The Art of Machine Learning

Examining consumers' understandings of AI generated art

By

H.E.R.O. (Ray) Huang – S1043041

Radboud University Nijmegen

Master Thesis Innovation and Entrepreneurship

Supervisor: dr. P.J. (Paolo) Franco

Second Examiner: dr. K. (Karim) Sidaoui

Preface

The Art of Machine Learning is my final project I've done to complete my master's specialization Innovation and Entrepreneurship at Radboud University. It has been a long journey since I first started at Radboud University, but I'm finally at the end where I have to put all my knowledge together for this thesis.

Writing this thesis, however, wasn't as easy as just applying knowledge gained from my courses. I firstly want to thank dr. Franco for guiding me through the whole thesis process and providing me with constructive criticism to encourage continuous improvements on my thesis. Secondly, I want to thank dr. Sidaoui for taking his time as a second examiner and also giving useful feedback on improvements for my thesis.

I also want to thank my fellow researchers for providing me with additional data. This helped me a lot in gaining enough participants for my study. They've also helped me with providing feedback and were able to answer any quick questions I had. Lastly, I want to thank my friends and family for volunteering as participants. This has helped me gain valuable insights and complete this thesis. It means a lot to me that they were willing to help and see me succeed. This thesis is the final product of the continued support and my own efforts.

Thanks for reading!

Ray Huang

Abstract

AI image generators are a technology that recently became more available to the public, this increased its popularity and usage. However, controversy arose around the use of AI image generators for creating art. This has affected the adoption of the technology. While a group of people do adopt the technology, there is also a group that doesn't. This can happen because of various reasons.

Traditional adoption theories look at rational decision making to decide whether to adopt a new technology or not. However, this is not always the case, as can be seen in this study. My thesis adds to existing adoption theories by putting a bigger emphasis on social and cultural factors. My thesis examined what consumers' understandings of AI image generators are, how these get shaped, and how the understandings affect adoption.

Data has been collected from a total of 17 participants through semi-structured interviews and 10 weeks of netnographic fieldwork. The results showed that understandings can be divided into 3 categories: authenticity, time and effort, and quality. These understandings get shaped through heterogenous interactions between humans and non-humans. People will choose different types of adoptions through these understandings.

Keywords: Adoption, AI image generators, Consumer Culture Theory (CCT), Actor-Network Theory (ANT), Translation, AI art

Table of Contents

1 Introduction

Art has existed for many centuries. It started as traditional art where art is created using physical materials like paint, pencils, paper and clay. In the modern era when computers became more widely available, people started making digital art. Digital art is made by using digital tools like tablets, computers and software applications. These types of art were all made by humans. But nowadays, it is also possible to make art using AI. With the adoption of AI, it is possible to create traditional and digital art minimizing the involvement of humans and increasing the involvement of non-humans. This technology is continuously in development to the point where it would be difficult to distinguish human-made art from AI art.

Although this technology has been discussed by academics in the last decade (Goodfellow et al., 2014), the public has only recently become aware of its existence and potential applications. This is because AI image generators became more available to the public through platforms like Dall-e and OpenAI. Images generated by AI were getting shared everywhere (Yamada, 2022; Knight, 2023), which made the technology even more popular. Creations get shared through social media platforms like Twitter and Instagram. The popularity grew even more when news outlets and Youtube videos were mentioning the technology.

Despite the popularity, the adoption of AI image generators has been quite controversial. The increasing involvement of non-humans shapes understandings that are different from ‘’normal’’ art. There are for example technical aspects like the number of mistakes AI makes (Weber at al., 2023) and social aspects like the way it learns from human sources (Vincent, 2023). This study focuses on the consumers’ understandings of

AI art and how they would adopt the technology either through directly using it or indirectly through artists and organizations using the technology.

1.1 AI image generators and its implications

AI is a study that uses concepts from many different fields. The fields that are included in the use of AI are philosophy, psychology, linguistics, engineering, mathematics and computer science among others (Russel and Norvig, 2010). The article by Russel and Norvig (2010) defines AI as a study of how to build or program computers to make them be able to do what other (non)human minds can do. A few examples of this are decision-making, language learning, perception, and creativity. AI can be used in multiple different areas ranging from voice assistants like Siri and Alexa to Boston Dynamic's autonomous robot dogs.

This study will focus on the application of AI in the creation of art. AI image generators are a relatively new technology. They can be defined as computer algorithms that can produce visual content with machine learning and Generative Adversarial Networks (Smith-Laing, 2018). The article by Smith-Laing argues that AI image generators can be used in different areas from art and design to virtual reality and gaming. However, the use of this technology raises important questions about truth, authenticity, and authorship. This technology uses machine learning algorithms with Generative Adversarial Networks (GAN) to create new images that are based on data and patterns the AI has gathered from existing images (Goodfellow, Pouget-Abadie, Mirza, Xu, Warde-Farley, Ozair and Bengio, 2014). The concept itself has been around for several decades, but the technology made significant advancements when deep learning and GAN were developed.

Machine learning is the concept of getting computers to learn and act like humans do where performance autonomously gets improved over time (Géron, 2019). According to Géron (2019), machine learning can be done with different approaches including supervised, unsupervised, and reinforcement learning. Most recent AI image generators with GAN use unsupervised learning where AI gets fed data that hasn't been labeled in a specific way (NVIDIA, n.d.). They learn through recognizing patterns and relationships in the datasets that they are fed. While this is the most popular approach, it is also possible to use supervised and reinforcement learning. Supervised learning is the practice of training machines with labeled data that have known input-output pairs. With this data AI can make predictions or classifications for new unknown data (Géron, 2019). Reinforcement learning is the practice of learning by trial and error. The AI gets rewards and punishments for the output they produce. These approaches are less common in AI image generators, but they can still be used.

GAN is an application of machine learning that can be used in AI imagery. How the GAN works, can best be explained by the Article of Goodfellow, et al. (2014). If we look at the AI image generators that use GAN, you can see that it uses two neural networks that work together in an iterative process. The first neural network is called the generator. The generator creates new images from random noise. The second network is called a discriminator. The discriminator makes an evaluation of the image generated by the first neural network. The second neural network evaluates whether the generated image is real or fake. The goal is to create an image that can't be recognized by the discriminator as real or fake. This process goes back and forth and will end when an image has been generated that the discriminator can't recognize anymore.

AI image generators are already being used in things like creating realistic images, videos, and virtual worlds (Lashinsky, 2018). AI image generators can reduce the costs of creating art. For art without using AI, it is necessary to contact artists and commission them for work. This process can take more time and money compared to using AI image generators. Not everyone is willing to adopt the technology, however. The use of AI-generated art for example comes with legal and ethical issues around intellectual property (Koene et al., 2019). But the willingness to adopt the technology seems more related to the human involvement through social and cultural factors.

1.2 Aim of the study and research question

This study focuses on consumers' understandings of AI art and how these understandings get shaped. The goal of this is to give a more elaborate explanation of why people have a certain understanding of technology in the context of AI image generation. This knowledge can be used to identify factors that influence the adoption of a new technology using AI by these consumers. The following research questions have been made to give more insight into consumers' understandings and the adoption of AI art:

''What are consumers' understandings of AI art?"

''How are consumers' understandings on AI art influenced by human and non-human objects?"

''How do consumers' understandings of AI art influence the adoption of the technology?"

1.3 Relevance

This study has theoretical and practical relevance as to why it is important to do research on this topic. The theoretical relevance comes from the fact that AI image generators are a relatively new technology. Research in this context is still lacking in terms of adoption

and CCT literature. There are plenty of adoption theories like Technology Acceptance Model (TAM) (Davis, 1989) and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Thong and Xu, 2012) but they haven't been applied in the context of AI image generators yet. It is possible that existing theories of adoptions might not be fully applicable to the context of AI image generators as there are controversies on the technology that don't follow existing adoption theories. Adoption theories lack the presence of social and cultural factors. While UTAUT adds social factors, it only goes as far as seeing how it affects the adoption of a certain technology. UTAUT doesn't look at how these social and cultural factors contribute to shaping the consumption itself (Arnould and Thompson, 2005).

In current adoption theories, not enough emphasis has been put on social and cultural factors. The use of Consumer Culture Theory (CCT) adds these more in-depth social and cultural perspectives to adoption theories. CCT can be seen as a family of different theoretical perspectives that study dynamic relationships between consumer actions, marketplace and cultural meanings (Arnould and Thompson, 2005). CCT looks at how meaning is given to the consumption of certain products and services. While CCT has multiple theoretical perspectives, most research is done in studying hedonic, aesthetic and ritualistic dimensions of consumption and possession practices (Arnould and Thompson, 2005), which don't really focus on the importance non-humans can have. Non-humans however, are also an important part of CCT (Franco, 2022). It is important to put equal emphasis on non-humans because non-humans also have a big role in shaping the consumption of products and services as stated by Entwistle and Slater (2014). This study will add the element of non-humans by using Actor-Network Theory (ANT) (Latour, 1992). ANT gives humans and non-humans equal opportunities to show their abilities to

shape a studied context and argues that non-humans should also feature in theories we create to explain phenomena like technology adoption.

The practical relevance comes from how this study can help artists and organizations in practice. The problem with using AI image generators currently, is that the usage of the technology is rather uncertain for the future. This is because the use of AI image generators can increase the productivity of an organization significantly, but there are some implications that must be taken into consideration. One of the biggest considerations are uncertainty around copyright policies (Quach, 2023; Novak, 2023) and reputational damage (Yup, 2023) that partly comes from people's understandings of AI art. With this study, artists and organizations have a better indication of what people's understandings of AI art are, how these get shaped and how this affects their adoption of AI image generators. This can help organizations and artists decide on whether to use AI image generators to create art for consumers. Reputational damage can be minimized and even be avoided if consumers' understandings of art made with AI are taken into consideration when adopting and implementing the technology. In the context of AI image generators, consumers' understandings of AI art have a big impact on their adoption of art made by AI. Artists and organizations can use this study to better take consumers into consideration when using AI for creating art.

1.4 Outline thesis

This thesis consists of 5 chapters that explain how consumers' understandings are shaped and how this influences their adoption of AI art. The theoretical chapter starts with an explanation of adoption theories and its extensions. While discussing adoption theories, it can be concluded that the social and cultural aspect of decision-making is lacking. The use of CCT research can help with adding the missing aspects in decision-making. This

concept will be explained further using Arnould and Thompson (2005). The theory chapter ends with an explanation of ANT and how it adds to CCT using Latour (1992) and other relevant articles, which is used as a theoretical lens to lead this study.

