

The Scholar

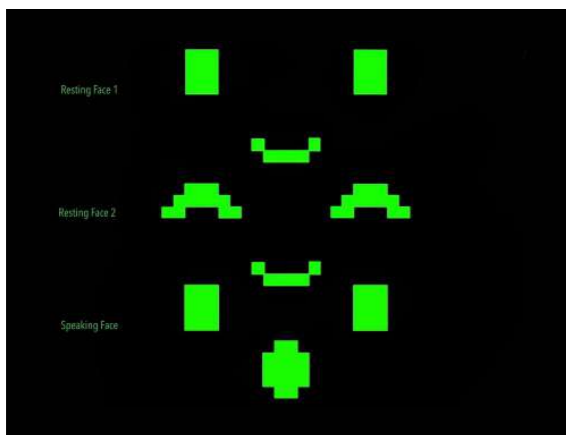
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***Social
Robots***
*boring machines
or best mates*

+
Academic
essays on
industrial
model villages,
and gender
and peace.

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Brilliant Club Ambassador, Sociology Student at the University of Bristol



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Introduction from The Brilliant Club

We are delighted to be celebrating the incredible work of pupils who have taken part in The Scholars Programme from schools across the UK.

In this edition, you will find 27 outstanding assignments with course titles ranging from 'Social robots – boring machines or best mates?' to 'How Did the 'Swinish Multitude' Learn to Read? Books & Education in the Eighteenth Century'. This edition of The Scholar features some of the most outstanding articles ever produced by pupils who have taken part in The Scholars Programme.

The university-style learning that pupils are exposed to on our programmes is designed to provide pupils with the freedom to develop their own ideas and approaches. Not only will this help pupils who go on to study at university, but we believe these are crucial skills to develop in the adult world. The development of independent study skills and support with critical thinking provides young people with a platform to share their ideas. We hope it will empower these young people to engage in debates that shape our world, whether they concern democracy or globalisation.

The Brilliant Club is passionate about exposing pupils on our programmes to these important aspects of university. We hope that these projects encourage pupils to dig a little deeper into subjects that matter to them and to seek opportunities to make unique contributions to their fields. In doing so, pupils can change their own lives by enriching them with opportunities for learning and being inspired by the topics they cover. This year, we had a hugely competitive number of essays nominated, so we would like to say a big congratulations to the pupils published in this edition and to the pupils who completed The Scholars Programme. All the pupils who graduate from the programmes should be very proud of themselves! On Page 4, we are delighted to have a guest article written by one of our Brilliant Club Ambassadors, Stallan Da Silva. Stallan took part in The Scholars Programme when he was in Year 12 at St Wilfrid's Catholic Comprehensive School in Crawley. He is currently studying Sociology at the University of Bristol and has just entered his second year. In his guest article, Stallan talks about overcoming setbacks in his personal life and his educational journey, and the importance of embracing life's challenges. A huge thank you to Stallan for sharing his story for this year's edition of The Scholar.



The map above shows the locations of all pupils featured.

In pursuit of our mission, to support pupils from less advantaged backgrounds to have fair access to university and to succeed once they get there, we run three core programmes: The Scholars Programme, Join the Dots and Parent Power. You can find out more about our programmes and how we support young people on our website: thebrilliantclub.org/about/

If you are a teacher who would like to find out how your school can get involved with either one of our programmes, we would love to hear from you! Please get in touch via our website: thebrilliantclub.org/schools/

We are building a network of Brilliant Club Scholars to create a community of like-minded alumni. If you have completed one of our programmes, and would like to join our alumni community, you can sign up via our website: thebrilliantclub.org/alumni

Guest Article

Overcoming Setbacks: Growing from Failure

Stallan Da Silva

Brilliant Club Ambassador, Sociology Student at the University of Bristol

When I was in secondary school, I broke one of the brackets on my braces. After repairing it, my orthodontist told me I would have my braces on for an extra six months. For fifteen-year-old me this was a disaster of the greatest magnitude – six more months of braces! Looking back on it now, the situation was a minor inconvenience at best; but at the time it had disrupted the plans I had for my appearance – a massive setback. In all our lives setbacks are inevitable. Whether it's professional disappointments, academic underperformance or personal issues, we all have moments when life feels challenging. I have found that while these challenges can be frustrating in the moment, they also hold the potential to teach us lessons and make us stronger.

Many of us have heard the famous stories of people who overcame failure to achieve greatness: Einstein didn't begin reading until he was seven; Walt Disney was told he 'lacked imagination'; and twenty-seven different publishers rejected Dr Seuss after he wrote his first book. From a personal standpoint, I have experienced setbacks far worse than my braces debacle five years ago. As an A-level student, the pandemic was hard for me – tackling a notoriously stressful part of life while experiencing unprecedented social circumstances made for a difficult period. In such moments, I was thankful to have a strong support system around me. My parents, siblings, friends and teachers provided a strong base to rely on, giving me comfort, perspective and advice. Whether it was a reassuring chat with a teacher after a tough week, a game night with my siblings to lift my spirits, or words of encouragement from friends who were going through the same struggles, these connections became a lifeline. From this time, I learned to see challenges as an opportunity to pick up new skills. I began exploring ways to deal with stress and even developed better time-management habits as I adapted to studying independently. Looking back, these small but significant steps helped me build resilience and confidence, proving that even in difficult times, growth is possible.

I have found that after an issue arises, focusing solely on what went wrong can be tempting. Feeling sad or angry is natural when things don't go your way. However, it is important to avoid being too critical of yourself. By accepting the situation and how it makes you feel, you give yourself the space to process it and start looking for solutions. Typically, a solution can come about by breaking the problem down into manageable pieces. From here, you can change your perspective from focusing on failure to supplementing growth and development.

Finally, remember that challenges are what make life interesting. If you were playing a video game and knew you couldn't lose, the game would get boring quite quickly. In the same way, an adventure film without any obstacles would make for a dull watch – it is the journey that makes such stories interesting. By utilising this mindset, I have learned to use setbacks to help me gain insights into what I can improve about myself.

In this journal, you will find 27 excellent assignments by some of the brightest students in the UK. They are a testament to the crucial work The Brilliant Club does – widening access to university for those from underrepresented groups. This leads to a fairer, more equal education system. I'm forever grateful for the opportunity to be part of their Scholars Programme – it helped build my confidence and improve my understanding of life as a university student. I can proudly say I am a graduate of the programme and I'm so glad to see the amazing work that is still coming from students who are part of The Brilliant Club. No doubt the students featured here experienced setbacks when completing their assignments. But the quality of their work tells me that they were able to overcome them, and I imagine they learned a couple of things about themselves on the way.

Stallan Da Silva
Brilliant Club Ambassador, Sociology Student
at the University of Bristol



Arts and Humanities

Write a literary analysis of one of the extracts, through the lens of two literary theories, evaluating its usefulness for studying literature

Key Stage 3

Pupil Name: Charlie Oates
School Name: Co-operative Academy, Stoke-on-Trent
Supervised by: A.L. Blaney
Tutor University: Keele University
Course Title: Through the Looking Glass: An Introduction to Literary Theory

As a reader, we can use different literary theories to interpret the meaning of the text. Literary theory explores a piece of literature from different perspectives, almost as if each theory is a different pair of lenses. This means that as we examine our chosen text, we can have different ideas in our minds depending on which literary theory lens we look through.

The extract that I have chosen to explore for this analysis is 'Little Red Riding Hood and the Wolf' by Roald Dahl. Little Red Riding Hood is a well-known fairy tale that has been altered and retold in many different ways over the years. Its origins can be traced back to several pre-17th-century European folk tales. The two best known versions were written by Charles Perrault and the Brothers Grimm [1]. Roald Dahl's retelling of the classic fairy tale 'Little Red Riding Hood' encourages the reader to look at the traditional story in a different, more thought-provoking way. The tale has been modernised into a poem using rhythm, rhyme, and humour to make it more entertaining and appealing to all age groups. My analysis will look deeper into the themes and messages within the poem and how these can be used to interpret literature. I will be looking through the lenses of ecocriticism and feminism, as I believe that they are the two most appropriate theories to summarise the way that Roald Dahl has altered the overall message and how the poem can be interpreted.

The first theory we shall look at will be through an ecocritical lens. Ecocriticism is a literary theory that examines the representation of nature in literature as well as the relationships between humans and the natural world. The storyline and setting of 'Little Red Riding Hood' allow us to look at the links between the way humans, animals, and the environment are portrayed and why it becomes valuable to study. The very basis of the two main characters begins this ecocritical link, as the wolf can symbolise nature and Red Riding Hood can be seen to represent humans.

Roald Dahl's version was first published in *Revoltin' Rhymes* in 1982 [2], and his poem has changed readers' understanding of the traditional tale dramatically. In

Dahl's poem, the position of power between the human and the wolf has been swapped around. The predatory role has been reversed. The ending is delivered with the animal being triumphantly killed by the human known to readers as Little Red Riding Hood: 'and bang bang bang, she shoots him dead' [3]. In Perrault's 1697 version, the quote, 'this wicked wolf fell upon Little Red Riding Hood, and ate her all up' [4], shows how the same human that avoids harm in Dahl's poem is eaten up by the wolf. Roald Dahl may be suggesting that in a more modern society, nature has become weaker as humans take over and become more powerful. The way that the wolf is killed so quickly and easily with a gun shows how destructive people and their modern advancements are to the natural world. Because of the way in which previous versions portrayed the wolf, readers have a pre-existing opinion that the 'big bad wolf' is the horrid character, showing the strain on relationships between humans and animals. In this extract, Little Red Riding Hood kills the wolf without care or hesitation, showing how cruel humans can be towards animals, perhaps raising the question of who the villain of the story really is.

If the reader looks deeper into this ecocriticism theory, it can be seen as a fight for survival between the wolf and the girl. Little Red Riding Hood's murder of the wolf is evidence of the war between humans and nature. She demonstrates that the natural world is a never-ending battle for survival by shooting him dead. Either the wolf gets killed or he eats the girl. Has the human encroached into the wolf's natural habitat, forcing him to fight for safety, or is the wolf showing negative human attributes by lying and being cunning to get what he desires? It could be that the wolf's manipulation and deception mirror the ways in which humans exploit and harm nature for their own gain. The wolf refers to humans as 'a decent meal', suggesting that his power in nature is more dominant. However, this contradicts the view that, throughout history, humans have considered themselves to be at the top of the food chain and therefore more powerful.

The second theory we shall look at will be through the feminist lens. Feminism is a literary theory that explores women's rights, challenges female stereotypes, and explores gender inequalities. Due to the messages in previous versions of Little Red Riding Hood, readers may think that the wolf is the strong male character and the girl is portrayed as gullible and unprepared. However, in Roald Dahl's interpretation, the girl is prepared and intelligent. Knowing that most of his audience has most likely heard the traditional tales, Dahl skips the introductions of the characters and allows the reader to continue to assume the characteristics of the wolf and the girl. His portrayal then comes as a surprise from the usual expectations. In Charles Perrault's version, the girl and her grandma are eaten by the wolf and are saved by the woodcutter, being shown as weak and helpless. In Roald Dahl's version, the girl is not saved by anyone and instead pulls out a gun and shoots the wolf dead. She is no longer cowardly and does not allow the stereotypical norm of the weaker gender to give in; she fights back and shoots the wolf right in the head without

remorse. The line 'The small girl smiles. One eyelid flickers. She whips a pistol from her knickers' [5], shows that she is not scared.

Later in the text, Red Riding Hood says, "Hello, and do please note my lovely furry wolfskin coat"[6], implying she had skinned the wolf and is now displaying her sense of pride in murder. Riding Hood has retrieved her dignity, and the author has shown how a girl can have just as much strength as a man. The wolf has been killed because he did wrong, and so the young girl has been given the authority to punish those in the wrong, traits that a female is not usually given in traditional literature. Women's rights and feminist movements have a strong presence in today's modern society, and so Roald Dahl's retelling can be seen as an attempt to make the tale less outdated and more politically correct. Dahl has empowered the modern woman by writing to show that it's time that Little Red Riding Hood can realise the betrayal of the wolf and can handle it herself.

Roald Dahl is renowned for his unique takes on children's stories, giving them unexpected twists and surprising endings. In this particular poem, he gives a general message that appearances can be deceiving by giving a once helpless, naive little girl more power and intelligence. She is not fooled by the wolf masquerading as her grandmother, like we expect, and instead humorously deals with the previously overpowering character unaided.

In conclusion, the application of ecocriticism and feminism to Roald Dahl's 'Little Red Riding Hood and the Wolf' offers students much more depth and understanding, revealing themes and messages embedded within the poem and allowing us to see things that we might have previously missed. It provides us with a valuable insight into the complexities of writing as well as the social, cultural, and environmental issues that exist in the world today.

Dahl has modernised the messages in his poem to better fit the modern world, and by looking through the ecocritical and feminist lenses, we can understand how and why he decided to alter his narrative to reflect his views of equality in a 1980s society. Literary theory allows us to look much deeper into a piece of writing and not just at its initial, most obvious theme. Each theoretical lens we look through can give a complete new meaning to how we perceive the text; some are more fitting to a specific piece of work, but there is usually the possibility of seeing examples of many contrasting literary theories in a single extract. It has the power to completely alter the way in which a character is perceived. By using theories to study literature, we are able to compare the ways in which a reader can interpret the author's way of writing, the messages within the piece, and how the author has used the structure of their writing to create different viewpoints and meanings. This provides starting points for discussion and alternative ways of thinking. The literary theories can also help adults make better choices for which literature they find suitable to help their children become more insightful readers, even before the child can understand literary theory. The more we know and

learn about literature, the better we can appreciate its accomplishments and its impact on the reader. Using different literary theories takes reading merely for entertainment to a greater level of challenging and broadening the mind.

References

- [1] Wikipedia, Little Red Riding Hood, <http://en.m.wikipedia.org> (May 2024).
- [2] [google.com/search Roald Dahl's Little Red Riding Hood and the Wolf](https://www.google.com/search?q=Roald+Dahl's+Little+Red+Riding+Hood+and+the+Wolf) (May 2024)
- [3] Little Red Riding Hood and the Wolf, Roald Dahl. The Scholars Programme, Through the Looking Glass: An Introduction to Literary Theory, p.48
- [4] Little Red Riding Hood. Charles Perrault, 1697
- [5] Little Red Riding Hood and the Wolf, Roald Dahl. The Scholars Programme, Through the Looking Glass: An Introduction to Literary Theory, p.48
- [6] Little Red Riding Hood and the Wolf, Roald Dahl. The Scholars Programme, Through the Looking Glass: An Introduction to Literary Theory, p.48

Parent comment:

"As well as his first introduction and visit to a university, The Scholars Programme gave my son the needed support to produce a brilliant piece of work at a much higher level than his year group, giving him confidence in his writing that previously lacked" - Danielle Bailey

In what ways do the works of E.M. Forster navigate issues that are relevant to the modern, twenty-first century reader?

Key Stage 4

Pupil Name: Cora Jepson
School Name: Springfield School
Supervised by: J. Attridge
Tutor University: University of Surrey
Course Title: E. M. Forster - Privileged Insider or Sympathetic Outsider?

Forster was writing in the Edwardian period: a liminal time full of vast artistic, social and political changes. The Victorian era of empire, rigid class structure and industrialisation had just passed, and the anticipation of imminent war was amplified by the political state of the world. The global unrest that Forster lived through and experienced and which undoubtedly influenced his writing, is similar to today when the same division and fear of conflict shapes the lives of many contemporary families and people. In this essay I will examine how Forster explores and foregrounds the conflict that arises from an embedded fear of 'the other'; whether this is shown through presentation of foreign cultures, depiction of homosexuals or the creation of "Otherness" itself through alienation resulting from technological advancements.

Philosophers Friedrich Hegel and later Jaques Lacan state that the concept of "the Other" stems from an understanding of the self and, perhaps more importantly, recognition of why the idea of the Other came into being. Peter Benson, however, also comments that "the Other might also be identified with Society itself – with all its rules, assumptions and regulations" (Benson, P. 2018). This suggests that "the Other" is an idea forged out of society's rigid expectations as to how people act and who they are. Thus, people who are not or do not conform to this stereotype are viewed as "the Other". This idea is

central to Forster's work. During the Edwardian period the prospect of imminent global war created fear, suspicion and tension between individuals. As countries geared up to fight, mistrust spread.

There is an inherent fear of "the Other" in Western culture. This fear becomes apparent in the presentation of the Edwardian era in Forster's texts. In *A Passage to India*, for example, Forster explores the cultural differences between traditional British values and those of the Indians. The English characters face this at the denouement of *A Passage to India* when the Indian character Aziz says that he and Fielding will be friends only after declaring "we hate you most". Forster writes "the horses didn't want it-they swerved apart; the earth didn't want it [...] in their hundred voices, 'No, not yet' and the sky said 'No, not there'" (Forster 1924: 306) Despite the fact that this detail comes at the very end of the text it is arguably one of the most significant because it concludes the writing with the symbolic idea that even though Fielding and Aziz are now the closest thing to friends as possible, no matter how like-minded or happy together these characters are, they can never move away from the constraints of their two cultures holding them hostage. This fundamentally impacts how both of those societies view the other, adding to the Western fear of the Eastern "other". When Forster uses personification and writes "the earth didn't want it" it suggests that the friendship between Aziz and Fielding is unnatural because the noun "earth" is something we all live on and so we would assume that the earth would want peace between the English and the Indians, but this is not the case. The cultural differences are too great. Fielding and Aziz are presented as a microcosm of the massive issue between the two groups of people.

Forster also symbolically uses the landscape to show how fear stems from the unknown. For example, in *A passage to India* the landscape of mysterious caves is frequently used to show confusion and miscommunication: "They are dark caves. Even when they open towards the sun, very little light penetrates down the entrance tunnel into the circular chamber." (Forster, 1924 pp. 116) This links the idea of "the Other" because in this novel darkness is associated with the skin colour of the Indians and the uncertainty the English feel, not knowing how to act with and around the Indians. This shows otherness because traditionally along with the dark comes fear of the unknown, amplifying the symbolism of the caves and their reflection of the unknown culture of the Indians to the English. The noun "sun" acts as a metaphor for the English and that not even they can bring light into the caves, which represents the struggles of the Indians at the time. Laurence Scott writes "while many travel to India for enlightenment, it was the country's darkness that interested Forster." (Scott, 2013) and that suggests that Forster was willing to confront the issues that needed to be faced.

Fielding himself reflects "it is possible to keep in with the Indians and the Englishmen but that he who would also keep in with the Englishwomen, must drop the Indians." (Forster, 1924, pp57). This shows that even if Englishmen are initially able to forge relationships with

other cultures, for the sake of respectability they cannot maintain these friendships and still engage in proper English society.

Presentation of foreign "Otherness" can also be seen in *A Room with a View* through the actions of the Italians, especially in chapter 4, and the fight in the piazza. In this section, the "Other" culture of the Italians is vastly different to that of the English. When the Italian man is attacked by his friend, Forster writes "as if he had an important message. He opened his lips to deliver it, and a stream of red came out between them and trickled down his unshaven chin." (Forster, 1908 pp 42). He cannot articulate in a way Lucy recognises and the fact that he cannot speak could symbolise the lack of communication between the two cultures. He is presented as a terrifying, monstrous character with blood spilling from his mouth. As well as this, the adjective 'unshaven' connotes how vastly different he is to the English gentlemen Lucy would be used to. He does not look or sound civilised and Lucy is so stunned she faints falling into the arms of a more proper, respectable English gentleman. Lucy is appalled at the nature of the Italians and the death in the piazza, and this shocking event shines a light on the snobbery and ignorance of the English because death is a natural part of life but cannot be avoided or ignored. The threat to Englishness in this moment is foreshadowed earlier when Lucy - desperate to experience Italian life - flings open her window but "pinch[es] her fingers in unfamiliar fastenings", showing that everything in Italy is "unfamiliar" and potentially dangerous. Lucy's fainting suggests that the culture of the English denies freedom and even some of the more horrible but natural parts of life and instead pretends they don't happen. After the death, the man's body is taken away by "creatures with black hoods, such as appear in dreams." (Forster, 1908, pp44) The adjective "black" and the noun "creature" suggest that the Italians are seen as unhuman and different to Lucy and the English gentility, amplifying the presentation of "the other" in foreign culture.

In the autobiographical novel "Maurice", Forster deals with a different kind of "Otherness" and the fear which not only affects how people view foreign cultures but also how people view homosexuality in their own society. This idea is so prominent because it is an issue that equally affects the modern reader who may still feel marginalised. Maurice is an expression of his repressed homosexuality, (Lane, 2007) first written in 1913/14 but not published until 1971. This concept is so relevant to conflicts experienced by the modern reader because homosexuality "often hinge(s) on perceptions of difference, strangeness" (Bengry, J 2021, pp. 50). Bengry asserts that many homosexual histories have not been recognised or even recorded because of the "difference" and the disgust that people wrongly think of when faced with the idea of homosexuality. Early in the novel, for example, when Maurice returns to school from the holidays Durham confesses that he loves him; "Maurice was scandalized, horrified. He was shocked to the bottom of his suburban soul and exclaimed, 'oh rot!'" (Forster, E.M. 1971. pp48) The adjective triple

"scandalized, horrified" and "shocked" emphasises how astounded and appalled Maurice is at the prospect of Durham loving him. This shock shows how unusual it would have been for anyone to openly declare this, adding to the fear of "the Other" because this would have been seen to be different and strange.

Like in *A Passage to India*, Forster uses the natural landscape to reflect the otherness. Laurence Scott writes "Greenwood provides the book's homosexual lovers their escape from society's punishments" (Laurence, S 2013). This suggests that Greenwood was a place away from society's expectations as to how people should act. Maurice does not conform to these expectations because of his sexuality and so seeks to "escape" them in a place that he can be free, the wood. The idea that the wood is the only place that allows Maurice to exist away from "society's punishments" is important because it symbolically suggests that the natural world is supportive of homosexuality and that it is just other people's views and fears that impose restrictions on Maurice and his lovers. These fears of challenging conformity add to the idea of the homosexual "Other".

This is important to the modern reader because homosexuality should be both

recognised and recorded so that people do not feel that they are "the other" and are not excluded from history. Sadly, Forster was a closeted homosexual for his whole life, facing laws which made homosexuality illegal until 1967 when the sexual offences act was introduced. Many people then and now still are prejudiced against homosexuality which makes it even more important that it is recognised and that his writing navigates issues that the modern reader might encounter.

Forster explores the idea of Otherness not only through foreign otherness and homosexuality but also through the creation of otherness by technological advances. In his science fiction novella, *The Machine Stops* the idea of Otherness being created by technology is fundamental to the text. All the characters in this text are confined to live alone, only relying on the machine to care for them. This alienation inherently creates "Others" because it means people view everyone else as people separate from themselves. This creates a whole society of "Otherness" where everyone sees everyone else as "different". In *The Machine Stops* the character Kuno says about the machine "It has robbed us of the sense of space and the sense of touch, it has blurred every human relation" (Forster 1909,33) The metaphor "robbed" suggests that the machine has restricted and stolen human communication to the point that humans are unable to have relationships or act normally without the machine. It implies that it is a crime towards humanity. This relates to the idea of "the Other" because without human relationships it is hard to have empathy or compassion with each other resulting in miscommunication and anger which leads to people seeing other people as separate from themselves and thus creates "otherness." On one hand, the word "blurred" can suggest that perception of

differences has been reduced, but on the other, it also implies that in this future world people are so isolated that their individual traits become more obvious whenever people do interact and that they no longer have the skills to understand and tolerate each other's differences.

This idea is so important for modern readers to navigate because in the current technological age where people rely on machines so heavily, it is vital that literature can seek to encourage human connections and empathy in society. This means that people would no longer view each other as "different" or with "Otherness" but simply as a person and so resulting in less prejudice and division between each other.

In conclusion, the way Forster navigates complex issues faced by the modern reader is simply by writing about the problems he faced when he was alive. These issues of isolation, fear and prejudice are still felt and impact many people, making them so important. His writing is essential to the twenty-first century because it helps us understand how those issues affect people and therefore encourages empathy. It makes us realise how far we have come and yet how far we have yet to come. The fear of "Otherness" is founded by the lack of connection between different groups of people and that is made abundantly clear in Forster's writing. It leaves us understanding that communication and writing can illuminate many issues if used to its full potential.

References

- Barry, P. *Queer Theory, Beginning Theory. An Introduction to Literary and Cultural Theory*, Manchester University Press, Manchester, 1995
- Bengry, J. *Can and Should We Queer the Past? What is History, Now?* Weidenfeld & Nicolson, London 2022
- Benson, P. *The Concept of the Other From Kant to Lacan. Philosophy Now magazine*, London 2018
- Forster, E.M. *A Passage to India*. Penguin, London [1924] 2005
- Forster, E.M. *Maurice*. Penguin, London [1971] 2005
- Forster, E.M. *The Machine Stops*. Modern classics Penguin, London [1909] 2011
- Lane, C. *The Locked Diary, Forsterian Sexuality, The Cambridge Companion to E M Forster*, Cambridge: Cambridge University Press, 2007
- Scott, L. *Re-reading Maurice by E M Forster*, The Guardian, London, 2013
- Tambling, J. (ed) *E. M. Forster: New Casebooks*, Macmillan, Basingstoke, 1995

Parent comment:

"I am thrilled with the way in which The Scholars Programme inspired my daughter to consolidate her embryonic academic interests. The time she spent with her tutor elicited tangible results and her confidence grew noticeably as a direct result. I was particularly impressed by the way she was coached into using higher level research skills as well as conducting wider reading with integrity and rigour. What a wonderful programme!"
- Claire Dickens

How can sport be seen as a political act?

Key Stage 4

Pupil Name: Hanna Sadowska

School Name: William Edwards School

Supervised by: D. Felix

Tutor University: Goldsmiths, University of London

Course Title: Sport and the British: Is Sport Political?

The dictionary definition of political is 'relating to the government or public affairs of a country'. Highlighting the words 'public affairs', sport can be categorized as political, considering how it exists on an international scale with the public being incredibly engaged in any types of sporting events. On the other hand, it's unwise to view sport as a political act whilst only acknowledging how it falls under the dictionary definition of 'political'. It is important to look beyond that and meticulously explore the reasons why it can be considered political and what makes it political in the first place. The 1948 Olympic Games, held between the 29th of July and the 14th of August in London, can be utilized to explore the deeper foundations of sport and show how it can be viewed as political. The Olympic Games are an international sporting event held every four years, with their prime role being a worldwide symbol of unity and to send a message of diversity [1]. Their purpose is to unite the world in peaceful competition to enforce tolerance, understanding and global harmony. The Olympics involve setting aside political beliefs in front of a diverse crowd to provide entertainment and amity. To what extent is that true? It is popular belief that sport always implements a political aspect, whether this involves a country boycotting an event due to holding different political beliefs, a country being excluded due to their political standings or an event being used as a political message. The 1948 Olympics are key in presenting sport as political, due to the contextual circumstances of those specific games. During that time period, international tensions and instability remained unwavering in the aftermath of the Second World War and the irreparable damages caused by this six year conflict. As a result, the 1940 and 1944 Olympic Games were cancelled and then were reconfirmed in 1948. Additionally, certain nations were banned from attending and some chose not to send a team. Why is this significant? This essay will explore the realities surrounding the 1948 Olympics and deeply analyze how the presence of nationalism and patriotism, a facade of meritocracy and the numerous social inequalities are crucial in viewing sport as political.

How does sport correlate with national identity? Sport fuels patriotism and therefore nationalism as people become extremely passionate in support of their country at a sporting event. However, there is a distinguishable difference between nationalism and its effects, depending on the event and the nations involved. This difference is evident when comparing and analyzing the 1948 London Olympics to the 1936 Berlin Olympics orchestrated by the Nazis. Both events utilize nationalism, but in conflicting ways, despite the events being hosted only 12 years apart. The Olympics in 1948 arguably utilized the events to promote nationalism in a positive light. Restarting the tradition of the Olympics after a tedious 12 year break was the spark which reignited Britain's pride and unity

with other nations. It was used as a tool to decrease post war tensions after a nearly globalized conflict and restore international relations and peace. In this light, Britain used nationalism to renew the nation's pre-war attitudes, to remind its public that the hardships of the war had passed and present a prosperous future. Alternatively, Britain also utilised nationalism in a much more negative way and implemented a political dispute by banning Germany and Japan from competing in the 1948 Olympic Games. This act isolated nations, which fought on the opposing side to Britain in the Second World War, from social events in an attempt to restore the integrity of the Allied powers and unite nations against the largest of the Axis powers (Japan and Germany). This then evidently made the event a political affair, as nations were being excluded from an international event due to their political standings and were clearly still considered an enemy, otherwise they would have been allowed to compete in an event attended by 59 other nations. Furthermore, the Olympics were used as a fierce presentation of nationalistic beliefs and high patriotism to strengthen the Allied nations against the diminished Axis powers [2]. There was a deep worry when Japan announced that they intended to compete, which was at a risk of causing 'serious public resentment' [a]. Considering how no official peace agreement had been signed after the war, officials clearly thought that allowing certain nations to compete would have been immensely detrimental to the image of the Olympics. Evidently, sport does contain a political aspect, as exemplified by the 1948 Olympics, due to the fact that the political beliefs of a nation are able to determine what events they are able to participate in.

To continue, the Nazis utilized the 1936 Berlin Olympics as an indoctrination scheme leading up to the First World War. The event was cleverly orchestrated to reflect the Nazi ideologies and subconsciously brainwash spectators and athletes into blind conformity and acceptance of the Nazi values [4]. This goal became a reality when a stadium with a capacity of 110,000 spectators was built especially for this event. This became the foundation of the Olympics which then allowed other factors to be implemented to emphasize Nazism and enforce nationalism amongst the German citizens. At the event, everyone had to do the Nazi salute and the stadium was coated in a sea of swastikas. This promoted the image of strong, glorious Germany, as the dictatorship camouflaged its racist, militarily driven values by exploiting the games and soft pedalling its antisemitic and discriminatory propaganda. This highlighted the powerful aspects of Germany and bedazzled spectators with an image of a peaceful, tolerant nation to highlight the country's formidability and glory. The games evoked a strong sense of nationalism amongst its citizens through political propaganda, which was controlled by Joseph Goebbels to promote a flawless image of the country. This explicitly presents sport as political as it gave an excuse for strong nationalism, which was created when exemplifying the nation's power. The sole purpose of the event was to be a presentation of the Nazi political message, therefore showing that sport can be seen as a political act.

What is the relationship between meritocracy and sport? Some would consider society to be meritocratic, meaning that people are successful due to their individual efforts and merit. This can be associated

with sport, where many would overlook that material deprivation and inequality affect sporting success and also success in general. Tessa Sanderson, a former British Olympic javelin thrower, experienced many hardships on her journey to winning a gold medal at the 1984 Summer Olympics. Some claim that any person is capable of getting to the top if they train hard enough and get recognised for their talent. However, it is important to consider that there are external and internal factors that affect an athlete's chances in the sporting world. Sanderson exemplifies this as she had to conquer numerous challenges in order to get where she did: the 1984 Summer Olympics. Her journey definitely cannot be described as straightforward, taking into consideration how she experienced heavy racism from the sporting community and the public themselves, which made her goals that much harder to achieve and placed her at a severe disadvantage. Sanderson felt as though she had a 'lack of support from British athletics' governing body' [5]. Overcoming such hate and discrimination was a great obstacle and the fact that she was treated unequally only because of her race was angering and deeply unfair. If sport is not somewhat political, why are hateful political attitudes involved in determining an athlete's success, despite their fantastic talent? The political aspect of sport was evidently very prominent in determining Sanderson's career and arguably made her work much harder to gain her place in the Olympics than many other athletes did. Athletes of colour tend to face many disparities and therefore lack the opportunities presented to other athletes. If society was truly meritocratic, things such as this would never be playing a part in the sporting world. Furthermore, Sanderson also had to persevere through tough financial periods, when she lacked sponsorship and funding money. On top of this, she was forced to balance training and competitions with full time work, in order to provide for herself and her family whilst also working towards her goals. Tessa Sanderson is only one named example of many people in the sporting world, who faced this many challenges due to things that were completely out of their control, in a society that some would argue is meritocratic. Acknowledging these facts, it is difficult to deny that sport can be seen as a political act. If it truly did not contain any ounce of politics, athletes would not be restricted and held back due to things entirely out of their control, despite their sporting abilities and natural talents.

Sport is used as a political expression under a plethora of circumstances in order to promote a message. This has occurred numerous times over the course of history, stretching from countries boycotting an event, to protests being held in order to promote a political message or a set of values. This was exemplified in Britain at the 1948 Olympics, or rather at the absence of the Soviet Union at the games. Despite the fact that the Soviet Union had been invited to the Olympic Games, they did not send a team to participate, but still sent spectators in preparation for the 1952 games. The reason why, is because after the Bolshevik Revolution, the Soviets viewed modern sports as elitist and a proponent of Western capitalism [6]. This explicitly presents sport as political, as it has been viewed as a political expression and proponent. Furthermore, sport had also been utilized for political purposes in 1980, where 65 nations boycotted the Summer Olympic games held in Russia. This was orchestrated by American president Jimmy Carter, who encouraged

over 60 other nations to join, in protest against Russia's invasion of Afghanistan in December 1979 [7]. Visibly, this boycott was extremely influential and significant in the history of the Olympic games, considering how many nations disagreed with the political choices that Russia had made and undoubtedly stood, hand in hand, for what they believed in. This specific sporting boycott epitomizes sport as political, in the sense of it being a form of political expression, due to the fact that the event was used by a large number of nations to express their disagreement on Russia's political views. Perceptibly, they disagreed with it to a massive extent, that they felt their only course of action was to refuse to participate in an important, international event.

To summarize, sport is a powerful voice in politics and has been used largely as a tool for political expression and strong nationalism over the course of many Olympic events in the last century. It has played a significant role in shaping the world politically, for instance to express deep nationalism and isolate other nations with opposing political beliefs. In addition, it has also been crucial in presenting the inequality experienced globally by athletes, whether this was because of gender, race or financial situations. Lastly, sport has been incredibly key as a political expression, in terms of nations boycotting an event to express a political perspective on a certain matter. Visibly, sport is a crucial aspect in politics and has ongoing political significance, especially when someone or a group wants to advocate for a certain political matter that they feel strongly towards. In society, when people do not feel as though they have a voice, they may turn to sport in order to express their beliefs in a non-violent way, which is inevitably seen by many people nationally or even across the globe. Sport continues to thrive as a great source of entertainment, but also is deeply rooted in politics by aiding many political protests and serving as a loud, influential voice in dire times of social need.

Tutor comment:

"It was a pleasure working with Hanna, a hard-working scholar whose application and aptitude for History really shone through! I enjoyed reading and rereading her essay which presented well researched data in a way that historians and non-historians alike can appreciate. I awarded a 65 - well done!"

Do we live in a simulation and if we did, would it matter?

Key Stage 3

Pupil Name: Hannah Monica Matthes
School Name: Eltham Hill School
Supervised by: Dr S. I. Gounari
Tutor University: Royal Holloway, University of London
Course Title: Are we living in a simulation?

In this essay, I am going to explore whether we live in a simulation or a physical world. I will examine what we ultimately know about simulations and if it is even possible to create and live in one. I will also explore if we are able to distinguish between a simulation and reality and if there is even a difference between the two. Additionally, I will explore the context of philosophical skepticism and show how they link to the simulation hypothesis and how other philosophers have undermined this pursuit as meaningless. I will also provide the answer of the question 'would it truly matter that we live in a simulation?' and attempt to redefine the debate from whether a simulation exists to does it have any value.

The simulation hypothesis is the theory that we might live in a simulation. It comprises of a simulated universe, exactly the same as ours but created by beings in the future with a higher technological knowledge to ours. This hypothesis also reasons that it is probable that there are more simulated people in existence rather than actual people. This is the case because for each simulated reality, there would be a multitude of simulated people inside of it. However, a simulated world even existing is very unlikely because it would require an enormous mass of technological power to create something as immense and intricate as the universe. In addition to that, the simulation theory, developed by Nick Bostrom (1) includes having multiple universes so that would mean the technologically advanced race of futuristic beings would have to find a way to get unlimited energy and resources to facilitate it. The complexity of it all becomes quite bewildering.

Similar to Descartes' dream argument, it is impossible to prove whether we live in a physical reality or a simulated reality since both existences would appear absolutely identical. On the other hand, even if people in the unlikely to exist simulated world found out about their lives being simulated, it ultimately would not matter. This is because even people who are simulated would have built up a life and it wouldn't affect them having spent their time in a simulation for all of their existence. For example, in a town with identical houses, you wouldn't move across the road just because that house went on sale, there would be no reason to. So like Wittgenstein's idea of reality being tied to language they would use language to create meaning. If we talk about an apple and it makes sense to us. Then the apple is real to us regardless of its existing in a simulation or otherwise. It is where and how we find meaning that matters.

The simulation hypothesis also is deemed to be unnecessarily complicated. It suggests that an advanced future civilization made a complete simulation of the

universe. However, since a future civilization possesses such great technological knowledge, what would be their motivation to make a mere facsimile of the universe. With the possibility of future technological power so magnificent, why wouldn't it make something more creative and advanced than a mere replica of the universe, something which they would already have had. With such technological superiority it would be probable that there would be a higher moral and intellectual superiority which would surely preclude the existence of an artificial replica.

The simulation theory is the most recent carnation of philosophical skepticism. It follows in the footsteps of Descartes in Western philosophy and Zhuangzi in the East. Both argue that it is impossible to know what is real and what is knowable. Descartes (2) writes in Meditations on First philosophy: 'I will suppose...that some evil demon of the utmost power and cunning has employed all his energies to deceive me' and Zhuangzi writes in Zhuangzi, The Butterfly as Companion: Meditations on the First Three Chapters of the Chuang Tzu: 'I was conscious only of my happiness as a butterfly, unaware that I was myself. Soon I awaked, and there I was, veritably myself again. Now I do not know whether I was then a man dreaming I was a butterfly, or whether I am now a butterfly, dreaming I am a man.' Neither can distinguish between dream and reality or whether a superhuman force is creating a reality for us.

These theories have also been reimagined in popular culture such as the 'brain in the vat' or in the movie the Matrix. However, the enduring popularity of skepticism have not made their value any stronger. Just because something cannot be disproved doesn't mean that it is true. The claim that we cannot know anything is itself absurd as it makes the claim that we know something i.e. that we know nothing! Nick Bostrom's intricate and complicated theories of a simulated reality is undermined by the commonsense philosophers such as G.E Moore (4) who does not engage and entertain complex and fanciful arguments but merely observes that he has 'two hands' which grounds him in reality. Arthur Schopenhauer (5) regards complex skeptical arguments such as Bostrom's simulated reality to a fortress that is best ignored: it is impenetrable but its garrison does not pose any threat since it never sets foot outside the fortress. We are left with an intellectual conundrum that we can never solve. But does this lack of knowledge and certainty about our reality really matter? Is it such a bad thing if we live in a simulation? The philosopher David Chalmers (6), writes about the simulation hypothesis. His argument states that a simulation and real life is identical to each other because they both allow us to share the same experiences, feel emotions and learn new things. The point is that it does not matter how or where we experience things, it just matters if we experience them. Even our simple use of video games can make us feel immersed and excited just as much as if we were playing football with our friends in the park. Both of these examples have meaning and experience to them, no matter how we experience it. Chalmers also argues that a detailed enough virtual reality such as a simulation, would enable us to use enough freedom to make autonomous

decisions just like in a non-simulated reality. If we live in a simulated reality and we are able to enjoy friends, nature and our families it doesn't matter where this is, only that it matters to us. Chalmers finishes on the point that even if we live in a simulated virtual reality which is artificial, this is not so different from the artificial environments we create for ourselves in cities and industrial areas. These are still meaningful and useful to us. There could even be the bonus of the knowledge that a benevolent being or an advanced intelligence has created a wonderful intricate simulated reality that could be seen as a source of comfort and inspire awe.

