Examining Changes of Power Dynamics in The System of Commercial Art After the Incorporation of AI Art Generators

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction – AI Generated Art Has Been Gaining More Attention.

Recently, artificial intelligence (AI) generated art has undergone rapid technological advancements that have contributed to making AI art generators more accessible. In a review article by Cetinic and She (2022), the authors construct a timeline of the recent technological milestones that have contributed to the advancement of AI generated art. Of note, Cetinic and She attribute the recent rapid growth of AI art technology to the use of generated adversarial networks (GANs), a machine learning framework. The most recent milestone that Cetinic and She (2022) highlight is the release of the DALL-E in 2021. DALL-E allows users to type in a text prompt, which the model uses to generate an image. The potential value of AI generated art was exhibited when, in 2018, a portrait that was created using a machine learning algorithm was purchased for $432,500 (Epstein et al., 2020). The sale of the piece, titled "Portrait of Edmond Belamy", sparked discussion of ethics and authorship in AI art (Cetinic & She, 2022).

Given the potential value of generated images and ease of use of models, artists are concerned about how AI art generators could affect their jobs. R.J. Palmer, a digital artist, writes in a tweet about new AI art generators that "[w]hat makes this AI different is that it's explicitly trained on current working artists…[t]his thing wants our jobs, its actively anti-artist" (RJ Palmer [@arvalis], 2022, as cited in Roose, 2022, n.p.). Therefore, openly available technology that allows users to generate an image from text alone raises some issues about the value of art and the employment of artists. It's not clear how AI art generators will fit into the system of art production, and there needs to be discussion on how they could change power dynamics in the commercial art industry. If AI art generators continue being developed without considering how they could impact artists, human created art could start being devalued due to the comparative ease of AI art generation.

In this paper, I argue that AI art generators will significantly complicate the existing system of commercial art and create issues for commercial artists but will not replace them. This paper reviews sources that discuss commercial art and AI art to understand their surrounding sociotechnical systems. After establishing their respective systems, this paper analyzes changes of power dynamics in the sociotechnical system of commercial art after the incorporation of AI art.

Section 1 – Issues Surrounding AI Generated Art and Defining Commercial Art

To understand the actors involved in AI art, this paper reviews sources that define the functionality of AI art generators, as well as the ethical issues they raise. Based on this knowledge, an actor network can be constructed, which is used to analyze the change in power dynamics when introduced into the system of commercial art.

AI art technology has advanced rapidly over the last decade, with models becoming accessible to the point that anybody can use them regardless of technological experience. A review article by Cetinic and She (2022) provides a timeline of recent innovations in AI art, which is shown below as figure 1. The timeline culminates in the release of the dall-e model in 2021 (Cetinic & She, 2022). Models such as BigSleep and DeepDaze are open-source recreations of DALL-E (Cetinic & She, 2022). On the subject, Cetinic and She write "[w]ith the emergence of such open-source implementations, the use of advanced text-to-image synthesis models for generating images is becoming more widely adopted and currently represents a relevant trend in the AI Art community" (pg. 66: 10). Text-to-image models are easy to use, given that users only need to provide a prompt describing the image they wish to generate. The WOMBO Dream website is an example of an openly available text-to-image AI art generator, as

users input a text prompt (and choose a style) in order to generate an image (*AI Created Art by Dream*, n.d.).

