherwise be hunched over a desk for nine hours each day.

In a nutshell, we cannot look at every single one of the aforementioned comparisons in silo, but rather must put them together to get a complete picture of what life is like for the modern worker. A recurring theme is flexibility: flexibility to work other side-hustles, flexibility over when to head down to the office or flexibility in terms of having the sufficient skill sets to make a mid-career switch. Indeed, the advancements in technology and shift in employers' mindsets have catalysed change for the better in many companies and across sectors, and this encouraging trend shows no sign of abating. With respect to the VUCA world that lies ahead, I can say with confidence that workers today are in the best position that they have ever been to face the challenges of tomorrow.

Comments

Excellent piece of work that sufficiently and maturely considers the nature of today's world and the characteristics of modern society to argue that workers have never had it better. Points are clearly established, with sufficient support although examples are largely restricted to Singapore. To strengthen your position, consider different contexts from around the world. Also work on sustaining the consistency of argument throughout the essay – reverting to discussing the benefits/harms of work today towards the end of the essay diminished the overall strength of your response.

5

2022 | Y6 | GP Prelim | Paper 1 | Question 12 **Lai Pengchong | 22S06D**

Is conflict inevitable in today's volatile world?

In 2021, the withdrawal of thousands of American troops from Afghanistan marked the end of a two-decades long war between the United States and the Middle East. The hundreds of thousands of civilian lives lost in both Iraq and Afghanistan left an indelible mark on the psyche of people around the globe, reminding us that the age of conflict is not behind us. While optimists posit that the rise of international organisations can help to quell conflict, the reality in today's volatile world is that conflict's continued existence is still unavoidable due to the amplification of ideological and religious differences by new media and the rise of nationalism.

Optimists believe that the ecosystem of international organisations today can resolve differences between countries, rendering world peace attainable and conflict avoidable. There is some merit in this argument. International organisations like the International Court of Justice or the United Nations can serve as a neutral third party to mediate negotiations and help nations in disagreement reach common ground, thus avoiding the outbreak of real conflict. In today's volatile world, where disputes over critical resources and territory are commonplace, such organisations play a pivotal role in resolving differences. For example, when Singapore and Malaysia disagreed over the ownership of the islands of Pedra Branca and Middle Rocks, they went to the International Court of Justice, which eventually ruled that the former belongs to Singapore and the latter to Malaysia. So long as such organisations can maintain their prestige as a neutral organisation free from the influence of national interests, nations would be willing to trust them, so it seems like conflict can be avoided with diplomatic solutions.

However, while international organisations can, to some extent, reduce conflict, they are likely unable to ever eradicate it completely. In fact, international organisations' inability to neutralise the root causes of conflict is one of the reasons why conflict is still unavoidable today. One key weakness of international organisations is that they act from afar. Being an amalgamation of international entities, they may lack the legitimacy to act in local contexts defined by local sensitivities rather than global goals of world peace. When the root cause of conflict is highly specific to regional circumstances, local sentiments may be resilient to international organisations' attempts to influence them towards more peaceful ideals. For example, the protracted conflict between Israel and Palestine is motivated in large part by the historical baggage born of millennia of religious differences. When the United Nations called on both parties to exercise restraint, neither one heeded its plea. In fact, according to a Pew Research survey, Israelis' perception of the United Nations is one of the poorest in the world, with many Israelis accusing it of imposing its ideals without a proper understanding of the region's history. Even if international organisations can broker short-term peace, so long as profound disagreements over ideology or religion are not resolved, then it is only a matter of time

before the volatilities of the modern day catalyse another war. So, because even our best instrument for resolving differences – international organisations – fail to get to the root causes of conflict, conflict is inevitable today.

The rise of new media today has also exacerbated our world's volatilities as it amplifies the ideological and religious differences which catalyse conflict, both within and between countries. And because the decentralised nature of new media is extremely hard to regulate, its effect of increased conflict is largely inevitable. The mechanism through which this occurs is two-fold. Firstly, through its ubiquity and convenience, social media acts as a megaphone that helps radical ideas to spread, playing on existing prejudices and grievances to strike a chord with its audience. Secondly, the emergence of echo chambers, where individuals are constantly fed by algorithms with content that aligns with their pre-existing views, or where people are influenced by radical online communities that they voluntarily join, makes ideological and religious differences even more entrenched. Such entrenched beliefs naturally lead to hatred and resentment, potentially motivating individuals or countries to engage in conflict, while the world is made even more volatile due to the increased unpredictability of animosities amplified by new media. For example, in Myanmar, social media has amplified hatred towards Muslims, with figures like the Burmese monk Ashin Wirathu using social media to incite intense religious feelings against Muslims. Even after he was deplatformed from Facebook, the online communities he created survived, continuing to reinforce prejudice and hate on the Internet. This has led to a spate of violence against Muslims in Myanmar, while also feeding into a protracted civil conflict between the Muslim minorities and the rest of the nation. As can be seen, new media exacerbates root causes of conflict, and resists attempts to quell its power to instigate as the ubiquity of the Internet allows radical ideas to fester in a myriad of alternative online forums. Hence, the world is ever more volatile, and conflict remains inevitable.

Finally, the rise of nationalism today, supported by powerful political leaders, drives nations to conflict and renders conflict inevitable. While globalisation has seemingly brought countries together and weakened the concept of national borders, it has also, more pertinently, spawned a perverse response of countries reasserting their identity and sovereignty, now on a global scale. In their nationalistic attempts to assert their dominance, countries are increasingly motivated to engage in conflict to achieve goals of national pride. For example, populist former US President Donald Trump painted China as an enemy of America, rousing nationalistic feelings through his vision of the revival of "Great America", to justify his trade war with China. While not a physical conflict, the economic war brought significant consequences to the jobs and livelihoods of citizens of either nation. More recently, China's attempt to dominate as a superpower of the globalised world today, motivated by many of its citizens' desire for a "Chinese Century", led it to rain missiles over the straits of Taiwan, bringing us closer to a perilous war between China and the Western powers supporting the island nation across those waters. This problem is extremely challenging to resolve as the emotional appeal of pride and identity attached to feelings of nationalism, already hard to reverse, is endlessly exploited by strongman leaders with vast means (through media, for example) like Xi Jinping or Vladimir Putin, who feed and nurture it to extremes, to justify their own legitimacy. As a

result, to quell nationalistic fervour is an impossible task. Nationalism feeds into a desire for countries to assert their dominance over others for the sake of national pride, resulting in greater belligerence, thus making our world more volatile and conflict all the more inevitable.

In conclusion, while international efforts have the effect of reducing conflict to a certain extent, they are still very limited in their ability to truly eradicate conflict. The root causes of conflict, like nationalism and religious or ideological differences, not only persist, but are also exacerbated by modern trends. In view that these root causes, at least as of now, are impossible to eradicate, the world is thus ever more volatile, and conflict remains inevitable.

Comments

You show decent awareness of the issues, providing very good examples that show knowledge. However, some of your claims can be explained more clearly. You do make some assertions that sound logical, but those need to be fully fleshed out if you want to demonstrate analysis. Also, you could rework the organisation of the points to better bring out your arguments (e.g. start with base factors, then move on to exacerbating factors).

6

2022 | Y6 | GP Prelim | Paper 2 | AQ

PASSAGE

Tracy Lindeman discusses the attitudes and issues surrounding architecture and design in Canada.

1 When Ottawa unveiled the design of its new central library in 2020, the mayor promised it would be 'more than just a building with books'. The design of the $192 million edifice, 'connects the facility to Ottawa's rich history and natural beauty', the city elucidated. 'Its shape is reminiscent of the Ottawa River; its stone and wood exterior reflects the adjacent escarpment and surrounding greenspace'. While some members of the public felt the building was magnificent, not everyone was so generous with their praise. CBC's[1] Facebook polls showed that some were indifferent, some were hoping for better, and many others saw the price tag and wondered why the city was bothering at all: 'Giant waste of tax dollars to pacify a very small number of people and mostly just the employees. Times have changed, people!!!'. All of this, dear readers, is why Canadians cannot have nice architecture.

2 But beautiful spaces are critical for the life of a community. Think of the places you love most in your community and consider how they make you feel. What comes to my mind are fond memories of roaming the narrow corridors of Diocletian's Palace, in Croatia; savouring a cup of coffee on the lively piazzas of Rome; experiencing the thrill of fireworks over the Old Port of Montréal. These are spaces built for people. All kinds of people want to use a lovely library, bike through a lush park, visit a poignant outdoor monument, even use the rooftop patio of their condo building. Consider our COVID-19 experience, which has seen people clamouring for communal outdoor spaces where they can be safely together. When all this is over, buildings will again be gathering points. Do we not deserve beauty?

3 Today, barring the newish Halifax and Calgary central libraries (which opened in 2014 and 2018, respectively), one wonders whether the average Canadian could name a building constructed in the past thirty years the country could be proud of. This is not only a matter of aesthetics: for a country that is ostensibly concerned about climate change, we do not do much to push the envelope on environmental design. That is not to say there are no good, sustainable modern buildings in Canada; there are always exceptions to any rule. They certainly are exceptions, though. It is true that the modernist era was incredible for architecture, abroad and in Canada. The movement inspired Montreal's Lego-like Habitat 67 and more discrete gems like Bauhaus master Ludwig Mies van der Rohe's gas station, which in 2020 was repurposed into an intergenerational community centre in Montreal.

[1] *Canadian Broadcasting Corporation*

4 Since modernism, though, architecture in Canada has taken a real nosedive. One possible explanation is increasing suspicion of government spending, especially if it appears to involve frivolous design. Then came sprawling suburbanisation, the economic recession of the 1980s, the spread of the megamall, and the fast-and-furious office tower and condo boom that cast a shadow of sameness across cities. In many places, officials ceded visions for cities to private developers, which is why you can now find massive condo towers in low-rise neighbourhoods. Sometimes it feels like 'design' has become a dirty word.

5 The reason Canadian cities look so *blah* compared to, say, European ones is only partly because ours are much younger. When it comes to architecture – and, truth be told, a lot of things – University of Calgary architecture professor Graham Livesey suspects that Canadians do not want to make a fuss. 'I don't think Canadians are any less informed than anybody else in the world. We are fairly educated, we are fairly sophisticated, and we travel', says Livesey. 'But,' he continues, 'I think Canadians – and it's not just particular to architecture – are just a bit passive. You could say the same when it comes to the environment. We're really not doing that much for the most part, and Canadians aren't really demanding that their politicians do very much either'.

6 There is a lot of truth in Livesey's estimation, but I suspect our commitment to accepting 'good enough' is not merely about a lack of empowerment or abundance of ignorance. Fundamentally, it represents our aversion to risk. The predominant approach to the design and construction of buildings, especially multi-unit residential housing across Canada, has been, 'why rock the boat when something functional and cheap will suffice?'. Furthermore, in many instances, 'build cheap' also means 'build ugly' – not because good design necessarily costs more but because we have conned ourselves into believing that it does. In reality, good design simply means making more creative choices with the money you have – something that is simply beyond the capabilities of the people with the rubber stamps. In many ways, our devotion to fiscal conservatism has caused us to settle for buildings that do not meet even the most basic standards of environmental sustainability.

7 While Livesey is not so cynical to think that Canadian architecture as a whole is a chore to look at, he sees many newer private-sector buildings suffering from various ailments. Canada's downtowns are stuffed with cranes piecing together gleaming towers with floor-to-ceiling glass – a design choice that sucks up excessive amounts of electricity in both the summer and winter months. Private developers push for this kind of design because it is relatively easy and inexpensive to construct; it almost always gets approved by cities, and when combined with cheap materials, it is the quickest way to get returns into the pockets of investors. Unfortunately, these motivations come at a cost. In 2014, the CBC reported glass panels falling off the facades of newly built hotel towers in downtown Toronto, including the Shangri-La luxury hotel, where the most basic room goes for a minimum of $575 a night. In a Toronto high-rise, residents contend with wildly fluctuating water temperatures due to improperly installed valves. Then there is Vancouver's enduring leaky condo crisis, in which tens of thousands of homes built in the 1980s and 1990s have been flagged

for water leaks.

8 Why we accept it is a patently Canadian phenomenon: our national psyche has us much more interested in checking boxes than in taking chances. Our standard process for contracting buildings often gives projects to the lowest bidders, even if a vastly more beautiful design is just a little bit more expensive. The tendency has been to make fairly functional, reasonably inoffensive, generally mediocre buildings. And those buildings then set the standard. Why succeed and produce a jewel when you are in a sea of mediocrity? We have become so devoted to frugality and bureaucracy, and are so readily appeased by basic functionality, that we have lost the fortitude to take and demand risks, even if the outcome could be the most beautiful thing we have ever seen.

9 Can we hope that passive, suspicious, and cheap Canadians will one day believe that good design exists and that it is an expense worthy of our tax dollars? When the city of Calgary got its award-winning central library, it was striking to see how public opinion shifted. For a long time while it was still in the planning and construction stages, people asked, 'What are you doing building a library? Aren't libraries dead? And why is it so expensive?'. People shut up after the library opened, in 2018, to global adulation, however. 'Suddenly', the discussion was, 'Wow, that's really cool. Did you know that was in the New York Times?'.

7

2022 | Y6 | GP Prelim | Paper 2 | AQ **Swaminathan Visakan | 22S02A**

Tracy Lindeman discusses attitudes towards architecture and design in Canada, and how such attitudes impact other areas of Canadian society. How applicable are her observations to you and your society?

Tracy Lindeman argues that Canadians are "readily appeased by basic functionality, that we have lost the fortitude to take and demand risks." Moreover, she mentions that they are willing to "accept good enough" and that these traits range across many sectors of Canadian life. I feel that this is highly applicable to my society. Singaporeans are a largely pragmatic bunch, and we tend to value the concept of "functionality" greatly. Beginning from the example of our Singapore skyline and Central Business District, we can take note that just like Canada, we seem to have "towers with floor-to-ceiling glass", as seen in the numerous buildings of financial firms like ANZ and DBS in Singapore. This is not limited to commercial but also residential buildings, where many new condominiums like Jadescape and The Garden Residences constitute a simple design that has structures made of glass and concrete support. This is due to Singaporeans being very pragmatic and profit-driven -- as a small state, our survival hinges on our ability to stay economically competitive, making enough revenue to keep our families afloat, since we do not possess much natural resources. Another key observation is that our fast-paced lifestyle puts buildings with great aesthetic value into question – do we really make use of and enjoy these "beautiful spaces"? Upon further investigation, we see that the answer is largely "no" as we Singaporeans are materialistic (even as we transition into a post-materialist state) – precisely because of our lack of resources in our initial state – meaning that time used to enjoy these spaces is often seen as one that comes with great opportunity cost. Every waking moment can be spent on getting ahead of other Singaporeans in our competitive society, as evidenced by the average of 50+ working hours spent by our workers – highest among ASEAN countries. As such, given our pragmatic mindsets, we simply lack the incentive to find, build and enjoy building with good designs, so I agree with Lindeman.

I agree with Lindeman as she mentions that we are "devoted to frugality and bureaucracy", which might not be the case in Singapore. Although a more nuanced stance will admit our pragmatism result in frugality, we must take note that creating buildings of great aesthetic value is of great practical value to Singapore as well. Take for instance Jewel, and our 4 Changi Airport Terminals, which our government has splurged billions on. Despite our general "fiscal conservatism", we recognise the need for such buildings as they add aesthetics to our tourism sector. Tourism accounts for about 4% of our GDP and is a major employer of Singaporeans. Given the lack of natural wonders, buildings are crucial to attract tourists. This is especially important and applicable to Singapore as we are a small nation state, and our safety hinges on strong diplomatic relations. Hence, such buildings add to our international reputation, without which we cannot stay competitive

in the international arena, attracting not only tourists, but also inward Foreign Direct Investment. Hence, this shows that while Singaporeans are pragmatic to consider cost, we also recognise the monetary value that these buildings bring, and this allows us to stay competitive.

Comments

Clear evaluations made that are relevant, with good examples brought in. There is a good contrast between the expected observation and Singapore's unique circumstances.

8

2022 | Y6 | GP Prelim | Paper 2 | AQ **Alldon Garren Tan | 22S03O**

Tracy Lindeman discusses attitudes towards architecture and design in Canada, and how such attitudes impact other areas of Canadian society. How applicable are her observations to you and your society?

Tracy Lindeman argues for the inclusion of more aesthetic and sustainable architecture in Canada, expressing disappointment in the public's passivity and lack of support for the cause.

One of her main qualms is the reluctance of Canadians to pursue better architecture. In paragraph 6, she highlights that the 'aversion to risk' means most Canadians are willing to settle for something which is 'functional and cheap'. I feel that this is somewhat applicable to Singapore, where utility is also highly valued. This mindset ostensibly stems from the early days of our independence, when many Singaporeans lived in sub-optimal housing conditions. Then, it was imperative that many flats, or Housing Development Board (HDB) apartments be constructed in a short span of time to accommodate the burgeoning population efficiently and safely, therein leading to the block-like flat structures which dot the roads of Singapore. Being a highly pragmatic society that remains economically motivated, most Singaporeans still value utility, as seen from the fact that the main influence on housing prices are factors such as location and proximity to 'good' schools, and not design or cultural richness.

Nonetheless, I feel that this is something that is changing, as Singapore becomes more affluent and Singaporeans crave a good quality of life, not just a materially satisfied one. To this end, city-planning and 'design' have not become 'dirty word[s]', as the author comments in paragraph 4. While Singapore has urbanised and experienced a similar 'office tower and condo boom', building green, community spaces has not been something which was sacrificed. The Ministry for National Development and various other governmental organisations have always incorporated facilities and amenities, such as playgrounds, hawker centres, activity corners and more. In fact, the plan to develop Singapore into a 'city in a garden', rather than a 'garden in a city', through road maps which involve park networks, planting more trees and ensuring that every Singaporean lives within walking distance of a park by 2020, is testament to the value Singaporeans place on architecture and green spaces. This may have started out as an economic initiative to attract investors and expatriates, but it has since evolved into a facet of national identity which many Singaporeans are proud of. Similarly, being a young nation, the need for a common sense of identity was needed, and to bring communities harmoniously together, common spaces were used as a tool for community bonding. The government continues to recognise this, as it has ramped up the number of heritage buildings being preserved by the Urban Redevelopment Authority, which has conserved thousands of historic buildings in recent years. The intrinsic importance of community and care for the environment inculcated in

Singaporeans since young is hence also a driving factor behind the importance of architecture.

Lastly, Lindemann expresses disappointment for the lack of 'good, sustainable modern buildings' in paragraph 3. Once again, I feel that this is applicable to Singapore, but such a trend is changing. In conjunction with our push to become a green nation, and the Singapore 2030 Green Plan, efforts have been made to repurpose old buildings and increase the energy efficiency of apartments. For instance, solar panels have been and are continually installed on HDB rooftops, green designs are lauded and implemented, and office towers are encouraged to use natural lighting and cooling rather than artificial options.

In conclusion, while pragmatism may be shared by Singaporeans and Canadians, there is definitely a more conscious effort to incorporate beautiful spaces and architecture in Singapore, due to our sense of identity being tied to many of these places, as well as long-term benefits which the government foresees.

Comments
Very good response. Fully relevant; offers balance; provides good detail (mostly) in illustration. Sustained reference to the text. Overall, well organised. Penultimate paragraph needed further elaboration, though this is a really strong response given the time constraints.

9

2022 | Y6 | GP Prelim | Paper 2 | AQ **Jasryn Cheong Jia Ning | 22S03O**

Tracy Lindeman discusses attitudes towards architecture and design in Canada, and how such attitudes impact other areas of Canadian society. How applicable are her observations to you and your society?

The author discusses the general negative or indifferent attitude of the Canadian people towards architecture and design, citing greater concerns about frugality and an aversion to risk-taking as the main reasons. Her observations seem to have limited applicability in Singapore, primarily because Singaporeans, as well as our government, have long recognised that good, innovative architecture can be crucial to developing Singapore's identity and recognition.

In paragraph 6, Lindeman discusses that in Canada, "the predominant approach to the design and construction of buildings, especially multi-unit residential housing" is to disregard innovation since "something functional and cheap will suffice". In the Singaporean society, it is possible that some will offer similar criticisms in the way that our basic housing estates, designed and built by the Housing Development Board (HDB), are often not the most architecturally unique or revolutionary, especially since most of them are structurally similar and do not possess much aesthetic flair on the buildings themselves. However, even this can be considered to be a myopic view of the thorough urban planning that the relevant authorities have done. The uniqueness of the HDB buildings stem from the features that are intricately tied to the structure of the buildings themselves, with many being interlinked by amenities like playgrounds or small green spaces at lower levels of the buildings that provide a communal outdoor location for residents to catch a glimpse of nature. The simplicity of the buildings cannot be written off as dull and merely due to a need to lower costs, as this feature also prevents neighbourhoods from looking messy despite the need to cluster many buildings together because of our limited land space. Moreover, HDBs are often well-constructed and maintained, with fresh coats of paint applied every few years, and older estates even enjoying services like government-subsidised retiling and renovation of utilities. This is unlike the "costs" that Lindeman brings up in paragraph 7, with dangerous safety hazards and poorly installed infrastructure. Hence, it can be said that Singaporean housing, even ones that are meant to be affordable for the masses, are not only built to be functional but also carry aesthetic value for individual neighbourhoods.

Beyond simply the aesthetics of buildings, the author also mentions in paragraph 3 that in Canada, "for a country that is ostensibly concerned about climate change, we do not do much to push the envelope on environmental design", yet such an observation is also not very applicable to Singapore. As a highly globalised nation, Singapore consumes large amounts of energy to fuel our processes, both in the secondary and tertiary sectors. As a

country located at the equator, we are also more than aware of the growing effects of climate change in the form of rising temperatures and humidity. Due to these factors, both the government and citizens are rightfully largely concerned about environmental issues, similar to the Canadian people. However, increasing urbanisation and construction of buildings that are essential for economic growth come at the cost of reduced natural landscapes and greenery, as plots of land and sometimes even forests have to be cleared for urban projects due to the limited land space in Singapore. To this end, the government has explored many ways to incorporate environmentally sustainable designs into the construction of new buildings, such that environmental needs do not have to be greatly sacrificed for economic ones. Such environmentally sustainable buildings include incorporating vertical walls of greenery on the sides of buildings, installing solar panels on the roofs of tall HDB buildings, as well as the developing net-zero buildings like the NUS SDE4 building, which greatly reduces the amount of harmful emissions produced. Due to the government and the public's recognition and agreement about the need to have such environmental designs, these new developments have also received praise from the general public.

Despite the aforementioned differences, Singapore indeed mirrors the author's observations about Canada in paragraph 9 with regards to "global adulation" as a driving force for increasingly positive public opinion towards good architecture. Structures like Jewel at Changi, Gardens by the Bay with its Flower Dome and Cloud Dome, Esplanade and even Changi itself with its unique interior decoration like the Kinetic Rain have been points of national pride for citizens due to the international recognition they receive, which is a sentiment that is also greatly pushed by the government. These architectural feats have played a major role in helping Singapore gain recognition on a global stage, especially as Singapore has few natural or historical landmarks, and is also a young and small nation among many other bigger giants. Hence, few complaints are made regarding costs whenever new architectural developments are announced as citizens have long come to realise that such buildings are indeed a worthy investment and a source of pride for the nation.

In conclusion, citizens of Singapore are largely favourable of bold design choices in local architecture, unlike Canadian citizens as mentioned by the author.

