# AI Art Versus Human Art: A Reception Analysis

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#### **Abstract**

Artists must adapt to survive in a culture where artificial intelligence (AI) art is in high demand. Research that helps artists compete successfully with AI technology is needed. Previous research has been limited to opinions about AI art and how well it imitates human art. This study looked at how individuals decode and distinguish AI from human art. A total of 53 Spring Hill College students and staff were asked to select the best image that conveyed, "Leaping freedom heart of fire." 29 of the participants ranked human art as number one. The amount of study in communication arts was associated with identifying art.

Surprisingly, participants with fewer years of study were better at distinguishing AI from human art. Only 30% of participants changed their minds about their best art choice after learning the art origin. 66% had an unfavorable opinion about AI's impact on the culture. Thematic analysis showed that schemas affected art preference. Participants who preferred the human-made image focused more on the woman in the foreground. Those who preferred AI art focused more on the well-defined heart in the background. Those who liked the human-made image preferred symbolism, imprecision, and no boundaries. Those who selected the AI art image focused on the literal meaning of the work, technique, and precision. The insights obtained from this study underscore the importance of artists knowing their clients to connect with them through their art.

#### Introduction

Artificial intelligence (AI) software is reshaping the public's view of art. These systems are "endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience" (Encyclopedia Britannica, 2022). AI software involves a digital-computer or a robot controlled by a computer that completes tasks that are usually associated with intelligent beings (2022). These systems "have the ability to reason, discover meaning generalize, or learn from past experience" (2022).

An intense debate is going on about whether artificial intelligence improves or hurts lives.

Artificial intelligence has been used for many helpful purposes, which include facial recognition, online shopping, search engines, translation services, cybersecurity, and even fighting disinformation on social media (Encyclopedia Britannica, 2022) Because of these innovations, artificial intelligence has helped improve workplace safety, accessibility for people with disabilities, and has made life more convenient and enjoyable by improving our health and overall standard of living (2022). However, there is a cost to these benefits. Artificial intelligence poses dangerous privacy risks, exasperates human racism, and harms the standard of living for many people "by causing mass unemployment as robots replace people" (2022).

Artists are among the many professionals who have felt the negative impact of artificial intelligence on employment because of AI art. AI art is any artwork, specifically images and music compositions, that is created through artificial intelligence. These can be text-to-image models or image-to-text models. Anyone can now type a few words or submit an image into a textbox and generate a complex work of art. Dalle-E-2 is artificial intelligence software that can turn anything a person types into art, in any style. If a person wants a portrait of a surfer in the style of Von Wong, Dalle-E-2 will fulfill the command. This process is not a "cut and paste" technique. Instead, Dalle-E-2's conceptual and abstract understanding of images allows it to produce an original artwork like a human being (CBS Interactive, 2023). Dalle-E's creator, Aditya Ramesh, describes this process "sort of like how

a human would use inspiration from all the images he or she may have seen in a lifetime" (2023, para. 6). Dall-E-2 can "make videos, children's books and magazines, and Sunday Morning stories" (CBS Interactive, 2023). Dalle-E can imitate the style of any living or known artist. This ability frustrates professional artists who believe that their styles should not be entered into the data sets of AI software without their permission (2023). They believe they should be able to opt-in to the AI's database of images and be compensated for their styles (2022).

AI companies are racing to produce AI art and composition that is indistinguishable from human-made content, while growing exponentially in popularity. Dall-E2 is generating "4 million images a day" (OpenAI, 2023, para. 1). ChatGPT has grown so popular that subscribers often get network server errors. ChatGPT is an artificial intelligence model that interacts with users in a conversational way (2023). ChatGPT can "answer follow up questions, challenge incorrect premises, admit its mistakes, and reject inappropriate requests (2023, para. 1). Because of its uncanny ability to mimic human language and reasoning, ChatGPT has ushered in an artificial intelligence revolution. The AI program can conjure up essays, recipes, translate languages, tell jokes, and even dispense advice (2023, para. 1).

The ease of use and popularity of AI programs are threatening the livelihood of artists. People can generate their own original works of art and composition, instead of commissioning professionals to produce the works for them. As OpenAI, ChatGPT, and Dalle-E2 offer apps that draw millions of subscribers, AI technology is marginalizing artists. Artists are forced to compete with AI software for clients. To remain competitive, human artists need to know what attracts people to AI art.

According to the AI Generators Market Report, the global AI market in 2021 was one million USD and is "expected to expand at a compound annual growth rate from 2022 to 2030" (I.B. Insights, 2022, p. 102). Over the next eight years, the value of AI generators is expected to grow from nearly 100 billion U.S. dollars to up to two trillion U.S. dollars (2022). I.B. Insights (2022) also projects that the AI market will cover "a vast amount of industries (2022, p. 102). These will include supply chains,

marketing, and product making (2022, p. 102). To stay competitive in an AI driven market, artists must stay abreast of the latest technologies, and how they can be useful or harmful for their profession.

According to the National Security Commission on Artificial Intelligence, the "biggest harm that AI is likely to do to individuals in the short term is job displacement, as the amount of work we can automate with AI is vastly larger than before" (NSCAI, 2021, para. 1). Researchers from Emory University explained that the "most general fear associated with commercial artists today is in areas such as illustration, animation, and graphic design" (Newton, 2023, p. 2). Newton (2023) compared the AI revolution to the industrial revolution because it is displacing so many skilled workers from their jobs. This "reduced dependency on traditional art" is hurting the livelihood of human artists (2023, p. 2).

