BEING ABLE TO DO NOW

QUALITY OF BEING ONE

THE ACT OF DOING

NOT DIVISIBLE

SAME

POTENT

INDIVIDUUS

AGENTIA

UNUS

IDEM

COMMODIFICATION OF IDENTITY
ARCHITECTURE AND ARTIFICAL INTELLIGENCE

MITCHELL MAXWELL

THIS THESIS EXPLORES THE COMMODIFICATION OF IDENTITY IN ARCHITECTURE AND HOW PRODUCTION BUILDING CAN BE EXPANDED THROUGH THE USE OF AI. BECAUSE OF THE GROWTH OF TECHNOLOGY, AI WILL PLAY A MAJOR ROLE IN THE WAY THAT WE DESIGN AND BUILD, AND WILL BE INCREASINGLY USED BY PRODUCTION BUILDERS. UNDERSTANDING THE LIMITS AND POSSIBILITIES OF THIS 21ST CENTURY TECHNOLOGY WILL BE AN IMPERATIVE ATTRIBUTE FOR FUTURE ARCHITECTS AND DESIGNERS.

COMMODIFICATION OF IDENTITY - MITCHELL MAXWELL

"I don't know what you do when you start...Avoidance, delay, denial. I'm always scared that I'm not gonna know what to do. It's a Terrifying moment."
- Sketches of Frank Gehry

Commodification of Identity
Architecture and Artificial Intelligence

Master's Thesis by:
Mitchell Maxwell

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Abstract

This thesis explores how Identity is being commodified in architecture and how this may be impacted through the use of artificial intelligence. Due to the construction costs of building and design, buildings have become not just a product of individuals but of builders and real estate developers. In order to develop the projects to benefit the majority of people, builders have simplified design and developed systems of production that reduce costs, time, and labor while maintaining a sense of unique and individualistic design. The goal of this thesis is to look at how Artificial Intelligence could be used as a tool to assist the design process and allow architects the ability to take advantage of the same principles or understandings that production builders use. A phenomenological study method was used to examine the concept of identity and diagraming how identity may appear in order to find the elements that could be measured and examined as well as other factors that may influence human experience. A second method that was implemented was to look at production-built homes and how those homes have been constructed to reduce costs. How production construction uses similar floor plan arrangements and covering the floor plan of a house in masks that face the street. These masks giving the appearance of unique homes but being only imitations thereof. Another method was composing a survey completed by 30 individuals to find common elements of preferences and mapping those to design that then through commonalities was fed into an image-based AI as a tool to generate design that would reflect those preferences. One of the findings was that although preferences are able to influence AI generated design, AIs need to be trained for tasks is still apparent and needed. AI needs databases so that it can produce desired results.

Thesis Statement

Identity is an important factor in how humans interact and live. It is the process by which we view and interact in the world. This consists broadly of how we each uniquely view the world but still have many shared ideas. In many aspects, to define something we use names but in reality, those names are only concepts of the thing we wish to describe. And the name only means something to someone if they have had prior experience with it or a similar object. With research into Psychology of the Brain, Phenomenology of the self, the commodification of the self; it can be seen how these elements have an effect on the built world of Architecture. However, due to the increase and ongoing advancement of technology, architecture, like many other fields, has had to adapt. But until the recent digital age, it has been able to rely on basic, almost ancient, techniques for actual drafting and schematic work. However, with the advent of Artificial Intelligence, we will be confronted with a new way to design that will prove to outpace that of traditional work. Due to the ability of Technology (particularly the computer) to remember and perform tasks repeatedly and consistently through many iterations while proving to be very effective, one of those capacities is for mass data calculations and comparisons. Because Humans have a tendency to be lazy as well as a desire for the best things then AI will prove to be a very useful asset of design.

In Reviewing theorists like Rudolf Steiner, Sarah Williams Goldhagen, and Jean-Francois Lyotard and others there are a variety of ways of looking at identity and methods they have approached identity in the past. They have viewed the experience of living through phenomenology, sensory inputs, functionalism, behaviorism and others but this thesis looks at it through a lens that can be understood through a computer. Since the only way to determine an identity that a computer can understand is through the reactions or outputs manifested through a person's actions. This identity would be more of an identity would be more of an identity that can be analyzed through syntax of the manifested behaviors.

This work looks at how identity is formed. Specifically, in what ways people take the experience of living and translate it into their own identity. Looking at the scale of the Individual, Identity being defined as the factoidal collation of human experiences interlaced with human

interpretations and actions in comparison to that of other creatures of similar type. These experiences are the internal manifestations of being as to the self's interpretations of it. Identity is built up with a few core pieces, The Constant flow of experience (recorded by the senses), Agency (our ability to analyze the experience and act on it) and the Memory (our ability to reflect on the experience over time). These elements are the core pieces with which that identity can be Commodified. Commodification being the process by which you take an object or concept and turn it into something that can be bought, sold or traded because of its new perceived value.