In the methodology chapter, the methods of conducting the study will be discussed. It starts with explaining the research approach that discusses the nature of the study. It is followed up by methods of data collection. Data collection is done through interviews (Arsel, 2017; Hoskins and White, 2011) and netnography (Kozinets, 2010). After that, the data analysis approach will be discussed using grounded theory of Glaser and Straus (1967). The chapter ends with a section for quality of research and research ethics.

The findings chapter will explain the findings from the collected data. The explanation will follow the 4 phases of the theoretical framework showed in the beginning of the chapter. The first phase explains human art. The second phase explains the network of actors and how these actors interact with each other. The third phase explains the different types of understandings consumers have and the fourth phase explains the different types of adoption.

Lastly, in the discussion chapter implications and the limitations will be discussed. The chapter starts with theoretical implications where the study's contribution to literature is explained. This is followed by the managerial implications where the contribution to practice is explained. In the end the limitations of the study will be discussed.

2 Theory

The theory chapter will cover Technology Acceptance model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) to argue what is missing from existing adoption theories. In the next part it is argued that Consumer Culture Theory (CCT) can be a great addition to existing research to expand upon adoption theories. CCT has multiple lenses to look at. This study will focus on the explanation of flat ontologies of consumption markets with Actor-Network Theory (ANT) in particular.

2.1 Technology Acceptance Model

TAM (Davis, 1989) is one of the frameworks of adoption theories. It tries to understand the behavior of a user towards a new technology. This model suggests that the perceived usefulness and perceived ease of use are key determinants of the acceptance of a new technology. Perceived usefulness is the degree of which a user believes that using the new technology will improve their current performance. The perceived ease of use refers to the degree of which a user believes that the new technology can be used effortlessly. The perceived usefulness and the ease of use have influence on the attitude towards using it. The attitude towards using the new technology in turn has an influence on the behavioral intention to use. The actual use of the new technology gets influenced by the behavioral intention to use.

TAM has been expanded with newer versions like TAM2 and TAM3. TAM2 (Venkatesh & Davis, 2000) adds subjective norms and image to the original TAM model. The subjective norms refer to the perceived social pressure for using a certain technology. Image refers to the perceived impact using a certain technology has on a user's self-image. TAM3 (Venkatesh, Morris, Davis & Davis, 2003) is an extension of the TAM2 that

address the factors trust and risk to the model. Trust is the user's perception of reliability and dependability of a using a certain technology. Risk is the user's perception of potential negative consequences that can occur when using the technology.

2.2 Unified Theory of Acceptance and Use of Technology

UTAUT is a theoretical model of Venkatesh et al. (2003) that integrates eight factors that have an influence on the user acceptance of IT. The factors in this model are performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit and self-efficacy. This model adds extra factors that TAM lacks. TAM focuses mainly on cognitive aspects while UTAUT incorporates other determinants like social and organizational factors that influence user acceptance. UTAUT adds a more elaborate set of factors that determine user acceptance and use of technology when compared to TAM.

This set of factors also take externalities into account. This is because UTAUT pays attention to relationships between determinants and user behavior (Venkatesh et al., 2003). According to UTAUT, moderating effects like age, gender and experience influence this relationship. TAM doesn't take this into account because it sees a linear and direct relationship between cognitive factors and user behavior.

Lastly, UTAUT also takes relative importance into account. The TAM of Davis (1989) assumes that Perceived usefulness and perceived ease of use have an equal impact on user behavior. UTAUT on the other hand assumes that the relative importance of each determinant changes depending on the technology and its context.

UTAUT has been extended in the article of Venkatesh et al. (2012). This article extends the traditional model with extra factors that includes additional constructs that are related to social influence, hedonic motivation and price value. It is argued that the

original UTAUT model still does not fully capture the complexity of consumer behavior because it is still too focused on functional factors (Venkatesh, Thong and Xu, 2012). The extended model of UTAUT is supposed to solve this problem.

2.3 Critique on adoption theories

What's notable, is that adoption theories like TAM and UTAUT are rather rational in nature. This is because the models are based on rational behavioral theories like Theory of Reasoned Action (Ajzen & Fishbein, 1980) and Theory of Planned Behavior (Ajzen, 1985) and are designed to explain cognitive processes that influence a user's decision to accept or reject a certain technology. A problem with this rational thinking is that there are other factors that influence a user's adoption that are more irrational. An example can be seen in the article of Lyytinen and Damsgaard (2001) where they critique the assumption that existing adoption theories assume choices are based on a set of rational factors. They found that irrational factors like loss aversion also played a role in technology adoption.

Another critique is that while social and cultural factors are incorporated in UTAUT, it has been done in a utilitarian way. The focus of UTAUT is still that rational decision making takes place and social and cultural factors are merely indirect external variables. Social and cultural factors can have a direct influence on shaping consumer behavior that is not explained by TAM and UTAUT. Leonardi (2013) for example highlighted the importance of the social aspect in adopting information technologies.

The article of Williams, Rana and Dwivedi (2015) addresses the current state of UTAUT including its limitations. The most reported limitation is that most applications of UTAUT primarily focuses on the individual level. A single subject is studied partly because of the relatively small importance of social and cultural factors. Williams, Rana

and Dwivedi (2015) suggest future research should focus on more subjects and the inclusion of more external variables. A bigger emphasis on social and cultural factors should help UTAUT focus on a more aggregate level.

Consumer Culture Theory (CCT) can be a well-suited addition to TAM and UTAUT. While UTAUT has acknowledged the fact that social and cultural factors have an influence on technology adoption (Venkatesh et al., 2003), it is not the focus. By adding social and cultural factors through CCT, limitations mentioned in Williams et al. (2015) can be addressed and considerations for irrational behavior can be added.

2.4 Consumer Culture Theory

CCT is a collection of theoretical perspectives that emerged in marketing and consumer research. CCT can be seen as multiple theoretical perspectives that look at consumer behavior in terms of a cultural system. In this cultural system, the consumption of a good or service is a symbolic practice that carries social meaning (Arnould & Thompson, 2005).

The main purpose of CCT is to examine how cultural and social factors can shape consumer behavior and how consumer behavior can influence cultural and social norms. According to CCT, consumption is used to express consumer's individual and collective identities and influence their relationship with other people (Arnould & Thompson, 2005). An example of this is the article of Huff et al. (2017) where American gun violence prevention groups try to change the controversial gun culture through consumer interest groups and collectives.

In CCT research, there are multiple different streams to work from. Franco (2022) explains three of these streams. The streams mentioned in the article are consumer identity work, consumers' social relations and market involvements and flat ontologies of consumption and markets. These streams all have a different way of looking at consumers

and the consumption of products and services. In short, consumer identity work looks at how consumers shape their identities using products or services. Consumers' social relations and market involvements look at how consumers interact with other consumers through consumption and markets (Franco, 2022). Lastly, flat ontologies of consumption and markets looks at how humans and non-humans can equally shape consumption and markets. For this research, flat ontologies of consumption and markets will be used so this will be further elaborated upon.

2.5 Flat ontologies of consumption and markets

This stream sees human and non-human objects being able to equally shape consumption and markets. In most CCT research, the role of objects in consumption contexts is often overlooked. This has been noted by Arnould and Thompson (2005). Traditionally, CCT focuses on social and cultural meanings that individuals attach to consumer practices while overlooking material and symbolic dimensions of the objects themselves. Researchers like Belk (2014) have addressed this critique by also incorporating material and symbolic dimensions of objects in their studies. This stream goes further into detail on how and why certain consumption and markets happen and what and who is involved. A certain object for example, might not be only used for its intended purpose. This can be further clarified by Epp and Price (2010) that gives an example of different ways a simple dining table can be used. A dining table is used to dine on, but it can also be used for other activities like working or simply serves as a gathering point for social interactions (Franco, 2022).

An equal focus on humans and non-humans can be seen as social and cultural. This can best be explained by the article of Entwistle and Slater (2014). The authors state that it is important to focus on human and non-humans because objects also play a

significant role in shaping consumption and markets. Non-human entities are not passive instruments, they actively participate in shaping social and cultural contexts (Entwistle and Slater, 2014). Considering humans and non-humans as equal can help with providing a more nuanced and holistic understanding of consumption. An example of this is that certain interactions don't happen in the first place when an object facilitating this doesn't exist. So human and non-humans are both social because without certain objects like social media platforms a lot of social interactions get lost. It is cultural because objects can have an influence on cultural meanings and practices.

In this stream, there are multiple lenses that can be used for research (Franco, 2022). I have chosen to use Actor-Network Theory (ANT) for studying consumers' understanding and the adoption of the technology as it gives detailed information on the components that shape understandings of AI art.

2.6 Actor-Network Theory

ANT is an approach that looks at how a social phenomenon is shaped through interactions in a network. One idea of ANT is that a context can be seen as a black box. In order to understand this context, it is important to unpack this black box into components (Schouten, 2014). Unpacking this black box into components happens in ANT through studying the actors and the relationships they have with one another. This theory emphasizes the role actors and their relationships with one another have on shaping a social phenomenon. Actors can be described as a human or nonhuman that can be perceived to ‘’modify, transform, perturb or create’’ other entities in a certain context (Latour, 1999: 122). The relationships actors can have with each other comes from the fact that in a certain context actors will need to interact with each other to make something happen.

The actors and their relationships with each other can be explained by the study of Schouten (2014). This article mentions the context of airport security. There are different components or actors that together form the context of airport security. Some actors mentioned in the article are the security guards, technologies like metal detectors they rely on and performance indicators. Schouten (2014) mentions the controversy that happened at Schiphol airport where people were trying to identify what the problem was with the security system. Some people said it was the outdated technology while other people said it was bad guarding. These are examples of how actors are identified in isolation from each other. But when also looking at their relationships, security guards had a lack of security awareness because they held onto Key Performance Indicators which made them use technology only in a certain way without paying attention to people's behavior. What can be understood from this is that one actor can influence how another actor interacts with other actors. In the example of Schouten (2014), KPIs made security guards only interact with passengers through technology like metal detectors. Adding, removing or changing actors like KPIs can make security guards rely less on metal detectors and more on social skills when interacting with passengers.

The way actors have a relationship with each other can also be seen in the article of Giesler (2012). This article used ANT to look at how brand images influence market creation processes. The article specifically looks at doppelgänger brand images. Doppelgänger brand images in this article refer to belittling stories and images about a brand usually from stakeholders with a negative perspective on this brand. Stakeholders here make an evil representation of a brand. The main point here is that actors need to work together in order to create new markets. But there will be actors that cause conflict within the process of market creation which in this article would be the actors creating

those doppelgänger brand images. Every positive perspective will have a negative perspective. It is up to the organization to neutralize the negative perspectives by working together and addressing the critiques of all actors. From the article of Giesler (2012), it can be concluded that the relationship between actors will affect how future actors will be added or removed and how these in turn will interact in its network with other actors. Actors in a network will change over time which makes it a dynamic process. Because of this dynamic process, social phenomena like brand images in this article will also change over time.