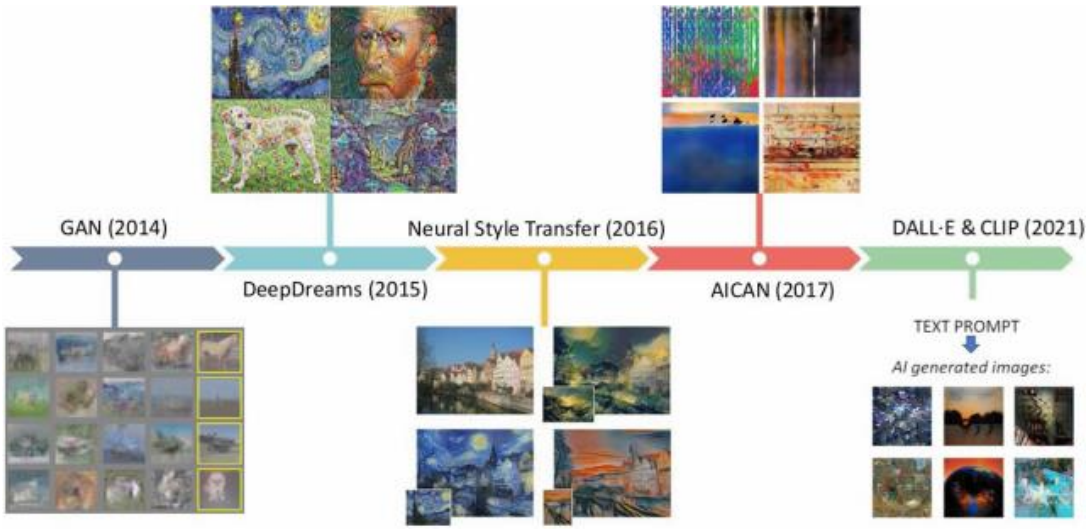

Figure 1 – Timeline of Recent Technological Milestones in AI Art Technology (Cetinic & She, 2022)

Given that AI art generators have become more accessible, it's fair to assume that artists would be concerned about AI art becoming a threat to their livelihood. A news article written by Kevin Roose (2022) details how an instance of an AI generated art piece winning first place at the Colorado State Fair's annual art competition sparked backlash and unease about the future of art. The winning piece was created using a text-to-image AI art generator (Roose, 2022). On the subject of text-to-image AI art generators, Roose writes that "[t]hese apps have made many human artists understandably nervous about their own futures — why would anyone pay for art, they wonder, when they could generate it themselves?" (Roose, 2022). Roose details the backlash that Mr. Allen, the winner, received on twitter when he posted about his win. Roose includes a tweet from a critic that reads "' [w]e're watching the death of artistry unfold right before our eyes'" (Roose, 2022, para. 18). Roose goes on to explain that some defended Mr.

Allen, providing that it requires users to formulate creative prompts. Mr. Allen is stated to have expressed empathy towards the artists who are concerned about their careers in his interview (Roose, 2022). The article ends on a quote of Mr.Allen stating that "'[a]rt is dead, dude. It's over. A.I. won. Humans lost'" (Roose, 2022).

Users of AI art generators generally have authorship, and therefore can sell their generated works. Cetinic and She state that "…most of the recent examples of sold AI artworks indicate that currently the authorship rights are attributed to the artist who produced the artwork using AI techniques, regardless of the narrative surrounding the creation process (e.g., the fact that the artwork was labeled as being made by AI)" (2022). Similarly, based on the terms of services of some text-to-image AI art generators, users are given authorship rights to works they generate. For example, Wombo's terms of services state that "[u]sers own all artworks created by users with assistance of the Service, including all related copyrights and other intellectual property rights (if applicable)" (*Terms of Service - WOMBO Dream*, n.d.). The intellectual property rights apply only if users "contribute creative expression in conjunction with use of the Service, such as in creating or selecting prompts or user inputs to use with the tools offered by the Service," (*Terms of Service - WOMBO Dream*, n.d.). Only paid members of Midjourney own generated assets, and businesses that make more than a million in gross revenue must buy a corporate license (*Terms of Service*, n.d.). Theoretically, users could sell their generated works to businesses at the fraction of the cost an artist might charge. Businesses could even generate their own work to use for commercial purposes without having to pay commercial artists.

A prominent ethical issue of AI art is that the current precedent can be considered overly simplified, with important actors being left uncredited. In the introduction of a journal article by Epstein et al. (2020), the authors use the sale of the *Edmond De Balamy* to discuss authorship of

AI generated art. Obvious, a Parisian art collective, was responsible for selecting, printing, marketing, and selling the piece of AI generated art (Epstein et al., 2020). However, there were countless other actors that contributed to the creation of the *Edmond De Balamy*. Some of the responsible actors include the machine learning experts who developed the technology, as well as the Renaissance masters who created the art used to train the machine learning algorithm. Despite the collective effort involved in the generation of the *Edmond De Balamy*, the entirety of the $432,500 profit went to Obvious.

