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Revista de Ciências Jurídicas
e-ISSN: 2317-2150
Universidade de Fortaleza

Algorithmic Racism: How do Image Generators Reproduce Racial Discrimination?[1]

Racismo Algorítmico: Como os Geradores de Imagens Reproduzem a Discriminação Racial?

Racismo Algorítmico: ¿Cómo los Generadores de Imágenes Reproducen la Discriminación Racial?

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Abstract

This paper analyzes Generative Artificial Intelligence and image generators from a racial perspective. Artificial Intelligence has become a new technological agent capable of not only absorbing and organizing data, but also transforming certain terms into meaningful images. In this step, incorporating Systems Theory to explain communication and language and with art as a central point, the ChatGPT website was used to understand the artistic references considered relevant by Generative Artificial Intelligence. Next, using the NightCafe image generator, images were generated containing the keywords *beautiful*, *beauty standards* and *powerful* linked to the human terms *body*, *woman*, *man* and *family*. After analyzing the result of the generated images from a Luhmannian perspective, it is understood that this type of Artificial Intelligence highlights the lack of neutrality and impartiality of the algorithm, as well as the perpetuation of inequalities by new technologies.

Keywords: generative artificial intelligence; art; image; language; whiteness.

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[1] O presente trabalho foi realizado com apoio da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Código de Financiamento 001. This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001" Texto traduzido por Inteligência Artificial.

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Resumo

O presente trabalho analisa a Inteligência Artificial Generativa e os geradores de imagens a partir de termos sob uma ótica racial. A Inteligência Artificial se tornou um novo agente tecnológico capaz não só de absorver e organizar dados, mas também de transformar determinados termos em imagens. Nesse passo, incorporando a Teoria dos Sistemas para explicar a comunicação e a linguagem e tendo a arte como ponto central, foi utilizado o site ChatGPT para entender as referências artísticas tidas como relevantes pela Inteligência Artificial Generativa. A seguir, utilizando o gerador de imagem NightCafe, foram geradas imagens contendo as palavras-chave beautiful, beauty standards e powerful atreladas aos termos humanos body, woman, man e family. Após uma análise do resultado das imagens geradas sob a ótica luhmanniana, entende-se que essa modalidade de Inteligência Artificial evidencia a ausência de neutralidade e imparcialidade do algoritmo, bem como a perpetuação das desigualdades pelas novas tecnologias.

Palavras-chave: *inteligência artificial generativa; arte; imagem; linguagem; branquitude.*

Resumen

El presente trabajo analiza la Inteligencia Artificial Generativa y los generadores de imágenes a partir de términos con una óptica racial. La Inteligencia Artificial se ha convertido en un nuevo agente tecnológico capaz no solo de absorber y organizar datos, sino también de transformar determinados términos en imágenes. En este sentido, incorporando la Teoría de Sistemas para explicar la comunicación y el lenguaje, y teniendo el arte como punto central, se utilizó la plataforma ChatGPT para comprender las referencias artísticas consideradas relevantes por la Inteligencia Artificial Generativa. Posteriormente, utilizando el generador de imágenes NightCafe, se generaron imágenes con las palabras clave beautiful, beauty standards y powerful, asociadas a los términos humanos body, woman, man y family. Tras un análisis de los resultados desde la óptica luhmanniana, se concluye que este tipo de Inteligencia Artificial pone en evidencia la falta de neutralidad e imparcialidad del algoritmo, así como la perpetuación de las desigualdades a través de las nuevas tecnologías.

Palabras clave*: inteligencia artificial generativa; arte; imagen; lenguaje; blanquitud.*

1 Introduction

In Aristotle's classical philosophy, art could be considered mimesis, a form of imitation of nature. However, with human evolution, this same category can be understood as expression, communication, experience, concept, form of inquiry into social behavior or simply art for art's sake. According to the definition of Azevedo Júnior (2007), “art is a human experience of aesthetic knowledge that transmits and expresses ideas and emotions”.

In this sense, a work of art fulfills the most diverse social functions, especially by reflecting certain behaviors and habits of an era, in addition to being a form of communication that is not limited to verbal language. The canons of beauty, social customs and practical activities are some examples of behaviors represented in works of art.