What can be taken from these two studies is that human and non-human actors interact with each other in a complex network to create shared meaning on a social phenomenon. This shared meaning is not something static and will also change when time goes on. It is important to mention that humans and non-humans have equal emphasis on shaping a social phenomenon. The emphasis on also considering non-humans is explained in Latour's (1992) article. Here it is argued that objects have an important role in ANT by mediating how humans interact with each other and influencing the formation of an actor network. Latour (1992) gives an example where humans don't close the door when entering a building. The solution to this is hiring another human, the porter, that welcomes the other human and opens and closes the door for them. The human porter can be unreliable, however. So the task gets delegated to a non-human, the door-closer. Adding the door-closer changes the existing actor network of closing the door and removes the human interaction between the porter and the visitor.

The interaction between actors in a network can be further understood with the concept of translation. Translation is a key concept in ANT that emphasizes the distortion happening through interactions. Here, qualities of one actor gets re-presented by other

actors (Qiao-Franco and Franco, 2023). The idea is that by re-presenting, the initial qualities of an actor get distorted. A simple example of this is how text in one language gets translated into another language. It's not possible to fully bring over the meaning of one language to another. The translation process essentially gives a distorted view of the original meaning. If we look at how we can couple this to the context of AI art, we can see that AI image generators try to re-present art made by humans. However, understandings differ between AI generated art and human made art. Somewhere in the process of translation, things get distorted which creates this different understanding.

Why ANT should be used, can be explained by the critique Latour (1992) has on traditional approaches to sociology and technology studies. His article claims that these studies have a too narrow focus on human agency and they don't take non-human actors or objects into account. Human agency can be described as the ability of an individual to act and make choices that shape their own and other's lives (Scott, 2014). The traditional way of studying social phenomena is by focusing on the actions and behavior of an individual human actor. Non-human actors like objects and technologies are considered passive elements in these studies. Latour (1992) argues that non-human actors are of equal importance. He believes that social phenomena are not only a product of human agency. They are a result of complex interactions between humans and non-humans. Because non-humans play an active role in shaping social outcomes, they need to be treated as equals. Latour's (1992) critique also applies to technology studies. In technology studies, the focus lies on technical aspects of technological change. These studies ignore social and cultural contexts the technologies are embedded in. The author suggests a more expansive view of agency where non-human actors are also recognized as important for shaping social phenomena.

CCT studies have used ANT to explain how consumers and consumption drive the creation of new markets (Martin and Schouten, 2014). The role of ANT in this article is examining an emerging market by uncovering the relations and translations between actors that facilitates the emergence of this market. It highlights the role actors have in driving market emergence. Other examples of usages of ANT are studying consumption communities (Thomas, Price and Schau, 2013) and how human and non-human actors facilitate the transition to fatherhood (Bettany, Kerrane and Hogg, 2014).

In the context of AI image generators, ANT can show how the interaction between actors shape consumers' understandings of AI art. It can be simple interactions like friends telling each other that AI image generators make a lot of mistakes. But you can also look at multiple actors interacting with each other to shape understandings of AI art. ANT studies the relationship between actors in detail to make a more complete whole of how people understand AI art. An example of a more complex interaction is where an artist interacts with AI to create art and how this gets shared on social media. The people seeing this art on social media can develop their opinions based on their own set of interactions. The identification of complex interactions in shaping understandings is more difficult to do with other research approaches in CCT.

3 Methodology

In this chapter, the methods of conducting this study will be elaborated upon. This chapter is an important part of the thesis because it provides an explanation of the research methods used to answer the question *''What are consumers' understandings of AI art?"*, *''How are consumers' understandings on AI art influenced by human and non-human objects?"* and *''How do consumers' understandings of AI art influence the adoption of the technology?"* The chapter will start with the research approach followed by the data collection methods. For data collection, interviews and netnography will be used. The next section will explain how the data will be analyzed. At the end of the chapter the quality of research and ethical considerations will be discussed.

3.1 Research approach

I have used a qualitative research approach for this study as CCT is research that requires rich and in-depth data to make sense out of a complex situation. The article of Arnould and Thompson (2005) says that CCT represents a research approach that uses thick descriptions of data to get a full understanding of complex phenomena. Thick description means that observations and interpretations of data are rich in detail. CCT has led to qualitative methods that can help with immersing the researcher in the consumers' context. Qualitative research makes it possible to look further into social phenomena like human behavior, cultures and experiences and explore new concepts. This is much harder to do when working with a quantitative research method because elements like predefined variables can limit the amount of exploration needed for CCT research (Hair et al., 2018)

Another reason why qualitative research is used, is because it helps with developing new theories. Qualitative research methods allow researchers to explore social

phenomena with in-depth and context related information, which is very much needed for developing new theories (Charmaz, 2006). Quantitative research is more often used as a confirmatory approach to test hypothesis on theories (Hair et al., 2018). The article of Charmaz (2006) suggests that qualitative research is useful because it allows researchers to ‘’immerse themselves in the data’’ which can help with understanding the meaning people give to experiences (Charmaz, 2006, p. 6). This is very much needed in the case of AI imagery because it is a relatively new technology where research in this context is still lacking. Rich data is collected to study what consumers' understandings of AI art are and how this gets shaped. To build my theory on the understandings of AI art, I have used an inductive approach. This means creating new theories or concepts that are based on data collected. An inductive approach is used because it makes it possible to make new discoveries from raw data.

The collection of data has been done in two rounds. The first round of data collection has a broader focus on topics. This data has been used to identify patterns that help with developing a theoretical framework. The first round of data collection consists of 6 interviews and 6 weeks' worth of netnographic fieldwork. The second round of data collection has a narrower focus. The second round of data collection is used to improve the theoretical framework by adding detail to the different elements and reinforcing assumptions made based on the first round of data collection. This data collection consists of 11 interviews and 1 month worth of netnographic fieldwork. I have chosen to collect data in two rounds because of the changing focus in data. As the first round of data collection has a broad focus with less in-depth data. A second round of data collection is needed to get more in-depth data that the first round of data collection is missing.

3.2 Data collection methods

For this study, netnography and interviews have been used to collect data.

Netnography

Firstly, data has been collected through netnographic fieldwork. Netnography is an approach that is similar to ethnography, but here it focuses on online communities instead of real-life situations (Kozinets, 2010). A non-participatory research method is research that observes and analyzes online content without the active participation in it. It can best be described as ‘’the collection and analysis of online data from public websites and forums where the researcher does not need to actively participate or have membership in the online community under investigation’’ (Kozinets, 2010, p. 62). Non-participation results in less time needed to collect data from each community. This is useful because multiple actors from different communities are studied. The textual nature of communities also won’t be lost because the same approach can be achieved without direct participation (Cova and Pace, 2006).

The netnography consists of content on AI image generators as well as people’s opinion on the technology and AI art. This data has been gathered from Reddit and Twitter. For Reddit and Twitter, each post or tweet has been treated as the start of a threat. The comments in the threat have been used for collecting the data on different understandings on AI art. Tweets on Twitter consists of different topics ranging from authors simply sharing their art pieces to sharing their opinion on the technology. The main data are from the comments on the different tweets and posts as this is where people’s understandings of AI art become visible.

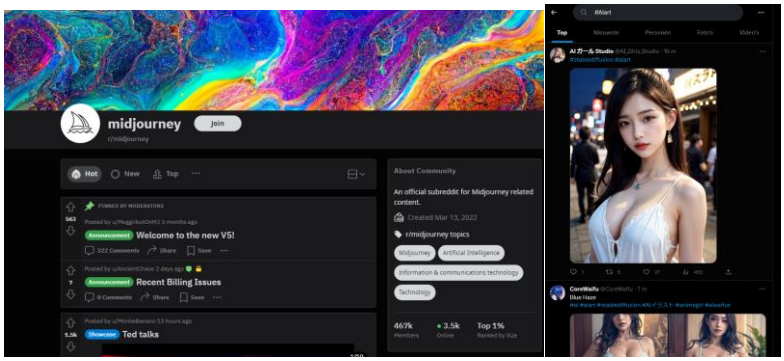

Figure 1: Screenshot of the midjourney Reddit community and #AIart hashtag on Twitter

Netnography is used as a starting point for structuring interview questions for the first round of data collection. In the second round of data collection, netnography has a more complementary role that helps with triangulation of data for the interviews. It has been used as a complementary role because it will make findings in interviews more generalizable, and it helped with filling in the gaps that data from interviews couldn't cover.

Netnographic field notes have been used because they provide the study with in-depth context specific knowledge. They serve as complementary notes that address the interpretation of a text in a specific context. This is only possible with netnography because it immerses the researcher in the context. As a result, it is possible to develop a deeper understanding of the culture in a community and its context. Kozinets (2010) claims that field notes in netnography help with identifying key actors and their roles within a community, documenting important events and changes, describing social norms, values and practices, identifying patterns and themes within collected data and reflecting on the researcher's biases and preconceptions. Online communities can be complex and dynamic. With netnography it is possible to capture this complex and dynamic nature.

Interviews

The second method used for this study are interviews. The main source of data for the findings are coming from these interviews. In CCT research, interviews are used to gain in-depth insights into consumer attitudes, behaviors, experiences and understanding of how these are shaped by social and cultural factors (Thompson and Haytko, 1997). Interviews enable people to share their lives and perception of the experiences that are important for them (Arsel, 2017). With interviews it is possible to not only gather data on different understandings, but it also explains how these understandings are getting shaped.

I am using a semi-structured or 'semistandardized' (Arsel, 2017) interview method for this study because of the inductive and iterative nature of my research. This means that the overall outline with themes and topics are set beforehand. But the exact questions that will be answered can differ each interview. This helps me having a focus during the interviews while giving the participants the opportunity to say what they want to share. The article of Arsel (2017) says that semistandardized interviews are suitable for research designs with an inductive, emergent and iterative nature. Some would argue that an unstructured interview is also suitable for this case, but Arsel (2017) says that researchers should shy away from interviews that are fully unstructured. The author suggests that it is better to make a set of themes to explore during the interview while being open to follow the direction of the interviewee.

The article of Hoskins and White (2013) states the importance of relational inquiries in research interviews. They describe relational inquiries as a research approach that emphasizes the importance of building relationships between the researcher and the participants. According to Hoskins and White (2013), relational inquiries can give more rich and nuanced data through encouraging participants to share their experiences,

perspectives and emotions in an open and honest way. Not only do relational inquiries promote new insights and perspectives on the research topic, they also promote ethical research practices (Hoskins and White, 2013). To make participants feel at ease during the interviews, I usually open with a (short) conversation not related to the study. I start with the interview when I have the impression that the participant is comfortable enough.

