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Artists, AI, and the Artistic Process

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***Abstract*— This study examines the impact of artificial intelligence on the artistic processes from the perspectives of young artists. Through twenty-three semi-structured interviews with art institute students, this study contributes to the ongoing discussion surrounding AI in the creative industry. The study moves beyond the binary debates surrounding AI's destruction and enhancement capabilities, highlighting the needs for an artists-centric, process-centric form of AI. This study develops a deeper understanding of the artistic process; highlights the potential and limitations of AI; discusses the uncertainty faced by artists; and suggests AI's future role in shaping the art industry. The study first differentiates the artistic process into that of the conceptualization phase, characterized by its freeform creativity, and the execution phase, characterized by its attention to detail and techniques. It then discusses AI's limitations with respect to the two phases, and lays out young artists' concerns and uncertainties surrounding AI. Lastly, the study emphasizes the need for AI to adapt to the artistic process, a necessary change for AI to enhance artists' creative endeavors.**

I. INTRODUCTION

In recent years, the popularization of image generating AI has reignited the academic research interests surrounding AIs and art. More recently, in late 2022, the release of models such as Dalle, Stable-diffusion, and Midjourney, has sparked more active debates and conversations. Research surrounding AI is one of rapid development, evolution, and debate. As models are becoming more robust, and more funding is directed towards AI technology, it is increasingly important to develop an in-depth understanding of the impact of these novel technologies on various aspects of society. This study focuses on young students at art institutions and their reaction to image generating AI. In latter parts of the research, when using the term AI, I am speaking to image generation models such as Midjourney and Stable-diffusion. This study actively avoids the binary debates on AI as a destructive force or a creative agent, instead taking on a qualitative approach, aiming to capture how young artists think about the impact of AI on the artistic process. By focusing on the experiences of young artists, this study highlights the benefits, and challenges of integrating AI into art practices. This study contributes a sociological angle to the ongoing discourses on AI in the creative industries and suggests potential development directions for AI tools in the art industry.

II. THEORETICAL FRAMEWORK

Scholars have studied the impact of artificial intelligence on society from many perspectives, and discussed AI's impact across various industries including the creative industry. But it is relatively uncommon for this research to focus on specific workflows and processes. Without an in-depth, sociological approach, it is common for researchers to take on a binary stance towards artificial intelligence in the creative industry, either viewing AI as a force of creative destruction, ethical labor replacing agents [4], or the more common stance, a creativity-enabling, collaborative tool, that has the potential to create new artistic fields and career possibilities[3][6].

Economic researchers have studied AI as a force of automation, and considered its impacts in relation to the general labor force. Economists have highlighted the importance of developing the "right kinds of AI", defining it as a technological platform that would have lasting impact on employment and productivity, inturn yielding greater prosperity across society[1]. However, the vast implication of AI technology combined with its complex interaction with the social structure meant we lack the model and data to effectively track and predict AI's overall impact on labor[2]. Overarching research on the societal level illustrates the complexity and stake of AI related research, but its vast scope means it is unable to contextualize the impact of AI in specific industries.

In studying AI in respect to the creative industries, researchers followed an overarching theoretical framework, comparing AI to past technological innovations such as photography and digital music production, in turn hypothesizing AI's impact on the labor economics of creative work, and the shifts in culture, aesthetics and public perceptions[6]. Other researchers categorized AI's creative applications into categories such as content creation, analysis, information extraction etc, and discussed each category separately[7]. This framework of analysis examines AI through its potential applications, a gesture to break down and examine AI by use cases[8] There is also a move to quantify the impact of AI on creative production, employing experiments in which artworks are judged based on metrics such as participant aesthetics evaluation[9][10]. These researches, while all provided excellent overviews and perspective on the impact of AI on the creative industries, they eventually fell into a binary

debate - a utopian view of AI verses a dystopian view of AI. This debate, while intellectually stimulating, is in many ways detached from the underlying reality. Many of these studies, while recognizing the issues surrounding labor force replacement, copyright and public aesthetics, suggested a future where AI technology is human-centric, augmenting creativity and even enabling new forms of creative labor[6]. These arguments are hardly grounded in the context of the artistic process, and are constructed without concrete exploration on how AI may or may not augment human creativity.

I argue that in addition to use-case studies, theoretical, and quantitative modes of analysis, a qualitative approach is necessary for the study of artificial intelligence. Previous research has stressed the need for sociological perspectives in the field of AI. A sociological approach may contribute to a more diverse understanding of AI, incorporating perspectives from all aspects of society and driving AI innovations to become more socially-aware[11][12]. Sociological thoughts and research methods contextualize the question, narrowing down the scope of analysis onto a unique artistic workflow. This may aid better understanding of the interplay between the artificial intelligence, artists, artistic process and the creative industry. In addition, there has yet to be any qualitative research that focuses on artists' reaction to AI technology. This study aims at capturing the thoughts of young artists. Through this approach, I am able to highlight the necessary AI developments for the art industry. These findings can also be extrapolated, contributing to larger discussions between AI and society.