Currently, new technologies require a transformation in the artistic sphere: with the arrival of Artificial Intelligence (AI), artistic works do not necessarily have to be created by an individual. Artificial Intelligence (AI) is the study of how to produce machines that possess some of the qualities of the human mind, such as the ability to understand language, recognize

images, solve problems and learn. It is often described using models of computer systems developed to imitate human behavior.

In just over a decade, this concept has gone from being limited to science fiction to becoming a concrete innovation in society, expanding the horizons of the economy and generating a technological metamorphosis. In a strict sense, the term IA is generic, encompassing several techniques with different functional applications and potential social and economic use in different sectors. Among these techniques, in this work, Generative AI stands out, also known as GenIA.

Generative AI is a subsector of AI, described by Lim et al. (2023) as: “a technology that (i) uses deep learning models to (ii) generate human-like content (e.g., images, words) in response to (iii) complex and varied requests (e.g., languages, instructions, questions)”. This modality specializes in the creation of content inspired by existing data and on the ground it has the capacity to respond to a question, but also to generate the content of the answer, transcending human interactions. Its technologies can emulate human cognitive functions, such as perception and logical reasoning. Its popularity was produced after the arrival of ChatGPT and image generators from text.

Released on November 30, 2022, ChatGPT is a chatbot developed by OpenAI. Its functionality is versatile: despite communicating with humans, it can write songs, write essays, conduct assessments, play games, and more. Like ChatGPT, other programs have become famous for creating artistic works, so-called "image generators," such as the website NightCafe.

NightCafe is an online digital platform based on Artificial Intelligence and capable of generating personalized works of art. Its deep learning algorithm tools allow users to transform a textual description into an image with specific styles. In other words, its main function is to transform a text into an image.

Incorporating Niklas Luhmann and Rafaelle de Giorgi's theory on systems, communication, and language, this work seeks to verify, through communication with artificial text and image generators, the existence or reproduction of racism. This analysis will be based on the responses provided by ChatGPT, as well as on the images artificially generated by NightCafe, not based on specific activities or physical characteristics, but on the chosen expressions: beautiful body, beauty standards, power, and attractiveness.

These terms were chosen because they are inferred from abstract constructs. The objective is to verify which bodies and subjects are generated image-wise from these expressive associations. The goal is to question whether there is a racial bias toward what is considered

beautiful and powerful: will Black men and women, or even those of other ethnicities, appear in the research? Which subjects represent the ideal of beauty and power that society expects?

In this sense, the research is considered inductive, as it involves the collection and analysis of specific data to subsequently develop general theories and conclusions. Based on the collected data, algorithmic racism will be explained through data patterns. Regarding the approach, the research is classified as qualitative, as it seeks to interpret a phenomenon and its meanings. For Zamberlan et al. (2014, p. 94), "the qualitative approach is descriptive. Researchers tend to analyze their data inductively. Process and meaning are the main focuses of this approach."

2 Inteligencia artificial desde una perspectiva luhmanniana

First, following Luhmann's perspective, it is necessary to consider society as a system within a relationship of reciprocal interdependence (Luhmann, 1980, p. 15). For the German sociologist, in addition to the material aspect, this relationship has a temporal aspect, following the direction of an evolutionary theory of society and law.

Using Niklas Luhmann and Raffaele Di Giorgi to analyze society, the starting point of sociologists' theory is the existence of systems. The theory is systemic both in relation to the pattern of analysis and its object, which allows it to be broken down into three levels: (i) general systems theory, (ii) the theory of the system of society, and (iii) the theory of social systems (Luhmann; Giorgi, 1996).

Luhmann and Giorgi (1996) understand that a system is that which is differentiated from its environment or from an environment (conceptualized as the unity of difference). The environment is a dynamic complex of relationships, with open horizons as limits, which can be modified. What constitutes the system is the creation of a limit capable of distinguishing it from the environment: within the limit, it is considered a system; outside of it, an environment.

The system is composed of elements and relationships, called units and structures. The fundamental characteristic of systems is their self-reference, which means that the system is the object of its own analysis and is defined by the recognition of its distinction in relation to the environment.

For Luhmann (1996, p. 61), self-reference allows the system to be both closed and open, forming a paradox based on the autopoiesis (self-production) of the system. In this operation, the system produces its structure, its elements, and determines its state based on the previously

obtained limitation. In short, for Luhmann, singularity is found in difference. The identity of the subject is perceived through diversity.