Comments

Excellent throughout! Covers an impressive range of points raised in passage and able to consistently link them back to Singapore. You also provide very good context setting, showing strong knowledge. All your evaluation focuses on the subject matter, able to offer nuanced, layered critique. Structurally, this response is also very well organised. Well done!

10

2022 | Y6 | GP Prelim | Paper 2 | AQ **Matthew Lee Rei Herng | 22S06B**

Tracy Lindeman discusses attitudes towards architecture and design in Canada, and how such attitudes impact other areas of Canadian society. How applicable are her observations to you and your society?

Tracy Lindeman discusses attitudes towards architecture and design in Canada, and how such attitudes impact other areas of Canadian society. How applicable are her observations to you and your society?

In the passage, Lindeman discusses the largely flippant, nonchalant attitude of Canadians towards architecture and design, with a pronounced emphasis on cost-efficiency and practicality. She laments that Canadians in general have developed an apathy towards good design, and such attitudes echo the Canadian society's pragmatic mindset. On the surface, I find Lindeman's observations largely applicable to Singaporean society, but in reality, there are a number of differences which distinguish the overly-pragmatic Canadian society from Singaporean society, which balances pragmatism and thoughtful design.

In Paragraph 4, Lindeman posits that modernism and rapid economic development cast a shadow of sameness across cities". Superficially, this observation is largely applicable to Singapore. Fresh out of separation from Malaysia in 1965, Singapore found itself having to rapidly construct sufficient public housing to accommodate its residents, most of whom lived in slums. The economic situation then was volatile as Singapore was a burgeoning young nation, hence the Housing and Development Board pushed for the most cost-efficient way to construct public apartments. At a time where economic development was the priority, early public housing was therefore constructed with functionality in mind to solve homelessness, similar to what Lindeman discusses in Paragraph 8, where "[Canadians] have become so devoted to frugality and bureaucracy, and are so readily appeased by basic functionality". The early apartment buildings therefore took on largely similar forms and shapes – elongated, rectangular blocks painted in drab hues of grey and blue, and these blocks can still be found in some of the mature estates such as Queenstown and Bishan. Therefore, Singaporeans' mindsets in the early days are largely similar to that of Canadians, where the buildings that are constructed then trade off design for practicality to accommodate Singapore's rapidly expanding population.

However, there has been a paradigm shift in Singaporeans' mindsets in the past few years. As Singapore found its footing as a knowledge-based economy, its GDP increased exponentially from the mere US$500 back in the day, and Singaporeans now have the financial capability to spend on design. However, rather than taking on a flippant, nonchalant approach to design as Lindeman suggests, the government now has the

capacity to invest in good design and liveability. Lindeman states in Paragraph 8 "[Canadians'] national psyche has [them] much more interested in checking boxes than in taking chances", with bids awarded to the lowest bidders "even if a vastly more beautiful design is just a little bit more expensive". With increasing affluence, Singaporean consumers are more discerning of the designs of their property and would largely pay more for a superior design. In recognition of this, the government has launched the Design, Build and Sell Scheme (DBSS) which allows private developers to construct public housing. Some of these projects, such as the Pinnacle @ Duxton, have gone on to win global design awards, and have seen very high take up rates among home buyers despite the steeper price tag. In fact, many units at such developments are selling for almost two to three times the cost price. Therefore, with rising affluence compared to her early days, Singaporeans are more willing to spend on good design.

Lastly, in Paragraph 6, Lindeman suggests that "[Canadians'] devotion to fiscal conservatism" has led to buildings that do not meet "basic standards of environmental sustainability". This is the opposite of Singapore's case, where buildings are constructed with the environment as a priority. With its location at the Equator, Singapore is greatly affected by climate change, more specifically increased precipitation and increased temperatures. The "City in a Garden" approach seeks to tackle this phenomenon by using vegetation as a carbon sink, such that temperatures can be brought down and the air can be freshened. Therefore, most, if not all buildings in Singapore are constructed with this vision in mind, to run congruent to Singapore's reputation as a garden city. Even the "gleaming towers" in Singapore's downtown are laced with sky gardens and heat dissipation systems to minimise the environmental footprint – something that greatly differs from what Lindeman observes of Canada in the passage. One of Singapore's newest developments, CapitaSpring, best exemplifies this – it boasts a 4-storey sky garden on levels 17 to 20 with dense vegetation, and was constructed with energy-efficient cooling and lighting systems. Therefore, we see that the design of Singapore's downtown is purposeful in the environmental regard – all decisions are made with the environment in mind, to minimise the need for electricity-intensive air conditioning systems in Singapore's year-round scorching weather. Arguably, Singapore would feel the effects of climate change more so than Canada, therefore it makes a more concerted effort to ensure environmental sustainability in the development of buildings.

Comments

Fully relevant, consistently providing strong examples and contexts that enable you to provide insightful and nuanced evaluation throughout. Very impressive, given the tight time constraints of the paper. Well done!

2022 | Y6 | KI Prelim | Paper 1 | Question 2 **Gene Chong Kenqin | 22S06A**

Critically assess the importance of experience in the construction of knowledge.

In order to construct a knowledge claim we must do two things. First, we must discover the claim, and second, we must justify it. I argue that experience is important for both steps. For the first step, experience plays the most important role; most claims are discovered at least partly via experience. For the second step, while not as important as reason, experience still plays an important role in justifying basic claims about the world.

Let us first consider why experience is important in discovering the knowledge claims we construct. The main reason for this is that, at the end of the day, experience must play such a role, since reason alone cannot. Reason alone cannot play a substantial role in how we discover knowledge claims because reason is always reasoning from one proposition to another. That is, reason cannot happen in a vacuum; we must start off with some premises, which we find via experience, and then move from the premises to the conclusion. Consider the claim that "the floor is wet". We may discover that the floor is wet via experience, of course, by touching it. But let us say we are stuck in an exam hall and cannot get such experience. How then might we discover such a claim? We come up with the claim by using previous knowledge; it was raining an hour ago. While reason played a role here, we went from the premise "it was raining an hour ago" to the conclusion "the floor is wet", reason alone was not how we discovered the conclusion that "the floor is wet", because we can only go from proposition to proposition via reason. The initial claim that "it was raining an hour ago" was discovered by our senses, by us seeing that it was raining an hour ago. Hence, even if, in the construction of a knowledge claim, we use reason, we must also use experience since reason is only ever from one proposition to another; we must start somewhere and that somewhere comes from experience.

In some cases however, it seems like we do not have to start from experience and here it seems like experience does not play a role in the discovery of knowledge claims. "A triangle has three sides" for example could be found just considering the concepts "triangle" and "three sides", and noticing that the concept, "three sides", is contained in the concept "triangle". That is, we do not have to actually see a triangle to find out that "A triangle has three sides". Some may think, therefore, that experience is not a necessary condition for discovering knowledge claims, and hence not a necessary condition for constructing knowledge claims.

However, even here experience must play a role, since we get our concepts from experience. Going back to the example of "A triangle has three sides", we find this claim perhaps by considering the meanings of the concepts of "triangle" or "three sides", but consider how we even have an idea of what these concepts are in the first place. In order to even have an idea of what a triangle is, we must have been told what it is by a mathematics teacher or we must have seen a drawing of a triangle and have been told that

that drawing represents a "triangle". Once again, reason, like the comparing of the concepts "triangle" and "three sides", to find that the latter is entailed in the former, does not happen in a vacuum. There must be concepts to reason with for reason to play a role in how we discover knowledge claims, and these concepts are found via experience, not reason alone. Hence, experience is still important in the discovery and therefore the construction of knowledge claims.

Even in fields of knowledge which seem to be purely based on reason, experience plays an ineliminable role in the discovery of knowledge claims. In mathematics, mathematicians always first come up with a conjecture before moving on to prove that that conjecture is true, and the process of coming up with a conjecture involves experience. Consider for example the claim that there are infinitely many prime numbers. To even get started with proving this claim, mathematicians must first come up with it by playing around with numbers. Mathematicians must first observe that 2 is prime, 3 is prime, 5 is prime, 7 is prime and so on and so forth, before making the guess that there are infinitely many primes. But to do this, one needs experience to know what a prime number is in the first place, it must have been taught to the mathematician, or if not taught the idea of divisibility must have been taught to them before they came up with the idea of a prime number. Hence, to even have something to prove, one must have relied on experience in some way to come up with a conjecture. Furthermore, proving is also reliant on experience since mathematical proving is a skill that requires experience and practice to have. I, for example, have no clue how to prove that there are infinitely many primes. However, more skilled mathematicians who have more experience with mathematics would find it easy to prove this result. While it is not the skill but the content of the proof that justifies it, the skill acquired via experience is nonetheless necessary in order for the mathematician to even come up with the proof for mathematical knowledge claims. Hence, even in mathematics, a field which on the surface seems purely based on reason, experience plays a crucial role in the discovery and therefore the construction of knowledge claims.

Having established that experience is ineliminable from our process of discovering knowledge claims, let us now consider the role experience plays in justifying our knowledge claims.

Firstly, experience is what we use as justification for our most basic knowledge claims about the external world. By "basic" knowledge claims I mean claims like "the table I am using is blue" or "there are two drawings of cows stuck on the wall in front of me". Intuitively, it seems like we justify such claims not by virtue of reasoning from other knowledge claims but by experience itself; this seems to be non-inferential justification. When we ask some random GP student, "why do you believe that the school has green railings?", it would be surprising to get any answer that goes deeper than "because I see that the railings in school are green". Intuitively, just the fact that we see the green railings alone, not any further proposition, justifies the basic knowledge claim that the railings in school are green. Hence, basic knowledge claims about the world are justified by experience; this constitutes the role experience plays in justifying our knowledge claims.

However, while important for the justification of basic knowledge claims about the world, this also seems to be as far as it goes for the role of experience in justifying our knowledge claims. For most of our non-basic knowledge claims, our source of justification is reason and not experience.

Firstly, let us consider claims about the world which are not "basic" in the sense of being directly justifiable by experience. While experience plays a role in the discovery of such claims, reason is ultimately the source of justification for such claims, since these are claims that we do not directly "experience". Consider the earlier example of the floor being wet because it rained an hour ago. My justification for the claim that "the floor is wet" does not come from experience. For it to be justified by experience, I must "experience" the wetness of the floor, perhaps by touching it. But I am stuck in an exam hall and have no access to such an experience, as wonderful as it would be to actually touch grass. Hence, the justification is not in virtue of experience here, it is in virtue of the fact that in moving from the premise, "it rained an hour ago" to the conclusion "the floor is wet", I am employing good reasoning. The reasoning here is good and provides justification for the claim that "the floor is wet" because the truth of the premise "it rained an hour ago" makes it very likely that the floor is still wet. For it to not be wet, it would have to be dried by something, which is unlikely in an hour's time; the sun is not that hot yet and no one is insane enough to wipe the floor dry. Hence, the justification for this claim, that "the floor is wet", comes not from experience but from the fact that good reasoning was employed. In general, many of our claims of the world are justified in this manner, because we are limited beings who cannot experience all there is to experience. Thus, while experience provides justification for basic claims, most of our claims about the world are still justified by reason. Hence, experience plays an important but limited role in justifying our knowledge claims.

Secondly, let us consider more general, lawlike knowledge claims about the world. Clearly, reason in the form of generalisation is the justification for such claims, not experience. A paradigm example would be scientific claims. Consider, for example, the claim that force is equal to mass times acceleration. Experience alone could not justify such a claim, because it is a general claim, but experience only justifies specific claims about what we observe like "the table is blue". F=ma is supposed to apply for all objects, not just one. Hence, we need to use generalisation, a form of reasoning, to move from specific instances to general claims about all objects, and so we need reason to justify scientific, general claims. The way this is done in science is via experiment. We observe, for example, the force acting on the ball, the mass of the ball and its acceleration as the ball is dropped from a height. Then we can perhaps find that the relationship F=ma holds for any height the ball is dropped from, for any mass or volume of the ball and so on. We can then generalise that F=ma in all cases; we changed the scenario and the relationship still held, and with consistency, so that gives us reason to think that F=ma in all scenarios. Here, while we need experience to measure force, mass and acceleration, it is ultimately the generalisation, reason and not experience, which is the source of justification for our claim that F=ma. In general, we make many such knowledge claims which are lawlike and general rather than specific. F=ma, $s=ut+\frac{1}{2}at^2$, all canned drinks are sweet, all GP students are cringe and so on. All such claims are justified by virtue of generalisation, a form of reason, not

experience. Hence, experience plays an important role for justifying our basic knowledge claims, but many of our knowledge claims cannot be justified by experience, they are justified by reason.

Lastly, experience does not justify our claims which are not about the world, reason plays that role instead. This is because experience is always experience of this world; we cannot ever experience things or concepts which are not in the spatiotemporal world. Consider mathematical claims for example. Mathematical entities are not to be found in the real world. A mathematical point, for example, is a point that is dimensionless. It has no length, breadth or height. Yet if I try to draw one in the spatiotemporal world, like the period immediately after this sentence, it inevitably has some length, breadth or height. As you can see, because I used a pen, the point is 0.5mm thick, not dimensionless. It is clearly impossible to actually create mathematical points, yet we know of them and have mathematical knowledge about them. This knowledge can never be justified by virtue of experience, because we have no experience of such entities. Hence, they must be justified by reason. Consider the claim that the point (1,3) lies on the line $y=2x+1$. While we can discover that this is true by experience, by plotting an imperfect representation of the line and the point on a piece of graphing paper, this does not justify the claim at all. We are not "seeing" the point (1,3) and the line $y=2x+1$ and the relationship between them because we have created an imperfect representation of them. Since the line and point we draw have thickness, even if the point seems to lie on the line, we could be wrong since the point could lie on the line only because it is thick and its sides and not its centre touches the line. In order to properly show and justify the claim that (1,3) lies on $y=2x+1$, we need deductive reason and not experience. We substitute the values in, $y=3$ and $x=1$, to find $3=2(1)+1$ which is true since three is in fact equal to three. Hence, this confirms that (1,3) does in fact lie on $y=2x+1$, but the plotting of the graph on a piece of paper does not. In general, we do have much knowledge of non-spatiotemporal objects like mathematical entities, for example. Or for religious people, claims like "god is good". Or perhaps even claims like "unicorns have on horn", which would be justified by reason; a comparison of the concepts "unicorn" and "one horn" to find that the latter is entailed in the former. Hence, experience plays a role in justifying our basic knowledge claims, but there are many claims that must be justified by reason and not experience.

In conclusion, to reiterate my points, we need to discover a claim and then justify it. Experience is always necessary in the discovery of claims, but only justifies basic claims about the external world; most of our claims are justified by reason. Regardless, since experience is ineliminable from the process of discovering knowledge claims to then justify, experience is ineliminable from the process of constructing knowledge. Therefore, I believe that experience is very important in the construction of knowledge.

Comments

Very good attempt! Original in approach. Well developed and argued generally, though there is a tendency to overstate your case.

2022 | Y6 | KI Prelim | Paper 1 | Question 2 **Chloe Neo Yi Ting | 22S030**

Critically assess the importance of experience in the construction of knowledge.

The view that experience is the source of all our knowledge is encapsulated by Empiricism. Indeed, considering that synthetic a posteriori statements, which make up the majority of our knowledge, claims, require experience in their construction process, this view may seem believable. However, the fact remains that there are certain types of knowledge claims, like analytic a priori statements that Math consists of, which are knowable via reason alone. Furthermore, the "unreasonable effectiveness" of math in its applications to the real world seems to suggest that a large proportion of our knowledge does not require experience. Nonetheless, it can be shown that Math ultimately requires Science, a discipline deeply grounded in experience to allow math to apply its concepts in the real world. Some may further argue that ethical knowledge is gained through reason alone, but experience can also play a role in helping us acquire such knowledge. Therefore, I believe that experience is integral in the construction of a large part of our knowledge.

Firstly, experience plays a significant role in the construction of knowledge as it is necessary in our acquisition of synthetic a posteriori knowledge. Synthetic a posteriori statements are those where the predicate is not contained within the subject such that negating the predicate does not result in a logical contradiction. For example, the statement "water boils at 100°C" is synthetic a posteriori as negating the predicate – "water does not boil at 100°C" – does not result in a contradiction; there are indeed instances when this is true, such as when there are impurities in the water. Such statements are typically truths of the external world, such as those dealing with natural phenomena, which are contingent in nature. Therefore, synthetic a posteriori statements require a recourse to experience in other to gain knowledge of. This shows that experience plays an important role in the construction of our knowledge.

However, some may rightly point out that there is another type of statement – analytic a priori – which are knowable via reason alone, so experience is unnecessary in the construction of such knowledge. This is because analytic a priori statements are those when the predicate is contained within the subject such that negating the predicate results in a logical contradiction. For example, "a bachelor is an unmarried man" is an analytic a priori statement. Negating the predicate – "a bachelor is a married man" – would result in an obvious contradiction as this goes against the definition of a bachelor. Therefore, in analytic a priori statements, examining the subject is sufficient for us to gain knowledge of the predicate as any such statement is simply an unpacking of the concepts inherent within the subject. This means that reason is sufficient for us to gain knowledge of such statements. If experience is not necessary in the construction of this entire class of

statements, then this seems to undermine its importance in the construction of knowledge.

While it is true that analytic a priori statements do not require a recourse to experience, experience still constitutes a significant source of our knowledge as the majority of our knowledge claims are synthetic a posteriori statements. For every analytic a priori statement, there is an infinite number of related synthetic a posteriori statements. This becomes evident when considering the previous example of the analytic a priori statement – "a bachelor is an unmarried man". For this statement alone, there can be an infinite number of possible variations, such as "a bachelor is rich/ friendly/ bald/ lonely etc.", all of which are synthetic a posteriori statements which require a recourse to experience to gain knowledge of. If experience is removed as a method of knowledge construction, we would be left with only analytic a priori statements, which causes our knowledge to be very limited as analytic a priori statements cannot give us any knowledge of the external world. Instead, knowledge of analytic a priori statements can be simply construed as knowing different aspects of the definition of terms, which gives us no practical use. For example, a spinster may know the definition of a bachelor, but what is useful for her is to know whether a bachelor exists or where to find a bachelor, which requires experience. Therefore, it is evident that experience still plays a significant role in the construction of useful knowledge.

At this point, detractors may argue that math, the paradigm of reason, seems to be extremely effective in explaining the real world, which seems to suggest that experience is not necessary for us to obtain knowledge of the external world. Before explaining this point, it should be established that math consists of analytic a priori statements which do not require a recourse to experience to obtain knowledge of and are knowable via reason alone. For example, "a triangle has 3 sides" is a math statement where the predicate is contained within the subject such that negating the predicate – "a triangle does not have 3 sides" would produce a logical contradiction. The view that math seems to explain the workings of the natural world very well may indeed seem true when we consider the origins of math, that math was developed as a tool to help us deal with life. For example, arithmetic was developed for trade and inventory, while geometry was developed for navigation and construction. Proponents of this view argue that this must mean that analytic a priori statements contained in math are able to give us knowledge of the natural world. Furthermore, even abstract concepts like complex numbers which can have no physical instantiation in the real world have later proven effective in explaining certain aspects of the natural world, like electromagnetism and quantum mechanics. This seems to defeat the argument that all of our knowledge of the external world requires a recourse to experience by proving that reason, like in math, is sufficient to explain the real world. If so, then experience seems to lose its status of importance in the construction of knowledge.

However, I believe that the above viewpoint is flawed and so experience is still integral and necessary in the construction of knowledge of the external world. While math indeed

seems to be unreasonably effective in its explanations of and applications to the real world, a crucial point to note is that math still requires science to come in and provide the fundamental theory which deals with knowledge of the external world; only then can math step in to more precisely explain the relationship between the variables. Importantly, science is a field of knowledge which deals with natural phenomena, which are contingent synthetic a posteriori statements that therefore require experience to construct. For example, a scientific statement like "the Earth revolves around the Sun" is synthetic a posteriori as negating the predicate does not result in a contradiction; it is conceivable that the Sun revolves around the Earth instead and, in fact, there was a time when people thought so. Returning to the point, math could not have come up with equations like F=ma or $E=mc^2$ by itself. The first and most fundamental step is for scientists like Newton or Einstein to make observations about the external world, formulate hypotheses on the basis of these observations and carry out experiments to repeatedly test these hypotheses, all of which require experience. Math only comes in at the last step when a scientific theory has been formulated to add precisions to our knowledge through mathematical equations. Even the point on the origins of math showing that it can explain the natural world can be refuted. For example, while we use geometry on the stars to help with navigation, what is first required is the contingent knowledge of, say, the relative position of the stars at a certain time of the year, which requires experience to obtain. Therefore, it is not true that reason, like that used in math, can give us knowledge of the external world by itself. Rather, it is only experience that can play this role, making it important in the construction of such knowledge.

Another field of knowledge which does not seem to require experience in its construction process is ethics, which seems to rely solely on reason, making experience seem irrelevant in the acquisition of ethical knowledge. Indeed, this is the common-sense view of the nature of ethical knowledge; even arch-empiricists like John Locke agreed that ethical knowledge is constructed via reason and not experience. This is because we typically think of moral truths as necessary, universal and eternal, in that they should apply equally across all time and space. For example, what is a true moral fact now, like "murder is wrong", should also be true 50 years ago and 50 years later, and in all societies and cultures. This suggests that ethical knowledge must be derived via reason as only reason can guarantee the necessary and eternal nature of knowledge claims, as established earlier in the discussion of analytic a priori statements. On the other hand, if experience was used to construct moral knowledge, then moral statements would become contingent, meaning that they could change with time and space. This is an unintuitive prospect as it would mean that moral truths would lose the normative force they have on us to compel us to act in a certain way. Nonetheless, it may seem believable that moral truths are contingent as what is accepted by society as morally permissible has seemed to change over time. For example, slavery was a practice that was condoned in the past, but is condemned now. This seems to suggest that moral truths can change over time. However, upon closer inspection, we realise that this is not the case as we do not say that "slavery was right in the past and it is wrong now". Rather, we are saying that "we were wrong to condone slavery in the past, but now we know better". It now becomes evident that this is not an

example of contingency of our moral knowledge, but rather, an instance of moral progress. Therefore, moral knowledge is indeed constructed via reason and not experience, undermining the importance of experience in the construction of knowledge.

While experience indeed does not play an evidential role in the construction of moral knowledge, it can still play a role in helping us acquire knowledge of new concepts, such as non-moral facts, that are required in the construction of moral knowledge. For example, consider the following argument:

P1: Murder is the deliberate killing of someone.
P2: We should not deliberately kill someone
C: Murder is wrong (P1, P2)

In this argument, P1 is a non-moral fact which we could have gained knowledge of via reason or experience. For example, we could have learnt the definition of murder in a dictionary (reason) we could have witnessed someone being murdered in real life (experience) therefore, while experience is not necessary in the construction of ethical knowledge, it can still aid us in our acquisition of such knowledge. Thus, experience is still important in this way.

In conclusion, experience plays an important role in the construction of knowledge, particularly knowledge of the external world, While there are instances where experience does not play an evidential role in the justification and construction process of knowledge, such as in math and ethics, it can still help us in the acquisition of such knowledge and is, thus, still important.

Comments

A very good attempt. Comprehensive mostly, though no discussion on certainty? That seems a little remiss. Consistent argumentation of points and providing of examples. Well developed and elaborated generally (though some awkward bits here and there).

2022 | Y6 | KI Prelim | Paper 1 | Question 3 **Gene Chong Kenqin | 22S06A**

'There is no such thing as moral knowledge.' Discuss.