III. DATA AND METHOD

To pursue my research, I conducted a total of 23 semi-structured interviews with young artists studying in art institutes. Interviewees were recruited through snowball sampling, and consist of current students and recent graduates from four art institutes - Rhode Island School of Design, School of the Art Institute of Chicago, Pratt Institute, and Parsons School of Design. Interviewees are mostly students in their third and fourth year, with varied levels of internship and work experience. Their major and field of study includes concept design, illustration, interior design, fashion design, UX design, graphic design, and industrial design. Among the 23 interviewees, ten are Chinese international students.

These interviews highlight the various artistic processes, in addition to how my interviewees are internalizing the impact of AI. Three interviews were conducted in person, and the rest were conducted using Zoom. All interviews were recorded and transcribed. Interviews that were conducted in Chinese were translated by Google translate and paraphrased by me. The length of the interviews was on average 90 minutes, detailed reflections were written after each interview. Early interviewees tend to be shorter and less in depth, therefore 3 followup interviews were conducted. Text exchanges were made for clarification purposes and to gain permission for using interviewees' artworks.

Interviews were free flowing and short probes were used to guide the interviewees. Interviews started with a brief introduction of the research, then focused on the interviewee. Throughout the interview, four themes and topics were discussed with no particular order.

1) The interviewee's major, and the artistic process for their field of study.
2) The interviewee's internship and work experience in industries.
3) The development of AI technology and implications.
4) The future of the respective industries and interviewee's own career choices.

These themes were often naturally explored by the interviewees during the interview. In addition to the core sets of 23 artist interviews, eight supplemental interviews were conducted with teachers, experienced illustrators, freelance workers, and students from fields such as sculpture and music performance.

There are several limitations to my data collection process. The first is the snowball sampling recruitment method. To gather a wider range of perspectives, I engaged with students across various institutions and fields of study to recruit interviewees, rather than relying on a single source. The second limitation concerns the schools from which interviewees are recruited. These schools are highly selective art institutes, three of which are located in the New England region. Students studying art at general education universities, less selective art institutes, or outside of New England and the Midwest were not included in this study. The third limitation pertains to the field of study of the interviewees. During the recruitment process, I aimed to focus on students whose majors are more closely related to the digital space and who have some level of industry experience. Therefore, interviewees consist mostly of digital artists, illustrators, and students in their 3rd or 4th year of education. These limitations have narrowed the scope of this research. However, by focusing on this specific interviewee cohort, I was able to develop much more in depth understanding, and more closely capture the thoughts, reactions and narratives of my interviewees.

I analyzed the interview transcripts and reflections notes using inductively, iterative coding with MAXQDA. For the initial cycle of coding, I coded the transcripts line by line using in vivo coding. When coding the data, I noticed interviewees from different fields of study were describing analogous ideas with different vocabularies. Instead of immediately creating categories, I decided to first capture the narrative of each interviewee then evaluate for patterns. For my following coding cycle, I utilize process coding, value coding and emotion coding to develop an extensive list of codes for each interviewee. I then revisited the list and reorganized the codes around prominent themes and categories that speak to my research topic.

IV. RESULTS

A. The Distinction between Conceptualization and Execution

Before diving into the discussion surrounding artificial intelligence, I need to first unpack the artistic process, as it is the backdrop of my later discussion. In order to capture the impact of AI, I need to develop a solid understanding of my interviewee's field of study and workflow. I decided to start every interview by asking the interviewee to explain their artist's process, as this not only allowed me to contextualize later discussion surrounding AI, but also served as an ice breaker. Many of the interviewees, though not explicitly, differentiate the artistic process into two distinct parts - conceptualization and execution. The line between these two stages is often blurry, and not all artistic processes can, or should be separated into stages.

The conceptualization stage is about building a mental image of the very thing you want to express, and then execution follows, as this stage translates the idea into reality. Take the field of illustration as an example, during the conceptualization stage, the artist may be inspired to develop the idea of a deserted island. The artists explore various existing representations of deserted islands across various mediums and incorporate their ideas to arrive at a final design concept: a deserted island with striking geology, cliff-filled coastlines jagged, hilly terrain, and more. The concept may call for a specific response from the viewer, a sense of distance and gloom. The execution is about translating these ideas into an illustration, not only the visual elements but also the artist's intention. The artist needs to decide on the medium, style, usage of colors, shades, etc, and properly incorporate a variety of techniques to finally create the illustration. The artistic process itself is iterative, concepts are refined through execution, and executing an idea brings forth new inspirations.