According to Luhmann and Giorgi (1996), there are three classes of autopoietic and self-referential systems, with different levels of complexity. The first are living biological systems (brain, cell, and organism), followed by psychic-conscious systems and social systems (composed of organizations, institutions, and society).

Regarding the production of each system, social systems are responsible for the reproduction of meanings, and psychic systems for their perception. Another difference lies in the basic operations performed by both: in psychic systems, thought is the constitutive operation, while in social systems, communication is the only genuinely social operation.

Luhmann and Giorgi (1996) teach that its integration occurs through three moments of selection: (i) information as a choice between possibilities, (ii) notification as a means of expression, and (iii) the act of understanding, the decisive element through which communication exists.

In addition to the fact that communication occurs solely through communication, sociologists argue that its condition of existence presupposes the recipient's understanding of the information and guides their behavior based on this understanding. In other words, communication is limited to the three selections described.

In Luhmannian theory, communication plays a central role, as it is the constitutive element of a system, as well as the way to differentiate it. A system can develop from its specific communication with the rest of the environment, weaving together questions and rules.

Giorgi and Luhmann clarify that the regular structural coupling between systems of consciousness and systems of communication occurs through language. For them, language is "an extremely improbable type of noise, which, precisely because of this improbability, has a high attentional value and very complex specification possibilities" (1996, p. 55). Furthermore, sociologists believe that language is not part of its own system, but rather depends on other operations.

> [...] language has no mode of operation of its own, it should not be treated as the act of thinking or as the act of communicating; and consequently, language does not constitute its own system. It depends and will continue to depend on the fact that the systems of consciousness, on the one hand, and the system of communication of society, on the other, continue their own autopoiesis through completely closed operations of their own. If this were not the case, all language would immediately cease and, with it, all possibility of thinking linguistically (Luhmann; Giorgi, 1996, p. 55).

Language, then, depends on both the operations of the consciousness system and the society's communication system. Currently, neither communication nor language necessarily need to involve humans directly. With Artificial Intelligence, a system is able to communicate with a human, offering responses through a database.

Generative Artificial Intelligence, a subgenre of Artificial Intelligence, consists of programs "[...] designed to generate content (texts, images, audios, simulations, videos and codes) from the data on which they are trained through databases and algorithms" (Melo; Bassani, 2023, p. 2). In this sense, for the present work, it is important to highlight the distinction between what is data and information, crucial topics for understanding how the internet works.

To provide such clarification, the concepts attributed by Setzer (1999) will be used. The researcher argues that data consists of quantified or quantifiable symbols capable of being processed by a machine and considered a mathematical entity, while information would be something more meaningful to humans, as it could come through images, texts and sounds.

Setzer (1999) also teaches that "a distinction between data and information is that the former is purely objective-subjective in the sense that it is described in an objective way, but its meaning is subjective, dependent on the user". Precisely because of the need to evaluate data and transform it into coherent information, the availability and quality of these are pillars of an AI system, as they form the so-called "algorithm".

The term algorithm can be defined as being "a finite sequence of steps (instructions) to solve a problem" (Ferrari; Cechinel, 2008, p. 14). According to Ferrari and Cechinel (2008), when developing an algorithm, a pattern of behavior is established that must be followed to achieve the result of a problem. Among its achievable tasks are reading and writing data, making decisions and repeating a set of actions based on conditions.

Because they are fed by data, algorithms are constantly characterized as neutral and impartial. This is the first term to be analyzed: neutral. Based on the lexical definition, the word neutral is composed of the adverb of negation ne and the adverb of place utro, which means "to one side". Thus, neutral comes to mean "to neither side".

The definition of neutrality in everyday human life does not reach contrasts: in chemistry, it is that which is neither acidic nor alkaline. In physics, it is neither positive nor negative. In gender, it is neither feminine nor masculine. In verbs, it is neither active nor passive. In this step, the etymology of the term chameleon has been used to designate something that is indifferent to forces, opposing parties or conflicts.

Since Artificial Intelligence works based on reading data to perform its function, when faced with incorrect information, it can create incorrect patterns and disrupt the entire information chain.

With the concepts of Luhmann and Giorgi (1996), in which singularity is found from difference and language depends on other operations, it is necessary to verify which are the important historical conditions in the organization of Western society that influence language. In this path, we find colonialism as a primary factor.