Professional artists are concerned about how AI enables anyone unskilled in art to become complex image creators. According to Metafy (2023), AI art is the democratization of creativity because society is less dependent on human skill. By lowering entry barriers and expanding the definition of art, AI technology makes art "more accessible to people around the world" (Metafy, 2023, para. 1). Metafy (2023) argues that by "democratizing creativity," AI art will make the world a more inclusive and diverse place by allowing "more people to participate in the creative process" (para. 1). However, artists like Karla Ortiz are concerned about AI's growing capabilities. (CBS Interactive, 2023). "Why would someone hire someone, when they can just get something from AI that is good enough. These are distressing developments" (2023, par. 6). Ortiz's point is that AI takes away the creative process itself which is "therapeutic, inspiring, and involves communication between one human and another" (2023, para. 8).

## **Research Rationale**

Because AI technology is reshaping the art world and market, professional artists must adapt to survive. Chen (2022) asserted that human artists must improve, or machines will replace them. Research

is needed to help artists remain relevant in a culture that prizes AI art. Because of the high demand for AI art, researchers have been interested in how well people distinguish AI art from human-made art. However, there is a gap in research about the interpretation of human-made and AI art. This study filled a void in research by looking at how people decode human-made and AI art. The insights gained from this study shed light on how AI attracts people and what artists need to do to successfully compete with AI art generators.

### **Purpose**

For artists to compete successfully with AI art, they need to understand what attracts people to AI art. Research that helps artists build a strong personal brand to compete successfully with AI is needed more than ever. The purpose of this study was to uncover insights that could help artists remain valuable in an AI driven society. The study's survey aimed to uncover the different ways people respond to AI art and human art, and to determine if patterns exist that could help artists thrive in a world that is driven by artificial intelligence.

## **Research Question**

AI technology has "changed the game in graphic design, interior design, architecture, fashion, and moviemaking" (CBS Interactive, 2023, para. 4). Because artists are losing their jobs because of AI, this study aimed to answer the question: "Are there measurable differences in how people interpret and distinguish human-made and AI art?" This answer to this question was uncovered through the responses of 53 survey participants.

## Literature Review

The evaluation of AI-generated art is an under-researched area due to the challenge of measuring personal opinions about the art form and the rapid advancement of AI technology. Research performed on AI software today is not useful in the near future because the technology is advancing at such a rapid pace. It is challenging for artists to stay up-to-date on all these developments

and compete with AI art. Previous research on AI art has focused on whether it is actual art or how well it can imitate human art (Lu, 2005; Hong, 2018; Ch'ng, 2019; Hong & Curran, 2019; Gangadharbatla, 2022; Nightingale & Farid, 2022). Lu (2005) found that art teachers had negative perceptions about AI that made them reluctant to use AI in the classroom. Hong (2018) discovered that bias against AI resulted in the unacceptance of AI art. Two decades ago, people considered AI art to be fake. More recent studies indicate that public opinion about AI art has improved (Gangadharbatla, 2022; Ninghtingale & Farid, 2022). The public has come a long way in accepting AI art. As AI art programs improve and grow in popularity, public approval of AI is likely to increase as well.

# **Reception Analysis Theory**

While studies have measured how well people accept and distinguish AI art from human art, there are no available studies that identify the audience reception codes of AI art and human art. Instead, reception analysis research has focused on literary texts or broadcast media (Hall, 1973; Hall, 1980; Diniasti & Haqqu, 2022). Hall (1973) criticized the traditional view of mass communication as a linear and static process consisting of a sender, message, and receiver. Hall argued that the process is more dynamic and that messages are usually distorted between the time they are sent and received (1973). His reception analysis theory said that interpretation could be classified into three codes (1973).

Reception analysis involves looking at how people decode a message. Hall (1973) explained that an audience decodes the meaning of the message in three ways: dominant, negotiated, and oppositional. A dominant response means the person accepts the obvious message intended by the author of a work. Hall refers to this as the "preferred reading" (1973, p. 9). The receiver accepts the "values and beliefs embedded in the message" (Dainton & Zelley, 2014, p. 209). A negotiated response means that the audience accepts the dominant message from a unique perspective. An oppositional response occurs when an entirely new meaning or interpretation of the message is received. Hall (1973) explained that the audience does not reject the messenger's values or beliefs, but instead recognizes bias in the message.

These individuals deconstruct the message and reconstruct it from a different point of view (2014, p. 209).

### The Role of Context

People respond differently to a creative work instead of passively accepting an artist's message. The audience's interpretation of the message depends on the context. Context is everything that surrounds the work of art, the artist, and the audience that can affect interpretation. Context can be time, culture, and demographic factors. Context comes to play when multiple people from different backgrounds receive totally different messages from the same piece of art. Contextual information is important because it deepens our understanding of artwork. For instance, we will place a higher value on a signed photograph of a famous person than a casual photo of a pet. Background and experience influence how an audience receives art.

Hall (1973) explained that it is the relationship between the message and the reader that produces the response, not the message itself. A group of people who share the same cultural background may receive the message in a similar way. At the same time, people who do not share the messenger's heritage or background may not interpret the intended message.