I agree with the view that there is no such thing as moral knowledge. This is because for a statement to be considered knowledge, the statement must be a true statement. However, moral statements, such as "murder is bad" or "charity is good" are false since moral properties, such as "good" or "bad" do not exist. Hence, while we often use moral discourse to guide our actions as if we had moral knowledge, this is ultimately an error despite its intuitive plausibility.

Before we begin our more substantive discussion on whether or not moral statements can be true or whether they can be knowledge, let us first consider why a statement must be true for it to be considered knowledge. It is highly unintuitive to say that we know something or to consider some proposition knowledge if that proposition were false; that is, truth being a necessary condition for knowledge is built into our definition and usual or normal use of the term "knowledge". Consider a caveman from thousands of years ago, who observes that eggs do not roll off the face of the Earth when placed on the ground and concludes that the Earth is flat. For all the available information at the time, the caveman seems justified in having this belief. However, it still seems like a stretch to say that the caveman knew that the Earth is flat, because the Earth is in fact not flat. In general, when we encounter some new evidence, we claim that our previous belief, like "the Earth is flat" is false and not knowledge, and that our new belief, like "the Earth is round", is true and is knowledge. We do not grant that the false claim is knowledge, since part of what we mean when we say we know a proposition is to say that that proposition is true. Hence, truth is necessary for knowledge.

Moving on, let us consider why many take the view that there is moral knowledge. The main reason, I believe, is that there is a strong intuition behind this claim. When we go around asking people, " is murder wrong?" or "is charity good?", we can expect everyone to say that yes, murder is wrong and charity is good. Most people seem to have an intuitive "sense" that it is absurd to say that "murder is right", for that would seem to suggest that we are allowed to or even encouraged to murder others; we are clearly not. The fact that there is widespread agreement on this matter also seems to suggest that we all have access to the same moral truths; the simplest explanation for this agreement is that it is in fact true that murder is wrong. It is much more complicated to say that civilised society happened to develop in such a way which created a consensus that murder is wrong. We intuitively favour the simplest explanation because it seems the most likely to be true; less things have to fit in place for it to turn out to be true. Hence, there is some reason to think that we have moral knowledge.

However, such an intuition does not truly point towards there being moral knowledge, so the fact that most would accept the claim that "murder is wrong" or any other intuitively true moral claim does not establish the view that we have moral knowledge. I believe this "intuitive sense" that most people have towards affirming claims like "murder is wrong" and denying claims like "murder is right" ultimately is not an "intuition" that the claims are true, but rather a reflection of a sense of disgust or condemnation towards murder. When ethical philosophers make moral claims like "murder is wrong", the intention is to say that the type of act, "murder", possesses the moral property, "wrong". There is no such intention for most people. Most people would not have a clear idea of what exactly they mean by "murder is wrong". Most come to believe that "murder is wrong" not via substantive philosophical reflection, but because they are taught it and because culture, as seen in art like movies or books, condemns acts like murder and conveys to us a sense of disgust at acts like murder. Hence, in general, the answer to whether or not we have moral knowledge is not to be found in the intuitions of regular people; it takes more to actually establish whether or not an act possesses a certain moral property. The "intuition" does not point towards truth or knowledge.

However, some philosophers have attempted to define moral properties clearly and show that they do in fact exist and that they apply to some acts. If such a definition is successful, then we clearly do have moral knowledge. An example of such a definition would be utilitarianism, the view that the right action is the action that produces the most pleasure. There is some reason to believe that this definition works, since the things we think are good often cause happiness. We often think that charity is good, for example, and charity spreads joy to both the giver and the beneficiary. Given that we can come up with definitions of moral properties in terms of things we know exist, such as pleasure, it seems like if these definitions work, then we have reason to think that moral properties exist and that we have moral knowledge.

However, such attempts to define morality fail, and so we ultimately cannot show in this direct fashion that moral properties do exist. Firstly, there are fundamental disagreements about the definition of moral properties which seem to be irresolvable. Take the aforementioned view, utilitarianism, and take another definition, deontology, which views good as a matter of acting in accordance with maxims like "do not do to others what you would not wish upon yourself." Both views or definitions are intuitive; good acts often result in happiness, and we do in fact guide our actions via rules like the one stated above. However, there is a fundamental irresolvable disagreement between the two views at the ontological level. A utilitarian would see good as a property that applies to actions, but a deontologist would see good as a property that applies to the intentions behind the actions. This ontological difference suggests that both definitions of "good" cannot be true at the same time; we must choose one or the other. However, the fact that both views have some intuitive plausibility makes it seem impossible to actually choose. Furthermore, it is not clear what exactly would determine if a definition of "good" is correct or not. Not consensus, since that would not point towards ontological truths, as established earlier. But there does not seem to be any other criteria we could use to tell if we have been

successful in defining moral properties. Hence, the project of defining moral properties has failed and we do not have sufficient reason to believe that we have moral knowledge.

Secondly, any attempt to define moral properties also seems to fail to Moore's Open Question Argument, and hence we cannot show that moral properties exist by defining them clearly and we have no good reason to think we have moral knowledge. The argument is as follows: Consider again our example definition of good, "good is pleasure". A correct definition, like "triangles have three sides" would have the following property: if we ask, "This is a triangle, but does it have three sides?", the question would be tautological; a simple analysis of the terms "triangle" and "three sides" would give you the answer. To use Moore's terminology, the question is "closed" rather than "open", where an open question would be non-tautological, like "Do you like cheesecake?". Going back to our example definition, "good is pleasurable", it does not seem to have this property. For example, "Gambling is pleasurable, but is it good?" seems like an open question, not a closed one. We cannot simply analyse the terms involved to get the answer, but we should be able to do that if our definition were correct. Furthermore, this seems to hold true, intuitively, for any definition of good whatsoever. For any definition, "Good is X" we can seemingly always ask the open question "Y is X, but is Y good?". This would falsify any definition of moral properties in terms of things we already know exists, and so we cannot show that moral properties exist by defining them in this way. We hence have no reason to think that we have moral knowledge.

Moving on, I would argue that we can show conclusively that moral properties do not exist, not just that we have no reason to think that they exist. Hence, there is no such thing as moral knowledge. By definition, for some property to be a moral property, it must be normative and motivational; it must point us towards certain acts and motivate us to act in that way. For example, take the moral statement "murder is wrong." Intuitively, part of what we mean by this statement is that we ought not to kill other people. Intuitively, what we mean is not just that "murder" possesses the property "wrong", but also that by virtue of this relationship between "murder" and "wrong" we ought not to murder, and we must act in such a way that avoids murder. Consider someone who claims that "murder is wrong, but screw it I want to kill the next person I see." We would intuitively consider their claim that they think "murder is wrong" to not be genuine. A genuine belief that murder is wrong would stop us from wanting to kill the next person we see. Hence, moral properties, if they existed, would be inherently normative and motivate us to act in a certain way. However, upon considering the properties that we know exist, it becomes apparent that no such normative property could possibly exist. Much of our knowledge of the world and its properties is based on experience, that is, our five senses. For example, I know that there is a bottle of water beside me because I can see it beside me. Yet what we know about the world does not have this property of being normative or motivational in itself. If I were motivated to pick up the bottle of water beside me and take a sip, it would be because I am thirsty; the fact that there is a bottle beside me alone does not motivate me to drink water. This is since nothing about how the world is implies anything about how it should be; just because I have bad handwriting does not mean it should be that way, just

because stabbing people causes pain does not imply that one should not stab. Yet moral properties, if they existed, must bridge this gap between descriptive claims and normative claims. Moral claims, as established earlier, mean that an act or a person possesses a certain moral property, and that solely by virtue of this relationship, we would be motivated to act according to what the moral claim prescribes. This is far too large a commitment. If we accept the first part of the meaning of moral claims, that a certain thing possesses a certain moral property, we would have to reject the second, normative, aspect because no descriptive claim can ever have normative content. On the other hand, if we accepted the normativity of moral claims, we would have to reject its descriptive content; desires motivate us, but moral properties purport to motivate us regardless of our desires. Since our idea of moral properties contains two ideas, that it describes things and that it motivates us, that are incompatible, it is impossible that moral properties exist. Since moral properties like "good" or "bad" do not exist, nothing in the world could possibly make it such that claims like "murder is wrong" are true. Moral claims are hence all false, and so we do not have moral knowledge.

In conclusion, to reiterate my stance, I fully agree with the view that there is no such thing as moral knowledge. Not only have attempts to define the moral properties needed to make moral claims true failed, we can also show conclusively that moral properties are an impossible ontological commitment that we cannot make.

Comments

Very good! Comprehensive discussion that goes beyond the syllabus, integrating /synthesises the content well. Clearly signposted as well, with good examples given (mostly).

14

2022 | Y6 | KI Prelim | Paper 1 | Question 3 **Mei Feifei | 22A13A**

'There is no such thing as moral knowledge.' Discuss.

The view that "there is no such thing as moral knowledge" can take on a variety of forms: from the subjectivist stance that morality is in the eye of the beholder, to the relativist stance that morality is merely a matter of social consensus, and to perhaps the most extreme nihilist position that morality does not exist. While these views seem attractive due to the apparent prevalence of moral disagreements, which occur between both experts and laypeople, and the issue of non-cognitivism posited by moral nihilists, these arguments can be refuted on the grounds that disagreements mask more widespread agreement and the Frege-Geach problem addresses non-cognitivism. Moreover, the view that moral knowledge exists — that there exists an objective, universal moral standard — is a more justified view as it allows for moral error and does not run into the problem of moral equivalence. Therefore, I disagree with the claim that "there is no such thing as moral knowledge."

Let us begin by examining the arguments that may support the claim that "there is no such thing as moral knowledge".

First of all, the fact that laypeople disagree on a wide variety of moral issues calls into question whether we can tell right from wrong, suggesting that there is no such thing as moral knowledge. Our moral norms have changed over time: actions that were considered immoral in the past may be considered moral now and vice versa. These fluctuations in what we consider to be moral suggest that we do not have an objective standard for what is moral and what is not, and morality is merely a reflection of social norms and conventions. This is also reflected by how laws evolve over time, and we tend to regard laws as a good proxy for a moral code. For example, intercourse between two males used to be illegal in Singapore, but that law was repealed in 2022. This suggests that homosexuality used to be considered immoral, but it is now moral. What this then indicates is that people from the past would disagree with people of the present over moral issues; yet for contentious issues like abortion and homosexuality, we seem unable to conclusively say that one side is right and the other is wrong. Hence, it seems that we have failed to arrive at anything resembling moral knowledge because there are irresolvable disagreements over what is the moral action to take in controversial situations.

Moreover, such disagreements also occur between experts: the two most major ethical theories, deontology and utilitarianism, have failed to give us a clear answer as to what is moral and what is not, suggesting that there is no such thing as moral knowledge — if an objective moral code did exist, why have we still not discovered what it is after a few

thousand years of back-and-forth debates? Deontology is the ethical theory that one is acting in a moral way when one treats other humans as ends in themselves, rather than as means to his own end. Utilitarianism is the ethical theory that one is acting in a moral way when one's actions lead to the greatest happiness for the greatest number of people. These two theories give us vastly different suggestions as to what is the moral course of action. Consider the classic trolley problem: a trolley is hurtling down the track that five workers are standing on. You have access to a lever which you can pull to divert the trolley onto another track on which there is only one worker. To pull or not to pull? Under deontology, the right thing to do is to not pull the lever: you should not use the one worker as a means (by killing him) to achieve your own ends (of saving the five workers). Under utilitarianism, the right thing to do is to pull the lever: by saving five people at the expense of one, there are net four people alive, and you would have maximised happiness for the greatest number of people. This example illustrates how the two major ethical theories disagree over what is moral. This conflict is inevitable because of fundamental differences: utilitarianism is outcome-oriented, whereas deontology is intention-oriented. Moreover, both theories have their own proponents and flaws, making it impossible to objectively reject one in favour of the other. For utilitarianism, it is difficult or arguably impossible to measure happiness accurately. For deontology, one variation states that one must act in accordance with one's duties, such as the duty to not lie, the duty to protect innocent lives and the like. However, deontology fails to answer for situations where there is a conflict between duties. For example, an innocent person begs you to let him hide in your house to escape from a murderer. Moments later, the murderer shows up at your doorstep and asks you if the innocent person is hiding in your house. There is a conflict between your duty to not lie and the duty to save an innocent person: if you do not lie, the murderer will surely enter and find and murder the innocent person. The fact that each theory has its own flaws means that experts cannot privilege one over the other in the event that the two theories give conflicting, or even contradictory, moral decrees. This shows that experts are also unable to come to an agreement over what is moral and what is not, and as such, it appears that we have no moral knowledge, supporting the view that "there is no such thing as moral knowledge".

Now, let us examine the moral nihilists' case for why there is no such thing as moral knowledge. Moral nihilists, specifically non-cognitivists, argue that moral statements are not truth-apt. That is, moral statements cannot be true or false, and thus they are not propositional knowledge claims — which is what we generally refer to when we speak of moral knowledge. This is because of the is-ought fallacy: propositional knowledge claims deal with "is" statements that state facts. For instance, there exists mathematical knowledge that the sum of two odd numbers <u>is</u> always even, and there exists scientific knowledge that metal <u>is</u> a good conductor of heat. On the other hand, morality deals with "ought" statements that have normative force. For example, we can say that "you ought to treat others as an ends in themselves", but it is very weird to say that "you do not ought to" do something. If we wanted to have 'moral knowledge', then we need to convert moral statements to "is" statements, and moral statements lose their normative force. However, this seems unacceptable: even when we say something like "it is good to respect

others", what we really mean is "you ought to respect others", and morality is concerned with telling people how they ought to act, not how they can act. Hence, morality appears to be incompatible with knowledge. What is more, nihilists argue that moral statements are merely expressions of emotions, i.e. "boo-yah" statements. When we say that "you ought not to commit abortion", we simply mean "abortion-boo!" — expressing a negative emotion of disapproval. For statements expressing sentiment, they are also not truth-apt. Hence, moral nihilists argue, moral statements cannot be true or false, and thus they cannot give us propositional knowledge. Therefore, there is no such thing as moral knowledge.

However, the nihilists' argument can be countered by the Frege-Geach problem, which shows that moral statements are truth-apt, and thus, there can be such a thing as moral knowledge. The Frege-Geach problem demonstrates that deduction can be applied to moral statements, but deduction can only be applied to truth-apt statements according to the rules of logic. Therefore, moral statements are truth-apt. Take the example of an argument as such:

P1: smoking is something that is bad for your health.
P2: if smoking is something that is bad for your health, you ought not to smoke.
C: you ought not to smoke. (P1-P2)

This argument utilises modus ponens (if P, then Q. P, therefore Q). Here, P=smoking is something that is bad for your health, Q=you ought not to smoke. Therefore, following the rules of logic, all the statements — including the 'ought' statements — in the argument must be truth-apt. Since moral statements are 'ought' statements, they are truth-apt and thus can constitute propositional knowledge. Therefore, there is such a thing as moral knowledge.

Let us now address the problem of disagreement: in reality, these disagreements mask more widespread agreement, suggesting that we do have moral knowledge. This is because disagreements occur in moral grey areas that are at the margins of moral issues. There is, in fact, widespread agreement on many moral issues: one could not seriously doubt the claim that "we should not murder innocent babies". Previous examples like the trolley problem are ultimately only thought experiments, and in our daily lives, there is widespread agreement on what is moral and what is not. This suggests that we do have moral knowledge, refuting the claim that "there is no such thing as moral knowledge".

Also, we have good reason to believe that there is such a thing as moral knowledge because it grants us the possibility of moral error. In real life, we want to be able to say that we know that certain actions are wrong. To be able to make claims like "stealing is wrong", we have to know what exactly is 'wrong' and what is 'right', i.e. we must have an objective moral code. Without one, we would not be able to condemn immoral acts like the Holocaust, which is an extremely unintuitive prospect. Therefore, to be able to say that a certain action is wrong, we must have moral knowledge. Thus, we have good reason to believe that there is such a thing as moral knowledge.

Another reason opposing the claim that "there is no such thing as moral knowledge" and morality is in the eye of the beholder, or simply a matter of social consensus, is that we do not seriously think of all moral systems as truly equivalent. Intuitively, we think that some societies are more moral than others, and the same applies to individuals. For instance, no one could seriously say that morality is in the eye of the beholder and thus we do not know if the Buddhist moral system is better than the Nazis'. Hence, this implies that we do have moral knowledge as it is a prerequisite for us to make these judgments. Thus, there is such a thing as moral knowledge.

In conclusion, although moral sceptics argue that "there is no such thing as moral knowledge' by pointing out the issues of moral disagreements and non-cognitivism, their arguments can be refuted. We have good reason to believe that there is such a thing as moral knowledge as it grants us the ability to spot moral errors and compare moral codes.

Comments

A good attempt. Quite a comprehensive range of points; quite well elaborated and developed (except for the point on nihilism). Consistent argumentation too mostly, though last few points do seem a little rushed.

'Of all the various bodies of knowledge, Mathematics is the most certain.' Critically assess this view.

Mathematics has widely been regarded as the most certain of all the various bodies of knowledge, not least because it consists of analytic a priori statements and is constructed via reason alone, while disciplines like science and history deal with synthetic a posteriori statements that require a recourse to experience. Because of this reliance on experience, these fields require the use of induction, which undermines their certainty as compared to math, which proceeds solely via deduction. Even so, it may seem that in history, the narrative can be "given to us" directly by the facts, making it as certain as math. Nevertheless, this is not possible due to the problem of selection in history. While in math, it may seem like its practitioners can also make mistakes, the difference is one of degree. Lastly, ethics is a discipline in which the knowledge also constructed via reason, but the fact remains that it has contradictory ethical theories, whereas no such contradiction exists in math. Therefore, math is still the most certain body of knowledge.

Firstly, math which consists of analytic a priori statements, is more certain than other disciplines which consist of synthetic a posteriori statements. Analytic a priori statements are those where the predicate is contained within the subject such that negating the predicate results in a logical contradiction. For example, the math statement "1+1=2" is analytic a priori as negating the predicate – "1+1=/=2" would result in a contradiction. Therefore, such statements are knowable via reason alone. For this reason, mathematical truths are always absolutely certain as they are simply an unpacking of the concepts within a particular term. On the other hand, synthetic a posteriori statements are those where the predicate is not contained within the subject such that negating the predicate does not result in a logical contradiction. For example, a scientific statement like "water boils at 100°C" is synthetic a posteriori as negating the predicate – "water does not boil at 100°C", would not result in a logical contradiction; there are indeed instances when this is true, such as when there are impurities in the water. Similarly, a knowledge claim in history like "the Japanese invaded Singapore on 15 February 1942" is synthetic a posteriori as negating the predicate does not result in a logical contradiction. It is indeed conceivable that the Japanese invaded Singapore on some other date in history instead. Therefore, synthetic a posteriori statements require a recourse to experience in order to gain knowledge of as examining the subject is not sufficient to give us knowledge of the predicate. Rather, they are contingent statements that could always be otherwise, thus requiring us to appeal to experience to verify their truth. In doing so, knowledge claims in such fields are open to the problems of experience as a knowledge construction method, like sense deception. This is the idea that when perceiving things in the external world, our senses could be deceiving us. For example, a stick half immersed in water appears

bent as the effect of refraction deceives our sense of sight. If we relied on experience alone to construct our knowledge, we would indeed think that the stick did bend as it entered the water, which is obviously false. Therefore, this introduces uncertainty into synthetic a posteriori knowledge claims that are constructed based on experience. Math, as an analytic a priori discipline, does not suffer from such issues in certainty. Therefore, it is indeed the case that math is more certain than synthetic a posteriori disciplines like science and history.

Furthermore, the method of knowledge construction in math, deduction, is also an important aspect that makes it more certain than disciplines that use induction in their knowledge construction process, like science. Math proceeds via the axiom-theorem method, which utilises solely deduction. Deduction is a type of reasoning in which the arguer intends that the content of the conclusion does not go beyond that of the premises. Therefore, in a valid deduction, it is impossible for the conclusion to be false given that the premises are true as the conclusion follows necessarily from the premises. For example, consider the following mathematical proof that the sum of two odd numbers is always even. We begin with the axioms that any even number can be represented as $2n$, while any odd number can be represented as $2n+1$, where n is a whole number. The proof is as follows:

Let the two odd numbers be $2n+1$ and $2m+1$, where n and m are whole numbers.

$$2n+1+2m+1 = 2n+2m+2$$
$$= 2(m+n+1)$$

But this is of the form $2p$ and hence even (QED).

From this example, it is evident that theorems in math are absolutely certain as they follow logically from the axioms, which are assumed to be true. Therefore, the deductive nature of math guarantees the certainty of its claims.

On the other hand, induction is used in the construction of scientific knowledge, introducing uncertainty into its construction process. This is evident from the scientific method, where induction is used to generate a hypothesis on the basis of numerous observations. Since science deals with natural phenomena which consists of contingent statements that could always be otherwise, induction is necessary in forming a generalisation about all instances of a particular phenomenon, based on only a limited number of observations of the phenomenon. For example, to arrive at the law that "all metals expand when heated", we generalised from a limited data set of some metals expanding when they are heated. However, the problem arises when we consider that there is always a possibility, however small, that the next metal we heat does not expand. After all, even well-confirmed generalisations, like "all swans are white" can be proven wrong – the first black swan was discovered in the 17^{th} century. Indeed, as Hume pointed out, in order to infer from some instances of As that are Bs to "all As are Bs", we need to add the uniformity of nature principle, that "the future resembles the past". However, there is no reason for us to accept this principle as it is not analytic a priori – the predicate "resembles the past" is not contained within the subject "future". Negating the predicate – "the future does not resemble the past" – does not result in a logical contradiction as it

is indeed conceivable that this is true. For example, just because I had a cup of tea at 9am yesterday does not mean I will do so today. Instead, the uniformity of nature principle is itself the result of an inductive inference – we generalised from past instances of the future resembling the past to arrive at this principle. However, this illustrates the circularity of the principle as we are assuming what we set out to prove, that the future resembles the past. What this problem means for induction is that it does not preserve the certainty of knowledge claims. Therefore, areas of knowledge which utilise induction, like science, are undeniably less certain than math, which utilises solely deduction.

Detractors may still argue that history is as certain as math as the narrative can be "given to us" by the facts in history, making knowledge in history absolutely certain. This is encapsulated by the Reconstructionist view of history, which claims that we can arrive at an absolute historical truth simply be examining the historical evidence available, from which the historical narrative will arise naturally. As Leopold von Ranke said, the job of the historian is simply to show exactly what happened in the past. In this view, the narrative-writing process in history is akin to putting pieces of a puzzle together – once all the evidence has been gathered, there is only one possible way to arrange the facts. This may be likened to an analysis of a crime scene, where various pieces of evidence, like footprints, DNA, eyewitness accounts etc. point towards a single perpetuator. Indeed, this view of history may seem intuitive in that it often seems from historical evidence that there is only one way an event could have panned out. For example, when examining an archaeological site of the city of Pompeii being buried under ash and pumice, it seems that the only logical explanation is that the city was buried and killed in the volcanic eruption of Mount Vesuvius in 79AD. Therefore, historical knowledge may seem to be absolutely certain, just like mathematical knowledge.