To conclude all my points, the idea of living in a simulated reality is a wide ranging and embracing argument. It makes us question what can we actually know to be real and what can we actually know. It can be traced back to thousands of years where philosophers in the sceptical tradition would question their consciousness and ask who is making this reality that we live in and who are we. Later, other philosophers questioned this and found it a meaningless intellectual game as it could not be disproved but didn't offer much in return. However, as many of our lives are now being lived digitally in virtual worlds it is obvious that we are finding meaning and values in these virtual places and so if we are living in a simulation, it probably isn't important. As long as we have value and meaning it doesn't matter whether our existence is simulated or physical.

References

- 1) Nick Bostrom Are you living in a computer simulation 2003
- 2) Rene Descartes Meditations on First philosophy 1641 pg 15
- 3) Zhuangzi, The Butterfly as Companion: Meditations on the First Three Chapters of the Chuang Tzu 1992 (via Are we living in the real world Brilliant Club)
- 4) G E Moore Certainty (1959) in his philosophical papers (via wikipedia)
- 5) Schulte, Günter (2007). "Gehirnfunktion Und Willensfreiheit. Schopenhauers Neurophilosophische Wende" pg 88 (via Wikipedia)
- 6) David Chalmers Reality Plus 2022 (via Are we living in the real world Brilliant Club)

Websites

Nick Bostrom Are you living in a computer simulation 2003 <https://simulation-argument.com/simulation.pdf>
 Philosophical scepticism https://en.wikipedia.org/wiki/Philosophical_skepticism
 Simulation hypothesis https://en.wikipedia.org/wiki/Simulation_hypothesis

Bibliography

Are we living in the real world – The Brilliant Club

Tutor comment:

"Working with Hannah has been a pleasure. Her insight and philosophical talent lit up the classroom discussions and modelled enthusiasm and confidence for their peers. Her creative thought and writing skills surpass expectations from students on her level. Prestigious undergraduate programmes will benefit immensely from Hannah's presence and contribution."

What is Fairness?

Key Stage 2

Pupil Name: Kushal Purkaystha
School Name: Hallsville Primary School
Supervised by: S. A. Cruz Dávila
Tutor University: King's College London
Course Title: What is Fairness?

The big question we will be looking at in this essay is, 'what is fairness?'. This is a very important question to understand the meaning of, because of how many times people ignore it and end up being unfair. This answer will help people across the world understand the problems of sexism, ageism, of minimum wages everywhere and the big problem, that I will be focusing on, Child Labour. To help answer the main question of fairness, I will take the subject of child labour and first look at the reasons why child labour is unfair and should be banned, some other examples of unfair and fair situations then, to end I will give my perception of fairness. I say 'my perception of fairness', because everybody will have a different way of thinking about fairness due to the fact that it is represented in different ways. There are also different types of fairnesses, sometimes even unfairness can help! Confused? Let me explain. Unfairness can help, when one person is more in need than someone else, the leader can choose to be 'unfair' and help that person and pay more attention to them. Still, I don't believe that this is the meaning of fairness, so I shall now explain.

As mentioned above, my main case study will be on child labour. Child labour is the exploitation of children through any form of work that deprives them of their childhood, interferes with their ability to attend regular school, or is mentally, physically, socially and morally harmful. Reports show that the most common places that child labour happens is in sub-Saharan Africa and a lot of Asian countries. Estimated percentages tell us that 75% of Bangladesh, 72% of Sri Lanka, 41% of Pakistan, 30% of Nepal, 20% of India and 6% of Bhutan are making children work for them. Did you know that when a toy or piece of clothing says 'made in China or Bangladesh', they are most likely made by kids? An interesting point that I found was about the decline of mental health and happiness of children who are forced into child labour. This is probably one of the most unfair situations, as young children like me, are getting made to do adult work. Child labour happens all over the world and it can damage and hurt a child permanently. An article is provided explaining how the world's biggest cocoa farms are still using child labour. To add onto this point, I would like to state the age that it is legal to start working at, which is 13+, however, companies using child labour, make children work from the age of 5.

I believe that this is an unfair situation, however, many think this can be fair. For example, giving children work puts them in a position where they can provide for their family, making them believe that they have power. I see this as a tragic way of seeing child labour for many reasons like, the minimized pay wage and their human rights being abolished. As I have shown and explained my view of unfairness (which is when people don't have an equal amount of something and someone has more of something another person needs) below are some

examples of a fair and another unfair situation.

'Kingsley', a small town detached from the city, is known to be the fairest, and happiest place on earth, but they only achieved that with two important things. They have a 'happiness-o-metre' and a 'need-o-metre', they both measure people's happiness and 'needy-ness' across Kingsley. Every week, they will check people's happiness, and if they are happy and have all of the resources like food, drink and clothes, the government will leave them be, but, if you do not have enough resources for the week, the government will provide it, and vice versa, they will make you laugh and help you regain that happiness with a friend. As well as this, if someone doesn't have enough resources, but another has too much and won't use it, the government has the right to take it. However, although what I am implying is 'equal happiness and distribution according to need' is fairness, I see a flaw in the system which is that they could collide if the government is unable to pick up when someone is unhappy with what the government has given them to help. This can also lead to arguments because, if they distribute fairly, if one shop sells double the amount of items than another one, although that other shop sold less, they will get paid the same amount of money which could be seen as unfair. Although this may have a few problems, it is an okay representation.

Another situation is women's and men's football. There is an ongoing discussion about the unfairness in women's football when compared with men's football. The male football players all get paid around £2,800,000 for the premier league while women get paid only £30,000 for the premier league. As well as this, female football players only get 2,500 attendees at their matches while male footballers get 50,000 attendees, which is 20x the amount of attendees than the female players get in a match. Women's football gets little to no advertising, while men get a lot more. To prove that female footballers are just as good as males, a French videographer used AI to expose fake football shots stolen by the men to create an advertisement, the stolen shots were actually of female footballers. This is example of unfairness because the skills of women were used to promote men. This shows unfairness as doing the exact same thing, but getting paid less. Of course, out of all of these examples, I believe that the thought experiment explains fairness in one way, but I believe in another. I will explain to you with a kid's story.

This is about a grasshopper and some ants. To sum up the story, a grasshopper is carefree and an ant colony are working hard to survive for winter. Then when winter comes, the grasshopper is in deep danger from cold, so he goes to the ant's house and the ants only help him if he helps them in the summer to collect fruits and food. It is a fair trade so that the ants help the grasshopper for winter and then the grasshopper helps the ants gather food, while learning the lesson of survival. This represents fairness as everybody gets what they need and no one has missed out on anything that is needed for survival, which lists: Food, water, shelter, health and clothes. Our world isn't like this, hence why we need to explain what fairness is.

To conclude, I believe that fairness always ends with the

people involved to get what they need and they all help each other.

References

1. Title: Child Labour-Wikipedia https://en.wikipedia.org/wiki/Child_labour
2. Title: Child Labour in South Asia - The International Labour Organization https://www.ilo.org/newdelhi/areasofwork/child-labour/WCMS_300805/lang-en/index.htm#:~:text=A%20substantial%20share%20of%20employment,6%20per%20cent%20in%20Bhutan
3. Title: The long shadow of child labour on adolescent mental health: a quantile approach - Springer Link - <https://link.springer.com/article/10.1007/s00181-022-02241-5>
4. Title: Measuring child labour on Ivorian cocoa farms certified child-labour-free : the way you ask matters - The Conversation <https://theconversation.com/measuring-child-labour-on-ivorian-cocoa-farms-certified-child-labour-free-the-way-you-ask-matters-168521#:~:text=Yet%2C%20C%3B4te%20d'Ivoire%2C,to%20reach%20an%20estimated%20790%2C000>
5. Title: Finding a job and earning money- the children's society <https://www.childrensociety.org.uk/information/young-people/advice/employment#:~:text=How%20ol d%20do%20you%20have,to%20work%20during%20school%20hours>
6. Title: Global Estimates of Child Labour- Alliance - https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_57554_1.pdf
7. Title: Child Labour - UNICEF - <https://www.unicef.org/protection/child-labour#:~:text=Child%20labour%20can%20result%20in,care%20C%20restricting%20their%20fundamental%20rights>
8. Title: Women's football: equal pay for equal play? - So Legal Author: Hamed Ovaisi - 20/10/22 <https://www.solegal.co.uk/insights/womens-football-equal-pay-equal-play>
9. Title: You've gotta see this: How this viral ad used AI trickery to prove a point about women's football - S.B.S news, Author: Jessica Bahr <https://www.sbs.com.au/news/article/youve-gotta-see-this-how-this-viral-ad-used-ai-trickery-to-prove-point-about-womens-football/xixwnl2x3>

Tutor comment:

"Kushal was an excellent student during our course on 'What is Fairness?'. He has a facility for understanding and using difficult concepts, as well as for coming up with thought experiments of his own to solve practical problems. This was clear in his final assignment, where he envisioned a small town called 'Kingsley' to explain that fairness requires both a distribution according to need and an assurance of equal happiness. This two requirements can of course collide, which Kushal was able to notice and explain, showing his critical thinking skills."

Are we living in a simulation? And if we were, would it matter?

Key Stage 3

Pupil Name: Lana Al-Taie
School Name: Nottingham University Academy of Science and Technology
Supervised by: D. Jones
Tutor University: University of Nottingham
Course Title: Are We Living in a Simulation?

The fascinating conundrum of whether humans exist inside an intricate simulation has captivated the minds of scientists, scholars, philosophers and visionaries throughout history and today. In this essay, I will argue that we do not live in a simulation, and even if we did, it still would not crucially affect our philosophical and practical interpretation of reality. I will also present an argument based on Occam's Razor opposition of the possibility of a simulated existence and acknowledge the notion of the importance of the scenario by adventuring into philosophical principles and traditions that suggests that the ultimate nature of reality transcends the simulation dichotomy.

The simulation hypothesis asserts that our reality could be an artificially produced simulation, possibly created by an even more sophisticated civilisation. This idea

obtained popularity with Nick Bostrom's seminal 2003 paper, which encourages that one of three premises must be correct: (1) It is very unlikely that world can reach the level of technology required to make accurate simulations of the world before going extinct, (2) the people in the world that have the technology to run highly accurate simulations would be uninterested in running these simulations, or (3) almost all people are living in a simulation world instead of an actual world. Consequently, comprehending the simulation hypothesis demands us to understand the nature of what we define reality as.

One convincing argument opposing the simulation hypothesis originates from Occam's Razor, the principle that simpler explanations are generally superior to the other complex ones. The simulation hypothesis requires the speculation of an intricate network of creators or experimenters conducting and or manipulating our life sequence, predetermining our fate and destiny. Enabling us to ponder about the purpose behind the simulation. This intersects with Occam's Razor since our perceived reality is objectively real and doesn't need these extra conjectures which helps us avoid making things more complicated than necessary and also requires us to accept what we already know. According to basic probability, explanations with fewer assumptions are more likely to be true. Therefore, by applying Occam's Razor it seems logical and rational to believe that our reality is not simulated. As philosopher David Chalmers agrees with me by positing the existence simulation makes things far too complicated without offering any greater explanation than the idea that our universe is fabricated (Chalmers 2022).

Furthermore, if whether this reality was a simulation, it still would not turn the true essence of philosophy or how humans engage with reality upside down. As evidenced by philosophical traditions, an ancient Chinese philosopher called Zhuangzi contemplated the distinction between dreams and reality in his "Butterfly Dream" parable, which demonstrates that the perception of reality is subjective, and that the knowledge and the meanings derived from dreams and reality persist to be impactful

and useful. The simulation hypothesis proposes that our reality could be a fabricated construct leading us to ponder if we truly understand the essence of our existence. Similar to Zhuangzi's contemplation on the boundary between dreaming and wakefulness this hypothesis urges us to reflect on whether our perceived reality's authentic or simply a product of a simulation. This tale highlights the challenge of discerning between reality and a meticulously built simulation (Zhuangzi, 2022).

Comparably, in Advaita Vedanta, a branch of Hindu philosophy, the concept of reality is viewed as a representation of a singular, consciousness known as Brahman. Advaita Vedanta's concept of Maya as an illusory representation of reality directly intersects with the simulation hypothesis, prompting a contemplation on the nature of existence and the potential parallels between a simulated reality and the perceived world.

Whether this illusion is likened to a simulation or occurs naturally does not change the understanding that the ultimate truth goes beyond our personal perceptions (Shankara, 1992).

One objection against my standpoint that we are not living in a simulation arises from the theory presented by Bostrom. If advanced societies have the ability to produce simulations, then the vast quantity of simulated realities would significantly surpass simulated ones leading to a high probability that we exist within a simulation. Nick Bostrom's argument questions Occam's Razor by proposing that the sheer volume of simulated realities outweighs the simplicity of assuming our reality is real and there is no guarantee that because the explanation is simpler, it is more accurate. It implies that with the possibility of simulations it is more probable for us to be in one of them than in the original reality. Nevertheless, this objection is based on guesses regarding the capabilities and intentions of undisclosed civilizations. As physicist Sabine Hossenfelder highlights there is no empirical evidence supporting the presence of these advanced societies or their inclination to create simulations because Bostrom's theory is just based on assumptions (Hossenfelder, 2018).

Some critics who object my standpoint, which is that living in a simulation wouldn't affect philosophical traditions and way of living, may argue that it could impact our beliefs, about will, ethics and purpose if our behaviours are predetermined by a world it might lead to feelings of nihilism or fatalism. Nonetheless, according to existentialist thinkers such as Jean Paul Sartre, the significance and worth of life are not present in the universe. They are forged by one's actions and decisions in life. Whether these choices are made in an environment or in the world, the essential duty to find meaning remains constant (Sartre,1943).

Moreover, looking at it scientifically quantum mechanics and ideas about consciousness suggest that the world is more intricate and interconnected than what we know. The concept of the observer effect in quantum physics indicates that reality isn't set in stone and isolated but rather impacted by observation and measurement. This idea resonates with the belief that reality's interactive and ever changing regardless of whether it's akin, to a simulation or not (Wheeler, 1983)

In conclusion, while the simulation hypothesis presents an intriguing philosophical puzzle, it is less plausible than the simpler explanation that our reality is not simulated, based on principles like Occam's Razor.

On top of that, even if we were to discover that we live in a simulation, this knowledge would not fundamentally alter our philosophical or practical engagement with the world. In proportion to various philosophical traditions and modern scientific theories, they insinuate that the true essence of reality, even if it's simulated or not, is influenced by a human's insight, choices and the meanings we grant our experiences. Thus, the simulation hypothesis, while fascinating, does not significantly impact our understanding of existence or our place within it.

References

1. Chalmers, D. J. (2022). (2022). Reality-F: Virtual Worlds and the Problems of Philosophy. W. W. Norton & Company.
2. Hossenfelder, S. (2018). Lost in Math: How Beauty Leads Physics Astray. Basic Books.
3. Sartre, J.-P. (1943). Being and Nothingness. Washington Square Press.
4. Shankara. (1992). Crest-Jewel of Discrimination (Vivekachudamani). Trans. Swami Prabhavananda & Christopher Isherwood. Vedanta Press.
5. Wheeler, J. A. (1983). "Law without Law," in Quantum Theory and Measurement, edited by J. A. Wheeler and W. H. Zurek. Princeton University Press.
6. Zhuangzi. The Complete Works of Zhuangzi. Burton Watson. Columbia University Press.

Tutor comment:

"Lana produced consistently high level of work throughout the course, demonstrating huge maturity and all-round excellence in subject research, argumentation and writing ability, getting well over 70 for her final essay (that would be a high A-level grade potentially). No doubt she will continue to achieve at this high level, and the world is her oyster, academically speaking."

“How does “CONVERSATIONS ABOUT HOME (AT THE DEPORTATION CENTRE)” challenge negative representations of refugees in British media?”

Key Stage 4

Pupil Name: **Matilda Boakes**School Name: **Trafalgar School**Supervised by: **A. Mathers**Tutor University: **University of Southampton**Course Title: **What can refugee poetry teach us about the refugee crisis?**

In “CONVERSATIONS ABOUT HOME (AT THE DEPORTATION CENTRE)”, Warsan Shire

challenges the negative representation of refugees in British media, with her portrayal of an overly personal, human experience. This is conveyed through language and structural choices that humanise refugees to an audience who have been taught by the British media to view them with fear and scepticism.

One way in which the British media negatively misrepresents refugees is through generalisation. For example, in 2013 The Telegraph published an article that included “a generation of innocents”, but then in 2015 (a time when there was a massive increase in the number of displaced asylum seekers in Europe) the attitudes of the media turned against refugees and The Sun published an article titled “Illegals have landed”. Both articles group all refugees under one label, and as the media controls the public’s perception of refugees, this fast changing attitude towards them as a collective creates a sense of confusion amongst the public, which then translates into fear of the unknown group. Generalisation of refugees allows the media to manipulate the public’s perception of them. An example of this is a 2015 Daily Mail article titled “The ‘swarm’ on our streets”, where they published pictures of police arresting refugees, even incriminating those not involved in any anti-social or illegal behaviour. This is known as a “representational crisis”,

where the situation is worsened by the media’s portrayal of it.4 However, Shire contradicts this through her use of language, instead portraying the experience of a refugee on a personal level, whilst also by extension showing the diversity of refugees. In her poem, Shire describes how she was dragged “past the old prison, past the school gates”: through the connotations of the nouns “prison” and “school” as symbols of evil and innocence, she demonstrates that the two can co-exist within any society, instead of generalising all of the citizens of a country under one label.5 Furthermore, “prison” and “school” are familiar to the British citizen; to the reader, the inclusion of this shows a familiar, functional society. Through this, Shire conveys the humanity of refugees and normalises them to the public, encouraging the reader to view them as unique individuals rather than one massive threat.

In the British media, descriptions of and references to refugees are limited - divisive collective pronouns, like “our”, are often used, and during the 2015 refugee crisis, approximately 62% of European articles referred to refugees as nationals of a country. This separates refugees from the public and turns them into an “other”, encouraging apathy towards their struggle. Shire challenges this generalisation of refugees through her use of structure. The poem is written in the first person perspective. The first person pronouns like “I” and “my” reinforce the humanisation of refugees throughout the poem as it presents an intensely personal experience, compared to if collective pronouns had been used. Furthermore, Shire’s use of the first person perspective creates a conversational tone which challenges this by bringing the reader closer to Shire, instead creating an empathetic response as it encourages the reader to consider a more personal perspective and imagine themselves in the refugee’s place. The effect of this is also supported by the use of colloquial language, such as “Well” or “God”, and the long lines which resemble a paragraph more than a stanza, keeping the reader interacting with the text as a conversation rather than a poem; this allows the reader to better connect with Shire’s narrative, and then by extension the refugees. By having the poem directly speak to the reader on one refugee’s experience, Shire can most effectively humanise refugees, whilst deconstructing the confusing narrative of refugees from the media, which turns them into a threat.

Shire challenges the dehumanisation of refugees in the media through her excessive use of bodily language. Where the British media uses fear mongering vocabulary like “tide”, connoting ideas of an active, massive, unknown danger that cannot be controlled, Shire employs an overwhelming amount of language surrounding the human body. For example, she writes how her home becoming hostile to her was “like tongue against loose tooth”, how she was dragged “by the hair”, had been “carrying the old anthem” in her mouth, and was “bloated” with language she couldn’t “afford to forget”. The use of language highlights the pain the refugees suffer physically, but can also be interpreted as being metaphorical for the psychological turmoil that refugees experience. This leads to the reader having a better understanding of the refugee as physical hurt is a universal experience, whereas the psychological impact

of being displaced is harder to relate to, turning the story into a reality for the reader. This directly contradicts the dehumanisation that the British media puts on refugees by communicating the physical, mental and emotional trauma through the vessel of the human body. This therefore encourages a more empathetic response to the amount of refugees as a display of the amount of suffering endured, rather than a display of the threat facing the British public. Where the British media dehumanises and turns the refugees into a “tide” threatening Britain, Shire’s poem turns them into human victims.

The British media exaggerates the toll of the refugee crisis on the host country, and understates the horror of what refugees experience, thus portraying them as a burden or antagonist to the public. In 2016, the Daily Express published an article titled “Migrant crisis: sort it now”. By definition, a crisis is a time of danger or hardship, and so this implies that the refugees are causing this for the public, therefore twisting the narrative so that refugees become the cause of the crisis for the British. Additionally, the use of “migrant” crisis suggests that refugees choose to move across the border, instead of being forced to, undermining the danger which refugees flee from and the trauma they have experienced.15 Comparatively, Shire uses an anecdote whilst directly addressing the reader to encourage them to consider the reality of what refugees have truly experienced. She writes, “God, do you know how difficult it is, to talk about the day your own city dragged you by the hair, past the old prison, past the school gates, past the burning torsos erected on poles like flags?” By directly addressing the reader, Shire’s poem ensures the reader’s attention is solely focused on the question, so that the desired effect of the imagery used is achieved. Shire describing being dragged “by the hair” shows the suffering caused by the violent actions that happen to refugees - women specifically, as hair is a symbol of femininity - as their home becomes hostile towards them. Then, the grotesque sensory imagery of “burning torsos” encourages the reader to imagine the sensory details of a refugee’s experience, emphasising the danger and trauma which would be faced by remaining in their unsafe environments. “Erected on poles like flags” can be interpreted as acknowledging that the danger has completely overrun the country and it has become a place of violence, as “flags” represent a country.19 However, it could also be interpreted as saying that the oppression faced by refugees is their lasting image of that country. The reader could also approach it from an international perspective, as the world’s view of the country, and its people, is one of unsafety. By phrasing this as a rhetorical question, Shire’s poem encourages the reader to consider the reality of what refugees have left behind, and if the burden of refugees on their society is close enough to the danger that those refugees are fleeing to turn them away.

The paratext used in the media is also important. In the same Daily Express article, a picture of “thousands” of British people enjoying a day at the beach is shown, possibly to allude to the large number of refugees on the beaches, who were arriving in Britain through irregular migration. The amplification of the number of refugees going into the UK is a common theme in

the media’s negative representation of refugees. The previously mentioned 2015 Daily Mail article, titled “The ‘swarm’ on our streets”, was overflowing with language like “hundreds”, “stormed”, “intensified”, “astonishing” and “triggered”, that escalated the real scale of the issue. Shire contradicts this theme by discussing instead the scale of the suffering that refugees experience, even once safe. She writes “I recognise the longing, the missing, the memory of ash on their faces”. By describing refugees’ trauma and suffering as being physically visible, Shire emphasises the struggles which refugees experience.

Additionally, “the longing, the missing” suggests a desire to return home, challenging the misuse of “migrant” when referring to refugees. This is often used in British media. Another example is an article stating “Britain must ban migrants”. Shire’s poem challenges the call to ban or introduce legislation against refugees, and further challenges the misrepresentation of refugees as migrants when she writes “I’m bloated with language I can’t afford to forget”. The noun “language” can be seen as being symbolic for a community, or culture, and “can’t afford to forget” implies a fear of the implications of forgetting it. This could therefore be interpreted as suggesting that Shire is reliant on the discomfort of belonging to her original home, despite the trauma it has inflicted on her and how it has “spat” her out, for her to retain an identity. This gives the reader an empathetic incentive to include refugees, as they can understand the discomfort on a physical level. The quote could also be referring to British culture and language, implying that Shire resents the new community and culture she has to learn, but is helpless as she must conform and internalise it, to prevent being shut out. As the poem is set from the perspective of someone in a deportation centre, this would reflect how those waiting for legal permission to stay in the host country are often reduced to their status as asylum seekers, rather than people. Shire wants an identity but is rejected by both her old and new home. However, neither interpretation suggests that Shire wants to stay in Britain, rather has to. By including this, Shire contradicts the misrepresentation of refugees as migrants, which undermines their struggle, and reinforces the psychological, emotional and physical trauma that they endure, encouraging an empathetic response instead of an exclusionary one as the article calls for.

The impact of this negative representation in the media was clear. Alan Carrington, a British citizen, wrote to The Sun in April of 2015: “Immigrants do not have a gun to their heads when they board these boats.” He continued: “They have only one thing in mind. Get to England and then screw the taxpayers for every penny they can get.” Publishing the opinions of readers whose views align with those pushed by the media encourages and normalises a hostile response to refugees, without using language which the organisation could face repercussions for. Yet Shire writes “No one leaves home unless home is the mouth of a shark.” then in the second stanza, “I wouldn’t have put my children on the boat unless I thought the sea was safer than the land.” This serves to remind the reader that refugees have emotional ties to their home and were violently forced out; they left out of necessity, rather than desire or greed, and had to make several

sacrifices to do so. The image of children is symbolic of innocence and inspires in the reader a need to protect, commonly used in other media which portrays refugees in an empathetic light - for example, the charity "Save The Children" produced an advert placing a British child in a refugee Syrian child's situation. The symbolism of children emphasises both the risks taken to escape the home country, but also the connection between the refugee and the British citizen.

Overall, throughout her poem "CONVERSATIONS ABOUT HOME (AT THE DEPORTATION CENTRE)" Warsan Shire uses a mixture of language and structural techniques to challenge the British media's negative portrayal of refugees. She rejects the generalisation and dehumanisation of refugees, and gives a compelling narrative that encourages the reader to question the British media and have empathy for asylum seekers and refugees through her portrayal of a diverse group of desperate people.

References

Bennet, Bruce, 'Becoming refugees: Exodus and contemporary mediations of the refugee crisis', 5.

Blair, David, Spencer, Richard, 'Generation of innocents' at risk in Syrian war, says UN', The Telegraph, 23 August 2013

'Britain must ban migrants', Daily Express, 2016

Ellicott, Claire, Wright, Stephen, 'The 'swarm' on our streets', Daily Mail, 31 July 2015, p.1

Hall, Macer, 'Migrant crisis: sort it now', Daily Express, 20 July 2016, p.1

'Halt the asylum tide now', The Sun, 2015, p.1

Pisa, Nick, Willetts, David, 'Illegals have landed', The Sun, 22 October 2015, p.4-5.

SaveTheChildren, Most Shocking Second a Day Video, online video recording, Youtube, 5 March

2014, <<https://www.youtube.com/watch?v=RBQ-loHfImQ>> [accessed 4 January 2024]

Shire, Warsan, Teaching My Mother How To Give Birth (Flipped Eye Publishing, 2011)

The Sun, 22 April 2015

Zaborowski, Rafal, Georgiou, Myria, Media coverage of the "refugee crisis": A cross-European Perspective (France: Council of Europe, 2017), p.10

Parent comment:

"Having the opportunity to be challenged and assessed at university level, along with the support she received from everyone involved, contributed to Matilda's confidence in her abilities and helped her in considering her future academic and professional plans."

- Rich and Emma Bookes

Can Texts Fight Colonialism & Inequality?

Key Stage 4

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Course Title: Can Texts Fight Colonialism and Inequality?

"I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel", (Angelou, 2023).

To understand the true measure of how textual sources portray theories within post colonialism, it is imperative that we recognise individual definitions and what they suggest. According to the *Oxford Learner's Dictionary*, colonisation is "The act of taking control of an area or a country that is not your own, especially using force, and sending people from your own country to live there", (Press, *Oxford Learner's Dictionary: Colonisation*, 2023). In a societal context, *Science Direct* asserts that "Inequality refers to the phenomenon of unequal and/or unjust distribution of resources and opportunities among members of a given society", (Koh, 2020). Overall, this essay will explore the metaphysical outlook words can illustrate and will assess how global relationships of today cause occurrences of social, cultural, and economic tension. Utilising primary and secondary sources of interest, I will analyse the full entirety of modern enslaved existence, providing quotations, data, definitions, and most significantly reasoning. Do texts fight colonialism and inequality? Yes, and I therefore write to persuade the reader.

I concur with the overall statement that texts do indeed help resist colonialism and inequality, yet only to a limited extent. My reasoning for this argument, is that colonial textual sources address historical impacts of colonisation and how that still integrates with modern difficulties. These texts highlight stereotypical discrimination many encounter in the present, incorporate theories around self-identity, whilst linking back to the overall topic of post-colonial philosophy. It is evident that in modern times, there has been a rapid increase in protests that primarily advocate for change and voice a resistance. For instance, data from the *2020 Global Peace Index* shows "that civil unrest has doubled over the last decade. Between 2011 and 2018, the number of both protests and riots roughly doubled, while the number of general strikes quadrupled, from 33 events in 2011 to 135 in 2018". (*Vision of Humanity*, 2020). If global trends for these statistics continues to progress and incline further, it is no doubt that upcoming generations will predictably suffer from higher rates of global instability, tension, and social disparities. Several forms of resistance take place through protests, boycotts, petitions, most typically; literature, media, photography and importantly texts. The untimely death of George Floyd resulted in the foundation of the Black Lives Matter movement (BLM) a resistance calling upon recognition and equal significance of ethnic minorities. Climate activist, Greta Thunberg promotes environmentally sustainable means and reminds society that nature is challenged in its biodiversity. Greta highlights resistance. The globally recognised Cost of Living Crisis is where many are visibly striking out

and resisting against those in power, demanding that regulations be adapted to accommodate for the rise in expenses, housing, and normal commodities. Present in all annual Pride Parades, there is an undeniable common resistance among members of the assemblage, who so passionately defy the stereotypical gender/sexuality boundaries. According to the *Oxford Learner's Dictionary*, resistance is "A dislike of or opposition to a plan, an idea, etc.; the act of refusing to obey", (Press, *Oxford Learner's Dictionary*, 2023).

In a context applied to current circumstances, resistance is the process of seeking to alter or withstand the policies applied by a particular occupying power. These policies can exhibit negative social attitudes, for example the notion of a systematic bias which causes the public to deter from compliance. Furthermore, these prevalent social discontents are experienced more profoundly amongst marginalised communities. Marginalised figures include: the elderly, ethnic minorities, refugees, asylum seekers, the disabled, LGBTQIA+ communities etc. Why should there be more displaced, disadvantaged and dehumanised groups in society? This is the act of purposefully inflicting an individual with insignificance; disapproving their presence and/or social, cultural, or financial status. The marginalised who are in pursuit of equality, justify what they are entitled to by using resistance. They use resistance because they now understand via knowledge transferred from texts that they are indeed able to resist post-colonialism and inequality. They realise that their current experiences of justice are not true inclusive actions as purported by the majority of Western nations but are instead deceptive means behind injustice.

Data from the *Brookings Institution*, reinstates my point above, "Rising inequality and related disparities and anxieties have been stoking social discontent and are a major driver of the increased political polarization and populist nationalism that are so evident today. An increasingly unequal society can weaken trust in public institutions and undermine democratic governance", (Qureshi, 2023). This sudden global determination to acquire the truth and resist authorities, arises from the newfound knowledge that texts can provide. For instance, the ideology that society abolished slavery entirely is simply a deceptive facade. Physical slavery is still present, as evidenced by texts which confer that "over 49.6 million people worldwide who are living in modern enslavement, approximately, 25% of these within enslaved means are children", (*International*, 2022). Slavery has simply adapted. Slavery is concealed by our visible blindness and ignorance to those excluded to the furthest margins of societal grounds because our human ideals of individual self-righteousness have not changed. The belief in one attaining more superiority over another takes precedence over others race, gender or religion etc. Today, habitual enslavement still internally thrives. Points of views derived from various texts do indeed help fight post colonialism and its associated effects. The mutual need to empathise with the suffering of others becomes even greater among all. I believe that we need various texts to represent various factors of life that us humans are still reluctant to resolve. Texts incite determination and counter the internal slavery and hidden prejudices that embeds our civilisations today. This in turn helps tackle discrimination, ends post-colonialism, inequality, disparity and injustices.

Finally, empathy is us humans being able to commiserate with another individuals' state of affairs. Unlike sympathy, empathy is not the act of passing judgement, but quite opposingly offers understanding. Empathy is understanding thoughts and feelings of another as if they were your own. In metaphorical language, it is mutual collaboration of the heart; this is what provides solidarity, unity, and collective success. One particular renowned example of a literature which induces empathy, is *The Diary of Anne Frank*. Originally published in 1947, the autobiography features Jewish teenager Anne Frank documenting her experiences about World War II (1939-1945), and shows the effects of persecution imparted by the German Nazi occupation of the Netherlands, who sought to eradicate the Jewish population. Consequently, Anne Frank and the remainder of her family solicited refuge in a Secret Annex, where they tolerated isolation for over 2 years. This source strongly highlights the theme of inequality through religious conflict specifically anti-Semitism. This text source implores sensitivity and holds great textual significance. Fortunately, the remnants of Anne Frank's past inspires resistance against unrighteous treatment, and promotes respectful recognition of all religions. A quotation from her historical text record reads "it's utterly impossible for me to build my life on a foundation of chaos, suffering, and death. I see the world being slowly transformed into a wilderness, I hear the approaching thunder that, one day, will destroy us too, I feel the suffering of millions. And yet, when I look up at the sky, I somehow feel that everything will change for the better, that this cruelty too shall end, that peace and tranquillity will return once more. In the meantime, I must hold onto my ideals. Perhaps the day will come when I'll be able to realise them", (Frank, 1942-1944). Derivatives of text, knowledge and the ability to understand, allows for empathy to channel through and the presence of courage to grow. Empathy ignites revolution. Through fictional fantasy or via non-fictional autobiographies, texts can evoke the empathy needed to fight. Texts also help towards resisting conflict. One critical colonial literature that supports my argument, is Kiran Desai's fictional narrative, *The Inheritance of Loss*, which explicitly outlines themes of post-colonialism, globalisation, and cultural identity. Further discussion on how colonialism still exists is identified in texts. Globalisation is discussed by various sources as a term used to describe the advancement in global interconnection. This can be shown by technological developments; improvement in transportation fields; positive rates in trade deals, and global appreciation of cultural aspects. Texts show that globalisation and personal identity are correlated. For example, if the influence of one particular custom/s is regarded as favourable, then inevitably there will be a loss in a socially unfavourable cultural characteristic of that time. This method of creating and getting rid of non-socially acceptable standards is ignorant to the overall concept of diversity. Text evidence to prove this point of view is "Under the influence of globalization a certain common, unified cultural standard or sample is formed, which destroys the diversity of traditional schemes of life, customs and cultural identities. Cultural globalization catalyses the processes of displacement of one national cultures with the other or turning them into international ones", (PhD Assoc. Prof. Bogoliubova, 2017). Alternatively, globalisation inspires uniformity, conventional behaviours and communism. The *Oxford Learner's Dictionary* clarifies that communism is "a theory or system of social organization in which

all property is owned by the community and each person contributes and receives according to their ability and needs", (Press, Oxford University Press, Oxford Learner's Dictionary, 2023). As readers, we are given the interpretation that the cultural relationship between India and the British Empire has a clear negative social imbalance, resulting in loss of tradition, therefore, inciting racial insecurity and systematic bias. Quotation from *The Inheritance of Loss* to directly prove my analysis is "They didn't like English writers writing about India; it turned the stomach; delirium and fever somehow went with temples and snakes and perverse romance, spilled blood, and miscarriage; it didn't correspond to the truth. English writers writing of England was what was nice", (Desai, 2006). The author is explaining how despite the end of the British Empire's colonial reign in India, the English press are purposefully posing Asian stereotypes, lifestyle choices, and misinformation to be factual. I have chosen this specific quotation as it shows the great impact that textual sources can have by exhibiting the symbolic disparity between Britain and India in this case. This proves that texts impart resistance. One way in which to identify the literary technique the supposed English writers were using, are hyperboles. *The Oxford Learner's Dictionary* educates readers that a hyperbole is "a way of speaking or writing that makes something sound better, more exciting, more dangerous, etc. than it really is", (Press, Oxford University Press, 2023). Apparent use of hyperboles in English writers when writing about India, were not to present information in a magnificent, appreciative way, but instead, in a shameful, belittling manner. In this scenario, texts were used to emphasise abstract superiority and mental control that the British were able to instil from afar. To clarify, this abstract superiority is a nod to a dominance that the Indians had subconsciously fallen subject to, under British jurisdiction. Interestingly, reader understand that this was simply achieved via use of texts as the presence of physical force is non-existent here; no chains, no bonded labour, no violence, no evidence of any tangible oppression. Just the implication of words, just text.

To deepen further insight on the full magnitude of linguistics and literature; research on the psychological impact that words can have on human behaviour introduces a new term semantic prosody. Semantic prosody describes the perspective one can perceive upon coming across certain words. For instance, neutral words can command either negative or positive associations/connotations. Many factors such as context, intonation, gestures, genre etc, all influence whether or not a person experiences what they do as a result of text. For example, one article from *Psych Central* explores the psychological power that words can possess, it states that "people naturally import perceptions of certain words into new situations that are neutral" (PhD Wilson, 2022). Researchers called this "semantic prosody, where the precise meaning of a word comes from where it occurs in language", (PhD Wilson, 2022). This links back to the question of textual sources fighting colonialism and inequality. Overcome by these imposing views of their lifestyle, Indian inhabitants felt as though they had to alienate their cultural identity – internally and externally – so that they may become compliant with the 'fitting favourable' ideals of an English civilisation. This links back to the notion of racial insecurity, the Indians were not free to be themselves, they were discouraged, as their heritage was mocked upon. Undignified. This

gives clearance to the act of mimicry. The process of a change in culture, in tradition.

For those who cannot be persuaded of the argument that various textual sources can indeed fight colonialism and inequality, one more text source can persuade this view. In William Shakespeare's play *The Tempest*, the author emphasises the perception that the play is a representation of colonisation, by representing the only native of the island (the character of Caliban) as a slave to Prospero (a character who is in the position of a coloniser). A quotation from the narrative to prove my analysis is "It was shaped like a man, but its skin was covered with glistening green scales, and its eyes were as yellow as a lizard's, Caliban!" Prospero said sternly. "You brought no wood or water to the cave this morning. Must I send the spirits to torment you again?" Caliban scowled. "I was not born to be your servant!" he answered defiantly", (Shakespeare, 2003). If we examine this quotation, it is evident that Caliban's character has been imprisoned, enslaved and threatened on his inherent land, and yet forcibly, Prospero administrates him in the place of a servant. Further research displays that Caliban's participation in the play could serve as a metaphor for a 'Black African', apprehended and dehumanised by Caucasian characters in slavery, (Alshhre, 2020). The relationship between Caliban and Prospero is visibly disparate, as Prospero obtains the supremacy, control and dominance, whereas on the other hand, Caliban endures inferiority, subjection, and compliance. These identified themes combine the theory of colonisation, imbalance, and globalisation together in terms of text. This introduces a representation that resists the capacity race can embody. As the quotation states, Caliban recognises his place as a justified inhabitant of the island and defies his master, Prospero, bringing in the conviction that all beings are born emancipated and should not have to tolerate the influence of discriminatory behaviours. Caliban resists. The Tempest resists. Text inspires resistance. The major revelation of this study, is that textual sources help resist colonialism and other related imbalances. I have mentioned previously texts evoke the empathetic outlook required to combat disparities and resist the systematic racial bias that still uncomfortably governs our societies.

In summary, words can inflict psychological impact, words can be negative or positive depending on the person's perspective of the subject in question. One way or the other, this view can result in the information that texts possess being processed differently by the reader. This difference means that each individuals' actions upon reading a certain text will vary; some may be swayed to resist a concept whilst some may be swayed to be in agreement with the concept. Furthermore, this knowledge can inspire change and action towards specific global inequalities.