### **Schema Theory**

While there is a void in research about the reception analysis of art, Hong (2018) applied schema theory to study AI and human art. Psychologist Frederic Bartlett (1932) introduced the idea that schemas influence perception. Schema theory says that people form mental schemas or units of information that guide perception (Anderson et al., 1977). For instance, a child learns that a horse has four legs, hair, and a tail. These details form schemas that help the child distinguish a horse from a cow. The act of comprehension is based on one's knowledge of the world. Since schemas are subjective, they contain stereotypes that are "part of an associated network of related opinion nodes that are linked to memory" (Dixon, 2006, p. 163). Hall (2018) applied schema theory in his AI art study and found that negative

schemas about AI cause people to prefer human art. He also found that a new awareness of an art's origin can change a person's opinion about art. 2018) He argued there was a "knowledge of attribution" effect on art perception (2018).

### **Knowledge of Attribution**

Attribution is giving authorship to a particular work of art. When the authorship of a work becomes known, the audience may respond favorably or unfavorably toward the art based on what they think or feel toward the artist. To see if knowledge of attribution had an impact on perception, Hong (2018) presented the same human-made artwork to 26 participants, who were randomly assigned to two groups. The first group was told the image was AI generated, while the second group was told that the image was made by a human. Because most participants agreed that the image was art except two people who believed it was AI, Hong suggested that the preference for human-made art biased the two members against the art (2018). While bias against AI art could have caused a negative view of the work, other factors could have played a role too. According to Hong (2018), "further studies focusing on how different contexts of similar messages influence schema processing will provide insight" (2018, Section 6.3). This study aimed to uncover new insights about how schemas influence perception.

### **Summary**

Reception analysis studies have focused on literary texts and broadcast messages instead of art. As a medium with a message, art can be evaluated on how well it communicates that message. This research study performed a reception analysis to see how different groups decoded and distinguished AI art from human art. Responses were studied to see if context, schemas, and knowledge of attribution affected audience reception. When artists are aware of these influences, they can create art that appeals to people. This is the only known study that applied reception analysis theory and schema theory to look at how context, schemas, and knowledge of attribution affect perception of AI art and human art.

#### Method

This was a qualitative research project. In-person surveys recorded participant feedback about AI and human art. The researcher recruited participants by approaching them in person on the Spring Hill College campus and asking them to take part in the study. Snacks and soda were offered to recruit participants. Perceptions about the decoding of art were recorded on a pen and paper survey. Each survey had two sections (see Appendix A). Section one asked participants to interpret and identify two images of art. Participants were unaware at the beginning of the survey that one of the images was generated by artificial intelligence. After participants completed section one, the researcher revealed attribution. Participants were then instructed to complete section two. An informal interview style was used to increase dialogue (Deacon et. al, 2021, p. 173).

A painting by artist Kelly Carroll on Etsy was selected for the human-made image. Carroll named her drawing, "Leaping freedom heart of fire." This title was entered into Dall-E2 to generate an AI image. Half of the surveys presented the AI image first. The other half presented the human-made image first. This was done in case participants told others about the images or selected "image one" for best art because of its similarity to "number one."

#### **Resources and Solutions**

Microsoft Word created the survey, permission form, and follow-up forms. Excel developed the timeline for the study. IBM SPSS Statistics 29 was used for data entry and analysis. A journal was used to record important tasks and setbacks associated with the study. The AI art was generated by Dall-E-2 with a text-to-image command. The text that generated the AI art was "Leaping freedom heart of fire." All responses and feedback were recorded on a pen and paper survey.

### **Setbacks**

A major challenge for this study was obtaining participants with four or more years of communication arts education who did not know about the study. Another setback was struggling

to understand the SPSS program and complete a thematic analysis. YouTube tutorials helped with the data entry. However, IBM SPSS has so many tests that it is confusing for a beginner. Tutorials involving software for thematic analysis were not helpful. Different software programs were tried that involved highlighting and coding the text. This took too much time, so the researcher used a pen-and- paper template on Canvas instead. The researcher's unease about going up to people and asking them to participate was also a problem. Soliciting participants to get a demographic composition that looks like the student makeup at Spring Hill College was difficult too. During the last week of recruitment, it became apparent that the sample needed more white male participants. This required the researcher to focus on just one demographic group at the end. Another obstacle was having difficulty reserving a meeting room for focus groups through Spring Hill College's Dude Solutions. The online system kept placing obstacles in the way, so the researcher decided to just approach participants one-on-one for involvement. The final challenge involved the survey. Question 6 was revised during the first week of the study after participants told the researcher that they misread it. As a result, the researcher made sure that each participant answered Question 6 as intended during the interview.

# **Participants**

Purposeful sampling was used to study the question, "Are there differences in how groups decode and distinguish AI art and human art?" According to Deacon et. al (2021), purposeful sampling "stresses the intentions of those who apply the procedures" (p. 31). Purposeful sampling occurs when the researcher identifies a population segment that can provide the relevant information. Spring Hill College staff who majored in communication arts, art communication students, and students who have not studied communication arts were the purposeful sample for this study. These three main groups were chosen to see if educational differences affected how participants coded and distinguished the art. Although efforts were made to recruit a sample that reflected the gender and racial composition of Spring Hill College's student body, there was some difference due to the availability of participants. A studio arts classroom and student meeting areas at Spring Hill College were the interview locations.

A total of 53 students and staff from Spring Hill College were surveyed between the ages of 17 and 39 (Table 1). The frequency of each participant by age showed that most of the participants were aged 20 and 21.