Artists are concerned about the potential harm AI generated art could have on their work, which is the topic of discussion in an MIT Technology review article by senior reporter Melissa Heikkilä (Heikkilä, n.d.). Heikkilä interviews an artist, Greg Rutkowski, whose fantasy landscapes have been used in franchises such as Dungeons and Dragons and Magic: The Gathering. Heikkilä highlights how, according to Lexica, a website that tracks prompts used in Stable Diffusion (an AI art generator), Greg Rutkowski's name was used in about 93,000 prompts. When Rutkowski searched his name, he found art that featured his name, but were not his own work. On the subject, Rutkowski says "'It's been just a month. What about in a year? I probably won't be able to find my work out there because [the internet] will be flooded with AI art,'" (Heikkilä, n.d.). In the same article, Heikkilä also interviews Karla Ortiz, an illustrator who has been raising awareness about the issues surrounding copyright and AI art (Heikkilä, n.d.). In Heikkilä's article, Ortiz cites that artists have expressed concern about losing income due to people starting to sell AI generated art generated using copyrighted work.

AI art generators exhibit bias both by being a technology that reveals human knowledge and by using art, which can also demonstrate bias, to train algorithmic models. Ramya Srinivasan and Kanji Uchino (2021) discuss bias in generative art from the lens of art history. It

should be noted that AI art falls under the category of generative art because the creation of AI art involves the use of autonomous systems. In the introduction, Srinivasan and Uchino review expert discussion on the topic. In Srinivasan and Uchino's review, they cite the argument that art and technology can reveal human knowledge such as "…societal values, cultures, beliefs, as well as individual biases and prejudices," (p. 41). Additionally, Srinivasan and Uchino cite artist David Young's essay *Tabula Rasa*, writing that "…Young notes that human biases in the form of preconceptions, irrationalities, and emotions can easily get embedded into the data used to train these generative art AI models," (p. 42). Srinivasan and Uchino also provide an example of bias in AI art, in which a portrait generator app called "AIportraits" would lighten skin color in portrait renditions of people of color. Stable diffusion, an open-source AI art generator model, acknowledges that generated content could reinforce bias in a disclaimer at the bottom of the demo page (*Stable Diffusion - a Hugging Face Space by Stabilityai*, n.d.).

This paper specifically focuses on the field of commercial art, instead of the wider industry acc, because fine art/modern art will remain relevant given that pieces can be status symbols. Additionally, focusing on the entire art industry will create too wide of a scope, complicating the system to the point where it would be difficult to form insights. To understand the different actors involved in the field of commercial art, this paper reviews sources that seek to define the industry. Additionally, some perspectives from commercial artists are evaluated. The boundaries of commercial art are somewhat ill-defined, so this paper first looks at two different definitions of the industry. One definition of commercial art is "…any form of art that is intended for commercial uses, such as advertising or marketing" (*Commercial Art*, n.d.-b). The definition seems to be limiting commercial art pieces that can be directly tied to the advertising of a product, like a billboard or animation for an ad. Another applicable definition is "[g]raphic

art created specifically for commercial uses, especially for advertising, illustrations in magazines or books, or the like" (*Commercial Art*, n.d.-a). The definition encompasses art that can be tied to any aspect of a commercial product. It therefore includes some non-obvious examples, like book covers and movie posters, all of which are designed to convey certain concepts about a product. For the purposes of this paper, the latter definition is used, as it covers more ground and leaves more room for interpretation as to what constitutes commercial art.

In an article written by Tom Purvis entitled "Commercial Art", published in a 1929 issue of the *Journal of the Royal Society of Arts*, the author gives a positive view of the field from the perspective of an artist (Purvis, 1929). Purvis describes the knowledge commercial artists need, noting that they need to be salesmen, sometimes before they are artists. Additionally, Purvis writes that "[t]he final purpose of his work being to attract his audience with his message in such a way as to leave them interested in…the value of his client's commodity" (Purvis, 1929). This article was published only a couple years after the term "commercial art" was first recorded as being used in 1922 ("Commercial, Adj. and n.," n.d.).

In a book entitled "Commercial art," by Guy Cahoon, published in 1930, the author provides advice for artists looking to join the field of commercial art (Cahoon, 1930). In part 2, Cahoon discusses the customer, and how to deliver a successful product. Cahoon describes the customer as a businessman who "…is not an artist, and does not have the viewpoint of an artist" and that "…many times his ideas will be vague," (Cahoon, 1930, p. 23). However, Cahoon reasons, "…it is the [commercial artists'] business to assist him in working out the details, formulating a complete picture" (Cahoon, 1930, p. 23). From Cahoon's description, it can be assumed that the client, as an actor in the system, is not an artist, and that it's the job of a commercial artist to understand and clearly present their ideas.