Throughout this essay, I have stated that inequalities continue to be a factor in our present society. Inequalities still exist internally and primarily affect our conscience and outward ability to change our behaviour in a manner that is socially acceptable. This is only provoked further by rapid globalisation which threatens to eliminate and hinder cultural identities across all regions. This may unavoidably lead to an enslaved Westernised existence. Humans were liberated from the physical representation of inequality

i.e. slavery and colonialism symbols of chains that clasp hands. However; will mankind be liberated from a mental slavery that transfigures to mental cages and binds the mind i.e. the psychological slavery? Only texts can continue to inspire to change our ideals post colonialism and beyond. To summarise my argument, texts do fight inequality as they encourage and motivate us towards fighting for change and action. As Emmeline Pankhurst 1903, said "deeds not words", (Roberts, 2018) with texts at the forefront deeds can be achieved.

References

- Alshhre, A. (2020, July 17). William Shakespeare's The Tempest. Retrieved from Caliban is a Black African: Alshhre, A. William Shakespeare 'https://core.ac.uk/download/pdf/233575867.pdf, (April 3 2017), Modified, (July 17 2020), pp. 1-13 (p. 1).
- Angelou, M. (2023, August 3). 114 Best Maya Angelou Quotes About Life, Love, & Change.. Retrieved from Good Good Good.: https://www.goodgoodgood.co/articles/maya-angelou-quotes.
- Desai, K. (2006). Desai, K. *The Inheritance of Loss*, pp. 215-229. (p. 217). The Grove Press.
- Frank, A. (1942-1944, June- August June 14 - August 1). www.litcharts.com. Retrieved from The Diary of Anne Frank (April 5, 1944): Frank, A. The Diary of Anne Frank https://www.litcharts.com/lit/the-diary-of-anne-frank/themes/world-war-ii-fear-suffering-and-hope
- International, A.-S. (2022). Anti-Slavery International. Retrieved from Anti-Slavery: What is modern slavery?: https://www.antislavery.org/slavery-today/modern-slavery/#:~:text=According%20to%20the%20latest%20Global,of%20modern%20slavery%20are%20children,
- Koh, S. (2020). International Encyclopaedia of Human Geography (Second Edition) pp.269-277 (Abstract). Retrieved from Science Direct: https://doi.org/10.1016/B978-0-08-102295-5.10196-9
- PhD Assoc. Prof. Bogoliubova, N. a. (2017, April 7-8). Cultural Ties in a Globalization World. Retrieved from The Threats and Challenges pp.35-41 (p.3): PhD Assoc. Prof. Bogoliubova, N. and PhD Assoc. Prof. Nikolaeva, J. Cultural Ties in a Globalization https://rais.education/wp-content/uploads/2017/05/Cultural-Ties-in-a-Globalization-World-The-Threats-and-Challenges.pdf
- PhD Wilson, D. R. (2022, October 10). Psych Central. Retrieved from How do words affect the brain?: https://psychcentral.com/blog/words-can-change-your-brain
- Press, O. U. (2023). Oxford Learner's Dictionary. Retrieved from Oxford Learner's Dictionary: Resistance: https://www.oxfordlearnersdictionaries.com/definition/english/resistance?q=resistance
- Press, O. U. (2023). Oxford Learner's Dictionary: Colonisation, second edition. Retrieved from Oxford Learner's Dictionary: Colonisation: https://www.oxfordlearnersdictionaries.com/definition/english/colonization?q=colonisation,
- Press, O. U. (2023). Oxford University Press. Retrieved from Oxford Learner's Dictionary: https://www.oxfordlearnersdictionaries.com/definition/english/hyperbole?q=hyperbole,
- Press, O. U. (2023). Oxford University Press, Oxford Learner's Dictionary. Retrieved from Oxford Learner's Dictionary: Communism: https://www.oxfordlearnersdictionaries.com/definition/english/communism?q=communism, (2023)
- Qureshi, Z. (2023, May 16). Brookings Institution. Retrieved from Rising Inequality: A major issue of our time: , https://www.brookings.edu/articles/rising-inequality-a-major-issue-of-our-time/#:~:text=Rising%20inequality%20and%20related%20disparities,institutions%20a,
- Shakespeare, W. (2003). *The Tempest* (A Shakespeare Story), Original (1623), pp. 7-58 (pp. 15-16). Matthews, A. & Ross, T. Orchard Classics.
- Vision of Humanity. (2020). Retrieved from Vision of Humanity: Civil Unrest Around the World has Doubled in the Last Decade: https://www.visionofhumanity.org/civil-unrest-on-the-rise/#:~:text=Civil%20Unrest%20on%20the%20rise,2011%20to%20135%20in%202018,

Tutor comment:

"It was an absolute joy to work with M. in tutorials on literature and colonialism. I was particularly impressed with their outstanding level of engagement with the texts, comprehensive writing skills and creativity. No doubt M. would be an invaluable presence to any undergraduate programme"

Industrial model villages then and now: historical context and a proposal

Key Stage 5

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Tutor University: The Open University
Course Title: I loved living there: Industrial model villages then and now

An introduction to the industrial model village.

Victorian Britain was a stark contrast to the Britain we know and live in today in a plethora of ways, and in some cases what we have today would not exist without Victorian Britain. The uprising in factories and mines from the boom of the Industrial Revolution around the country meant that jobs were plentiful with factories having over 500 employees [1], advances in machinery and public health were made rapidly, and various social reforms had occurred in this period that shape what exists now, such as the Liberal Reforms which included National Insurance in 1911. [2]

However, to get to this stage Britain had to face a challenging time, particularly for the working class. A highly stratified and classist society meant that this group often suffered the most, because of the harsh attitudes towards the poor shown by the Poor Law Act 1834 giving housing and food in exchange for hours of hard labour [3]. This led to children being "bullied and forced to carry out the jobs that no-one else wanted to do... and working 12 hours in physically demanding jobs leaving them exhausted." [4] Living conditions in the slums that came with the mass movement into cities and towns were never better, which were insanitary with a rudimentary sewage and waste system becoming a breeding ground for diseases like typhoid and measles, leading to the deaths of many children.[1]

This brings our attention to philanthropic industrialist figures, such as George Cadbury (founder of Bournville and Cadbury chocolate) who stated, "No man ought to be condemned to live in a place where a rose cannot grow" [5], who understood that healthy and satisfied employees performed better and were more productive overall compared to their counterparts in the slums.

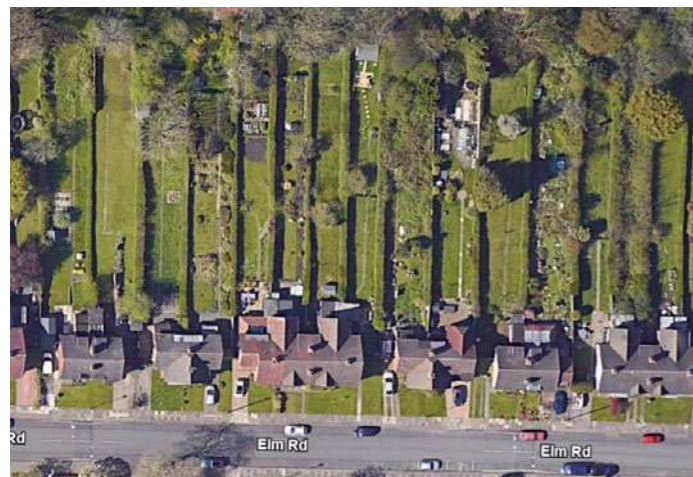
While both the industrial model villages and the slums were both located close to the factories, the difference between the two in terms of their conditions is broad. The model villages can be perceived as a paternalistic (defined as "the interference of a state or an individual with another person, against their will, and defended" [6]) utopia where an understanding that satisfied and healthy employees were better and more productive was demonstrated. The idea of paternalism will be a repeated theme throughout.

Bournville, United Kingdom: then and now.

Bournville is a model village located near Birmingham, United Kingdom, which was created in 1893 by industrialist George Cadbury, where he purchased 140 acres of land [7] to build and develop the model village nearby to the works of the Cadbury chocolate manufacturing factory.

George Cadbury was raised in a Quaker background, whose family and himself were members of the Society of Friends or Quakers: a denomination of Christianity which believe in a direct relationship with God as every living being contains something of God. With this in mind, we can infer the values of George Cadbury. One of which can be that since everyone has a part of God, we should respect and uphold each other's rights to a safe, healthy, and spiritual life. This can indicate the idea of stewardship, which is demonstrated throughout the Cadbury family, such as her involvement with a volunteered medical mission in Belleville, Paris, "which had grown out of efforts to provide relief for victims of the Franco-Prussian War", where she had "supported the work of the Mission's orphanage...[and] undertook home visiting in the Parisian slums" [8]. This will play a crucial role in the development and vision that George Cadbury had for Bournville.

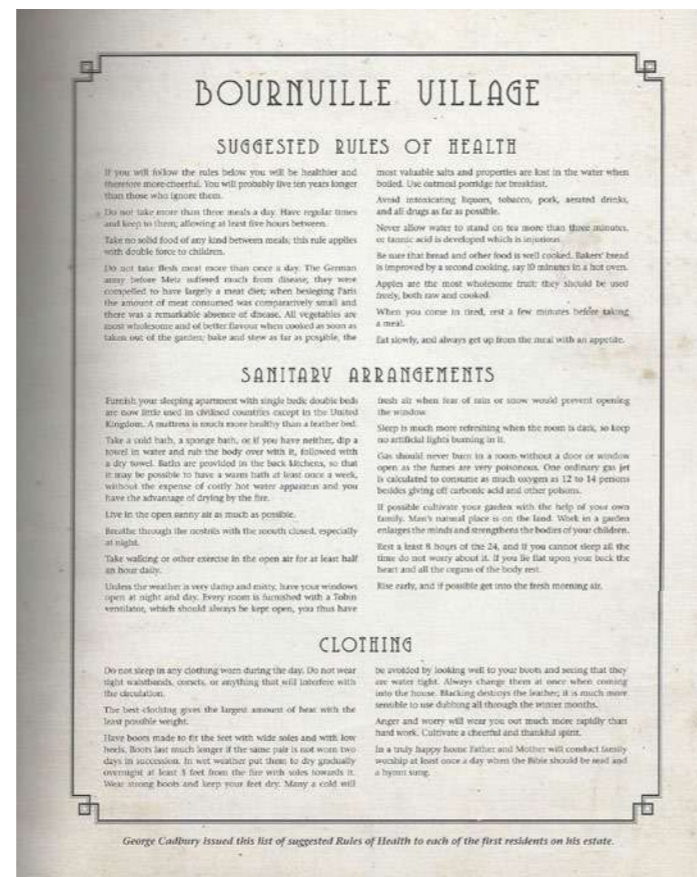
During this time came about the Industrial Revolution which although resulted in a boost of industry, it also resulted in inadequate quality, cramped and insanitary housing and work conditions, leading to an ill and poverty-stricken workforce. George Cadbury, inspired by the book "Garden Cities of To-morrow" by Ebenezer Howard (a book which envisioned a merge of benefits between town and county life, in the form of fresh air and opportunity among other things) set out on putting this into practice for Bournville. Therefore, we can argue that the creation of Bournville was Cadbury's reaction to the living and working conditions of those who lived in the slums and sought to improve the quality of life not just for the working class but for all. Features of Bournville will now be outlined below in the form of images with descriptions and commentary.



Google (2022), Elm Rd, Birmingham, 2024 (cited 2024 March 5). Available from:

Above is an aerial view of a row of houses that are situated in the Bournville Village Trust's Conservation Area [9]. As shown the image, there is a notable higher proportion of the size of the garden compared to the house itself. This is an intentional design choice that is strictly enforced by the Bournville Village Trust in their Design Guide, where nowadays it states how the "Garden depth should be at least equivalent to the depth of the house". [10] This change may be as a result of the changes of trends over an extended period of time, deviating from the initial goal of having 25% of a home consisting of a house while the remaining 75% being garden or green space. The inspiration for this may have come from the idea of the "Three Magnets"

in Howard's book specifically where it conveys that people are attracted to "Brighter Homes & Gardens, No Smoke, No Slums" [11].



[12]

Above are the "suggested Rules of Health" that were issued to "each of the first residents" on the Cadbury Estate. Some of these rules may seem reasonable, such as avoiding "all intoxicating liquors, tobacco, pork, aerated drinks, and drugs" and not allowing gas to be lit in an unventilated room.

However, other rules are more questionable and obscure. For example, having the window open at night and day weather allowing. This rule may raise concerns for the contemporary reader in regard to the security of the home, as it can give an ill-intentioned individual an opportunity to intrude and trespass into a home and create a threat to the occupants. Another case can be where it states how a "truly happy home Father and Mother will conduct family worship at least once a day when the Bible should be read and a hymn sung". While it can be argued that society in the Victorian era was mainly Christian of various denomination and followed the practices, it can be interpreted as alienating to those whose family structure is not nuclear (a group of people who are united by ties of partnership and parenthood and consisting of a pair of adults and their socially recognized children [13]), or those who's religion is not Christian.

The idea of paternalism is apparent here: the freedoms of those living within Bournville are limited with the intention of maintaining and improving their quality of life or standard of living. However, it can lead to one questioning where the line of imposing restrictions on the lifestyle of citizens should be, and how would it be enforced. An argument can be made that a human being should have the right to be autonomous and live

the life they intent to be, without an arbitrary system to interfere them. However, if the lifestyle a person lives will harm themselves, others or affect his work, would these restrictions be justified enough?

Crespi d'Adda, Italy: then and now.

Crespi d'Adda is a village and hamlet (*frazione* in Italian), located in the North of Italy approximately 30 kilometers to the Northeast of Milan, and was founded by Italian entrepreneur Cristoforo Benigno Crespi, who was looking for a location for his factory to produce cotton wires [14].

Crespi envisioned a small village built around his factory where the workers would be housed and provided all the necessary local facilities, whose needs would be satisfied "from the cradle to the grave". [15] This reminds us of the idea of a paternalistic utopia: a way of life which is orchestrated by the owner/founder with the goal of increasing productivity through promoting a healthy and satisfied workforce. This is especially important considering that only those who worked at the cotton factory were permitted to live in this area and the life of everybody was connected to the factory, its rhythms, and its demands. [15].

Nowadays, it is currently on the UNESCO World Heritage List as "an outstanding example of the 19th - and early 20th-century 'company towns' built in Europe and North America by enlightened industrialists to meet the workers' needs" and is reflective of the predominant philosophy of enlightened industrialists with respect to their employees [16].

With the above in mind, we can infer that Crespi also envisioned this to be the perfect model to other factories and the world as they had expected higher productivity as a result. This makes us question his motivation for investing into this idea: was it due to his moral and ethical compass in the desire to promote a healthy sustainable quality of life for his workers? Or was it a desire to outperform his competition in productivity to boost his sales of cotton from the competition?

We will now go through the features of the village through images and commentary of these images, to aid us in how Crespi put this vision into practice.

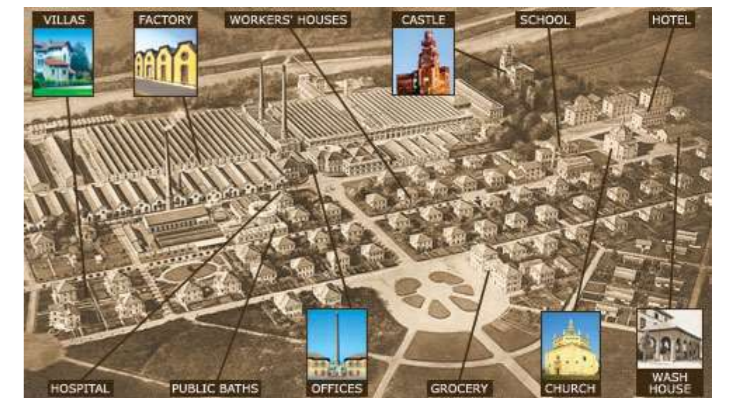


[17]

Above is the castle of Crespi d'Adda which was commissioned by Crespi to architect Ernesto Pirovano and is seen as "the business card" of the village. Being described in this way can make us think that this castle one of the Unique Selling Points (the essence of what makes your product or service better than competitors [18]) of the village, making the village seem polished, grand, and prosperous.

The decision to erect a castle within the village can

connote ideas of power and authority, which links to the idea of paternalism where Crespi has the ability to restrict and have a huge influence on the life of the workers, who would be dependent on his resources for their lifestyle. While they may end up having a healthy lifestyle, it may impose on their freedom to do actions at their own will.



[18]

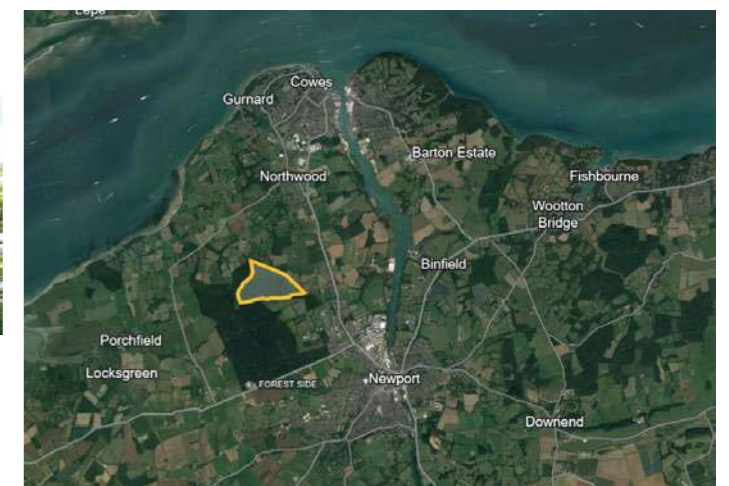
Above shows the facilities that were available to the residents of the village, which can be seen as quite comprehensive containing the majority of what a family residing here may need, from free education paid by the factory [15] to healthcare from a hospital. This can demonstrate Crespi's recognition of how satisfied and healthy employees will not only lead to higher productivity but also work to upskilling his workforce to be able to achieve more of his business's aims and objectives.

Village Proposal.

Inspired by the villages that have been explored previously, I propose one of my own: Saffington Village.

Location

Below is an image of where I opted to locate my village, where the borders of the village are shown in yellow.



Google (2019), Isle of Wight, United Kingdom, 2024 (cited 2024 March 13). Available from: <https://earth.google.com/>

I have opted to locate this on the Isle of Wight due to the vast amount of land that is available for development of the village and its proximity to The Solent (a strait that runs between mainland Britain and the Isle of Wight). This will enable my village to be connected with the rest of the country through ferry services between Cowes and Southampton, (in addition to being connected with the rest of Europe) which would be useful when it comes to exporting goods that will be produced from my factory on a National and EU level.

My factory will be an agriculture processing and packaging facility, in which it will reach a contract to local farmers on the island to purchase their produce and prepare them for sale to a variety of customers in various locations, such as the service industry or supermarket chains. The rationale behind this is that "enhancing efficiency in a handful of sectors such as tourism, agriculture, health & social care and public sectors is of strategic importance to the Island" according to the 2019 economic profile [19]. Therefore, we would be meeting an economic objective of the authority while also providing jobs and help farmers increase their sales volume.

Saffington Village will be managed by the Saffington Village Trust (SVT), which will act as the local authority of the village regarding building, business and the financial/economic activity.

Saffington mapped.



Saffington is divided into three separated by the Business Circle: The Public Service Quarter, the Private Business Quarter, and the Residential Area which makes up for half of the village.

The Residential Area takes inspiration from Bournville with its emphasis on green space and clean air, demonstrated by the Diamond Park, which will be open during Daylight Hours, allowing residents to socialise and relax in its peaceful nature, and the garden-to-house proportion of the housing. The SVT will hold a strict stance on the modification and maintenance of homes to maintain its uniformity particularly the garden-to-house proportion. Those who live in the flats will have access to a slot in the Allotments, allowing them to plant and grow their own produce and plants. These actions should promote a healthier lifestyle, increasing motivation and therefore productivity. It can open the door for residents to have an additional income through the selling of their produce at the Market.



Representations of a house in the map above

The Public Service takes inspiration from Crespi d'Adda's large array of services that is offered to its residents. Therefore, Saffington Hospital is built to provide free private healthcare to its residents that work for the factory, as well as providing services for the National Health Service to those who do not. The schools (Primary, Secondary, Sixth Form) will ensure the children of the families will receive a high-quality education without the need to travel to a nearby town/city. The Leisure and Fitness Centre will provide a variety of physical activities such as swimming and tennis, which can encourage exercise and improve the health of the residents. Provisions such as food can be provided by local businesses run by residents in the Business Circle, which can build a tight-knit community spirit.

Saffington recognises that building and maintaining a village will require vast sums of cash to pay for expenses. As such, it attempts to encourage private business and investment in the Private Business Quarter, particularly in The Hexagon (an amusement Centre) and the Business Circle which the village can collect revenue through taxation. This will enable the village's economic profile to expand into new industries and sectors, as well as fund for future growth in making the village larger over time.

Would we want to live here?

The industrial model villages are an excellent example of philanthropic industrialists taking a paternalistic management style considering the needs of the workforce of their life outside of the workplace. However, we should ask ourselves if this would work in the modern day? The survival of Crespi d'Adda is threatened by changing economic and social conditions [16], yet the Bournville Village Trust still exists today and actively maintains its standards despite the Kraft (now Mondelēz) takeover of Cadbury [20]. So, what chance would an industrial model village will have of being successful in the modern day?

It can be argued that the motivator for the creation of these villages was to increase the output of production and maximise sales or profit, yet this can be counter argued that the village is a large-scale investment that would increase the *labour cost per unit* (the cost to produce one unit of output in terms of labour), leading to a slimmer profit margin.

Despite this, we should ask ourselves the question: would we want to live here? Although the freedoms of a resident may be restricted, these restrictions are intended to provide and sustain a healthy standard

of life given that this was at a time of poor living and working conditions with widespread illness. The prospect of not having to worry over the health and housing of your family and the security of your job would make it very appealing to many, which is applicable to today at a time of economic instability. Therefore, I will answer in agreement that we would want to live here.

References

[1] James (Primary Facts), Victorian Factories and the Machines of Industry: Facts and Information [Internet], 2024 (cited 2024 February 29). Available from: <https://primaryfacts.com/1683/victorian-factories-and-the-machines-of-industry-facts-and-information/>

[2] John Offer, New liberalism [Internet], 2024 (cited 2024 February 29). Available from: <https://www.britannica.com/topic/new-liberalism>

[3] The National Archives, 1834 Poor Law [Internet], 2024 (cited 2024 February 29). Available from: <https://www.nationalarchives.gov.uk/education/resources/1834-poor-law/#:~:text=The%20new%20Poor%20Law%20ensured,shared%20this%20point%20of%20view.>

[4] Birmingham City Council, "Glad ur not... at work" [Internet], 2024 (cited 2024 February 29). Available from: https://www.birmingham.gov.uk/info/50139/explore_and_discover/1609/life_for_children_in_victorian_britain/3#:~:text=Jobs%20were%20plentiful%20but%20worker's,the%20homes%20of%20the%20wealthy.

[5] Cadbury, OUR HISTORY [Internet], 2024 (cited 2024 February 29). Available from: <https://www.cadbury.com.au/our-history>

[6] Stanford Encyclopedia of Philosophy, Paternalism [Internet], 2024 (cited 2024 February 29). Available from: <https://plato.stanford.edu/entries/paternalism/#Intr>

[7] Bournville Village Trust, "The Bournville Story [Internet]", 2024 (cited 2024 March 5) Available from: <https://www.bvt.org.uk/publications/the-bournville-story-2/>

[8] Library of Birmingham, "Papers relating to Elizabeth Taylor Cadbury's early public philanthropic work and interests up to 1888 [Internet]", 2024 (cited 2024 March 5). Available from: <https://calmview.birmingham.gov.uk/CalmView/Record.aspx?src=CalmView.Catalog&id=MS+466%2f1%2f1%2f3>

[9] Bournville Village Trust, "The Bournville Village Trust Estate Plan", 2024 (cited 2024 March 12). Available from: https://www.bvt.org.uk/wp-content/uploads/2014/01/66593_BVT_Maps_HR1.pdf

[10] Bournville Village Trust, "Bournville Estate Design Guide", 2024 (cited 2024 March 5). Available from: <https://www.bvt.org.uk/publications/bournville-estate-design-guide/>

[11] Ebenezer Howard, "To-morrow: A Peaceful Path to Real Reform, London: Swan Sonnenschein & Co., Ltd., 1898.", 2024 (cited 2024 March 5). Available from: [https://commons.wikimedia.org/wiki/File:Diagram_No.1_\(Howard,_Ebenezer,_To-morrow_.\).jpg](https://commons.wikimedia.org/wiki/File:Diagram_No.1_(Howard,_Ebenezer,_To-morrow_.).jpg)

[12] Claudia Favero, The Brilliant Club, "I loved living there..." Handbook, 2024 (cited 2024 March 5).

[13] Britannica, "nuclear family [Internet]", 2024 (cited 2024 March 12). Available from: <https://www.britannica.com/topic/nuclear-family>

[14] CRESPI, "History / The Brilliance [Internet]", 2024 (cited 2024 March 13). Available from: <https://visitcrespi.it/en/the-brilliance>

[15] Crespi Cultura, "What is Crespi? [Internet]", 2024 (cited 2024 March 13). Available from: <https://villaggiocrespi.it/en/>

[16] UNESCO, "Crespi d'Adda [Internet]", 2024 (cited 2024 March 13). Available from: <https://whc.unesco.org/en/list/730/>

[17] CRESPI, "WORKERS' VILLAGE / ARCHITECTURE / THE CASTLE-VILLA [Internet]", 2024 (cited 2024 March 13). Available from: <https://visitcrespi.it/en/the-castle-villa>

[18] Optimizely, "Unique selling point [online]", 2024 (cited 2024 March 13). Available from: <https://www.optimizely.com/optimization-glossary/unique-selling-point/>

[19] Isle of Wight Council, "Isle of Wight Economic Profile 2019 [Internet]", 2024 (cited 2024 March 17). Available from: <https://www.iow.gov.uk/azservices/documents/1433-Isle-of-Wight-Economic-ProfileFinalFebruary2020.pdf>

[20] Mondelēz International, "INFORMATION FOR FORMER CADBURY SHAREHOLDERS [Internet]", 2024 (cited 2024 March 18). Available from: <https://www.mondelezinternational.com/investors/stock/information-for-former-cadbury-shareholders/#:~:text=On%20February%202%2C%202010%2C%20Cadbury,name%20to%20Mondel%C4%93z%20International%2C%20Inc.>

Tutor comment:

"Safiyur wrote an exceptional essay, rich with personal insights and a deep understanding of the complex history of the Industrial Model Villages, showing a thoughtful appreciation of their relevance today. His research was thorough, and his participation in tutorials equally impressive".

"All Ranks and Degrees now READ" - To what extent do you think this statement was true at the end of the Eighteenth Century?

Key Stage 4

Pupil Name: Zahraa Fairouz
School Name: Ricards Lodge School
Supervised by: S. Bankes
Tutor University: The Open University
Course Title: How Did the 'Swish Multitude' Learn to Read? Books & Education in the Eighteenth Century

The eighteenth century saw a significant expansion of educational opportunities, particularly for the middle classes, driven by the growth of the printing industry, the rise of the Enlightenment, and the spread of new ideas about the importance of education. However, access to education was still limited for certain groups of people, and significant inequalities persisted. In this essay I will explore the factors that drove this expansion and the barriers that remained will provide insight into the accessibility of reading in the eighteenth century.

Economics

When considering whether everyone in Georgian England was able to read, it is useful to think about what reading might cost someone. This section of the essay will explore whether it was easy for readers from less affluent backgrounds to buy and read books in the eighteenth century. It will examine the cost of books, discover what people earned and look at the cost of food and other essentials. Finally, it will consider the conditions necessary for reading.

In the eighteenth century, the printed word was not easily accessible to the less wealthy readers. The cost of books was high, and the majority of the population could not afford them. In addition, there were no public libraries, and the few private libraries that existed were only accessible to the wealthy. The literacy rate was also low - roughly 60% of men and 40% of women could read by 1800 - and many people could not read or write. This made it difficult for them to access the printed word even if they could afford it. The printing press was also not as advanced as it is today, and the process of printing was slow and expensive. All these factors combined made it hard for the less wealthy readers to access the printed word.

The growth of literacy in Western Europe from 1500 to 1800 was a gradual process. Between ca. 1500 and ca. 1800, most Western European societies moved decisively from restricted to mass literacy. However, this process was not uniform across all social classes. The less wealthy readers in the eighteenth century found it hard to access the printed word due to various reasons.

Firstly, the cost of books was high, and most of the population could not afford them. Tradesmen, farm workers, domestic servants, and the rest of the employed population who had to provide for families as well as for themselves, only earned as much as 10 shillings a week but some labourers might only have earned a shilling a day if they were lucky. Books were considered luxury items and were priced accordingly. The less wealthy readers could not afford to buy books, and hence, they were deprived of the knowledge contained in them. The wealthy, on the

other hand, could afford to buy books and build private libraries. This gave them access to knowledge that was not available to the less wealthy readers. For example, Tom Jones or History of a Foundling, a popular novel by Henry Fielding, cost 6s 6d which in that time could be used to buy a butter for a family of seven for a whole week for the same price. What I'm trying to imply in this example is that money spent on a book could be used to buy food to feed yourself and family. You could buy luxuries such as tea for the price of a book and perhaps, this could've given you a better image than owning a book.

There was also the issue of privacy and lighting. As in the case of James Lackington, masters did not allow candles in the servants' or apprentices' rooms so their time by the light became limited. Lackington writes that he used to read by the light of the moon, but this was not always bright or visible. This was due to candles being expensive. And in most cases time by the candle was consumed by working and carrying out chores/duties. There was the rushlight, it was a cheaper makeshift candle made by long pieces of rush and was dipped in animal fat and left to burn. As disgusting as this sounds the idea of sitting by the rushlight would've been unpleasant and slaves would've had to smell this smell all for the sake of reading a book and we can then see that this style of thought leads to them becoming unwilling to read.

Privacy was also an issue as Jane Austen said 'the living incessant noise was to frame and temper, delicate and nervous like Fanny's, an evil which no super-added elegance could have entirely atoned for. It was the greatest misery of all... by sitting together upstairs, they avoided a great deal of disturbance of the house, but they sat without a fire'. From this quotation from Jane Austen, we can infer that people in the less wealthy classes had no privacy or personal space and could get distracted easily and that even if they did, they would have to make the sacrifice of not sitting by the fire as in less affluent households there was only one fire in the house and that would be where everyone of the household would stay. This meant that if you wanted to read by yourself without disturbances, it would be in a room that was stone cold, and the reader would not have the comfort of warmth. A fourth reason would be that people from less wealthy classes would value time more dearly than people of other classes, to them the time that would be used to read could be used to earn a few more pennies and shillings. For example, the time used to read could be used to earn a few shillings from doing various handyman jobs.

Learning to read

Assuming that would-be readers could afford to buy a book and prepare a place to study it, it is also important to examine how they might have learnt to read in the days before the 1870 Education Act brought schooling to every child in the country. This part of the essay will explore how a child or young person who was not born into a wealthy family might have been able to learn to read in the eighteenth century, particularly if there were few people in their community who could read. It will investigate how people were taught to read, what might have motivated them to want to learn to read, and some of the obstacles which they may have faced.

To actually learn to read, a young person would have to start with the basics of the alphabet and phonetics. They would then progress to simple words and sentences, and eventually, they would be able to read more complex texts. Reading aloud and practicing writing would also be

important in the learning process but people often learnt to write long after they had learnt to read. We can take the example of a young girl named Margery Meanwell. From the book, The History of Little Goody Two-shoes (1780) we learn about the little girl's journey on learning how to read. From the story we learn that little Margery learnt to read from childhood books. She used intuitive methods and different learning techniques. One of these, as told in the books was that the little girls cut out several pieces of wood and wrote the letters of the alphabet on it, simulating building blocks and puzzle pieces. This may remind you of the phonics programmes now used in schools to teach children to read. This, therefore, proves the effectiveness of the method. We also learnt from this book that Margery learns to read and becomes a 'trotting tutoress' giving lessons to the local children which also helped them learn to read. We also could note that the children never did have a dedicated learning environment and that time with Margery was sometimes limited. This shows that children often had to learn with whoever was willing and able to teach them even if this was another child.

Having motivation to read can make the learning process easier. Motivation can increase an individual's energy level, determine the persistence in reaching a specific goal, affect the types of learning techniques used, and an individual's thinking processes. When an individual is interested in what they are learning, they pay closer attention, process the information more efficiently, employ more effective learning strategies, such as engaging in critical thinking, making connections between old and new knowledge, and attending to deep structure instead of surface features. We can see this in the example of Thomas Holcroft. Thomas Holcroft states in an autobiography "After that my progress was so rapid, that it astonished my father. He boasted of me to everyone; and that I might lose no time". This suggests that his motivation for learning to read came from impressing and not letting down his father. We could also infer that his deep, dearly, devoted love for the Bible fuelled his motivation, we can infer this when he states, "aided by the love I had of reading, and the wonderful histories/sometimes found in the sacred writings generally induced me to go through the whole of my tasks". From this statement we can tell that his religion matters greatly to him. When he states the wonderful histories, we can assume that he is referring to what we would refer to as stories and that the wonderful, intriguing stories also gave him motivation to read.

However, if we talk about the life of Olaudah Equiano we get a completely different motivation certainly not as light-hearted as the first. When Equiano states that "I thought now nothing but being freed, working for myself..." we could assume that Equiano wanted to learn to read to work for himself, and become independent, his strong desire of wanting to climb the social ladder was his motivation of learning how to read as reading was respectable and would help him earn money and buy himself freedom. This is because he was enslaved as a child and had everything, including his name taken from him. He eventually achieved his aim to buy his freedom for 40 l due to his hard work. He also had a more heartfelt reason which was wanting to prove to people that even though he was a slave who had been taken from Africa, he had a heart, a sharp mind and a soul and should not be enslaved. He worked to end slavery with the Abolitionist movement.

As this shows there was no automatic right to an education for children in England at this time, so it was mostly wealthy

children who went to school. There were charity schools that provided free education to poor children. These schools were established by philanthropists and religious organizations to provide basic education to children who could not afford it. For example, the Society for Promoting Christian Knowledge (SPCK) established schools in the late eighteenth century that provided free education to poor children. Secondly, there were Sunday schools that provided education to children on Sundays. These schools were established by churches and were free of charge. They taught children how to read and write and provided religious education. Sunday schools were popular in the late eighteenth century and early nineteenth century. An example of this would be from Hannah More who set up one of these such schools and wanted to teach on sabbath so that the children are taught and were not being nuisances on these special days. She essentially wanted them to do good. As this shows, there was a close link between education and religion at this time. We can see that although education was not accessible to everyone at the end of the eighteenth century, it was possible for a young person from a less wealthy background to learn to read from Charity schools, Sunday schools' members in their communities who had already gained that knowledge and by the sheer determination and perseverance of themselves.

The politics of reading and obstacles in the way of readers

Not everyone in eighteenth century England encouraged all members of society to read widely. Some politicians and people in power wanted to deter people from lower classes from reading. For example, in the case of Davies Giddy, a Member of Parliament, he didn't want people of the lower classes to climb the social ladder in the fear that they would become ungrateful of what they have and won't work for the nobility anymore: he feared that 'instead of teaching them subordination, it would render them fractious and refractory'. While Edmund Burke's fear was significantly heightened as there had just been the French revolution which saw the deaths of many of the nobility and the Kings and Queens. He feared that the ability to read spreading in the lower class and the gain of knowledge would put his position and other aristocratic positions in danger of being abolished in a revolution. He wrote that learning would be 'cast into the mire and trodden down under the hoofs of a swinish multitude.' They both primarily believed in the same thing.

Poor people learning to read threatened the power of the ruling class in several ways. For instance, literacy could lead to social unrest and challenge the existing power structures. The ruling class believed that by keeping the poor uneducated, they could maintain their power and control over society. By learning to read, the poor could gain access to information and knowledge that could help them challenge the status of the people in power. We see real concern in England when books such as part two of The Rights of Man by Thomas Paine was published in cheap editions or 'ushered into the world in all shapes and sizes and thrust into the hands of subjects of every description' as the Attorney General was heard to say. Moreover, literacy could lead to economic mobility. The poor could use their newfound knowledge to acquire new skills and pursue better-paying jobs as we see with Thomas Holcroft and James Lackington, which could threaten the existing power structures which benefit the people in authority. In addition, literacy could lead to political participation. The ruling class believed that the poor were not capable of participating in the political process and that they should not be allowed to do so. By

learning to read, the poor could gain access to political information and become more informed about the issues that affected them. This could lead to political mobilization and challenge the existing power structures.

The French Revolution served as a grim warning to people in authority and power. They had heard that pamphlets and leaflets had been given to the commoners of France which advertised the belief of uprising which then led to the French being able to uphold a successful revolution and abolish a monarchy and establish a fairer society. France is not that far away and that heightened fears that this could happen to England which is what the aristocrats obviously didn't want. An example of this happening is the address from the London Corresponding Society the passage criticises the government and is written by a group of labouring class individuals who came together through an interest in politics. They drew inspiration from some of the ideas which stoked revolution in France and this in turn, caused anxiety among some in England as a result of them spreading their ideas which included criticism of the 'present vitiated state of British government'. The London Corresponding Society was eventually banned. Another producer of cheap literature was Thomas Spence who created his Pigs' Meat or Lessons for the Swinish Multitude for just 1 d in direct response to Burke. Therefore, one of the reasons why people in authority were concerned about poorer people learning to read was that they might gain access to political information and become more informed about the issues that affected them and that this could lead to a revolution and challenge the existing power structures.

There were also different expectations people had of men and women being able to read. For example, in the letter of Lord Chesterfield to his son, he encourages his son to seek and 'hoard up' knowledge, and not to get tired of it as having more knowledge and understanding it gives you respect in high society. He also encouraged his son to explore books and sciences and told him that if he did not make himself master of it, he would live a very boring life. We can infer this when he says "and, take my word for it, a life of ignorance is not only a very contemptible, but a very tiresome one". This shows clearly the expectations that fathers had for their sons' learning, particularly if they came from wealthy backgrounds. This book was published and widely circulated as an example of how to raise sons.

On the other hand, John Gregory, a father writing a book of advice to his daughters told them a very different thing; He stated, "Avoid all books, and all conversation, that tends to shake faith on those great points of religion which should serve to regulate your conduct, on which your hopes and eternal happiness depends". We can infer that John Gregory wanted the best for his daughters and knew that if they wanted to have respect and live a happy life without people judging them and getting them into trouble it would be best for them to avoid books, as at that time girls who read books were considered weird, lost and that they had no manners. Therefore, a reason why people in authority such as husbands, fathers and brothers didn't want women to read was not because they hated them and thought they were inferior but rather to protect them from the evil and judgemental high society. And perhaps from other males who would be jealous and try to land them in trouble. We can infer this belief from when John Gregory says, "If you happen to have any learning, keep it a profound secret, especially from the men".

Another reason why authority wanted to stop women from reading was that society at the time thought that if women

were to have begun to read, she would have been so engrossed in it that she would have made herself seem like a fool and that she would abandon all her duties as a woman, which include cleaning looking after children and various other chores. They were also worried that women would have been in a constant fantasizing state where they would think and dream about being a romantic relation like the characters in the books they might have read. We can infer this from the pictures of Bernard d'Agesci (1780) which depicts a lady reading the letters of Abelard & Heloise.