The distinct stages of the artistic process can be seen more clearly in industries. Some artists have "full autonomy" in the development of an artistic design, responsible for both the conceptualization and execution process. Illustrator #6 mentions *"I was only an intern for three months… I did not get to see the final product, but I was incharge of the concepts until the day I left."* Some other artists would work in conjunction with a design lead, where the illustrator only works on the execution stage and has relatively little control over the concept development process. *"I don't have much autonomy in my work,"* Illustrator #2 tells me. *"I usually get a sketch from [design lead] and I take care of the visual."* Both interviewees were in a concept design position. How much autonomy an artist has in the design process varies a lot depending on their position, the project they are on, and the team they are in. Regardless of completing the design process in a team or as an individual, concept designers need to develop a core concept, execute it, and then iterate until the final product is satisfactory, or they run out of time. The same cycle is applicable to other fields, taking the form of drawing concept illustrations for a video game, developing UX UI interfaces for a mobile app, or designing living room interiors for a client.

The conceptualization and execution are different not only in their functionality but also in how artists value each phase of the process. Interviewees often hold conceptualization in higher regard than execution. Industrial designer #2 states *"In the field of design, I think the most important thing is to have an excellent idea. Working on renderings and implementations might be 80% of the daily work, but your project is only successful if your idea is on point."* Other interviewees also agree with this statement, *"wireframes and prototypes are there to visually showcase my ideas and design,"* says UX UI designer #10. For most of the interviewees, the techniques and skills involved in execution serve to manifest the concept. That is not to say the techniques are not important, on the contrary, it is essential. In the end, what is a great concept if you can not properly illustrate it? However, there seems to be a hierarchy between the value of conceptualization and execution, the former corresponding to the creative, artistic part of the process, and the latter corresponding to the technical, rigid part of the process.

B. AI for Conceptualization

During the second overall interview conducted, Illustrator #1 mentions that he finds AI to be a helpful brainstorming tool. He does not use tools like Midjourney to materialize his concepts, but to explore the various design elements associated with the idea, assisting him in finding reference materials.

Interviewees like illustrator #1 believe that AI has the potential to facilitate the search for art references and the development of initial concepts. They find AI to be a convenient alternative to scour through the internet for art references. For illustrator #1, AI enables faster concept iterations:

> *For me, AI is a relatively fast and time-saving tool that can help me quickly organize my concepts, it can provide a general direction, and help me visualize an effect. I use it during the initial brainstorming phase. Then, based on the images or concepts generated by AI, I would further refine them myself, get my ideas across, before presenting them to my colleagues.*

Industrial designer #1 also believes that AI is sufficient to facilitate the initial brainstorming and ideation part of his work and creative process. He mentions that he never uses AI to produce the final, presentable work, instead it is more of a discovery and experimentation tool for concept development. He shared a case where he was tasked with developing a concept for a fashion runway. He was given basic themes such as a clash between nature and city scape. He developed the idea further, leading him to land on an initial concept of combining acrylic,