The interviews are heterogenous because questions change based on answers a participant provides and the difference in focus throughout the rounds of data collection. The focus in interviews keep shifting because each part of the framework needs to be backed up with enough data and new findings emerge during interviews that also needs to be incorporated in the framework. Arsel (2017) also sees this as the way to go for CCT. This is because interpretivist research approaches move back and forth between ‘’conceptualization, data collection, data analysis, and theory building’’ (Arsel, 2017, p. 940). An application of this iterative process is by Thompson and Tambyah (1999) who advocate for a dynamic and responsive approach to CCT research. They argue that the nature of consumer culture is complex, dynamic and changing, so it is important to constantly adapt research questions, methods and theories to properly study a social phenomenon. Thompson and Tambyah (1999) first started with an initial research question. After doing some field research, they found a key theme in their data. The research question then got reiterated to study this key theme.

It is important that the research questions are iterative, flexible and open-ended so that it allows researchers to explore new themes that emerge from their collected data. This iterative concept has been used to explore different actors and how they shape understandings of AI art.

3.3 Data analysis

Data has been analyzed through the Actor-Network Theory lens to help identify and label useful information during the coding process. The article of Glaser and Strauss (1967) gives an explanation on how this coding process has been done. The collected data will go through three stages of processing. In open coding the transcribed data has been used to identify general concepts that are relevant to the research question. In the next phase axial coding is used. Here relationships between concepts will be identified grouped together into different categories. In the last phase, the most important concepts are used to build the theory around understandings of AI art and adoption through selective coding. The concept of coding during the analysis phase is very useful because it makes it easier to identify relevant concepts and their relationships with each other.

Coding has been done based on the theoretical framework and the enabling lens. This helps with identifying the different actors and their relationship with one another, labeling different types of understandings and labeling different types of adoption. Just like the article of Glaser and Strauss (1967), data has been processed through open, axial and selective coding. Fragments of interviews and netnography have been analyzed and the content has been summarized by using key words. These words have been labeled based on the phases of the theoretical framework. In selective coding, they have been further labeled into concepts inside of the phases. I have used this way of coding because it makes it clear what parts of the theoretical framework each fragment reinforces.

This analysis is an iterative process because new concepts have been theorized based on the analysis of previous data. Because of the new concepts, previous coding has been re-examined to see whether it fits with the newly added concepts of the framework. New data has also been processed based on the adjusted theoretical framework. This

flexible and iterative research method is in line with how Thompson and Tambyah (1999) suggest a dynamic and responsive approach to CCT research. I use this approach because of the ability to generate rich in-depth theories in a specific context that are well embedded in empirical data.

3.4 Quality of research

This study belongs to interpretivist research. This research approach has several characteristics that have been described by Kozinets (2010). The characteristics are Subjectivity, contextualization, empathy, inductive reasoning, reflexivity and triangulation. Subjectivity relates to the acknowledgement of subjective experiences and meanings that are shaped by social and cultural contexts. It seeks to explore and understand subjective experiences from a participant perceptive. Subjectivity is used in this study because it observes the experiences and thoughts of participants. Contextualization relates to the social and cultural context consumer behavior occurs in. It aims to situate consumer behavior in a specific context. This is also the case in this study because it looks at technology acceptance in the context of AI image generators. Empathy relates to a researcher's ability to emphasize with participants to understand their point of view. That's also the case in this study because it tries to study consumers from their perspective. Inductive reasoning relates to the process of collecting data, developing theory and creating hypotheses based on the data. That's also how this study is structured. Reflexivity relates to researchers being able to reflect on their own role in the study with potential biases and assumptions that may influence the study. This study also reflects upon the role I take in this study with considerations to biases and assumptions. Lastly. Triangulation relates to using multiple methods of data collection in

order to increase validity and reliability. This study applies triangulation by using interviews as well as netnography.

Hogg and Macalaran (2008) explain how interpretivist consumer research can convince the audience of the soundness of their research findings. The first key criteria is authenticity which looks at how convincing it is that the researcher drew their interpretations of the study from collected data and that the researcher was well involved in the context with a good understanding of how the participants view the world. To achieve this, I need to be immersed enough in the field and make sure I'm genuine to the field experience. I do this by clearly explaining how I'm collecting and analyzing data and by systematically using myself and research methods as an instrument for generating and reflecting on data. It is important that I am critical about myself as a researcher and my research methods to show how I and my methods influence the collection and interpretation of the data.

Plausibility means that information provided in the study needs to be accounted for. There needs to be a good fit between information given and its interpretations by the researcher. Researchers need to demonstrate that data has been systematically and consciously searched through. This way, the data showed in the study is well thought out without ignoring inconvenient findings. The systematic approach has been accounted for by making connections with established methodological approaches and enabling lens. The approach to data collection and analysis follows established papers like Arsel (2017) and Glaser and Strauss (1967) to make sure everything happens systematically.

Lastly, criticality looks at enabling reflection for the reader. Not only the researchers need to reflect on their studies, but there also needs to be room for readers to reflect. Assumptions can influence the interpretations readers have which can be different

than what the researcher is trying to share. This has been done by giving the reader room to reflect in the text, encouraging readers to re-examine their views and imagination. An example of this are the breaks like headings and subheadings where the reader can stop and think about what they have read.

3.5 Ethics

There are several ethical considerations that have been considered based on Kozinets (2010). These ethical considerations refer to the collection and use of data collected for this study. Firstly, it is important to have informed consent from the participants. This means that researchers need to inform participants of the purpose, procedures, risks, benefits and rights of the study. This has been done through a consent form that can be signed or through recorded verbal consent. While conducting netnography, there might be some issues when working with informed consent. This is because studying online communities come with varying levels of privacy and anonymity. When looking at public posts like Reddit forums or tweets, there is a relatively low level of privacy because these comments are publicly posted. Kozinets (2010) suggests researchers to inform participants and receive consent when it is possible to do so. An example for this would be when gathering data from private forums with limited access.

The confidentiality and anonymity of participants is valued. Therefore, data has been altered to make it personally unidentifiable through for example pseudonyms and has been stored securely. Kozinets (2010) adds to this that the privacy and confidentiality of online communities should also be respected and avoid disrupting the flow of conversations. Participants have also been treated with respect. I have taken a passive role in netnography and interviews with minimal interference. When it comes to interviews, any sensitive questions that might cause harm are avoided. In terms of benefits,

participants can let their voice be heard which results in a study that can facilitate the adoption of AI image generators while keeping different stakeholders in mind. So, it can result in concerns being addressed in the future to reduce the negativity around the technology. Risk of participants is also minimized. Situations have been avoided where counseling and support services are needed for participants. Since data is collected through non-participatory observations and open interviews, there would be little to no risk for participants. Lastly, I have also been transparent about the data usage and participant privacy. I have informed the participants of how their data might be used and who has access to it. The interview starts when they agreed to the terms.

It is important to keep in mind that in some cases data fabrication is needed. Markham (2012) defines this as creating or altering data, documents or other materials for research purposes. Data fabrication is mainly used for ensuring the privacy of participants. This is in line with what Markham (2012) says about fabrication. The author argues that it can be an ethical practice when it is used to protect the identities of participants or to preservice sensitive information. Pseudonyms have been used and personally identifiable data has been changed to ensure that the findings in this study can't be connected to a specific person. As Markham (2012) states, fabrication could be ethically problematic when it is used in cases like deceiving stakeholders and supporting preconceived conclusions. Therefore, it is important to clearly describe research methods and be honest about any fabrication in this study.

4.0 Findings

This findings chapter focuses on the theoretical framework that emerged from the interviews and netnography. In the next few sections, each part of this framework will be explained in further detail.

4.1 Theoretical framework

The theoretical framework consists of multiple phases that explain how understandings of art reproduced by AI are created and how these understandings affect the adoption of AI image generators. The first phase explains what is meant by human made art. The second phase explains how actors and their interactions with each other translate art into different meanings. The third phase categorizes the different meanings into three types of understandings. Phase four explains the different types of adoption people have on AI generated art and how the use of these types is determined by the different understandings people have of the technology.

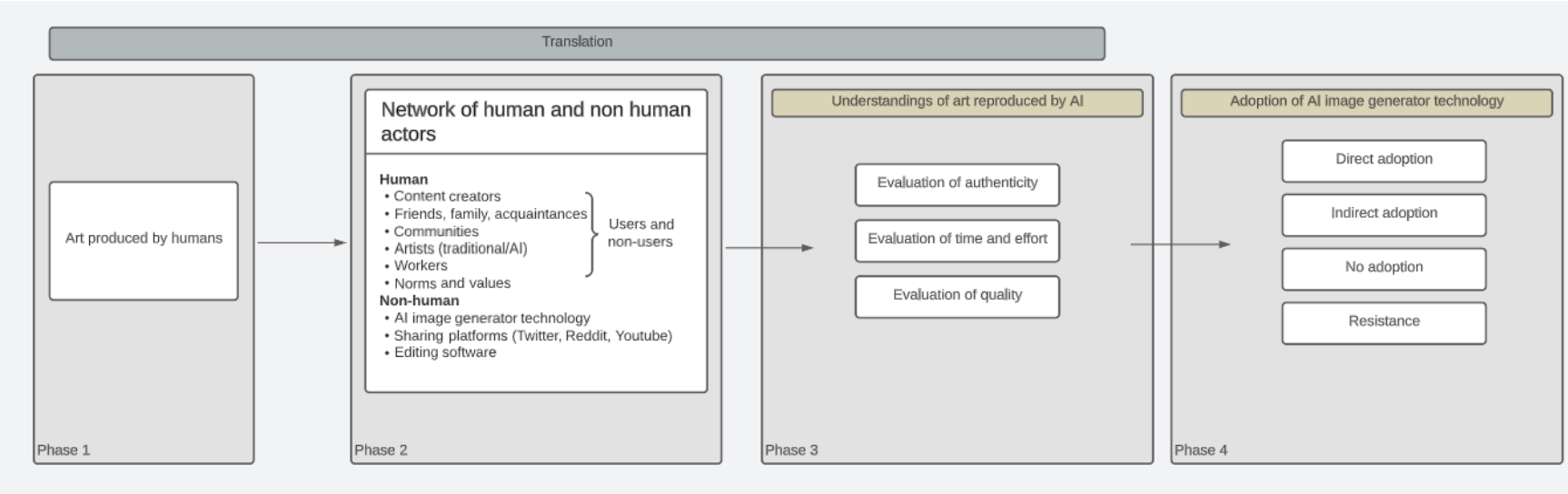

Figure 2: Theoretical framework process model

4.2 Phase 1: Art produced by humans

Translation starts with art being produced by humans. There are different types of human art like paintings, logos, graphical art and sketches. But what they all have in common is the human being involved in the whole process. Humans may create art with the help of tools like brushes, tablets and pencils. However, the use of certain tools wasn't always accepted in art. One of the participants Hudson said: *''It reminds me of the same sort of impact that photography had when the camera was invented, and portraiture was considered state-of-the-art of art […] people and the culture at large has now accepted that. That's a piece of art. And, you know, I think AI is in a similar state to where there's a cultural shock going on with it"*. In its current state, AI image generators are not seen as a tool to create human art.