**Table 1**AGE OF PARTICIPANTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17	1	1.9	1.9	1.9
	18	6	11.3	11.3	13.2
	19	7	13.2	13.2	26.4
	20	16	30.2	30.2	56.6
	21	14	26.4	26.4	83.0
	22	7	13.2	13.2	96.2
	23	1	1.9	1.9	98.1
	39	1	1.9	1.9	100.0
	Total	53	100.0	100.0	

The gender composition for the sample was 43% male, 55% female, and 2% Binary (Table 2).

**Table 2**GENDER OF PARTICIPANTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	23	43.4	43.4	43.4
	Female	29	54.7	54.7	98.1
	Binary	1	1.9	1.9	100.0
	Total	53	100.0	100.0	

The sample's racial composition was 60% Caucasian, 28% African American, 4% Asian, 2% Latin American, 2% American Indian, and 2% Biracial (Table 3).

**Table 3**RACE OF PARTICIPANTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Caucasian	32	60.4	60.4	60.4
	African American	15	28.3	28.3	88.7
	Asian	2	3.8	3.8	92.5
	Hispanic	1	1.9	1.9	94.3
	Native American	1	1.9	1.9	96.2
	Latin	1	1.9	1.9	98.1
	Biracial	1	1.9	1.9	100.0
	Total	53	100.0	100.0	

A total of 12 participants studied visual and communication arts, and 41 participants majored in different fields. 15 majors were represented by the sample (Table 4). The frequency of study by major showed that the greatest number of participants were studying Communication Arts. The reason the researcher recruited a greater number of Communication Arts majors was to compare their responses as a group to those who did not have communication arts training.

**Table 4**AREAS OF STUDY BY MAJOR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Business	5	9.4	9.4	9.4
	Nursing	4	7.5	7.5	17.0
	English	4	7.5	7.5	24.5
	Psychology	4	7.5	7.5	32.1
	Communication Arts	12	22.6	22.6	54.7
	Accounting	2	3.8	3.8	58.5
	Health Science	2	3.8	3.8	62.3
	Sports Management	5	9.4	9.4	71.7
	Biology	3	5.7	5.7	77.4
	International Business	1	1.9	1.9	79.2
	Marketing	3	5.7	5.7	84.9
	Supply Chain Management	2	3.8	3.8	88.7
	Computer Science	1	1.9	1.9	90.6
	Pre Med	1	1.9	1.9	92.5
	Pre Health	3	5.7	5.7	98.1
	Undecided	1	1.9	1.9	100.0
	Total	53	100.0	100.0	

The years of education in visual and communication arts for the sample ranged from none to over four years (Table 5). Most of the participants had no or less than a year of communication arts training.

Table 5

YEARS OF COMMUNCATION/VISUAL ARTS TRAINING

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	21	39.6	39.6	39.6
	Less than a year	11	20.8	20.8	60.4
	1 year	5	9.4	9.4	69.8
	2 years	5	9.4	9.4	79.2
	3 years	5	9.4	9.4	88.7
	4+ years	6	11.3	11.3	100.0
	Total	53	100.0	100.0	

# **Confidentiality**

Participants were encouraged to keep confidential all communication. Surveys were numbered so that responses could not be identified. All data was stored in a locked filing cabinet approved by the Institutional Review Board (IRB). Only the researcher and secondary advisor had access to the data. All confidential material was destroyed at the conclusion of the research project. Every participant signed an informed consent agreement (see Appendix B). Only the researcher obtained informed consent. All participants were given a contact form for follow-up questions or to obtain the results (see Appendix C).

## **Data Analysis**

The data from the completed surveys was entered into IBM's SPSS Statistics 29 to see if associations existed between the independent and dependent variables. (See Appendix D). The

## Context

Table 6

independent variables were age, race, gender, and communication arts education. These were also the context variables of the study. The dependent variables were coding and distinguishing the art. All variables were categorical or nominal. A cross-tabulation analysis was performed in SPSS with a nonparametric test called Pearson's Chi-square test for independence. This was the choice of data analysis because the Pearson chi square test determines if there is a significant association between categorical variables. The null hypothesis of the study was that context would not have any association with the coding or distinguishing of art. The test hypothesis was that context would have an association with the coding and identification of art, consistent with Stuart Hall's reception theory.

Pearson's Chi-square testing showed no significant associations between age, race, and gender and the ability to distinguish the two art images, p > .05. (Table 6, Table 7, Table 8).

Association Between Age and Distinguishing AI from Human Art

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.741ª	2	.419
Likelihood Ratio	2.126	2	.345
Linear-by-Linear Association	.103	1	.749
N of Valid Cases	53		

Context

 Table 7

 Association Between Race and Distinguishing AI from Human Art

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	4.035ª	6	.672
Likelihood Ratio	5.567	6	.473
Linear-by-Linear Association	.113	1	.736
N of Valid Cases	53		

 Table 8

 Association Between Gender and Distinguishing AI from Human Art

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	1.741 <sup>a</sup>	2	.419
Likelihood Ratio	2.126	2	.345
Linear-by-Linear Association	.103	1	.749
N of Valid Cases	53		

# **Context**

A crosstabulation of years of education in communication arts and distinguishing AI from human art showed that those with two years of communication arts training were the best at identifying the art (Table 9). All six participants with four or more years of education in communication or visual arts could not distinguish AI from human art.