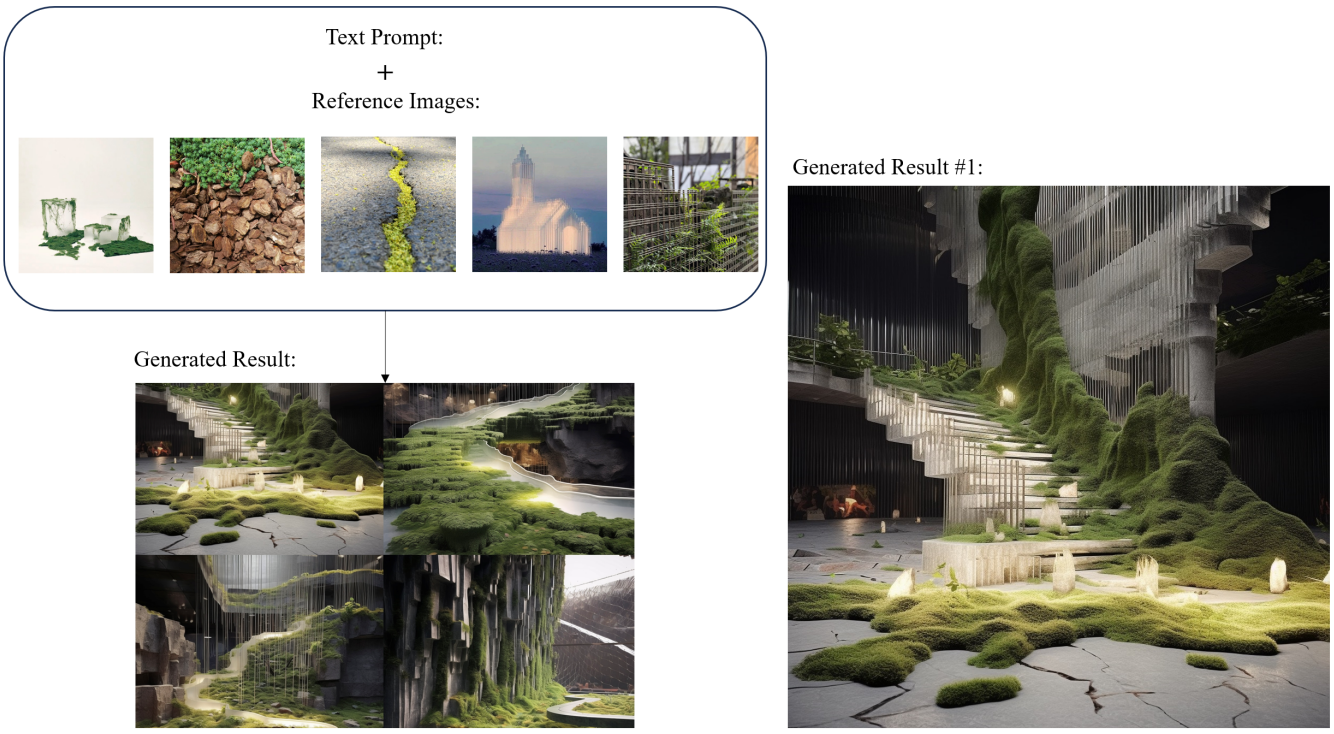

Fig. 1. Midjourney Concept Generation on Fashion Runway

glass, concrete and fern to build out a S shaped fashion runway. The designer then selected five reference images and crafted a text prompt for Midjourney. The reference images included acrylic blocks, mulch, cracks in concrete, reflective structure with glass like finish, and steel mesh. The prompt is as follow:

High-definition, photorealistic rendering of an indoor fashion show venue, featuring an S-shaped fashion runway surrounded by mountain-like structures. Mirrored reflective seating. Fashion models. Green plants in the cracks of concrete. Miniature cityscape made of glass, acrylic blocks as stairs, embellished with ferns and stones. [Fig. 1]

Among the AI generated images, there was one in particular that caught the attention of the designer. *"It [AI] got a few things right,"* he says *"the cracks in the floor, the hollow, reflective acrylic stairs and the greenscape surrounding the staircase are all designs that can be incorporated... It [AI] is really helpful because I can generate something in a few minutes and share my ideas with the team."* [Fig. 2]

Industrial designer #1 also mentioned that the AI experience is not without flaws:

When I am developing the concept, I need to translate it into a series of descriptions. In a modern, urban environment, the roads are cracked, and small green plants are beginning to grow from these cracks. I need to convert my idea into these types of descriptions, so it [AI] would understand... The third reference picture with cracks and ferns, I had to add that image or else AI won't get it.

Similar to industrial designer #1, many interviewees see the potential of AI as a tool for concept exploration and concept aggregation. This sentiment is shared among close to half of all interviewees, while some of these students don't actively use AI for brainstorming for their academic and professional works, they are not against the idea of an AI tool for concept development.

On the other hand, Illustrator #12 disagrees with the former group and claims AI in its current form is quite useless in aiding the conceptualization process.

Nowadays, whenever I need to draw something [concept design work] I first run it through AI. But sadly, so far, no AI tools have managed to produce something I can use as reference, even though I think I have tried pretty hard, sometimes spending a solid day on it... although the image often looks really good, the content, the design is pretty crap.

Illustrator #12 believes AI generated images are not useful reference materials. He emphasized that finding a variety of high quality references is a critical part of the conceptualization phase. These art references, in combination with the artist's experiences and training, serve to inspire the artists, enhance existing design choices, and enable new perspectives. Illustrator #12 along with the other half of the interviewee argue that AI tools might seem to help accumulate existing knowledge, but in their

current form, AI distorts the available creative thoughts, and is unfit as a brainstorming tool.

Fig. 2. Midjourney Concept Generation - Usable Design Elements

At the heart of this argument is the fact that AI is a black box, and artists can not peek into how AI thinks and acts. This group believes that AI is tailored to public aesthetics and fails to generate novel insights. When given a prompt, AI would not develop anything novel, instead, choosing the ordinary, most widely accepted designs. This makes AI a reductive tool, unfit for the free-formed, exploration-driven conceptualization phase. After the interview, illustrator #12 shared a case where he played around with Midjourney to execute upon a previous freelance concept design work: A caravan made up of dwarfs and mule carts walking through a huge cave full of yellow crystals. The illustrator mentions that AI can never strike a balance between all the important design elements, most notably *"AI puts too much emphasis on the yellow crystal and fills the entire illustration with it."*

Even in situations where artists find AI's certain design choices and design elements to be interesting and worth further exploration, there is no reliable way to retrace the steps of AI and directly learn from the reference materials. Concept design artists #6 commented:

When it comes to AI, to put it simply, it's about using machines to combine existing human thoughts. Some AI-generated images may seem impressive to those who don't draw, but in reality, they are all based on the work of other artists. A painting by the original artist might be even more beautiful, and I can appreciate its finer details. Why wouldn't I prefer that over AI-generated content?