4.3 Phase 2: Network of actors

Human actors

Multiple actors have been identified that shape understandings through interactions with each other. One of these actors are the content creators. they can both be people who have used the technology and people who have not. This actor creates awareness of the technology to the wider public through interactions with their content. Some participants in the interviews state that they started using AI image generators when they saw it being talked about and used by other content creators. An example of this is Felicia's answer: ''*I saw this picture of the last selfie on earth, which was everywhere on the internet. That kinda got me interested. […] I wanted to see whether it was that far and that impressive already."*. This can also be seen in Westley's answer: *''There is a content creator I randomly stumbled upon […] He was using the generator. I started looking into it because it looked cool"*. Art can be translated through content creators by

demonstrations, sharing thoughts or sharing creations. AI art gets portrayed as something novel, impressive, and cool by content creators. But they can also be portrayed as something of low effort.

Figure 3: Screenshot of Twitter on clashing thoughts from two content creators on the time and effort it takes to create AI art

Friends, family and acquaintances are also an important source for introducing the technology and developing further understandings. They can sometimes help with convincing others to use it. Keaton says: *'The need is barely there until someone tells me about it"*. People tend to show their creations made with AI art to their friends when something funny, mind blowing, good looking or weird comes out. Hayes and Avaline for example mentioned that they find enjoyment in sharing their creations with others. Some people show it to their close friend groups while others post it on social media. Here, art gets translated through friends, family and acquaintances by showing creations that leave a strong impression. AI art here gets portrayed as something that's fun, impressive or weird. These actors can however also give more negative portrayals of AI art. It can be seen as something 'fake' or non-creative. This is usually done by friends, family and acquaintances who haven't used the technology.

Another important actor are AI image generator communities. They shape understandings of members inside of the community. Participants stated that they don't belong to an AI image generator community. However, they might join one temporarily to figure out how to use the technology. This can be seen in Felicia's answer: *''Not at all. Just a discord group for 2 days to see how it works. I haven't really actively talked about it".* Art gets translated differently depending on the community. There are for example communities that exist to help other users by solving problems and help each other grow. This can be seen in Hudson's answer: *'' There's some great groups on there like AICC and a few others that are just great collections of people encouraging each other and just a great community that's very positive and reinforces the learning and helping each other grow and stuff like that"*. These communities translate art through its members by learning from each other and giving each other inspiration for their own creations. Sometimes a person is ''forced'' to join a community to make use of an AI image generator. Midjourney for example, requires joining a Discord group to use it. Zinnia describes this community as a *'kind of messy place with everyone generating images and it's chaotic [...] it was really you know, a nice place to be, to experiment".*

Artists also have an influence on people's understandings of AI art. The artists can be divided into ''traditional artists'' and ''AI artists''. Traditional artists are the people who create art without the help of AI while AI artists create art using AI image generators. Artists share their creations online and may also share their opinions on the technology. This can happen through social media or talking to people directly. Traditional and AI artists translate and portray AI art differently. Traditional artists usually have a more negative portrayal of AI art and translate by sharing their opinions with others. Phyliss said: *''I've talked to one artist and they said that they are worried about the art they make*

and that other people think they are AI”. Sometimes artists collaborate with each other to get a message across to a wider audience. An example of this is the case where multiple artists uploaded images with ‘’No to AI generated images’’ on a platform that allowed AI generated content. Here, AI art is portrayed as something that is ‘’stolen’’ from human artists.

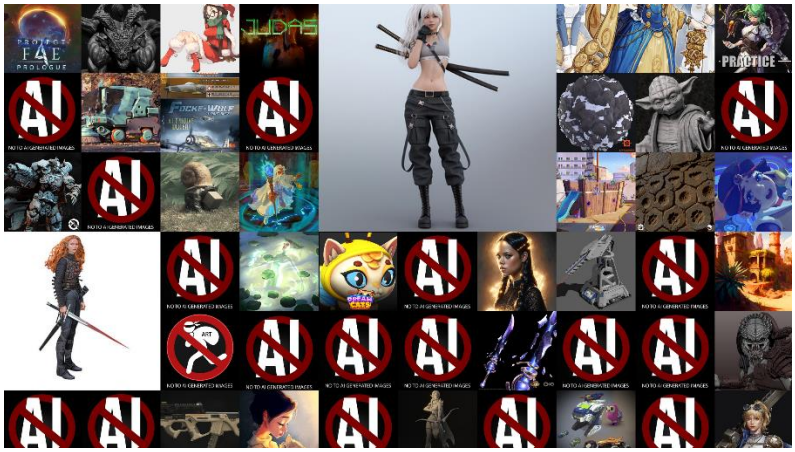

Figure 4: *Screenshot of ArtStation with traditional artists uploading ‘’No to AI generated images” among other art*

AI artists translate art through directly creating it and sharing it with other people. The AI artist has a more positive portrayal where AI image generators are more seen as a tool to create art just like how drawing tablets, pencils and editing software are used.

The workers are a special kind of AI image generator user. These are the people who incorporate AI in their workflow to increase productivity, usually in a commercial setting. Examples of workers are media designers, programmers, and marketeers where AI is used to design websites or game textures. These people usually have a more practical look at the technology. Hayes said: *‘’What I personally see is that I can automate processes and make icons for applications”.* The translation of art here is more subtle as the creation of art is more a part of the process or an element in the final product. Just like with AI artists, AI image generators are more seen as a tool to help with the process of

creating a final product. Workers usually hear from and share their involvement in AI with their colleagues.

The interaction between these human actors can help shape the norms and values a person has. Because each person will have different kinds of interactions with others, norms and values can differ significantly. This can cause certain people to decide to use the technology while being aware of the same negative consequences as people who decide not to try out or use the technology.

Non-human actors

There are different types of AI image generators available. Westley for example says: *'' The AI I currently use is from NovelAI.net, it's more curated towards anime […] Other ones are pretty mediocre".* While Hudson says: *'' And then when I actually got into the door to mid journey, I was like, oh, this is a whole other level of power of refinement".* Preferences in AI image generators differ per person. AI image generators are translating art by directly creating it from existing human art. The characteristics of an AI image generator like distribution platform, costs, interface and output can decide whether people would try out the technology and influences people's experiences with the technology. An example of how costs can influence a person's decision to try out the technology can be seen in Logan's answer: *'' That's the one that I like… looked up but […] you had to pay for it so like hell nah I'm not paying for it when I only want to try it out right".* Interacting the technology helps shaping understandings further as it makes users aware of the implications with generating an art piece. The characteristics of a generator can also enable interactions with other actors. A user can for example ask other users to explain the technology, join communities or read documentation if the generator is too complicated to understand. Hayes for example used documentation to learn the

technology: *‘’The learning of those things you can just do through documentation, so I didn’t really need the help of others”.*

Using the AI image generator is an interaction between the user and the AI. The user comes up with prompts or different inputs like drawings and photos that help shape the output of the AI. There will be multiple options the user can tinker with to customize the output even further depending on the type of AI image generator that is being used. After that, the user can generate the output and reiterate it when necessary, by for example enhancing or regenerating the output. This is a back-and-forth interaction between the user and the generator until the desired result has been created.

Sharing platforms are also an important actor. People share their thoughts and creations through these platforms for others to see. Examples of sharing platforms are Youtube, Reddit, Discord and Pixiv where people can share content and easily communicate over long distances. The creation of communities is also made easier by having sharing platforms. People over the world can come together in a community through Reddit and Discord for example with minimum effort. Participants mentioned that they got introduced to the technology through sharing platforms like Youtube where they saw images, videos, articles and other posts about the technology. It helps connecting friends, family, acquaintances, colleagues, and content creators with each other to get familiar with and talk about this new technology.

Editing software is an important actor for the ‘’higher quality’’ artworks. AI image generators themselves have limited capabilities that can only do so much, which enables the need for editing software in certain circumstances. Editing software can range from minor color correction programs to photoshop programs. Art can be translated through editing software by taking the output of AI image generators and processing them even

further. Further processing through editing software is usually done by AI artists and workers rather than the average AI image generator user. Using editing software can help with correcting mistakes and other adjustments that can't be easily done by the AI image generator itself. This can be seen in Zinnia's answer: *'' Also, there is one last step that I do sometimes. I use the final output from Mid journey and then with some other tools I would make it a vector for example, and then I can play around in Photoshop, illustrator or any other editing tool and then I can polish the assets that Midjourney created".*

4.4 Phase 3: Understandings of art translated by AI

Authenticity

There are three types of understandings identified. Firstly, there is the evaluation of authenticity. Authenticity is the thought of whether art can be considered true to the creator or others. This can be seen in Avaline's answer: *'' it's authentic when it's done by you and only you and nothing to help […] it's not like being changed by any means by somebody else or another program".* Participants would argue that AI art is not authentic since human art is being altered by AI. It is argued that authenticity can't be replaced by AI as can be seen from my field notes: *User commenting that AI won't replace artists because people value craftmanship and love that has been put into a product.* The human gives the input to start the whole process, but the AI does all the ''heavy lifting''. The idea of how much of an art piece belongs to an artist using AI can also be seen when asking the artists themselves. Teddie for example says: *''It's a less good feeling for yourself […] it's partly my content, but I haven't thought of or made it myself and stuff. So I have published it, but it is not mine".*

What's noteworthy however, is that AI art can still be considered authentic. Participants mention that the human aspect is lacking in AI art, which causes it to not be

authentic. However, this view changes when acknowledging the skills that are involved in creating AI art. Logan says: *'' if someone has skill in this type of thing and maybe, I don't know, you would consider the art style AI generated then I would say it's authentic".* Just like using tools like Illustrator and Photoshop, using AI image generators also comes with certain skills that can create authentic art. These skills can create unique AI art that only this artist would be able to make. The acknowledgement of AI art skills is stronger by the participants who have used the technology themselves and know what implications creating AI art has. Westley says: *'' Other things I can't seem to figure out. Couple instances of not knowing how to fix it. Kept coming blurry, couldn't find any way to fix it.".* While using the technology, users can acknowledge the difficulty that comes with creating the perfect image. So when people see an art piece made by AI that they themselves can't recreate, it would me more appreciated.