When dealing with this topic, both black history and culture are merely intruders within a traditional European vision reproduced by generations, including those who are not descendants of Europeans. Within capitalism, racism consists of a mechanism for distributing privileges in societies marked by inequality, with the presence of three simultaneous characteristics.

The first is the construction of the difference between races, in which whiteness is considered a reference point from which other races differ from what is considered standard. Whiteness can be defined as being "the position of the subject, arising at the confluence of determinable historical and political events" (Steyn, 2004, p. 121).

Although being white has different meanings depending on the location, the process of discrimination makes the other different. In Brazil, whiteness goes beyond the subject's genetics and ethnicity, connecting to status, appearance and phenotype. Sovik (2004) understands that:

> Being white requires light skin, European features, and straight hair; being white in Brazil is a social function and implies playing a role that carries with it a certain authority or automatic respect, allowing access and eliminating barriers. Being white does not exclude having black blood (Sovik, 2004, p. 366).

The second characteristic of racism is the construction of differences based on hierarchical values. This construction of hierarchy together with the construction of difference forms what is called prejudice. The third characteristic is formed by the powers that accompany such processes: historical, social, political, economic and cultural power.

The term *power* (from the Latin *potere*) means having the ability or possibility of something, having physical or moral strength, having influence, value or having moral authority for something. Therefore, power mixed with prejudice is the form of racism. In these lessons, we find the so-called structural racism.

Structural racism excludes black people from most political and social structures. This form of racism denies black people access to positions of power and spaces in the job market, as well as associating power and the accumulation of wealth with whiteness. For Sovik (2009,

p. 74), being white is “a kind of guarantee, a sign that one has money, even when there are no other signs, it is like walking around with an imaginary guarantor on your shoulder”.

Author Grada Kilomba (2019) explains that official structures clearly privilege white individuals. Consequently, this creates inequality between racialized groups. In addition to constructing the above ideas for black individuals, colonizing discourse created the amalgamation of whiteness as intellectual, moral superiority, and authority (Schucman; Costa; Cardoso, 2012, p. 91). Thus, terms such as beauty, power, relevance, and intelligence often refer to a Eurocentric and whitening perspective.

Due to the structuring of society based on colonialism and masculinity, a tangential concern in reading the data is the possible biases of Artificial Intelligence (AI). According to the Michaelis dictionary, bias is a “tendency associated with or determined by external factors.” Bias is understood as an association generated by the brain in an almost automatic way.

In this sense, can racism, white superiority, and colonialism be biases in the use of Artificial Intelligence in the use of ChatGPT and image generators? Art was chosen as a form of communication, as it would be possible to generate both textual information and images through generative AI.

3 What are the artistic references of Generative Artificial Intelligence?

With art as the central theme, the first GenAI program used was ChatGPT. Three questions/requests were asked to the program using the terms relevant and important. The terms were chosen to verify which criteria Generative AI considers to classify a work of art in this way.

First, ChatGPT was asked to cite relevant works of art. Following the command, the website presented 10 paintings under the justification of being “some of the most significant and recognized works in the history of art”, namely: *Mona Lisa*, by Leonardo da Vinci, *Starry Night*, by Vincent van Gogh, *Guernica*, by Pablo Picasso, *The Birth of Venus*, by Sandro Botticelli, *The Persistence of Memory*, by Salvador Dalí, *The Creation of Adam*, by Michelangelo, *The Garden of Earthly Delights*, by Hieronymus Bosch, *The Scream*, by Edvard Munch, *Las Meninas* by Diego Velázquez and *The Kiss*, by Gustav Klimt. It is noted at this point that, despite the difference in time and artistic style, ChatGPT only recognizes the

popularity and relevance of works based on a social system positioning, offering as answers only European artists, men, white people and paintings produced with a Eurocentric worldview.

When asked "what are the most beautiful and relevant works of art that portray people?", the first answers provided by ChatGPT were also based on the fame of the works and portray figures of remarkable beauty that have become cultural and historical references.

The works cited were *Venus de Milo, Mona Lisa* (Leonardo da Vinci), *Aphrodite of Cnidus* (Praxiteles), *The Birth of Venus* (Sandro Botticelli) and *The Youth of Bacchus* (François Gérard). In five of the first works, three portray the Greek goddess Aphrodite, also known by the Roman name Venus.