Section 2 – Using Actor-Network Theory to Understand Power Dynamics in a System

The method used in the paper allows for the analysis of changes in power dynamics that can occur when a new technology is introduced into an industry. To do so, the systems of the industry and the new technology must be defined. Defining the systems involves analyzing sources that provide insight on the actors involved and their connections. This paper analyzes the different definitions of commercial art to provide a baseline understanding of the field, while also serving to define the boundaries of the field more clearly. The discussion of the two sources written by commercial artists, published soon after the field was first acknowledged, provide an inside perspective of the fundamental actors and dynamics in the system of commercial art. To define the system of AI art generators, sources that provide insight on the actors and ethics are analyzed. Once both systems are established, the existing power dynamics need to be defined by creating a network using modified actor network theory. Insights on changes of power dynamics can be made by connecting the networks of the industry and the new technology.

Using Actor-network theory can therefore be a useful tool in understanding who exercises power by utilizing actors, as well as understanding why certain actors can exercise power. This paper uses the method described in the research article titled "Using Actor-Network Theory to Analyze E-Government Implementation in Developing Countries", written by Carolyne Stanforth (2007), to analyze the changes of power dynamics when AI art generators are introduced into the system of commercial art. The article by Stanforth goes into detail about applying a modified actor-network theory framework to analyze the implementation of e-governments. Of note, Stanforth (2007) discusses how certain actors can establish themselves as obligatory points of passage (OPP) to control transactions in a network. Actors also differentiate themselves and define their relationships by creating intermediaries and giving them social

meaning. Intermediaries can be money, skills, artifacts, and more. So, to become OPP, actors define and change a network through their relationships.

Using the actor-network theory method described in the Stanforth research paper is valuable in understanding the current power dynamics in commercial art and how they could change with the incorporation of AI art generators. The modified actor-network theory provides an analysis of which actors have control. When analyzing the effect AI art generators could have on the commercial art industry, it is crucial to understand who has greater control to define relationships and transactions between actors. These actors have the most power to determine the role that AI generated art will play in the industry of commercial art. Actors that can position themselves as OPP will be able to exercise power, and furthermore be able to change the network.

Section 3 – Incorporating AI Generated Art into the System of Commercial Art

By extrapolating from the sources discussed in the literature review, a list of actors that comprise the sociotechnical systems of commercial art and AI art generators is constructed. The list of actors for both commercial art and AI art generators are used to create actor-network diagrams. The changes in power dynamics when AI art generators are added to the system of commercial art are analyzed using the modified actor-network theory described in the method section. AI generated art complicates the system of commercial art and creates problems for commercial artists, but ultimately will not make them obsolete.

Businesses that commission commercial art can be seen as obligatory points of passage because they offer an intermediary, money, to artists. For many commercial artists, to survive, they must work for businesses by providing pieces that are to their satisfaction. This would also

be the case for any creatives whose work, such as books or movies, are being funded by businesses. Some of these creatives may have more control over promotional material, but they are also relying on these businesses for a paycheck. As the goal of commercial art is to be seen by the public, ideas such as reputation and profitability also play a factor. As with any product, ownership and credit play a crucial role. Therefore, copyright law is an important actor. These insights are summarized in Figure 2 below.