Bernard d'Agesci (1780)

Lady Reading the Letters of Abelard & Heloise

By contrast a painting by Joshua Reynolds (1771) which depicts Theophilia Palmer reading Clarissa, and painting by Jean Honore Fragonard (1769-72) which is titled the reader and shows a woman reading suggest that reading was beginning to become a more acceptable pastime for women.

In addition, literacy was seen as a threat to the established religious order. While many people such as James Lackington and Thomas Holcroft began to read by reading the Bible, once they had developed this skill, they often strayed into more controversial topics. We see a huge growth in different religious beliefs at this time and movements away from religion towards atheism. The poet Percy Shelley was expelled from Oxford University for atheism. England was a Protestant country in the eighteenth century so approved of people engaging with the Bible for themselves provided they had plenty of 'guidance' from the clergy. However, one of the issues with Protestantism is that once you allow people to interpret the Bible for themselves how do you prevent them from taking their beliefs in directions not sanctioned by the State and the Church? This is what happened as sects such as Unitarianism developed and other nonconformist beliefs.

In conclusion, the authorities during the eighteenth century were concerned about women and poorer people learning to read because they believed that it would lead to social unrest and challenge the existing power structures. The evidence suggests that women and the poor were considered inferior and were not allowed to participate in the political process. Furthermore, literacy was seen as a threat to the established religious order.

My own reflection on what reading means

Conclusion:

This essay has demonstrated that reading is a powerful tool that can have a profound impact on individuals and society. It provides access to ideas, knowledge, and skills that can help people improve their lives and the world around them. For women, reading can be particularly empowering, providing them with the knowledge and skills they need to succeed in a world that has often been dominated by men. For those with political energy, reading can provide a deeper understanding of the issues they care about and the tools they need to effect change. Being able to gain access to ideas and knowledge is essential for personal growth and development. It allows individuals to broaden their horizons, challenge their assumptions, and gain a deeper understanding of the world around them. Moreover, it enables individuals to give a lasting account of themselves, to share their experiences and insights with others, and to contribute to the collective knowledge of society.

However, access to ideas and knowledge has not always been equal. As this essay has shown, while many more people were starting to read at the end of the eighteenth century, it is not possible to claim, as Lackington does, that everyone was able to read. Historically, certain groups of people have been denied access to education and the resources necessary to learn. Even today, there are still significant inequalities in access to education and information. Therefore, it is important to continue working towards greater educational equality and to ensure that everyone has the opportunity to gain access to the knowledge and skills they need to succeed.

References

- <https://www.jrf.org.uk/report/does-money-affect-children%E2%80%99s-outcomes>
- <https://www.jrf.org.uk/sites/default/files/jrf/migrated/files/poorer-children-education-full.pdf>
- <https://www.gov.uk/government/publications/making-finance-decisions-for-young-people-parent-and-carer-toolkit/making-financial-decisions-for-young-people-who-lack-capacity-a-toolkit-for-parents-and-carers>
- <https://www.kqed.org/mindshift/32503/how-the-power-of-interest-drives-learning>
- <https://brewminate.com/the-growth-of-literacy-in-western-europe-from-1500-to-1800/> [accessed 19.11.2023]
- <https://www.encyclopedia.com/social-sciences/encyclopedias-almanacs-transcripts-and-maps/women-16th-17th-and-18th-centuries-introduction>
- <https://slate.com/human-interest/2012/10/a-woman-reader-by-belinda-jack-women-s-books-have-always-been-marginalized-from-the-roman-empire-to-chick-lit.html>
- https://socialsci.libretexts.org/Bookshelves/Sociology/Introduction_to_Sociology/Introductory_Sociology_1e_%28OpenStax%29/17%3A_Government_and_Politics/17.02%3A_Power_and_Authority
- <https://communityliteracy.org/why-were-the-jesuits-a-threat-to-elizabeth/>
- <https://www.unicef.org/eap/press-releases/70-10-year-olds-now-learning-poverty-unable-read-and-understand-simple-text>
- <https://openstax.org/books/introduction-sociology-2e/pages/17-1-power-and-authority>
- <https://www.psychologytoday.com/us/blog/persuasion-bias-and-choice/202112/motivation-for-power-why-do-people-want-to-be-in-charge>
- [teach-reading](https://www.apmreports.org/episode/2019/08/22/whats-wrong-how-schools-</p>
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<https://www.bbc.co.uk/bitesize/guides/zgw3wxs/revision/2>

https://en.unesco.org/70years/knowledge_societies_way_forward_better_world

<https://www.newstatesman.com/international-politics/climate-international-politics/2021/09/the-power-trap-why-the-energy-crisis-is-a-crisis-of-politics>

<https://www.newstatesman.com/international-politics/climate-international-politics/2021/09/the-power-trap-why-the-energy-crisis-is-a-crisis-of-politics>

'Address from the London Corresponding Society to the Inhabitants of Great Britain on the subject of Parliamentary reform. (1792)

Blackstone, William, 'The Commentaries of Sir William Blackstone on The Laws and Constitution of England (London: Clarke, 1796)

Burke, Edmund, Reflections on the Revolution in France (London: 1790)

Cavallo, Guglielmo, and Roger Chartier, eds., A History of Reading in the West (Cambridge: Polity, 1999)

Chapone, Hester, Letters on the Improvement of the Mind Addressed to a Young Lady (London: 1773)

Lord Chesterfield, Letters Written by the Late Right Honourable Philip Dormer Stanhope, Earl of Chesterfield to His Son (London: 1776)

Eliot, Simon, "'Never Mind the Value What about the Price?": Or, How much did Marmion Cost St John Rivers', Nineteenth-Century Literature, 56 (2001), pp. 160-197

Gregory, John, A Father's Legacy to his Daughters (London: 1761)

Lackington, James, Memoirs of the first forty-five years of the life of James Lackington (London:Lackington, 1791),

Lackington, James, The Confessions of J Lackington (London: for the author, 1804)

More, Hannah, Cheap Repository; The Sunday School (London: 1795)

Holcroft, Thomas and William Hazlitt, Memoirs of the Late Thomas Holcroft (London: printed for Longman, Hurst, Lees, Orme and Brown, 1816)

Lady Sarah Pennington, An Unfortunate Mother's Advice to Her Absent Daughters (London: 1761)

Porter, Roy, English Society in the eighteenthcentury (London:Penguin,1990)

St Clair, William, The Reading Nation in the Romantic Period (Cambridge:CUP, 2007)

Vincent, David The Rise of Mass Literacy: Reading and Writing in Modern Europe (Cambridge: Polity Press, 2000)

Wollstonecraft, Mary, A Vindication of the Rights of Woman (London: 1792)

Tutor comment:

"Zahraa is such a diligent student as this work demonstrates. She worked tirelessly throughout the course, and I was particularly impressed by her independent research. She followed some fascinating research paths and fed the results into her essays each week building a rich and detailed base from which to write her final assignment. She was a valued member of a lovely group of students, and I am grateful to Ricards Lodge High School and Ms di Passio for all their support with the programme."

Social Sciences

Tackling Generational Bias – Social Policy to support Care-Leaver Parents

Key Stage 4

Pupil: **Charlie Berrisford**

School: **Ormiston Sir Stanley Matthews Academy**

Supervised by: **S. Shomai**

Tutor University: **University of Worcester**

Course Title: **Breaking the cycle using social policy**

What Problems Does This Policy Brief Aim to Highlight?

- Challenges faced by care-experienced parents
- Disparities between care-leavers and non-care-experienced parents
- Financial and practical help which can be offered by governmental organisations
- Tacking prejudices against care-experienced parents

Introduction

Over 400,000 children are involved in the social care-system at any time in the UK (80,000 in care placements), so it is imperative that the government ensures that children receive the necessary support as they move through the system, and eventually leave it. This is especially important as lack of adequate support may be causing damage to care-experienced parents, often leading to continued involvement from social services within the family, in a generational snowball effect that can have long-lasting effects on both parent and child. This proposed policy, aims to present the impacts of the lack of support available to care-leaver parents, as well as provide a comprehensive selection of methods that will help tackle the generational bias emerging, ranging from emotional and therapeutic counselling to financial and practical help, in an informative and concise way. Additionally, you will find clearly highlighted and annotated evidence collected from various academic sources that aim to give the reader a holistic perspective on the challenges faced, as well as help guide understanding. This issue is undoubtedly urgent, and I implore the reader to consider the suggestions and evidence carefully and explore the arguments made thoroughly, as I strongly believe that the wellbeing of families should be the utmost priority for national and local organisations.

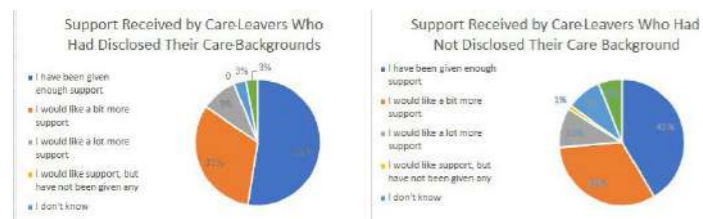
Section 1:

What Challenges Are Faced by Young People Entering Care?

Entering the care-system is an experience that is unique to each individual and all will face different challenges, therefore forming a one-size-fits-all solution is impossible, however, numerous studies suggest a correlation between care-placements and social and economic outcomes for the young person. Following a meta-analytic review conducted in 2019, it was found that placement instability (referring particularly to the

frequency of change of placement, as well as the support available from them) commonly had consequences such as losing **"intimate bonds [and] significant social relationships"**¹. Naturally, that may have profound impacts on the ability of care-experienced parents to form meaningful social relationships that will enable them to receive support; furthermore, the study concluded that placement instability **"increased risk for [...] distrust in guardians and other adults"** which can lead to strained relationships with their own children, especially as they become more independent. This is because a lack of communication and trust with their caregiver can result in underdevelopment of skills needed to build loving family bonds, which would allow the feelings and needs of all to be expressed. The study actively expressed that placement instability does not predict with absolute certainty that an individual will develop these problems, and equally, complete stability doesn't ensure fully positive outcomes. However, this increased likelihood of the young person entering care because of a lack of family structure is one of the main problems that the points here will help to tackle.

Another area where challenges can be found for care-experienced parents was financial instability. Data from the ONS survey displayed that individuals in care were **"less than half as likely to be living in a household that was owned,"**² when compared with their out-of-care counterparts. When raising a child, this poses the issue of not having the means to sufficiently provide for another person, which may lead to the child being taken away from parents and forced into care. This disparity in financial independence may stem from several factors, however access to higher education, such as university, was observed to be a barrier for many care-leavers. A study conducted in 2012³ interviewed a group of 200 participants who had been in the care-system, to understand their own experiences of not only entering higher education, but also during their study. The study divided the participants into two groups, those who had informed their universities about their care backgrounds, and those who had not. Of those who had, nearly half had expressed that they would have benefitted from additional support from their HEIs (Higher Educational Institutions) with **9%** expressing the need for **"A lot more support"**. However, of the group that had not disclosed their care backgrounds, nearly **60%** responded that they were not being given enough support. These statistics display that **"limited institutional support ... exacerbate[s] their marginalisation from higher education"**,⁴ which could have consequences for financial stability later in life, as education is often considered a **"Passport out of poverty"**⁴.



Hyde-Dryden, Georgia. Overcoming by degrees: exploring care leavers' experiences of higher education in England. Diss. Loughborough University, 2013 // see Page 192

The 2012³ paper also explores the variation in financial

factors that may make attending university more difficult. One case showed a fortunate individual who received adequate funding from both their university and local authorities with excess that local authorities suggested she put into savings. Conversely, one interviewee explained that they had been given incorrect information about the funding that they were eligible for, insufficient funding and found that their support diminished throughout their study. Not only can there be monetary barriers, but also cultural barriers to further education. Cultural change should be integrated to **'Address consequences of poverty'**, including **'Low educational horizons and expectations'**⁴ to encourage aspirations and financial success. These issues can make attending university almost impossible for some, demonstrating the urgent need for local authorities to make information and resources accessible to ensure that care-experienced adults have equal opportunities to those who grew up in 'traditional' families, including financial support.

Section 2:

Revisions in Social Policy

For the reasons outlined above, it is imperative that the government take action to support these families. To begin, the points made in this section will be intended to both target the support at the root of the issue, the experiences of young people in care currently who may go on to become parents, as well as support for current care-leaver parents.

One potential way to tackle continued social service involvement is by funding professional family support facilities, allowing parents to connect with others and to receive practical advice. Schemes such as the facilities suggested have been used previously, for example in the **Sure Start Centres**, which provide medical, emotional, and parenting advice for new parents, particularly in less privileged areas: this is especially important as studies show that **81%** of children entering the care system were **"Deprived in at least one dimension"**⁵ (following the 2011 census). One research paper displayed the long-term benefits of early start centres even through the young people's teens, suggesting that at their peak, Sure Start Centres prevented hospitalisations of **13,000**⁶ 11–15-year-olds per year, most likely due to providing accessible medical information to parents to keep them well-informed about the health of their children, as an effective preventative measure. This is just one example of the tremendous improvement that early start centres can have on the well-being of new families. Unfortunately, these centres have become significantly less common recently, meaning that there is a greater need for authority involvement than before. This, however, can be to the detriment of families as social services can take away the independence of the parents in the upbringings of their own children by creating an authoritative structure which may not suit everyone.

Therefore, increasing the number of facilities who offer pastoral and holistic support, as opposed to intrusive action, will reduce the stigma involved with the need for support (especially for care-experienced individuals who may face unnecessary judgement about their ability to parent), while providing a safety net for all families and maintaining parental independence. However, these facilities can be costly to the taxpayer, potentially taking resources away from other necessary facets of social support, as at their peak, Sure Start Centres cost £1.8 billion per year. This has recently been reduced however by over

two-thirds, following significant reduction in the number of centres. Thus, while centres have proven themselves to be vital in providing advice and support, they cannot provide a complete solution and must be used in parallel to other schemes to be viable.

One of these potential parallel schemes could be 'Staying Put' policies: many UK regions have implemented policies which allow young people to remain in care or receive continued governmental support after the age of 18 if they are in some form of higher education. For example, the Scottish **'Continuing Care'** policy was introduced in the **Young People's Act 2014**⁷, which enables young people to remain in their current placement until age 21. Further after support is provided until age 26. Similar systems are seen in Wales (**'When I am ready'**)⁸ and Northern Ireland (**'Going the Extra Mile'**). These require local authorities to provide help that is **'Intended to be equivalent to that which a child who has not been looked after might reasonably expect from his or her parent'**⁹. While these systems seem practical, the countries within the UK are not unified in the laws surrounding the policies: this can be seen in the age range that the systems cover (Scotland supports people up to 26, while Wales and N. Ireland provide support until age 25) as well as the level of support given. This can be rectified by creating an overarching system that includes the whole nation – overall this would be beneficial to ensure that individuals are not restricted and have equal opportunities across regions. Furthermore, these schemes are intended to allow young people to remain in a placement up until mid-20s if they are enrolled in an educational course, such as a degree or apprentice – this would greatly reduce the impacts of the academic disadvantages outlined in paragraph 2 of section 1 by providing stable living accommodation and support networks.

Before concluding, I'd like to provide a brief mention to the improvements that must be made through financial grants needed to ensure money struggles are not reasons to split families apart. In May 2021, a £51 million¹⁰ investment was put towards improving financial support for care-leavers, announced by Education Secretary, Sir Gavin Williamson, which will complement the **'Staying Put'** scheme and allow financial support to UK care-leavers. While this shows the strides that the UK government has made in prioritising after-care of looked after young people, it is imperative that this isn't a single-time investment. The data has clearly shown that care-experienced young people are more frequently predisposed to poverty and economic disadvantage, and any action taken to reduce this gap should be taken with immediate effect.

Section 3: Conclusion

To conclude, I'd like to reiterate the importance of supporting parents who have been in the care-system, to create a safe and non-judgmental society where both parent and child can thrive, and where a parent in care doesn't necessarily mean the child following. This means that providing adequate support to individuals currently in the care-system as well as after-care for those emerging into independence.

The Africa proverb, 'It takes a village to raise a child' has such wide connotations and meanings for so many, whose challenges will differ vastly during the upbringing of a child, but for those without that 'village' it is left up

to leaders and governmental organisations to form a supportive network where social policy can ensure fairer and more equal opportunities for all families, regardless of background. I firmly believe that by providing well-equipped support facilities and better educational and economic opportunities, we, as a society, can break down the barriers faced by so many in their journey towards raising a loving and well-provided for family. We owe it to the 400,000 children involved with social services, and 80,000 looked after within the care-system, to ensure that their futures are not hindered by an inadequate system and unjust biases, and that they have this proverbial village as their own families grow.

References:

- 1 Konijn, Carolien, et al. "Foster care placement instability: A meta-analytic review." *Children and Youth Services Review* 96 (2019): 483-499.
- 2 Who are the children entering care in England? - Office for National Statistics (ons.gov.uk) - 11/2022
- 3 Hyde-Dryden, Georgia. Overcoming by degrees: exploring care leavers' experiences of higher education in England. Diss. Loughborough University, 2013.
- 4 McNamara, Harvey, Andrewartha, 2019 (Abstract)
- 5 Who are the children entering care in England? - Office for National Statistics (ons.gov.uk) 11/2022
- 6 At their peak, Sure Start centres prevented 13,000 hospitalisations a year among 11-to 15-year-olds – Sarah Cattin and Christing Farquharson – 08/2021
- 7 Interpretation of Key Terms - Guidance on Part 11 (Continuing Care) of the Children and Young People (Scotland) Act 2014 - gov.scot (www.gov.scot)
- 8 Gov. Wales 'When I am Ready Scheme' 03/2016 (Part of 'Social Services and Wellbeing Act')
- 9 Social and Well-Being Act (Wales) 2014
- 10 £51 million for councils to support care leavers – Department for Education and The Rt Hon Sir Gavin Williamson CBE MP 05/2021

Parent comment:

"I couldn't be more proud of the work Charlie produced; or appreciative of the chance to participate in this programme."
- Sarah Berrisford

To what extent is the Criminal Justice System successful in achieving justice for victim-survivors of domestic abuse, and how could it be improved?

Key Stage 4

Pupil: Eden Clifford
School: The Burton Borough School
Supervised by: C. Marino
Tutor University: University of Warwick
Course Title: Law, Feminism and Society: Improving Our Criminal Justice System for Victim-Survivors

I firmly believe the Criminal Justice System (CJS) is not successful in achieving justice for victim-survivors, and many improvements need to be made. The Criminal Justice System is a government system made up of several government agencies, with a goal of controlling crime and protecting victims. One of these agencies is the Ministry of Justice (MOJ) which is tasked with overseeing the entire running of the Criminal Justice System. It is one of the largest government departments and is responsible for all aspects of the criminal law. A brief overview of the aims and ideals is wanting to create "a world class justice system that works for everyone," ensuring that "offenders are brought to justice" and making victims feel "protected, cared for and safe" [1][2]. However, this is not the reality of the Criminal Justice System especially for women victims and there needs to be more effort put into fixing this. Feminism – a political movement striving to end sexism and give everybody equal rights – is an immensely important concept when bringing criminals to justice. I will be greatly considering this concept throughout my essay much like how I will be speaking from a victim-centred point of view and focusing on feminist victimology. This means that instead of focusing on how we should be dealing with criminals I will mostly talk about how women victims are treated and how they should be treated - which is with respect. This is a massive problem in the CJS as in most cases judges concentrate on criminals and ignore the victim which can be seen in this quote "the CJS is ineffective at addressing the harm done to victims because it centres around punishing the accused perpetrators of violence" [3]. Therefore the CJS is not successful in achieving justice for victim survivors.

I thoroughly believe that a perfect Criminal Justice System would have a fifty-fifty balance between punishing criminals and caring for victims so that everybody has the best possible experience, instead of putting all its focus on punishing the criminals and neglecting the needs of victims. A successful Criminal Justice System should adhere to all its stated aims such as - giving "the right amount of support at the right time" and "to recover and rebuild" the victim survivors lives [2]. Additionally, the symbols of Lady Justice, who is the personification of justice itself should form a huge part in the running of the Criminal Justice System. For example, the scales of justice which she holds in her right arm symbolise weighing the two sides of a court

case which shows that the CJS should not make a biased decision as scales are a fair way to decide between two opposing sides. Lady Justice also wears a blindfold over her eyes which conveys that she cannot judge the victim based on their race, religion, disability, or appearance further emphasising how the case will be unbiased in an ideal justice system. In her left hand, she holds a sword which can be interpreted in three ways. Firstly, that the CJS is powerful and must be respected otherwise the sword will punish offenders who disobey it. This illustrates how crime and criminals will be penalised to make the world a safer place for all. Secondly, that the sword defends the innocent including victims of crime and punishes the guilty, this is underlined in the aims and ideals. Finally, as the sword is unsheathed this shows that there are no secrets in the court room and that nobody will be forgiven without their due punishment. At the bottom of the statue there is a book that Lady Justice is stood on that is lifting her up which some interpret to be the Book of Law. This shows that the rules and real meaning of law will always be present during all court cases. Law is seen as a particularly important concept and above any living creature this can be seen in the quote "let me be clear- no one is above the law. Not a politician, not a priest, not a criminal, not a police officer," [4]. An alternative interpretation is that this book is the Bible, which would suggest that God and his rules are lifting Lady Justice up towards heaven. This could also infer that God is watching every court case and knows the truth about the potential criminal and victim and knows whether to send them to heaven, hell, or purgatory after death. God will also oversee if victims are being mistreated and disrespected during court and will punish the people doing this to them – in life or after death. Next to the book is a snake which Lady Justice is stood on; snakes symbolise evil, especially in the bible. This tells us that evil and crime will be crushed. It could also be used as a metaphor for the criminals changing their ways. Snakes shed their skin and have a new skin underneath which could signify the criminals shedding their bad behaviour after their punishment and becoming a new, better person. These symbols of Lady Justice clearly outline the aims and ideals of the Criminal Justice System. Ideally, the Criminal Justice System should also take close care in providing the victims of crime with the rights that they deserve. In the 1960's and 70's the Victims' Rights Movement began which was a cultural shift that highlighted the importance of treating victims with respect and care for their rights. This movement began because of the feminist movement so this shift had a prime goal of achieving rights in the Criminal Justice System for men AND women. The feminist movement "took on helping female victims of crime as part of its mission." [5]

Increasing attention on victims' rights meant that more people than ever before began to be treated correctly, but unfortunately this is not the case for everyone. Many victims are subject to secondary victimisation which means that after being put through trauma once (the reason they are in court) they are now being put through it again. This can include many different things such as their abuser scoffing and talking over them, being told that they are exaggerating, that men get angry sometimes and that its 'normal', being accused of lying about their abuse and just not being updated about your case. This is unnaturally

common towards women and many women have a negative viewpoint towards the Criminal Justice System. For example, a survivor named Nicole stated that "You have a room full of people questioning who you are as a person and trying to tear that apart...", that you "can't defend yourself" and you are made to "feel like you don't really matter" [6]. Another example is from a domestic violence interview where a victim revealed that while she was crying during her case as her abuser was further bullying and abusing her, a judge said to her "I'm sorry I can see why Mr [...] finds you such a difficult woman," and continued to call her "argumentative" [7]. The ideals and reality of the CJS are almost the antithesis of one another as displayed in this quote "victim-survivors expect to receive support ... she instead encounters victim-blaming attitudes" [8]. Minority groups are particularly affected by secondary victimisation as seen in these quotes "racism, homophobia and disability discrimination create additional sources of secondary victimisation", "certain groups – including women, people of colour and those with disabilities – are disproportionately affected by secondary victimisation" [9] [10]. These sources illustrate how bad the Criminal Justice System treats victim-survivors and how substantial changes need to be made. Personally, I believe this is a disgrace and it needs to change immediately. This is a strong argument as there is lots of evidence to support the point and most sources are recent – one being in 2023. In an ironic twist, Lady Justice can also be used as a symbol for how people are mistreated in the Criminal Justice System as her blindfold has a double meaning. The blindfold could symbolise that she has a blinkered or unchanged point of view which is displayed in a passage written by a feminist academic which states "Lady Justice is far from blind and impartial – she is blinkered, biased and discriminatory." [11] She later confesses that many women in the CJS are "finding themselves harmed further at the hands of the CJS" which emphasises how common Secondary Victimisation is [11]. Lady Justice only knows one perspective which is the one she was first introduced to which was most likely a misogynistic view as historically this was normal. As her eyesight is covered, she cannot see any other viewpoints and will have an unchanged opinion on the cases. This shows that the patriarchy will often be displayed in the Criminal Justice System and in most court cases. Therefore, the Criminal Justice System is not successful in achieving justice for victim-survivors, especially female ones, and changes must be made to improve it.

One important way to improve the CJS for victim-survivors would be to employ more Independent Domestic Violence Advocates (IDVA's) to help guide the victims through the court process. Feminist principles of empowerment, reducing inequalities and victim-centeredness are the main goals of IDVA's work. IDVA's were originally introduced in 2005 and the position is recently gaining more popularity as victims' rights are increasingly attracting more attention in society. IDVA's are specially trained to support victims of domestic abuse, to fight for their voices in a court room, to give them a listening ear when struggling with trauma and supply trauma informed care. Trauma-informed care means that IDVA's will focus on victims' needs and strengths to build confidence instead of blaming them for what has

happened. IDVA's also supply victims with other services such as housing, legal services, and counselling to improve the victim's wellbeing and help get their life back on track. Most importantly IDVA's are a person that victims can trust to talk about their case or mental health and receive advice tailored to them. Some IDVA's are specialised to support victims-survivors from minority groups including LGBTQ+ and disabled communities to recognise their specific needs. This will reduce Secondary Victimisation in the court rooms as victims do not feel so alone while in a court case. Victims with access to IDVA's say that they have helped their court process, "88% reported feeling safer after receiving IDVA support" and IDVA's are "the highest rated form of support for victims and survivors of domestic abuse" [12]. This quote is very trustworthy as it uses statistics. Some victims go through so much distress and extra trauma throughout the court process that they are left "wondering whether it was even worth reporting it to the authorities at all" [10]. Increasing the amount of IDVA's in the CJS will greatly improve how victims of crime, especially domestic violence, are treated throughout the court process but cannot single-handedly transform the societal issues that invade the CJS.

Unfortunately, austerity has had a terribly negative impact on the CJS. Austerity is when the government reduces the amount of money, they spend to reduce the nation's budget deficit. In 2007-2008 there was a severe financial and economic crash which led to long-lasting debt in Britain. When the Conservative Party was elected in 2010, they chose to decrease the amount of money spent on public services (e.g. the CJS). This has resulted in a lack of funds to pay for enough IDVA's for every victim-survivor in need; this means that many victims are left feeling alone and stressed when trying to pursue justice as IDVA's are unavailable. Most areas in Britain are at a significant shortage of IDVA's "particularly in the West Midlands (56%) and in Yorkshire and Humber (52%)" [13]. This quote is especially useful as it was written in 2020 so it is relatively recent, and it includes statistics which illustrates the exact impact of austerity. Another solution to improve the CJS would be specialist domestic violence courts which are courts that only deal with domestic violence cases, and all judges, lawyers, clerks etc have been specially trained to be sensitive to the victim-survivors needs and respond in a trauma-informed way. Similarly, austerity has negatively impacted the availability of specialist court provision, so there are simply not enough to meet the needs of victim-survivors all around the country.

In conclusion, I strongly believe that the CJS is not successful in achieving justice for victim-survivors. I believe this because everybody involved in the CJS knows how to treat victims based off of the aims and ideals, including Lady Justice herself who often presides over their courthouses as a symbolic statue for everyone to remember the ideals of justice, but unfortunately legal professionals do not all treat victims in this way. The aims and ideals state that it is "their moral duty to protect these victims of crime" [2]. However, we know that this does not always happen as some victims are subject to secondary victimisation meaning they have been put through a second lot of trauma by the CJS. To improve, the government should put more money into providing more IDVA's for all victims to receive the care and support they deserve.

References:

[1] Ministry of Justice, 'About Us' (2023, gov.uk website), available from: <https://www.gov.uk/government/organisation/ministry-of-justice/about>

[2] Ministry of Justice, 'Delivering justice for victims: A consultation on improving victims' experiences of the justice system' (gov.uk website, 2021), available from: https://consult.justice.gov.uk/victim-policy/delivering-justice-for-victims/supporting_documents/deliveringjusticeforvictimsconsultation.pdf

[3] Jeffery Bradley, 'the criminal justice system is retraumatizing victims of violent crime' (the conversation, November 2022) available from: <https://theconversation.com/the-criminal-justice-system-is-retraumatizing-victims-of-violent-crime-193067>

[4] Antonio Villaraigosa, '11 famous quotes about law' (2016, vannormanlaw.com website), available from 11 Famous Quotes About Law (vannormanlaw.com)

[5] Leah Daigle, 'introduction to victimology', in victimology: the essentials (3rd edn, sage 2021), available from: https://uk.sagepub.com/sites/default/files/upm-binaries/83271_Chapter_1.pdf

[6] Department of Justice Canada, 'transforming the criminal justice system: victim's experience' (youtube, 2017), available at https://www.youtube.com/watch?v=BOrwmgd_L5g [begins at timestamp 2:17]

[7] jenny birchall and shazia Choudhry, "'what about my right not to be abused?': domestic abuse, human rights and the family courts' (womensaid website, 2018) available from : <https://www.womensaid.org.uk/wp-content/uploads/2018/05/Domestic-abuse-human-rights-and-the-family-courts-report.pdf>

[8] Lesley Laing, 'secondary victimisation: domestic violence survivors victims' navigating the family law system' (2016) 23 violence against women, available from: <https://journals.sagepub.com/doi/full/10.7710/1077801216659942>

[9] equality and human rights commission, 'survival, recovery and justice : specialist services for survivors of domestic abuse' (November 2020), available from: https://www.equalityhumanrights.com/sites/default/files/parliamentary_briefing_specialist_services_for_survivors_of_domestic_abuse.docx

[10] thriving survivors, 'what is secondary victimisation?' (thriving survivors website, 2023), available from: https://www.thrivingsurvivors.co.uk/post/what_is_secondary_victimisation

[11] Rebecca Roberts, 'is lady justice blind or just blinkered?' (centre for crime and justice studies, February 2014), available from: <https://www.crimeandjustice.org.uk/resources/ladyjustice>

[12] the victims and prisoners bill, 'written evidence submitted by safe lives to the victims and prisoners bill PBC: IDVA's (VPB32)' available at: <https://bills.parliament.uk/publications/51938/documents/3718>

[13] roger Grimshaw, 'domestic abuse interventions: a history of neglect amidst growing need' (centre for crime and justice studies, June 2020), available from: <https://www.crimeandjustice.org.uk/resources/domestic-abuse-interventions-history-neglect-amidst-growing-need>

Parent comment:

"We are very proud of what Eden has achieved through the Scholars Programme. It has shown us what a capable and hardworking individual she is, congratulations Eden!"

Discuss the policy factors that influence the play experience of a child in hospital. Which factors do you consider to be most influential and why?

Key Stage 4

Pupil: **Mabli John**

School: **Ysgol Bro Preseli**

Supervised by: **K. Minton**

Tutor University: **University of Wales, Swansea**

Course Title: **Does Play Matter? Play Policy and the Hospital Play Experience**

It has been over 30 years since play was recognised by the United Nations as a child's right. This assignment will aim to discuss how such policy factors influence the play experience of a child in hospital, with consideration of the most influential factors.

Play is a fundamental right of all children and adults and has become an integral part of national and international policy, as noted in Article 31 of the United Nations Convention of the Rights of the Child (1). It could be argued that it forms the basis of how we develop as people. Without having the opportunities to play we would not be able to understand or enjoy life experiences. Play is everything; play is being able to engage in activity for enjoyment and recreation rather than a serious or partial purpose (2). Defining play is complex and following analysis of various theoretical schools of thought, Peter Gray (2013) concluded that play has five main characteristics, it is self-chosen and self-directed; intrinsically motivated with no end gain; guided by rules that are loose enough to allow creativity; imaginative; and conducted with an alert, active and safe mind (3). Through play we learn to adapt, survive and thrive by exploring different aspects of our world, problem solving in a safe and non-judgmental way, learn to process our world, and ultimately come to understand who we are, and our place in our world.

Play can encompass so many different experiences through the variety of types of play one can be exposed to. According to B. Hughes in their article Play Matters (encourageplay.com) (4) there are about 16 different types of play. These all include and evolve around physical, emotional, social and cognitive features. Ranging from rough and tumble play and locomotor play, where the child is encouraged to play very tactically with others, for example play-fighting, wrestling, to playing tag or 'stuck in the mud', all of which help the child understand and develop physically, their gross motor skills, and socially as they experience touch and pressure in a safe and fun environment with others.

If we consider socio-dramatic play and role play, these are types of play which allow the child's imagination to run free, enacting and engaging in pretend play for example, pretending to be a shopkeeper or working in a cafe, making tea and cake for everyone. Assuming these roles allow children to pretend and develop a sense of others and the different roles people play, how they may behave and speak - all things that children absorb as they

are exposed to a variety of different social settings. If we consider the other type of motor development, fine motor skills, these may be honed playing with objects, pens, being creative by drawing, colouring and messy play. To be able to think creatively and interact socially is a skill that people can take for granted. We have a right to play, and when we have been afforded these opportunities, we often don't appreciate how important it is.

Without having the opportunity to play, a child could be considered deprived in all manner of ways and go on to experience lots of difficulties later in life. Sadly, more children than we could wish to imagine don't experience this fundamental right to experience play. Their growth and development occur differently in very different situations, for example when a child is raised in a very emotionally deprived environment, or in a very traumatic situation.

Through our understanding of child development theory, we know that this has a significant impact on their development - it is often stunted, and the detrimental impact on their emotional, social, physical and cognitive development is immense. If we consider the evidence presented in the video 165 - Effect of emotional deprivation and neglect on babies (YouTube) (5) we see the clear evidence of children who are both securely and insecurely attached to their caregivers (6). Those who were securely attached, content and felt safe showed curiosity and were immersed in the blocks they were provided with. Others who were known to have been neglected, both emotionally and physically, showed little interest in the playthings that were placed in front of them, having no learnt experience of what they should do with them, and showing more interest or anxiety in the other people in the room (researchers).

As we have come to understand, children that have grown up where they weren't exposed to an environment that encouraged play can be at greater risk of developing poor mental health and more difficulty in their lives. For example, not being able to recognise their own feelings and thoughts, and having trouble controlling their emotions, often difficult emotions such as envy, anxiety and feeling overwhelmed, all things that we safely and naturally learn through play, and most importantly learning to be comfortable in their own skin.

Thankfully, as aforementioned, the importance of play in child development has been highlighted at international, national and government level, with specific policies developed and written to help achieve their strategic aim to enhance child wellbeing. The Welsh Assembly Government Play Policy (2002) (7), which was reviewed in 2014 with the publication of Wales: A Play Friendly Country (2014) (8) and again in 2020 (9). These policies reflect the views that every child in Wales is entitled to respect for their own combination of qualities and capabilities. This policy sets out the aim that play should be personally directed and intrinsically motivated, and that every child's need to play is met and supported by their caregivers, local communities, and education. The Welsh Government went a step further by enshrining this ethos in law, the first country to do so. Similarly, the Scottish Government also developed a Play Strategy for Scotland (www.gov.scot) (10) which sits alongside their Early Years Framework

(11) and National Positive Parenting Strategy (www.gov.scot) (12) and emphasises the benefits of play on child development, but also offers more guidance to families on how they can support their children to access healthy play opportunities. The beneficial elements of using nature, and outdoor spaces is also reinforced in the Scottish policy. Having such policies ensures that governments can hold different local authorities to account and ensure that they have play on their own locality agenda.

Locally here in Wales, the 2019 Local Authority Play Sufficiency Assessments show good progress is being made through cross sector and multi-disciplinary working, despite the financial pressure across the board. Our community borders across three large local authorities in West Wales, where we are fortunate to have plenty of physical and environmental space to play, and support in place to ensure children of all ages have access to structured play opportunities through the health, education and social sector. Ensuring children are supported to access play opportunities is crucial to their development and ability to cope with more difficult experiences, for example if they are required to spend time in hospital or have a health condition which requires ongoing hospital care and monitoring.

As we have already established, play can enhance a person's physical and mental wellbeing. In 2019 and 2020 the Starlight Children's Foundation conducted a review of current research on the impact of play in hospitals (13). They concluded that when delivered as part of a team of health professionals, play therapy can improve people's experience of hospital; through distraction and safe escape, could reduce anxiety, stress and pain associated with being in hospital and their treatment. Play can also reduce the amount of sedation required, and support engagement with required treatment. Children and young people are often frightened and have difficulty coping with strange sights, sounds, smells and hospital routines. People can feel vulnerable and unable to express their wishes, which play has been shown to help with. Play can enhance the feeling of control and autonomy, which I have the privilege of knowing about first hand within my own family. My brother was born with a congenital heart defect and play therapy was a significant factor in helping him to tolerate his treatment. His story highlights how important this was to his developmental stage. He had recovered well from his first open heart surgery, which occurred following birth, when he had little recollection of his experience. He was nurtured, loved and allowed to play, developing well and meeting all his developmental milestones as expected. It was following his second open heart surgery that he began to develop a fear of doctors, nurses and any hospital-based activity - by this stage he was 16 months and had an awareness, in line with our understanding of child development theory. He was clearly experiencing fear as a result of trauma. Discussing this with my brother and my parents, they explained that this required travelling to different hospitals to meet with play therapists even when he didn't have a cardiac appointment. The therapist progressed from play sessions in the playroom, to play sessions in the clinic room and theatre settings. My brother was able to play with medical equipment and pretend to use them on my parents and his teddies. Within months, he was transformed and would

enjoy going to his appointments. His consultant could not believe the difference. We as a family are eternally grateful for such support and being able to verify the conclusions drawn by the Starlight review is very powerful.

The provision of play and play therapists in a hospital setting is in my opinion a fundamental part of health care that should be available to all children. I have seen how successful this can be, and how challenging life in and out of hospital can be without it. However, it can also be very challenging delivering play in a hospital setting that supports every child's needs. Although, some hospitals try to prioritise play, health care is such a large tree with play being a tiny branch that is competing with larger, more demanding branches or priorities. Some health care trusts and boards may outsource their play provision, making it more ad-hoc with less consistency. Education in hospital settings may also take priority, with some preferring to fund teaching input rather than play specialists. However, these should not compete but rather complement each other as play is essential for a child's development and is fundamental in the learning process. I believe that play should always be provided in hospitals whether it's a specialist children's hospital or a general hospital as it has validity for all ages. With play comes a sense of control and autonomy, which is often lost through illness and hospitalisation.

Play should be everyone's business and part of everyone, especially children and young people's treatment plan. Play should feature alongside medication and all the therapies, such as physiotherapy, occupational therapy, and speech and language, as without it, children will be less likely to benefit from all the other elements of their treatment plan. Play enables children to thrive, allow them this opportunity when they require this most, at their most vulnerable and when most in need. Play matters.