Regarding the relevance of the *Venus de Milo,* ChatGPT states that "the sculpture is famous for its idealized representation of the female form and its anatomical perfection, even without arms. It is one of the greatest expressions of classical beauty and the search for perfection in the human body". As for the work Aphrodite of Cnidus, IAGen makes a similar description, claiming that "it is known for portraying the goddess naked, something innovative for the time. The sculpture was celebrated for its graceful form and the harmony of the idealized female body" (ChatGPT, 2024).

Figure 1. The works of art *Vênus de Milo* and *Afrodite of Cnidus*

Fonte: Louvre Collections, 2011.

The same pattern was observed in the description of Sandro Botticelli's work *The Birth of Venus*. ChatGPT explains that "the figure of Venus is represented with an ethereal and almost

supernatural beauty, with long golden hair and a graceful posture. The painting conveys an idea of idealized and pure beauty, typical of the Renaissance" (ChatGPT, 2024).

Figure 2. Work of Art "The Birth of Venus"

Fonte: Tela de Sandro Botticelli "O Nascimento de Venus (1485)

Speaking of the work *The Youth of Bacchus*, the only one among the five works containing a man in the center of the screen, the Artificial Intelligence defines that "the character is portrayed with great beauty and youth, reflecting the classical ideals of physical and aesthetic perfection that dominated the neoclassical period. The muscular body and the smooth face are characteristics of this search for ideal symmetry" (ChatGPT, 2024). However, the system makes a mistake when attributing its authorship, since the true author of the work is William-Adolphe Bouguereau and not François Gérard, as pointed out.

Figure 3. Painting *The Youth of Bacchus*

Fonte: Musee Aquitaine [*s. d.*].

The third question asked was "who are the most important artists in the history of art?" The answer given was justified by the profound impact of the evolution of artistic style or

ideology, “influencing generations of artists and shaping cultural trends over the centuries” (ChatGPT, 2024).

The 10 artists mentioned include: Leonardo da Vinci, Michelangelo Buonarroti, Vincent Van Gogh, Pablo Picasso, Rembrandt van Rijn, Johannes Vermeer, Caravaggio, Claude Monet, Frida Kahlo and Salvador Dalí. With the exception of Kahlo, a Mexican painter, all the artists listed are white European men. That said, according to ChatGPT, the most relevant and important works of art were produced by white European men.

4 How does image generation reproduce racism?

After verifying the notions of artistic references from ChatGPT, images were artificially produced using some terms that denote superiority or power. The NightCafe Creator platform was used to create artistic images. The keywords were related to beauty, power and importance of bodies, men, women and family.

The available image generation styles used were Flux and Google Imagen 3.0 Fast. Flux is the largest open-source text-to-image model owned by Black Forest Labs, while Google Imagen 3.0 Fast is a fast model from Google DeepMind with good typography. The choice of using two distinct styles is justified by the need to verify whether there would be any substantial change in the creation of artificially generated images.

The first topic addressed was the body. This choice was made based on Michel Foucault's notion of biopower (2012). For the sociologist, biopower is a way of governing the lives of subjects and is divided into two main axes. The first is discipline, the way of governing the bodies of individuals, and the second is biopolitics, the way of governing the population.

The body would be, simultaneously, a mass composed of flesh, organs, bones and limbs that remains throughout history. It is a living being subject to the actions of historical and political power relations. In this step, the generation of two images was requested from the term *beautiful body*.

The first image generated by the Flux model depicts a blonde woman with long hair, white skin, a thin nose, a slender body and a uniform similar to that of a Nordic goddess. According to the image generator, the figure is “a majestic and armored warrior goddess [...], positioning herself heroically with an ethereal and sparkling aura” (Night Cafe, 2025)

Figure 4. Image generated from the term *A beautiful body*

Fonte: Night Café (2024).

The second image was generated in the Google Imagen 3.0 Fast style. The figure consists of a body covered by a white cloth, but with a silhouette outlined below, suggesting that it is a woman due to the protuberance of her breasts. The image is described by the website as capable of arousing mystery and fascination, "exuding an aura of refined and sophisticated beauty" (Nightcafe, 2024).

This image recalls the works *Pietà*, by Michelangelo and the sculptures of the Italian Antonio Corradini, sculpted using the so-called veil technique or marble fabrics. This type of technique uses the veil as a stylistic resource to hide and reveal, suggesting mystery and sensuality by covering the woman's body. See the image comparison below:

Figure 5. Image generated from the term *A beautiful body* e estátua de Corradini

Fonte: Night Café (2024).