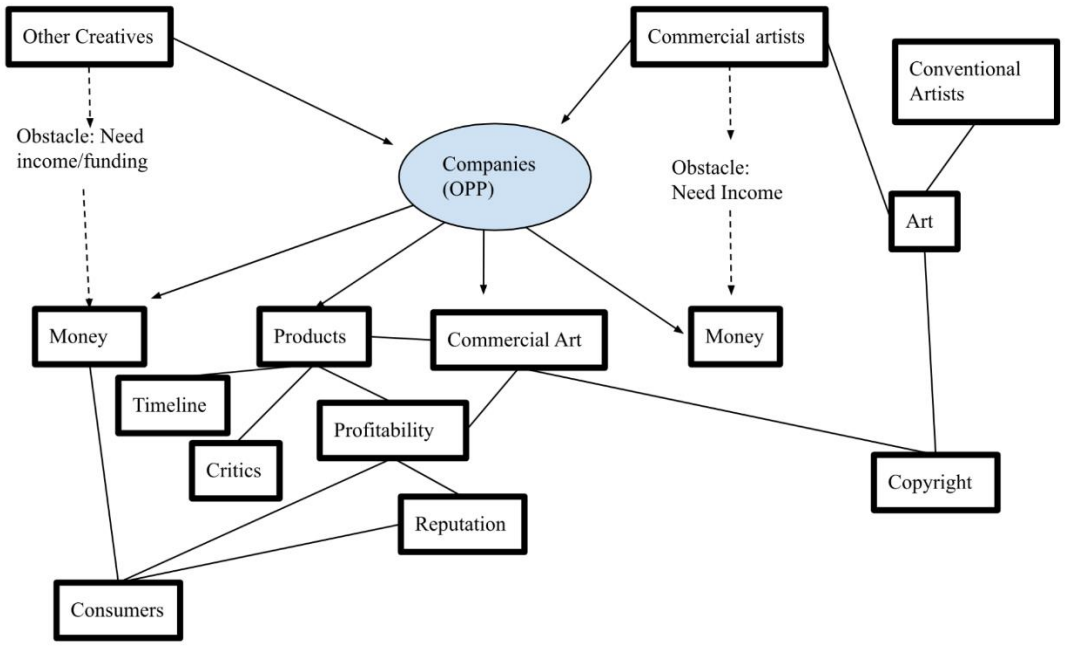

Figure 2 – Actor Network Theory Map Analyzing Power Dynamics in Commercial Art Industry (Created by Author)

In the system of AI art generators, technologists are important actors as they develop models and art generator websites. With every technology there are users. Furthermore, AI art generators rely on art to train algorithms, so artists are also actors in the system. With the several actors involved in the creation of a piece of AI generated art, the idea of authorship is another

actor. Currently, the technology user who generated the piece has authorship, which is a controversial outcome. Given the ethical dimensions discussed in the literature review, the concept of responsibility is another important actor. These insights are summarized below in Figure 3. The actor-network resulting from the inclusion of the system of AI art generators in the system of commercial art is visualized below in Figure 4.

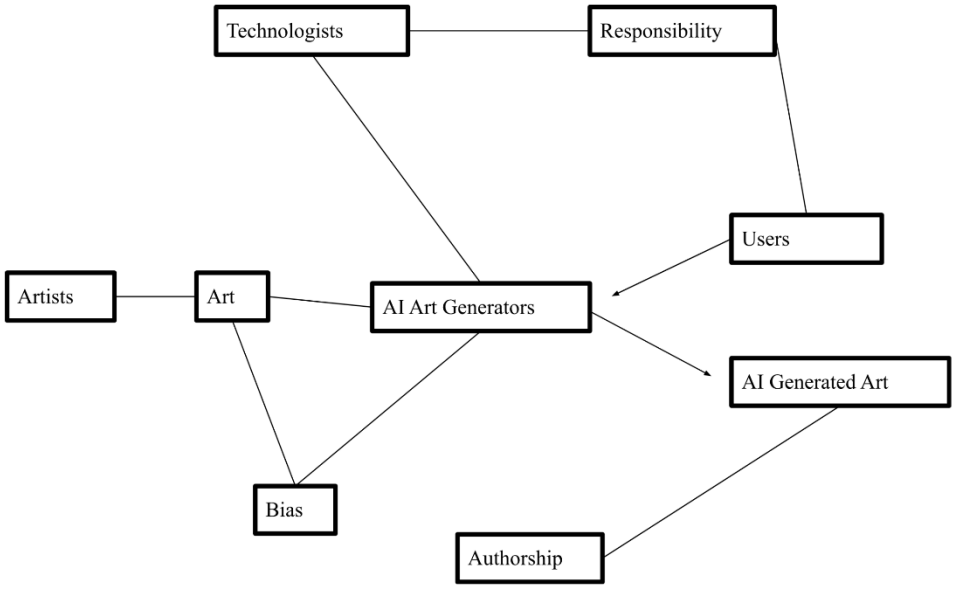

Figure 3 – Actor-Network Map Showcasing the Sociotechnical System of AI art generators (Created by author)