References:

1. Spotlight Report Article 31: the right for all children to have rest and leisure, to engage in play and recreational activities and to participate in cultural life and the arts (March 2018)
2. Oxford Languages: Oxford Dictionary of English. Oxford University Press
3. Gray, P. (2013): Definitions of Play; Scholarpedia, 8(7):30578.
4. B. Hughes; Play Matters (encourageplay.com)
5. 165.Effect of emotional deprivation and neglect on babies (YouTube)
6. Mooney, C (2009): Theories of Attachment: An Introduction to Bowlby, Ainsworth, Gerber, Brazelton, Kennell, and Klaus
7. Welsh Assembly Government Play Policy (2002)
8. Wales: A Play Friendly Country (2014)
9. Morgan, J (2020), Deputy Minister for Health and Social Services: Written Statement: Update on the Ministerial Play Review, Welsh Government
10. Play Strategy for Scotland: Our Vision (www.gov.scot)
11. The Early Years Framework (www.gov.scot)
12. National Positive Parenting Strategy (www.gov.scot)
13. Starlight Children's Foundation (2020): The impact of children's play in hospital

Tutor comment:

"I was immensely impressed by Mabli's consistent hard work, both during tutorials and also in her assignments. Her final assignment on the topic of "policy factors that influence the play experience of a child in hospital" was of such a high standard that it was awarded a mark of 85. Mabli produced a beautifully balanced, knowledgeable, and well referenced piece of academic work which included some very appropriate personal reflection. Overall, this was a very powerful and emotive assignment which was exceptionally well written. I have no doubt whatsoever that Mabli will be an enormous asset to any undergraduate class and to her future university."

What Does Peace Mean To You?

Key Stage 3

Pupil: Martha Manning
School: Parkside Academy
Supervised by: K. Morris
Tutor University: University of Durham
Course Title: Gender and Peace

Intro

In order to fully recognize what peace means to me we must look at various factors that contribute to reinforce my beliefs of peace. I will look at the role of the United Nations and gender and activism to help create my definition of peace fully. It is a complex question that requires a lot of thought to consider all the various angles of information and opinions for me to reach a full conclusion.

UN

A good starting point to debate this question is how the United Nations (UN) are an organization of almost all the countries in the world that work together to try and achieve peace. The UN was formed in 1942 and began its function in 1945. Originally it was a group of 26 nations including the United Kingdom (UK). Their work is based on the good foundations of helping those who are vulnerable however they have been accused of possible corruption (Guardian, 2024). As there are only two countries that are not included in the UN, many people would expect there to be peace although, when we look at the countries who are in it some of them are the ones who are fighting and causing conflict. It has also been suggested that the UN are bystanders in a time of war. My suggestion is the countries and those involved in the UN take this position to not get their hands dirty. UN (1999) itself states that in the time of the genocide in Rwanda the UN were unable to prevent the murder of half a million people as they watched from the side lines, however they had gathered a small force of peacekeepers to prevent it but they all got killed at the start. In my opinion they had attempted to assist the people yet with such a backlash it left them with no other option but to regroup. So was this a failure of law or of countries to send enough troops to enforce it? As we know the United Nations have a set international law meaning those who are a part of the UN should follow them but they have a system in place for dealing with conflict and they also say when its legal to go to war. The UN do not only contribute to large crises like war they also assist with natural disasters and providing for those

who have been effected by economic factors. This helps people to live their lives in comfort preventing conflict. They also send aid to those living in North Korea and other countries suffering from a poor government or disasters. When the UN was formed it was signed and agreed by a group of white men giving it a narrower and less diverse view. Whereas now the general diversity of those in power has grown, yet we still to this day rarely see a woman in power. For me as a woman it is inspiring and empowering to have a woman in power to break stereotypes and add a new perspective. Although the UN have issues it is still a worthwhile to have a system in place for preventing conflict as it is better than doing nothing. However it still requires improvement such as developing and evolving with current times rather than its status quo.

Gender

Long before the UN was formed organisations such as the WILPF were established to try and promote equality around gender and peace activism. The WILPF stands for Women's International League For Peace and Freedom. Since 1914 they have been fighting for international laws that will improve the lives of many people and taking action to keep peace in wars such as the conflict in Gaza (WILPF, 2023). For the amount of circumstances they have taken action in for so long they are much less well known as the women's voice is often not well heard due to gender bias. They work on the principle of herstory instead of history. Gender as we know it often generally referred to as what society or historically has been defined as a man or a woman. This definition, based on history's perception of women, is often what effects equality. So this raises the question of how can decisions on peace encompass the needs of all when it only effects half of the world's population? This issue is greater due to intersectionality, which includes aspects such as religion, race and more. All of these aspects are underrepresented and likely to suffer from discrimination. For example a woman of a minority ethnicity and religion may face bias in several ways effecting their general life with aspects such as jobs. Many laws and policies have recently been put in place (Parliament, 2020) in order to help solve issues that come with wrong social definitions, showing that efforts have been made to help ensure equality. However the historical lack of equal representation of intersectionality means that many international laws still exist that are not considered representative although they are difficult to change.

Activism

Activism is the act of protesting and encouraging discussions to attempt to bring about change of laws and people's perceptions and actions. This is often achieved through physical protests like demonstrations or marches and legal protests such as petitions and meetings as well as campaigns especially using media. In order to ensure peace many have to fight for their beliefs and rights so that measures can be put in place to improve the lives of all peacefully. Current activists such as Greta Thunberg and Xiya Bastida who fight for climate change improvements to be put in place, take actions like strikes and attending conferences (YouTube, 2019). Would Greta have been invited to a worldwide conference if she was from a different ethnic background or social class? Sometimes these protests are not peaceful with the likes of

Extinction Rebellion and Just Stop Oil who also take actions like causing traffic jams including stopping ambulances passing by and causing damage. Are these measures even necessary to be heard? Other current activists include those who are protesting to stop the war between Israel and the Palestinians. These take actions like street protests and signs to promote peace as well as the use of social media. Activism has been relevant even in the past, for example the suffragettes who campaigned for equal rights for women. However the suffragettes did not always use peaceful means as they would often damage property through fire and explosions. Can peace only be gained through only peaceful means?

Conclusion

In conclusion the United Nations is important to exist in order to bring peace where possible, applying rules and regulations that are relevant to the current day despite its irregular flaws. One of which is discrimination which as we know has been a long historical battle, so by improving gender equality gives half the population a reason to have peaceful means. In order to have these equal rights and personal opinions it is necessary to protest so activism is a key part of peace. Ultimately peace means more to me than the absence of fighting and war as it could simply mean contentment with everyone having their own sense of comfort, without disruption of others. This is as well as the recognition of human rights and the freedom to express your own opinions. This has to be all done without disregarding and effecting others views such as the females who do not believe in equal rights for women. For example freedom of expression means that I believe the influencer, Andrew Tate has the right to say what he does although I completely disagree with him and feel uncomfortable with him being able to do so. However the line is drawn when he begins to harm others with his views and to insight hurtful actions. Freedom of expression is not an excuse to disturb the peace.

References:

- Guardian (2024), UN to investigate claims of corruption in Iraq aid project. Available at: <https://www.theguardian.com/global-development/2024/feb/05/un-to-investigate-claims-of-corruption-in-iraq-aid-project#:~:text=According%20to%20an%20internal%20document,people%20obtain%20lucrative%20construction%20contracts.> (Accessed: 9 March 2024)
- Parliament (2020), Gender Equality Policy Hub. Available at: <https://www.parliament.uk/mps-lords-and-offices/offices/commons/scrutinyunit/gender-equality-policy-map/#:~:text=Equality%20Act%202010%20%E2%80%93%20sex%20is,Human%20Rights%20Act%201998> (Accessed: 9 March 2024)
- WILPF (2023), WILPF WEEK OF FEMINIST ACTION AGAINST GENOCIDE IN PALESTINE. Available at: <https://www.wilpf.org/wilpf-campaign/wilpf-week-of-action-against-genocide-in-gaza/> (Accessed: 9 March 2024)
- UN (1999), UNAMIR International Tribunal for Rwanda 1999 Independent Inquiry. Available at: <https://peacekeeping.un.org/en/mission/past/unamir5.htm> (Accessed: 9 March 2024)
- YouTube (2019), WATCH: Greta Thunberg's full speech to world leaders at UN Climate Action Summit. Available at: <https://www.youtube.com/watch?v=KAJsdgTPJpU> (Accessed: 9 March 2024)

Parent comment:

"The Brilliant Club is a fantastic opportunity. The topic of peace really tapped into Martha's interests and has sparked a further enthusiasm for a career helping people, possibly law."
- Jane Manning

Critically discuss the role of wellbeing economies in solving socio-economic challenges

Key Stage 5

Pupil: Millie Cooper

School: Croxley Danes School

Supervised by: N. Shenxane Sandawana

Tutor University: UCL

Course Title: Pathways to Wellbeing: Exploring Sustainable Life Satisfaction

A Wellbeing economy is designed to work in the favour of the people and the planet - rather than common economical measurements such as the General Domestic Product. This provides dimensions that a general economy would not cover; dimensions like teamwork, inclusivity, sustainability and environmentalism. A countries' population would rely on a Wellbeing economy in order to provide a guaranteed and pleasant future for later generations, along with the assurance of having sufficient materials and natural resources to live comfortably. Furthermore, this gives people more exposure and therefore more resolutions to socio-economic challenges that affect people across the globe during their day-to-day lives. These socio-economic challenges include education - and how a vast majority of children in developing countries will not get to experience the education or quality of education they deserve. And housing - where a lack of funding made by a council or government is not put into the housing sector, or people are even turned away from purchasing homes because of discriminatory reasons like gender or race. In this essay I will be discussing the positive and negative roles of a Wellbeing economy in solving socio-economic challenges.

Firstly, a Wellbeing economy is a great resource for people aiming to solve socio-economic problems, in this instance education (also represented as an objective wellbeing indicator). As of the Global Education Statistics of 2023 from the University of Technology Sydney, only 49% of countries have achieved gender parity in primary education globally. And approximately 617 million children and adolescents worldwide are not achieving minimum adroitness levels in reading and mathematics according to Global Partnership. The Wellbeing economy is a functional system setup to track non-tangible factors that dictate people's overall prosperity, and one of the many things is quality education on the Sustainable Development Goals. Scotland initially put in place a wellbeing economy in 2007, and reviewed it in 2018 - from 2016 to 2022, the percentage of young people aged 16-19 in education had risen from 90.45% to nearly 92.5%. Whilst this is a good plan of action, Scotland is in a comfortable position economically to provide the funding and other resources needed to fuel this change, other developing countries like Chad, rated lowest for education on the planet, aren't capable of providing fundings and aid for this field. As of 2021 according to the UNESCO Statistics of Data (UIS data), primary school completion for girls in Chad was 38% and 49% for boys, further declining to 14.1% girls and

24.4% boys at lower secondary education levels. As this is a tricky challenge to tackle from an outer perspective, bringing helpful charities which help with the distribution of teachers, and development of safe buildings to use with correct funding of resources. Charities such as UNICEF and READ foundation along with volunteering would assist the growth of these countries to ensure that future generations to come can be vowed a thorough education, which is not only a human right, but also something that far more wealthy and developed countries seem to take for granted. Education is also a factor which could bring out eudaimonic happiness which one is still possibly longing for. However, whilst a Wellbeing economy is a distinguished resource and even seen as fundamental for the base of a thriving economy and population by many, it could potentially have some slightly negative impacts on a country. For example, if the GDP of a country is on the rise, it may promote more leisurely activities more often for individuals and groups, which could damage the overall wellbeing in the long term. Factors such as food waste and climate change from vehicles and product manufacturing. Therefore, a Wellbeing Economy is an abundant asset to help solve socio-economic challenges across the world.

Additionally to this, a Wellbeing economy acts as a foundation for solving socio-economic problems such as housing - this is due to the developed idea of meeting the needs of the planet and people, rather than just focusing on transactions. Unlike the General Domestic Product which is a monetary measurement. According to the World Economic Forum as of August 2023, approximately 730 million people across the world are living in poverty, specifically in middle-income countries, 84% of people living in rural areas within these countries. Whilst there are efforts and have had for centuries to constantly upgrade and develop the quality of housing in areas such as Africa, Scotland and the United states, approximately 90% of 200 cities studied globally were found to be unaffordable to live in (according to the World Economic Forum). Although the cost of living is a separate issue to housing itself - what ties quality and affordability together is the quality within the cost of housing. According to the Government UK, 'an estimated 14% of households (3.5 million) live in a home that fails the Decent Home Standard', along with '10% of households (2.3 million) live in a home with a Category 1 hazard present', such as damp, mould and excess cold. Housing is an essential human right which is also a bold socio-economic challenge globally but how are countries attempting to tackle it? With the help of a Wellbeing economy in place, areas such as Africa and South Asia, slums are a vast problem and the UN-habitat launched the Participatory Slum Upgrading Programme (PSUP) in 2018. This is successfully addressing the issue of urban poverty and its primary aim is to improve the lives of slum dwellers by clearing the areas and redoing the homes, providing much more care such as clean water and sanitation (According to Habitat for Humanity). There are currently 35 Secretariat of the African, Caribbean and Pacific (ACP) who have introduced this programme. Although the usage of a Wellbeing economy for improving the quality of housing is almost entirely a positive thing, it's whether the upkeep of these areas will be maintained for years to come is the question. Therefore, a Wellbeing economy is a great way to tackle socio-economic challenges -

such as housing.

Furthermore, a Wellbeing economy is rudimentary for solving socio-economic problems like climate change. A wellbeing economy recognises relationships between nature, health, sustainability and the economy, so this allows countries to get a better understanding of not only the impacts of climate change on the planet's overall wellbeing, but also the health of the economy and how sustainable the current lifestyles being lived truly are. A study from the Office for National Statistics (ONS) - Opinions and Lifestyle Survey (OPN) showed that Climate change and the environment was at just under 70% for important issues facing the UK. The attitudes towards climate change are most certainly mixed in not only the United Kingdom, but globally in general. Some even go to the extent of labelling it as fake news. A key factor in the success of a Wellbeing economy is partnership and the involvement of everybody rather than it just being between governments. Unlike other socio-economic challenges, climate change is a much more difficult issue to tackle primarily because of the differentiated opinions globally, which restricts much more being put in place with the help of a Wellbeing economy. According to Pew Research Center's study that was made to collect different views of climate change in America in 2023, 37% of Americans believe that addressing climate change should be a top priority, whereas another 34% believe it's important but should not be a top priority. Additionally, for the majority of Democrats, climate change falls in the top half of priority issues, but Republicans rank it as second to last. A wellbeing economy study was made and it shows that there was a near-perfect correlation between global economic growth and an increase in greenhouse gas emissions. As climate change cannot be measured by a GDP, there are many indicators of wellbeing that can be accounted for with a Wellbeing economy instead - such as environmental indicators which climate change falls under. And many new measurements of growth have been developed which are used to combat socio-economic inequalities including climate change, such as the Ecological Footprint. If communication between people is sufficient, this can help combat climate change successfully as a Wellbeing economy is composed of partnership and the environment. Therefore, a Wellbeing economy is excellent for combatting socio-economic challenges such as climate change.

Finally, a Wellbeing economy plays an important role in solving socio-economic problems such as food insecurity. This includes accessibility and affordability - being a large issue widely known as world hunger. According to Action Against Hunger, approximately 1 in 10 people globally go to bed hungry every night. Along with this, 3 billion people to this day still cannot afford a healthy, nutritious diet. Having access to nutritious food to maintain the upkeep of a healthy life is a basic human right and many countries have already begun implementing ways to combat this with the help of a wellbeing economy. For example, in India (according to the Economic World Forum), a 'National Food Security Act' was introduced in 2013. The government aids with the distribution of coarse grains like maize, along with wheat and rice. This act is meant to supposedly help 800 million people across the country.

Additionally in Colombia, a collaboration between the Colombian Ministry of Agriculture, six National Growers Association, the National Agricultural Research System and other non-governmental organisations was established to develop new ideas and ways that farmers can integrate into their strategies. This has led to 160,000 farmers across Colombia being provided with improved advice about farming to tackle extreme floods and droughts which are wiping out large yields of crops, which they rely on as a source of income along with food. To tackle this socio-economic challenge, along with others, involves the world to come together as partnership is a key factor for successful sustainability. There are many companies and charities across the globe that are aimed at fighting food insecurity; charities such as 'Action Against Hunger', 'The Hunger Project' and 'World Food Programme' are all humanitarian organisations which provide food assistance worldwide. Unfortunately, this is such a large problem and has been for hundreds of years, so it will take a very long time to almost completely eradicate - this means that everyone globally including people in the future will need to work together so that progress is continuously made. That being the case, a Wellbeing economy is a great way to help tackle socio-economic challenges like food insecurity.

In conclusion, I believe that a Wellbeing Economy plays an important role in tackling socio-economic issues globally as the rules and incentives primarily revolve around people's health, happiness and comfort rather than looking just at economic and numerical statistics, which sometimes do not provide enough information to gather an individual's mental and emotional state. However, with this being said I do believe that the GDP and Wellbeing Economy do efficiently go hand and hand with tackling issues that may need more than one perspective. For example, a GDP is heavily measured and assessed by the state of the overall economy and government, whereas a Wellbeing economy measures the wellbeing of the planet and the people. Without wellbeing economies, our progress in challenges like education, housing, climate change and food insecurity would not come anywhere as close as it is now - as it provides an alternative route for facing and fixing global problems that at a first glance, look almost impossible to fix.

References:

1. Gender parity in schools - Global Education statistics 2023 - University of Sydney: <https://studyonline.uts.edu.au/blog/education-statistics>
2. Global Partnership for Education literacy and numeracy average: <https://www.globalpartnership.org/>
3. Scotland Wellbeing economy: https://nationalperformance.gov.scot/sites/default/files/documents/NPF_Scotland%27s_Wellbeing_May2019.pdf
4. UNESCO Chad education statistics: <https://www.iicba.unesco.org/en/node/75#:~:text=According%20to%20the%20UNESCO%20Institute, and%202024.2%20percent%20of%20boys.>
5. Housing/poverty World Economic Forum: <https://www.weforum.org/agenda/2023/08/multidimensional-poverty-index-health-housing/>
6. Housing quality in UK (Gov UK): English-housing-survey-2021-to-2022-housing-quality-and-condition
7. Habitat for Humanity Slums: <https://www.habitat.org/emea/about/what-we-do/affordable-housing#:~:text=The%20different%20strategies%20used%20to, Government%20subsidy%20or%20rent%20control.>
8. National Statistics UK climate change: <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/publicopinionsandsocialtrends/greatbritain/15to26november2023>
9. Action against hunger: <https://www.actionagainsthunger.org.uk/why-hunger/world-hunger-facts>
10. World Economic Forum - Wellbeing implementations to combat world hunger <https://www.weforum.org/agenda/2015/09/4-ways-countries-are->

- successfully-fighting-hunger
12. Pew Research Center American climate change opinions: <https://www.pewresearch.org/short-reads/2023/08/09/what-the-data-says-about-americans-views-of-climate-change/#:~:text=Nearly%20eight%2Din%2Dten%20Democrats,identical%20to%2010%20years%20ago.>
 13. Wellbeing economy climate change study: <https://researchbriefings.files.parliament.uk/documents/CDP-2021-0205/CDP-2021-0205.pdf>

Parent comment:

"I was very happy my daughter was chosen to take part in The Scholars Programme and I am incredibly proud of her and the school for her partake and the school for supporting and encouraging her, she really enjoyed it and I personally think that these opportunities are invaluable."
- Lisa Cooper

Conflict analysis of the United Nations Mission in Liberia (UNMIL): Was it successful?

Key Stage 4

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School: The Weald Community School
Supervised by: J. Ellis
Tutor University: University of Reading
Course Title: Understanding War, Building Peace

The UN peacekeeping operation in Liberia, also known as UNMIL, was established in 2003 after president Charles Taylor resigned and the second Liberian civil war ended. The UN had sent forces to Liberia previously due to Taylor's administration and the rise of rebel groups, however the mission I am discussing was set up to maintain peace and help introduce a new transitional government. The civil war had been devastating, and the UN worked to help all aspects of the country reestablish stability. From the research I have done, I believe that UNMIL was partially successful in providing peace to Liberia after the conflict, so that it could move forward in the future. They succeeded in helping the displaced, and regained the GDP lost in the 14 years the country was at war. However, as stated by Rouse, 'within a year of the final troops leaving in June 2018 the annual economic growth forecast was slashed from 4.7 percent to 0.4 percent' (Rouse, 2019). Further issues have risen, and the decline of Liberia's economy can be seen after the UN officially removed their troops. I will therefore argue that it was not entirely successful in providing lasting peace and prosperity.

The events leading to the UN's involvement began with the Second Liberian Civil War, lasting from 1999 to 2003. Previous attempts at post-conflict peacekeeping of the First Liberian Civil War had not been successful, failing to provide key pillars in which to help Liberia. Upon the shaky foundation the peacekeeping had built, the second civil war broke out. One of the main factors leading to it included the attacks launched by the group known as "Liberians United for Reconciliation and Democracy" (LURD). Groups who had been involved in the first Liberian Civil War were now involved in the second, including LURD. Other parties in the conflict were disaffected members of the Taylor-led National Patriotic Front of Liberia (NPFL) who no longer agreed with Taylor's regime, and the opposing government of Charles Taylor. As said by Momodu, 'The

origin of the second civil war was rooted in the previous conflict waged between 1989 and 1996 which saw former rebel leader Charles Taylor become president of the entire nation, following UN-monitored elections in 1997' (Momodu, 2017). During his time in office, Taylor was accused of war crimes and his direct involvement in the Sierra Leone civil war, where he had been helping a rebel group via the selling of weapons that caused the death and injury of thousands. Additionally, he was further accused of aiding the recruitment of child soldiers. The use of such child soldiers was seen in the Second Liberian Civil War too, with both Taylor and LURD using them.

In April 1999, LURD, with the support of the Guinean Republic, invaded North Liberia, and by 2002 they had almost reached the capital Monrovia. As well as this, Taylor faced fighting from another rebel group, the Movement for Democracy in Liberia, who quickly gained control of southern areas of the country. Under the pressure of both the loss of power over large areas of land and the Siege of Monrovia, where LURD shelled and stormed Liberia's capital, Taylor resigned and fled to Nigeria in August 2003. A peace agreement was signed by the parties involved, and marked the beginning of Liberia's transition to democracy. The UN deployed troops to help peacekeeping alongside the National Transitional Government, who were to remain in power until the 2005 general election. After 4 years of fighting, the Second Liberian Civil War was over, and peacekeeping began to help Liberia recover and gain security once again.

The effects of the war were terrible, with over 50,000 deaths and many more displaced within the country. An estimated 1,000 people were killed in the Siege of Monrovia alone, in just under 4 weeks, with thousands more made homeless. Gender-based violence was also hugely apparent, with an estimated 80% of women and girls affected. Furthermore, children were targeted too, with child soldiers being used by both LURD and Taylor. Them and other combatants were routinely addicted to drugs such as cocaine as a means of control. In total, over both the first and second Liberian civil war, there were an estimated 150,000 to 250,000 deaths of men, women and children, and the displacement of over half the country's population. It was clear Liberia needed UN intervention, so UNMIL was deployed in October 2003. Lieutenant General Daniel Opande, UNMIL's first-force commander, described the situation of the country at the time of deployment: "Nothing functioned, the government had collapsed, no security arrangement, the entire country was in turmoil. People were moving from place to place, looking for safety or for food. It was very bad." (Ighobor, 2018).

There were few services and the people's quality of life was low, with little clean water, little electricity, and many fighters in the possession of guns. Such people made attempts at peacekeeping a challenge throughout the time UNMIL was present. Riots in Monrovia caused the deaths of 15 people and injury of almost 400 when the UN attempted the disarmament of forces in the capital. The conflict had had devastating effects on the country, and UNMIL faced challenges from the rebel groups, civilians, and state at which the country had been left, however with around 165,000 people deployed by 2018, they

managed to bring positive changes to the country.

The support given by the UN was immense, with 126,000 military, 16,000 police and 23,000 civilian staff deployed over the course of the operation. The main goals UNMIL aimed to achieve were to support the ceasefire and peace progress, provide aid to those affected by the war, especially those displaced, via the building of infrastructure and implementation of services, and provide national security while maintaining the safety of the UN troops and other parties involved. An example of a success in response to these goals was the prioritised empowerment of women, to vote, run for office and join armed forces and police. UNMIL became 'the first UN peacekeeping operation to have an all female contingent thanks to India's deployment of a formed police unit' (United Nations Peacekeeping, 2018). Further proof of UNMIL's successes was its support of 3 presidential elections over the 15 years the operation was carried out. Initially a transitional government was put into power, and the UN managed to support them, and the other presidents and governments that followed. They also managed to regain 90% of the GDP lost during the war.

Along with these specific positives, UNMIL was successful at nearly all aspects of peacekeeping. 'Disarmament, demobilisation, rehabilitation and reintegration process and peaceful elections, the mission's attention shifted to providing security for the country, helping to midwife a new army and police force and extending civil authority throughout the country. As well, UNMIL provided technical and logistical support to various government departments' (Ighobor, 2018). This shows that UNMIL was successful in providing peace and security to Liberia, however other sources I looked at said otherwise, specifically once the UN troops had left the country officially.

I ensured that when looking into the operation in Liberia, I used multiple references and sources to guarantee I had the most information to answer my question. Research I did into UNMIL suggested that the economic state of the country had seriously declined after June 2018, when the UN removed its troops from Liberia. Liberian businesses are now in decline and inflation has risen. People have taken to protesting too, with up to 10,000 people at times voicing their dissatisfaction with the government. There was overall a large failure to address the economic crisis the country was in after the war, and so it couldn't thrive once the UN forces left.

Despite this, I do believe that UNMIL was largely successful, with security and peace being almost completely restored to Liberia - and any instability that remains has the support of international partners to help address such issues. UNMIL allowed it to move forward, in terms of both human rights and the renewal of the country post-conflict. I believe the UN operation put Liberia in a place at which lasting prosperity and peace could be achieved, despite the challenges, and that it should be an example for future peacekeeping missions.

References:

1. Rouse, L. (2019) 'Liberia's peacekeeping deficit: What happens to an economy when the blue helmets go?', The New Humanitarian,

- 25 November 2019. Available at: <https://www.thenewhumanitarian.org/analysis/2019/11/25/Liberia-peacekeepers-UNMIL-economy-peace#:~:text=A1%20its%20closure%2C%20UNMIL%20was,of%20conflict%20had%20been%20regained> (accessed 30 May 2024)
2. Momodu, S. (2017) 'Second Liberian Civil War (1999-2003)', Blackpast, 3 October 2017. Available at: <https://www.blackpast.org/global-african-history/second-liberian-civil-war-1999-2003/> (accessed 31 May 2024)
3. Ighobor, K. (2018) 'Mission accomplished; 15 years of peacekeeping success in Liberia' Africa Renewal, April 2018 - July 2018. Available at: <https://www.un.org/africarenewal/magazine/april-2018-july-2018/mission-accomplished-15-years-peacekeeping-success-liberia> (accessed 30 May 2024)
4. United Nations Peacekeeping, (2018) 'United Nations Mission in Liberia completes its mandate' Available at: <https://peacekeeping.un.org/en/united-nations-peacekeeping-mission-liberia-completes-its-mandate> (accessed 1 June 2024)

Parent comment:

"I am extremely proud of what Robyn has achieved in this programme. I am very hopeful that the opportunity for extended, independent work offered will benefit them in their future studies."
- Jane Andrews

How can social psychology theories like Social Identity theory and Attribution theory be applied to understand the formation and perpetuation of stereotypes and stigmatising attitudes within societal structures

Key Stage 5

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Supervised by: A. Sehrawat
Tutor University: University of Sheffield
Course Title: Breaking Boundaries: Unveiling Social Perceptions Stigma and its Consequences

The term "stereotypes" was first used in the printing industry by Firmin Didot to describe a printing cast as the word is composed of the Greek roots "stereos" meaning "solid" or "firm," and "typos" meaning "impression" or "mark." However, over time the term "stereotype" evolved to a concept of generalising a fixed idea to specific social groups or individuals. [1] And is now defined and understood as a widely held and oversimplified idea about a group of people whereby we attribute a defined set of characteristics to this group. (Kite & Whitley Jr, 2016, p. 46). Stereotyping can be understood as a cognitive process through which individuals categorise and generalise information about certain groups of people based on shared characteristics. These cognitive processes are influenced by various factors such as socialisation, personal experiences, and cultural norms. Stereotypes can be both positive and negative, but they often oversimplify and exaggerate differences between groups, leading to biases, prejudice and discriminatory behaviours.

[2] Prejudice is an irrational attitude of hostility directed against an individual, a group, a race, or their supposed prejudice. It involves making judgments without having

sufficient knowledge or understanding of the individual or group. A bias is a natural inclination for or against an idea, object, group, or individual. They can be implicit or explicit. Implicit biases are unconscious attitudes against specific social groups that an individual can develop through learned association between social categories and a quality/behaviour. An example may be that if a person is repeatedly exposed to media portrayals of a certain racial or ethnic group as criminals, they may develop an implicit bias associating that group with criminal behaviour. [3] A study conducted by Greenwald and colleagues in 1998, titled "Measuring individual differences in implicit cognition: The implicit association test," provides insight into the concept of implicit biases and their connection to stereotypes. The researchers developed the Implicit Association Test (IAT), a widely used tool for measuring implicit biases. The IAT assesses the strength of associations between different concepts (e.g., race, gender) and evaluations (e.g., positive or negative). This test shows how people conceal or are unaware of the prejudices/biases we hold.

Whereas an explicit bias is a conscious attitude or belief towards certain social groups. They can further reinforce stereotypes as the individual consciously holds their biased beliefs about a certain group thus they are likely to view members of that group through the lens of stereotypes which could lead to stigmatising attitudes that reinforce negative perceptions and judgements about a group. [4] Stigmatising attitudes can be damaging to society as they are unfair/negative attitudes to a particular individual/group due to a particular characteristic or attribute. This can develop in labelling a group/individual as inferior or abnormal leading to social exclusion, loss of opportunities and unequal treatment. And can even deteriorate to discrimination. Discrimination is the unfair or prejudicial treatment of people and groups based on characteristics such as race, gender, age, or sexual orientation. One form of discrimination is racial and ethnic discrimination and it's prevalent in virtually every country across the globe. [5] Racism unchecked can fuel large-scale atrocities such as the 1994 genocide in Rwanda and more recently, apartheid and ethnic cleansing of the Rohingya people in Myanmar. ("Discrimination - Amnesty International," 2023). This illuminates the devastating impact discrimination can have on human life and society. Recognising and understanding the impact of issues such as stereotypes and how they ultimately lead to stigma and discrimination is essential. As it allows us to tackle issues such as hate crimes and to be more informed of humanitarian issues involved in discrimination which can help promote inclusivity and equality. Learning about why stereotypes and stigmatising attitudes form could also help an individual uncover their own biases and prejudices they hold, thus being able to challenge and overcome them.

The field of social psychology can help us explain why stereotypes and stigmatising attitudes occur. [6] It is the scientific attempt to understand and explain how the thought, feeling, and behaviour of individuals are influenced by the actual, imagined, or implied presence of others (Allport 1954). One of social psychology's aim is to identify and address the underlying causes of stigmatising attitudes and stereotypes, and to promote positive social

change. Social psychology recognizes that stigmatisation and discrimination can have detrimental effects on individuals and society as a whole. Theories in social psychology can help examine and understand why these behaviours occur.

[7] For example, the Social Identity Theory, proposed by Tajfel and Turner, provides insight into how individuals' identification with groups contributes to the development of stereotypes and the perpetuation of stigmatisation. Tajfel and Turner proposed that people develop their social identity or sense of self through interaction with society. Social identity theory states that we assign ourselves and others into social groups based on attributes such as socio-economic status, race, religion, gender, or age. This is known as social categorisation. We use categorisation to help understand and simplify the social environment as when we assign people to a category it allows an individual to access knowledge on that individual based on the attribute/category assigned. However, when we rely simply on a social category to identify someone it can lead to over reliance on generalisations such as societal norms or cultural representations which means we may fall into the trap of excluding individuality resulting in the perpetuation of stereotypes.

Furthermore, once an individual has categorised themselves as a member of a group, they develop a sense of belonging and affiliation with them and begin to adopt their values, behaviours, norms, and beliefs this process is known as social identification. Once an individual has developed an identity you automatically assign everyone you meet as either those who share the same identity as you (in-group) or the out-group which are people who are not in your group. Those in your in-group will have a natural inclination towards but neutral or even negative towards out-groups. This is further reinforced when you develop biases which can occur through social comparison; this is when an individual compares their group to others. This comparison is often biased in favour of one's group which means you show a preference for people only within your group. But have an automatic dislike or hostility towards those out of your group. This is known as in-group favouritism and is one-way stereotypes are reinforced. Social comparison can also result in social identity threat where individuals perceive out-groups as threats to their own group's resources, status, or identity. This perceived threat can lead to the amplification of stereotypes, prejudice, and discriminatory attitudes as a means of protecting in-group interest.

A real-life example of this is the Israel-Palestine conflict. This conflict demonstrates the detrimental effect in-group favouritism and social identity threat can have. Both Israeli Jews and Palestinian Arabs have developed strong in-group identities, with each viewing the other as the primary out-group. This has resulted in harsh and hostile stereotypes in which the opposing groups view one another in. [8] According to a study published in the Journal of Conflict Resolution, "Israelis and Palestinians hold deeply rooted stereotypes of each other, which contribute to the intractability of the conflict." The researchers found that Israelis tend to stereotype Palestinians as aggressive and unwilling to compromise, while Palestinians stereotype

Israelis as arrogant, oppressive, and unconcerned with Palestinian suffering (Bar-Tal & Teichman, 2005). This effectively demonstrates how when we distinguish groups with negative connotations it can lead to the formation of harsh stereotypes. [9] Furthermore, a study published in the Journal of Peace Research found that "the use of dehumanising language and imagery in the media has contributed to the perpetuation of negative stereotypes and the escalation of the conflict." [10] The researchers concluded that this type of rhetoric can lead to increased support for violence and a decreased willingness to engage in peaceful conflict resolution (Kteily & Bruneau, 2017). A recent example of this is when the Israeli Defence Minister Yoav Gallant stated, "We are fighting human animals and we are acting accordingly," when talking about the siege they had over Gaza in Palestine (Bowen, 2024). This highlights how the media can also play a role in promoting and pushing a narrative which poses a threat to groups as it paints an untrue and abhorrent perspective. Thus, illustrating how intergroup conflict can create stigmatising attitudes and stereotypes.

[11] Another theory that could help explain the formation of negative attitudes is the fundamental attribution error theory, which is when we underestimate the impact of the situation and overestimate the role of personal factors when explaining other people's behaviour (Ross, 2011). The error causes us to make quick and often incorrect assumptions about others without taking into account external factors such as the environment. This can lead to a deficit in our interpersonal relationships as we do not afford others the benefit of the doubt when their actions are guided by situational factors. Further, this can lead us to perpetuate biases and stereotypes which are harmful not only on an individual level but a systemic level. As when it comes to addressing systemic issues in our society as we are quick to negate the situational factors that play into someone's behaviour or observable actions. A real-life example of this is the issue of homelessness. When encountering individuals experiencing homelessness on the streets, society may often attribute their situation solely to personal characteristics, such as laziness, addiction, substance abuse or a lack of motivation. This attribution neglects the complex range of situational factors that contribute to homelessness. Such as insufficient or limited access to social support systems like healthcare and social services or lack of affordable housing. But instead, we rely on our biases/stereotypes to address the issue instead. This demonstrates how the fundamental attribution error can occur on a societal level, leading to widespread misconceptions, stereotypes, and a failure to address the underlying systemic issues that contribute to social problems such as homelessness.

To conclude, understanding how biases and stereotypes form is detrimental in dismantling issues such as stigma, prejudice and discrimination. Because as a society we often fail to recognise the heavy impact they can have on individuals and groups. Such as marginalisation, mental health issues, loss of opportunity and much more. If we don't examine and become aware of our own biases they can become involved in our institutions and policies, creating systemic barriers to equality and inclusion which means they can become further

reinforced through media, education, and everyday interactions. Understanding social psychology theories such as the social identity theory can motivate us to maintain a positive sense when it comes to viewing others and ourselves social identity. This helps us identify and counteract the unconscious biases that lead to in-group favouritism which means we can begin to view other groups through a lens that is non-biased and fair. Furthermore, understanding the cognitive bias, the fundamental attribution error can also have a positive impact. By understanding that we often jump to internal, trait-based explanations for the actions of out-group members, we can make a conscious effort to consider the external reasons and situational pressures that may be shaping their behaviour. This can prevent us from falling back on stereotypes. In addition, awareness of the fundamental attribution error encourages us to put ourselves in the shoes of others and consider the contextual factors influencing their actions. This can make us empathetic and reduces our tendency to judge or blame people. Ultimately, addressing the root causes of biased thinking is crucial if we hope to build a more just and compassionate, society for all.

References:

- Kite, M. E., & Whitley Jr, B. E. (2016). *The Psychology of Prejudice and Discrimination*. Cengage Learning.
- Stigma Definition. (2024b). In the Merriam-Webster Dictionary.
- Pagotto, L. (2014). Implicit attitudes and discrimination against people with physical disabilities. Unipd. https://www.academia.edu/3022240/Implicit_attitudes_and_discrimination_against_people_with_physical_disabilities
- Stigma Definition & Meaning | Britannica Dictionary. (n.d.). <https://www.britannica.com/dictionary/stigma#:~:text=Britannica%20Dictionary%20definition%20of%20STIGMA,poor%20%3D%20the%20stigma%20of%20poverty>
- Discrimination - Amnesty International. (2023, September 18). Amnesty International. <https://www.amnesty.org/en/what-we-do/discrimination/>
- Uldall, B. R. (2013). *Social Psychology*. In Springer eBooks (pp. 2171-2179). https://doi.org/10.1007/978-1-4020-8265-8_1047
- McLeod, S. (2023b). Social Identity Theory In Psychology (Tajfel & Turner, 1979). Simply Psychology. <https://www.simplypsychology.org/social-identity-theory.html>
- Bar-Tal, D., & Teichman, Y. (2005). *Stereotypes and prejudice in conflict: Representations of Arabs in Israeli Jewish society*. Cambridge University Press.
- Halperin, E., & Bar-Tal, D. (2011). Socio-psychological barriers to peace making: An empirical examination within the Israeli Jewish society. *Journal of Peace Research*, 48(5), 637-651.
- Kteily, N., & Bruneau, E. (2017). Darker demons of our nature: The need to (and how to) study and address the role of dehumanisation and inhumanization in intergroup relations. *Current Directions in Psychological Science*, 26(6), 471-477.
- Pilat D., & Sekoul D. (2021). Fundamental Attribution Error. The Decision Lab. Retrieved June 10, 2024, from <https://thedeclaration.com/biases/fundamental-attribution-error>

Parent comment:

"It has inspired her to excel in everything she does."

- Nazeem Najib

STEM

Proposal for a Social Robot: A Social Robot to Reduce Loneliness in Older People

Key Stage 3

Pupil: **Daisy Cameron**

School: **Tynecastle High School**

Supervised by: **I. Voysey**

Tutor University: **University of Edinburgh**

Course Title: **Social robots - boring machines or best mates?**

Introduction

I propose a social robot that acts as a companion for elderly people. Today, loneliness is extremely common among older people, especially those whose partners have already passed away. As of 2017, 1.4 million older people in England reported that they were often lonely, and this number will continue to rise if no action is taken [1].

Loneliness can be extremely dangerous. A lack of social interaction has been strongly associated with cognitive decline, depressive symptoms, and suicide [2]. And not only can it affect your mental health, but your physical health also with it having been linked to an increased risk of heart disease, strokes, and dementia [3].

Evidently, it is crucial that we do something to tackle this issue but there are many reasons as to why human interaction may not be possible or ideal. Humans can make mistakes, judge people easily, and be extremely unpredictable which can make conversations a struggle for some. This is where a social robot could come in.

Social robots could allow people to gain some form of social interaction without fear of judgement which could make conversations a simpler task and since robots rely entirely on their programming to perform interactions, they do not make mistakes the way humans do and their responses and reactions are very consistent which adds a level of comfort when talking to one.