The generation of two images of female bodies fuels the understanding that the vaity and appearance of only female attributes. Consequently, this body becomes an object to be

admired on the male face, as well as the works of art previously portrayed. For Grossi (2004, p. 11), “beauty is two central elements of the constitution of femininity in the modern Western model, because it is what will allow women to feel neglected by men.” However, it is not just any woman who looks beautiful, as she sees herself below.

For the next images, the focus was on the female figure directly. I was required to create an image in the Flux style, from two terms *an art with beauty society standards* and *a contemporary art with a beautiful woman*. Both women meet in a garden and their clothes denote femininity. Furthermore, their bodies are lean, their hair is white and their hair is straight, despite their different colors.

Figures 6 and 7. Images generated from the terms *an art with beauty society standards* and *a contemporary art with a beautiful woman* no modelo Flux

Fonte: Night Cafe (2024).

The two images reflect a binary demarcation of the feminine, pois formed and described with characteristics such as delicacy, elegance, refinement and tenderness. The description of the work contains a woman named as within two sociais parents of the society, the image generator is defined as:

> A serene woman in a porcelain robe and delicate patterns, adorned with an elegant and ebullient dress with intricate dress details, posing in a lush and vibrant garden full of unbuttoned flowers, surrounded by a soft and quent sunlight, reflecting the standards of beauty of a refined society, not in the style of Gustav's luxurious Golden Period Klimt, with the delicate lines and dreamlike quality of Alphonse Mucha's Art Nouveau and the vibrant cores of Henri Matisse's Fauvist movement (Night Cafe, 2024).

In the second image, when describing a contemporary artwork containing a beautiful woman, the terms offered were “a stunning woman, with elegant clothes and refined features” (Night Cafe, 2024). Furthermore, considering the generated scenario, the image generator also

tried to point out that the style of the work was reminiscent of the styles of impressionists such as Gustav Klimt and mixed contemporary art with European art nouveau (Night Cafe, 2024). In addition to portraying beautiful bodies as exclusively feminine, beauty for the image generator is feminine and white.

The third point deals with the male figure, using terms related to beauty and power. By creating an artwork with a handsome man, as well as a contemporary artwork of a handsome man, the image creator drew two stereotypes of masculinity marked by aggressiveness, toughness and success.

The first, generated by the Flux model, is connected to physical strength, with muscular arms, abdomen and shoulders, marked jaw and prominent arm veins. In addition, it has white skin and short hair similar to a military image. According to the description of the figure made by the website, a man with a beautiful body is a muscular male figure, "with sculpted features and a strong chin, dressed in a dark, tight suit that accentuates his physique" (Night Cafe, 2024).

In the contemporary image of a handsome man, the figure created alludes to money and to the successful man. The big city as a backdrop resembling New York and the use of formal clothes make the figure look like that of a businessman. Furthermore, the art created also follows the pattern of the previous ones: a white man. In the description of the image, the following definition can be seen:

> A handsome man with chiseled features and piercing eyes, dressed in a tailored suit, stands in a modern cityscape at dusk, surrounded by sleek skyscrapers and neon lights, in the style of David Hockney's bold, vibrant palette, with the dramatic lighting of a Caravaggio painting and the subtle sensuality of a Lucian Freud portrait (Night Cafe, 2024).

Figures 8 and 9. Images generated from the terms *an art with a handsome body* and *a contemporary art with a beautiful woman* no modelo Flux

Fonte: Night Cafe (2024)

The man depicted in the first image is very similar to the men in the painting *The Youth of Bacchus*: strong, masculine and with an air of virility, while the second man has an image of a modern man, but with artistic influences from ancient works, such as Caravaggio.

The second expression related to men asked GenIA to create *a powerful man*. In the Flux style, the man depicted was a majestic and heroic king, who "radiates authority and strength" (Night Cafe, 2024) and his imposing appearance evokes a sense of admiration. As in the first image above, it refers to strength as a primordial element of masculinity, as well as evoking medieval European cultures.

In the Google Imagen 3.0 Fast style image, the powerful man represents a modern-day successful figure and has physical characteristics similar to an executive, lawyer or holder of some prestigious position. In addition to being a white man, according to the prompt's additional descriptions, a powerful man is considered to be one who has "a strong jaw and piercing eyes, wearing a tailored suit with intricate textures and patterns" (Night Cafe, 2024).