During the interview, the designer walked me through the drawbacks of using AI for conceptualization using an example - a vague concept such as a deserted island. We first tried to explore this concept through platforms such as Behance and Pinterest. On these platforms, vague concepts such as desert islands would result in a flood of semi-related images. Some images are completely unrelated, but the sheer quantity and variety of images present meant that we were able to explore the concept from multiple perspectives. When searching deserted islands on Pinterest, there are not only palm-filled islands but also abandoned islands like Japan's Hashima island; rocky, barren volcanic islands; mythical floating islands, and more. This allows artists to explore the possible ways to extend and elevate a set concept.

The experience with AI is quite different, when prompting "deserted island", the images generated were very similar: a small, uninhabited island in the middle of the ocean, with a beach and vegetation in the form of bushes and palm trees. This is as expected since this is a common way to interpret and represent a deserted island. After playing with a variety of prompts, and altering aspects of the island such as landscape and size, it was obvious that AI would not be able to generate images that are outside the scope of undiscovered, uninhabited islands if not explicitly prompted so. This means users might miss out on design possibilities such as islands in a lake, or an abandoned island with man-made structures.

Through this example, we found that AI is quite reductive when used for conceptualization. Unlike a gallery that has a large variety of art reference collections, or a platform that displays all "relevant" information, AI only showcases what it deems fit. AI is trained through online images and its users' reactions, so what it deems to best fit the prompt would almost always reflect the public aesthetics and consensus. Some artists took issue with this, pointing out that using AI tools would subtly cause artists to comply with the public's aesthetics, expectations, and stereotypes, hindering artists' creativity, and limiting their conceptualization process.

When examining the argument of the two groups. It is not hard to realize that the two groups are focusing on two different aspects of AI. For the first group, AI's efficiency enables faster iteration cycles in the conceptualization phase. Before using AI tools, industrial designer #1 has made up his mind on design elements such as cracked concrete, and AI serves to quickly help him visualize this concept. Less time spent on the executional leg of the conceptualization stage means more iteration cycles, and designers can spend more time on expanding the concept. On the other hand, the second group is doubting AI's ability to contribute to a process that is creative and bold. This group emphasizes that using AI to develop a concept would naturally bring the artists closer to mediocrity. If an artist follows the design direction of AI, then he is less likely to go with a design choice that hides the gleaming crystal in a raven. The latter group believes that AI's execution is uninspiring and would taint the