However, the Reconstructionist view merely presents an ideal which is impossible to achieve in reality – the historical narrative is riddled with gaps that introduce a large amount of uncertainty into historical knowledge. This is partly due to the problem of selection on the part of recorders of history. This problem arises as it is physically impossible for observers of a historical event to record down every single detail of their experience. This is because by observing a particular factor, one is already choosing not to observe other factors. For example, in the wake of the 9/11 attacks, a student's diary entry would likely focus on the personal and worldwide reaction to the event and not his lunch that day or his walk to school. While unrecorded events do typically seem to be the less relevant ones, it is indeed conceivable that there were important details that were missed out as a result of it and thus lost to history. Crucially, it is the recorded who decides, based on his own subjective criteria, what is significant enough to warrant recording, so our historical narrative, written based on these primary sources, are necessarily incomplete. Given that the gaps in historical knowledge may be significant enough to change our understanding of an event, historical knowledge is thus uncertain.

One may argue that practitioners of mathematics are also liable to make mistakes in the process of deriving theorems, thus allowing uncertainty to enter. For example, even a

careless mistake like 3+5=9 is possible. Furthermore, this has indeed occurred before, when Andrew Wiles' first proof of Fermat's Last Theorem was wrong. However, the difference between these mistakes and those made in history is one of degree. Arguably, mistakes are far less common in math than in history, where uncertainty is inevitable due to the problem of selection as highlighted earlier. Therefore, it is logically possible for math to be certain, while not practically certain in some cases, but for history, certainty is both logically and practically impossible. Therefore, math is still much more certain than history.

Finally, some may argue that ethics is also a field which constructs knowledge via reason, similar to math and, thus, should be absolutely certain a well. Indeed, it is the intuitive and widely held view that ethical knowledge is constructed via reason, with even arch-Empiricists like John Locke conceding to this view. This is because we typically view moral truths as universal, eternal and necessary – they are true of all times and places. For example, the statement "murder is wrong" must be true for all societies, cultures and individuals, and in all time periods, in order to have the requisite normative force to compel us not to murder anyone. Since only reason is able to guarantee this necessary nature, ethical knowledge is constructed via reason and therefore seems to be as certain as mathematical knowledge.

However, it is not the case that ethics is as certain as math due to the prevalence of disagreements in ethics, which is not present in math. The most obvious way to illustrate this is by pointing to the existence of numerous ethical theories, like Utilitarianism, Deontology, Virtue Ethics and Divine Command Theory, all of which have a fair number of proponents. This seems to suggest that ethical knowledge is not as certain as these ethical theories often disagree in the same ethical situation. For example, if a plane has been taken hostage by terrorists who demand that the authorities hand over an innocent citizen, Utilitarianism would tell us to concede to their demands for the greater good of all the passengers on the plane. On the other hand, Deontology would be opposed to this idea as it exhorts us never to use others only as a means to an end. Thus, utilitarianism focuses on consequences, while deontology is concerned with intentions, causing them to disagree in many instances. Crucially, we are unable to choose between them, putting us at a dilemma of what to do in certain circumstances. Thus, ethical knowledge is not certain due to these disagreements.

On the other hand, such disagreements do not exist in mathematics. Some may point to the supposed counter-example of Riemannian versus Euclidean geometry, but this is not a real contradiction as they are, quite literally, competing for different spaces – Riemannian geometry applies to curved surfaces while Euclidean geometry applies to planar surfaces. Indeed, the fact that mathematicians can agree on mathematical theorems point to the certainty of mathematical knowledge. For example, the math community agreed that Wiles' first proof of Fermat's Last Theorem was wrong, while his second proof was correct. As a point of comparison, it is highly unlikely that the same group of people would agree on other topics like art, music, politics or food. Therefore,

the wide agreement and absence of contradictions in math systems for millennia points to the fact that knowledge claims in math are certain and do not allow space for dispute. Therefore, math as a field of knowledge is more certain than ethics.

In conclusion, I agree that math is the most certain body of knowledge. Compared to fields like science and history which consist of synthetic a posteriori claims, math as an analytic a priori discipline is obviously more certain. Even compared to a field like ethics which is also knowable via reason, math trumps in terms of certainty due to the lack of disagreements in math, which is widespread in ethics.

Comments

A very good attempt. Comprehensive coverage of points and quite well-developed usually, though second half of essay tends to not go into the more fundamental issues related to the nature and construction of knowledge. Consistent argumentation and providing of examples.

16

2022 | Y6 | KI Prelim | Paper 2 | Question 1

PASSAGE

Noah Smith, a smart financial writer with a very good blog, recently wrote an article on how Bloomberg had imposed a $15 minimum wage and how this means, "finally", that we can test the economic theory of how a higher minimum wage causes an increase in unemployment as employers will find it more expensive to hire workers.

Yet Smith's claim is bizarre. We *already* have evidence that this theory on minimum wage is wrong, and the evidence is abundant and overwhelming; you just have to choose to see it. Everywhere you care to look, you can find examples of high-wage places with low unemployment, and low-wage places with high unemployment. In the overwhelming majority of circumstances, the high-wage states and cities in America enjoy low unemployment while the unemployment rate in low-wage states continues to climb. So clearly, wages can rise together with levels of employment while low-wage doesn't guarantee jobs for all. So much for calling it an economic "theory".

What the above incident reveals to us is that just because a discipline uses a scientific word to describe its claim doesn't automatically make it a science – you have to earn that right. For something to legitimately be called a theory, it must result in true predictions. For instance, the theory, F=ma (force equals mass times acceleration), is never wrong. Ever. In every case ever tested, force actually does equal mass times acceleration. There are no examples in the known universe in which force didn't equal mass times acceleration. But the same cannot be said for the "theory" that if wages go up, employment will go down. It's not always true. It's not even that it's *almost* always true—it isn't even *usually* true. Thus, the claim that when wages go up for low-wage workers, unemployment will go up isn't really a legitimate "theory."

Further, economists can call their claims "theories" all they want, but they have to actually heed the evidence and what it says about their so-called theory to call it one, which they don't. Scientists allow evidence to objectively decide for them their every move, from what hypothesis to generate to what theory to choose. Nowhere do we see bias and prejudice entering the scientific process. Economists however are like lawyers, able to twist every bit of evidence to the advantage of their 'client', even if it is incriminating: a falsifying piece of evidence is just an anomaly. And if it happens too regularly, well, that's only because you are testing a naïve version of their theory.

And if this is true of economics, with all its sophisticated computer modelling, experiments and other quantitative tools that make it *look* like a science when it isn't, you can bet your bottom dollar that this is true of the rest of the social sciences, especially those that try to legitimatise the use of qualitative methodology like interviews and participant observations by 'dressing' it up in scientific language. Here are just 3 simple ways that it happens. First, every opinion, no matter how ludicrous and prejudiced, is 'hard data'. Second, researchers 'code' their interviews and apply statistical analysis to find patterns, even though the interpretation of words is always and everywhere a subjective task. Third, interviews, that most laissez-faire of 'data' collection methods, can be 'controlled' by having the same set of questions, as if the sheer presence of the interviewer will not intimidate the subject to answer in the way that the researcher wants. These so-called social "sciences" are nothing but attempts by the researchers to rationalise their own prejudices and preferences while influencing the world to behave in a certain manner. That this happens to conveniently benefit the researchers apparently never crossed their minds.

We must give up the naïve view that social "scientists" have a right to that title; they are little different to those manipulative cowards who somehow get hold of your mobile number, call you up and prey on your fears to cheat you of your money: scammers.

Adapted from *Is trickle-down economics science or scam?*
by Nick Hanauer

17

2022 | Y6 | KI Prelim | Paper 2 | Question 1 **Allyscia Clare Pereira | 22S03D**

Analyse and critically evaluate the author's reasoning in this passage. In addition, respond to it with your own argument, supporting or challenging the author's conclusions. Where appropriate, make reference to relevant issues concerning social scientific knowledge.

The author's conclusion is "We must give up the naïve view that social 'scientists' have a right to that title". I do not accept the author's argument because the premises are false.

Here is a basic reconstruction of the author's argument:
MP1: Economic 'theories' do not always result in true predictions. (implicit)
MP2: "Economists have to actually heed the evidence and what it says about their so-called theory to call it one, which they don't".
MP3: If MP1 and MP2, then SC1. (implicit)
SC1: Economic theories cannot be legitimately called a theory. (implicit) (MP1-MP3)
MP4: "Social science tries to legitimatise the use of qualitative methodology like interviews and participants observations by 'dressing' it up in scientific language".
MP5: If SC1, then SC2. (implicit)
SC2: Social science theories cannot be legitimately called a theory. (implicit) (MP6, SC1)
MP6: If MP4 and SC2, then SC3. (implicit)
SC3: "These so-called social 'sciences' are nothing but attempts by researchers to rationalise their own prejudices and preferences while influencing the world to behave in a certain manner". (MP4, MP6, SC2)
MP7: If SC3, then MC. (implicit)
MC: "We must give up the naïve view that social 'scientists' have a right to that title". (MP7, SC3)

The author's argument is valid because it follows the logical form of modus ponens where "if p, then q; p; thus, q", where "p" is SC3 and "q" is MC.

Let me further examine MP4. The author presents the four premises — "Every opinion, no matter how ludicrous and prejudiced, is 'hard data'" (P1), "researchers 'code' their interviews and apply statistical analysis to find patterns, even though the interpretation of words is always and everywhere a subjective task" (P2) and "interviews, that most laissez-faire of 'data' collection methods, can be 'controlled' by having the same set of questions, as if the sheer pressure of the interviewer will not intimidate the subject to answer in the way that the researcher wants" (P3) and "if P1-P3, then MP4" (implicit) — to arrive at MP4. The author's argument is valid because it follows the valid form of modus ponens where "if p, then q; p; thus, q", where "p" is P1-P3 and "q" is MP4. However, I do not accept the author's argument for MP4 because P3 is not always true. In P3, the author describes the observer effect, where the very act of observation will affect the way study participants act and behave. In social science, the observer effect is amplified because of the very nature of the object of study — self-conscious humans. Oftentimes, study participants

wish for others to see themselves in the best light, which may cause them to act and answer differently from their every life. For example, the illumination experiment aimed to investigate the effect of illumination on workers' productivity by increasing illumination as factory workers worked and observed their changes in their productivity. However, it was found that when illumination was increased and decreased, worker productivity increases in both instances. This showed that illumination had no direct effect on worker productivity, but the workers knew that they were being observed by researchers and most likely wished to appear hardworking, hence they increased their work productivity no matter the stimulus. Hence, it is true that observer effect may cause study participants to behave differently, resulting in incorrect data collected. However, observer effect can be mitigated by habituation. By staying and interacting with the study participants over a long period of time, participants can grow more comfortable with the researcher and hence begin to act and answer normally. For example, anthropologists go native with tribes in hopes of the tribe members growing accustomed to their presence and begin to act normally in their presence. Going back to P3, it is possible for the presence of the observer to not affect the study participant from answering truthfully by simply making them comfortable in the interviewer's presence. To do so, the interviewer could simply engage in some chit-chat prior to the interview and even act more friendly towards the participant. Hence, I do not accept P3 and hence do not accept MP4.

Let me now examine MP3. In particular, I would like to examine how MP3 states "If MP1, then SC1". The author first presents the premise — "For something to legitimately be called a theory, it must result in true predictions" (P5) then the implicit premise of "if P5, then MP3" — to arrive at the conclusion of "If MP1, then SC1". The author's argument is valid as it follows the valid modus ponens form where "if p, then q; p; thus, q", where "p" is P5 and "q" is MP3. However, I reject the author's argument for MP3 because P5 is false. To support his argument for P5, the author raises the example of how the scientific physics theory F=ma is never wrong and states that an economic theory should wish to be of the same rigor. However, P5 is false because other theories in normal science do not always result in true predictions. The author has merely cherry-picked a particular instance of a scientific theory resisting all falsification without discussing other instances of scientific theories showing falsifying results yet retaining its scientific status. For example, when Mendeleev constructed his periodic table, there were some elements where molecular weights did not line up with his model. However, he did not reject his theory and others did not declare his theory as non-scientific as for most other instances, it proved to be true. Hence, he merely declared the anomalies to be due to experimental error. Hence, sometimes a few falsifying instances may arise when normal scientists test out their theories but due to their strong belief in their theories, they do not falsify their theories due to these small number of falsifying results but instead declare them as experimental errors. Hence, for the author to state that "For something to legitimately be called a theory, it must result in true predictions" in P5 is simply too strict a criterion as even some well-established and accepted scientific theories cannot fulfil this criterion. Thus, if even normal scientific theories cannot be legitimately called a theory, it seems that much of normal science cannot even earn a right to the "science" title which is simply unintuitive. Hence, I reject P5 and thus reject MP3.

Let me now examine MP2. To establish MP2, the author first presents the premises — "Scientists allow evidence to objectively decide for them their every move, from what hypothesis to generate to what theory to choose" (P6), the premise "Economists however are like lawyers, able to twist every but of evidence to the advantage of their 'client', even if it is incriminating" (P7) and the implicit premise "If P6-P7, then MP2" — to arrive at MP2. The author's argument is valid because it follows the valid modus ponens form where "if p, then q; p; thus, q", where "p" is P6-P7 and "q" is MP2. However, I reject the author's argument for MP2 because P6 is false. In P5, the author states that theory choice is objectively decided by evidence but this is simply untrue due to contrastive underdetermination. Contrastive underdeteremination states that for any theory which is well-confirmed by a body of evidence, there are other theories which are equally consistent with the same body of evidence. Suppose I am researching the effect of temperature on pressure and I obtain the data points X1, X2 and X3 as shown in Figure 1. I then inductively arrive at hypothesis H1 which is consistent with the data and deductively come up with prediction P. My prediction is then confirmed. However, H1 is still not conclusively accepted because another hypothesis H2 is also consistent with the data as shown in Figure 2. Hence, one may suggest adding more data points — Y1, Y2 and Y3. Since H2 is not consistent with Y1, Y2 and Y3 as shown in Figure 3, it can be conclusively refuted. However, H1 is still not conclusively accepted because the data is still consistent with another hypothesis H3 as shown in Figure 4. Thus, evidence alone cannot decide theory choice and scientists have to depend on other criteria such as simplicity and comprehensiveness to decide on a theory choice. However, each criterion has its own fair share of proponents, hence theory choice still ultimately depends on the scientist's subjective choice. Thus, P6 is false. Since I reject P6, I reject MP2.

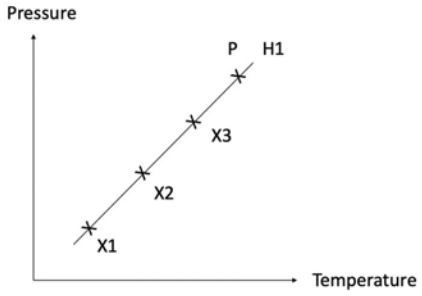

Figure 1

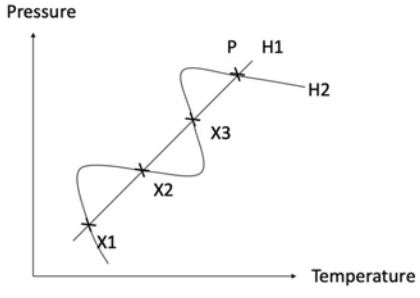

Figure 2

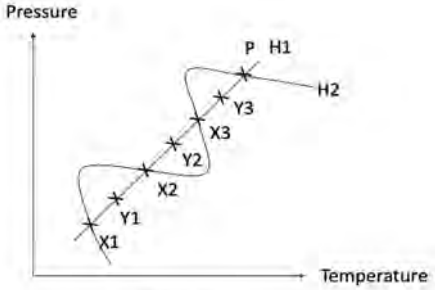

Figure 3

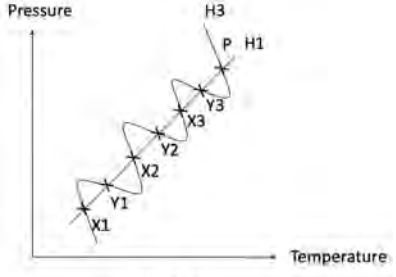

Figure 4

Therefore, since I do not accept MP2, MP3 and MP4, I do not accept the author's argument and his main conclusion.

Comments

A very good attempt! Reconstruction got the gist but there are a few inaccuracies. Evaluation is systematic and well developed mostly. Argumentation and examples provided were good. Good coverage of the arguments too. For assessment criterion 1, a number of points were shown and well elaborated on. Could have looked at why Science cannot always result in true predictions as opposed to it not doing so in the past.

18

2022 | Y6 | KI Prelim | Paper 2 | Question 1 **Chloe Neo Yi Ting | 22S030**

Analyse and critically evaluate the author's reasoning in this passage. In addition, respond to it with your own argument, supporting or challenging the author's conclusions. Where appropriate, make reference to relevant issues concerning social scientific knowledge.

In this passage, the author argues that "we must give up the naïve view that social 'scientists' have a right to that title". I do not accept his conclusion due to the presence of false premises in his argument.

In the first main thread of the argument, the author puts forward the first main premise that "for something to legitimately be called a theory, it must result in true predictions". He then asserts that economic theories like the "theory" that if wages go up, employment will go down are not usually true. These two premises, taken together with the implicit premise that "if these 2 premises re true, then the main conclusion", allows the author to establish the main conclusion.

In the second main thread of the argument, the author asserts that calling a claim a "theory" means actually heeding the evidence and what it says about the so-called theory. However, he says that economists do not do so. If these 2 premises are true, then this leads to the main conclusion.

In the third thread of the argument, the author puts forth the main premise that the "social 'sciences' are nothing but attempts by researchers to rationalise their own prejudices and preferences while influencing the world to behave in a certain manner". The main premise, taken together with the implicit premise that "if the above main premise is true, then the main conclusion", leads the author to establish the main conclusion.

Overall, the three main threads establish the main conclusion separately. Reconstructed in such a way, it is clear that all three main threads of the author's argument are valid through the use of modus ponens – "if p, then q; p, therefore q". For example, in the first main thread, p is the first main premise and q is the main conclusion.

Let us now examine the argument for the first main premise – "for something to legitimately be called a theory, it must result in true predictions". Here, the author cites the example of the scientific theory F=ma, saying that it is "never wrong" or true "in every case ever tested". He supports this by saying that "there are no examples in the known universe in which force didn't equal mass times acceleration". From this example, he inductively draws the criterion of a scientific theory having to result in true predictions, which is the first main premise.

Let us now evaluate the truth of the premises in this argument. Firstly, it is doubtful whether it is actually true that "the theory F=ma is never wrong". This equation is a well-

known and integral part of Newtonian mechanics and while we still use this theory prevalently in our normal learning of science and applications to the real world, Newtonian mechanics has been shown to be false and replaced by Einstein's theory of relativity. This is because Newton's laws can approximate quantities at low velocities, but at the scale of the universe, Einstein's theory of relativity gives more accurate predictions. Therefore, it may not be the case that "there are no examples in the known universe in which force didn't equal mass times acceleration". Even if we grant that this is the case, it can still be called into question whether this one instance of a scientific theory is representative of all scientific theories to allow the author to arrive inductively at the criterion that a theory must result in true predictions. This is because there are indeed instances in the history of science where something has been considered a law or theory, only for it to be thoroughly refuted later on. In fact, such examples are prevalent. For instance, in the past, people believed Ptolemy's geocentric theory that the Sun revolved around the Earth, while this has been proven wrong today, with Copernicus' heliocentric theory – that the Earth revolves around the Sun – being accepted instead. Given the presence and prevalence of such shifts in scientific paradigms throughout the ages, it is not so clear that scientific theories can be considered to be absolutely certain and true in all circumstances.

After all, science is a discipline which deals with natural phenomena, which are only ever contingent. In fact, looking at the scientific method, induction is necessary to generate a hypothesis from a limited number of observations of a particular phenomenon. For example, to arrive at the law that "all metals expand when heated", we generalized from past instances of metals expanding when heated. However, even well-confirmed generalisations can be proven wrong. For example, "all swans are white" was believed to be true until the 17th century, when the first black swan was discovered. As Hume pointed out, to make a generalization that "all As are Bs" from some As that are Bs requires the uniformity of nature principle – the future resembles the past. However, this itself is the result of an inductive inference – we generalized from past instances of the future resembling the past to arrive at this principle. This shows the circularity of such reasoning and, thus, we have no reason to accept the uniformity of nature principle. What this means for science is that its theories can never be absolutely certain. Referring to the author's example, even if there are no known examples where F =/= ma, there is nothing preventing the next experiment testing this to produce a contradictory result. Therefore, the first main premise cannot be established.

Furthermore, moving on to the premise that economic theories are not usually true, this premise may also be false. While the example cited by the author may indeed be false in many circumstances, there are many economic theories that are true and applicable in many real-life scenarios. After all, if all our economic theories are false, then there would be no point in even studying economics as a discipline, yet we continue to do so as it has indeed produced useful theories. For example, the law of demand and supply in economics seems applicable in many circumstances – when the price of a good, say lemons, go up, it is only expected that consumers would buy fewer lemons. Therefore, this premise is false and the first main thread cannot be accepted.

Let us now examine the argument for the third main thread, in particular the main premise that "the social 'sciences' are nothing but attempts by the researchers to rationalize their

own prejudices and preferences while influencing the world to behave in a certain manner". Here, the author asserts that social scientists "try to legitimatize the use of qualitative methodology like interviews and participant observation by 'dressing' it up in scientific language." He then goes on to explain 3 ways in which this happens – that "every opinion, no matter how ludicrous and prejudiced, is 'hard data'", "researchers 'code' their interviews and apply statistical analysis to find patterns, even though the interpretation of words is always and everywhere a subjective task" and "interviews can be 'controlled' by having the same set of questions, as if the sheer pressure of the interviewer will not intimidate the subject to answer in the way that the researcher wants". If these premises are true, then they work together to allow the author to draw the main premise.

Let us evaluate the truth of the premises in this argument, focusing on the premise that interviews can be "controlled". This may indeed seem true as researchers can choose to ask loaded questions in the interview, which influence the subjects to answer in a certain way, thus introducing the bias of the researchers into the interview process. Loaded questions may also appear in questionnaires and surveys. For example, in a 1990 United States poll, a similar question was worded in two different ways – "Do you believe there should be an amendment in the Constitution prohibiting abortions, or shouldn't there be such an amendment?" and "Do you believe there should be an amendment in the Constitution protecting the life of an unborn child, or shouldn't there be such an amendment?". In the former, 29% voted in favour, while this number rose to 50% in the latter question. This shows that the wording of certain questions can indeed have an effect on subjects' responses.

Nevertheless, qualitative methodology like interviews is an important way to gather data in the social sciences as they give us better insight into the thoughts and emotions of the subjects. This is because the subjects in social science are human beings with free will, who may not be amenable to quantification, even though quantitative methodology may seem to provide more precise data. Furthermore, qualitative methodology has been able to give us important knowledge on some cultures, traditions and behaviour, such as why monks chant instead of reading out their prayers, which may not have been possible through qualitative methodology. Thus, qualitative methodology should not be so simply discredited as the author has done as issues like loaded questions can be mitigated by using neutral wordings in questions, for example. Therefore, I do not accept this main premise.

In conclusion, I do not accept the author's conclusion all of its main threads are flawed, although the flaw in the second main thread was not shown due to time constraints.

Comments

A good attempt. Reconstruction is generally okay, barring a few minor issues. Evaluation is systematic and mostly well developed and good. But the last point was not actually that relevant. Be careful.

18

2022 | Y6 | KI Prelim | Paper 2 | Question 2

PASSAGE

The past decades have seen an increasing number of books being made into film adaptations. Think "The Lord of the Rings", "Game of Thrones", and that franchise of a boy wizard who somehow has a lightning bolt for a scar.