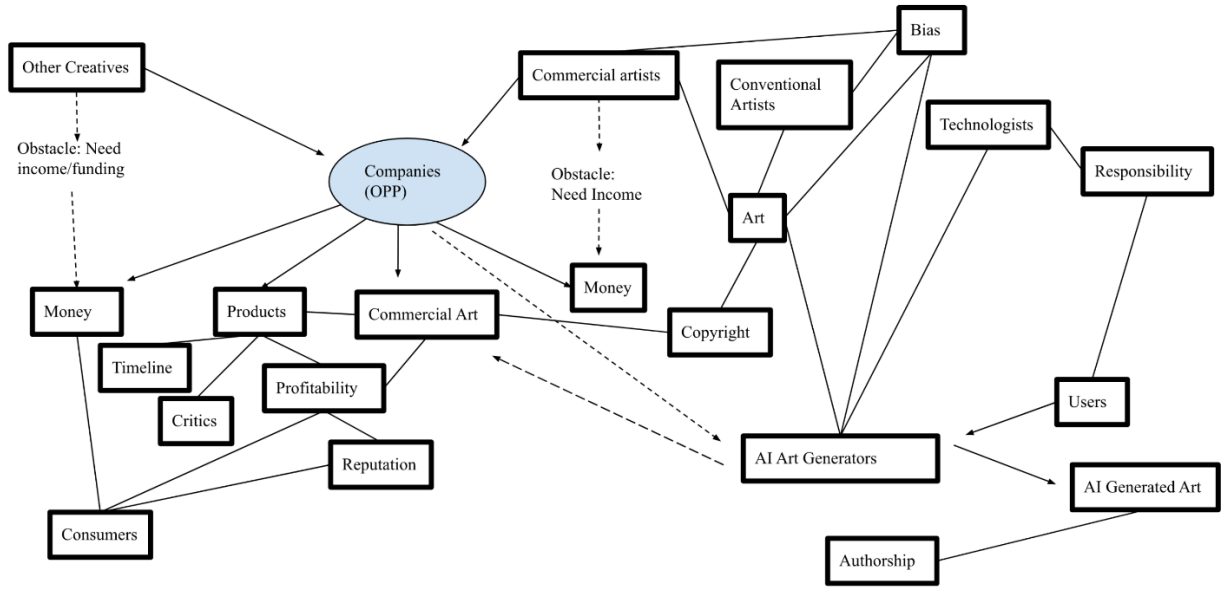

Figure 4 – Actor-Network Map Analyzing Power Dynamics in Combined System of Commercial Art and AI Art Generators (Created by author)

The most significant result from the analysis of power dynamics is the conclusion that AI art generators will not be able to replace commercial artists but could make their jobs harder or less profitable. As expressed in the article by Heikkilä (2022), there is growing concern from artists about how the use of AI generated art will affect their livelihoods. A radical but understandable conclusion to draw from the advancement of AI art generators is that they will completely replace artists. As exhibited by the actor-network of commercial art, commercial artists provide promotional material to businesses in exchange for money. When incorporating art generator technology into the network as an actor, there is potential for businesses to become users of AI art generators. Businesses could pay little to no money to use AI generated art for commercial purposes. To significantly cut advertising costs, businesses could completely replace commercial artists with AI art generators. The concept of authorship, as an actor, would enable

businesses to use AI generated art as promotional material. As users of AI art generators are viewed as the authors of pieces, businesses as users would therefore have all rights to use the work. Additionally, it would allow timeline, another actor, to be shorter for advertising projects. AI art generators can produce a piece of art much faster than a human ever could. Commercial artists, in turn, would be replaced in the system AI generated art and completely lose their income.

However, there are also actors and dynamics that deter AI art generators from completely replacing artists. Firstly, commercial artists are trained to work with clients who have little understanding of art. Some of the skills that commercial artists provide businesses are flexible interpretation of requests, understanding of how to visually communicate ideas, and ability to adjust art based on client feedback. AI art generators, on the other hand, aren't capable of the communication and flexibility that commercial artists provide. Users are responsible for understanding how to change inputs to achieve desired results. As stated earlier in this paper, both AI generated art and human created art can exhibit bias. Commercial artists, however, might be able to better mitigate bias in their own work. A commercial artist, by becoming more aware of their own biases, would already be equipped to address and mitigate biases in their work. However, mitigating bias in any AI technology is an extremely difficult process, and is an enduring topic of research. AI art generators aren't granted awareness of the meaning and potential interpretations of the images they are creating. Given the expertise of commercial artists that cannot be replicated by AI art generators, commercial artists will not become obsolete.

Even though AI art generators are not going to replace commercial artists, they still have the potential to damage the livelihoods of commercial artists. Commercial artists will have less

leverage because they no longer have the unique skill of producing art. Some businesses might value the low cost of AI generated art over the expertise of commercial artists. Therefore, technologists and commercial artists could be in competition for business opportunities with companies, giving businesses the power to negotiate for lower prices. In turn, commercial artists will lose power and income.