It is also argued that AI art is not authentic because it takes existing art from humans, puts it together and changes it slightly. Some participants mentioned that an AI can't be creative because of this reason. There are also participants who see this differently, however. Westley for example says: *'' I think for me it's because of the reason that we actually already copy other people or get inspirations from that and that's why I think that it's okay to use it to a certain degree".* It is argued that just like humans, AI will observe existing art to create something themselves.

Time and effort

The second type of understanding is evaluation of time and effort. From the interviews conducted, it can be concluded that the amount of time and effort put into an art piece is valued by the participants. Time and effort involves how much work a person has put into creating an art piece. The overall assumption is that AI art requires

significantly less time and effort to create than traditional art. Participants stated that they valued AI art less partly because of this assumption. Phyliss says: *''There was an art event and someone won with AI art […] I think that's pretty bad because artists work hard and then someone comes along and win without putting in the effort".* This statement can be backed up by Hayes: *''Because there also hasn't been any effort put into it. In a real art piece, a considerable amount of hours and effort is put into it. I think that that effort is part of art".*

While discussing the amount of time and effort further, participants do acknowledge that AI art can have a valuable amount of time and effort put into it. This acknowledgement is stronger among the AI artists and some other participants who have used the technology. Hudson says: *'' I think there's a big misconception too. That the AI is doing all the work and it's doing the heavy lifting, but it's just a mirror of you and your creativity.".* When AI art does have the same amount of time and effort into it, participants mentioned that they would value both AI and human art the same. This can be seen in Logan's answer: *'' If they put the same amount of time and work into it, it has the same value".*

People can also value time and effort differently where less time and effort is preferred. In work environments for example, more time and effort isn't always appreciated. Results matter more than the process. Hayes and Teddie mentioned that work already encourages the use of AI to make processes faster. Less time and effort is usually appreciated in cases where things needs to get produced quickly. A programmer for example, needs to spend time on making the program itself and rather not spend their time on creating art for their program. This was mentioned by Hayes where AI was used to make program icons.

Quality

Lastly, there is the evaluation of quality. In most cases, people appreciate the quality of work produced. Participants mentioned that there are both high- and low-quality AI generated art. Phyliss says: *'' To be honest, some of them look really good, some of them look like people actually drew them but some of them are weird".* Participants usually labeled something as high quality when it visually looked good in their eyes. An art piece was usually labeled as low quality when it had mistakes in it. Examples of mistakes often made by AI image generators can be seen from Westley's answer:

> *'' Oh, plenty. There are times where the legs will multiply to be 3 legs, sometimes 4. There are times where the head spun around so it would not be faced towards the front but towards the back of the head of the character. There are times where the arms just appear out of nowhere, there's arms that go into nowhere. Sometimes the eyes just don't work, like the face doesn't generate correctly."*

The quality of AI art can also be evaluated on the accuracy of how you expect the art to be. Most participants who used the generator mentioned that AI struggles with generating art exactly how you want it to be. You would generate art with a certain image in mind and you often get an image that's completely different from your expectations. Westley says: *''The margin for it to be the perfect image is almost close to impossible".* This can be a bad thing if you need very specific demands. Hayes for example, used the AI image generator to generate icons for programs. However, this attempt failed and another alternative was used.

What's noticeable though, is that some image generator users use the technology without the expectation of it being accurate to what they had in mind. They are still happy with the art generated by AI even though it is completely different from what

they expected it to be. The user is still satisfied with the result for example when something still looks good, or something weird and funny comes out that they want to share with others. This is usually the case for the users who use an AI image generator for enjoyment.

Relatedness

These understandings are also related to each other. Something can be authentic without putting the time and effort in as can be seen in Logan's answer: ''*Yes, I think something can be authentic if there's no time and effort involved. Because it's a human […] Like there is no effort and time put into it but it's authentic because it comes from an actual kid.* In the case of AI image generators however, the amount of time and effort put into an art piece does affect how authentic an art piece is. This is because putting more time and effort into an AI art piece increases the amount of involvement by the artist and thus making the piece more authentic. This can be seen in Colson's answer: ''*The more effort and energy you put into it, the more it is worth. So I can imagine that when you are really looking for the right prompt like how those AI artists are doing, it will really feel like it's your own".*

The evaluation of time and effort can also be affected by the authenticity of the art piece. Part of authenticity is the unique skills AI artists develop. Developing these skills of course require time and effort. Acknowledging the time and effort needed to develop these skills can increase the perceived time and effort of an art piece.

The evaluation of quality gets affected by both authenticity and time and effort. It gets affected by authenticity because of the unique skills AI artists can develop. These skills can enable artists to create higher quality art pieces that you wouldn't be able to make without these skills. Zinnia says: *'' If you are good in photography, you have a lot*

of vocabulary that you can use in the prompt and play on these things. So the more knowledge you have in one field, the better you will get the result with AI". Time and effort also has an effect on the quality. An artist can go through multiple iterations and edits to create something that is high quality. It requires experimenting with multiple prompts to get the result that you want. This of course, requires time and effort of the artist to generate the perfect output. As mentioned by multiple participants, AI image generators also often make mistakes and are inaccurate. Zinnia says: *'' Sometimes you have to correct mistakes that should not be there"*. So even when the desired output has been generated, changes would still be made to correct mistakes and process it to make it exactly how you want it to be.

4.5 Phase 4: Implications for AI Image Generator Adoption

The understandings people have of AI art can lead to different types of adoption. The types of adoption identified in this study are direct adoption, indirect adoption, no adoption and resistance. There is a direct adoption when AI image generators are directly used to obtain art. There is indirect adoption when art is obtained through commissions by an artist or organization that use AI. There is no adoption when traditional art is preferred. There is resistance when you not only decide to not use the technology, but also actively prevent other people from using the technology. What's notable, is that a single person can choose for multiple types of adoption in different scenarios.

Direct adoption

Direct adoption is firstly applied in cases where the quality doesn't matter as much as it is difficult to get a high quality output directly coming from the AI image generator. Low quality art is easy enough for a user to make themselves as it doesn't

require a lot of skill and time and effort. Some applications for low quality AI art would be in visualizing ideas, gaining inspiration and generating art for fun. Carlyle says: *''I think you can certainly use it for a bit of creativity and a bit of fun".* Another case would be when the AI image generator is being used a part of the process or final product. For example in online marketing, creating art is only part of the process in designing and publishing a whole website. AI image generators can fill in part of the process or final product that a person might not be able to do themselves or it would be faster to do it with AI.

Indirect adoption

People choose indirect adoption when it comes to AI art that require skill and time and effort to create. Teddie says: *''If I really go to a marketing agency and you really pay for it and they just use (AI image generators). Then it is like yeah, I could have done this myself".* So, when commissioning other artists or companies, it is important that it needs to be something that they can't do themselves. This is the case when products require expertise and time and effort that you don't have yourself to create. However, it's important that the artist is transparent with the client about the usage of AI image generators as there are a lot of misunderstandings about AI. Avaline says: *'' I'd feel deceived honestly. I'd be like wait I thought you drew this […] but you took it and used a generator. So to me it seems like less effort. Less effort, less value"* when asked about finding out afterwards that their commission was AI generated. Some artists state that they are transparent with when they use AI for their work and that clients are usually happy with the result. Zinnia says: *'' I'm always transparent. With the tools and especially AI because there's lots of fear and conflict and that kind of stuff, especially for artists".*

No adoption

There are also cases when people choose to not adopt the technology. As mentioned by Hayes, human-made art is preferred when it comes to something qualitative and authentic. There are cases where something qualitative is preferred to be human made as people question the capabilities of an AI image generator. Logan and Avaline for example, questioned the quality and accuracy an AI image generator can provide. Something authentic can be preferred to be made by a human because the human involvement in art holds value. This can be seen in Zinnia's answer: *'' one important thing is that if it was the same price, I would probably take the human each time".* Another reason is when it negatively affects others. Phyliss says: *'' I would not use them, it makes real artists feel unneeded, unnecessary".* Lastly, there is also a sense of enjoyment in making an art piece yourself, which can't be replaced using AI. This can be seen in one of my field notes: *User stating that making and enjoying art can't be replaced by AI on a tweet saying humanity is doomed while showing AI generated art.*

Resistance

Resistance occurs when the technology negatively affects you or someone else. This is the case for artists since AI image generators learn from their work and replaces their jobs. Some artists and other people don't do anything and just choose to not adopt the technology. But there are also people who do actively resist the technology by spreading their opinion to others with the goal of stopping others from using the technology as can be seen in the ''No to AI generated images'' protest mentioned in the network of actors.

5.0 Discussion

This chapter will first discuss the major contribution this study has on existing literature as well as directions for future research in this area. After that, the managerial implications will be discussed where findings in this study can be applied to practice. This is followed by the limitations identified in this study.

5.1 Theoretical implications

Findings in this study contribute to existing adoption theories as it looks at the deeper meaning of whether to adopt a new technology or not. The existing adoption theories mainly focus on rational behavior to decide whether to adopt a new technology (Ajzen & Fishbein, 1980; Ajzen, 1985). While later contributions on adoption theories do take social factors into consideration, it doesn't look at social and cultural factors as deep as this study has done with CCT research. The critique on existing adoption theories is explained by Williams, Rana and Dwivedi (2015) where social and cultural factors in later studies are present, however the main focus is still on the individual level factors.

My study confirms that a focus on the aggregate level is necessary by showing the importance of social and cultural factors in adopting a new technology. As can be seen in the findings chapter, the interaction individuals have with other actors can change how they understand AI generated art and how this in turn influences the adoption of the technology.

Some adoption types I identified are in line with prior studies. Direct adoption is in line with the normal definition of adoption which is the acceptance and integration of technologies in existing practices, systems or workflows (Rogers, 2003). No adoption is of course when these technologies don't get accepted or integrated. My definition of

resistance is also in line with prior studies. It can be seen as opposing the adoption and use of a technology which can affect others' perception and evaluation of the technology (Samhan, 2018). Indirect adoption is something that I couldn't find back in existing literature. So, it can be an addition to existing adoption types.

My study also shows that adopting a new technology is not only based on rational decision making. While the evaluation of quality is more in line with rational decision making, the evaluation of authenticity and time and effort is not. As can be seen in the findings, the human aspect and the time and effort an artist puts into their work holds value to the consumer. Just knowing that something is made with AI automatically creates the assumption that the art piece isn't authentic and has less time and effort put into it. This is more irrational thinking. For future research, it would be interesting to see how much of a decision to adopt a new technology is based on rational and irrational decision making.