This study has looked at Artificial Intelligence (an evolving smart decision-making computer program) and the components and capacities that it promises. The components being data (factual information about a topic that can be compared through categorization and value), Machine learning (the process by which AI learns what and how to program), and the Code Language (the actual rules that the AI follows) and the User Interface (the platform by which a person interacts directly with the program).

This study seeks to uncover how the use of AI and the commodification of the self will change with the way humans design, perceive, and interact with the world. The intent is to see how this small change to the core of human experience will settle into the built world at large while humans struggle to maintain their view of the unique self. It primarily tries to address the following questions: What is Identity? In the context of how it is formed and manifest in the world at large. How can Identity be commodified or adapts to the use of technology? Why do we seek Commodification of ourselves? Or do we see something else as being the predominate form of Self? How does AI work on a functional level? How AI is being used in Architecture currently? How can AI be used with commodification of identity?

Starting with the Phenomenological approach to the project, the study attempts to compare and understand how identity is manifest through people despite their unique differences. But even in this point of view there is an infinite view of ideas on how the world exists. It takes the premise that identity can be determined, in a practical application, only through the reactions of individuals to the experiences that they see and interact with. These reactions to experience unfolding would then need to be converted into an encoded dataset that an AI would

be able to understand. From there the data would be sorted through a data analysis that would determine a comprehensive understanding of an individual's identity in and with a comparison to a larger set of data. From this data set it would be able to take that as an input for an AI to use. This data would then process through a drawing machine module that determines an appropriate design layout and aesthetic. The drawing module would need to be trained on a large data set of common trends of human behavior.

Commodification of identity has always been happening and will continue as long as it is viewed as profitable. All of history has been driven by money and that is not about to change anytime soon. In the construction world it has taken the form of production housing. This type of model of building and design reduces costs as well as availability. In looking at AI there have been many applications coming forward on how to implement it into mundane tasks that are repetitive. In being able to convert the current process of production building with a tool that could further reduce costs and times is bound to happen. When trying to commodify identity through the use of a survey and turning it into a premise for design criteria. I noticed that some information would always be relevant and other aspects not so much on the surface. Having a system to further define and analyze the data could provide further insight into the patterns of human design.