The next significant result from the analysis of power dynamics is the insight that artists can utilize their connections to other actors in the network to exercise power and bolster their position in the network. One important connection could be the other creatives (directors, authors, etc.) commercial artists could be making promotional material for. They understand the creative process and might even relate to the anxiety of AI displacing their job. Some individuals, such as big-name directors, will have enough power to completely discourage the use of AI generated art in their promotional material. Additionally, commercial artists could unite creatives and boycott companies seeking to replace commercial artists. AI generated art could prove to be divisive with consumers and critics, which could potentially make a boycott even more successful. Businesses must consider their reputation and profitability when releasing promotional material. Therefore, businesses would be discouraged from using AI generated art as commercial art if it could result in a boycott.

Commercial artists, or any artist, could benefit from utilizing their connection to copyright law. Artists hold copyright over their pieces, and therefore can sue someone if they believe they are using their artwork without permission. With AI generated artwork, it would be difficult to win a lawsuit due to the precedent for authorship and lack of laws preventing the use of copyrighted artwork to train models for AI art generators. However, artists might have a case if they believe that a model was trained using a piece of copyrighted artwork, and that the

generated artwork had minimal changes. It could take one artist winning a copyright lawsuit to change data collection and regulations for AI art generators. Currently, as exhibited by Wombo's terms and conditions, the responsibility is on the user to apply creativity to generate unique pieces (*Terms of Service - WOMBO Dream*, n.d.). Technologists might decide to take more responsibility for collection of data and generation, as users might discontinue using a website if they feel the service does not properly warn and protect them from lawsuits. For example, technologists could attempt to prevent users from including a particular artist's name in a text prompt. A copyright lawsuit could even introduce regulations preventing technologists from using copyrighted work to train models without permission. In this case, commercial artists would become OPP, as technologists would have to seek permission from artists before using their work.

The final significant result from the analysis of power dynamics is the insight that AI art generators, especially more accessible forms such as text-to-image generators, could prove to be beneficial tools in facilitating communication between businesses and commercial artists. As discussed previously, it can be assumed that most business representatives aren't artists themselves. Therefore, it could be difficult for them to communicate to commercial artists what they are looking for. If businesses used AI art generators to visualize their ideas, then it could facilitate the communication of their ideas to commercial artists. Utilizing AI art generators to facilitate communication could even shorten the timeline, as commercial artists would have a better idea of what the business is looking for in their promotional material. Additionally, technologists and users could profit without displacing the jobs of commercial artists. There are still opposing actors such as bias. However, commercial artists would be using AI generated art similarly to a reference. They would be taking many artistic liberties, and therefore would be

capable of acknowledging and mitigating biases. In this particular outcome, businesses are still OPP, with commercial artists relying on them for income in exchange for their skills. Commercial artists could gain more power, given that businesses would be acknowledging that their skills are still needed when AI art generators are available.

The results of this paper provide a deeper understanding as to how AI art generators could fit into the system of commercial art. The results contribute an understanding of why AI art generators could harm commercial artists. The analysis remains grounded offering optimistic approaches to the problems that AI art generators introduce into the system of commercial art.

Conclusion

This paper argues that analyzing how AI art generators can change the power dynamics of system of commercial art is essential to understanding how AI art could affect commercial artists. Of the findings, the most significant result is an examination of why AI art generators, with their current issues, are not likely to replace commercial artists. Furthermore, there is discussion on how, by utilizing copyright law and connections to other artists, commercial artists can exert power and solidify their value in the system. Finally, it is determined that AI art generators could be used beneficially as tools to facilitate communication of ideas between businesses and commercial artists. The method used in this paper can also be applied to the many fast emerging technologies that can generate creative work, such as AI writing generators.

Actor-network theory is not a perfect framework. One issue to consider is that, due to how the whole concept of actor network theory involves grouping individuals into certain actor labels, it can flatten the diverse thoughts of individuals that belong to the same actor category into a single opinion. For example, some artists may be unconcerned by their work being used by

AI art generators and may not feel as if their livelihood is threatened by the technology. Actor-network theory functions through generalizations. Therefore, it cannot be used to convey all the complexities of a subject. However, by using generalizations, actor-network theory is more accessible and understandable. Another difficulty of using actor-network theory is maintaining an appropriate scope. There are no limits to the number of actors that could be added to a network. Involving too many actors could complicate a system to a point where it's hard to garner insights but involving too few actors would be ignoring essential dynamics.

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