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"Cautiously Optimistic": Young people's thoughts about the impacts and influences of Generative Artificial Intelligence

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Introduction

Although Artificial Intelligence (AI) is not a new concept, awareness and use of AI driven technologies has expanded rapidly with the popularisation of Generative AI tools. Globally a large proportion of young people grow up embedded within a socio-technical context where digital devices and internet connectivity are an omnipresent part of life, meaning they are likely to personally engage with technology from an early age. However, Generative AI offers many novel opportunities and challenges for individuals and societies, particularly for young people and their future career and education prospects. In this rapidly changing context, our understanding about the potential future impacts of Generative AI on social development and wellbeing is limited and we are only in the early stages of unpacking its impacts. To shed light on this topic this research brief qualitatively examines how young adults think and feel about Generative AI and its impacts on their lives as well as the potential influences on children and young people in the future. As such, we draw upon youth voices to assist in understanding the positive and negative future imaginaries of Generative AI.

What is Generative AI?

According to the definition in the UNESCO Recommendation on the Ethics of Artificial Intelligence[1], "AI systems are information-processing technologies that integrate models and algorithms that produce a capacity to learn and to perform cognitive tasks leading to outcomes such as prediction and decision-making in material and virtual environments." AI systems use techniques such as machine learning and machine reasoning to complete tasks usually requiring human intelligence, for instance decision making, image and speech recognition, as well as natural language processing which allows computers to interact with human language and to emulate understanding of such[2, 3]. Generative AI is a subset of AI that is designed to produce content or output based on a set of data with which it has been trained. Specifically, Generative AI systems use machine learning to discover patterns and structure from training data and then generate new data (based on inputs or prompts) that have similar characteristics. The types of information created by these systems can include text, imagery, and even synthetic datasets (artificially created data, not based on real world events). The development of Generative AI tools such as ChatGPT, Midjourney, and similar products producing both text and imagery have spurred major public interest in AI such that it has quickly

become a key part of our everyday digital experience. However, apart from these tools, AI has been embedded in a large number of other technologies that are a major part of our lives for some time including chatbots, virtual assistants, language translation, navigation, and recommendation systems within search engines and social media.

Young People's Attitudes towards AI

AI systems promise many advancements across diverse sectors such as manufacturing, health, and education meaning that we might expect generally positive attitudes concerning these technologies and their benefits. Yet research has found that many people feel anxious about the risks of AI and individual attitudes tend to be strongly related to levels of trust in AI technologies, the perception of threats resulting from AI, and its perceived impact on work and social life in the future[4, 5]. Studies have also found that age impacts attitudes toward AI, younger people tend to be the most optimistic and willing to embrace AI technologies as an inevitable part of the future of work and society[6, 7, 8]. Notably, young people appear to be very open to learning how to use the technology, recognising that it will be a key part of their lives and that they must develop skills in this area to ensure future success. In contrast, older individuals report higher levels of anxiety and worry about AI and a greater concern that it will cause job loss and diminish human capacities.

Young people also have an understanding that Generative AI is not without its potential risks. Some key concerns young people have with Generative AI include its ability to spread misinformation, its potential to replace jobs, overreliance on Generative AI technology, privacy concerns, and misuse or unethical use of the systems and their outputs[9, 10, 11]. However, it is not all negative, for young people Generative AI also presents a range of opportunities. For instance, it can be used as a means of enhancing their creativity, with platforms and tools offering them the opportunity to generate artwork, stories, and music[12, 13, 14]. Generative AI can also help create personalised learning systems, tailoring help to young people's specific learning style and needs[15, 16, 17, 18]. Similarly, Generative AI can increase the accessibility of digital platforms by automatically enhancing texts or changing colour schemes as well as allowing for image-to-speech technologies, supporting the learning of individuals with a range of impairments or specific needs.[19] Additionally, young people use AI to become more productive and to improve their efficiency in completing basic tasks and finding information. In fact, even though young people are aware of various types of risks and threats posed by AI, research has found that they believe the development of AI should continue and that individuals and societies need to able to adapt to the changes that are being initiated by AI.[20]