Table 9

Years of Communication/Arts Training \* Distinguishing AI from Human Art Crosstabulation

Count

			DISTINGUISHED AI ART FROM HUMAN MADE ART		
		Could Not Distinguish	Correctly Distinguished	Total	
YEARS OF	None	11	10	21	
COMMUNCATION/VISUAL ARTS TRAINING	Less than a year	4	7	11	
	1 year	2	3	5	
	2 years	0	5	5	
	3 years	2	3	5	
	4+ years	6	0	6	
Total		25	28	53	

Communication arts education was associated with identifying the art, X2 (5, N=53) = .033, p < .05 (Table 10). Those with the most communication arts training did not distinguish the art better than those with less education. 60% of the participants with two years or less in communication arts education correctly distinguished the two images, compared to 27% of those with three or more years of education. One of the participants with more than four years of communication arts education said, "A human artist drew image two because it looks more cohesive and not pieced together." The same participant said after the reveal, "I still think that the AI image is the stronger one."

Table 10

Communication/Visual Arts Education Association With Distinguishing AI from Human Art

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	12.135 <sup>a</sup>	5	.033
Likelihood Ratio	16.358	5	.006
Linear-by-Linear Association	.698	1	.403
N of Valid Cases	53		

a. 8 cells (66.7%) have expected count less than 5. The minimum expected count is 2.36.

# **Reception Analysis**

A strong association was found between the best image for "Leaping Freedom Heart of Fire" and the dominant reception code for AI and Human art, X2(2, N=53) = <.001, p < .05 (Table 11). This result was expected because the dominant code is usually given to the best image choice.

Table 11

Best Art Associated with Dominant Code for AI and Human Art

	Value	df	Asymptotic Significance (2- sided)
Pearson Chi-Square	26.651 <sup>a</sup>	2	<.001
Likelihood Ratio	30.768	2	<.001
Linear-by-Linear Association	23.118	1	<.001
N of Valid Cases	53		

Only 16 of 53 participants changed their opinion about their best art choice following the reveal.

Knowledge of attribution did not change opinion about the best art choice.

## **Schemas:**

A thematic analysis revealed eight schemas that affected the choice of AI and human art (Table 12). These schemas were symbolic preference, literal preference, precise structure preference, imprecise structure preference, no boundaries preference, woman-focused, heart-focused, and technique-focused. The score sheet showed a preference pattern for the best art selections. (see Appendix E).

Table 12

Preference Schemas for AI/Human Art	"Best Art"	"Best Art"
Theme Names/ Abbreviation	Human	AI
Symbolic Preference (SP)	19	5
Literal Preference (LP)	5	5
Precise Structure Preference (PS)	0	10
Imprecise Structure Preference (IS)	4	0
No Boundaries Preference (NB)	10	1
Woman Focused (WF)	17	2
Heart Focused (HF)	5	17
Technique Focused (TF)	3	12

Participants who selected the human art contained more woman-focused, symbolic preference, imprecise structure preference, no boundary preference schemas in their responses. Those who selected the AI image had more technique-focused, heart-focused, literal preference, and precise structure preference schemas in their responses. These results supported schema theory.

Only 17% of participants in this study had a favorable opinion about AI's influence on artists and art culture.

OPINION ABOOUT ARTIFICIAL INTELLIGENCE ART					
	_	_	Valid	Cumulative	
	Frequency	Percent	Percent	Percent	
Valid	Favorable toward AI	9	17.0	17.0	17.0
	Unfavorable toward AI	26	49.1	49.1	66.0
	Neutral toward AI	18	34.0	34.0	100.0
	Total	53	100.0	100.0	

#### Timeline

All tasks were completed according to a planned schedule (see Appendix F). The original human-made image was selected on January 27. The AI generated image was completed on February 3. The survey, forms, and first meeting with secondary advisor were finished on February 10. The IRB application was submitted on February 13. The project was approved on February 24. An average of ten participants per week were surveyed between weeks seven and eleven. Data entry was completed on April 4. The data analysis was finished by April 7. The final paper was completed on April 13. Helpful feedback was obtained from the secondary advisors on March 3 about recruitment and March 15 about sampling. The presentation of the project was completed by April 25.

## **Conclusion**

Now that AI art closely resembles human art, artists must compete with AI generating technology. Artists must adapt to a world that is becoming more AI automated to survive. Previous research has measured acceptance of AI art and how well AI art imitates human art. This study aimed to learn more about how different people code and distinguish AI from human art. The impact of context, schemas, and knowledge of attribution were tested. Education in communication arts was associated with the ability to distinguish AI from human art. However, participants with more communication arts education were not better at distinguishing the art. Instead, preference schemas affected art choice. Those who preferred AI art were technique and literal focused. Those preferring human art were focused on symbolism and imprecision. The coding of the art was associated with the best art choice. Participants selected dominant codes for the art they liked best. Knowledge of attribution did not change opinion.

### Limitations

The study was limited to just students and staff at Spring Hill College, so the results do not apply to the general population. The study could be repeated with participants who attend different colleges to gain new insight. Focus groups could be hosted to learn more about how AI is impacting artists and culture, as

well as how culture affects the interpretation of art.

The researcher was inexperienced in SPSS data analysis, so the results from the SPSS program may be skewed or incorrect due to researcher error. Because this was a qualitative study with nominal data only, the results may not be reliable. The occurrence of inaccurate or untruthful responses are possibilities that can make qualitative research invalid.

#### **Evaluation**

Participants were asked to critically evaluate this study. A common critique was less open-ended questions. A focus group where everyone could "tear apart" the study would have been helpful.