For many years, these film adaptations were seen as inferior by critics. Most opined that the film versions lacked the essence and quality of the original texts. And they are right; the cinematic versions can never do justice to the written word. First, they make any and every meaning plain for the viewer, leaving nothing for the average viewer to infer and deduce. It is as if the filmmakers think that the viewer is an imbecile who needs to be told every twist and turn of the plot, where every nuance and hint of foreshadowing has to be shown explicitly and sometimes explained in a 'vomit' of exposition. Gone is that beautiful relationship between author and reader where the author respects the reader by expecting him to be able to deduce and work out for himself the meticulous subplots that were woven into the storyline. Further, instead of overwhelming the viewer with a gazillion special effects, inundating him with an oversaturated palate of colours, books provide the reader with the space to use his imagination to conjure up fantastical worlds and beautiful princesses waiting to be saved. What computer-generated effects can ever hope to compete with the wild and free imagination of a human being? Finally, film adaptations commit the cardinal sin of shortening the original material (because the viewer cannot be expected to sit through hours of footage of every single event that takes place in the book). Yet this destroys the integrity of the story, making it hard for the viewer to understand why certain events had to happen in a certain manner or why a certain character was so beloved/hated. At the end of the day, no adaptation in any genre can ever hope to outdo the original – not games, not TV series, not even new book adaptations (who wants to read a *Les Misérables* comic??) – and films are no different.

19

2022 | Y6 | KI Prelim | Paper 2 | Question 2 Phang Li Ren, Alina Mesney | 22A13A

Critically assess the reasoning in this argument, explaining why you do or do not accept its conclusion (or conclusions).

In this passage, the author's main conclusion is that film adaptations of books can never hope to outdo the original book it was adapted from. His main argument is as follows:

P1: Films remove the "beautiful relationship between author and reader where the author respects the reader by expecting him to be able to deduce and work out for himself the meticulous subplots that were woven into the storyline".
P2: Films deny the viewer the "space to use his imagination to conjure up fantastical worlds and beautiful princesses waiting to be saved".
P3: Films "destroy the integrity of the story" by "shortening the original material".
P4: If P1-P3, then MC (implicit)
MC established (P1-P4).

Here, the author's argument uses the valid form of modus ponens – if A then B, A, therefore B, where A is P1-P3 and B is the main conclusion. I also accept his premises as true, and thus accept his argument as a good one. However, it is also worth noting that the author evaluates what makes a viewing or reading experience "good" by his own criteria, and given that this is not one that applies universally, his argument is only good insofar as it establishes the inferiority of films according to his own standards.

Let us first examine P2 – that films deny the viewer the "space" to "use his imagination to conjure up fantastical worlds". Here, the author argues that special effects "overwhelm" a viewer, but cannot hope to "compete with the wild and free imagination of a human being". I accept this premise on the basis that it is true that while one's imagination is limitless, filmmakers are constrained by practical considerations and therefore cannot ever fully encapsulate everything a reader if able to imagine upon reading the books. This, however, is premised on the assumption that people are always able to "conjure" such "fantastical worlds" through their imagination – indeed, this may not be the case, because some people are just not that imaginative. For some, reading words on a page just does not translate into visual interpretation or picturing of those events in their head, and thus they may not appreciate the book as much. For these people, the film experience would greatly enhance, far from dampening, their enjoyment of a story, bringing the characters from the words on the pages to life. For example, in the Lord of the Rings franchise, where Tolkien's world is deeply complicated and difficult to imagine, the films help to provide a visual portrayal of the things he describes. Given that Tolkien's writing style is quite old and difficult to understand, such visual portrayals of his characters and stories on the big screen could make characters seem more relatable and thus enhance the viewing experience. Films, after all, are carefully curated and produced by a whole team of people, and how they collectively work together to present a depiction of a story would be far beyond what a single reader could try to imagine. Therefore, I believe that the author's

argument holds true only for readers with a keen sense of imagination, but not those like me who lack the ability to envision fantastical worlds and thus thoroughly enjoy the experience of a film more than the experience of reading a book.

Let us now examine P3 – that "films destroy the integrity of a story" by "shortening the original material". This, the author argues, makes it "hard to understand why certain events had to happen in a certain manner or why a certain character was so beloved/hated". I agree fully with this premise, as films, often constrained by time, have no choice but to select what they deem to be the most significant events of a book to portray on the big screen, leaving out the seemingly meaningless or less important characters or events that actually contribute greatly to a plot or to the characterisation of a certain person. This is especially true for film adaptations of book series, as book series purposely drag out the plot while movies need to be self-contained and come to a sufficiently satisfying resolution within a couple of hours. For example, in the Percy Jackson franchise, a five-book series was condensed into two films; as a result, the second film was extremely rushed, having to skip to the end of the fifth book, which drastically altered the plot and made the main villain seem very one-dimensional. Therefore, I accept this premise.

Given that the premises are largely true and the argument form valid, I accept the author's argument.

Comments
Not a bad attempt. Would have made a lot more sense if you had just rejected the argument. Right now, your response is a little incoherent. Reconstruction got the gist but was not fully accurate. Evaluation: developed arguments for two points – good.

20

2022 | Y6 | KI Prelim | Paper 2 | Question 2 **Zhang Yifei | 22A13A**

Critically assess the reasoning in this argument, explaining why you do or do not accept its conclusion (or conclusions).

The author of the argument attempts to establish the conclusion that "cinematic versions can never do justice to the written word." In order to do so, the author puts forth three main premises: firstly, that film adaptation remove "that beautiful relationship between author and reader where the author respects the reader"; secondly, that film adaptations cannot "ever hope to compete with the wild and free imagination of a human being"; and thirdly, that film adaptations "destroy[s] the integrity of the story." Together, the three main premises seek to establish the author's conclusion. However, I will argue that the conclusion should not be accepted as it is a poor argument with flawed premises.

Firstly, the author puts forth the premise that film adaptations "make any and every meaning plain for the viewer, leaving nothing for the average viewer to infer and deduce" to establish the main premise that "gone is the beautiful relationship between author and reader where the author respects the reader by expecting him to be able to deduce and work out for himself the meticulous subplots that were woven into the storyline." The author's premise should be rejected as it does not seem that, by virtue of being a different medium, films thus explain everything "in a vomit of exposition". There are numerous instances of film adaptations which faithfully and skilfully weave layers of meaning into a given story and which are accordingly widely-lauded by critics – since the author raised the example of *Game of Thrones*, let us consider differences between the books and the TV show. In the books, character conflicts and thoughts and relationships are dwelt on in painstaking detail; it is obvious that they add great value to the story and are crucial to the reader's appreciation. In TV, these details and subtle meanings are also expressed for the viewer to "infer" and "deduce"; for example, it is not at all superficial or obvious that a friendly interaction between two rivals, Cersei and Margaery, is actually deeply threatening or hostile, but the showrunners or directors can subtly express this through visual cues such as body language, shot composition, soundtrack, etc. Hence the medium of film is equally able to give rise to complexity and detail for the viewer to "infer" and "deduce"; in fact, too much exposition is usually criticised as ham-fisted by film and TV critics and thus not a widespread practice in the medium. Thus, the first main premise that "gone is that beautiful relationship between author and reader" should be rejected.

The second main premise is established by putting forth the premises that film is "overwhelming the viewer with a gazillion special effects, inundating him with an oversaturated palette of colours" and "books provide the reader with the space to use his imagination"; together they establish that film cannot "ever hope to compete with [...] imagination." Firstly, the first premise is not well-supported as the author once again raises an example of a cinematic technique that is widely frowned upon – the overuse of computer-generated images and visual effects. It is not the case that film always does so, nor that films that do so will succeed; for example the 2008 adaptation "No Country for Old Men" actually uses stark realism and a sparse colour palette to encourage the viewer's

active imagination of the story. On the other hand, with regard to the second premise, although books may "provide the reader with the space to use his imagination", what if the reader lacks imagination? It is not the case that everyone in the world has vivid imagination; for example, some people might be able to visualise a dinosaur better than others. As such, it may be that computer-generated images can compete with our imaginations because these images also originate from the imaginative minds of artists and directors; for example, when told in Tolkien's "Fellowship of the Ring" that the Balrog creature is made of "flame and shadow", we might not be able to conceptualise this clearly; however, Peter Jackson's 2001 adaptation gives a clear yet imaginative and stunning depiction of the creature and is in some respect more impressive than Tolkien's description. Thus, we should reject the second premise that computer-generated effects cannot "compete with [...] imagination."

Thirdly, the author claims that because "film adaptations commit the cardinal sin of shortening the original material," the film "destroys the integrity of the story, making it hard for the viewer to understand why certain events had to happen." The sub-premise seems patently false as we can again point to adaptations such as the Peter Jackson Tolkien trilogy with a total, immense runtime of 14 hours or "Game of Thrones" with 8 seasons to point out that frequently, showrunners spare nothing of the source material. Furthermore, even if the premises were true, it does not then mean that the viewer cannot understand why certain things happened or why characters are beloved or hated; arguably this would be a skill issue as we also see feature films shorter than two hours that clearly allow viewers the same clarity and understanding as books, or even more. Thus, we should reject the author's third main premise.

Ultimately, it seems the author largely generalises from bad faith examples of what he considers bad movies to establish his three main premises but it is by no means clear that we should accept any of them, hence, the author's argument that "cinematic versions can never do justice to the written word" should not be accepted.

Comments

A good attempt. Reconstruction is generally okay, though ensure that it is consistent. Evaluation is systematic and genuinely engages with the text, giving clear examples and arguments too.

21

2022 | Y6 | KI Prelim | Paper 2 | Question 3

PASSAGE

It is natural that workers in some industries have warmed to the idea of a four-day work week: saving money from having to commute to and from the office, time to spend with one's loved ones, and just having that extra day to breathe, recuperate and then return to work with a renewed vigour are just some of the more popular reasons that come to mind.

Unfortunately, what is desirable for some individuals may not be advisable for the labour force at large as a four-day work week is practicable in only certain sectors of the economy. While it is indeed true that white-collar professionals can mainly work from home with minimal fuss, and maintain or even increase their productivity while doing so, employees in consumer-facing positions or labour-intensive manufacturing, do not enjoy such luxuries. Instituting a four-day work week might thus come at the expense of production output or service quality.

Implementing a four-day work week runs the risk of exacerbating disparities in the labour market, creating a situation in which some can enjoy improved work-life balance while others cannot (for the abovementioned reasons). This is a dangerous proposition when socio-economic inequality is already a great challenge. The last thing anyone wants is a divided population where one side looks at the other with resentment, wondering why those who are already earning a lot more have an extra rest day each week. Misery is a bad thing to have, but when shared, it at least gives people from different walks of life another 'touchpoint' to connect.

Instead of implementing a four-day work week for all then, we should conceive of policies that have the potential to benefit workers across all walks of life, not just some.

22

2022 | Y6 | KI Prelim | Paper 2 | Question 3 **Chloe Neo Yi Ting | 22S030**

Critically assess the reasoning in this argument, explaining why you do or do not accept its conclusion (or conclusions).

The author's main conclusion is that "we should not implement a four-day work week for all". I do not accept his conclusion as there are several problems with his argument.

The author first presents an opponent's argument, which argues that we should implement a four-day work week. This is because of the various benefits that it brings to workers. In the passage, the author cites several of these benefits – "saving money from having to commute to and from the office", "time to spend with one's loved ones" and "having that extra day to breathe, recuperate and then return to work". If having a four-day work week brings all of these benefits, then it supposedly allows the opponent to draw the implicit conclusion that "we should implement a four-day work week".

Following this, the author goes on to present his own argument in an attempt to defeat the opponent's argument. He puts forward the first main premise that "what is desirable for some individuals may not be advisable for the labour force at large". Together with the implicit premise that "if the above first main premise, then the main sub-conclusion", the author can establish the main sub-conclusion that "implementing a four-day work week runs the risk of exacerbating disparities in the labour market". This main sub-conclusion, taken together with the premise that "we should conceive of policies that have the potential to benefit workers across all walks of life, not just some" and the implicit premise that "if the main sub-conclusion and the previous premise are true, then the main conclusion", leads the author to establish the main conclusion that "we should not implement a four-day work week for all".

Reconstructed in such a way, it is clear that the author's argument is valid, utilising modus ponens – "if p, then q; p, therefore q". For example, p is the first main premise and q is the main sub-conclusion.

Let us now examine the argument for the first main premise – "what is desirable for some individuals may not be desirable for the labour force at large". Here, the author asserts that "white-collar professionals can mainly work from home with minimal loss, and maintain or even increase their productivity while doing so". He then introduces the next premise that "employees in consumer-facing positions or labour-intensive manufacturing do not enjoy such luxuries". The author implies that if this is true, then "instituting a four-day work week might thus come at the expense of production output or service quality". This sub-conclusion, take together with the first premise and the implicit premise that "if the sub-conclusion and the first premise are true, then the first main premise", allows the author to establish the first main premise.

Reconstructed in such a way, it is clear that the argument for the first main premise is valid, utilising modus ponens, which takes the form "if p, then q; p, therefore q". For example, p is the first two premises and q is "instituting a four-day work week might thus come at the expense of production output or service quality".

Let us now evaluate the truth of the premises in this argument. Firstly, the implicit premise that "if the first premise and the sub-conclusion are true, then the first main premise" is false. This is because while the it is true that white-collar professional are able to work from home while employees in other sectors are not able to do so, this disparity has little relevance to the implementation of a four-day work week as in his opponent's argument, it seems to refer to having an extra day where workers completely do not work, while in his own argument, it seems to mean having a day where workers do not need to physically go in to work, but still need to work from home. This creates a problem in his argument as while it is not possible for employees in consumer-facing positions or the labour sector to work from home for one day a week, it is indeed possible for them to be given an extra day off work. With regard to the premise asserting that if this is done, then production output or service quality may be affected, this may seem true at first glance, especially in vital for the functioning of society like public transport and utilities. However, upon deeper thought, it may still be possible to implement a four-day work week for workers on a rotational basis such that there will always be a sufficient number of people to keep essential services running. Therefore, I do not accept the author's first main premise as the argument for it contains false premises.

Since the first main premise cannot be accepted, the author's argument falls and I do not accept his main conclusion.

Comments
A good attempt. Reconstruction is generally okay. Evaluation is systematic and developed – good. Could have done with more range.

23

2022 | Y5 | GP Promo | Paper 1 | Question 1 Esther Woon Sue Ann | 23S03P

The world is a far better place for women today.' Comment.

"Gender equality is a precondition for meeting the challenge of reducing poverty, promoting sustainable development and building good governance." These were the words of Kofi Annan, former Secretary-General of the United Nations. His words highlight the importance of gender equality in today's supposedly progressive and advanced world, yet begs the question if such a goal is achievable, or has it already been achieved. Many pessimists argue that while gender equality is desirable, it is an unrealistic goal that is still out of reach, with many citing the examples of the oppression women face in developing countries and the blatant infringement of their rights that have seen little progress in recent years. However, many also argue that the world today is a far better place for women to live in, being able to enjoy the fruits of their ancestors' labour and achieving greater representation and progress in the political, social and economic spheres. Hence, I believe that the world is indeed a far better place for women today.

Detractors postulate that women in developing countries still face severe oppression today, and that they are still subjected to statuses inferior to their male counterparts, so it cannot be said that the world is a far better place for women today. Many developing countries choose to cling on to traditional, misogynistic mindsets in favour of the more progressive and liberal viewpoints that run rampant today, with one of such views being that both men and women should receive equal rights. The patriarchal nature of some of these developing countries, as well as the deep-rooted cultural beliefs of these societies make it hard for change to be enacted and for the lives of women there to improve. One such example would be how Malala Yousafzai was shot by the Taliban, an Islamic fundamentalist group, for advocating for girls' education in Pakistan. This highlights the opposition women in developing countries face when taking active steps to improve their lives and the lives of other women, and how despite efforts being made, the males in power will usually have the ultimate decision over the future of women in these countries. The male-dominated government in developing countries also further exacerbate the issue of gender inequality, with Niger allowing girls as young as 15 to be married, as compared to 18 for boys. This has resulted in 75% of Niger girls becoming child brides, something that the United Kingdom Humanitarian Aid Group has lambasted for ruining the lives of these young girls. Their research has shown that child brides are often isolated from the world and are unable to finish their education. This makes them financially dependent on the males in their families and hence unable to escape the abusive situation. These practices are deeply entrenched in the Niger culture and have been happening since the olden days. Yet, such unequal practices have not seen any improvements today, with many blatantly unequal customs being ignored by the governments of these countries and progress towards gender equality not being made. Hence, it cannot be said that the world is a far better place for women today, as women are still suffering and being oppressed in various parts of the world.

However, while this may be true in certain developing countries, other developing countries are starting to become more open to the ideals of equality and justice propagated by the rest of the world, and are hence taking small but sure steps towards eradicating gender inequality in their countries. A case in point would be how in 2018, Saudi Arabia allowed women to drive, when previously they could only rely on their male family members to bring them to other places, hence according them with greater freedom and less dependence on others. This can be seen as a huge step towards gender equality in these developing countries which have historically been plagued by patriarchal, conservative mindsets.

Women today have it better as their increased access to education has allowed for greater financial independence and a higher quality of life. In recent years, many countries have realised the importance of compulsory education for all regardless of gender. The access to educational opportunities, which has largely been lauded as a social leveller, has given women in these countries a fair and equal chance at improving their situation. They have increased chances of obtaining certifications and qualifications that employers value and reward accordingly with higher salaries. When employers use educational attainment as a screening device for job candidates, it eliminates the emphasis on one's gender, providing women with an equal chance at attaining employment. Such instances were not possible in the past, when women were not allowed to go to schools and had to conform to the societal stereotypes of being the caregiver. It is only with the hard work and determination of women's rights activists that women are able to enjoy such rights today. In the United States of America, women with a degree earned a median wage of $99500, as compared to women without a degree, who only earned $24500, highlighting the effectiveness of education in allowing women to receive higher salaries and a higher material quality of life. Women today are also more likely to achieve eminence in their field of expertise and command the respect of their peers, fulfilling their social and self-actualisation needs. One such example of women in power would be Susan Wojcicki, the Chief Executive Officer of YouTube and holder of two master's degrees. Such women in positions of authority also serve to further challenge the stereotype that women are docile and unassertive, and hence would not be able to lead others, providing a stepping stone for other women to scale the social and corporate ladder. These higher salaries that women today now enjoy with the aid of education confer them greater financial independence, allowing them to have greater control over their professional, and by extension their personal lives. Thus, they are less likely to be trapped in abusive situations or bullied into decisions by their male family members who they may depend on financially, hence providing them with greater power and freedom. Thus, it can be said that the world is a far better place for women today, as they are able to live independently of their male counterparts.

Furthermore, with the advent of technology in recent years, the widespread and pervasive nature of technology has allowed women to fight for their rights on a larger scale, providing many with the justice they deserve. With social media becoming more prevalent and integrated into our daily lives, its far-reaching and accessible nature allows women to utilise it as a platform to garner support for their causes to fight for their rights and take charge of their present and future. A case in point would be how Monica Baey, a student at the National University of Singapore (NUS), took to social media to demand for justice when she was sexually harassed by fellow student Nicholas Lim. When she initially

reported the incident to authorities, the perpetrator was met with almost no consequence. However, when she took to social media to shed light on the unfairness of the situation, she was able to use social media to galvanise immense and widespread support for her cause. When the support from the online community became too large to ignore, authorities were forced into action and meted out a heavier and fairer sentence. NUS also set up a victim care unit to ensure that future cases of sexual misconduct would be treated fairly. The result obtained in this incident was only possible due to the prevalence of technology and social media in our lives. Without these recent developments, such incidents would have been swept under the rug, with the offender being released with nothing more than a light slap on the wrist, just like how it was in the past. However, now, with the emergence of new technologies, such incidents can be publicised and the online community can be utilised as an effective tool in demanding justice for female victims, allowing them to obtain the justice they deserve and also deter future offenders from committing similar crimes against women. This makes the world a safer place for women today, thus it can be said that the world is a far better place for them today.

Increased representation of the female populace in politics in recent years has also improved the lives of women today by addressing the issues faced by women from a legislative standpoint. In today's progressive society, many believe in the ideals of equality, liberty and freedom. Such mindsets have resulted in an increase in the number of women in power, with many countries achieving a close to equal gender ratio in their governments today, something that would have been unthinkable in the past. With this unprecedented rise in female politicians, such as New Zealand Prime Minister Jacinda Arden and United States of America Vice President Kamala Harris, the issues that only affect or disproportionately affect women are now being thrust into the spotlight, with policymaking centred around many of these issues. One such example would be Monica Lennon, a Member of the Scottish Parliament who introduced the issue of "period poverty" amongst women, especially low-income mothers. This led to a new bill being passed in November 2020, which provides women with free sanitary products to effectively combat this issue. The increased participation of women in politics has also given them the power to overthrow sexist leaders and elect governors who take their needs into account, incentivising many politicians to place women's issues on their agenda. An example of this would be how during the 2020 United States Presidential elections, Joe Biden won majority of the female vote over former president Donald Trump. Such results could be accorded to the fact that Biden pass the paycheque fairness act, prevent violence against transgender women and reauthorise the violence against women act. On the other hand, during his presidential term, Trump had cut funding for Planned Parenthood, an organisation that provides reproductive health services for women, and had repeatedly made sexist and degrading comments about women. With universal suffrage being the hallmark of the democratic nation of the United States, women were able to influence the results of the election by voting to elect someone who would take their needs into consideration when implementing policies, helping to shape a better world for women to live in. Such events would have been unimaginable in the past, with women not even having the right to vote, much less participate in the political process as a candidate themselves. Women in the past would have to simply accept the results decided on by their male counterparts, with no hope of electing their leader themselves.

Hence, with greater awareness regarding gender equality today, the world has been made a better place for women by providing them with the ability to influence the government to enact policies in favour of women, be it from the inside or the outside.

In conclusion, while women have arguably seen an increase in their standards of living in recent years, more can still be done to ensure greater gender equality worldwide. As Kofi Annan has emphasised, gender equality is the foundation of society, and is a goal that humanity should constantly strive to achieve. Hence, while we celebrate the progress of women's rights and role in society from the oppressive and misogynistic past, we must not forget to keep working to improve the situation, such that the desirable foal will one day no longer be a distant dream.

Comments

A thoughtful response consistently evaluated and support with illustrations drawn from different societies, both developed and developing. Evaluation was consistently present – keep it up! Language use is secure with few grammatical errors; appropriate transitions are generally used, though try to steer clear of repetitively using 'also'.

2022 | Y5 | GP Promo | Paper 1 | Question 3 **Evan Lim Hong Jun | 23S06Q**

To what extent do you agree that the widespread use of artificial intelligence will improve our lives?

Across popular culture, artificial intelligence (AI) is depicted as something to be feared. Often this devolves into the clichéd, existential threat of humanity unwittingly creating true AI or a "singularity" which then seeks to subjugate and exploit humanity. Think of the Terminator, the Matrix, or the short story of an AI whose only mission was to maximise production of paper clips and decided that eliminating humanity was a necessary step in doing so. However, I remain sceptical of these claims. In recent years we have seen a resurgence in thought of the dangers of AI not as tyrannical overlords in themselves, but as a means through which a small group of ruling, elite humans come to subjugate the rest of humanity. *Dune* perhaps best illustrates this: the rebellion against AI (the "Butlerian Jihad") was not an attempt to overthrow AI overlords, but the people in power who utilised AI to control the populace with scary efficiency. I argue in this essay that although the widespread adoption of AI will generally improve our lives – as almost every technological revolution has – we must be extremely cautious about this technological revolution in particular. The reason is that the scale of technological disruption AI precipitates potentially supersedes anything in history – displacing large portions of the population from their jobs, granting authoritarian governments ever-increasing heights of power, and slowly stripping away at our sense of humanity and agency.