The International Context

The United Nations (UN) has acknowledged the potential of Generative AI to significantly impact the lives of all people, but particularly young people, as the rapid transforms in AI are likely to have unexpected and unintended outcomes. As such the UN advocates for ethical and responsible design, development, and deployment of AI systems while acknowledging the benefits of AI in enabling social and individual progress. Notably the UN suggests that for youth the benefits of AI include enhancing learning experiences, promoting digital skills, and supporting creative expression[21]. Furthermore, it is highlighted that young people's participation in decision making about contemporary, global issues that will directly impact their lives is vital[22, 23]. The UN advocates that young people need to be treated as active participants in global governance efforts, something that is reflected in The Common Agenda, which emphasises the need to equip young people with the required skills to navigate, as well as harness the benefits of emerging technologies (particularly AI)[24]. In fact, the intersection of young people and technology is a key focus within the Pact for the Future where participation is underscored in shaping a world where young peoples' needs and interests are safeguarded[25].

The aim of this research brief, therefore, is to explore the potential positive and negative implications of Generative AI, as understood by young adults, for themselves and future generations of young people.

Methods

The sample consisted of 12 young adults aged 18 to 25 (6 female, 6 male) residing in the United States, who self-reported having experience with Generative AI tools and platforms. For the purpose of this research Generative AI was defined as AI driven technologies that can be used to create new content such as text, images, and video, or as tools for interaction such as chatbots and AI assistants.

Semi-structured online interviews were undertaken in which three key topics were explored; (1) young people's knowledge and perceived competencies in using Generative AI, (2) the perceived influence and impact of Generative AI on their lives, and (3) what effects they believe Generative AI will have on the future for themselves and for other young people. Interviews were undertaken in English and lasted for between

25 and 45 minutes and were transcribed verbatim.

Bronfenbrenner's Bioecological Model of Human Development was utilised as the basis of the coding framework for qualitative data analysis[26]. The complete theoretical model depicts the interactions between the biological, psychological, social, and environmental factors in an individual's life over the course of their development and highlights the importance of the person in context. Two of the key "systems" of this model alongside individual characteristics were used as overarching themes to synthesise the data and structure the coding framework, as illustrated in Figure 1. Specifically, the first theme was individual factors (personal characteristics, attributes, personality), the second theme was the microsystem (people and settings the individual has the most direct interactions with, including peers, family and school) and the third theme was the macrosystem (the wider sociocultural context such as values, laws, social norms, traditions and cultural beliefs). Within each of these themes three sub-themes were inductively identified from the data, full details of which are outlined in Table 1.

Table 1. Coding Framework

Theme	*Sub theme*	Description
Individual	*Mental Health*	Generative AI's influences on mental health and wellbeing including feelings of distress, worry or anxiety about Generative AI or its impacts.
	Personal Experience	Previous experiences, knowledge, skills, and education impacts their views of Generative AI.
	Self-Expression	The use and utilisation of Generative AI for self-expression or creativity.
Microsystem	*Career & Future Work*	Generative AI's influence on work skills, types of jobs and availability of work now and/or in the future.
	Education	Generative AI's influence on educational environments or academic studies.
	Interpersonal Relationships	Generative AI's influence on interactions among family, peers, and romantic relationships.
Macrosystem	*Ethical Implications & Values*	Ethical implications of Generative AI and how this impacts the participant's life.
	Media & News	Media, social media or news coverage on Generative AI and its impact on thoughts, feelings, and knowledge.
	Sociocultural Implications	The impacts and potential implications of Generative AI within society or on the cultural context.

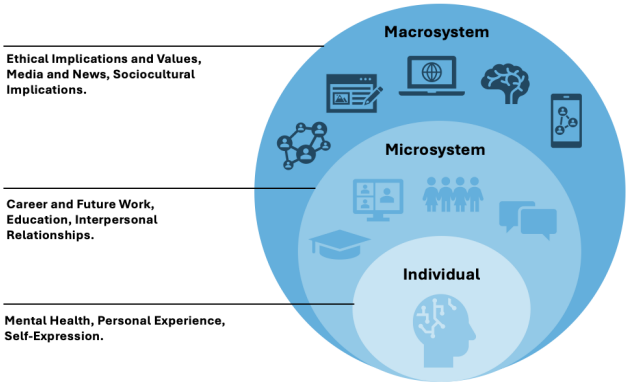

Figure 1. Ecological Model of Generative AI Impacts and Influences.