This paper will explore the different ways that social robots can assist lonely elderly people to improve their mental and physical wellbeing and will propose using a static social robot with neonatal features to converse with an isolated elderly person.

Anthropomorphism in Social Robots

One factor to consider when designing a social robot is anthropomorphism. Anthropomorphism is the projection of human characteristics, emotions, and behaviours onto non-human entities.

Getting people to anthropomorphise the robot could have many benefits. People may feel more comfortable around a robot they perceive to be human-like, they are more likely to empathise with it if it is presented and described anthropomorphically that if it were described and presented as a machine [4]. This could make implementing the robots a much easier task as it could help reduce the fear surrounding

this new technology and could also make the robots more effective at reducing loneliness as it would likely make them easier to communicate with.

Encouraging anthropomorphism could also reduce repair and replacement costs as if people were to care for the social robot and feel empathy for it then it would be less likely to come into harm and therefore would not need to be repaired or replaced as often than if there was no one who cared for it.

However, there are some negatives to anthropomorphising social robots. Animacy is the quality or condition of being alive. By presenting this robot as human-like and encouraging the application of human characteristics by observers you are giving them a false perception of the robots animacy and capabilities. Robots are inanimate objects: they do not have original thoughts, and they do not have feelings. The robot is not an actual person. However, if we allow and encourage anthropomorphism of a robot, people may see it as one and this is extremely deceptive and may be considered by some to be immoral.

Additionally, even though robots do not make mistakes the way humans do, they are not perfect; they are limited by their programming and can have glitches. If the robot's technology were to go out of date or if it were to malfunction, then it may need to be replaced but if a human had anthropomorphised the robot and gained an attachment to it then the human may not be able to let it go. This could be extremely dangerous if the robot was hacked or malfunctioning in a way that could endanger others. This problem would be much less likely if we did not encourage anthropomorphism as people would be less likely to gain an attachment to it.

Encouraging Anthropomorphism

Despite the drawbacks, encouraging anthropomorphism would be essential to ensure a successful implementation and use of the robot as this is still rather new technology, and taking as much steps as possible to reduce backlash from the public is necessary. However, there are very many methods of encouraging anthropomorphism. There are three factors that state when people will be most likely to anthropomorphise: elicited agent knowledge (how much is known about the entity), effectance (the desire to interact with and comprehend the entity), and sociality (the need to make social connections). When elicited agent knowledge is low and effectance and sociality are high, anthropomorphism is more likely to occur. Encouraging anthropomorphism can also be achieved by linguistically framing it so that it is not viewed as "just a machine", like by giving it a name; but arguably the most important of these methods is the robot's appearance.

Humans generally prefer human-like robots because them having a similar appearance to humans means it is easier to apply human traits onto them, however this is not entirely accurate. Mostly, the affinity the observer feels for the entity is higher the more human-like it is. However, it reaches a point where the entity is extremely human-like, but something is not quite right, and the affinity the observer feels for it plummets, only increasing again when the entity is extremely human-like, as shown in Figure 1. It is this dip in the observer's affinity that is known as the uncanny valley and things that fall into it can often be perceived by observers as creepy or unsettling [5]. In order to bypass the uncanny valley effect, it is best to design the robot to have human-like features, but not aim for realism.

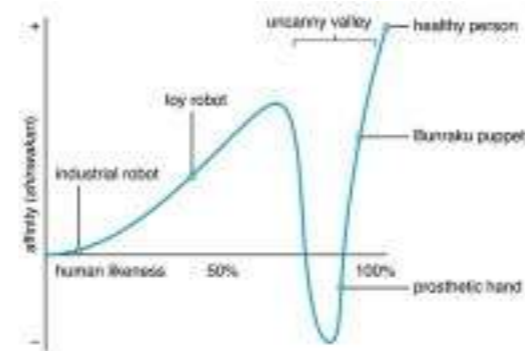


Figure 1 : Mori M, 'A Valley in One's Sense of Affinity', IEEE Robotics and Automation Magazine June 2012 issue, (2012), translation by MacDorman K & Kageki N.

Another way that we could potentially increase the affinity observers feel for it is by using features of the baby schema. The baby schema is a set of features that can make a creature appear "cute". These features include: a large head, big eyes, a small nose and mouth, a high forehead, and a plump body with stubby limbs. Entities that possess these features can evoke a desire to care for it in the observer, as one would for an infant [6]. By utilising these features in the social robot, we could compel observers to take interest in it without having to design and construct a hyper-realistic robot and worry much about the uncanny valley effect.

The robot that I propose will be constructed of a digital screen on top of a white robotic body. The digital screen will act as the robot's "face" and is a relatively low-cost method of allowing the robot to show facial expressions. Facial expressions are extremely important as they can not only convey emotion but can also communicate that an individual is to be trusted [7] which would be extremely helpful when introducing this brand-new technology. This robot will cycle between Resting Face 1 and Resting Face 2 when not speaking and switch to Speaking Face when it needs to speak (images shown in Figure 2). These images that it cycles through all contain big eyes and a small mouth, features of the baby schema which could evoke a desire to care in the viewer. They are also displayed in a pixelated cartoon-like style which prevents it from becoming so realistic that it begins to trigger the uncanny valley effect.

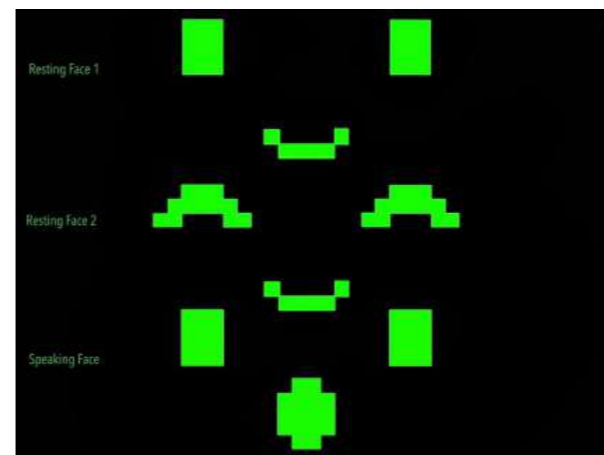


Figure 2: Images displayed on the robot's digital screen

The body that this digital screen resides on is around 70cm tall and is almost entirely constructed of ABS plastic. It's stubby arms and legs and a plump body further contributes to the

image of an infant and its ability to move its head enables it to look directly at the speaker and allows it to make nonverbal cues such as nodding.

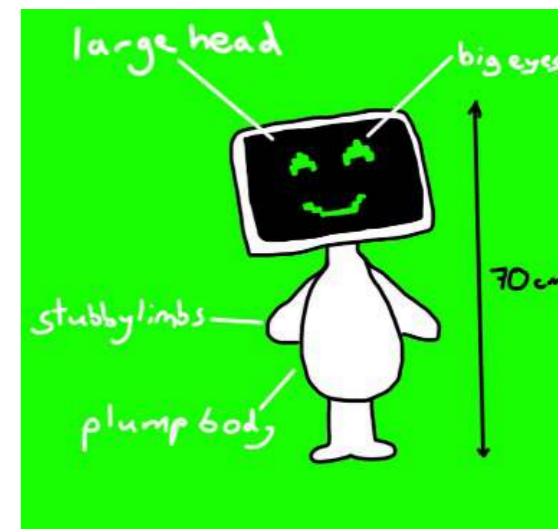


Figure 3: Rough labelled diagram of robot design

Embodiment and the Considerations It Accompanies

So why is a social robot needed here? Why not an app, a smart speaker, or an actual human? Although a human would be ideal for this purpose as they are capable of feeling empathy and understand tone in conversations which may be difficult for robots, employing exclusively humans for this purpose would not be achievable. People who work in care homes work long hours with little income in a job that is extremely challenging and unpleasant at times. There is a massive shortage of people working in the care industry as it is an extremely difficult job so getting enough people to help combat the issue of loneliness would not be feasible.

And even though an app or a smart speaker may cost less than a social robot or employing a human, it would not be as effective. A social robot is an embodied agent. It is intelligent and interacts with the environment through a physical body within that environment. People find it easier to talk, interact, and empathise with something that has a physical presence than something that is purely virtual [8].

Using a social robot for this purpose introduces multiple new considerations that are not present in a non-embodied agent, mainly in non-verbal interaction. There are three main aspects of this communication that are relevant to social robots: proxemics, gestures, and gaze. Proxemics is about how much space people feel the need to put between themselves and others but since our robot is stationary, proxemics does not apply. The others, however, are extremely important.

Gestures can be used to convey information without the need to speak. There are three types of gestures and to be able to function optimally the social robot would need to have at least a basic grasp of them all. Deictic gestures are very straightforward and involve actions like pointing at something and it is important that the robot could understand them so they could keep track of what someone is talking about or looking at. Iconic gestures aren't as crucial but are still helpful to understand; they involve acting out a word's meaning like flapping arms to indicate a bird. But symbolic gestures are perhaps the most important for the robot to understand as they are the only one the robot may use itself; they are actions

that carry their own meaning such as waving to say hello, putting thumbs up as a sign of positivity, or nodding to show understanding (as the robot may do).

Gaze is also an extremely vital tool to be able to understand and use. The robot needs to know to look at someone to signal that it is paying attention but not to stare all the time as it may scare people. It also needs to be able to understand that people may look at it to gain its attention so that it can reach its full potential.

Conclusion

In summary, loneliness is a severe issue in modern society, specifically among older populations, and in some cases can be detrimental to human health. Loneliness is usually tackled by encouraging human-human interaction however that is not always an option so a social robot can be used to interact with instead.

Encouraging observers to apply human characteristics to the robot (anthropomorphism) can have many benefits such as increasing the effectiveness of reducing loneliness, making it easier to implement them, and reducing the money spent on them.

This encouragement of anthropomorphism can be done in many ways like linguistically framing it by giving it a name or giving it human-like features, however if it resembles a human too closely observers may view it as creepy. Neonatal features can also be used to make the robot appear "cute".

I propose using these features to design a stationary robot with featured from the baby schema to create a robot that can be used to commune with elderly people. Using an embodied agent do this also allows us to use gaze and gestures to convey information non-verbally.

This robot could have a positive impact on the physical and mental health of the older generation and be a stepping stone to better health for the elderly in the years to come and aid in the transition to a more technologically advanced world.

References

- [1] Age UK, 'All the Lonely People: Loneliness in Later Life', https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/loneliness/loneliness-report_final_2409.pdf, (2017).
- [2] Hawkey LC, Cacioppo JT, 'Loneliness matters: a theoretical and empirical review of consequences and mechanisms', <https://doi.org/10.1007/s12160-010-9210-8>, *Annals of behavioural medicine: a publication of the Society of Behavioural Medicine*, (2010).
- [3] National Academies of Sciences, Engineering, and Medicine, 'Social Isolation and Loneliness in Older Adults: Opportunities for the Health Care System', <https://doi.org/10.17226/25663>, (2020).
- [4] Schömb S, Klein J, & Roesler E, 'Feeling with a robot – the role of anthropomorphism by design and the tendency to anthropomorphise human-robot interaction', <https://doi.org/10.3389/frobt.2023.1149601>, (2023).
- [5] Mori M, 'A Valley in One's Sense of Affinity', *IEEE Robotics and Automation Magazine* June 2012 issue, (2012), translation by MacDorman K & Kageki N.
- [6] Glocker, M. L., Langleben, D. D., Ruparel, K., Loughhead, J. W., Gur, R. C., & Sachser, N., 'Baby Schema in Infant Faces Induces Cuteness Perception and Motivation for Caretaking in Adults', <https://doi.org/10.1111/j.1439-0310.2008.01603.x>, (2009).
- [7] Frith C, 'Role of facial expressions in social interactions', <https://doi.org/10.1098/rstb.2009.0142>, (2009).
- [8] Blut M, Wang C, Wunderlich NV, Brock C, 'Understanding anthropomorphism in service provision: a meta-analysis of physical robots, chatbots, and other AI', <https://doi.org/10.1007/s11747-020-00762-y>, (2021).

You are a scientist at a large research institution that focuses on cancer evolution. You have just found out that a major funding body is deciding whether or not to grant millions of pounds to your institution. As researchers you are being invited to submit a letter to the funding organisation explaining why cancer evolution is so important, and why it deserves funding - write a 2500 word essay promoting cancer evolution research.

Key Stage 5

Pupil: Emily Hayford

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Course Title: Cancer Evolution: The Ever-Changing Disease

Introduction to Cancer Evolution

In the complex domain of cancer, patients across the world embark on a challenging journey imbued with determination, resilience and the fervent pursuit of a cure. Cancer, a malignant mass of cells that proliferate uncontrollably, remains a distinct enemy of the people; it takes on a life of its own, building an infrastructure of blood vessels to supply oxygen for its division, destroying healthy cells in its wake. Our organisation is committed to advancing the understanding of the complexities of cancer evolution and revolutionising treatment strategies. Studying the evolution of cancer is imperative in our society because it is the key to unlocking our ability to combat cancer, to understand the environmental factors in play and to construct predictive models for diagnosis. Within this essay, I will explore the essential role our institution plays in shaping the future of cancer research, highlighting why we can be the ones to change the lives of millions forever.

Recent Advancements in Cancer Evolution

Lung cancer is a common type of cancer, with over 43,000 people diagnosed with it every year in the UK [1], with the most common primary form being non-small cell lung cancer. Cancer Research UK describes this form of cancer as often being diagnosed late, and once identified, it rapidly develops resistance to treatment [2]. As a result, a program called TRACERx was established, to fill in the gaps in our knowledge of why this form of cancer reacts the way it does. TRACERx is a program involving 842 patients across over 20 UK hospitals, aiming to define how cancer clonal heterogeneity affects the risk of recurrence and survival [3].

This case study can be considered reliable as it consistently compares its data with other studies with other forms of cancer, and provides explanations for any similarities or

differences. For example, while they find that approximately 75% of metastases diverge late [4], other studies in breast and colorectal cancer have found predominantly early divergence [5], to which the authors explain this difference could be due to sampling size or the lack of a standardised method for the timings of divergence. By acknowledging the difference in data found, readers can be more confident that this project has a high validity. There is a lack of data that juxtaposes the data that TRACERx found, which implicitly suggests that while not perfect, TRACERx is a highly regarded source of cancer evolution research.

The future of TRACERx can yield invaluable results, such as developing our knowledge of tumour evolution, which can change how we treat patients to increase their chances of survival and longer lives. As TRACERx progresses into its next phase, TRACERx EVO, researchers are now discovering how changes to cancer cells' DNA enable them to anticipate how those cells will behave in the future [6]. As the Francis-Crick Institution describes, this knowledge could allow doctors to predict how a patient's cancer may grow and spread, enabling them to adapt their treatment strategies. This research does not only apply to lung cancer patients, as these scientists suggest that their findings could be relevant to the cases of melanoma or kidney cancer patients. As a result, we can determine that research into cancer evolution can have tangible results for patients and their futures.

Models of Evolution

Darwin's infamous theory of evolution states that organisms with adaptive traits will have a higher chance of survival, and will be more likely to reproduce and pass on these adaptive traits to their offspring. This process will continue until the weaker organisms without these adaptive traits die, leaving more advantageous organisms. This theory has been applied to cancerous cells by numerous people, for example, in an article written by Angelo Fortunato, he evaluates the question as to whether the evolutionary process of cancer mutation is driven primarily by natural selection or by other evolutionary processes such as founder effects and drift [7]. There are also many different types of patterns of evolution: convergent, divergent, parallel and co-evolution. In particular, Charles Darwin described co-evolution - although not by this term - about how plants and insects could evolve through a reciprocal evolutionary relationship. He used the example of orchids and insects in his book, *The Origin of Species*, where his orchid had an unnaturally long spur of 30cm, to which he determined that an insect with an equally long proboscis could pollinate this flower; such an insect had not been discovered until around 20 years later: the African Hawkmoth, proving that co-evolution exists [8]. Furthermore, in the instance of cancer, when a tumour develops, its cells may produce factors that affect neighbouring healthy cells, such as fibroblasts; these fibroblasts then become abnormal, facilitating the further evolution of this tumour. By understanding how certain tumours evolve, we can develop treatments that respond in kind. For instance, over the past ten years, immunotherapy has emerged as the most promising breakthrough in cancer research.

An article by George and Levine describes how immunotherapy possesses the unique potential to coevolve alongside an evading cancer population, essentially hitting a moving target of random mutations [9]. In this way, we could

argue that this form of treatment can be incredibly beneficial for a patient, as it is dynamic, constantly changing to match the attacks from tumours, precise to target cancer cells and uses the immune system's memory to remember the cancer to attack it again if it returns [10]. The Cancer Research Institute's clinical trials have shown that the beneficial responses to cancer immunotherapy treatment can be durable, resulting in long-term overall survival from the date of diagnosis [10]. However, immunotherapy can have several side effects on patients. The NHS advises patients to be wary of several serious side effects, such as hepatitis, abdominal pains, fatigue and hormonal or glandular issues [11]. Not to mention that the process of administering immunotherapy treatments can be painful, for example, infusion-related reactions or injection site pain, can occur shortly after treatment is administered [12]. Although most side effects can be managed with immunosuppressant drugs, it is important to note that immunotherapy alone can not be used to manage co-evolving tumours alone, further stressing the importance of continued cancer research.

Cancer developing in different ways makes it very complicated to treat as no one treatment can be used in every instance, and it may end up promoting mutations rather than containing them. An example in which this type of research is useful is an article uploaded by The Institute of Cancer Research [13], where it is suggested that a type of treatment could be developed in which a primary drug is used to evolve a cancer cell population in a certain way before administering a secondary drug that is likely to be effective against these changed cells. This directs the evolution of the tumour population using Darwinian adaptation to a drug.

Benefits to Patients of Cancer Evolution Research

Cancer evolution research brings forward a ray of hope for patients facing this daunting adversary. By taking a closer look at the mechanisms by which cancer evolves, we will unlock invaluable insights that directly impact patient care. For example, the data from the TRACERx organisation reveals that the immune system develops in tandem with a tumour by co-evolution, which will allow clinicians to target not just one, but multiple mutations [14]. Understanding evolutionary processes such as these allows us to anticipate how tumours might develop resistance to treatments, enabling us to design more effective treatments. For a patient, this may mean spending less time in hospitals undergoing several rounds of immunotherapy or radiation therapy and instead spending their time living their lives. This is not an unattainable goal, for example, a patient called Chrissie Mortimer was diagnosed with chronic myeloid leukaemia at the age of 61; with the help of the targeted treatment plan Imatinib, Chrissie lived a further ten years volunteering with refugees [15]. Imatinib is a type of chemotherapy, utilising cancer growth blocker mechanisms, preventing the tumour from growing further [16]. The future is indeed looking brighter for patients like Chrissie, ones who will be able to live longer and more fruitful lives as a result of cancer evolution research.

Cancer evolution research not only holds promise for patients but also holds substantial economic benefits; as a result of developing a deeper understanding of how cancer evolves, we open the potential doors to more efficient and cost-effective treatments. A study conducted by Buxton et al aimed to assess the economic returns to cardiovascular

Parent comment:

"The Scholars Programme has given my child an experience of writing scientific papers and now she is interested in taking one of the sciences at university." - Louise Cameron

research, and concluded that there have been substantial historical returns from public and charitable funding in biomedical and health research, and justifies the investments made [17]. The study, however, acknowledges

the challenges of measuring returns across a broad spectrum of medical research, which can be difficult to collect, estimate and utilise in the name of research. However, the study takes into account the data from 1970 to 2010, which offers a valid representation of the economic value of cancer evolution research, compared to a study that may only consider the past ten years. As a result, it can be argued that, overall, cancer evolution research provides tangible results to the patients, rather than being restricted to a laboratory.

Problems with Cancer Evolution Research

One question remains: is it sustainable to continue funding cancer evolution research, rather than prioritising research in our methods of treatment? There is some research to support this idea, for instance, a study led by Dr Stuart McIntosh, in which he analyses the funding towards cancer research in 2023; he found that almost three-quarters of cancer research is dedicated to pre-clinical or medicinal research [18]. Pre-clinical research, although it deepens our understanding of cancer, can have lengthy delays when being translated into patient benefit; simply put, most of our limited resources are dedicated to areas of research that can only benefit those who are fighting cancer several years from now. McIntosh says in this study that he believes that our current cancer investment does not align well with the current global distribution of cancer.

It is important to note that while this study considers itself to be a global representation of data, it does acknowledge that some countries will be underrepresented or not represented at all, like Italy or North Korea; in addition, the study does not take into account the funding from commercial sources and solely focuses on public and philanthropic awards [19]. As a result, the data it finds may not be fully accurate to how funding is spread out. Furthermore, it suggests that dedicating funds to preclinical and medicinal research is essentially a waste of funding because it does not provide immediate results, but this is not the case at all. Pre-clinical cancer research provides indispensable data that can be used to create cancer models: predictive models that break down the mechanisms involved in tumour onset, progression and treatment resistance [20]. While it may not provide immediate results, without first understanding how cancer evolves, we cannot assume that we already know all there is to know about cancer; one may argue that if that were the case, we would not need any kind of cancer research at all. The research article by McIntosh fails to explain why it is that so much money is dedicated to pre-clinical and medicinal research - could it not be that it serves a greater purpose to our knowledge as a whole? It seems to be that, for the most part, science agrees that this data is important, and while the distribution could arguably be reevaluated, it is not by accident that almost three-quarters of funding goes towards this type of data.

Why Research Must Continue

Continued investment in cancer research remains crucial due to its long-lasting impact on the life of a patient and society at large. As discussed in this essay, cancer has the relentless ability to adapt and evolve, demanding ongoing exploration and

innovation. If we cannot understand this disease, how can we expect to effectively treat it, without spending millions on fruitless trials?

Without this research, we deny ourselves the opportunity to unveil groundbreaking therapies or reduce healthcare costs. Cancer research has a long, rewarding history, from 1775 when Percivall Pott's report was the first to link the environmental exposure of chimney soot to the development of cancer, all the way to 2020 when a consort of international researchers came together to analyse over 2600 genomes from 38 different types of cancer to identify common patterns of molecular changes [21]. This ongoing journey of exploration, marked by significant milestones such as these demonstrates that every day, cancer research brings us closer to the end goal of curing cancer and changing lives across the globe.

One infamous example that stresses why cancer research is so important is the discovery of the BRCA1 and BRCA2 genes, genes that produce proteins that help repair damaged DNA; those who inherit harmful variants in one of these genes can have increased risks of several cancers—most notably breast and ovarian cancer [22]. As a result of this discovery in the 1990s, people can now be scanned for these genes by the use of modern multi-gene panels and can be observed by doctors for mutations. This could potentially open the door for early diagnosis, and improve the patient's chance at survival and recovery significantly. However, the journey for an effective test is not yet complete; a study conducted by Keren Bahar-Shany et al in 2022 believed that there aren't reliable tests for finding high-grade ovarian cancer early in high-risk women with BRCA mutations [23]. They aimed to develop a proteomic assay to spot markers for this cancer in high-risk groups and found that this test was nearly perfect at spotting the cancer, with a success rate of over 97%. Another study by Debbie Anaby et al aimed to develop an artificial intelligence based tool, shown to classify correctly ~65% of the tumours early, tumours which had not yet been diagnosed by radiologists at the time [24]. These recent studies serve as proof that although discoveries in the past have been influential, we must continue our endeavours to further our knowledge about cancer to improve the lives of millions of patients, whether it be by increasing the likelihood of early diagnosis or enhancing our treatments.

Conclusion: Cancer Evolution Research Deserves Funding

In conclusion, the trajectory of cancer research has evolved significantly, tracing a journey marked by pivotal discoveries. From the first association between environmental factors and cancer to modern-day breakthroughs like genomic analysis, each milestone emphasises the critical role of ongoing and continuous research into this disease. As evidenced by initiatives like TRACERx, which develops our knowledge of tumour growth, cancer evolution research has provided life-changing data for patients around the world. Furthermore, by embracing older theories like Darwin's evolutionary model in the context of cancer, scientists have advanced therapies like immunotherapy to be more effective in instances of co-evolving tumours. When taking into account the overwhelming evidence brought forward, it remains clear that the continued investment into cancer research promises a brighter future, one in which cancer is better understood, treated, and eventually, cured.

References

- [1] Lung cancer (2017) nhs.uk. Available at: <https://www.nhs.uk/conditions/lung-cancer/> (Accessed: 5 January 2024).
- [2] Tracking cancer evolution: the tracerx lung study (2017) Cancer Research UK. Available at: <https://www.cancerresearchuk.org/funding-for-researchers/applying-for-funding/how-to-make-a-successful-application/successful-applicant-case-studies/case-studies-of-major-research-programmes/tracking-cancer-evolution-the-tracerx-lung-study> (Accessed: 5 January 2024).
- [3] 'Lung TRACERx' (no date). Available at: <http://tracex.co.uk/studies/lung/> (Accessed: 5 January 2024).
- [4] Al Bakir, M. et al. (2023) 'The evolution of non-small cell lung cancer metastases in TRACERx'. *Nature*, 616(7957), pp. 534–542. Available at: <https://doi.org/10.1038/s41586-023-05729-x>. (Accessed: 5 January 2024)
- [5] Faltas, B.M. et al. (2016) 'Clonal evolution of chemotherapy-resistant urothelial carcinoma'. *Nature Genetics*, 48(12), pp. 1490–1499. Available at: <https://doi.org/10.1038/ng.3692>. (Accessed: 5 January 2024)
- [6] Genetic clues reveal lung cancer's next move (2023) The Francis Crick Institute. Available at: https://www.crick.ac.uk/news/2023-04-12_genetic-clues-reveal-lung-cancers-next-move (Accessed: 5 January 2024).
- [7] Fortunato, A. et al. (2017) 'Natural selection in cancer biology: from molecular snowflakes to trait hallmarks'. *Cold Spring Harbor Perspectives in Medicine*, 7(2), p. a029652. Available at: <https://doi.org/10.1101/cshperspect.a029652>. (Accessed: 5 January 2024)
- [8] Hassall, R. (2011) Darwin's archid and its contribution to the theory of coevolution - conservation articles & blogs - cj, Conservation Jobs. Available at: <https://www.conservationjobs.co.uk/articles/darwins-archid-and-its-contribution-to-the-theory-of-coevolution/> (Accessed: 5 January 2024).
- [9] George, J. and Levine, H. (2011) 'Implications of Tumor-Immune Coevolution on Cancer Evasion and Optimized Immunotherapy', 7(4). Available at: <https://doi.org/10.1016/j.trecan.2020.12.005>. (Accessed: 5 January 2024).
- [10] What is immunotherapy? (no date) Cancer Research Institute. Available at: <https://www.cancerresearch.org/what-is-immunotherapy> (Accessed: 5 January 2024).
- [11] Trust, U.H.P.N. (2022) Display patient information leaflets, University Hospitals Plymouth NHS Trust. Available at: <https://www.plymouthhospitals.nhs.uk/display-pil/pil-immunotherapy-treatments-5641> (Accessed: 5 January 2024).
- [12] Immunotherapy side effects (2019) Cancer Research Institute. Available at: <https://www.cancerresearch.org/immunotherapy-side-effects> (Accessed: 5 January 2024).
- [13] Godfrey, I. (2023) Using the principles of evolution to defeat cancer. Available at: <https://www.icr.ac.uk/blogs/science-talk/page-details/using-the-principles-of-evolution-to-defeat-cancer> (Accessed: 5 January 2024).
- [14] Taking lessons from cancer evolution to the clinic (2020) The Francis Crick Institute. Available at: <https://www.crick.ac.uk/research/research-reports/taking-lessons-from-cancer-evolution-to-the-clinic> (Accessed: 5 January 2024).
- [15] Cancer research offers more hope than people think (2019). Available at: <https://www.icr.ac.uk/news-archive/cancer-research-offers-more-hope-than-people-think> (Accessed: 5 January 2024).
- [16] Imatinib (2023). Available at: <https://www.cancerresearchuk.org/about-cancer/treatment/drugs/imatinib> (Accessed: 5 January 2024).
- [17] Glover, M. et al. (2014) 'Estimating the returns to UK publicly funded cancer-related research in terms of the net value of improved health outcomes', *BMC Medicine*, 12(1), p. 99. Available at: <https://doi.org/10.1186/1741-7015-12-99>. (Accessed: 5 January 2024)
- [18] Billions spent on cancer research but only small percentage goes to treatment, study shows (2023). Available at: <https://medicalxpress.com/news/2023-06-billions-spent-cancer-small-percentage.html> (Accessed: 5 January 2024).
- [19] McIntosh, S. et al. (2023) 'Global funding for cancer research between 2016 and 2020: a content analysis of public and philanthropic investments', 24(6). Available at: [https://doi.org/10.1016/S1470-2045\(23\)00182-1](https://doi.org/10.1016/S1470-2045(23)00182-1). (Accessed: 5 January 2024)
- [20] Golebiewska, A. and Fields, R.C. (2023) 'Advancing preclinical cancer models to assess clinically relevant outcomes', *BMC Cancer*, 23(1), p. 230. Available at: <https://doi.org/10.1186/s12885-023-10715-7>. (Accessed 5 January 2024)
- [21] Milestones in cancer research and discovery - nci (2015). Available at: <https://www.cancer.gov/research/progress/250-years-milestones> (Accessed: 5 January 2024).
- [22] BRCA gene mutations: cancer risk and genetic testing (2020). Available at: <https://www.cancer.gov/about-cancer/causes-prevention/genetics/brca-fact-sheet> (Accessed: 5 January 2024).
- [23] Bahar Shany, K. et al. (2023) 'Proteomic signature for detection of high grade ovarian cancer in germline BRCA mutation carriers', *International Journal of Cancer*, 152(4), pp. 781–793. Available at: <https://doi.org/10.1002/ijc.34318>. (Accessed: 5 January 2024)
- [24] Anaby, D. et al. (2023) '“Earlier than early” detection of breast cancer in Israeli brca mutation carriers applying ai-based analysis to consecutive mri scans', *Cancers*, 15(12), p. 3120. Available at: <https://doi.org/10.3390/cancers15123120>. (Accessed: 5 January 2024)

Tutor comment:

"It was a pleasure to work with Emily during the Cancer Evolution module I deliver at the Brilliant Club. From the outset, Emily was highly engaged, consistently contributing valuable insights and ideas with maturity and intellect. This essay is a testament to her abilities as a dedicated and driven young woman. I awarded Emily a First for this work—a well-deserved achievement. The quality of her essay is impressive, approaching the level expected from a third-year university student, which is remarkable for a Year 12 student. If this is the level of work we are seeing now from Emily, I am excited to see what the next several years bring!"

Preventing Malaria From Spreading In Mali

Key Stage 3

Pupil: **Enrique Major**

School: **Rednock School**

Supervised by: **K.Lessel**

Tutor University: **University of Gloucestershire**

Course Title: **Disease Detectives**

Introduction

Malaria is a tropical disease spread by mosquitoes that is fatal and has a high chance of mortality if not treated quickly (NHS, 2022). It is mostly located in hot and tropical regions, for example Mali, but you cannot contract it in the UK. This is because the climate is too cold for mosquitoes to survive in, therefore they cannot spread it. According to the World Health Organisation, malaria cannot be spread from person to person and people who are under five years old, pregnant, travellers and people with diseases like HIV or AIDS are at higher risk (WHO, 2024).

How malaria spreads

Malaria is most commonly spread by parasites in female mosquitoes. Once the parasite has entered the human body the parasite begins to multiply and change shape. Once the parasites have finished shapeshifting, they begin to burst out of red blood cells, killing them in the process. As stated by The Scholars Programme, once a mosquito bites an infected person, it drinks the blood containing the parasites. Then, the parasites mate in the mosquito's gut and start to produce small eyelash sized and shaped parasites. After this is finished, the eyelash sized shaped parasites move to the salivary glands of the mosquito. This is where mosquitoes drink the blood of people, and the next time the mosquito drinks the blood of someone the parasites enter the body again. (The Scholars Programme, 2024)

Symptoms of Malaria

The symptoms of malaria can range from mild to life-threatening depending on your vulnerability to the disease. It is essential due to the people of Mali being especially vulnerable to malaria due to poor sanitation, hygiene and medicine. Mild symptoms can be fever, headache and chills. However, there are more severe symptoms such as extreme tiredness and fatigue, multiple convulsions, difficulty breathing, abnormal bleeding, jaundice, dark or bloody urine and impaired consciousness. These symptoms usually occur 7 to 18 days after the initial infection, but the symptoms can take place months or even years after the transmission in rare cases. If someone has severe symptoms, then they must require emergency care immediately.

Why is malaria dangerous?

Malaria is a dangerous disease due to a wide range of reasons. For example, if not treated properly within 24 hours malaria can become dangerously lethal. Additionally, in some rare cases malaria can affect the brain. This is called cerebral malaria, where parasites block blood vessels to the brain. This can cause brain damage, swelling in the brain, seizures and comas (Mayo Clinic, 2023). Malaria is dangerous because the parasite responsible for malaria, Plasmodium, is hard to study

for scientists to develop resistances or potential vaccines. This means that there is no clear and definite cure for malaria, like for how bacteria is treated with antibiotics, but there are only some preventions and ways to slow down the spread of malaria.

Why malaria is a problem in Mali

Malaria is a problem in Mali because of the state of the country. Mali is a low income country and is among one of the poorest countries in the world with it having US\$ 880 GDP per capita (WHO, 2019). Thus, it has lower monetary gain compared to richer countries. This is a problem because the Malian government cannot spend money to prevent malaria outbreaks in the country. It also has a very large population, with approximately over 23 million people living in Mali (Worldometer, 2024). The average life expectancy of people living in Mali in 2024 is 60.86 (MacroTrends, 2024). This is a problem because that means that most of the people in Mali are children. Children are part of the population that are most vulnerable to malaria and disease as a whole. This is because the immune system of young children is not fully developed and strong compared to a healthy adult.

Preventions of malaria

There are a variety of ways to prevent someone from getting infected with malaria. One way to reduce the chance of getting infected is to install mosquito nets around beds and windows. This is effective because mosquitoes mostly bite people around dawn - when people start heading to sleep and are most vulnerable to mosquito attacks. However, one flaw of this method is that only the area on the bed is safe from mosquitoes and that mosquitoes can enter through other entrances through houses. Another way to stop malaria is by spraying houses with insecticides. This is done by spraying insecticides indoors, and it is done once or twice a year. This is effective because the insecticide is efficient at killing mosquitoes inside of households. The most effective insecticides contain diethyltoluamide, also known as DEET. One flaw of this method is that it is only effective inside households, and not outdoors or when travelling.

Treatments of malaria

Fortunately, malaria cannot be deadly if treated in time. One treatment for malaria is the malaria vaccine. There are many vaccines for malaria being developed, but it is hard to create one due to the Plasmodium parasite's life cycle - the parasite responsible for malaria infections. There has been a malaria vaccine in development since 1987, with it being the malaria vaccine with the most clinical development created by a pharmaceutical company named GlaxoSmithKline. This vaccine is called RTS,S and when tested, it was shown to prevent 4 out of 10 cases of malaria in children when the children were given four doses of it. Additionally, there are also antimalarial tablets that can be taken. Travellers, children and pregnant women are advised to take them when visiting high malaria risk areas like Uganda and Ghana. (WorldAtlas, 2017)

How to prevent the spread of Malaria

There are a number of ways to prevent the spread and transmission of Malaria. One way to reduce the spread of malaria is to give money to the Malian government so they can improve the general hygiene, sanitation and quality of life in the country, which should help increase life expectancy.

Increasing life expectancy is positive and will effectively stop malaria from being as dangerous as there are as not many children, who are more at risk to malaria. Another example is for the government to employ rules and restrictions to stop malaria from infecting as many people. This can be done by making sure every door and window is closed frequently, especially during night as that is when mosquitoes that carry malaria are present the most. When people are sleeping, they are most vulnerable to mosquito bites and therefore malaria infections.

Conclusion

In conclusion, malaria is a deadly, dangerous and lethal disease if not treated in time or properly. The biggest reason why malaria is dangerous is because the areas it is located in such as Mali. The country and government have substantially less income compared to other countries, meaning that they cannot spend as much money on preventing diseases, hygiene and sanitation. However, the most effective way to prevent malaria is to spray the indoors of people's houses with insecticides, particularly insecticides that contain diethyltoluamide, the chemical most effective against mosquitoes. A way of treating malaria that is most effective is the malaria vaccine called RTS,S. Although the vaccine has shown to be inconsistent it has been shown to work in some cases. The most effective way to prevent the spread of malaria, especially in Mali, is to fund the Malian government with money so they can afford ways to prevent malaria in Mali such as installing mosquito nets on beds and windows, spraying insecticides on houses and more.

References

NHS (2022). Malaria (<https://www.nhs.uk/conditions/malaria/>) [Accessed on 12/03/24]
 WHO (2024). Malaria (<https://www.who.int/news-room/fact-sheets/detail/malaria>) [Accessed on 12/03/24]
 The Scholar's Programme (2024). Disease Detectives [Accessed on 12/03/24]
 Mayo Clinic (2023). Malaria (<https://www.mayoclinic.org/diseases-conditions/malaria/symptoms-causes/syc-20351184>) [Accessed on 14/02/24]
 WHO (2019). Mali Data. (<https://data.who.int/countries/466>) [Accessed on 15/02/24]
 Worldometer (2024). Mali Population (<https://www.worldometers.info/world-population/mali-population/#:~:text=Mali%20population%20is%20equivalent%20to,49%20people%20per%20mi2>) [Accessed on 15/02/24]
 MacroTrends (2024). Mali Life Expectancy. (<https://www.macrotrends.net/global-metrics/countries/MLI/mali/life-expectancy#:~:text=The%20current%20life%20expectancy%20for,a%200.61%25%20increase%20from%202021.>) [Accessed on 15/02/24]
 WorldAtlas (2017). Countries with Highest Risk of Malaria. (<https://www.worldatlas.com/articles/countries-with-the-highest-rates-of-malaria.html>) [Accessed on 16/02/24]

Tutor comment:

"I was very impressed with Enrique's standard of work throughout the program. He was incredibly dedicated and engaged in each session, making him a pleasure to teach. His final essay was outstanding, especially for a Year 8 pupil, scoring a First in his assignment. Enrique has a bright academic future ahead of him."

What do you consider to be the single most significant technique in microscopy?