# **Implications**

This study showed that while people understand the negative impact of AI technology on human artists and art culture, they still prefer AI art even after learning it is AI. As one graduate of communication arts explained, "I hate what it is doing to creativity and artists, but I love the art!" So professional artists may need to look at AI from a different perspective. Instead of looking at AI as a threat, artists may consider using AI as a tool for productivity or creativity. Artists receive inspiration from other human artists. AI art can be a source of inspiration too.

This study reinforces what artists already know. They need to produce art that matches their audience's preferences. Consumers who are more precise and technique-focused are attracted to AI art. Clients who desire art that is symbolic and person-focused are drawn to human-made art. Human artists are imperfect, like the art they make. People relate to imperfection. As one participant said, "AI's putting art in a box where everything is perfect, but art is not supposed to be perfect. It's supposed to be expressive." Art is a visual medium with a message.

### Reflection

I thought doing a research study would be less stressful and easier than a hands-on media project. I was wrong. Going up to people I hardly know and asking them to complete a survey was way out of my comfort zone. I thought of calling it quits several times, but I learned that I don't have to be intimated by people. For the most part, I received a lot of encouragement from those participating. Several people said they loved taking part in the study. I was surprised by how many did not need a soda or snack to participate. I am most grateful for my professors, classmates, and advisors for cheering me toward the finish line. Thank you all! Now, if I can just avoid a panic attack during my final presentation.

The results of this study were encouraging. Knowing my audience allows me to connect personally with them and vice versa. That is my "big" take-away from this study.

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# **APPENDICES**

### APPENDIX A

<b>Art Communication Survey</b>

**Important Instructions**: To make sure that your responses remain valid, please answer each question in order. Please do not skip ahead and read all questions in advance before answering them. Please answer all questions if you wish for your responses to be considered in the study. Otherwise, your survey will be discarded. Please do not use any electronic devices during the completion of this survey. Once you have answered a question, please do not change your answer later. After completing the survey, please do not share its content with anyone who may be asked to take the survey in the future. Thank you!

1. Age: \_\_\_\_\_ Race: \_\_\_\_\_ Gender: \_\_\_\_\_

Multiple Choice: (Circle One)

- 2. Please choose from below (A-F) the number of years you have studied art or communication?
  - A. None B. Less than a year C. 1 year D. 2 years E. 3 years E. 4 or more years
- 3. Which of the two images is the BEST portrayal of "Leaping Freedom Heart of Fire?"





CHOOSE:

Image 1

OR

Image 2

Please Explain: (What details about the image makes it the **BEST** portrayal of Leaping Freedom Heart of Fire?)

4. For image 1, please select one of the choices below and explain.

- a. I believe that this artist totally nailed it when creating a "Leaping Freedom Heart of Fire."
- b. I see a "Leaping Freedom Heart of Fire," in this image, but another message stands out to me.
- c. I don't see a "Leaping Freedom Heart of Fire" in this image at all. I see a totally different message.

Please explain:

Participant No. \_\_\_\_\_





Image 1 Image 2

- 5. For image 2, please select one of the choices below and explain.
- a. I believe that this artist totally nailed it when creating a "Leaping Freedom Heart of Fire."
- b. I see a "Leaping Freedom Heart of Fire," in this image, but another message stands out to me.
- c. I don't see a "Leaping Freedom Heart of Fire" in this image at all. I see a totally different message.

Please explain:

6. One image was generated by artificial intelligence. The other was created totally by a person. **Which image is** <u>human made?</u> (Circle 1 or 2)





Choose:

Image 1

OR

Image 2

Please Explain:\_\_\_\_\_

Partici	pant	No.	

# Please look up to show researcher you have completed question 6. Thanks.

# -----Reveal of art origin by researcher-----

# **Audio Recorded Interview**

8. How do you think that AI art is affecting human artists, the art world, and society in general	ıl?
9. Please evaluate this study and survey. I need your honest feedback. What could be done	
better or differently? Thank you!	
better or differently? Thank you!	

## APPENDIX B

# **Participation Consent for Art/Communication Research**

You will be asked to evaluate two images. The survey will take about 15 minutes to answer nine questions. Your participation is confidential. Your name will not be requested during the study. Your responses will be identified only by your participant number. You are under no obligation to take part in this study. If you do choose to participate, you may withdraw at any time, without penalty, and whatever data has been collected to that point will be destroyed. As part of the study, you will be asked to reveal your race, age, and level of education in the arts or communication. This information is strictly for the purpose of the study only. Access to the raw data will be limited, and only the combined data will be made public. At the end of the survey, the researcher will ask you three questions that will be audio recorded. This audio recording will be transcribed and deleted afterwards.

If you consent to participate in this study, plea	ase sign and date below. Thank you.
Signature:	Date:

# APPENDIX C

Thank you for completing a survey for Spring Hill College's Senior Seminar COURSE CMM 495. If you have questions, comments or concerns, or if you'd like a copy of the results, please contact Sharon Nilsen at Sharon.b.nilsen@email.shc.edu. This project is supervised by Professor Stuart Babington at sbabington@shc.edu.