AI will generally improve our lives because of its unprecedented power to help humans analyse huge swathes of data and the technological revolution it can engender in the process. While humans are good at complex, multi-faceted tasks that require a cross-section of skills, AI is exceedingly efficient at completing singular, repetitive tasks in a controlled learning environment. What this means is that by using AI, humans can supplement our own intelligence and mitigate our greatest weakness – the speed at which we think. Instead of relying on an entire group of humans to trawl through data and meticulously search for patterns, we can leave the task to AI that will do so diligently with no complaints, never tiring, and at a fraction of the cost. For instance, recent work has developed AI that can analyse weather patterns and provide warnings for climate events like typhoons or floods. Farmers across the globe are increasingly adopting AI to analyse satellite imagery of farmlands and predict the best places for crops to grow and livestock to graze for optimal yield. Grab also famously uses AI in its pricing strategy – it automatically adjusts the price to match the influx of supply and demand to maximise the utility that customers and drivers can derive from the platform. On the scientific front, work like AlphaFold by Google is able to map out billions of protein structures and interactions, doing in a matter of hours what biologists have painstakingly been working towards for decades. There are an uncountable number of applications of AI in almost every field – from healthcare to finance and education. The pivotal reason is that today's technology grants us an enormous wealth of data as well as the hardware to process all of it. AI is the best tool at our disposal to take advantage of this. When self-driving cars could

potentially eliminate millions of deaths caused by reckless driving and human error every year, it would be foolish to shun the adoption of AI for an abstract fear of AI gaining sentience.

However, it is also naïve to therefore think that AI does not present any threats. In this essay I want to move away from discussing the danger of an AI singularity because it has been done to death by philosophers, science fiction authors and tech billionaires alike. Whereas the consensus on the time scales sentient AI will arrive are relatively unclear, what is extremely apparent are the many present dangers of the over-reliance on and over-adoption of AI even with today's technology. There are three key dangers, the first being that the widespread use of AI will necessarily result in the displacement of billions of jobs. Many critics of this argument will point to other technological transformations in history like the industrial revolution to assert instead that for every job replaced by AI, a new one will be created. However, this view is parochial because it fails to consider context. In the past, humans continued to thrive because even if machines replaced jobs involving physical labour, humans retained our cognitive edge over machines. Every miner or lift operator, for example, could take up a job that required distinctly human skills, most notably in the service sector. The difference is that once AI's cognitive capabilities outstrip our own, there is no third field in which humans will retain our superiority. Some will argue that humans will still be more creative. We only have to look as far as the recent developments in AI art generation like OpenAI's DALL-E 2 to know that the idea that AI cannot be creative is a myth. The processes through which humans are creative (pattern recognition, idea synthesis, etc.) can and have been replicated by AI. In chess tournaments, adjudicators often watch out for particularly unusual or creative moves as a sign of using AI to cheat – that is to say, creativity is not a hallmark of human play but of AI! Perhaps the only sector that humans retain our edge is in compassion and the human touch, which has thus far not been successfully replicated by AI. What all of this points to is that in the near future, there will be upheavals in all industries at all skills-levels; truck drivers, paralegals, general practitioners, visual artists, etc. all face an equally looming threat of being displaced by AI. The widespread adoption of AI will not leave us as stagecoach riders in the 19th century who transitioned into taxi drivers, but as horses in the 19th century who gradually became replaced and relegated to irrelevance. The great danger is that AI will displace billions of jobs, engender social and political unrest, and create a new "useless" class of citizens, making our lives worse.

Secondly, the widespread adoption of AI hands authoritarian regimes unprecedented levels of centralised power through surveillance. In the past, populations were always able to dissent and overthrow authoritarian governments simply because it was impossible to watch and control every citizen. Even with the invention of CCTVs, it was unfeasible to watch every camera and surveil every citizen. Only with the use of AI have states been given an unchecked power to collect, centralise and analyse video data from every corner of the country and personal data from every social media post and online profile. China's surveillance state perhaps best illustrates this point: with more CCTVs per capita than anywhere else on earth, the state is able to keep an extensive database of the faces and personal information of everyone within its borders (something that the government proudly boasts about on state media). This has let the government squash protests with brutal efficiency and root out any and all sources of dissent. Most notably, state media will

often air public apologies of citizens who have been arrested for posting criticisms of the government on social media. Detractors of this argument will claim that such use of AI is reasonable because it enhances our safety and thus improves our lives. I do not disagree that AI has come to play a pivotal part in guaranteeing national security – just this year the Singapore police arrested a 16-year-old boy planning to attack a mosque after AI systems flagged him for buying weapons online. The nuance of this argument is precisely that the widespread adoption of AI is a unidirectional affair. AI can be used to catch "bad people" such as criminals and terrorists. But what happens when the state defines "bad people" as dissidents, journalists, activists and others that undermine the state's power? Israel uses facial recognition technology and other AI tools to detect separatists from Palestine who pose a threat to national safety. This may be fair for Jewish Israelis, but what of the Palestinians? Once we allow states to adopt AI technologies on extreme and unjust scales, to the extent that they can intrude into our personal lives and monitor everything we say and do, there is no recourse. To this end, the widespread use of AI will limit our liberties and make life worse.

Thirdly, the widespread use of AI in determining how we lead our lives is gradually and imperceptibly removing our sense of agency which will ultimately make life worse. Today, every social media feed is powered by autonomous, indecipherable recommendation systems that sometimes seem to know more about us than we do about ourselves. When we shop online, many fail to recognise the extent of the power invisible AI technologies hold over us. This extends beyond Amazon's recommendation system or the Goodreads book recommendation system. Undergirding every aspect of our interaction with technology today is the notion that we give up some of our information so that the AI can serve us better. We do not mind Google Maps or YouTube knowing a little about us as long as it ensures that we can search for locations more quickly and find more interesting videos. The failure of contemporary debate about this issue is that it constantly neglects to consider how this gradually removes our sense of agency and control; imperceptibly, every decision we make (what we buy, read, watch) is increasingly controlled by AI. The impact of this is two-fold: first, companies and states gain more and more control over what we consume and desire. For example, a large proportion of Google's profits come from selling the top few search result links to other companies. The same is true for Amazon's product recommendations. In giving up our autonomy, we become increasingly reliant on AI to tell us what to consume, becoming imperceptibly shaped and manipulated by those in power. Secondly, this overreliance on AI systems breeds a sense of complacency that limits our own capacity for critical thought. Most notably, recommendation systems on Facebook inevitably construct walls around insular communities which become echo chambers, making us all more polarised and hostile and limiting real discourse and exchange of differing ideas in society. It is this aspect of AI that has catalysed the formation of more and more far-right groups in the US and stoked nationalistic, sometimes chauvinistic flames and ideologies. By adopting AI in every aspect of our lives, we surrender our own agency. In the long run, this can only harm individuals, restrict our freedoms, and make the world more conformist, blind, stagnant and intolerant.

In conclusion, the widespread use of AI has the potential to wreak incredible damage to society and our way of living. Simultaneously, AI has an incredible capacity to solve some

of humanity's most pressing problems. Ultimately, the progression of technology is inevitable – AI should and will be adopted, but we must do so with utmost caution and make every decision with great deliberation. We cannot allow the development and adoption of AI to be only driven by market interests and in backroom dealings between politicians and tech billionaires. Public discourse about the dangers of AI must happen. Regulatory bodies must be set up. Only by reclaiming the adoption of AI from the ruling elite to the public sphere can we truly use it for good.

Comments

Thoughtful and insightful response with a thorough evaluation of issues raised. Confident voice and range of expressions throughout essay.

25

2022 | Y5 | GP Promo | Paper 1 | Question 10 **Tan Jingyu Axil | 23S03K**

How far should profit be the aim of scientific or technological developments?

In his Nobel Prize acceptance speech in 1995, Joseph Rotblat urged the scientific community to "remember your humanity". In today's world where technological and scientific developments are becoming increasingly lucrative, the main goal of scientific and technological developments should be consistently kept in view––to benefit society and drive positive change. Though profits can be used as an incentive to drive innovation, I am of the view that profit should not be the aim of scientific and technological developments as this may result in the industry being exploitative in nature, cause health and ethics to be side-lined, and exacerbate inequality.

Detractors of my stand may postulate that profit should be the aim of scientific or technological developments, as this profit can be used to fund other developments and act as the incentive to drive innovation. Research and development (R&D) can indeed be an extremely expensive process – as of June 2020, funding for Covid-19 vaccines exceeded $21.7 trillion––and hence it can be justified that profits are earned by these firms to develop better products or inventions that improve the quality of life of society. Profit as an aim of scientific and technological developments can also be an incentive to drive innovation, as the promise of higher wages for scientists or technology developers may attract more talent and skilled workers to the field, increasing the productivity and efficacy of the industry.

However, while I do concede that profits can be justified in terms of its use to fund other developments, this reason is often overstated. In the pharmaceutical industry, R&D to develop new drugs are often reasons firms give to justify soaring and prohibitively high drug prices. However, empirical data shows that after accounting for all the research costs which cost up around $80 billion a year, $40 billion was kept solely as profits from the sale of the top 20 drugs in the United States. In fact, the company that conducts the most extensive R&D is Amazon, pumping $25 billion annually to consistently improve products and efficiency of productivity, even with products priced affordably and a profit margin of only approximately 5%, whereas the pharmaceutical industry flaunts a healthy profit margin of 22%. Thus, using R&D as a reason to increase profits may not be the most justified, as there are firms that can drive innovation even with lower profit margins.

Thus, I believe that profit should not be the main aim of technological and scientific developments. Firstly, profit being the main aim could result in these scientific innovations to be exploitative in nature. When a certain industry is lucrative, profits can be tempting to firms as it allows them to increase their financial gains, but when this becomes a primary aim, this may result in exploitative behaviour where profits are gained at the expense of others' health or safety. This is undesirable and poses a threat to societal welfare. Take for example: commercial surrogacy. With rapid advancements in in-vitro fertilisation (IVF), commercial surrogacy is growing to become a multi-million industry. These practices are especially rampant in the lower-income or poorer states of Thailand and India, where poor

women lend their wombs to be surrogate mothers for rich, infertile couples. Oftentimes these women are illiterate or uneducated, and thus unaware of the risks and rights they have. These firms often exploit their low education levels to not provide them with the proper compensation they deserve for their services, even when they have to bear the full burden of the risks to their health and safety. Furthermore, babies born through surrogacy are treated as commodities and those born with birth defects (and thus are "undesirable" for their customers who have paid thousands of dollars) are discarded. This example comes to show that the exploitative nature of a lucrative industry could pose threats to health and safety of those who are exploited and also raise questions on the violation of rights and the sanctity of human life – issues that are more pressing and important than gaining profits.

Secondly, profit being the aim of scientific or technological development may cause other important factors, such as health and ethics, to be side-lined, as it directs focus away from the more altruistic goals of science and technology––to better lives and the general benefit of society. For example, artificial intelligence (AI) has become an increasingly lucrative industry. Though lucrative, the development of AI-powered Lethal Armed Weapons (LAWs) poses many ethical issues due to its possibility and potency to cause mass killings and targeted genocides. AI having the power to decide what lives are spared from killing and having the decision-making power over life has been debated strongly in recent years. In the Russian-Ukraine war, there has allegedly been the use of AI-powered munition to aid in war efforts, and the development of such profitable, yet dangerous and harmful AI technologies has directed the aim of technology away from its altruistic goals. Another example would be human experimentation. Pharmaceutical firms may choose to locate human test subjects in countries with lower barriers and regulations to conduct human experimentation on less educated test subjects. This reduces cost of clinical trials and thus increase profits as these less educated test subjects often do not know the procedures and rights they have to claim compensation or refuse participation in these trials. In India, there is rampant exploitation of people in poorer states as test subjects, many of them unaware of the full risks and costs of participating. According to government data provided by a non-profit organisation Swasthya Adhikar Manch (SAM), from January 2005 to November 2017, approximately 5,000 people died from testing and more than 20,000 suffering from adverse effects. Only 187 of the families of fatalities were compensated. This highlights when profits are the aim of scientific developments, this may push firms to use nefarious methods to cut costs, which deprive exploited people of the right to health and safety.

Ironically, profit as the aim of scientific and technological developments can be counterproductive, hindering the efficacy and ability of science and technology to be an effective solution to health and societal issues. In the rush to push out new products and innovations first to gain the greatest share of profits, the quality of innovations may be neglected and thus be counterproductive, negatively affecting society. In the 1960s, a pharmaceutical firm, in the rush to produce new drugs to receive patents that allow for market exclusivity and in turn higher profits, did not conduct proper clinical trials according to guidelines set and were hasty in commercialising their drug, Thalidomide, even when it was considered experimental in the United States. This negligence caused thousands of babies to be born with birth defects caused by the consumption of Thalidomide by

mothers during their pregnancy, as it was later found that the molecular structure of Thalidomide had a stereoisomer, one of which had adverse effects on health and one that treated nausea. Thus, profits being the aim of scientific and technological developments may be counterproductive and prevent developments and innovations that benefit society to be reached.

Lastly, profit being the aim of such developments may exacerbate inequality, disproportionately affecting the lower income or the poor. When products or innovations are priced higher to increase profits, this decreases the accessibility and affordability of these goods to certain segments of society, mainly the lower income. When these products are essential or can be considered a basic necessity, and the lower income lack access to them, inequality is exacerbated. For example, drug prices in the United States are prohibitively high, with cancer drugs being at least $120,000 to $150,000 a year. This disproportionately limits the poor's access to healthcare, which can be considered essential to ensuring them a decent quality of life. Thus, profit being the aim of scientific and technological developments may even deprive an individual of the access to basic necessities and further exacerbate socio-economic inequality.

In conclusion, I believe that profits should not be the aim of scientific or technological developments as it results in science being exploitative and counterproductive, only benefiting those in power to wield such technologies and innovations. Canadian researchers Banting, Best and Collin sold the patent to insulin for just $1, stating that "Insulin does not belong to me, it belongs to the world." The potency of scientific and technological developments, similarly, when guided by altruistic aims and benefit of society in mind, can allow for much more progress in the world today.

Comments

Thoughtful response with good awareness of key issues. Examples are well-developed though there is some repetition in analysis and evaluation. Confident and well-handled essay. Varied sentence structures and wide-ranging vocabulary. I enjoyed reading this!

26

2022 | Y5 | GP Promo | Paper 1 | Question 10 **Ezekiel Joshua Chan Rong En | 23S03P**

How far should profit be the aim of scientific or technological developments?

A recent study was conducted by Global Balance Energy Network, investigating the correlation between sugar-sweetened beverages and the risk of obesity. Many would have expected the outcome – that the increased consumption of sweetened beverages would lead to an increased risk of obesity – but the results showed otherwise. Upon further investigation, it was found that this study was commissioned and funded by Coca-Cola Company, a major producer of sugar-sweetened beverages, leading many to question the accuracy and reliability of the reported findings, as such results could undeniably spark increased sales and profits earned of Coca Cola's products. This leaves us to question: how far should profit be the aim of scientific and technological developments? Some may posit that profit is essential to the survival of scientific and technological development, due to the costly nature of research and development. However, I beg to differ. Profit could motivate malicious actors with vested interest and nefarious intentions to pursue underhanded methods of research in a bid to cut costs, potentially threatening our safety and well-being. Profit, as a self-interested motive, also goes against the basis of science which serves altruistic intents, hence degrading the institution of science to a mere measure of dollars and cents. The motivation of short-term profits may also blind us to unseen consequences that may arise in the long term. Thus, I believe that profit cannot be the sole aim of scientific or technological development.

Proponents of profits being the impetus for scientific or technological developments argue that the high costs of sustaining research and development warrant monetary incentives to ensure its survival and continued pursuit. Undeniably, scientific and technological research presents high barriers to entry in the form of extravagant costs. These costs are apparent – capital is required to purchase highly specialised equipment that are designed with precision to fit the specific needs of said research. On a more intangible level, such specialised equipment would require skilled workers to man and utilise them, hence incurring training costs for labour, further compounded by the long duration of time that is needed to master these subject areas. Thus, it is evident that profit is essential for the very survival of research and development, without which scientific and technological advancement would be impeded. On top of mere survival, it is also worth noting that profit could serve as an incentive for scientific and technological development. Given the sheer amount of cost involved in research, it makes sense that the investment is compensated through profits that are reaped from a breakthrough. It is precisely this possibility of huge economic and financial return from that 'Eureka' moment that spurs scientists to continually develop and innovate. For example, in the recent COVID-19 pandemic, vaccinations were key to reducing the possibility of severe illness developing. Billions of dollars were pumped in to develop and produce vaccines, with companies like Pfizer and Moderna eventually emerging as the major suppliers of the highly sought-after good. Countries had to pay huge sums of money just to ensure that their citizens had

access to vaccines at the available time, and these dollars were in turn used to fuel the continued refinement of vaccines to tackle emerging variants and mutations in the virus genome. From this, we can clearly see that profit and revenue are fundamental to both the survival and continued sustenance of scientific research, without which we may not have been able to produce effective deterrence against the pandemic. Thus, profit should, and must be the aim of scientific or technological development.

However, the preceding argument is too parochial and facile, as there are assumptions inherent within. The preceding argument assumes that all profit is used in areas like funding the purchase of capital equipment and developing talent to advance scientific and technological development. Unfortunately, this is not the case in reality. Actors with nefarious intentions and vested interests may be motivated by profit to undermine the accuracy and veracity of scientific research, potentially threatening the safety of humanity, and disproportionately affecting marginalised groups. To begin, we must first acknowledge that human nature is interested in maximising one's self-interest. This implies that we seek personal gain, and whether or not our methods of achieving this gain affect those around us has little to no bearing on our decision-making process. In the case of profit-driven firms, such firms are interested in maximising revenue and minimising cost, eventually attaining a huge financial return on profits. Driven by these motivations, such firms may seek to manipulate scientific evidence and doctor results to achieve the goal of maximising revenue. This was clearly illustrated earlier in my essay, where Coca-Cola had funded, and potentially influenced the data that was presented, thereby inducing consumers to believe that their products had no deleterious effects on human health. These unscrupulous and underhanded means not only harm consumers who in actual fact develop diseases and illnesses like diabetes from the overconsumption of sugar-sweetened beverages; but also undermine the very institution of science as an empirical and reliable way of testing and confirming hypotheses.

Additionally, we must also consider the scenario where individuals are exploited for monetary gain in a bid to minimise cost. As scientific and technological development ultimately aims to benefit human life, human subjects are often needed in the course of experimentation. Unfortunately, marginalised groups often draw the short end of the straw, as they may be motivated by a meagre incentive to risk their safety and well-being in the "name of science". Profit-driven firms are aware of the vulnerability of such groups, and hence utilise them as "guinea pigs" to experiment on. In India, between January 2005 and November 2017, 4967 people died during the course of drug trials and research, according to government data; but pharmaceutical companies have only offered compensation to the families of the deceased only in 187 of these cases. From this statistic, we can clearly see that the profit-driven objective of firms has led to them exploiting these underprivileged individuals to cut costs. These detestable means to further scientific and technological development dehumanises these test subjects to mere "objects" and "experimental tools" to be played with, further degrading the value of these individuals' lives with meagre compensation. Thus, profit cannot be the aim of scientific or technological development, as it threatens our well-being and takes advantage of those who have little say when faced with profit-driven giants.

Furthermore, the pure pursuit of dollars and cents in scientific and technological development is blinding; actors motivated by these short-term gains may lose sight of and fail to consider the long-term consequences of these developments – to disastrous effect. The issue with elevating profit on a pedestal and placing it as the utmost priority of scientific and technological development lies in the fact that profit-driven actors now regard profits as the sole determinant of success, measuring the efficacy and impact of scientific development through the amount of revenue raked in. As profit can often be seen as the immediate reward for experiencing a scientific breakthrough, the "instant gratification" that said development provides results in individuals being overly focused on the short-term gain from scientific advancement, and as a result disregard the potential side effects that such advancements may bring. In the late 1900s, hydraulic fracturing was regarded as a "game-changer" in the field of energy and electricity generation. Through hydraulic fracturing – or fracking for short, we were able to liberate natural gases and other useful resources like oil from shale rock. The efficiency that such raw materials for energy generation provided were unparalleled – it was reported that there was a 1200% increase in efficiency in energy generation within weeks of discovery, and much profit could be gained for companies which practised fracking. US President Gerald Ford even included this discovery in his energy plan that year. However, it was found years later that the burning of such raw materials to generate electricity caused much pollution to the atmosphere, with residents living near such facilities reporting respiratory illnesses like asthma, birth defects and even cardiovascular disease. It is thus evident that the short-term profit motive in the form of efficiency in generating electricity caused many to simply focus on the immediate gains from this new discovery, without pausing to examine the potential side effects of these discoveries in the long term that could negatively impact human health and well-being. Thus, scientific and technological development should not solely be driven by profit, as it may lead to the disregard of side effects that could have deleterious consequences.

All in all, I believe that while profit, when utilised ethically and altruistically for scientific and technological advancement, can be justified, we must not forget the malicious actors who seek to undermine the integrity of science and exploit the marginalised through underhanded means in the name of profit. We must also guard against being blinded by short-term profit motivations, without considering the long-term impacts that accompany them.

Comments

A thoughtful and consistent evaluative response. Supporting illustrations were drawn from a few different industries and, while some could have come with more crucial details, were always relevant. Keep this up. Response was secure throughout (at least that which was legible), with a range of linking devices and a variety of sentence structure.

27

2022 | Y5 | KI Promo | Question 4 **Lau Ian Kai, Ethan | 23A01A**

'Bias inevitably affects knowledge construction.' How far do you agree?

To some extent, all fields of knowledge construction are anthropocentric in nature — with humans as the principal investigator of our world, any epistemological endeavour that we embark on is viewed through the lens of man. A necessary product of this is that our own biases and prejudices can seep into the construction of various kinds of knowledge. Ultimately, I disagree with the notion that bias inevitably affects knowledge construction. This is because there are some fields of knowledge which are not prone to any form of bias, and even when there is bias, we can take active steps to mitigate their effects on knowledge construction. However, I will concede that there are fields of knowledge which are affected by bias, and in fact welcome the differing viewpoints and notions of individuals.

First, let us establish that there are some forms of knowledge construction to which bias is not present, and hence cannot affect the formation of knowledge within its field. Such is the case in mathematics, which relies solely on logical deduction to arrive at new conclusions. As per mathematical inquiry, new proofs (such as those of the sine rule) are derived exclusively from objective, clinical notions about geometry and elementary operations. There is no room for bias to creep in, as the mathematical statements are also analytic in nature, with the subject contained within the predicate. There is nothing to interpret in the sentence "2+2=4" apart from the fact that adding two and two together gives four, because this statement is simply objectively true; the notion of "2+2" is contained within the concept of "4". Given that all mathematics follows such a structure, it would be impossible for biases to arise, as there is no interpretation or connecting of different ideas to be made — the statement must be true by definition. Even when bias sets in, leading to erroneous proofs, this is easily corrected by reviewing one's own logic thoroughly to identify the error. Clearly, mathematics is unaffected by bias in its knowledge construction, which would explain why mathematics that was conceived in different civilisations independently were similar to one another. If biases could act upon mathematics, it would seem unlikely for these similarities to arise.