Key Stage 5

Pupil: Khalid Al-Helaly

School: Llanishen High School

Supervised by: H. Baird

Tutor University: Cardiff University

Course Title: Detecting the Undetectable: An Introduction to Microscopy

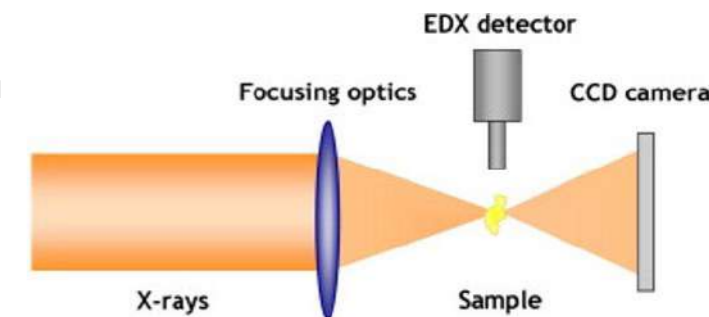
A Brief History of Microscopy

Microscopy has been an ever expanding and advancing field of study that has contributed to ground-breaking discoveries that have revolutionised our understanding of the world. Microscopy is the study of objects that cannot be seen with the unaided eye which uses microscopes to view samples and objects [1]. Microscopy has an exciting and exhaustive history stretching all the way back to the first recorded use of lenses for glasses in 1300. The world's first compound optical microscope was created in 1600 by Zacharias Janssen with a magnification of 20 – 30x. However, it was Antoine van Leeuwenhoek who truly revolutionised microscopy by observing fossils and cells using his simple optical microscope with a resolution of 200x, marking the dawn of microscopy. From there, the rate of advancement in microscopy exploded. The term 'cell' becomes used for the first time in 1665 by Robert Hooke in his book Micrographia. The 18th Century sees new advancements in microscopy bringing about improved image resolution. In 1830, an optical microscope that corrects for spherical and chromatic aberration is created by Physicist Joseph Jackson Lister and instrument maker William Tulley. Optical microscopes finally become widely adopted in laboratories all over the world in the 1830s, leading to the rise of cells as the focus of biological research. In the same decade, scientists Mathias Schleiden and Theodor Schwann discover that cells are the 'building blocks of life', revolutionising our understanding of living organisms and illnesses. Optical microscopy begins to be used to investigate diseases in the 1840s, marking the dawn of microscopic applications in medicine. In 1850, physician Arthur Hill microscopically examines the water supply in London and promotes water reform, improving water quality for millions of people. All of these exciting advancements lead up to the creation of the Royal Microscopical Society, the publishers of this magazine, in 1870 [2]. Over these 700 years of progress in microscopy, there is one technique which I believe to be the most significant. It enables detailed studies in myriad fields such as biology, geology, environmental science, physics, chemistry, medicine, archaeology, and more [3]! This exciting and influential technique is x-ray microscopy.

What is X-Ray Microscopy and How Does it Work?

X-ray microscopy is a non-destructive technique that uses x-rays to generate an image of the internal features of a sample. X-rays are an electromagnetic wave; they have a short wavelength and consist of high energy [4]. X-ray microscopes work by using x-rays as a source of illumination to view the internal features of a sample. The image is created by the difference in contrast provided by the different levels of x-ray absorption between the different components inside

the sample [2]. This technique in particular is unique as it provides higher resolution than optical microscopy which is a type of microscopy in which visible light and lenses are used to produce magnified images of samples. X-ray microscopy also allows for a higher penetration power than electron microscopy, a technique that uses electrons as a source of illumination to provide high resolution images of samples. X-ray microscopy now has a resolution of >25nm which further demonstrates its unique penetrating and image enhancing abilities [5]. The diagram below illustrates a simplified diagram of an x-ray microscope.



A focused beam of x-rays is concentrated onto a sample. Detectors are used to capture the transmitted x-rays and a camera at the end obtains a series of images. By varying the angle and position of the sample we can obtain images from different angles. The image can then be reconstructed to generate a 3D representation of the objects internal structure [3].

Optical Microscopy vs Non-Optical Microscopy

Optical microscopy utilises visible light and lenses to magnify and observe samples. On the other hand, non-optical microscopy uses techniques such as electron or scanning probe microscopy for imaging. Some common types of optical microscopy that you might hear include Stimulated Emission Depletion (STED) microscopy, Structured Illumination microscopy (SIM), Stochastic Optical Reconstruction microscopy (STORM), and Total Internal Reflectance Fluorescence (TIRF) microscopy. On the other hand, some common forms of non-optical microscopy include electron microscopy, atomic force microscopy, and x-ray microscopy [2]. Non-optical microscopy has several advantages over optical microscopy including higher resolution, greater magnification, and increased field depth [3]. X-ray microscopy, being a type of non-optical microscopy, therefore carries these advantages, demonstrating its significance and advantage over other techniques, particularly over optical microscopic techniques such as Stimulated Emission Depletion (STED) microscopy and Total Internal Reflectance Fluorescence (TIRF) microscopy [2].

The Benefits of X-Ray Microscopy

X-ray microscopy has a range of benefits that make it uniquely useful in certain applications. One key benefit is that it is much more penetrating than other types of microscopy, such as electromagnetic microscopy or electron microscopy. The great penetrating power of x-rays provides great advantage in mapping the inside of a sample without significant image degradation [6]. This makes the technique effective for imaging thick and dense specimens, such as biological tissues

or materials [3]. Scientists can identify the numerous layers to a sample by analysing the specific absorption characteristics of different materials. The 3D imaging capabilities of x-rays allow scientists to map the inside of a sample without the need for physical sectioning, a feature that many other microscopic techniques do not have [3]. X-ray microscopy also carries the benefit of being non-destructive (unless high energy x-rays are used). Other forms of microscopy such as atomic force microscopy uses a mechanical probe to 'feel' the surface of the sample which causes significant damage, especially in contact and tapping atomic force microscopy where the probe comes in direct contact with the sample [2]. This non-destructive imaging makes it especially suitable for studying delicate biological samples without altering their structure or form [3]. Another major benefit of this enthrusting technique is that no specialist sample preparation is required [2]. This allows for the techniques widespread use in a range of laboratories as it is relatively easy to carry out and specialist knowledge is not always required. X-rays have much shorter wavelengths compared to visible light which allows for high resolution imaging. This gives scientists the benefit of accessing fine details within the nanometre range (>25nm) [3]. X-ray microscopy also carries the advantage of having widespread applications across a range of fields, including biology, physics, chemistry, geology, archaeology and more. In essence, x-ray microscopy excels in areas that other microscopical techniques cannot compete in; from its non-destructive, high-resolution imaging, to its versatile application uses, x-ray microscopy remains an incredibly advantageous technique that will only advance even more as science progresses.

The Limitations of X-Ray Microscopy

Despite all the exceptional benefits of x-ray microscopy, there are a few limitations to the technique. The major drawback to x-ray microscopy is the risk of damage to the sample if high energy x-rays are used. X-rays are high-energy electromagnetic waves and have the capacity to cause radiation damage to sensitive materials [7]. However, this damage can be prevented by ensuring that the x-ray energies are not high enough to cause damage. X-rays also help prevent damage to samples as they can penetrate the surface of a sample to map the inside without the need for physical sectioning. So, while the risk of damage is prevalent, x-ray microscopy can also prevent damage to a sample [2]. Another major drawback is the lower resolution found in x-ray microscopy. Its resolution is limited by the x-ray wavelength and therefore has lower resolution to other techniques like electron microscopy [2]. This hinders the ability for scientists to discern the finer details of a sample. However, I believe x-ray microscopy still remains significant despite this as it still carries a much higher resolution than other techniques. For example, when compared to optical microscopy techniques, x-ray microscopy offers much higher resolution. The high expense of x-ray microscopy also poses a limitation for many people. Specialised expertise and facilities are needed to maintain this technology, making them less accessible and hindering their widespread adoption across labs across the world [3]. However, by investing in methods to make this technology more affordable we may eventually manage to overcome this problem. The usage of x-ray technology also presents concerns about the levels of radiation exposure researchers may be exposed to [3]. This adds another barrier in making x-ray technology an accessible and widely utilised technology, but by adhering to strict safety protocols and regulation

we can overcome this issue and make better use of what I consider the most significant technique in microscopy. While x-ray microscopy does come with a set of limitations including risk of sample damage, decreased resolution, cost, and radiation exposure, these challenges can be overcome with the right expertise and precautions.

Some people would argue that other techniques in microscopy are much more significant than x-ray microscopy. For example, Stimulated Emission Depletion (STED) microscopy provides useful high contrast images which make it useful for visualising fine structures and details. However, it is limited in penetration depth when compared to x-ray microscopy and often causes damage to the sample unlike x-ray microscopy which is non-destructive. Others may say that Structured Illumination Microscopy (SIM) is the most significant technique due to its fast-imaging speeds and enhanced resolution which allows for detailed imaging of cellular structures. However, x-ray microscopy is often preferred due to its penetration depth which we discussed earlier and its ability to allow for material differentiation, abilities that structured illumination microscopy fails to compete with. Stochastic Optical Reconstruction Microscopy (STORM) and Photoactivated Localisation Microscopy (PALM) may offer superior resolution and live-cell imaging however, like many other forms of microscopic techniques fail to compete with the penetration depth and non-destructive imaging of x-ray microscopy [2]. Some would also argue that the most significant technique in the world of microscopy is Total Internal Reflection Fluorescence (TIRF) microscopy as it is capable of live-cell imaging as well as single molecule imaging which allows researchers to track individual molecules near the cell surface. A commonly argued significant technique is electron microscopy due to its range of benefits. It offers aspects like high resolution, high magnification abilities, contrast variations, and 3D imaging. However, I still believe x-ray microscopy to be the most significant technique in microscopy as it shares many of these benefits like high resolution, material contrast, and 3D imaging, as well as some unique benefits like non-destructive imaging, and the ability to penetrate dense materials. Another technique some might say is the most significant is atomic force microscopy which uses a mechanical 'probe' to feel the surface of a sample allowing researchers to measure changes in the sample surface to a high degree of accuracy [3]. However, despite the myriad alternative microscopical techniques available I believe x-ray microscopy to be the best. Its unique penetration abilities, coupled with its high resolution and non-destructive imaging make it a versatile and valuable technique in microscopy.

The Impact of X-Ray Microscopy in the World of Microscopy and Beyond

The impact of x-ray microscopy around the world has been incredibly significant. In medical research, x-ray microscopy has emerged as a useful technique for studying biological structures at the cellular and subcellular levels [4]. It has enabled scientists to visualise intricate details without the need for physical sectioning, providing amazing insight into cellular processes. In biology this has led to advancements in areas like understanding disease and developing targeted treatments and medicines. This has helped foster an explosion in healthcare innovation and will contribute to the advancement of healthcare for decades to come. Improved medical diagnostics and treatments directly impact healthcare outcomes, leading to a rise in quality of life for us all. X-ray

microscopy has also contributed to a transformative impact in materials science. We can now explore the internal structures of materials with excellent resolution, allowing us to learn of their composition and properties. This has allowed scientists to develop new materials with enhanced functionality and performance [3]. We all benefit from improved quality control as a result, enhancing the reliability and safety of products. This advancement in technology has been massively boosted by the use of x-ray microscopes. Another field massively impacted by the use of x-ray microscopy is environmental research. Scientists have garnered greater understanding of Earth's history through the use of x-ray microscopes in the analysis of geological samples [8]. This knowledge has proved vital, particularly in recent years, by helping to address issues such as climate change [3]. The research of the environment will help us further develop sustainable practices for the future. Beyond these influential and everlasting impacts, x-ray microscopy has affected aspects of our entire lives in fields like physics, chemistry, archaeology, and a plethora more.

X-Ray Microscopy - The Most Significant Technique in Microscopy

X-ray microscopy is the product of an extensive and exciting history stretching all the way back to the first recorded use of lenses in 1300. From its beginnings in 1896 [4] x-ray microscopy has gone on to contribute to numerous fields of research including biology, geology, environmental science, physics, chemistry, medicine, archaeology, and many more [3]. By using x-rays to generate an image of the internal features of a sample, x-ray microscopy has given researchers many benefits. It is much more penetrating than many other microscopical techniques like electron microscopy and electromagnetic microscopy, allowing us to map the inside of a sample without the need for physical sectioning. This separates it from other forms like atomic force microscopy that can harm the sample being analysed. Its versatile use, thanks to the lack of specialist preparation required, allows for x-ray microscopy to be opened to researchers around the world [2]. If all that isn't enough to convince you x-ray microscopy is the most significant technique, it also allows for extremely high-resolution imaging when compared to optical microscopes. It is a technique with a history stretching all the way back to the Victorian Era that has pioneered our understanding of the microscopic world. It is the epitome of microscopical advancement, allowing an incomparable insight into the intricacies of microscopy. The groundbreaking knowledge which we have gained from this technique promises to pave the way for future scientific discoveries with far-reaching implications for ourselves and our societies.

References

- [1] The University of Edinburgh. 2018. "What Is Microscopy?" The University of Edinburgh. September 27, 2018. <https://www.ed.ac.uk/clinical-sciences/edinburgh-imaging/far-patients-study-participants/tell-me-more-about-my-scan/what-is-microscopy>.
- [2] Hannah Baird. 2023. Detecting the Undetectable: An Introduction to Microscopy
- [3] OpenAI. (2023). ChatGPT (Mar 14 version). <https://chat.openai.com>.
- [4] "X-Ray Microscopy - an Overview | ScienceDirect Topics." n.d. Www.scienceDirect.com. <https://www.sciencedirect.com/topics/chemistry/x-ray-microscopy>.
- [5] Schmahl, G., D Rudolph, B Niemann, Peter Guttman, J Thieme, and Gerd Schneider. 1997. "X-RAY MICROSCOPY." PubMed, May. https://doi.org/10.1142/9789812819581_0014.
- [6] Li, Lingjun, and Chris Jacobsen. 2018. "Relative Merits and Limiting Factors for X-Ray and Electron Microscopy of Thick, Hydrated Organic Materials." Ultramicroscopy 184 (January): 293-309. <https://doi.org/10.1016/j.ultramic.2017.10.003>.
- [7] Ampomdanai, Kangsa. 2014. "Biological Specimens Preparation for X-Ray Microscopy." https://www.desy.de/fi/students/2014/reports/ampomdanai_kangsa.pdf

[8] Cnudde, V., and M.N. Boone. 2013. "High-Resolution X-Ray Computed Tomography in Geosciences: A Review of the Current Technology and Applications." Earth-Science Reviews 123 (August): 1-17. <https://doi.org/10.1016/j.earscirev.2013.04.003>.

Tutor comment:

"Khalid is a brilliant student, who was a pleasure to work with. I was particularly impressed by his ability to grasp complicated scientific phenomena such as fluorescence, and the ease at which he was able to correctly and scientifically communicate these complex concepts in written work. Every bit of feedback given, he took on board and acted on, meaning he produced a magnificent essay which was marked as a 1st. This essay wouldn't be out of place among the essays of 1st or 2nd year undergraduates, which is incredible for a year 12 to achieve! I have no doubt that Khalid would prosper at university."

How Anchoring influences Algorithmic input as a result of human input

Key Stage 4

Pupil: Oliver Morgan
School: St Gabriels RC High School and Voluntary Academy
Supervised by: M. E. Halstead
Tutor University: University of Manchester
Course Title: The Human Factor: Decision-making Algorithms and Human Choices

Introduction

Every day decisions are made that will then determine the course of that day, whether this be by you, the human, or algorithms, the computer these are known as multi criteria decision making problems (MCDM) - a problem to solve when we have several options to choose from and need to figure out which one is best [1]. In the case of Jane, the decision problem we will be discussing is what university they will attend, but this choice will be affected by cognitive biases -when the use of mental shortcuts results in giving an incorrect answer [2]. More specifically, it will be affected by a cognitive bias known as anchoring- relying heavily on the first piece of information given when making decisions [2]- as this is something that commonly affects not only a problem such as this but everyday life, heavily impacting how you perceive options. The solutions- what is being evaluated or compared- are 10 different universities with the criteria- the standards or requirements used to judge or evaluate something- being cost, size, location, reputation and diversity, these are known as the structuring of a decision problem. Also mentioned in this essay is preference elicitation: the process of figuring out what someone likes or wants by asking them questions or observing their choices [3]. In particular, Point Allocation (allocating 100 points across criteria) [4] and SMART (points allocated in a positive gradient with a first of 10) [5]. This essay will cover how anchoring can affect criteria and solutions chosen by the human, how preferences are then made based on this, and limit the accuracy of decision making.

Evidence of Anchoring

Anchoring effects criteria and solutions chosen by the human

When first choosing which universities would be their solutions,

Jane will have been impacted by anchoring, affecting each university she picked. This could have had a positive impact, through ending up with universities that all have characteristics she likes (this characteristic would be her anchor), or a negative impact, giving her only a small range of universities that may restrict variety and a possibly perfect university that, due to anchoring, she will never know existed. However, when viewed from a broader angle, there could be many different possibilities to what her anchor could be. For instance, this could be moral beliefs, choosing a university that better nurtures these, a university she has been recommended or told is good by someone else, or one her parents may have been too- assuming this led to an aspiring future full of opportunities.

Furthermore, when selecting each university, it could be said that the previous university was the anchor. For example, when viewing Uni 3, Jane may have been intrigued by the pictures and so investigates, leading her to quite like the university from the initial information she gathers. This results in Jane, who now thinks she wants to go to Uni 3, picking a university that is terrible in comparison to it as she wants Uni 3 to be the preferred solution. Purposely or unknowingly, Uni 3 has become an anchor for Jane in this situation, at a disadvantage to her overall outcome.

Nevertheless, the solutions she has chosen are only the very first step of a decision problem, the second is selecting the criteria of which they will have data collected on. Again, impacted by anchoring, each criterion may have been picked based on personal experiences, past memories or events that have impacted her mental state for better or for worse. These experiences, which are individual to Jane, could have affected some sort of earlier learning. For example, a classroom may have been overwhelming with too many people so she would want a smaller class size, or on the contrary a range of different people may present different ideas and collaborations so she would want a larger class size, either way valuing size as a criterion. This same analogy can then be applied to the four other criteria, each with their own circumstances and as a result now impacting the entirety of the decision problem.

Anchoring affects how preferences are made

The next stage of the decision problem is entering preference information which will be personal to Jane. However, the data she does give will be affected by anchoring. Previously, we have mentioned how past experiences affected the criteria Jane chose, but the same can be said for the data she then inputs into them, leading her to value certain criteria more than others. For example, in both preference elicitation methods, Jane has indicated that she values reputation quite highly. This data can possibly be attributed to such experiences as previously attending a poorly reputable school and not wanting to again, or opposingly a highly reputable school and wanting the same again, either way, these experiences would be her anchor, making her allocate a higher number of points compared to other criteria. On the opposite side of the scale, diversity is seen as one of the lower valued criteria which, differing from the previous, could be due to having no linked experience and so in this case, the criterion itself becomes the anchor when comparing it to other criteria and allocating desired amounts of points. Moreover, a cognitive bias such as anchoring can also be seen being applied to the processes themselves of both SMART and Point Allocation,

each differently.

Firstly, when looking at SMART, the first set 10 points may influence how you then allocate points, possibly having a smaller range, as the 10-points (which would be the anchor) is relatively low. This can then be related to how the anchor makes you view the other criteria, if you extremely dislike it then it could make you feel like you must make the other points far higher, if there is little difference between your criterion then you may feel the points should be closer together. Furthermore, when ranking your criteria you may compare each criterion to the one you first ranked as smallest as that would be considered your anchor. This may possibly lead to you dismissing how other criteria relate to each other, as you are focusing on how they relate to your anchor. As a result of this method Jane ended with Uni's 1,8,3,2,7,4,10,5,9 (ascending order). Secondly when looking at Point Allocation, the first criterion you allocate points to would become your anchor. If you favour this criterion highly you will allocate the other only a small portion of the 100 points, or contrastingly if you dislike it, you will allocate large amounts of points to others. However, the 100-point value could also be used as an anchor. If you had many criteria and see only a messily 100 points, you may be swayed to value all criterion low, whereas you could possibly take points of some criterion to allow for more preferred ones to become larger. This could inevitably lead to an inaccurate preference solution due to the anchoring bias of 100 points. As a result of this method Jane ended with Uni's 3,1,7,2,8,4,10,5,9,6 (ascending order).

However, due to both having differing processes and therefore outcomes, anchoring has shown to affect each differently. In SMART, Uni 6 was shown to be the preferred solution, whereas in Point Allocation Uni 9 was shown to be the preferred solution. This difference in results perfectly reflects the impact of cognitive bias, human error that plays a role in varying data.

Anchoring can limit the accuracy of algorithmic decision-making

It is commonly thought that the human error mentioned above can be solved simply through the use of algorithms, however this is far from reality. Just as humans are affected by cognitive bias, so are algorithms, leading to their solutions being skewed. Anchors in decision-making algorithms are usually the first piece of information implemented, which in Jane's case could be the first university that she inputted. The algorithm would then find other solutions based off this first university. For example, if the university was located in Manchester, all other universities it finds may be located as close as possible, or if it has certain courses/subjects, the algorithm may only find places with these exact same courses/subjects. This can be viewed in two ways. Firstly, it can be said that this anchoring would tend to Jane's preferences as the first university that she would input would most likely be one she liked, so all its characteristics that made her like it could be found in other solutions (with note the first university inputted could be completely generic and so this would result in negative outcome of anchoring). However, it can also be said that through finding solutions that relate to the anchor, zero variety is created. This means that Jane would have very few different options to view that would've potentially each led down different paths and therefore creating the possibility of a new future for Jane she never even thought of previously, but instead this has been restricted by anchoring.

This algorithmic bias will also factor in when viewing how each criterion is specifically weighed. In the case of Jane's decision problem, the algorithm would most likely use Jane's situational data (if she inputted any) or her preference information to then decide what criteria to use and how to use them. For example, Jane stated in her preference information that she valued location quite highly, this could be for a number of reasons, but the algorithm would view this as important, leading it to then possibly find universities close to Jane as it views it as a problem for her. This can then be related to other criterion such as cost, if the algorithm found universities close to Jane, then they possibly would place less importance on cost as less would be needed to pay for travel. Again, this can be seen as a positive use of algorithms for Jane but also negative, as once more it is limiting Jane's overall choice to a certain area. Furthermore, similar to situations discussed in the previous paragraph, if the first university Jane input was one of high cost, the algorithm may view Jane as wealthy, leading it to not care about cost nearly as much as it would do otherwise, or vice versa.

When using algorithms in such a way, there are other important problems that should be considered. One of these is the general assumption of algorithms that they have a complete set of accurate information. This could possibly lead it to completely ignore external factors of a university that aren't within the boundaries of the criteria, for example a university's history, those that run the university (for both examples it implies about criminal or malicious pasts) or as simple as how the university looks. This can lead to moral implications for some factors, whilst for others the mere overall experience and quality of life for Jane at the university she will attend.

Conclusions

As stated earlier, the decision problem had two differing preferred solutions from each method, which would possibly lead to confusion within Jane. This could be for a number of reasons and so Jane should reflect on how she allocated her points to each respective method and how she may have been influenced at the time in doing so. Despite this, it is Jane herself making the decision herself and so she should be able to decide between Uni's 6 and 9 which she wants to attend. Decision-making problems are most used when there are many solutions, so although Jane has ended up with two, the process as still worked effectively and as intended as she know only must focus on said two, minimizing possible error she is able to make and give her time to eliminate any cognitive bias.

When discussing anchoring it can be said it has both strengths and weaknesses in all areas: the structuring of a decision, the preference information given and in algorithms. But more generically, if you are looking for similarities it can greatly aid you, but when making an important decision can limit variety in options, which in turn will limit the accuracy of the final solution. By studying this, the prior knowledge gained can then be applied to not only a decision problem such as Jane's, but also everyday life, allowing you to understand where you have unknowingly applied an anchor and therefore be able to resolve such an issue.

References

1. Edwards, T. and Chelst, K. (2014). Making Hard Decisions—Multi-Criteria Decision Making (MCDM). In Multi-Attribute Utility Theory: Background. pp.

- 1-8. [online]. Available from: <https://blossoms.mit.edu/sites/default/files/video/download/Multi-Criteria-Book-Chapter.pdf>.
2. Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, 185(4157), 1124–1131. JSTOR.
3. Hwang, C.-L. and Masud, A.S.M. (1979). Multiple Objective Decision Making — Methods and Applications: A State-of-the-Art Survey. Springer Science & Business Media.
4. Schoemaker, P. J., & Waid, C. C. (1982). An experimental comparison of different approaches to determining weights in additive utility models. *Management science*, 28(2), 182-196.
5. Edwards, W. (1977). How to use multiattribute utility measurement for social decisionmaking. *IEEE transactions on systems, man, and cybernetics*, 7(5), 326-340.

Parent comment:

"Oliver has worked hard with this programme, fully embracing the academic project, which will benefit him in using these new skills for his future education and career"

- Catherine Morgan

Write an essay of 1000 words to convince your school to get involved in slowing down climate change.

Key Stage 2

Pupil: **Poppy Pittham**

School: **Smitham Primary School**

Supervised by: **C. Lovell**

Tutor University: **King's College London and the Institute of Zoology**

Course Title: **Climate Change: What is it and why does it matter?**

Smitham Primary school should get involved in helping to slow down the effects of climate change so that we all understand it more, are better prepared for it, and are doing everything we can to reduce it.

Read on to discover why climate change is happening, why we should care and what we can do about it together.

Our world is getting hotter

Something big is happening to our planet. It has been experiencing a rise in temperatures across the globe for many years.

Our world has been getting hotter due to things humans are doing, like burning huge amounts of fossil fuels, cutting down too many trees and over-farming crops and animals.[1]

This is climate change. Climate change is the long term change of temperature and other elements of weather, such as heat, snow and rainfall, drought and floods. There is a difference, however, between climate and the weather – weather is an ever changing state of the atmosphere, it is what we actually see day to day, whereas the climate is fixed for longer and is what we expect. And so, when weather conditions change dramatically we don't expect it, and are not used to it.

Some places in the world are seeing bigger changes than others, for example, in 2010, the temperature in the Arctic Ocean increased more above average than the temperature in Hawaii.[2]

Causes of climate change

Meteorologists and climate scientists use temperature increases over time as a measure of climate change. They also monitor something called the greenhouse effect.

The greenhouse effect is a process that occurs when gases in Earth's atmosphere (such as carbon dioxide) trap the Sun's heat. This process makes Earth much warmer than it would be without an atmosphere. The greenhouse effect is one of the things that makes Earth a comfortable place to live.[3]

It takes its name from the way the glass of a greenhouse traps heat inside. As the amount of carbon dioxide in our atmosphere increases, this makes the atmosphere heat up even more. Carbon dioxide is rising due to factory and machine emissions, public transport, and burning fossil fuels. It is also due to deforestation, as trees absorb and store carbon dioxide which is released when they are cut down.

Forest loss and damage is the cause of around 10% of global warming. [4]

People eating more meat is the single biggest cause of deforestation globally. In Brazil, farmers are deliberately setting forest fires to clear space for cattle ranching and to grow industrial animal feed, like soya, for farms back in the UK.5

Methane produced by "cow burps" is also one of the biggest sources of greenhouse gas emissions from agriculture.[6]

What this means for us

Rising air temperatures will result in a warming of the water on Earth. Ice will melt and add more water, causing sea levels to rise, and when the permafrost that has been ground frozen for at least 2 years in a row melts, it releases greenhouse gasses. How well the surface of our planet reflects sunlight also depends on how white it is, called 'albedo'. The melting sea ice shifts the albedo closer to zero, which means the water warms more as it absorbs more sunlight and melts more ice.

Some people think that climate change will only affect animals, but it affects humanity equally, because if there are no animals, we can't survive.

Climate change can one day lead to devastating heatwaves, millions of people losing their homes to rising sea levels, and irreversible loss of plant and animal species.

What we can do about it

Scientists say that temperature rises need to be kept to 1.5 degrees Celsius by 2100 if we want to avoid the worst consequences of Climate Change, but unless further action is taken, the planet could still heat up by more than 2 degrees by the end of this century.

But it's not too late. We can make changes to adapt to the climate, and reduce, or mitigate, the effects of climate change. For example, we can make adaptations in our energy use to reduce the use of fossil fuels, such as switching to renewable energy sources that will not run out, like wind, wave, solar, geothermal power and biofuel.

Renewable energy sources could decarbonise 90% of the electricity industry by 2050.[7] We could power and heat our homes using solar panels and heat pumps, and drive electric vehicles instead of petrol and diesel cars. We could car-share to get to school, or better still, walk or bike to school.

We can also mitigate the effects by eating less meat and more plants, and therefore reduce deforestation, and also grow our own food to reduce food production.

If each country was to adopt a sustainable diet, this would reduce the global greenhouse gas emissions by approximately 30%.[8]

As a school, small things we do will add up:

- Turn off the lights and electrical devices
- Close doors so heat doesn't escape
- Turn off taps
- Walk or bike to school
- Eat more plants and less meat
- Buy less things
- Ban single use plastic from our lives

Summary

We should all care about climate change because it will soon affect all of us. Our world is getting hotter due to things humans are doing that increase the amount of carbon dioxide in our atmosphere and result in global warming. If we do nothing, this will one day lead to devastating heatwaves, millions of people losing their homes to rising sea levels, and irreversible loss of plant and animal species.

We can do simple things to help reduce the effects of climate change, such as eat less meat, walk to school and reduce our energy use.

As President Barack Obama famously said, "We are the first generation to feel the impact of climate change, and the last generation that can do something about it." [9]

Will you help us change the future?

References

1. Source of information: <https://www.bbc.co.uk/bitesize/articles/z4g3f82#>
2. Source of information: <https://showyourstripes.info/l/northamerica/usa/hawaii>, <https://showyourstripes.info/l/ocean/arcticcocean/baffinbay>
3. Source of information: <https://climatekids.nasa.gov/greenhouse-effect/>
4. Source of information: <https://www.wwf.org.uk/learn/effects-of-deforestation>
5. Source of information: <https://www.greenpeace.org.uk/news/why-meat-is-bad-for-the-environment>
6. Source of information: <https://www.wsj.com/articles/could-curbing-cow-burps-slow-global-warming-11674267505#>
7. Source of information: <https://link.springer.com/article/10.1007/s10311-022-01532-8>
8. Source of information: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7184671/>
9. Source of information: <https://obamawhitehouse.archives.gov/the-press-office/2014/09/23/remarks-president-un-climate-change-summit>

Tutor comment:

"Poppy was an excellent student who produced a great final essay (71% - so a 1st class)! She did a great job of communicating the complex ideas around climate change, did a lot of independent research herself and referenced it, and came to her own ideas and conclusions. She was engaged in tutorials and would clearly make a great addition to any undergraduate course - well done!"

What is the difference between a cupcake and a cookie?

Key Stage 2

Pupil: Sansa Shaw

School: The Lanes Primary School

Supervised by: R. Knight

Tutor University: University of Nottingham

Course Title: Chemistry of a Cupcake

In this essay, I will be explaining the difference between a cupcake and a cookie. While you might think there are very few differences between a cupcake and a cookie as they are both baked, edible, and have many of the same ingredients, there are actually many more than you realise such as: ingredients and how they form the baked good, acid and alkali levels in the batter, states of matter, the effect of heat on gas behaviour, the role of gases in the baking process, and finally, proteins and how they behave in baking.

The most obvious thing to start with is comparing recipes to look at the differences in ingredients and see how they make cookies and cupcakes different. I have found the cookie recipe on BBC Good Food along with the cupcake recipe (1). There are three main ingredients in both recipes: butter, sugar, and flour. Butter makes the sponge and cookie soft and moist. Sugar makes the cookie and sponge sweet and golden brown when baked. Flour builds the light, stable structure of the cookie or cupcake and holds all the other ingredients together. Cupcakes have an extra ingredient that the cookies do not have, eggs act as an emulsifier and build the structure of the cake, whereas in the cookie recipe, the other ingredients work together to achieve a similar effect. This difference means that cupcakes are light and fluffy where cookies are dense and crunchy.



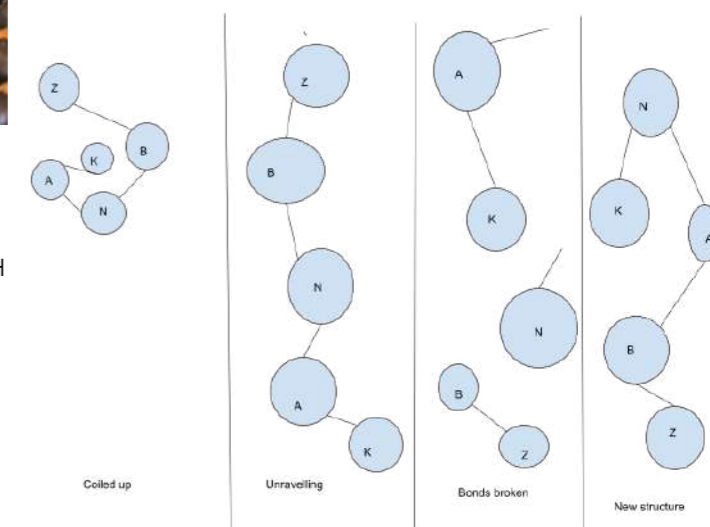
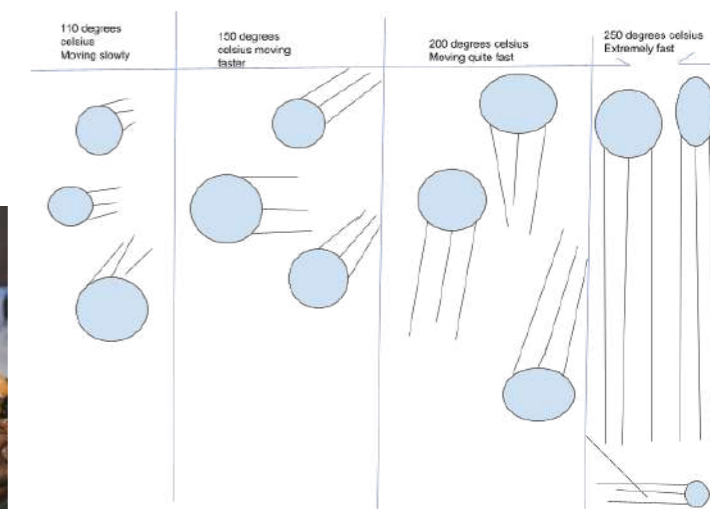
(2)

pH (or possibility of hydrogen) is a measure of how acidic or alkaline a liquid or solution is. The range goes from 0 - 14, with 7 being neutral. pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates alkalinity (3). The main difference between cupcakes and cookies as referenced in these recipes, is that cupcakes use self raising flour which contains bicarbonate of soda, while cookies contain plain flour. This means that in cupcakes, the bicarbonate of soda reacts with other acidic ingredients such as butter, sugar or milk, which have a pH of 4.5 - 7, to create carbon dioxide which makes gas bubbles. This raises the batter to make the cake fluffy and light. The chemical reaction equation is acid + alkali = salt +

water + co2. I have included a pH scale below to prove the pH of certain ingredients (2). Cookies don't have bicarbonate of soda in the plain flour used in their recipes, so when they bake, they do not rise as much and are denser to create a crumbly texture. Adding other ingredients to cupcakes (such as lemon juice which is very acidic) may change the overall pH of the cake and affect the reaction with the baking soda, so if you were making a lemon cupcake, as lemon juice has high acidity, the cupcake would be lower on the pH scale. As eggs have a pH of 8 when fresh, when combined with all the other ingredients, they make an average pH of roughly 7 as a cake whereas cookies are more acidic as they do not have an alkali balancer.



Cookies and cupcakes are baked at different temperatures. Cookies are baked at a higher temperature meaning the gas particles in a cookie are moving with greater velocity. This means that the gas particles are slamming the walls of the air pockets that are made by carbon dioxide from the chemical reaction equation above with more force and punching holes in the sides of the cookie. On the other hand, the cupcake's air particles are moving slower and they do not break the walls of the air pockets, only push the batter upward.



One of the key differences between cupcakes and cookies is their protein structure and the use of proteins in the recipes. The main difference between the recipes I have referred to is the cookie recipe does not have eggs where the cupcakes do, meaning that they have less protein than the cupcakes. Proteins are important in cupcakes because they make a stable structure and keep the gas bubbles in the batter due to the proteins unravelling and making new bonds around the bubbles, helping it rise when heated. When we remove the egg (as in the cookie recipe the mixture does not rise as much due to it having less protein so more gas escapes and the mixture becomes dense and crumbly instead of light and fluffy. In a cupcake, if you want to remove the egg you must source an alternate protein. You can use around 65g of human blood in place of one egg as they have similar protein compositions (4). While cookies do not have eggs, they do have protein in butter and flour, which contains gluten, which means the structure has a firmness, but can crumble easily.

As evidenced above, I have explained the differences between cupcakes and cookies both in chemical structure, ingredients and the effect it has on the baked good. While the ingredients in the recipes are similar, there are a few differences, namely, the removal of egg. In the chemical reaction regard, the main difference is that cupcakes use self-raising flour which contains bicarbonate of soda, which reacts with the butter and milk to create CO₂. The rising in a cupcake is caused by gas particles and in a cookie, as it is baked at a higher temperature, the gas is slamming into the sides of the cookie with such force it is breaking the cookie meaning the air escapes. The difference in proteins is that cookies have less proteins which means more air escapes and leaves the cookie flat and dense. In summary, cookies are different to cupcakes because they have different ingredients, chemical reactions, gases, and protein structure so they cannot be the same.

References

1. Basic cookies recipe <https://www.bbcgoodfood.com/recipes/basic-cookies> [20/05/2024] bendickson Cupcake recipe <https://www.bbcgoodfood.com/recipes/cupcakes> [20/05/2024] Sophie Godwin Close up of a bakery display platter - <https://www.dreamstime.com/bakery-display-platter-delicious-cookies-colorful-cupcakes-sale-close-up-case-image132357865> [31/05/2024] Lydia Saccio
2. pH Scale - <https://www.usgs.gov/media/images/ph-scale-0#:-:text=pH%20is%20a%20measure%20of,hydroxyl%20ions%20in%20the%20water.> [20/05/2024] water science school
3. Not Your Average Egg Substitute: Blood - <https://www.organicauthority.com/buzz-news/not-your-average-egg-substitute-blood/#:-:text=In%20fact%2C%20eggs%20and%20blood,be%20used%20in%20the%20kitchen.> [02/06/2024] Anna Brones

Parent comment:

"Taking part in this project was amazing for Sansa and amazing for us as parents to watch. Sansa was able to really challenge herself with scientific learning in a very different method, and learned tonnes not just about the chemistry of a cupcake, but also about writing essays, editing her own work, and self confidence along the way. There is not a single human who Sansa meets that doesn't get told about this project, and how fabulous it was."

- Lydia Grant

Gravitational Waves: the key to the cosmos?

Key Stage 4

Pupil: Sylvia Delargy Crawley

School: Claremont High School

Supervised by: J. Kozuszek

Tutor University: Imperial College London

Course Title: The Echoes of Dead Stars: Gravitational Waves as a New Window to the Universe

It's hard to believe that anything with a size of 1×10^{-23} , a number so small we can't even conceive it, could ever be important. Yet they could be the key to understanding our universe; but is this enough to justify costs of hundreds of millions to build) and around £35 million a year just for general maintenance (1) that it would take to make this proposed gravitational wave observatory in the UK a reality. That isn't even to mention the issue of finding enough suitable space to build such a large observatory, as it requires somewhere with minimal outside interference in the form of noise, which can be generated by anything from traffic to weather to birds. However, the knowledge these observatories could provide- as proved by the discoveries that other observatories around the world, such as LIGO, have already made- could outweigh the costs.

How then, exactly, could gravitational waves reveal to us the secrets of the universe? First, it's important to understand what they are, how they are caused and how they are detected. Gravitational waves are ripples in the fabric of space time, so incredibly small that they require two 4km long tunnels to detect them- and even then, it's not easy. The ones that we can most easily detect are known as Compact Binary Inspirals, Stochastic and Burst (2) which are more difficult to either detect or interpret). This category has 3 subdivisions depending on the objects involved: either a black hole binary, neutron star binary or neutron star-black hole binary. A binary refers to a pair of incredibly dense objects orbiting each other. They will lose energy as they orbit by emitting gravitational waves, eventually leading them to spiral closer together and merge, letting out a huge amount of energy. These gravitational waves travel across the universe over light years to Earth, where we can detect them with laser interferometry. This is a method of measuring to extreme accuracy. It works by splitting a laser beam and sending them in two different directions of the same distance (the two arms of LIGO) and then seeing if the beams match up at the end. Gravitational waves cause distances to expand and contract- in such tiny amounts that it's unnoticeable- so if they are present the beams will be slightly out of sync and the resulting interference can be measured.