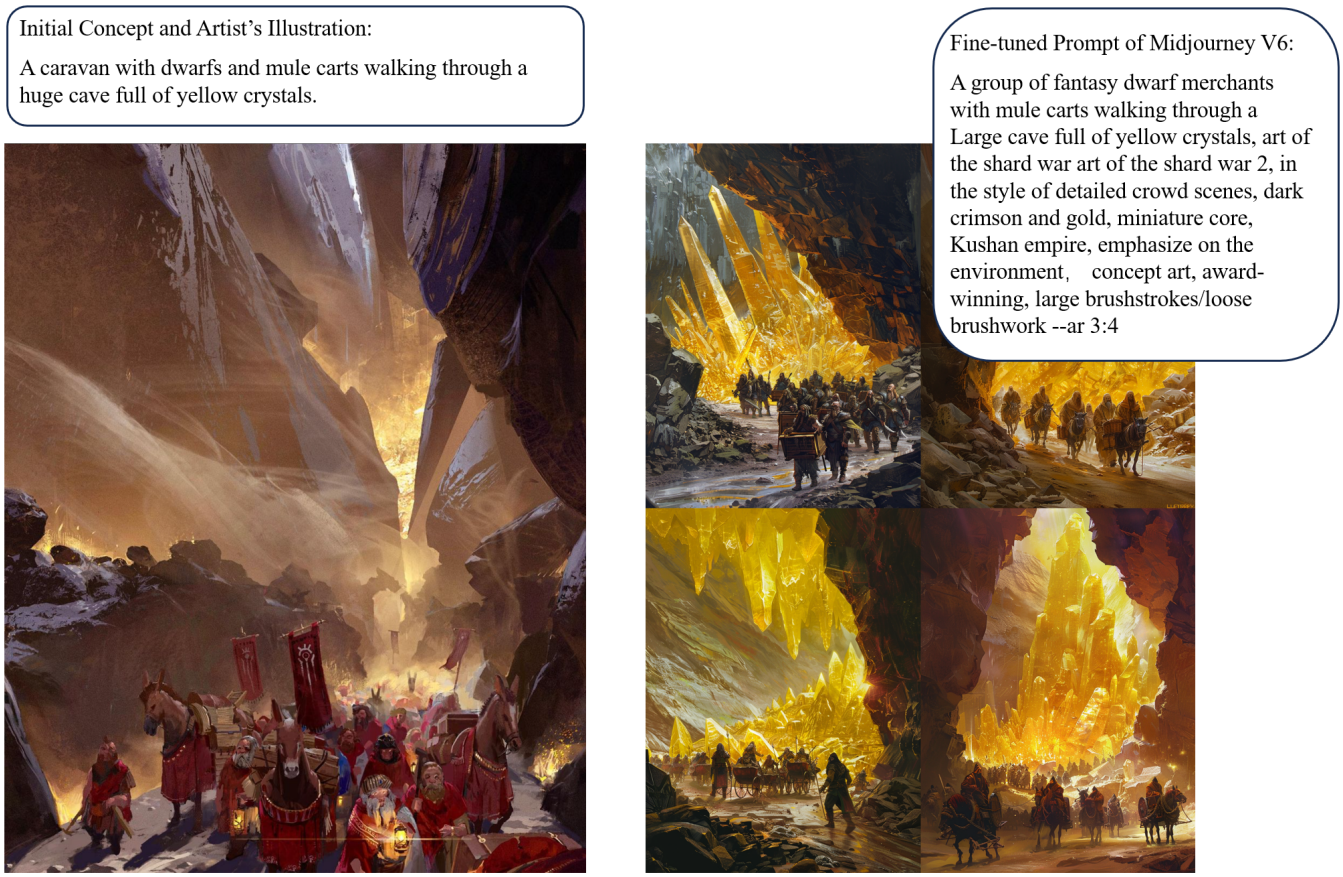

Fig. 3. Artist's Illustration Compared with Midjourney Illustration

conceptualization process.

C. AI for Execution

As we discussed earlier, the iterative nature of the artistic process means that artists are often constrained by time and their productivity. While an increase in productivity does not necessarily translate to a better end product, having a faster iteration cycle is often beneficial and welcomed. If the artists are more skilled and productive, then the team can spend that time talking to clients, developing concepts, or taking on more work. As we mentioned, execution is often a part of the conceptualization process and the larger iteration cycle, but for our analysis, we will look at how good is AI at faithfully reflecting the user's concept. Regarding the execution process, there are little to no positive remarks.

The most obvious limitation is inadequate generation, for instance, having too many or too few fingers. Issues this blatantly obvious have mostly been resolved and these bottlenecks are being actively tackled. But despite not having six fingers, AI-generated humans still have a weird proportion and anatomy. So inadequate generation is now more about inhuman-like designs and subtle mistakes that would require well-trained eyes and attention to detail to spot. It is increasingly difficult to tell apart AI's algorithmic limitations, and the mistakes made by an amateur artist. During the conversations regarding AI's limitations, inadequate generation was often the first thing discussed by the interviewees, however, it was never the primary issue. Interviewee recognized that in the near future, AI models would include a larger variety of styles, the details would be more fine-tuned and the overall image generation quality would be improved. Interviewee views AI as inadequate not only because of the generation quality but because in their eyes, the tool also does not fit into their workflow.

At the center of the issue is the problem of limited, poor transfer of ideas and information. For artists, it is often more effective to communicate artistic ideas through a combination of methods, such as descriptions, diagrams, and sketches. However, interacting with AI tools requires the users to compress all forms of knowledge and information down to text. Not only is it hard to describe these features accurately, but users are also limited to primarily using the English language. This is evident in the case of industrial designer #1, he needed to include a picture of cracked concrete inorder to AI to get his design concept. Perhaps the most difficult thing to communicate to AI is the context surrounding the images. AI is unaware of how the images are used, it can either be a poster for the living room or a video game's concept art. While both

are illustrations, the former only appeals to aesthetics, while the latter requires an understanding of whether the design is implementable in the video game. AI's inability to consider the broader context meant it was naturally unfit for certain kinds of workflow, as an interior designer #1 comments:

How large are the client's windows, the orientation, the natural lighting, where are all the pillars, these are all things AI doesn't know...Doesn't matter how good the rendering looks, when you try to fit it in your home, you find that the sofa that looks similar to the picture won't fit. Your ceiling is made of concrete and you can't install a chandelier.

For interior designers, merely presenting a rendered design that fits the clients' preference is insufficient, because the design also needs to be implementable given considerations such as the room layout, types of furniture, budgets, etc. To make AI useful, interior designers not only need to develop their design, and comprehend all the context and requirements, but they also need to communicate all this information to the AI model in texts. At this point, it is no longer efficient to use AI.

When executing a set idea, artists usually already have a mental image of the design, and how they like the final illustration to look like. However, getting AI to generate what you have in mind is a non-trivial task that requires lots of prompt engineering, tinkering, and trial and error. This inevitably leads the user to face a trade-off between having more control over the image and giving more complicated prompts:

My experience with Midjourney... to get the response you want, you have to have very specific prompts. I didn't know how to generate [a design], so I needed to search for guides.

Give the same prompt to the same model twice, the AI would generate similar, but different images. As more elements are included in the prompts and the complexity of the image increases, it becomes exponentially more difficult to generate the precise image you imagined. It comes to a point, where the effort required in fine-tuning the models and the prompts is too great, it pushes the artists to instead draw the image themselves.