In other fields of knowledge, it might also initially seem that bias is not present in knowledge construction. Take the case of science, a field commonly touted to give us reliable and objective knowledge of our world. This is done through the widespread use of the scientific method, where individuals first make an observation, before formulating a hypothesis to explain the phenomena. Proceeding this, the scientist undergoes experimentation, isolating the tested independent variable, before finally either proving, disproving or modifying the hypothesis according to experimental results. This scientific method seems to be effective at removing various kinds of biases to create a truly

objective method. Prior to the formulation of these scientific methods, people merely conjectured about the world around them based on their own personal beliefs, leading to the formulation of erroneous beliefs. For instance, "scientists" conjectured that the Earth was the centre of our world, and all the other planets orbited around it, solely due to their preconceived notions and biases of the world being created by God. The formation of an objective scientific method, to which scientific knowledge is created based on the results of controlled experiments meant that individuals could not insert their own biases into the situation, as hypotheses needed to be proved by solid experimental results. The further preference for mathematical analysis in the scientific method also attempted to make the sciences bias-free since numbers are value-neutral and are not prone to interpretation, as previously mentioned.

Yet, while much progress has been made by science to prevent bias from affecting knowledge construction, bias still inadvertently creeps in and taints scientific knowledge. For one, researchers are susceptible to observational bias, where their own preconceived notions lead to the making of wrong and flawed observations. For instance, scientists readily observed that the head of a sperm was a tiny man due to their preconceived notions about sperm cells prior to observation. Of course, such a mistake was soon discovered and findings were changed accordingly, but this still proves that our own senses could deceive us, leading to incorrect scientific knowledge. We are unable to determine if any of our current scientific is in reality victims to such a bias. Perhaps our own scientific knowledge is all tainted with our biases, which affect us all in small ways.

Perhaps more perversely, any scientific knowledge we create is theory-laden with other theories which influence the way we draw observations and see the world. We inevitably see the world through the lens of our own theories, which influences observation and scientific knowledge, which functions as a form of bias. For instance, looking at an x-ray to identify cancer is premised upon theories of cells and of electromagnetism. The problem, now, is that we have no way of accessing an objective, bias-free world if we build science not on objective method alone, but as the scientific method guided by biases created by the paradigm of science in which we live in. How are we able to determine if our theories are objectively true, if any action we take is through the lens of our own scientific worldview? Clearly, the very fact that we live in an age of science makes us biased to anything outside our current frame — we think that the concept of the caloric is wrong, but in another world with a different idea of science theory it might be true.

Despite this, the extent of our biases in our knowledge construction can be significantly mitigated. With respect to observational errors, this can be mitigated through the replication of experiments and verification of results by other researchers, eliminating the chances of such error taking place. At the same time, peer-reviews take place in order to eliminate the likelihood of preconceived notions or prejudices tainting experimental results and scientific knowledge. With respect to theory-ladenness, efforts have been taken to overcome this through questioning of our most basic principles and being willing to accept that we all have biases. Such is the basis for scientific revolutions, where new

information that cannot fit the old theory leads to the jump to a new paradigm. Notably, this paradigm-shift is not merely a "leap of faith" as described by Kuhn, but it is a reassessment of our scientific knowledge in favour of those with more explanatory power (and hence by Inference to Best Explanation is better knowledge). Furthermore, we rarely abandon our old knowledge, instead subsuming it under the new paradigm. In this sense, we are not making unclear progress but steadily reaching objectivity in science. Therefore, even if we initially start out with biases, we are eventually forced to question them, resulting in the re-examination and eventual mitigation of these biases in the construction of knowledge.

Finally, bias can affect knowledge construction especially in cases to which there is no objective metric for comparison. For instance, the strength of our objectivity in knowledge construction can be determined through correspondence to reality, but this is impossible in fields such as aesthetics. In aesthetics, people can choose to hold different knowledge claims based on their biases and preconceived notions ("good art must have vibrant colours" vs "good art must be lifelike and mimic reality"), with no way to differentiate between them. In such fields, the plurality of knowledge claims caused by bias is not feared, but rather embraced, for each adds their own unique interpretation of the situation which is meaningful. Someone might look at *The Last Supper* (a painting) and conclude that it shows the strength of brotherhood, while another might link it to biblical lore, since they are prejudiced as such. Both these interpretations being considered knowledge grants new perspectives to which others can see the painting in as well.

To conclude, knowledge construction is undoubtedly diverse and varied. Whether bias affects knowledge construction of a field is not inevitable, as we have developed tools and methodologies to overcome these biases. Instead, it is determined by the nature, constraints and goals of a particular field and constructor of knowledge.

Comments

This is an excellent piece that contains a clear argument for which bias can affect knowledge construction in some cases but not in others. There is a good range of points and examples from different areas of knowledge to support the points made. Delve a little deeper to explore the issues concerning nature and construction of knowledge to strengthen your argument.

28

2022 | Y5 | KI Promo | Question 5

PASSAGE

Philosopher James Weatherall recently claimed that the methods of physics can help make economics more rigorous. But from its inception, social science has struggled for respect. Auguste Comte proposed a hierarchy ranging from the physical sciences at the bottom up through biology to the 'queen' of sciences, sociology at the top, but where are we on that now? Yes, the intention was for the science of human behaviour to help humanity make moral and political decisions and construct more efficient, just governments, but time and time again, social scientists have trafficked in theories so lacking in precision and predictive power that they don't deserve to be called scientific.

The nature of the phenomena studied is just different; measurements are never precise in social science. Physics addresses phenomena – electrons, elements, electromagnetism, nuclear forces, gravity – that are relatively simple, stable and amenable to precise mathematical definition. In contrast, the basic units of social systems – people – are all different from each other; each person who has ever lived is unique in ways that are not trivial but essential to our humanity. The speed of gravity can be measured to an exact decimal point, whereas no one can tell if the group of friends in *Friends* is more strongly bonded than the group of friends in *How I Met Your Mother*.

Furthermore, social science can never approach the predictive power of the hard sciences. Protons, plasmas and planets are oblivious to what scientists say about them. Social systems, on the other hand, consist of subjects that watch television and read newspapers, journals, books, and blogs; and consequently, change their behaviour. Everyone is always influenced by everyone else, and especially alter their behaviour if an observer is present. How powerful can social scientific theories be if the subjects they study cannot be controlled? Besides, the recessions in the last decade provide a powerful demonstration of social science's limits. The world's smartest economists, equipped with the most sophisticated mathematical models and powerful computers did not foresee – or at any rate could not prevent – the financial calamities that struck the world in 2007 and 2020.

Even when theories 'successfully' predict phenomena, it was only because of self-fulfilling prophecy. For example, if you're planning to buy a refrigerator, and if you believe that it is going to be more expensive in the coming months because economists predicted impending inflation, you might think it sensible to buy it soon. If more people behave similarly, it is likely to drive up demand. And as production or supply remains unchanged in

the short term, this pushes prices further up, causing inflation to really occur. These make inflationary expectations a self-fulfilling prophecy, especially when consumers panic, expecting a future run on items like toilet paper or milk powder.

There is great danger in believing that social science scientific; it clearly isn't as justified as science is. Social scientists insist and try to convince others that they have discovered absolute truths about humanity, truths that tell us what we are and even what we should be, but the verdict is still out on that. We should resist anyone or anything that attempts to define and label us through biased interpretive lenses which they claim are objective, universal laws that govern all of humankind.

Adapted from "Is 'Social Science' an Oxymoron?"
by John Horgan

29

2022 | Y5 | KI Promo | Question 5 **Raphael Niu Zi Yuan | 23A01A**

Analyse and critically evaluate the argument in the above passage. In addition, respond to it with your own argument, supporting or challenging the author's claims and conclusion(s). Where appropriate make reference to relevant issues concerning social scientific knowledge and inquiry.

The main conclusion of the passage is that there is great danger in believing social science to be scientific. This is undergirded by a central intermediate conclusion that even though social science purports to discover absolute truths about humanity, it is nowhere as justified as science is. The author offers three reasons why: (1) that measurements are never precise in social science, (2) that social science can never achieve the same predictive power as the natural sciences, and (3) theories 'predict' phenomena only because of the self-fulfilling prophecy. Ultimately, while I accept the author's claim that social scientific knowledge is not as objective and reliable as knowledge in the natural sciences, I do not agree with the author's ultimate position that the social sciences should not be believed to be scientific.

The author's first two reasons are undergirded by a central comparison of social science with the natural sciences — he first argues that social science cannot achieve the same precise measurements as the natural sciences, because people are unique and some social phenomena (e.g., social bonds) cannot be adequately quantified. This is an accurate observation — indeed, many social scientists have to resort to inadequate proxies to quantify intangible phenomena. For instance, the World Happiness Report assigns a numerical value for how happy a particular nation's populace by measuring the tangible metrics of GDP per capita, healthy life expectancy and the amount of social support. Not only do these metrics not adequately capture the full complexity of human happiness (influenced by intangible factors like family ties, romantic success etc.), but they also fail to account for the varying conceptions of happiness unique to each individual — one might really value their quality of sleep but another might value the quality of public transport. Additionally, the author is right to point out that natural phenomena are far more "simple and stable" — while voltage is only determined by current and resistance (V=IR), human satisfaction is influenced by far more factors as explicated above, making it inherently difficult to precisely quantify in a mathematical manner. To that end, the author's claim that social science is not as precisely quantified as the natural sciences hold water, lending weight to his claim that the social sciences are 'less justified' than the natural sciences.

The author's second reason — that social science achieves less predictive power — is also an astute and accurate one. The author first correctly explains that social systems are affected by the presence of an observer — this Hawthorne effect has been widely documented across social scientific study. In the 1920s, researchers found that the

presence of an observing researcher in Western Electric's Hawthorne Works increased worker productivity, rather than the intended independent variables of lighting conditions and break times. Additionally, pedagogical researchers have found that children over Grade 9 pay more attention in class when their lesson is being observed. If test subjects modify their behaviour when they are being studied, the ability of social science to offer reliable, objective predictions is thus questionable. The author subsequently offers the example of economists failing to predict economic recessions in 2007 and 2020. While perhaps a cherry-picked example, as economists are generally accurate in their predictions up to 8 months before the end of the year and could not have foreseen the Covid-19 pandemic, it does show that economists are unable to reach the same level of predictive accuracy of the natural sciences since society is far more complex. In this light, this second line of reasoning holds, making his sub-conclusion that social science is less justified than science persuasive.

However, the author's third claim — that successful predictions are only because of self-fulfilling prophecies — is perhaps his least persuasive reason. While economic predictions are especially vulnerable to self-fulfilling prophecies as consumers can panic buy (as seen during the Covid-19 pandemic), this problem afflicts other fields of social science to a much lesser degree. For instance, pedagogical research about the use of productive failure to boost student performance seems to not encounter this problem — students do not 'improve their grades' by virtue of learning about this technique alone. Hence, it is perhaps a stretch to claim that *all* successful social scientific predictions are a result of self-fulfilling prophecies.

Ultimately, I agree with the author's sub-conclusion that social science cannot be as 'justified' as science — problems with quantification and predictive accuracy do undermine its claim to offer "objective universal laws" and absolute truths. However, it must be acknowledged that the author is focusing only on a narrow spread of positivist social scientific disciplines (e.g., Economics, Clinical Psychology) that truly purport to offer 'objective universal laws' and uncover unchanging social facts. On the other hand, interpretive disciplines like Anthropology do not have such grand ambitions, instead seeking to use the scientific method to uncover the meaning communities attribute to their behaviour and generate a "thick description" of what a particular practice means to the people involved. For instance, Clifford Geertz's seminal 1973 paper, "Notes on the Balinese Cockfight", only made claims specific to the Balinese culture and that particular cultural practice, even as it employed the scientific method of observing the phenomenon, hypothesising about it and collecting data through interviews. Against this backdrop, it is perhaps unfair to hold all of social science as 'unscientific', based on the aims of positivist researchers alone.

Further, demonstrating that social science is less 'justified' than science is insufficient to show that it should not be regarded as "scientific" at all — even the staunchest positivists would not make the ambitious claim that social scientific knowledge is as reliable or objective as physics knowledge. Social scientists also employ numerous methods to

improve their reliability and objectivity or qualify their conclusions — for example, using anonymous surveys to overcome the Hawthorne effect, or offering different economic predictions to reflect best and worst-case scenarios in recessions. Hence, the author's comparison to science shows, at best, that social science should not be regarded as scientific to the same degree as the natural sciences, but not that it should be discounted as 'unscientific' altogether.

Thus, while I accept the author's generally well-proven sub-conclusion that social science is less 'justified' than science based on its comparatively lower precision in quantification and predictive power, his eventual conclusion that "it is dangerous to believe social science is scientific" is too extreme and under-substantiated.

Comments

Excellent response, Raphael! Clear understanding of the author's argument and of what he was trying to achieve in his criticisms against social science. Reconstruction is good; although the points about bias and labelling were not largely considered, this did not significantly affect the overall understanding of the author's argument). Evaluation is thorough, comprehensive and had sufficient examples that were accurate, relevant, and largely effective! Response is also very concise. Good job!

30

2022 | Y5 | KI Promo | Question 5 **Tan Sheng Yi, Ben | 23A01A**

Analyse and critically evaluate the argument in the above passage. In addition, respond to it with your own argument, supporting or challenging the author's claims and conclusion(s). Where appropriate make reference to relevant issues concerning social scientific knowledge and inquiry.

The author's argument is that social science is not as justified as science is. The author uses three main premises to support this conclusion. Firstly, social sciences are never precise, unlike hard sciences like physics, as social phenomena cannot be reduced to mathematics and measured. Secondly, social science has much less predictive power than the hard sciences as subjects will alter their behaviour unlike in the hard sciences. Special cases of this include the researcher themselves causing changes in the subjects' behaviour, and a researcher's prediction causing a self-fulfilling prophecy which confirms the theory, making the reliability of the process questionable. Thirdly, social science is not as objective as it claims to be.

The argument is moderately strong. However, while the premises are largely true, there are some exaggerations and undue weight lent to specific examples that may not fully represent the utility of social science. The link to the conclusion also hinges on the assumption that standards for justification in science and social science are identical, and that the scientific method is applied in the same way.

Firstly, that social science is "never precise" it's true insofar as it cannot match the position of the natural sciences. The scientific method is applied in physics on quantifiable phenomena like forces, thus leading to a high degree of objectivity, as they can be described mathematically. The researchers' personal biases do not colour the conclusions as much, as there are few interpretations that can be drawn from the data. This makes the process of research more reliable, and the conclusions more certain. The author implies that social phenomena like the strength of bonds between groups of people cannot be measured, and this is true. But this does not necessitate that unquantifiable findings make the field less justified than science. The author leans towards the positivist view that social science is a logical continuation of science and must be held to the same standards of justification, with precision and tailing quantifiability and statistical accuracy. This might be crucial for Fields like Economics due to the need for predictive power—which he later brings up, but the author ignores other fields like Anthropology which deal with lift experiences where position might entail correspondence of a theory with the subject's subjective experience. Such fields are more interpretivist in nature and seek to describe the meaning of individuals' social actions through qualitative not quantitative means. Given that such "unique traits" of each person is "essential to our humanity", as he acknowledges, then even the social sciences which use non-quantifiable means are

justified in giving us knowledge in social behaviours which, to begin with, are largely unquantifiable. It can be considered justified on the basis of describing specific experiences, just not in the same way natural science is.

Secondly, the premise that social science lacks the predictive power of the natural sciences is largely true. Even Economics, with its relative precision among the social sciences, utilizing quantitative methods and graphs like the natural sciences, cannot predict the behaviour of markets as well as fields like physics can predict the movement of bodies. Yet it is misleading to conclude that social sciences are thus less justified since it is due to the large number of variables in social phenomena that reduce predictability, not the methodology. There is hardly another approach that can be used to get greater predictive power. In a sense, it is justified as there is no better method to study society. Besides, in the natural sciences, other than ideal experimental conditions in laboratories, predictions will experience interference, though to a lesser degree.

Next, the example that Economics could not predict the financial calamities of 2007 and 2020 ignores numerous counter examples of the utility of Economics. Data and graphs about costs and revenue help firms make decisions and have allowed many of them to grow. It must be acknowledged that it is not fool proof, again due to having too many variables, but it is a good enough gauge, if not the best one available for economic agents, and is thus justified on a pragmatic basis.

However, the point about changes and behaviour of the subjects, due to other people or the researchers themselves, is quite convincing. For example, a sociological study on colloquial speech might have subjects who begin speaking formally simply because of the formal research setting, distorting the results. This, however, largely affects interpretivist leaning social sciences with the presence of researchers being prominent. For fields like Economics relying on detached data collection, the effect of a researcher on a market is generally non-existent.

Of course, there might be extreme cases, such as the example of the self-fulfilling prophecy of inflation, but that is a specific case that does not reflect the utility of Economics well. Besides, the author seems to be using that to further the point about the lack of predictive power, with the implication that correct predictions only happen by coincidence in social science and even then, the success is illusory ("even when theories 'successfully' predict phenomena"). On this front, it is greatly underqualified. Economics allows governments to, in fact, predict economic crises and inflation and plan their finances. Psychological models of personality also allow predictions of behaviour. It is true that social sciences do not "approach the predictive power of the hard sciences" but the third paragraph's implication that it is completely unable to make predictions is not qualified.

The final point that we should not allow ourselves to be defined by the universal laws of social science seems to be a leap from the claim that social science does not have precision

and predictive power. This point would qualify the argument more given that it implies social science falls short of its purported claims to be as justified as science. This could rebut counter arguments that it could be justified based on a different standard from science. However, no evidence is provided to substantiate this crucial premise. The example of Weatherall's claim only purports to make sciences more "rigorous".

Therefore, the argument is only moderately strong. The author does succeed largely in showing that social sciences lack the position and predictive power of science but gives the further implication that they should be resisted. However, his assumption that leads to this—that the same standards of justification apply to both fields—is highly questionable given that some aims diverge from the positivist social sciences' objective detached study. The examples about predictive power are very selective, though the premises themselves happen to be true.

Comments

Very good response here, Ben! Clear understanding of the author's argument, and systematic treatment of the main premises. Some insight shown, although some points lacked proper substantiation and explanation. In this sense, the argument was uneven. Overall, there is sufficient treatment of the author's argument, and a good awareness of the nature of both fields of knowledge.

To what extent is diplomacy effective in dealing with conflicts today?

"I do not know if war is an interlude during peace, or peace is an interlude during war." These were the words of Georges Clemenceau, the French Prime Minister during World War One. While his words highlight the prevalence of war and conflict between countries back then, this is a situation which still largely applies to the world today. Nevertheless, with globalisation and the increasingly interconnected nature of countries today, many optimists argue that diplomacy is effective in dealing with conflicts today, due to the hesitance of nations to face backlash from the international community and preferring more peaceful means of resolving conflicts. Conversely, many pessimists argue that diplomacy is ineffective in dealing with conflicts today, citing the example of belligerent leaders refusing to listen to international organisations and the use of aggression and force by countries to achieve their political aims. I believe that diplomacy is largely ineffective in dealing with conflicts today.

Detractors postulate that the unprecedented integration and interdependence of countries today create a system in which countries have more to lose and less to gain from resorting to violence, making diplomacy a peaceful and effective alternative to resolving conflicts instead. With the advent of globalisation, the interconnected nature of countries brings about integration of the social, political and economic spheres of different countries. There is hence very little that countries must take forcefully that cannot already be obtained through diplomacy. In turn, this facilitates mutual progress and growth, minimising the prevalence of conflicts between countries. Foreign relations are no longer a zero-sum game in which one can only achieve their geopolitical aims at the expense of another country. This nullifies a major motivation for countries to immediately resort to violence to get what they want, choosing instead to proceed with diplomatic and peaceful negotiations. A case in point would be the Pedra Branca disputes between Singapore and Malaysia. When Malaysia laid claim to the series of islands, Singapore contested that claim, resulting in tensions and conflicts between the two countries. However, due to the close geographical proximity of the two countries and both countries relying heavily on the other for international trade and foreign relations, the countries chose to use diplomatic, rather than violent, methods to settle the dispute, submitting a formal report to the International Court of Justice (ICJ), which ruled that Pedra Branca belonged to Singapore. To uphold this ruling by the ICJ and the United Nations Convention on the Law of the Sea (UNCLOS), Malaysia and Singapore came together to set up a committee to serve the purpose of adhering and abiding by the rulings, allowing the conflict to be resolved in a peaceful manner, which in turn strengthened the diplomatic ties between the two countries today. Thus, it can be seen that diplomacy is effective in providing countries with a platform to air their grievances and allows countries to have peaceful talks and

negotiations regarding their conflicts, oftentimes resulting in more effective and efficient resolutions of differing views and opinions between countries. Therefore, diplomacy can be said to be effective in dealing with conflicts today.

However, diplomacy is only as effective as countries allow it to be. While some countries are willing to abide by the rule of international law, other countries ruled by belligerent leaders may be less willing to work peacefully and cooperate with the rest of the world.

The rise of such belligerent leadership in today's world thus casts scepticism on the efficacy of softer methods of conflict resolution such as diplomacy, especially in the face of brute force and the presence of vested interests. When countries have differing interests, the ties between them become strained, regardless of existing agreements or alliances. This may result in conflict between countries, especially when countries with vested interests are also the ones with large economic and military might. This allows belligerent leaders to do whatever it takes and use whatever resources they have to get what they want, oftentimes at the expense of smaller and weaker countries – something that is hard for diplomacy to address, especially when the government of the country refuses to listen to the international community and continues to further its vested interests. One such example would be the annexation of Crimea by Russia in 2014, whereby Putin had wanted to secure trade interests in the Black Sea and Sevastopol. Despite attempts from international organisations such as the United Nations and the European Union (EU) to discuss the situation with Russia peacefully, such attempts were quickly shut down by Russia. The United States and the EU were hence forced to levy sanctions and tariffs on Russian exports and freeze their overseas assets, resulting in significant economic consequences for Russia. It was only then that the public support for the continued occupation of Crimea, as well as Putin's administration, fell from 85.9% post-annexation to 63% in 2018, after Russia weathered a financial crisis from 2014 to 2016 due to the punitive measures taken by the international community to discourage conflict between Russia and Crimea. This highlights the efficacy of hard power and punitive measures such as economic threats in convincing an aggressive and belligerent leader to reconsider the consequences of their actions and forcibly resolving conflicts, as opposed to more peaceful and diplomatic means which do not hold as much weight or threat to these huge military and economic powerhouses. Hence, diplomacy is largely ineffective when it comes to dealing with conflicts incited by aggressive and hostile political leaders.