Results

Individual

Data coded at the individual theme comprised of young people's feelings about how Generative AI has or may impact their health and wellbeing personally as well as their self-reported knowledge, skills and utilisation of Generative AI for self-expression.

> "I'm hopeful about the future, but at the same time it is cautious optimism."

The findings highlight that young people express mixed emotions concerning the impact of AI on their wellbeing. Some voiced a heightened sense of concern or distress, others seemed positive, however, most often they felt both simultaneously. Effectively, while they felt apprehensive about the unknowns, young people were open to Generative AI tools and optimistic about what benefits it may bring. Where young people did express worries, these were similar to past research with sources of distress including privacy concerns, lack of transparency about the technology, and the potential for AI it to be misused or used maliciously. Notably a novel finding was a feeling of powerless to have a say about the development and use of AI across contexts – with many young people feeling swept up in the technology boom where

development of AI tools was seen to be happening too fast and be lacking in regulation. The worries cited by participants are realistic and grounded in their experiences whereby they had no decision-making power concerning the implementation of Generative AI tools across their spheres of life but were highly aware of the unknown and unpredictable impact of these changes. In expressing these tensions young people exhibited what was described by one participant as 'cautious optimism'. Participants were open to this new technology, saw its potential of positive effects, but were anxious about the potential for negative impacts over which they had little say.

When asked how they use Generative AI platforms, young people described positive experiences and explained how they had increased their productivity and enhanced their learning. For instance, quickly answering questions or looking up information. Despite this, young people did feel that given how convenient these platforms are there is a chance some may become dependent on them, eventually leading to a decrease in skills and a lack of desire for critical thinking.

Microsystem

Data coded at the microsystem theme encompassed how Generative AI may impact young people's education, social life and personal relationships, as well as their future career prospects.

> "AI is kind of giving people the easy way out and so I feel like with that there's going to be a lot of people who are using that to do their work."

Participants explained that within educational settings Generative AI supported their learning and they used it in many ways, for example to create study plans, brainstorm ideas, summarising literature and making reference lists. While they highlighted that Generative AI assisted in meeting their personalised learning needs and boosted their capacity to engage in academic studies, they were also worried that these tools will be used by students to cheat and plagiarise (including by themselves). Some participants expressed that students may bypass the difficult aspects of learning (i.e., not learning how to learn), which could diminish educational experiences for everyone and devalue academic qualifications. Thus, young people saw Generative AI as both a tool to support their learning but also as something that, if too heavily relied upon, would diminish knowledge and substantially reduce the value of assessments and even of higher degree programs.

Participants felt similarly when asked about Generative AI's impact on the future of work. They expressed a significant amount of concern about the need to be confident and competent in using these tools (i.e. AI literacy), as well as how it will change the job market. Participants were non-specific about how the job market might change, but they anticipated this would be very disruptive and were concerned about planning for the unknown. Importantly participants also acknowledged that the impact will not be all negative, with Generative AI becoming an instrumental tool to make work easier.

Young people felt less positive about the impact of Generative AI on their relationships and interactions in daily life. Their worries ranged from individuals not learning how to communicate and relying on AI assistants, to a loss of socialising and AI acting as a mediator for human relationships. While few had experienced this first-hand, many had concerns about the degradation of human relationships.

Macrosystem

Data coded at the macrosystem theme included how young people believed Generative AI could affect society and culture, and what the ethical implications may be in the future.

> "It can definitely be addicting. If you have an addictive personality, so you might spend like a little bit too long on there ... I think the general fear that people will become lazy with it, you know, you see the jokes about people passing a medical class with an AI and college"

Participants described Generative AI as a "double-edged sword" serving to improve and reshape society in many ways but also noting that this comes with pitfalls. For instance, while young adults believed Generative AI presents a valuable tool, offering convenience and improving efficiency, the majority were very worried about the negative social and ethical implications. Some concerns that stood out included becoming addicted or dependent on Generative AI tools, the loss of privacy and how much access these platforms have to citizens personal information, as well as the spread of misinformation and perpetuation of biases. These worries also led participants to express the need for regulations and safeguards to be put in place, but the question of who should be responsible for ensuring safety in Generative AI was not clear. Participants suggested that restrictions should be created to decide how this type of technology is used and who should be using it but recognised that this is unlikely to be endorsed by tech companies and difficult to implement by policy-makers.