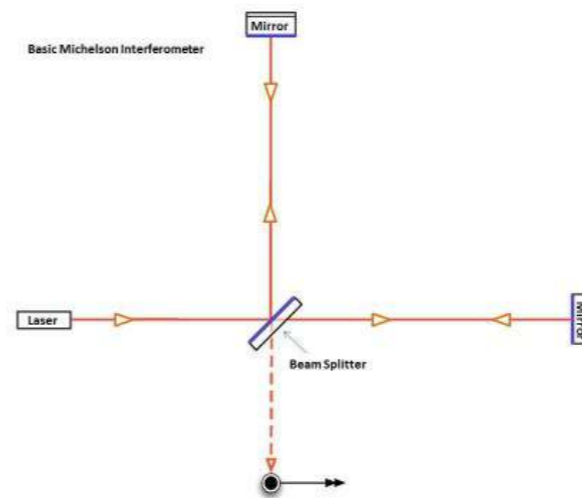
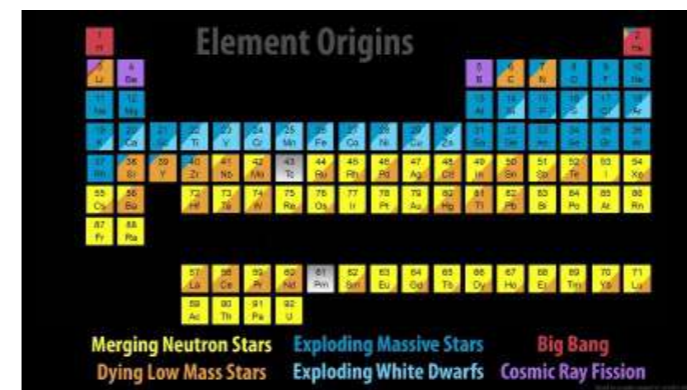


Image Credit: LIGO Caltech

Currently, there are 5 operational gravitational wave observatories - the two LIGOs in the USA, Virgo in Italy, Kagra in Japan and GEO600 in Germany, as well as a planned third LIGO in India. The first actual detection of gravitational waves made by a detector was in 2015, when LIGO picked up a black hole merger. (3) This was followed by the first detection of a neutron star binary in 2017 and the first neutron star-black hole binary in 2021. (4) On their most basic level, these detections prove that such binary systems exist, as previously they were only theorized. They can also help us to learn more about the properties and masses of these objects and their systems- particularly black holes as they absorb all light and so can't be studied through electromagnetic radiation like other celestial bodies. (5) For example, the first black hole binary detection proved that black holes with a mass 30 times that of our sun exist. (6) They could provide more information about degenerate matter, the incredibly dense substance they are composed of, and test the accepted laws of physics under more extreme circumstances than ever before. When a massive star burns through its fuel and collapses, the pressure of the implosion is so great that protons and electrons turn into neutrons, and the star implodes, leaving behind either a black hole or a neutron star. The conditions inside these objects are so extreme that strange things start happening, like nuclei fusing together (7), and more research is needed to fully understand their composition. One of the discoveries about neutron stars that has already been made through LIGO (and its associates) is that many of the heavier elements in the periodic table, such as Gold, Uranium, Iridium and Platinum, formed as the result of merging neutron stars. (8)



In the future, gravitational waves could even provide information about what the universe was like in its earliest era, because gravitational waves can travel through space

relatively unimpeded compared to photons which will have already been absorbed. In summary, gravitational waves have already helped us make important discoveries, and there's no telling how much they could reveal about the fundamental makeup of the universe we live in.

Therefore, it's not a surprise that the United Kingdom might want to play a part in this exciting new scientific endeavor. Right now could well be the prime time to get involved; discoveries have already been made, proving that it's not a fruitless effort, but research hasn't moved so far that there's nothing left to learn. If gravitational waves really do prove to be the key factor that transforms our understanding of the universe, we wouldn't want to be left behind while other countries do all the work- and take all the credit.

However, while gravitational waves could certainly teach us a lot, is there really a need for an observatory in the United Kingdom? The UK is already involved with the GEO600 detector, which despite being in Germany was a collaboration of many international European institutes, including the universities of Glasgow and Cardiff (9). What would be the gain of building our own when we can rely on the information from the already established observatories around the world? The UK has strong ties with all the countries currently running these projects, and it seems unlikely they would withhold information on a subject so theoretical. It isn't always necessary to be at the forefront of each new scientific discovery- we don't have an infinite budget and must pick our battles carefully. In addition, there are of course logistical problems to building a new gravitational wave observatory, the least of which is the cost. LIGO is estimated to have cost US taxpayers around millions of dollars, not to mention the yearly cost of running it, which is generally \$45 million (£35.3 million) (1). When you compare the huge initial cost, and the continuing cost of repairs, employment and general maintenance with the UK yearly budget for research and development - £14 billion - it's clearly a significant portion. What else wouldn't get funded because this project did? During a time in England of economic shrinkage and a cost-of-living crisis, people might not be happy about so much money being spent on something which not only has, so far, no practical application, but of which several already exist.

There's also the simple problem of space; LIGO has two arms spanning 4km each, and finding this space could prove difficult. The UK is quite a small country, and it has a much higher population density than Italy, Germany and the US (while Japan does have a much higher population density, people tend to be concentrated very heavily into a few cities). Most of the land in the UK which isn't built on is either farmland or nature reserves - this contrasts to somewhere like the US, which has deserts, and therefore large swaths of empty land. Clearing away already disappearing green spaces wouldn't be a popular decision. Areas that do have more empty land, such as in Scotland and Wales, are emptier for a reason - they tend to have more extreme weather and more frequent rain, which could cause noise for the detector, and often more uneven terrain, while the detector needs flat ground to be built. The observatory also couldn't be built in the middle of nowhere, as it would require reasonable proximity to an airport. This would just be another factor limiting the possible locations. Overall, finding an optimal location would have its difficulties - difficulties of course experienced by all other countries which have built one of these detectors - but in the case of the UK,

combined with economic issues and the fact there are other existing locations, it begs the question of whether the reward is worth the work.

There is a reason that more than one observatory has been built, and more are planned. Noise is one of the biggest problems faced by laser interferometry. The instruments are so sensitive that they can pick up any minuscule vibrations, caused by anything from ocean waves to seismic activity to a rogue refrigerator. Trying to distinguish these sources from actual gravitational waves is why you need multiple observatories and is why two LIGOs were originally built. By comparing the readings of both detectors - and eventually from those in other countries - you can see if the recordings are the same on all of them, or if it was only present at one detector, and therefore pick apart noise from the actual waves, which would show up on every detector. There's another benefit too; the waves will reach the different detectors at different times- thought only by fractions of a second - and through this it's possible to figure out what direction the wave is coming from and therefore what event has caused it. Acknowledging this, I would propose that instead of constructing a new observatory in the UK, one was built somewhere in the Southern hemisphere, as this could help to calculate direction. Somewhere in Australia or southern Africa would be ideal locations, as they are far from tectonic boundaries- meaning little seismic activity- and have generally lower population density, and no shortage of open space.

In conclusion, I would argue that gravitational waves are incredibly important to our expanding view and understanding of the universe, and that observing them is worthwhile. Building more observatories is also important to improve the accuracy of our readings - but that doesn't necessarily mean that the UK needs to build its own. Considering the funding required and all the logistical issues that would need to be considered, it would make more sense for Britain to, for now, let other countries do the detecting, and I would instead propose (though I'm aware I have no control over other countries' research projects) the construction of an observatory in the southern hemisphere.

References

1. https://nsf.gov-resources.nsf.gov/about/budget/fy2022/pdf/66_fy2022.pdf
2. <https://www.ligo.caltech.edu/page/gw-sources#CBC>
3. <https://www.ligo.caltech.edu/page/timeline>
4. <https://www.cardiff.ac.uk/news/view/2530338-black-hole-and-neutron-star-merger-detected-for-first-time>
5. <https://www.nationalgeographic.com/science/article/black-holes#:~:text=Peering%20through%20the%20darkness,reveal%20a%20black%20hole's%20presence.>
6. <https://www.ligo.caltech.edu/page/faq?highlight=faq>
7. https://imagine.gsfc.nasa.gov/science/objects/neutron_stars1.html
8. <https://www.ligo.caltech.edu/news/ligo20180817>
9. <https://www.physics.gla.ac.uk/igr/index.php?L1=detectors&L2=geo600>

Tutor comment:

"Sylvia loved being part of the programme. It really gave her a lot of confidence. It pushed her but she felt really well supported."
- Matt Delargy

Assess how plant priming works and whether it is the magic bullet to increase plant productivity

Key Stage 4

Pupil: Tehniat Mubashar

School: The Bemrose School

Supervised by: A. Tidy

Tutor University: University of Nottingham

Course Title: Branching Out: How plants sense and respond to their environment

Introduction

Plants are living organisms and like every other living organism respond to environmental stresses in certain ways. Some of these stresses may be too harsh for the plant to adapt to and may prove to be fatal to the plant. There are many environmental stresses that plants face which put them at risk. Among them, drought is described as the most severe as 80-95% of the plant's body is comprised of water and is described as being the most critical threat to food security (Seleiman et al., 2021). This poses a problem as in times of drought, there is a deficit of water which could cause severe damage to the plant. This damages the plants in a number of ways such as the stomata closes off to preserve water, but this also results in less carbon dioxide entering and this negatively affects photosynthesis. This also means that there will be less food as the amount of crops will decrease which is something the world cannot afford happening due to the rise in population. An example of a plant that is affected by drought is wheat. In Ethiopia, from 1981 to 2018 the rise in temperature due to global warming resulted in reduced production of wheat (Tirfi and Oyekale, 2022). Drought is a result of global warming, and it causes great concern as this crop is consumed at a large scale and less of it would result in a global food shortage.

Plant Priming and the significance

Every plant has certain characteristics that help it adapt to its surroundings and to sudden changes in environment such as global warming due to pollution and rising population. Some species of plants are able to adapt to certain changes quicker as compared to other species of plants because these adaptations are individual to every plant. This is not ideal as there is a possibility that crops that humans consume cannot adapt to their surroundings and they may be in danger of extinction. Plants, like humans, also have immune systems which help protect them from foreign threats and helps them grow stronger. Plant tolerance is an adaptation in every plant which determines when the plant grows and is responsible for how quickly the plant responds to threats (Ecosystems United, 2019). This allows plants to adapt, and this therefore decides the survival rate of the plant as it is responsible for how quickly the plant will respond. The scientists have discovered a way to increase the tolerance of plants. They found out that the tolerance of a plant can be enhanced by a process called plant priming. Plant priming is a physiological process by which a plant prepares to more quickly or aggressively respond to future biotic or abiotic stress (Frost et al., 2008). This is done to increase the durability of the plant, so the plant survives seasons of environmental stress and sometimes this is done in an effort to strengthen endangered species of plants to ensure that they survive. This process enhances the already

existing adaptations. There are many different ways that plant tolerance can be enhanced, and an example is chemical priming.

Chemical priming is a process where chemicals are added to plants to enhance certain adaptations like increasing the strength of cell walls. Wheat is an example of a crop that goes through this process, and this is done because it is a desired crop and is affected by drought. Wheat adapts itself by having fewer stomata which results in less water loss, but chemical priming enhances this adaptation of preserving water to ensure that the plant stays healthy. Chemical priming maintains drought tolerance by seedling strength, nutrient uptake and water use efficiency (Demir et al., 2012). This then increases the rate of survival as the crop is now able to manage the intake and use of water better, ensuring that useful water is not lost which is essential in times of drought. Chemical priming is also used for other "thirsty" crops such as rice and cotton in an effort to balance and ensure that water is being retained because these crops are affected in seasons of drought as they require a substantial amount of water. Melatonin treatment is an example of priming and is known to maximise the rate of photosynthesis in wheat seedlings (Cui et al., 2017). Melatonin is a chemical and by increasing the rate of photosynthesis, it enhances the existing tolerance of the plant for drought. This is extremely useful as a higher rate of photosynthesis will facilitate plant growth.

Although chemical priming has a number of benefits, many still disapprove of it. The antagonists of plant priming believe that nature should not be tampered with. They argue that when chemicals are added to plants, the whole food chain may carry the chemicals and harm other species as well. Some believe that the risks outweigh the benefits as there is always a risk that the chemical has a side effect and somehow damages the plant.

Chemicals used in Plant Priming

In an experiment conducted by (Tidy, 2024), two chemicals were studied in order to determine which chemical would be most beneficial to the plant for priming. They were also compared to an untreated plant. This experiment was completely objective and only planned to compare two chemicals, which makes this a reliable source to gain information from. To study the chemicals, they were both used in Elderflower. Elderflower is a species of plant that is affected strongly by drought and even when the elder flower is established (primed), it needs to be watered during seasons of drought. The two chemicals which were used in the experiment were calcium chloride and Beta-aminobutyric acid (BABA).

Calcium Chloride

This is a chemical used in chemical priming and is used in many different species of plants such as rice to enhance its drought tolerance. This chemical is widely used by farmers as it is cheaper than most chemicals used in plant priming. Calcium Chloride is known to increase plant resistance against biotic and abiotic stresses and leads to a stronger and quicker response in rice (Wang et al., 2022). This means that this will also help the elderflower become more tolerant to drought as this chemical is known to increase response time and tolerance which will help it adapt to drought. It is able to do this by recognising the stress earlier on and being able to adapt to

it quicker, which in return increases its survival rate. There is not much known about the effects of this chemical and this experiment will help us gain more information regarding the effects of the chemical on plants that suffer from drought and study how they improve. Due to the properties that this chemical enhances, it is safe to say that we can expect the plant with calcium chloride to easily adapt to drought and recover faster compared to the untreated plant.

Beta-aminobutyric acid (BABA)

This chemical was also added to a separate elderflower and studied to make a comparison. This chemical like every other chemical is known for the enhanced capability of resisting stresses and was discovered by scientists noticing that high amounts of BABA in plants induced sterility in Arabidopsis thaliana and that this chemical acted as a defence system for the plant (Ton et al., 2005). This means that plants that are treated with this chemical gain an enhanced ability to recognise and respond to stresses quicker which increases the survival rate of the plant. This will also mean that it is able to recover faster after a long period of drought as it was preserving its water earlier on. This chemical has been studied and been introduced as a chemical in plant priming for a longer time compared to Calcium Chloride which means that we have more knowledge about how well this chemical increases plant tolerance to drought stress. BABA is a great chemical for priming however it has been reported to have reduced plant growth as a side effect (Wu et al., 2010).

Results and what they suggest

In the experiment all three pots of elderflower were kept under the same condition and were watered equally. BABA costs significantly more than Calcium Chloride as 1 kg of BABA costs £4,600 whereas Calcium chloride costs £22. This may result in people especially farmers leading towards using Calcium Chloride before even considering which one has better results. There were two sets of data recorded from the experiment:

Rate of Photosynthesis

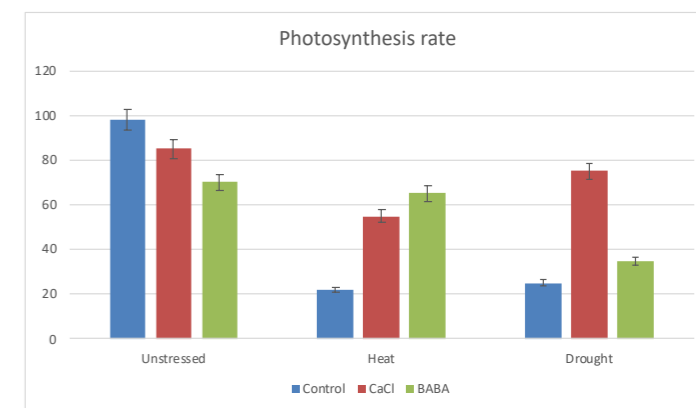


Figure 1: Photosynthesis rate of the plant with different priming (unprimed; control, 10mM CaCl, 1mM BABA) and under different conditions (Unstressed; 21/18oC, Heat 3 days 35/25oC, Drought 10 days without watering).

The control plant had the highest rate of photosynthesis under unstressed conditions and not far behind it was the plant with Calcium Chloride. In heat the plant with BABA was able to photosynthesise the most and Calcium Chloride was again not far. In drought Calcium Chloride photosynthesised the most with BABA again not far behind. Considering all of these stresses Calcium Chloride will be the most rational decision as it held up well in all of the stresses. The control plant is not going

to be a good decision because although it photosynthesised the most in no stress it was not able to photosynthesise well in both of the stresses. BABA is not going to be a good decision as it only did well in heat whereas Calcium Chloride was able to perform better compared to BABA in every situation.

Percentage of leaves that recover after stress

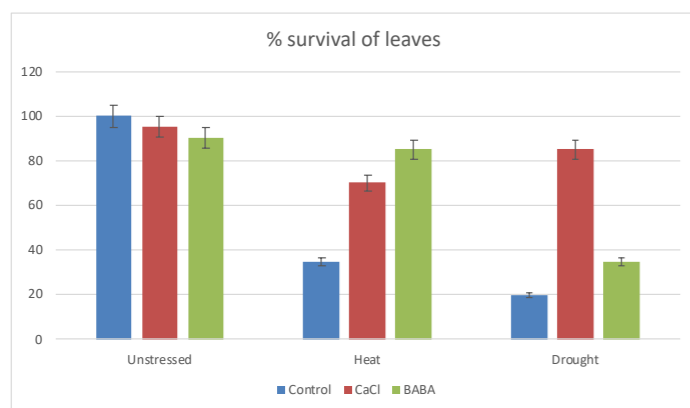


Figure 2: Percentage survival of leaves in the recovery after treatment (Unstressed; 21/18oC, Heat 3 days 35/25oC, Drought 10 days without watering), for different priming of plants (unprimed; control, 10mM CaCl, 1mM BABA).

The plant with Calcium Chloride recovered in every stress as it recovered quite significantly in drought and was not far behind BABA in heat and not far behind control in unstressed conditions. BABA cannot be a rational decision as it only managed to recover the best in heat. It also cannot be control as it only recovered best in unstressed and was not able to recover in both of the stresses. The most rational decision would again be Calcium Chloride due to how well it performed in drought and how it was able to perform good in other conditions, with and without stress.

Conclusion

Chemical priming, like all the other types of priming, has a lot of benefits and there are multiple chemicals that can be used to achieve a healthier and stronger plant. However, some chemicals are more cost effective and have less side effects. This case study shows that Calcium Chloride is a better choice as compared to BABA as it costs significantly less, meaning that it can be used by farmers on a large scale. BABA is not a good choice as it has recorded side effects like negatively affecting plant growth besides being more expensive than calcium chloride. An advantage that BABA has is that it has been studied a lot more as compared to Calcium Chloride which allows the farmer to be completely aware of all of the side effects and be able to prepare for them. Calcium Chloride has not been studied as much as it is a recent discovery so farmers will not know of any hidden side effects it has and there will be a possibility that it will cause harm to the plants down the lane and the farmer will not be prepared for it. As opposed to BABA, which had performed well under stress only, Calcium chloride performed better in stress as well as under normal conditions which is a benefit for farmers. Using calcium chloride, the farmers will always be able to rely on their crops as they will still grow even if unpredicted stress occurs. If a side effect of calcium chloride is discovered in the future, it will still be the better option because it costs significantly less and performs better in multiple conditions. Calcium Chloride has recently been discovered and many of its benefits are yet to be found, therefore it provides multiple possibilities and directions for plant farming in the future.

References

- Seleiman, M.F., Al-Suhaibani, N., Ali, N., Akmal, M., Alotaibi, M., Refay, Y., Dindaroglu, T., Abdul-Wajid, H.H. and Battaglia, M.L. (2021). Drought stress impacts on plants and different approaches to alleviate its adverse effects. *Plants*, 10(2), p.259. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7911879/#:~:text=Approaches%20for%20drought%20stress%20alleviations,the%20stress%20tolerance%20in%20plants.> (Last Accessed: 31 May, 2024)
- Tirfi, A.G. and Oyekale, A.S. (2022). IMPACT OF CLIMATE CHANGE ON YIELDS OF WHEAT IN ETHIOPIA: AN AUGMENTED COBB-DOUGLAS PRODUCTION FUNCTION APPROACH. *Journal of Agricultural, Food and Environmental Sciences, JAFES*, [online] 76(1), pp.34-47. Available at: <https://journals.ukim.mk/index.php/jafes/article/view/1803> (Last Accessed: 31 May, 2024)
- Ecosystems United (2019). what is plant tolerance? why is plant tolerance important? [online] ECOSYSTEMS UNITED. Available at: <https://ecosystemsunitd.com/2019/07/31/what-is-plant-tolerance-why-is-plant-tolerance-important/>.
- Frost, C.J., Mescher, M.C., Carlson, J.E. and De Moraes, C.M. (2008). Plant Defense Priming against Herbivores: Getting Ready for a Different Battle. *PLANT PHYSIOLOGY*, 146(3), pp.818-824. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2259053/> (Last Accessed: 31 May, 2024)
- Demir, I., Işıl Özüaydın, Fikret Yaşar and J. Van Staden (2012). Effect of smoke-derived butenolide priming treatment on pepper and salvia seeds in relation to transplant quality and catalase activity. *South African Journal of Botany*, 78, pp.83-87. Available at: <https://doi.org/10.1016/j.sajb.2011.05.009> (Last Accessed: 31 May, 2024)
- Cui, G., Zhao, X., Liu, S., Sun, F., Zhang, C. and Xi, Y., 2017. Beneficial effects of melatonin in overcoming drought stress in wheat seedlings. *Plant Physiology and Biochemistry*, 118, pp.138-149. Available at: <https://pubmed.ncbi.nlm.nih.gov/28633086/> Accessed: 31 May, 2024)
- Tidy A. 2024. Branching Out: How plants sense and respond to their environment. *The Brilliant Club*. (Last Accessed: June 1, 2024)
- Wang, Y., Shen, C., Jiang, Q., Wang, Z., Gao, C. and Wang, W. (2022). Seed priming with calcium chloride enhances stress tolerance in rice seedlings. *Plant Science*, 323. Available at: <https://pubmed.ncbi.nlm.nih.gov/35853520.> (Last Accessed June 1, 2024)
- Ton J, Jakab G, Toquin V, Flors V, Iavicoli A, Maeder MN, Métraux JP, Mauch-Mani B. Dissecting the beta-aminobutyric acid-induced priming phenomenon in Arabidopsis. *Plant Cell*. 2005 Mar;17(3):987-99. Available at: <https://pubmed.ncbi.nlm.nih.gov/15722464/#full-view-affiliation-1> (Last Accessed: June 1, 2024)
- Wu, C.C., Singh, P., Chen, M.C. and Zimmerli, L., 2010. L-Glutamine inhibits beta-aminobutyric acid-induced stress resistance and priming in Arabidopsis. *Journal of experimental botany*, 61(4), pp.995-1002. Available at: <https://academic.oup.com/jxb/article/61/4/995/540215> (Last Accessed: June 1, 2024)

Parent comment:

"I am immensely proud of Tehniat's achievement. Participation in The Scholars Programme has boosted her confidence and helped her strive for excellence with this healthy competition. Many thanks to her PhD tutor and The Brilliant Club"
- Samana Qayoom

You will take on the role of an Investigator for the (sadly) fictional Office for Responsible Data. A (also fictional) pharmaceutical company called GoodCompany Inc. is on your radar following their recent marketing claims about their new Miracle Pill™.

You have found the following documents publicly available on GoodCompany Inc's website.

1. A table of source data;
2. A collection of processed data graphs generated from the source data;
3. A marketing statement that makes reference to both 1 and 2.

Using these documents, compile a report in 2500 words.

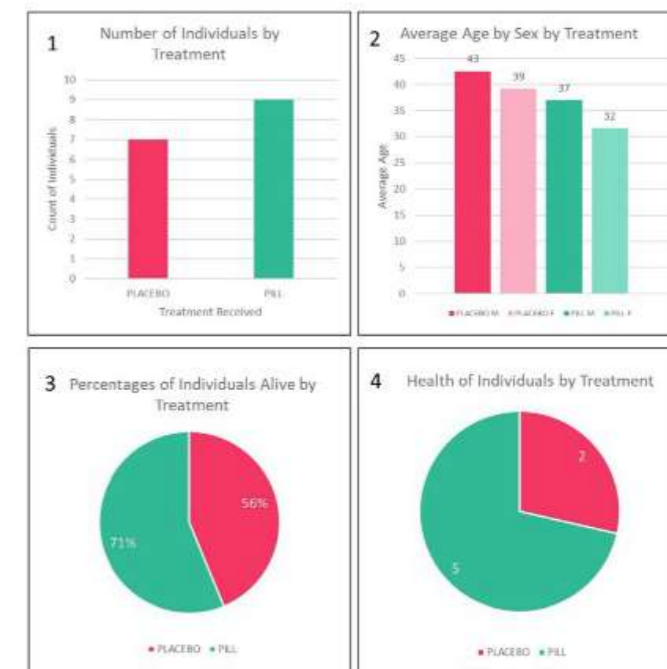
Key Stage 5

Pupil: Tobias Dallimore
School: Coleg Gwent
Supervised by: R. Maddison
Tutor University: Cardiff University
Course Title: Numbers Do(n't) Lie

Source Data

NAME	SEX	AGE (YEARS)	ADDRESS	DATE ENTERED STUDY	TREATMENT	SIZE	HEALTH	DATE OF DEATH
Oliver Brockbridge	F	26	744 High Street, KIRBYALL, KW29 9JL	JUL 21	0	TALL HEAVY	4	SEP 23
Scott Freeman	M	23	14 Chester Road, WARRINGTON, W10 6EG	JUN 21	1	MEDIUM MEDIUM	5	NA
Owen Ryan	M	53	16 High Street, HORNBY, HU13 9EJ	JAN 22	1	SHORT LIGHT	5	NA
Sabrina Jackson	F	33	89 Gwynne Road, WEST LONDON, W8 4QV	FEB 21	0	MEDIUM LIGHT	4	NA
Ormanuel Woodward	M	44	Street, CANNIZ, CA13 3AS	JUL 20	0	MEDIUM HEAVY	3	NA
Scott Freeman	F	41	5 Springfield Road, SHARDA, S65 7YB	JUL 21	0	SHORT LIGHT	3	DEC 20
Olivia Tucci	F	26	985 Taw Street, WARRINGHAM, W10 6DG	MAY 21	1	MEDIUM LIGHT	5	NA
Sharon Ingham	F	70	70 Lane, SOUTHAMPTON, SO12 6BP	APR 21	0	TALL HEAVY	2	NA
Owen Knighton	M	53	14 High Street, HORNBY, HU13 9EJ	JAN 22	1	SHORT LIGHT	5	NA
Oliver Gray	F	44	Richmond Road, NORTH LONDON, N14 4JL	JUL 21	1	MEDIUM MEDIUM	5	NA
Oliver Brockbridge	F	26	744 High Street, KIRBYALL, KW29 9JL	JUL 21	0	TALL HEAVY	4	SEP 23
Scott Freeman	F	41	5 Springfield Road, SHARDA, S65 7YB	JUL 21	0	SHORT LIGHT	3	DEC 20
Summer Clayton	F	33	1 Church Lane, SOUTHAMPTON, SO12 6BP	APR 21	1	SHORT LIGHT	5	NA
Atta Chakraborty	F	29	Road, HEREFORD, HR5 2JL	JUL 21	1	SHORT HEAVY	5	JUL 21
Olivia Tucci	F	26	985 Taw Street, WARRINGHAM, W10 6DG	MAY 21	1	MEDIUM LIGHT	5	NA
Rhod Davis	M	19	9 Edge Road, NEWCASTLE, NE1	AUG 21	1	SHORT HEAVY	3	NOV 21

Processed Data



Introduction

As data becomes exponentially more important in our modern world, so too does responsible data communication become even more vital in tandem. While many organisations are making strides to responsibly use their wealth of data, the attempts of others can be thought of as mistaken at best, or deceitful at worst. In this essay, I will demonstrate how GoodCompany Inc falls into both of these latter categories through misstructuring of data and later outright manipulation of facts to make more sales. I will also include an analysis of the legality of their data collection and release and will make some suggestions on how they can improve their overall practices.

Part One – Data Structure

In this first part, I will look at how the source data and processed data have adhered to common practices that lead to responsible data usage, utilising the CLEAN format to do this for the source data and using a general analysis for the data representations.

The first CLEAN rule states that data should be consistent, meaning that the source table of data should have one variable per column, one observation per row, and one value per cell. Although some parts of the table adhere to this, the "size" column clearly violates this by having both height and weight categorised as one variable. To a lesser extent, the "address" column violates this as the locations are not separated into their component parts (e.g. street name and postcode), meaning the data is not atomic and harder for computers to search through.

The second CLEAN rule is to make data legible by having descriptive row and column headers as well as labelled units. The table does not do well overall; Firstly, the date columns ("date entered study" and "date of death") are both unclear in what they represent, including a month and a number that ambiguously indicates either the year or day. The "health" column suffers similarly with the number that presumably

ranges from one to five not being anchored at any point. Secondly, the "size" column has the issue of not defining what each of its values mean in numerical terms, and what the ranges of these values are. For example, it is not stated what height "short" relates to, and how closely in height the different people labelled "short" are.

The third CLEAN rule is to have complete data without any missing values. The source data does an excellent job at this, with the only missing data being some death dates that are labelled as "NA"; however, this is not missing data in actuality as it is conveying that the participants were still alive at the time of recording this information.

The fourth CLEAN rule is that data should be accurate, meaning it correctly represents the real-world situation which the metrics originate from. Most of the source data seems sensible, though there is a potential issue when it comes to the date variables. If the number represents the year, then there is an inconsistency in the data for Sarah Freeman. She supposedly entered the experiment in July 2021, and died half a year earlier in December 2020, which does not make chronological sense.

The final CLEAN rule is to eliminate duplicates in the data, which this source data fails completely. Out of the 16 entries, four of those are direct duplicates of other entries (being Olive Breckinridge, Owen Royston, Sarah Freeman, and Giulia Tucci). This means that a quarter of the data is incorrectly weighted. Notably, each of the duplicates either took the medication and survived, or did not take it and died, which may imply deceptive practices explored in section two.

For the processed data, I will evaluate the accuracy, effectiveness, and utility of each representation. Graph one compares the number of individuals who received each type of treatment, using a simple bar chart. It is effective at accurately displaying the source data as it directly compares two variables. The bar chart's effectiveness is intermediate, although it would be better to use a percentage bar chart or pie chart to clearly show the comparative element. In terms of utility, it is effective at demonstrating potential bias in the investigation, namely how more people received the pill compared to the placebo.

The second graph compares the average age of the participants versus the combined variable of treatment type and sex. The data is accurately pulled from the source data, and the presentation method has similar effectiveness to graph one, with the notable difference of having three variables making the graph worse to read. However, utility is where this graph fails as it only demonstrates a coincidental trend within the control variables that bears no use to the investigation overall.

Graph three uses a pie chart to compare the death rates of those who received the placebo and pill, respectively. Although it accurately pulls the data from the source, its effectiveness is severely limited as it used a pie chart to present two unrelated percentages as though they are one whole, potentially manipulating readers. The utility is high as the percentages shown are greatly important to the conclusions later drawn in the marketing statement.

Finally, graph four uses a pie chart to compare the health of the individuals by the type of treatment they received.

This graph is the worst of the four in terms of all three metrics; it is unclear in what it presents, ambiguously presenting the average health for each treatment type. Use of a pie chart in this case is once again inappropriate, comparing two parallel statistics as being parts of a single whole in a way that can easily manipulate a reader.

Overall, the source data and processed data are inadequate at presenting their data in a responsible way. Although they succeed in some metrics (such as accuracy), the data is riddled by many structural issues and multiple of the data representations are either accidentally or purposely manipulative to the reader, something which will be discussed more in part two.

Part Two – Data Misinformation

Although it could be reasoned that many of the issues seen in part one are accidental, I will now demonstrate the potential that many of these were done purposefully to misinform the public. Firstly, I will analyse the ways in which the data has been misrepresented by the marketing statement. Then, I will use an AIM analysis to link this to a potential misinformation campaign by the company.

The first data-based statement made by the marketing team is that the MiraclePill™ is "equally effective in both sexes". The data does suggest this as the average health for people who took the placebo pill in both men and women is 5 (the maximum value), although there is no basis for the health of volunteers before the investigation so we cannot compare the gain in health caused by the pill. Therefore, this statement is somewhat factual.

The second statement given is that "no matter where you are from, MiraclePill™ can work for you". To analyse this, I used Google Maps to plot the locations of each of the given addresses whilst excluding the duplicates (with some difficulty due to many of the postcodes being inaccurate), the results of which can be seen below. Interestingly, two of the locations were in North America, whereas the other ten were in Britain. The statement does not seem to hold very well as a majority of the addresses (eight) were in England, with only one in Wales and Scotland and respectively and none in Northern Ireland. For the American locations, one was in the USA and the other was in Canada. Overall, this lack of diversity in location both in Britain itself and within the wider world makes this statement invalid.



The third claim made is that the MiraclePill™ "works for the young as well as the old". To analyse this claim, I have calculated the average ages of those who took each form of treatment, and then further split these lists into those who died during the investigation and those who survived (see below). On average, the people who received the pill were younger than their placebo counterparts by about a decade, and similarly the mean age of those who died was in both cases over a decade less than those who survived. This refutes not only the statement given, but the effectiveness of the drug overall as this is the opposite of the correlation you would expect from age and death rate.

Lived	Placebo		Pill		Age of Participant
	Died	Lived	Died	Lived	
33	26	23	29		
44	41	53	19		
70		26			
		44			
		33			
Averages for above categories					
	49	33.5	35.8	24	
	Average for all placebo		Average for all pill		
	42.8		32.42857		
Average for all participants	36.75				

The fourth claim states that the MiraclePill™ gave "guaranteed peak health in 100% of individuals... compared with 0% who did not". This claim is clearly validated by the data (as all pill takers had a health rating of five compared to no placebo volunteers), though it does raise the question of whether the data given has been cherry picked by only including the data points that validate this claim, another potential source of misrepresentation.

The fifth claim is that the MiraclePill™ "lowers the risk of death by 15%". When computed with the duplicates, the absolute decrease in death rate between the placebo and pill users was about 35%. Without the duplicates, it was around 11%. Neither of these figures are around the 15% mark, and

neither are each if taken as the relative percentage change. Therefore, it can be concluded that this statement is not based on this research, and thus cannot be validated by it.

The final claim states that the MiraclePill™ "helps you live a longer, fuller life with a greater degree of health", which is just a restatement of the fourth statement in general. That statement was shown as factual based on the data, so it logically follows that this final statement must be correct also.

Now that the issues of misrepresentation have been discussed, the extent to which this was purposeful can now be analysed. The AIM criteria analyse the angle, intention, and motivation of an organisation or individual related to their misrepresentation of the data. For GoodCompany Inc, their angle is that they want customers to go out and buy the MiraclePill™ so that they can make profit from the sales. Their intention is to persuade their customers that the MiraclePill™ has many health benefits for them to convince them to make a purchase of the product. The motivation is that the company will earn more profit that management can both keep and use to increase the salaries of their marketing employees who made this statement.

Overall, the AIM analysis seems very plausible. The statements themselves are evidently created to paint the MiraclePill™ and GoodCompany Inc in a positive light, and there are clear cases of obvious misrepresentation seen within them which gives me cause to believe that misinformation has taken place. However, there is no concrete evidence as to whether GoodCompany Inc intended for this misrepresentation to take place, so this cannot be guaranteed.

Part Three – Data Legality

Although the potential illegality of GoodCompany Inc's actions cannot be directly proven through their marketing statements, there may be some other metaphorical skeletons hidden within their navigation of data protection laws. The European Union's GDPR (General Data Protection Regulation), and the UK's implementation in the DPA (Data Protection Act), outline rules for the processing of data that can be used to personally identify a person. By looking at the released survey data, it is evident it falls under this category with fields such as "name" and "address" directly identifying the volunteers. The data processing taking place is during the marketing campaign, where the source data has been used to create graphs and draft a marketing statement for use by GoodCompany Inc.

Under chapter one article four, three people key to data processing are defined. The data subject is the person to which the personal data pertains to, in this case clearly the volunteers in the study. The data controller is the person responsible for the data's storage and how it can be used by other entities, here being the employee(s) of GoodCompany Inc's marketing team who collected the survey data. The data processor is the person who takes the collected data and manipulates it in some way, such as by creating marketing statements. Therefore, the data processor would also be the marketing team for this case.

Under chapter two article six of the GDPR, there are six cases given in which data processing can be legally conducted. Condition A states the processing is legal if the subjects have given permission for it to take place, and this can be assumed

to be true as volunteers in studies need to sign legal forms which data processing would fall under. Arguably, condition E also applies to this case as the study was an investigation into a new medical treatment, scientific in nature and hence in the public interest. However, it could be argued that this condition does not apply as the company released some information unnecessary to the study (such as names of volunteers).

In chapters three and four, the GPDR highlights many rights possessed by data subjects regarding their data. In chapter four section 2 article 1, it is stated that it is the responsibility of the data controller and processor to ensure all data is handled securely throughout the process, highlighting methods such as encryption or regular security tests. This has been breached by GoodCompany Inc as presenting raw personal data on a public website is not a secure method of storage. In terms of access rights, data subjects have the right to access, modify or delete their personal data at any given time by submitting a request; GoodCompany Inc's following of this cannot be confirmed as there is no information given for this. For where breaches may have occurred in the data subject rights, there are no applicable limitations as the study being conducted is not of a critical nature such as national defence, ethical breaches, infringes upon other parties' rights, or civil law disputes.

Overall, there is once again no direct evidence for any illegal actions taken by GoodCompany Inc in collecting, storing, and processing the data from their study. More information would be needed from a deeper analysis of organisational structure and security protocols, alongside depositions of those involved in the marketing statement to make any further, more concrete conclusions on the legal side.

Conclusion

Although the legal analysis did not yield any misconduct by GoodCompany Inc, there are still many non-legal issues present in their data collection and usage which must be rectified for their practices to be more responsible.

The first issue to be fixed is the layout of the source data. To fix this, I would rewrite the data table with a larger number of columns to split some of the variables and make them atomic (such as "name" into first name and surname), as well as adding anchors for the values found in "size" and "health" to illustrate their connotations more clearly to users; I would also include the exact values for height and weight in another column. Furthermore, I would give full dates in the applicable columns, as well as highlighting at what point the death date statistics were obtained relative to the study's beginning and publication of marketing statement to highlight any potential bias here; I would also add more values for the health statistic over the timeline of the study to compare changes more effectively.

The second issue is the presence of a high number of duplicates within the data that skew the results. This is the simplest issue to be rectified as it only requires removing the duplicates detailed in part one and being more observant in the future to ensure obvious mistakes such as this do not occur again; a good method would be using a computer to search through the names, adding novel entries to a new list to be searched and not adding any duplicate entries alongside a notification to the user that this has occurred.

The third issue is the creation and selection of data representations to illustrate and summarise to readers the source data that has been collected. To rectify this, I would remove graph two completely due to its lack of utility, and then swap between percentage-based graphs (such as pie charts) and comparative graphs (such as ordinary bar charts) for the remaining graphs one, three and four to make them more interpretable to readers. Finally, I would add some more graphs that directly compare the effects of some of the control variables on the outcome, such as how age influences the effect of the MiraclePillTM on health over the study period.

Parent comment:

"The Brilliant Club has been a fantastic opportunity for my son. The tutors make learning fun and engaging and the support he's received has enabled him to dive deeper in his studies in an enjoyable way."
- Ceri Dallimore





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