# APPENDIX D

# SPSS Data Set for Al vs Human Survey.sav

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4,0,,000		BEST_IMAGE_CHOICE_FOR_ME SSAGE	HUMAN_IMA GE_CODE	AI_IMAGE_C ODE	RECTLY_FIR ST_TIME	NGED_AFTER REVEAL	OPINION_AL OUT_AIART_ CULTURA	
1	1	HUMAN MADE ART	DOMINANT	NEGOTIA	Could Not	OPINION C	Neutral to	H-AJ
	2	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Neutral to	Al-H
	3	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Correctly	OPINION ST	Unfavorab	Al-Al
	4	ARTIFICIAL INTELLIGENCE ART	OPPOSITI	DOMINANT	Could Not	OPINION C	Unfavorab	Al-H
1	5	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	н-н
1	6	ARTIFICIAL INTELLIGENCE ART	DOMINANT	DOMINANT	Correctly	OPINION ST	Favorable	Al-Al
	7	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION C	Favorable	H-AI
;	8	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Correctly	OPINION ST	Unfavorab	Al-Al
	9	ARTIFICIAL INTELLIGENCE ART	DOMINANT	DOMINANT	Correctly	OPINION ST	Favorable	Al-Al
1	0	ARTIFICIAL INTELLIGENCE ART	OPPOSITI	NEGOTIA	Correctly	OPINION ST	Favorable	AI-AI
1	1	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Neutral to	AI-H
1	2	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Neutral to	Al-H
1	.3	HUMAN MADE ART	DOMINANT	NEGOTIA	Could Not	OPINION ST	Unfavorab	H-AI
1	4	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Unfavorab	AI-H
1	.5	HUMAN MADE ART	DOMINANT	NEGOTIA	Could Not	OPINION C	Neutral to	H-AI
1	6	HUMAN MADE ART	DOMINANT	DOMINANT	Correctly	OPINION ST	Unfavorab	н-н
1	7	ARTIFICIAL INTELLIGENCE ART	OPPOSITI	DOMINANT	Correctly	OPINION ST	Unfavorab	Al-Al
1	.8	HUMAN MADE ART	DOMINANT	NEGOTIA	Could Not	OPINION ST	Favorable	H-AI
1	9	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Unfavorab	Al-H
2	0	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Favorable	Al-H
2	1	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	н-н
2	22	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	н-н
2	3	HUMAN MADE ART	DOMINANT	NEGOTIA	Could Not	OPINION C	Neutral to	H-AI
2	4	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Correctly	OPINION C	Unfavorab	Al-Al
2	25	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	н-н
2	26	HUMAN MADE ART	DOMINANT	NEGOTIA	Could Not	OPINION ST	Neutral to	H-AI
2	27	HUMAN MADE ART	DOMINANT	OPPOSITI	Correctly	OPINION ST	Unfavorab	н-н
2	8	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Neutral to	AI-H
2	29	HUMAN MADE ART	DOMINANT	OPPOSITI	Could Not	OPINION C	Unfavorab	H-Al
3	0	ARTIFICIAL INTELLIGENCE ART	OPPOSITI	NEGOTIA	Could Not	OPINION C	Unfavorab	AI-H
3	31	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	н-н
3	32	HUMAN MADE ART	DOMINANT	OPPOSITI	Correctly	OPINION ST	Neutral to	н-н
	33	HUMAN MADE ART	DOMINANT	NEGOTIA	Could Not	OPINION C	Neutral to	H-AJ
1	34	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	Н-Н
1	35	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	н-н
	36	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	н-н
1	37	ARTIFICIAL INTELLIGENCE ART	DOMINANT	DOMINANT	Could Not	OPINION C	Neutral to	AI-H
(1)	38	ARTIFICIAL INTELLIGENCE ART	DOMINANT	DOMINANT	Could Not	OPINION ST	Neutral to	AI-H

# APPENDIX D

### SPSS Data Set for AI vs Human Survey.sav

	BEST_IMAGE_CHOICE_FOR_ME SSAGE	HUMAN_IMA	AI_IMAGE_C ODE		OPINION_CHA NGED_AFTER REVEAL		e_Attribu
39	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Neutral to	н-н
40	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Neutral to	H-H
41	HUMAN MADE ART	DOMINANT	OPPOSITI	Correctly	OPINION ST	Favorable	н-н
42	HUMAN MADE ART	DOMINANT	DOMINANT	Could Not	OPINION C	Unfavorab	H-AJ
43	HUMAN MADE ART	DOMINANT	DOMINANT	Correctly	OPINION ST	Unfavorab	н-н
44	HUMAN MADE ART	NEGOTIA	OPPOSITI	Could Not	OPINION C	Unfavorab	H-AI
45	ARTIFICIAL INTELLIGENCE ART	DOMINANT	DOMINANT	Could Not	OPINION C	Unfavorab	Al-H
46	HUMAN MADE ART	DOMINANT	DOMINANT	Could Not	OPINION C	Neutral to	H-Al
47	HUMAN MADE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Unfavorab	н-н
48	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Correctly	OPINION ST	Neutral to	AI-AI
49	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Favorable	Al-H
50	ARTIFICIAL INTELLIGENCE ART	NEGOTIA	DOMINANT	Could Not	OPINION ST	Neutral to	Al-H
51	ARTIFICIAL INTELLIGENCE ART	DOMINANT	DOMINANT	Correctly	OPINION C	Unfavorab	AJ-AI
52	ARTIFICIAL INTELLIGENCE ART	DOMINANT	NEGOTIA	Correctly	OPINION ST	Favorable	Al-Al
53	HUMAN MADE ART	DOMINANT	OPPOSITI	Correctly	OPINION C	Neutral to	н-н

# **APPENDIX E**

Best Image Preferences For "Leaping Freedom Heart of Fire"

THEME NAMES/ ABBREVIATIONS	KEY WORDS
Symbolic Preference (SP)	illusion, implied, portraying, represents, seems, feels, metaphor or simile des
Literal Preference (LP)	Looks like, literal, can see
Precise Structure Preference (PS)	Defined, actual, perfect, more clearly, clear
Imprecise Structure Preference (IS)	Not perfect, not defined, swirling linesk
No Boundaries Preference (NB)	Not confined, open, no barrier, engulfed, not contained,
Woman Focused (WF)	Woman, girl, she, silhouette, figure, person, character, subject
Heart Focused (HF)	The heart
Technique Focused (TF)	Words that describe technique- the use of, quality, (complimenting the artist), describe the work as visually pleasing

# SCORESHEET:

Which image is the best portrayal of the message, "Leaping Freedom Heart of Fire?"