As stated by Arnould and Thompson (2005), most CCT research don't put enough emphasis on non-human objects in consumption contexts. Non-human objects do however have an important role in consumption and markets as stated by Entwistle and Slater (2014). This study confirms that non-human objects have an important role as it shows that interaction between humans and objects enable further development of understandings on AI generated art. An individual who has used an AI image generator for example, knows the implications of creating an AI art piece and will value it differently compared to someone who hasn't interacted with the technology before. This study has also shown that the characteristics of non-human objects change the interactions a human has with other human and non-human actors. For future research,

it would be interesting to see how characteristics of an object enables for different interactions between actors in further detail.

5.2 Managerial implications

The findings in this study can be applied to multiple areas in practice. This is firstly very useful for artists and other organizations producing art to predict how the implementation of AI image generators would affect their current business. Implementing a new technology has multiple implications for a business model. It can for example change key activities, resources, and cost structure of an existing business model (Osterwalder & Pigneur, 2010). Before the changes to the business model are implemented, it is important to test it. Stress testing or heatmapping of a new business model is done through brainstorming different scenarios (Haaker et al., 2017). My study helps with brainstorming scenarios that are more consumer oriented. The use of this new technology can for example change the cost structure by decreasing production costs. However, the end product could be valued less because of how the human aspect of art is valued by consumers.

The findings also explain how the technology should be used by artists and organizations for consumers to be satisfied with the final product. Innovating companies struggle with bridging the gap between strategizing the innovation and the execution of it (PricewaterhouseCoopers, n.d.). My study contributes to the execution of the innovation by emphasizing how a consumer would value the end product when using the technology in a certain way. While my findings chapter states when a consumer would commission AI art, it doesn't always mean that they will be satisfied. A client for example can be dissatisfied with a commission when it is not clear where and how much AI has been used to create the final product. A lack of transparency on the whole

process can cause a client to evaluate the authenticity and time and effort of a final product lower.

Lastly, the research findings can be used by developers to create AI image generators that are targeted at a specific customer segment. Market research is needed to see whether the technology fits a customer segment. My study uses Actor-Network thinking to identify actors and how they interact with each other. The same way of thinking can be applied in researching customer segments. It can be used to see how a customer segment would interact with an AI image generator and other actors and how this shapes new understandings that are specific to their generator. Negative understandings can be changed into positive ones by adding or removing actors or changing characteristics of existing actors.

5.3 Limitations

There are a few limitations in this study that need to be considered. Firstly, it is worth to mention that there is a bias in the selection of participants. I used participants from mine and other researchers' contacts and snowballed from there. This makes it possible that the network of actors and their interactions with each other are incomplete as not every actor related to AI image generators have been studied. However, the use of participants in my own and other researchers' contacts made sure that I could reach the right people suitable for this study. It is also a common practice in qualitative sociological research (Biernacki and Waldorf, 1981). Now that this network of actors has been identified, future research can focus on other actors that may contribute to the existing network of actors as well.

I have also noticed that some participants were nervous during the interviews which causes them to give shorter answers compared to some other participants. So, it is

possible that not every participant was able to give their complete experiences and opinions on AI image generators. Since some participants personally know me, it is also possible that in this way some thoughts and experiences would be left out compared to when they would be completely anonymous to me as the researcher. I did my best to offset this by using data from other sources and relational inquiries (Hoskins and White, 2013).

Lastly, it is worth to mention the moment in time this study has been conducted. As mentioned in ANT studies, the network of actors can change over time (Giesler, 2012). This study has been conducted in the relatively early stages of the technology. So, there is still a lot of misunderstandings of the technology. As actors will be added and removed in the future, the understandings people have of the technology will change as well. The use of AI image generators might be acceptable in more situations with the change in understandings. The understandings identified in this study might not be accurate anymore in the future. While there are studies that use ANT as a dynamic way of looking at the development of a social phenomenon (Giesler, 2012), many ANT studies are a capture of a moment in time and suffer from the same limitation as this study. A suggestion is to study how the understandings of AI art shape dynamically over time by combining findings in this study with future research on understandings of AI art.

6.0 Conclusion

My findings expand on adoption theories through Consumer Culture Theory and Actor-Network Theory. It has a more social and cultural focus with the inclusion of non-human objects. To reach the goal of the thesis, I have put together 3 research questions that gets answered through the data collected from interviews and netnography.

The first question ‘’What are consumers’ understandings of AI art’’ can be answered with the 3 types of understandings identified. The understandings revolve around authenticity, time and effort, and quality. Without prior knowledge, consumers tend to have the assumption that AI art is not authentic and has no time and effort put into it. This assumption gets weaker when the consumers have used the technology. The question ‘’How are consumers’ understandings on AI art influenced by human and non-human objects?’’ can be answered by looking at the network of actors. There are human actors like influencers, friends and family as well as non-human actors like AI image generators and sharing platforms. People tend to shape their understandings based on their interaction with others and objects. Lastly, ‘’How do consumers’ understandings of AI art influence the adoption of the technology?’’ can be answered by looking at the different types of adoption. When art is less authentic and low in time and effort, people tend to choose direct adoption as it is something they can make themselves. Something of higher quality, authentic and requires more time and effort, is usually made with indirect adoption. But no adoption can also be chosen when the person prefers the human aspect in high quality art. Lastly, resistance occurs when it negatively affects others.

References

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 11-39). Springer.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall.

Arnould, E. J., & Thompson, C. B. (2005). Consumer Culture Theory (CCT): Twenty Years of Research. *Journal of Consumer Research, 31*(4), 868–882. https://doi.org/10.1086/426626

Arsel, Z. (2017). Asking Questions with Reflexive Focus: A Tutorial on Designing and Conducting Interviews. *Journal of Consumer Research, 44*(4), 939–948. https://doi.org/10.1093/jcr/ucx096

Bajde, D. (2013). Consumer culture theory (re)visits actor–network theory. *Marketing Theory, 13*(2), 227–242. https://doi.org/10.1177/1470593113477887

Belk, R. (2014). You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, 67(8), 1595-1600.

Bettany, S., & Kerrane, B. (2016). The Socio-Materiality of Parental Style: Negotiating the Multiple Affordances of Parenting and Child Welfare within the New Child Surveillance Technology Market. *European Journal of Marketing*, 50(11), 2041-2066.

Bettany, S., Kerrane, B., & Hogg, M. K. (2014a). The material-semiotics of fatherhood: The co-emergence of technology and contemporary fatherhood. *Journal of Business Research, 67*(7), 1544–1551. https://doi.org/10.1016/j.jbusres.2014.01.012

Biernacki, P., & Waldorf, D. (1981). Snowball Sampling: Problems and Techniques of Chain Referral Sampling. *Sociological Methods & Research, 10*(2), 141–163. https://doi.org/10.1177/004912418101000205

Charmaz, K. (2006). *Constructing grounded theory*. SAGE.

Cova, B., & Pace, S. (2006). Brand community of convenience products: new forms of customer empowerment – the case “my Nutella The Community”. *European Journal of Marketing*, *40*(9/10), 1087–1105. https://doi.org/10.1108/03090560610681023

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

Entwistle, J., & Slater, D. (2014). Reassembling the Cultural. *Journal of Cultural Economy*, 7(2), 161-177.

Géron, A. (2019). *Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems*. O'Reilly Media.

Giesler, M. (2012). How Doppelganger Brand Images Influence the Market Creation Process: Longitudinal Insights from the Rise of Botox Cosmetic. *Journal of Marketing*, 76(6), 55-68.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine De Gruyter.

Goodfellow, I. J., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., Courville, A., & Bengio, Y. (2014). Generative Adversarial Networks. *arXiv (Cornell University)*. https://doi.org/10.48550/arxiv.1406.2661

Haaker, T., Bouwman, H., Janssen, W., & De Reuver, M. (2017). Business model stress testing: A practical approach to test the robustness of a business model. *Futures*, *89*, 14–25. https://doi.org/10.1016/j.futures.2017.04.003

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2018). *Multivariate Data Analysis* (8th edition). Cengage Learning Emea.

Hogg, M.K., & Macalaran, P. (2008). Rhetorical Issues in Writing Interpretivist Consumer Research. *Qualitative Market Research: An International Journal*, 11(2), 130-146.

Hoskins, M. L., & White, J. D. (2013). Relational Inquiries and the Research Interview. *Qualitative Inquiry*, *19*(3), 179–188. https://doi.org/10.1177/1077800412466224

Huff, A. D., Barnhart, M., McAlexander, B., & McAlexander, J. H. (2017). Addressing the Wicked Problem of American Gun Violence. *Journal of Macromarketing*, *37*(4), 393–408. https://doi.org/10.1177/0276146717715744

Koene, A., Arnold, P., McAuley, D., & Lieshout, M. V. (2019). AI-generated imagery and the copyright implications of non-human authorship. *International Journal of Law and Information Technology*, 27(2), 169-191.

Kozinets, R. V. (2010). *Netnography: Doing ethnographic research online*. Sage Publications.

Kozinets, R. V. (2010). Netnography: Some Reflections on Consumer Research in the Era of Interactive and Social Media. *Journal of Research in Interactive Marketing*, 4(2), 114-128.

Lashinsky, A. (2018, 25 july). *How AI-generated art is changing the way we define creativity*. Fortune. https://fortune.com/2018/07/25/ai-artificial-intelligence-creativity

Latour, B. (1992). Where are the Missing Masses? The Sociology of a Few Mundane Artifacts. In W.E. Bijker & J. Law (Eds.), *Shaping Technology/Building Society: Studies in Sociotechnical Change* (pp. 225-258). Cambridge, MA: MIT Press.

Latour, B. (2005). *Reassembling the Social: An Introduction to Actor-Network Theory*. New York: Oxford University Press.

Lee, M. (2018, May 17). *AI-generated images: Are they art?* The Conversation. https://theconversation.com/ai-generated-images-are-they-art-97012.

Leonardi, P. M. (2012, 21 september). *When Does Technology Use Enable Network Change in Organizations? A Comparative Study of Feature Use and Shared Affordances*. https://ssrn.com/abstract=2150376

Lyytinen, K., & Damsgaard, J. (2001). What's Wrong with the Diffusion of Innovation Theory? The case of a complex and networked technology. In *Diffusing Software Product and Process Innovations* (p. 308). Springer Science+Business Media. https://doi.org/10.1007/978-0-387-35404-0_19

Markham, A. N. (2012). FABRICATION AS ETHICAL PRACTICE. *Information, Communication & Society, 15*(3), 334–353. https://doi.org/10.1080/1369118x.2011.641993

Martin, D. P., & Schouten, J. W. (2014). Consumption-Driven Market Emergence. *Journal of Consumer Research, 40*(5), 855–870. https://doi.org/10.1086/673196

Mick, D. G., & Fournier, S. (1998). Paradoxes of technology: Consumer cognizance, emotions, and coping strategies. *Journal of Consumer Research*, 25(2), 123-143. doi: 10.1086/209535

Novak, M. (2023, 23 februari). AI-Created Images Aren't Protected By Copyright Law According To U.S. Copyright Office. *Forbes*.

https://www.forbes.com/sites/mattnovak/2023/02/22/ai-created-images-in-new-comic-book-arent-protected-by-copyright-law-according-to-us-copyright-office/

NVIDIA. (n.d.). *What are GANs?* Retrieved from https://www.nvidia.com/en-us/research/ai-playground-gans/

Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. John Wiley & Sons.