For non-artists like myself, AI's accessibility and speed significantly outweigh its limitations and drawbacks, because it provides a new means to communicate ideas. However, these qualifications do not make AI an effective tool for artists, who already have the proper skills to translate their ideas and designs onto paper. When asked about how AI is different from tools such as Photoshop, illustrator #6 states:

In the case of Photoshop, I am still the person behind the wheel, Photoshop is not gonna tell me how to draw [design elements] . . . I want to get my design across, so in that light, AI doesn't make my life easier, it can come up with something, but as I said, it's pretty mediocre.

For artists, the problem with AI in the execution phase is that it can not faithfully turn their ideas into images. Instead of tinkering with the tool, drawing the design by hand guarantees its quality and is often the better option. For artists, AI tools in their current form is similar to having a bad assistant, who can never quite get what you want to do, despite how much time you spend explaining the idea.

D. Bracing for the future, uncertainties with AI

Despite the various perspectives on AI's usefulness in the execution and conceptualization phase, nearly all of the interviewees expressed some level of concern over the future impact of AI on the subject of the labor market, and overall design process. There are two layers of uncertainties that the interviewees are dealing with, the first being the uncertainties surrounding AI as a technology, and the latter being the uncertainties regarding AI's impact on the overall art industry.

At the very heart of these concerns are the concerns regarding how AI models might perform in the next decade. Many students felt that it was too early to make claims on AI's usefulness as it is still a novel tech. *"I see AI as a constantly evolving technology. . . I don't know what it will develop into in the future."* says Illustrator #2. The image generated by AI has already come a long way and AI is drawing more attention and investments than ever. A few years ago, most people could distinguish AI-generated human figures from artist-drawn ones because of the finger generation limitation. These basic mistakes were a dead giveaway on who created the image. Nowadays, despite AI-generated images might still have a weird proportion and design choices, it is increasingly difficult to tell apart AI's algorithmic limitations, and the mistakes of an amateur artist. AI essentially raised the cut off line for artists, where previous artists can make a living off of skills and execution alone, the emergence of AI put them on the verge of losing their jobs. Illustrator #14 states

I think AI has redefined what it means to be a good artist, what skills are necessary to stay relevant. Many things that are difficult for humans to do, AI can accomplish with incredible efficiency. Whereas many things that are easy for us humans, are impossible for AI. . . AI is exceptional at making good looking pictures. Despite past technological developments like 3D renderings, it was still extremely difficult to make good looking pictures. I am not judging the content, style, or design. Just making a good looking illustration was a monumental task. . . With AI, this suddenly becomes meaningless, anyone can make a good looking picture, it no longer has any technical barrier. . . For artists, it's not like creativity, fresh concepts and solid designs were not important. It just happens that other skills, like making a good looking picture, are much less important now.

Other interviewees agree with illustrator #14, as they also had moments of self-reflection, questioning their own capabilities and whether they would still hold an edge over AI in the near future. Uncertain about the relevance of their skills in a future with AI. AI might not be able to generate exceptional work, but it is quite good at generating visually appealing works, and it is only going to get better. The anticipation of AI's technological advancement pushes young artists to rethink the relevance of their skill sets, role in the artist process, and future career choices. Illustrator #14 believes that AI has made executional skill sets less desirable among digital artists. And as a response to their skill sets suddenly becoming "obsolete", digital artists become obsessed with conceptual greatness, creativity and design.

Interviewees also rustle with the uncertainty of how corporations, industries would respond to a future with AI. They are particularly worried about a time where AI's limitations and mistakes are so minor that most people can not tell it apart from artists' works. Interviewees highlight two possible futures. In the first case, AI technology and tools would alter parts of the artistic process. This might simultaneously affect both the conceptualization and execution stages, but AI remains as a tool that facilitates artists' creative expression. In the second case, AI would completely alter the artist process beyond our recognition, an entire overhaul of the existing artistic process and employment landscape.

Expanding upon the first case, AI would have an effect similar to the impact of 3D technology on illustration. *"For animation studios and video game developers, most of their employees were illustrator and concept artists, thats until 3D technology rolled around."* said animator #18. 3D technology altered the employment composition of the animation industry, nowadays a few concept artists would work with a group of skilled 3D artists and animation, who would build out the character models and renderings. AI tools can further reduce the team sizes, eventually a company would only need a few design leads, who utilize AI tools to execute upon their ideas. This is already happening, as illustrator #6 mentioned that some companies are already cutting down on the spending and sizes of internal concept design teams.

I think [illustrators who are responsible for producing the final, consumer-facing image] are not in deep trouble. Companies are less interested in replacing them at the moment, because of the concerns over copyrights and public sentiments. I don't think AI will fully replace these jobs. For my job, no one would notice that [certain company] replaced me with AI. The final design is worse, but I don't think many consumers would notice that. It's quite sad because [company] is lazy and I know that for [another project in the company], they only have a few concept designers left on the project, and they do lots of their work with AI.