KEY- H - Human Art received Dominant Code Al- Artificial Intelligence Art received Dominant Code de

Participant Responses	SP	LP	PS	IS	NB	WF	HF	TF
R1 H- Woman is leaping free, she						X		
looks more free and passionate								
R2 AI- Looks like leaping, reaching		Х						
R3-AI- The heart is more defined			Х				Х	
R4-AI-The use of dark colors								Х
R5-H-The girl is not confined to a					Х	Х		
heart								
R6-AI- Heart is better quality							Х	X
R7-H- Isn't defined. Gives a	Х				X			
stronger illusion of a heart. not a								
literal word expression, implied.								
R8-AI- There is an actual heart			X				X	
R9-AI-The heart in the background							X	X
displays the message well								
R10-AI- The heart is more at the							X	X
center, the focal point & prettier								
R11-AI-When the title says "heart"			Х				Х	
I immediately look for shape.								
R12-AI- The literal heart of fire		Х					Х	
behind the dancer								
R13-H-It fills the entire image.					Х	Х		
Woman is leaping and fire is								
encompassing her.								

ALART VERSUS HUMAN AR		_						
R14-AI-I can see the heart more								
clearly. Skirt is more artistic use of							X	X
dark flames. The hair is less			X					
distracting and shows arms more								
clearly.								
R15-H-She is leaping instead of						Х		
reaching								
R16-H-I think it is more open so								
does a better job at portraying the	X				X			
freedom piece.								
R17-AI-Other is too bright. For this								
message, imagine something								X
darker.								
R18-H-She has a free-like body	Х					Х		
expression in the fire.								
R19-AI-The fact that the heart is			Х				Х	
clear to see unlike the other one								
R20-AI-The fire is a more perfect			Х				Х	Х
heart figure. All the components								
come together.								
R21-H-She is dancing in the fire	Х					Х		
and love still forms around her.								
R22-H-The fire has the curvature				Х		Х		
of the heart and is not precise. The								
figure is actually leaping.								
R23-H- The girl looks as if she is	Х					Х		
leaping into freedom.								
R24-AI- The more defined heart			Х				Х	
shape in the image.								
R25-H- The heart is not perfect like	Х			X			X	
a wild fire.								
R26-H-The skirt looks like a	Х	X						
monarch butterfly symbolizing								
freedom.								
R27-H-Just gives a feeling of	Х				X		X	
freedom because there is no								
barrier around the heart								
R28-AI- She seems like she is flying	X					X		
because the heart is giving her								
freedom.		1						
R29-H-The girl is leaping and the	Х					X		
bright fire represents freedom to								
me								
R30-AI- There is more background			X				X	X
and boundary of the heart. More								
like embracing instead of leaping								
out	ļ				1			
R31-H-The heart takes up the	Х				X		X	
whole page and is not contained,								
which seems more free					1			
R32-H-The person is more free	Х				X	X		
because she is not confined inside								
the heart.		1						

AI ART VERSUS HUMAN AR	1							1.,
R33-H-It portrays the message	X							X
more and seems more symbolic		1,,						
R34-H-It really looks like a leap of		X						
freedom								
R35-H-The fire and leaping	X							
symbolize the freedom								
R36-H-She is free in the heart	Х				X	X		
instead of trapped								
R37-AI-The background is a literal		X					X	X
heart of fire								
R38-AI-The details are more clear.		X	X					X
The dress looks like flames and the								
heart stands out more.								
R39-H-It looks more like a leap in		X					X	
the background making a heart								
R40-H-She was engulfed in the	X				X	X		
flames								
R41-H-It is a great leap. I don't		X						X
understand the other one.								
R42-H-She is literally leaping		X				X		
through a heart of fire								
R43-H-It shows freedom because	Х			X			X	
the heart is not as defined as the								
second image								
R44-H-The character is leaping and	Х					X		
it feels free								
R45-AI-The heart symbolizes	Х						X	
freedom								
R46-H-She is leaping						X		
R47-H-The lines swirling around	Х			Х		Х		Х
the subject forming a heart give an								
illusion that the person is jumping								
into it.								
R48-AI-You can see the heart more		Х	Х				Х	
clearly and the pose makes more								
sense								
R49-AI-I see a woman who is free	Х				Х	Х		
and not trapped or engulfed by								
the flames								
R50-AI-The heart protects the	Х						Х	
woman from the outside world								
R51-AI-The picture is beautiful,	Х						Х	Х
shows more of a heart, and								
portrays more leaping								
R52-AI-The colors are more								Х
intense								
R53-H-She's lost in the heart	Х				Х	Х		
instead of contained in it								

## AI ART VERSUS HUMAN ART

## APPENDIX F