Furthermore, diplomacy is also ineffective in resolving conflicts encumbered by historical baggage. When the reasons for a conflict are deep-rooted, it can incite aggression and antagonism between countries, which is not easily resolved by diplomacy. Such historical baggage is a critical reason many contemporary issues remain unresolved, despite there being various diplomatic platforms available for leaders of these countries to talk things out. Finding common ground is difficult when the interests of countries plagued by historical baggage are in direct conflict, and especially when agreeing to a compromise now means forgetting decades of past grievances and failing to honour the sacrifices of their past soldiers. Diplomacy is thus ineffective in allowing such countries to resolve deep-rooted disagreements and conflicts. One such example would be the Israeli-Palestinian

conflict, which has been going on for decades and stems from atrocities committed by both sides in the past. Their competing claims to Jerusalem are difficult enough to reconcile, but when these states have advanced such claims through violent means throughout the years, this makes resolution of the conflict nearly impossible through the use of diplomacy alone. It is unlikely that the countries will be able to find an agreeable compromise, especially with the bloody history of the Palestinian Intifadas and the protracted, possibly illegal occupation of the Gaza Strip and West Bank still deeply imprinted and weighing on their minds. In 2021, this conflict led to violence between Israel and Hamas, trading blows while claiming that the other side had made the first move and that they were only retaliating. This resulted in more than 200 deaths and countless buildings and houses destroyed. Even after an Egyptian-mediated ceasefire and multiple attempts by international peace organisations encouraging the two sides to find a non-violent compromise, Hamas militants continued to lob explosive balloons into Israel, with the latter retaliating by blowing up the former's weapon factory. Such conflicts highlight the gross inability of diplomacy in resolving historical conflicts and changing the entrenched mindsets of countries weighed down by such grudges and baggage. Diplomacy is unable to resolve all the past atrocities on both sides and address the root cause of the issue, especially when the countries in question are unwilling to seek out diplomatic means in the first place, hence making it largely ineffective in dealing with conflicts today.

Lastly, diplomatic platforms in today's society meant to facilitate the peaceful resolution of conflicts fail to hold leaders accountable for their actions, seeing as sovereignty is still largely prioritised in today's world, and the authority that international organisations have pales in comparison to the importance of independence and non-intervention in the affairs of other countries. Hence, diplomacy is largely restricted in its effectiveness as it relies on the compliance of the international community and cooperation between countries to uphold its rulings, which may not always be the case, especially in the face of countries with disproportionate influence and economic ability. Countries which are large and powerful enough are able to ignore the rule of international law that they enforce on others, purely on account of their sheer strength and influence, allowing them to act however they wish and incite conflict with others, with little to no negative consequences or punishments being meted out. This is something that diplomacy and international organisations are unable to counter, especially if such countries contribute greatly to these organisations in the first place. A case in point would be how the militaristic advances of China into the disputed regions of the South China Sea have yet to face punitive action. Despite several attempts at diplomacy between the Association of Southeast Asian Nations (ASEAN) and China, the widespread Chinese influence in Asia and the heavy reliance of some ASEAN countries on China for trade and economic progress have led to a stalemate between the countries. China is resistant to any attempts at peaceful negotiations and seems to only be focused on pursuing their own interests in the region, at the expense of smaller ASEAN countries, leaving their competitors helpless to such obvious threats and undiplomatic methods of conflict resolution for fear of greater backlash from China. China's flagrant dismissal of UNCLOS and its rulings lends credence

to the claim that diplomacy is ineffective when it is unable to keep powerful countries in check. Furthermore, the large role China plays in such international organisations keeps their hands tied, preventing them from contesting China's provocative claims and actions. Such an example underlines the ineffectiveness of diplomacy in dealing with conflicts incited by strong countries in the world today, who can simply choose to ignore the attempts at peaceful conflict resolution, especially since international organisations and their diplomatic platforms are hesitant to hold such countries accountable for their actions and do not have sufficient authority to challenge these countries and their method of governance. Thus, peaceful attempts at negotiation between large and small countries are likely to be skewed in favour of the larger and more powerful countries, preventing effective conflict resolution in today's world.

Nevertheless, while it is clear that diplomacy may not be the most effective in dealing with conflicts today, we should still seek to pursue other non-violent means of negotiation and conflict resolution. As Georges Clemenceau highlighted, we should aim to eliminate conflicts in a peaceful manner, and to minimise wars and conflicts. It is only through global cooperation and international agreements that we can slowly take steps towards achieving the utopian ideal of world peace and prosperity, and maybe then, when all countries are on the same page and willing to make compromises and collaborate with other countries, that diplomacy will become more effective in resolving conflicts.

Comments

It was a delight to read this essay! Examples used are wide-ranging and fully relevant, and your arguments reflect depth and clarity of thought. The discussion is fully engaging and shows personal insight.

32

2023 | Y6 | GP TP | Paper 1 | Question 3 **Zhang Chenxi | 23S06Q**

To what extent is diplomacy effective in dealing with conflicts today?

Gone are the days of world wars, which wrecked the lives of billions, displaced people from homes and destroyed countries. It took the international community decades to recover from the damage, and vow to another moral, unshakeable resolve – that such a large-scale calamity was never to repeat itself. Indeed, with the rise of international organisations and peace talks, it might seem as though diplomacy was the new popular solution to the global quandaries of the present. Arguably, sitting down and seeking a compromise where both parties could obtain a win-win situation does seem like a more favourable option. However, I claim that in today's fragmented and fractious world, diplomacy often fails to hit its mark on the resolution of conflicts, as the conflicts are often a result of entrenched socio-cultural tensions where interests of different parties inherently clash violently. Furthermore, the rise of belligerent superpowers and rogue parties further exacerbate the failure of diplomacy, making it an idealistic goal through and through.

Prima facie, diplomacy may seem to be effective in dealing with conflicts as it is a bastion of peaceful negotiations and resolutions, where both parties are able to sort out their differences on the issue and seek an agreeable compromise. Indeed, the prospect of a win-win situation will very much be ideal for both parties if they are both acquiescent to the outcome. This can be further facilitated by international organisations like the International Court of Justice which helps to stipulate a ruling on the conflict, eventually providing avenues for bilateral and multilateral diplomacy where the issue can be peacefully tucked away. With the rising norms of international cooperation and the preference of peaceful antidotes over violent means, countries are more amenable to diplomatic processes. For instance, the Iran Nuclear Deal in 2015 had been a great feat of multilateral diplomacy between the Western nations and Iran, as the latter agreed to halt its nuclear programmes in favour of the Western nations lifting its crushing sanctions on the languishing Iranian economy. Indeed, the Iranian economy improved greatly after the sanctions were lifted, and Iran went from being a rogue nation to being integrated back into the global economy. These mutual benefits that diplomacy can bring may even entice uncooperative nations like Iran to toe the line and halt the conflict. After all, nations also have a domestic responsibility to uphold the wellbeing of the citizens, and protracting the conflict may be an unnecessary waste of resources – often unideal. Conflicts are often borne out of necessity and as a last resort, so the promise of diplomacy to bring about a mutual agreement and cooperation is an ideal solution to the problem.

However, this argument is idealistic, failing to account for the fact that many long-standing and complex conflicts have tensions that run so deep from centuries of social and cultural differences that diplomacy can only be a futile attempt. Yes, the merits of diplomacy over its more hostile cousin of violence and retaliation must be acknowledged, but it has not borne much fruit given today's polarised and divided world. As strife is a natural part of the human condition, conflicts over national boundaries, civil wars over ethnic differences or even wars waged by power-hungry authoritarians have only been halted when one party has surrendered – and often not through the means of diplomacy. An example was the civil war between the Sri Lankan government and insurgency group Tamil Tigers, which was widely regarded as one of the longest conflicts in the South Asian region. Despite pledging to a temporary ceasefire with the mediation of Norway – another nation which stood fervently by international ideals of cooperation – the fighting broke out again and eventually ended when the Tamil Tigers lost. Furthermore, conflicts today have compounded in terms of scale, especially when other countries and stakeholders can come into play through the interconnected web of international relations through military aid. The sad truth is that many Middle Eastern wars ended up being a proxy war between Saudi Arabia and Iran attempting to establish hegemony in the region, further elevating the conflict into a regional battle. Such is the nature of conflicts today – complex, intricate, nuanced interplay between a multitude of actors, such that diplomacy has become a distant option to achieve peace. Even more so, the argument for not protracting the conflict due to a lack of resources does not hold, with the immediacy of aid from other countries due to the globalised world today. The Russia-backed despotic Saddam Hussein administration in Iraq ravaged its own nation with chemical weapons, bombed its own hospitals with Russian weapons, and put up fierce resistance against the opposition forces. Hence, diplomacy is often ineffective in resolving the conflicts of today as the nuances underlying the tensions are simply too complex to be addressed – much less resolved – by mere peace talks and treaties. Even if the countries directly involved in the conflict wish to resolve it, the other actors indirectly involved may still attempt to prolong it via inflammatory means.

Furthermore, with the rise of belligerent superpowers like Russia and China that have uncontestable economic and military prowess, most nations do not dare to go up against these countries through multilateral and bilateral diplomacy. Bilateral diplomacy with these countries is often impossible as the superpowers can simply resort to coercion or threats to swing the tide in their favour due to the sheer power imbalance. Hence, their acts of violence often go unpoliced, as their uncontrolled hostility cannot be contained by diplomacy alone. In the case of China, it wished to establish dominance in its backyard – the South China Sea. It laid its claim on the territories that ASEAN nations also claimed to possess, most notably contesting for the Spratly Islands with the Philippines. Due to the Philippines' economic inferiority to such a superpower, it was impossible for the small Southeast Asian nation to be able to assert its ground against China in bilateral diplomacy.

Even in its attempt to coordinate the ASEAN nations against the blatantly malicious acts of China, the Philippines was unable to pass a resolution due to a lack of consensus, largely in part due to the opposition of Cambodia – a nation with strong economic ties with China. Despite the ICJ's ruling on the issue, China disregarded the verdict, continuing to conduct military exercises near the Spratly Islands as an obvious act of provocation. Since the ASEAN nations also have strong trade ties with China, there was little impetus to further antagonise the nation; they chose to let the South China Sea dispute go unresolved, offering only the barest of reprimands. Hence, these belligerent superpowers who deliberately choose to start conflicts due to self-aggrandisement and an assertion of military might are often deliberately dismissive of diplomatic attempts simply because they know that there are few consequences that they will face. Even in Russia's 2014 Annexation of Crimea, countries were initially hesitant to impose sanctions as they knew that there would have been negative economic spillover effects on their own nations. Hence, diplomacy is not effective in curbing the violent tendencies of such nations that have too much military and economic power, and who are not incentivised to seek peaceful alternatives but rather force events to go their way.

Lastly, rogue parties with inherently violent ideologies or are isolated from the rest of the international community are generally not agreeable to any forms of cooperation. Yet, the 21st century has seen an increasing prevalence of these stakeholders. Most notably, the tragic rise of terrorist organisations – which operate by means of terror through massacring civilians, bombing, and causing chaos – has posed a modern threat to diplomacy. Due to the asymmetrical nature of such conflict, terrorism is an insidious force that is not restricted to just operating in one country. Fundamentally, the notion of diplomacy does not apply to terrorist organisations as they are not compliant with international laws, nor do they have the same responsibilities as sovereign states. In fact, trying to engage terrorists in peace talks has not been very effective, as their radical ideologies are incompatible with the norms of peace and cooperation that diplomacy advocates for. It may even cause a dent in the terrifying image of these organisations, compromising their appeal to many radicalised individuals or their threats to target nations. This is precisely why, throughout history, terrorist organisations have been counteracted mainly by staunch military actions. Furthermore, isolationist and withdrawn nations like North Korea, which have already been cut off from the world, will only hold on to the "us versus them" mentality even tighter. It cites its nuclear weapons as the only assets ensuring its survival, and something which it has built its national solidarity around. Peace talks between the US and Pyongyang have often been to little effect, as the Kim administration pushes on with the development of nuclear weapons, not surrendering to the demands of the international community and Western states. Such rogue nations will only withdraw into themselves further, resisting all avenues of diplomacy to uphold their previously established narratives. Clearly, diplomacy is not effective in dealing with conflicts where rogue and radical parties are involved, as the means which they operate

by are fundamentally in conflict with the tenets of diplomacy, making it a fruitless venture in most cases.

While the ideals behind diplomacy always seem to be more beneficial than coercion and violence, it is often unattainable or futile in dealing with conflicts of today's reality. Unfortunately, it appears that diplomacy, where humans can learn to coexist peacefully and sort out their differences with judicious negotiations, is still a faraway ideal. After all, it is difficult to say what steps the world can take to make countries more supportive of diplomacy, other than just championing international cooperation with empty promises.

Comments

Well written. Each point was relevant with clear explanations and apt examples. Perhaps the impact of diplomacy in mitigating conflict could be better examined. Still, good work!

2023 | Y6 | GP TP | Paper 1 | Question 12 **Yap Yu Ning | 23S03I**

Do you agree that the promises of technology are exaggerated?

With the advent of science and technology, our world and its inhabitants have been able to reap countless benefits. Indeed, the application of scientific knowledge to create and innovate has allowed the development of many technologies that grant us a staggering increase in efficiency, as well as undeniable health benefits. Given the above, experts may tout technology as extremely promising, and zoom in on the advantages that technology may bring. However, I find this too myopic a view. Despite the improvements to society that technology has the potential to give, they are often compromised by those who stand to benefit from the tight control of access to such technologies. These people include corporate firms, the wealthy, and the government. Often, they may misuse their position of power to limit the benefits of technology for their own gain. In this regard, I believe that the promises of technology are exaggerated.

Detractors of my stand may argue that technology plays a key role in providing health benefits to millions worldwide, especially in times of crisis. This confers significance to the stand that, if anything, technology has been able to live up to its promises. Take for example, the recent Covid-19 pandemic. When the Covid-19 virus was first discovered, it posed a threat to the lives of many as a virus that could spread easily and quickly. Those who were especially vulnerable were those with pre-existing medical conditions and the elderly. Technology, however, came to the fore. In response to the time-sensitivity of the pandemic, the Covid-19 vaccine had miraculously been rolled out and distributed globally in less than a year, undoubtedly saving millions of lives. This feat was made even more significant as vaccines typically take 10 years to develop, as reported by BioSpace. Apart from the vaccine itself being a form of technology that directly saved countless people, other technologies played a more 'behind-the-scenes' role in this impressive feat. This includes the Internet, which enabled top researchers around the globe to work together to create the vaccines, or the airplanes and cargo ships, which managed to safely deliver the vaccines from medical facilities around the world to where they are needed. With this in mind, it may seem dismissive to disregard the potential of technology. Had we been living in a world that was yet to be industrialised, it may have been far harder to curb the spread of the virus, and many lives would have been compromised. Technology, then, seems to have proven itself indispensable, fulfilling its great promise to save lives and improve health.

Yet, the promises of technology may be limited as the benefits it brings are not accessed by everyone, and the poor are at a disadvantage. When technology is heralded to be able

to bring health benefits to all corners of the world, it is expected that everyone – the young and the old, the healthy and the sick, and most importantly, the rich and the poor – have access to it. However, I find that this is not the case. In a world plagued with human avarice, it is overly idealistic to imagine that corporate firms would share the benefits of technology with everyone equally. Giants in the medicinal and pharmaceutical industry, such as Moderna and Pfizer, have announced an increase in prices of the Covid-10 vaccine from 20 USD per dose to 130 USD per dose, as reported by Yahoo Finance. When these companies, which have the control over the prices of the vaccine and thus who receives the drugs, are chasing their individual interests to make profit, the poor inevitably get the short end of the stick. With their limited income, they are unable to afford such ridiculous prices, creating an issue of accessibility. This issue has been long-standing in human history, and is amplified in developing countries. For example, between 1997 and 2006, 12 million Africans died from AIDS as the price of the HIV vaccine was out of their reach, being set at 10 000 USD per person every year. In a developing country rife with many pre-existing problems such as a skyrocketing cost of living and lack of food security, inaccessibility to basic healthcare adds another issue to the mix. In this regard, I argue that although the promises of technology are indeed significant, when such technologies are left in the hands of greedy corporate firms, it is doubtful that the promises of technology are as great as it seems.

On a similar note, the development of modern technology may further perpetuate the divide between the rich and the poor, highlighting a large difference in inequality. The promises of technology are hence indeed exaggerated when it exacerbates existing issues in our social fabric instead of resolving them. An example includes the discovery of CRISPR gene-editing technology. In short, this ground-breaking technology creates the potential of changing the genes of babies, enabling doctors to remove problematic health conditions from babies before they are born, relieving them of the burden they may otherwise be born with. However, the wealthy may abuse this technology to their own gain. They may 'customise' their child to give them desirable characteristics such as superior intelligence and physical capabilities, giving rise to the concept of 'designer babies'. This technology will undoubtedly be expensive to use, and only the affluent would be able to afford it. As such, this may culminate in a large percentage of the high socio-economic class having ideal features which remain just a pipe dream for those in the lower income bracket. As the wealthy may have desirable inherent characteristics on top of an abundance of money, the difference between the poor and the rich are only reinforced. The gap between them is increased rather than reduced. With this in mind, I argue that the promises of technology are exaggerated, as they intensify social issues rather than helping to reduce them.

Lastly, I also find that some governments may be contributing to exaggerating the promises of technology, as they are chasing their own economic growth. This may be

exemplified by the case of the Siamese twins many years ago. The twins, Ladan and Laleh, were conjoined, and were seeking an operation to separate them so they may lead their individual lives. In the chase of spearheading the growth of the medical tourism industry, the Singaporean government jumped at the chance to offer this operation. In their plan, the government had promised technology that would be able to grant them their wish, allowing Singapore to be the first to successfully cross uncharted territories, bringing fame and credibility to Singapore's name. However, this was not the case, as the effectiveness of the operation was greatly exaggerated, and the twins passed away during the operation. Critics argued that the Singaporean government had been over-eager and under-cautious in proceeding with the operation, resulting in the cost of the lives of two otherwise healthy individuals. This sheds some light on the situation – the truth is – technology is not as great as it is hailed to be, and we must be careful when considering the benefits of technology, as not all sources, including the government, are reliable. In this case, the government had misused its position of authority to claim that their technology had immense potential, but was proved wrong in the end with the twin's untimely deaths Hence, the promises of technology may be greatly exaggerated.

To conclude, the promises of technology are indeed great. However, in the society we live in, where many stakeholders chase their individual goals, the potential of technology inexorably becomes greatly exaggerated. We must remember to tread carefully, should we wish to access its full potential.

Comments

Your response shows a high degree of relevance and covers a wide scope, addressing the question reasonably well. There is also good range in both vocabulary and sentence structure. Still, content-wise, the penultimate paragraph was shaky, not fully addressing "exaggerated" nature of scientific "promises" – including the example of the Siamese twin makes some claims that are largely speculative of the Singapore government's intentions.

2023 | Y6 | KI TP | Paper 1 | Question 2 **Lau Ian Kai, Ethan | 23A01A**

'Man does not always act rationally.' Critically assess the implications of this view for the nature and construction of knowledge in Economics.

The "Rational Man" assumption is one that appears right on the first page of our economics notes and is an assumption that undergirds a substantial majority of current economic theories. It states that man will always act in a rational manner to maximise his own personal gain. Yet, it is increasingly clear that man does not always act in a rational manner and might actually act against his own interests. While it might initially seem that this necessarily invalidates a significant amount of economics knowledge, I argue that the nature and construction of economics knowledge is not that affected by the claim that man does not always act rationally. In fact, recent branches of Economics have arisen that takes this into consideration, providing us with useful knowledge in Economics.

At first, it would seem as if the fact that man does not always act rationally makes economics knowledge far less credible and certain, since significant degree of economics knowledge rests on the fact that man is always rational. For instance, our understanding of how demand and supply affect equilibrium prices and quantities of goods in an economy is premised on the assumption that man is rational — when prices decrease, consumers would want to consume more units of the good (since it is now cheaper) in order to maximise their own individual welfare. When our current economic theories (and economic knowledge) are premised on the fundamental assumption that man is rational, the fact that the base assumption made does not hold water would also render knowledge contingent on it possibly false. This affects the very way we view economics knowledge, since it either is false when applied to the real world or lack pragmatic value when viewed as an ideal circumstance of the real world. It hence would seem that the undermining of the rational man assumption undercuts economics knowledge significantly.

However, I argue that, in reality, the nature and construction of knowledge in Economics is far from being affected by the claim stated in the question for several reasons. First, it is important to consider the degree to which man does not act rationally; while it might be true that man does not always act rationally, this does not matter significantly if only a small group of individuals are irrational. After all, Economics is rarely concerned about the thought calculi of singular people, instead being far more preoccupied with larger collections such as markets and economies. If it is the case that, at any point of time, only a small group of individuals will act irrationally (and this is likely the case since most people are self-serving and want the best for themselves), then the knowledge constructed on the belief that there are no irrational people can still hold, since it can be verified as true in the real world (for example, through experimentation). In such a case, Economics as a field of knowledge is unlikely to be compromised.

In fact, I argue that it is not meaningful to consider irrational actors. This is because, by definition, irrational actors do not do what one would expect them to do. As a result, it is difficult (if not impossible) to actively predict their behaviour at any one time. If the study of Economics is to (rationally) deal with these unpredictable, irrational acts, such a task is not only impossible to perform, but it also obfuscates the true value of economics knowledge, since it leads to impractical and uncertain knowledge that is premised on whether or not people are irrational, and the extent of their irrationality. For example, where firms previously had an idea of what price to set prices at in order to maximise profits via considering marginal costs and revenue, taking into account the fact that individual buyers all have the probability to be irrational (and to different extents) only turns the simple act of price-setting into an impossible one, where there are numerous unknown variables that could lead to drastically different results if one value is tweaked even slightly. This harms the construction of knowledge in Economics.

Perhaps it is important to note at this point that economics knowledge based on the rational man assumption can coexist with a reality where man does not act rationally. This is because economics knowledge (and the predictions that come from such knowledge) do not have to be absolutely certain in that all predictions made will definitely occur in the real-world. After all, its object of study is not a passive, inanimate thing (like atoms, or light), but thinking and adapting humans that are never constant. Ostensibly, predictions in the social sciences will never be just as certain as that of the natural sciences, and hence the degree of certainty of knowledge required in such fields is less. In the case of the question here, this implies that Economics, being premised on the assumption that man is rational, is not actually affected by the fact that man is sometimes irrational; Economics can still provide us with useful and sufficiently justified knowledge.

Finally, I would like to consider recent fields of Economics that have begun to take into consideration the possibility that man acts irrationally. For instance, Behavioural Economics seeks to identify and account for the situations where individual actors choose to act irrationally. In Game Theory, economists actively deal with interactions where one party might not choose to act rationally, and attempt to derive a best-response strategy in such a situation. These examples show us the reality of Economics – that even as some of its most classical axioms/laws remain upheld because they are generally applicable to our world, constituting knowledge, economists are trying to account for a world where these underlying assumptions are absent, therefore providing us with knowledge that more accurately models how the world operates. Nonetheless, this does not invalidate Classical Economics, merely providing an alternative perspective to analyse interactions between economic agents.

In conclusion, when it comes to the field of Economics, the bedrock of its knowledge that man always acts rationally might appear to hinder the economist's conquest for useful, certain knowledge, but the inverse is actually true. Current simplifying assumptions that we apply to Economics do not lower its certainty significantly, while making economics

knowledge easier to apply and more useful to apply. Considering that the irrationality of man is only something which unnecessarily complicates the way in which we derive economics knowledge, and at best only complements current economics knowledge built on the rational man assumption.

Comments

Very good response that explores the truth value of the Rational Man assumption as well as the implications of its truth and falsity on the nature and construction of knowledge in Economics. Relevant points were made all-round, with good use of examples to support ideas. The discussion can afford greater depth though, as well as a broadening of the exploration of the kind of justification that would make a field like this still legitimate, despite an assumption that does not always hold true. Having said that, this was a very good piece with credible points and good insight!

KS Bull 2023 | Issue 1

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