Conclusion

Across the interviews, young peoples' experience of Generative AI differed based on their personal background and technical skills. However, the tension between whether this novel technology was going to be used as a force of positive change or have a negative influence on society consistently appeared. Many participants emphasised that Generative AI is an important tool that is now a feature of everyday life, but that its consequences are not fully known – particularly in the realm of human relationships and cognition. Yet, the risks of Generative AI are also not fully unknown, and as such many participants expressed a strong need for regulations. In fact, while the long-term impacts are still not yet widely understood, young people strongly believed that AI safeguards should be implemented right now.

This research brief has provided preliminary insights into how young adults feel about Generative AI and its potential impacts, highlighting that the majority have a strong sense of ambiguity, seeing both the good and the bad. It must be noted, however, that this research was limited in its scope - only including young adults located in the United States of America. More research is needed including a range of ages of youth (including children) and representing young people across geographic, political, and socio-economic contexts. Yet, this research does shed light on the nuance in young adults' understanding of Generative AI. Notably, it suggested that the sense of cautious optimism can be used a way of capturing the lived experience of the rise in AI popularism as compared to terms like AI-Anxiety, which can pathologise some of the legitimate concerns young people have and diminish the fact that they also feel positively about many aspects of AI.
In conclusion it is clear that there is a great deal of uncertainty around how Generative AI will shape the future, and this is reflected in the voices of young adults. Indeed, this research illustrated a deep tension and highlighted the mixed emotions young people have towards this technology. Notably, the cautious optimism held concerning Generative AI could easily shift into pessimism if appropriate methods are not taken to minimise negative effects.

Recommendations

Based on the findings of this study three recommendations are made for future research and action.

Collaboration with Young People in the Development of Future Polices.
There is substantial uncertainty surrounding how Generative AI will shape career trajectories, social dynamics, and the wellbeing of young people. Therefore, ensuring that they are prepared to navigate this future is of upmost importance. The findings of this research support previous research which has highlighted the need for inclusion of young people's voices in the process of determining what action to take to address Generative AI's impacts and to fully understand how to prevent the potential negative effects on their social and emotional development. We reinforce the recommendation that is crucial young people be involved in the policy and decision-making concerning AI given that these technologies will not only be a significant part of their lives but also shape their future opportunities.

Regulations and Safeguards for Generative AI Platforms.
Generative AI technology continues to advance at a rapid pace and as tools become more accessible and are utilised across contexts, the need for guardrails and regulations is growing. While there is a need to take a considered and evidence based approach to any measures that limit or restrict AI, known risks should be accounted for now in order to reduce the likelihood of long-term future negative impacts. There are ethical and societal implications of Generative AI, and young people are aware of these and are able to clearly articulate their concerns. Indeed, while young people believed organisations and governments should be held responsible for implementation of regulations, we also recommendation that young people's voice should also be included, using their experiences and concerns as a guide for what safeguards should be put in place.

Increase Generative AI Education and Literacy for Young People.

Many young people expressed that one of their key motivators for using Generative AI platforms was develop their competencies in using these tools because they understood capabilities in AI to be necessary for them in the future. Specifically, while young people acknowledged the true impact of Generative AI is unknown, they did believe it would be integral in their future work and careers. Following the calls to actions from the participants we recommend that AI literacy education is necessary across educational contexts, building basic knowledge and skills in school and providing in-depth educational opportunities at the tertiary level to support practical and ethical use of AI platforms. Additionally, of the young people interviewed, those who were knowledgeable and confident in their use of Generative AI reported less fear and worry about AI technology. Therefore, giving young people the information and skills to successfully understand and use Generative AI technology would not only set them up for greater success in future work but also reduce feelings of concern around AI.

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