The second form of change is more drastic, where AI eventually takes over the entire process, automating the creative industry. This scenario seems somewhat dystopian and far-fetched, but this was brought up many times by the interviewee during our conversation. In essence, interviewees are uncertain whether human artists would still hold any creative autonomy in a future with AI. Some interviewees mention that companies are already experimenting with automated workflow. AI would utilize datasets on public aesthetics and preferences to infer potential design choices, then automatically generate, and distribute the content for consumption. Illustrator #18 points out that this type of public aesthetics-oriented approach has been utilized in modern-day creative industries, but nowhere close to full automation:

I remember a few years back, [certain company] wanted to design a [character], and they eventually narrowed it down to the top three designs. I think they posted these designs around their campus and had their employees vote on them. [The company] stuck with the most popular choice.

Illustrator #18 believes that voting on human made designs ensures that artists still have creative autonomy. Human artists are encouraged to come up with unique designs and showcase their vision. Whereas AI would most likely adhere to the norm. In the second case, interviewees are worried that an industry fully automated by AI would reduce the willingness to take risk and to innovate upon design choices. This might lead to a future where artists are no longer in need.

V. DISCUSSION

Through my research, there are a few important themes that should be further explored in future research. The first is regarding the long term impact of AI on the art industry and public aesthetics. Illustrator #2 argues that AI tools would be devastating for the art community and the creative industry as a whole. Heavy reliance on AI would not only cause an initial wave of job replacement but also negatively affect the public aesthetics, causing the public aesthetics to stagnate and thus reduce industries' willingness to take risks upon design choices. Companies would be more profitable in sticking with existing, tested-and-true designs instead of making the effort and investment to hire artists to come up with new designs. This in turn will slow down the innovation process for art, artists are also no longer rewarded for their risk-taking, innovation, and the depth of their design. AI would serve as an echo chamber of public stereotypes and tastes, reaffirming the public's aesthetics, leading to further laziness in the design process, causing more creative, artistic positions to be replaced, and completing a feedback loop. The impact of AI on companies hiring practices and aesthetics was a topic that is consistently brought up during the interviews. However, I am unable to develop concrete insights on this

topic. Further research on this topic, should incorporate the perspectives of artists and designers actively working in the art industry.

Throughout the interview, there were lots of discussions regarding why AI tools in its current form would not aid the conceptualization process. However, no interviewees shared their particular vision of what an AI-powered conceptualization tool would look like. For the latter half of the interview, I actively probed the interviewees on this topic. Nearly all interviewees struggled with this question, unable to imagine what an AI concept exploration tool would look like. Illustrator #7 mentioned that instead of showcasing various executions of the same design, a conceptualization tool would display the varieties of design possibilities. She mentioned that while searching through art reference platforms, she can never be quite sure if she has fully explored all the possible design choices. She wonders if AI can help her more systematically explore these options.

I think this is very hard to achieve, but if "fragmented information" mentioned earlier [unpredictable, untraceable, information formatted intuitively] could become "systematic inspiration", then I think AI would become an extremely useful tool.

These observations have led me to believe that in the near future, two distinct sets of AI tools will be developed to tailor to the conceptualization process and the execution process. The underlying logic is quite simple, take the case of illustration as an example, the perfect execution tool would be able to faithfully convert the users' prompts and concepts into an illustration. Such a tool focuses on the "depth" of image generation, with particular emphasis on the users' control over the details of the illustrations. This sharply contrasts against a tool that aids the conceptualization process, such a tool would focus on the "breadth" of image generation, displaying a variety of ideas and possible design choices for the artists to consider. The conceptualization-oriented tool is not about having precise control over the AI-generated image but a systemic way to explore and display the potential design direction. Drawing a comparison of these two distinct sets of tools to existing modern-day services, the execution tool is comparable to having a typewriter or writing assistant, while the conceptualization tool is comparable to having an encyclopedia or library research assistant. The use cases are so distinctly different, I can only imagine different tools being developed for each process.

VI. CONCLUSION

This study first breaks down the artistic process into conceptualization and execution sub processes. It illustrates that AI tools in their current form are insufficient in aiding artists because the tools do not fit into the workflow of either of the sub processes. Worse than not being a companion to the artists, AI is threatening the artists' relevance, while simultaneously causing a spiral of uncertainties and anxiety. For this reason, it is very natural for a large portion of the artist community to reject AI technology. However, this study also shows that many young artists are excited about the potential of AI tools, especially in aiding concept development. This study argues that for the art industry, AI development should tailor to the unique needs of the conceptualization and execution processes. The study specifically calls for AI tools that focus on exploration. Contributing to a larger conversation regarding AI's impact, this study calls for human-centric AI design that puts AI developments in conversation with human workflow.

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