PricewaterhouseCoopers. (n.d.). *PwC's Innovation Benchmark Report*. PwC. https://www.pwc.com/sk/en/inovacie/innovation-benchmark-findings.html

Qiao-Franco, G., & Franco, P. (2023). *Insurmountable Enemies or Easy Targets? Military-Themed Videogame 'Translations' of Weaponized Artificial Intelligence*. Unpublished manuscript.

Quach, K. (2023, 17 maart). AI-generated art can be copyrighted, say US officials – with a catch. *The Register*. https://www.theregister.com/2023/03/16/ai_art_copyright_usco/

Rogers, E. M. (2003). *Diffusion of Innovations, 5th Edition*.

Russell, S. J., & Norvig, P. (2010). *Artificial Intelligence: A Modern Approach* (3rd ed.). Pearson.

Samhan, B. (2018). Revisiting Technology Resistance: Current Insights and Future Directions. *Australasian Journal of Information Systems, 22*. https://doi.org/10.3127/ajis.v22i0.1655

Schau, H. J., & Gilly, M. C. (2003). We Are What We Post? Self-Presentation in Personal Web Space. *Journal of Consumer Research, 30*(3), 385–404. https://doi.org/10.1086/378616

Schouten, P. (2014). Security as controversy: Reassembling security at Amsterdam Airport. *Security Dialogue, 45*(1), 23–42. https://doi-org.ru.idm.oclc.org/10.1177/0967010613515014

Scott, J. (2014). *Social Theory: Central Issues in Sociology*. Sage Publications.

Smith-Laing, T. (2018, 27 februari). *How AI-Generated Images Could Reshape the Nature of Visual Truth*. MIT Technology Review. https://www.technologyreview.com/2018/02/27/144914/how-ai-generated-images-could-reshape-the-nature-of-visual-truth/

Thomas, T. C., Price, L. L., & Schau, H. J. (2013e). When Differences Unite: Resource Dependence in Heterogeneous Consumption Communities. *Journal of Consumer Research, 39*(5), 1010–1033. https://doi.org/10.1086/666616

Thompson, C. J., & Haytko, D. L. (1997). Speaking of fashion: Consumers' uses of fashion discourses and the appropriation of countervailing cultural meanings. *Journal of Consumer Research*, 24(1), 15-42.

Thompson, C. J., & Tambyah, S. K. (1999). Trying to be cosmopolitan. *Journal of Consumer Research*, 26(3), 214-241.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186-204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.

Vincent, J. (2023, 16 januari). AI art tools Stable Diffusion and Midjourney targeted with copyright lawsuit. *The Verge*.

https://www.theverge.com/2023/1/16/23557098/generative-ai-art-copyright-legal-lawsuit-stable-diffusion-midjourney-deviantart

Weber, J., Wesolowski, K., & Sparrow, T. (2023, 12 april). Fact check: How can I spot AI-generated images? *dw.com*. https://www.dw.com/en/fact-check-how-can-i-spot-ai-generated-images/a-65252602

Yamada, H. (2022, 8 december). AI photography is taking over social media. Why are some concerned about privacy? *Good Morning America*. https://www.goodmorningamerica.com/living/story/ai-photography-taking-social-media-concerned-privacy-94526042

Yup, K. (2023, 25 januari). *What AI art means for society, according to Yale experts - Yale Daily News*. Yale Daily News. https://yaledailynews.com/blog/2023/01/23/what-ai-art-means-for-society-according-to-yale-experts/

Appendix

Verbal consent form

This verbal consent form has been used and consent has been acquired through a voice recording.

Participation in this research study is completely voluntary. It is up to you to decide whether or not to take part. If you do decide to take part, you will be given adequate time to read the participant information sheet and ask questions. You will then be asked to give your verbal consent before participating in the study. If you decide to take part, you are still free to withdraw at any time for any reason and withdraw any unprocessed data previously supplied. You can refuse to answer any individual question and request for the researcher to not use certain types of information at any time. You will not be penalised or disadvantaged in any way for your decision whether or not to participate in this study.

With your permission, interviews will be audio-recorded permission and then transcribed. The data will be transcribed, and then personally identifiable information will be removed. All information collected will be strictly confidential and will only be retained for the purpose of this study. Confidentiality, privacy and anonymity will be ensured in the collection, storage and publication of research material. To protect the privacy participants, direct identifiers such as names, places, occupation, institution and email addresses will be replaced with pseudonyms when transcribing interviews. Identifiable personal data will be anonymised using pseudonyms.

Plain language statement

Master Innovation and Entrepreneurship

Master thesis understandings of AI image generators

PLAIN LANGUAGE STATEMENT

Dear Sir/Madam,

We invite you to take part in this master thesis being conducted by the student researcher Ray Huang through the master Innovation and Entrepreneurship and Radboud University. This student research project contributes towards the fulfilment of the requirements of the Master of Science degree being completed by the student researcher.

Purpose: The purpose of this study is to investigate how consumers' understandings of art made by AI is influenced by things like social network and technology use. We hope this study will help us better understand the way consumers think about AI art and why.

Research Process: The researcher will ask you questions about the ways you consume AI generated art by either creating it yourself or simply looking at AI art. The research will also ask questions about your views on AI generated art and other AI related questions.

The length of these interviews are expected to be between 45 minutes and 90 minutes and are also contingent on how long you are all willing to participate in this study. This is at your discretion. Further interviews following the initial interview are possible and may allow you and the researcher to further continue our discussions. Participation in any future interviews are at your discretion. All interviews including any further interviews, as well as your overall participation is voluntary; you can withdraw at any time, and you can withdraw any data you have supplied (up to the point of analysis/publication).

Confidentiality and Data Use: Only the researchers involved in the project will have access to the raw data in this study. Confidentiality of information provided is subject to legal restrictions. We audio-record the interviews for research purposes. Once we have transcribed and analysed the recordings we remove any personally identifiable information from the transcript documents to provide you anonymity. In resulting research publications you will be referred to by a

pseudonym. A copy of the results – in full or redacted form - of the study, or a summary of the research findings are available to you, if you wish to be sent a copy.

Possible Effects: No physical or psychological risks to you are foreseen. You will not be audio-recorded or your personal details collected without consent. With the small sample of participants in this study there is the possibility that you and your responses may be identified through the outputs of this study. However all reasonable measures will be taken to mitigate this risk, including de-identification of any personal information in transcriptions of recorded audio and reference to you using a pseudonym in any written outputs produced from the research.

Providing Consent: You will be required to fill out a consent form to participate in the research, or provide verbal consent at the start of a research interview.

Researcher:

Name (Student Researcher)	email
Ray Huang	ray.huang@ru.nl

Any Questions?
For more information or for a request for the final report to be sent to you in an electronic format, please contact the student researcher Ray Huang through email.

Thank you for your assistance,
Ray Huang

Interview guide questions (First round of interviews)

General

- Name
- Age
- Gender
- Frequency of AI image generator use

Can you tell me a little about yourself:

- Where do you spend most of your time?
- What is your current occupation?
- Describe your home situation
- What do you do in your free time?

AI generation consumption background

- Which AI generators do you use?
- How aware are you of the different possibilities of AI generators?
- How often are you involved in AI image generators in a week?
- What is your purpose for using AI image generators?
- What kind of creations do you make with AI image generators?
- Do you share your involvement in AI image generators with others?
- What got you into using AI image generators?
- How long have you been using AI image generators?
- How aware are you on the workings of AI image generators?
- How aware are you on the way AI image generators learn?

Specialized questions AI generators

- Describe the way you use AI image generators, the whole process from start to finish
- What are your thoughts on AI image generators
- What are your thoughts on the way AI image generators learn?
- What are your thoughts on the work produced by AI image generators?
- What makes AI image generators so enjoyable or not so enjoyable to use?
- How can AI image generators be beneficial to you or other people?
- How can AI image generators be a drawback to you or other people?
- Is your overall view on AI image generators positive or negative?
- Can you describe how AI image generators changed your view on art?
- How has AI image generators changed your consumption of art? (more or less consumption)
- What do you find valuable for art to be considered good?
- Can the use of AI satisfy these values?
- Can you describe what aspects AI generators can do better than humans?
- Can you describe what aspects humans can do better than AI generators?
- Why would you choose one type of art over the other

Fishing questions

- Is there anything challenging about using AI image generators?

- Are there moments where you feel discouraged from using AI image generators?
- Are you involved with AI image generator communities?
- What changes would you make to AI image generators?
- What do you find rewarding in using AI image generators?
- How would AI image generators affect the future?

Wrap up

- Is there anything left you want to share?
- Is there anything you want to know more about?
- Are there any recommendations I could possibly talk to?

Interview guide questions (Second round of interviews)

General

- Name
- Age
- Gender
- Frequency of AI image generator use

Can you tell me a little about yourself:

- What is your current occupation

Actors

- Which AI generators do you use?
- How did you get introduced to AI image generators?
- Who would leave a stronger impression?
- What made you try out the technology?
- Do you share your involvement in AI image generators with others?
- Are you involved with AI image generator communities?
- Why did you decide to use the technology while some others don't?
- Describe the way you use AI image generators, the whole process from start to finish
- Is there anything challenging about using AI image generators?
- What do you find rewarding in using AI image generators?

Understandings

- What are your thoughts on the work produced by AI image generators?
- Can something made with AI be called authentic?
- How much of something made by AI can be called your own? What does it depend on?
- Would something made with AI have the same value as something made by a human if the same amount of time and effort is put into it?
- What can you say about the quality of art produced by AI image generators?
- What makes AI image generators so enjoyable or not so enjoyable to use?
- What do you find valuable for art to be considered good?
- Can the use of AI satisfy these values?
- Can you describe what aspects AI generators can do better than humans?
- Can you describe what aspects humans can do better than AI generators?
- Why would you choose one type of art over the other

Adoption

- What do you use AI image generators for?
- When would you choose human art and when would you choose AI art
- Would you think differently if you commissioned art where the artist used AI?
- In what instances would you use the technology yourself, commission AI artists, choose human art

Wrap up

- Is there anything left you want to share?
- Is there anything you want to know more about?

- Are there any recommendations I could possibly talk to?