Figures 10 and 11. Images generated from the term *powerful man*

Fonte: Night Cafe (2024).

The fourth topic focuses on the couple. The creation of images that represented the expression *a powerful couple* was requested. Initially, it is worth noting that both images portray powerful couples as being white. The first couple reinforces the idea that they are two leaders of a kingdom, due to the clothing they wear.

The second couple reproduces the idea of a Christian wedding ceremony, with the bride wearing white robes, the groom wearing black clothes, and the setting alluding to a church. In this image, the couple is described by IAGen as someone who "embodies society's beauty

standards" (Nightcafe, 2024, online). In the background, architecture inspired by baroque ornamentation with columns and tall windows.

Figures 12 and 13. Images generated from the term *a powerful couple*

Fonte: Night Cafe (2024).

As Luhmann and Giorgi (1996) understand, language depends on the social communication system. What can be observed with the collected images is how the accuracy of the data depends on the quality of the data and the parameters encoded in the algorithms. This means that the results of Artificial Intelligence are reflections of the thinking of their creator.

In this sense, two conclusions can be drawn: the first is the impossibility of total neutrality of an Artificial Intelligence system. The second conclusion is the existence of influences of social phenomena in the process of generating texts and images. Fred Benenson (2024), an American data scientist, coined the expression *Mathwashing* to address the fallacy of objectivity in mathematics:

> There is a widespread belief that because mathematics is involved, algorithms are automatically neutral. **This widespread misconception allows bias to go unchecked and allows companies and organizations to avoid accountability by hiding behind** algorithms (Lies[...], 2024, emphasis added).

In *Mathwashing*, power and biases hide behind the neutrality of numbers, and can occur accidentally or intentionally. Benenson (2024) also points out that "if we want to stick to the numbers, we have to be intellectually honest about how we collected them. Who recorded them and what criteria were used?".

The standard image generation for a beautiful body, a woman within beauty standards, a handsome man and a powerful man are white people. The generic search makes this clear, because in order for there to be results related to other races or ethnicities, the terms used must contain terms that delimit them, such as “black family” or “a handsome black man”, for example.

5 Final considerations

Communication and content production are no longer exclusive products of human beings. Machines are now capable of not only describing, but also producing images through terms based on a constantly updated database. However, this database is not free from historical, social and cultural biases of Western society, especially when it comes to structural problems that have persisted for centuries, such as racism and sexism.

Although Artificial Intelligence (AI) is used to increase the efficiency of processes and can be automated in some applications, it is not possible to expect its mode of operation to be objective, neutral and flawless.

This work analyzed 10 artistic images generated by the NightCafe image generator of bodies, women, men and families based on the terms beauty, power and standard with the aim of understanding what the results would be obtained by the aesthetic attributions associated with bodies and subjects. In this context, the idea was to verify what the initial image results would be related to the terms above generated by the algorithm. Considering the results of the questions asked to ChatGPT and the images generated, it is first clear that Generative AI is not neutral.

By studying the words beauty, beauty standard and power, what can be seen is that the images generated were all of white people, with straight hair, with bodies that fit into a beauty standard (slender or strong), demonstrating that there is a consideration of whiteness in the algorithmic language standard in all terms.

Whiteness represents both normality and neutrality, as it does not consider other racial identities. In other words: to find beautiful and powerful white bodies, men, women and families, it is necessary to carry out only generic searches, as done in this work. In this sense, these “neutral” technologies can strengthen historically rooted and crystallized inequalities, further enhancing social contrasts.

The scientific relevance of research on search engines and the results of terms in image generators via Artificial Intelligence lies in the fact that the results compose and represent what society understands about the body, subject and social positions, but the topic must be explored in greater depth to increasingly expose such problems and, in the future, solve them.

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Como citar:

MENEGAZ, Julia Garcia Tavora; PINTO, Igor Alves. Racismo algorítmico: como os geradores de imagens reproduzem a discriminação racial? **Pensar – Revista de Ciências Jurídicas**, Fortaleza, v. 30, n. 4, p. 1-20, abr./jun. 2025. DOI: https://doi.org/ 10.5020/2317-2150.2025.15850

Recebido: 17/02/2025
Aceito: 08/05/2025