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## ***LATET ANGUIS IN HERBA: UNVEILING AGEISM OF GENERATIVE ARTIFICIAL INTELLIGENCE***

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### **Introduction**

Social scientists are already starting to show how Text-To-Image (TTI) models reinforce stereotypes and discrimination. Recent studies demonstrated the existence of gender (Sandoval-Martin & Martínez-Sanzo, 2024), race (Nicoletti & Bass, 2024) and origin (Turk, 2023) biases embedded in the artificial intelligence-generated images. However, less has been said about ageism in TTI (Bird et al., 2023). This is not surprising, as ageist depictions are the norm but ageism is widely disregarded and deprioritised in research, industry and society (Officer & de la Fuente-Núñez, 2018). The goal of this research is to understand how age is visually represented in adult depictions generated by TTI models. We analyse images created by Midjourney, a popular TTI tool (AIPRM, 2024).

A comprehensive list of 101 everyday activities was initially curated (Edemekong et al., 2023; Janke et al., 2006) to ensure a diverse and representative selection of activities for the image-prompting process. Prompt formulation included 2 targets: “older person”, to elicit images of older adults, and “person”, to generate images of adults without reference to age. A total of 202 prompts were used, comprising 4 images each, resulting in 808 images. A combination of quantitative and qualitative methods was employed for the analysis. First, we used LLaVa 1.6 multimodal language and vision model ([LLaVA](#)) to infer the age, gender, and race of individuals depicted in images. Second, a qualitative visual analysis was employed to identify aspects that LLaVa cannot discern, including the roles, attitudes, and emotions of the individuals represented in the images. Qualitative analysis was also employed to evaluate the accuracy of computer vision results.

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## Generative AI prioritises youth, overlooking older generations

Most images of “a person” represent adults aged 25 to 34 years old (57%), but rarely older people, e.g. aged between 65 and 79 (2.5%). However, according to UN statistics (*Population Pyramids of the World from 1950 to 2100*, n.d.) the real world differs, with a slightly higher population of older people aged between 65 and 79 (8%) and a lower population of young people aged between 25 and 34 (15%). Images illustrated in Figure 1 reflect this pattern. Additionally, older individuals are depicted as seated, appearing tired, frustrated, some facing mobility challenges. In contrast, younger individuals appear in more dynamic postures, such as standing, with serious but unworried expressions, and situated in a lighter environment. The depiction of the younger individual's room is full of things and it is also a little messy, showing the idea of an active lifestyle.



Prompt: “A full-body portrait of a person in his or her room in a photorealistic style.” According to LLaVA, the three on the left are aged 25-34, and the one on the right is aged 18-24.



Prompt: “A full-body portrait of an older person in his or her room in a photorealistic style.” According to LLaVA, all images are of people 65-79 years old.

Figure 1: People in their room. Source: Midjourney, August 2024.

## Generative AI favours men in older depictions, marginalising women

Among the depictions of “a person”, gender is almost equally distributed (55% are women); however, among the depictions of “an older person,” men are more represented than women (70% are men), precisely the opposite to reality. According to UN statistics (*Population Pyramids of the World from 1950 to 2100*, n.d.), among the older population (over 65 years old), there are more women (56%) than men (44%), and this difference tends to increase with age, as women generally have a longer life expectancy than men. The images illustrated in Figure 2, derived from the prompt “A portrait of a person playing mental games in a photorealistic style”, follow this logic.



Prompt: “A portrait of a person playing mental games in a photorealistic style.” According to LLaVa, gender is equally distributed.

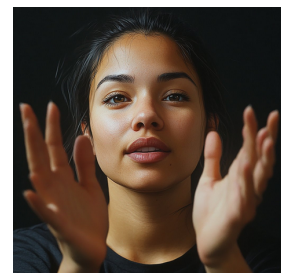
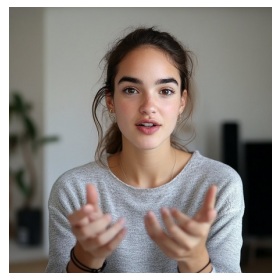


Prompt: “An older person playing mental games in a photorealistic style.” According to LLaVa, all images are men.

Figure 2: People playing mental games. Source: Midjourney, August 2024.

## Generative AI favours whiteness, marginalising diversity and ethnic minorities

Most depictions represent white people (63%), but this percentage is even more significant among older age groups (90%). However, reality differs with a more diverse society. The white demographic is declining (Wikipedia contributors, 2024) in countries such as the USA, Canada and the UK, but that is not reflected in our images. The images illustrated in Figure 3 represent people talking, and most of them are mostly white.



Prompt: “Create an image in front of a person talking in a photorealistic style.” According to LLaVa, most images depict white people.





Prompt: “Create an image in front of an older person talking in a photorealistic style.” According to LLaVa, all images depict white people.

*Figure 3: People talking. Source: Midjourney, August 2024.*

## Generative Ageism

AI systems often exhibit biases that harm our society by reinforcing racial, gender, and age stereotypes. In particular, TTI models fail to capture the true diversity and complexity of our society in the images they produce. This research demonstrates the emergence of what we propose to call “Generative Ageism”: the reproduction and reinforcement of age stereotypes through generative AI tools, taking the form of text, images or videos (our focus here is on AI image generation). We conceive Generative Ageism as an intersectional phenomenon encompassing age, gender and race stereotypes, among others, in our society.

Stereotypical depictions of old age reinforce not only the imaginaries society has about this life stage but also the images older people have of themselves, negatively affecting self-perception and everyday attitudes. Nevertheless, people of all ages can find enjoyment in their lives in different ways. Older people can maintain an updated, stylish, fashionable, and active lifestyle, even as they experience health issues associated with their age. It is important to recognize that older individuals are not solely affected by nostalgia and loneliness.

Traditional media has played a significant role in reinforcing age stereotypes. However, during the last decades, there has been progress toward a more inclusive representation of older adults in media (Loos & Ivan, 2018). In contrast, Generative Ageism appears to signal a regression in the visual representation of age diversity and inclusion. Generative Ageism can be framed within a broader ageist trend in AI systems (Stypinska 2023) that poses a potential threat by reinforcing and expanding visual forms of age-related discrimination already prevalent today. While we have revealed the manifestation of ageism in TTI models, we lack a comprehensive understanding of its true magnitude. The rapid spread of TTI popular tools and the failure to quickly mitigate its bias and adverse effects on society demands urgent attention.

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Notes:

Images were generated in August 2024 with Midjourney. The tool may subsequently have changed or will change in the future. Other text-to-image systems might produce less stereotypical images and better reflect the diversity of older people's lives, or not.

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