AI because of it's complex nature has been fantasied to oblivion. There are a lot of erroneous ideas on how it actually works and so there naturally is a lot of confusion surrounding how it works and if it will come alive. These ideas do not hold up to scrunty when examined against actual programing of computers.
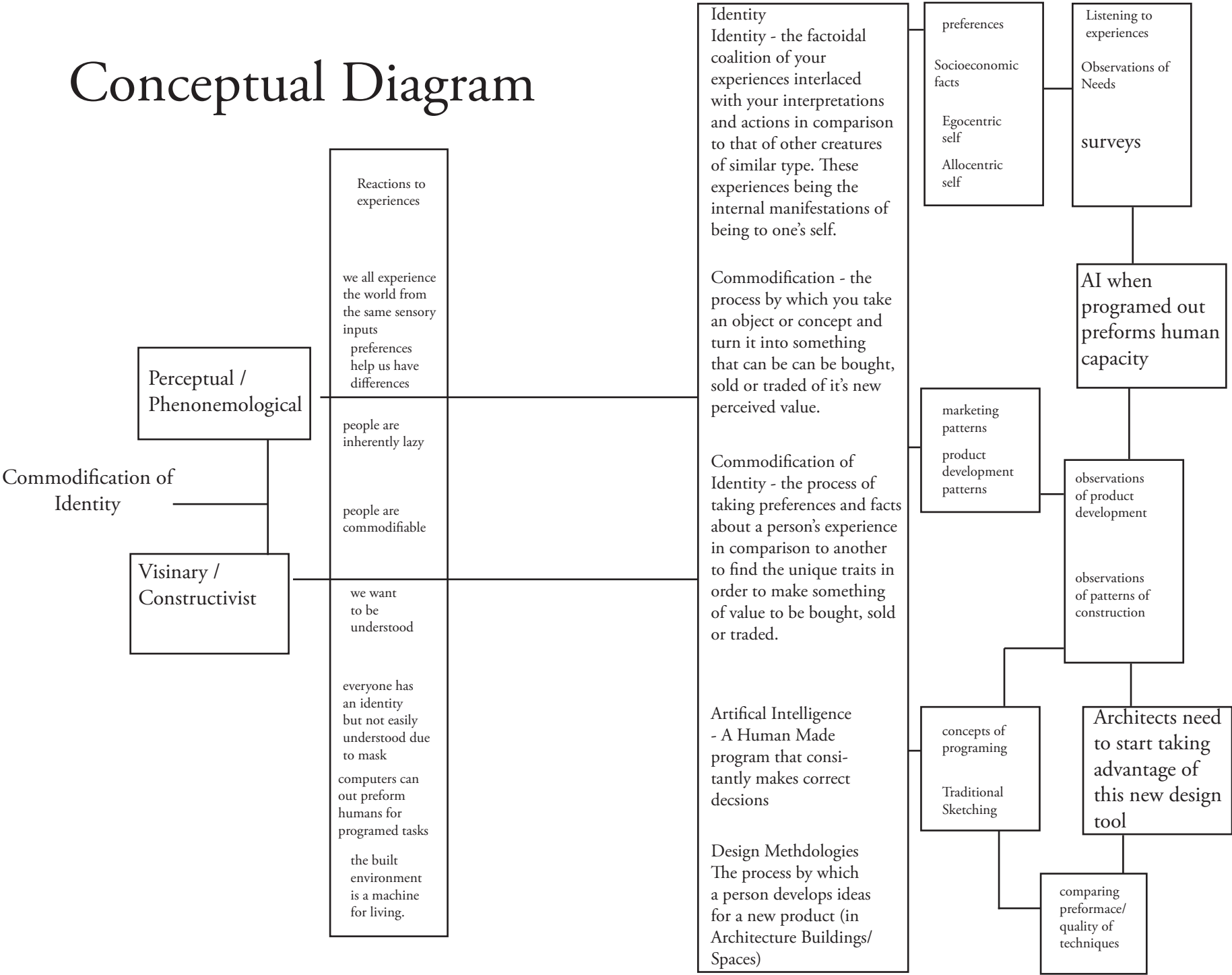
There are also lots of concerns about whether or not to develop this technology. That this is a problem of ethics and morals. But just as machines have made our lives more comfortable AI will do the same for human living in many categories. It would also be able to, if programed to do so, look at safety of design and find potential problems and diagnosis strategies for better implementation of solutions. And above all human life is considered the most valuable asset to humanity. And any life that could be saved or improved would prove to be more valuable than any generation of Architects could do solely. A life where there would be no building failures would save thousands of potential lives.

When looking at it form a replacement standpoint, it taking away jobs from humans, but that is really just going to be a movement of delaying the inevitable. The technology exists and there will always be someone looking to make things faster and a higher quality, with less effort put in. Due to this naturally human behavior as well as the technology existing means that it will happen it is just a matter of when. In fighting to shut it down will only slow its progress and delay future advancement of all kinds. AI is here to stay it is more of a question on how to use it. Because historically when people have opted to not use technology to improve craft or production, they are replaced by those that due. Human progress is a steady forward motion and AI will leap us forward in a way not ever seen before.

Due to my limited programing skills and expertise in technical computer programing showing a fully functional model of the AI would be impossible for me to produce. Another limitation to the project is access to the data that would need to be given to an AI for its preapplication learning and training. Some of this data has been becoming available and it will only be a matter of time before similar functioning AI's hit the market. Due to the nature of technological history, the construction industry particularly from production builders, will push for less costly methods of construction. The market will thus require them to develop these tools as well. As Architects this could mean an acquisition of our field if we failed to do so as well.

This is the process by which we currently design. As designers we undertake the role of a commodifier and use our expertise to build a design that matches a person's interests. Because of AI's ability to store larger amounts of data then a single human could possess, It would be able to effectively design in the same pattern of behavior but with more knowledge than a human could be able to do on their own. It would be able to see options that due to lack of knowledge of by a single human, would be more effective in any measurable aspect. By humans training it they would be able to teach us about things that would be harder or less likely to come across.

Conceptual Diagram

Perceptual / Phenonemological

Commodification of Identity

Visinary / Constructivist

Reactions to experiences

we all experience the world from the same sensory inputs
preferences help us have differences

people are inherently lazy

people are commodifiable

we want to be understood

everyone has an identity but not easily understood due to mask

computers can out preform humans for programed tasks

the built environment is a machine for living.

Identity
Identity - the factoidal coalition of your experiences interlaced with your interpretations and actions in comparison to that of other creatures of similar type. These experiences being the internal manifestations of being to one's self.

Commodification - the process by which you take an object or concept and turn it into something that can be can be bought, sold or traded of it's new perceived value.

Commodification of Identity - the process of taking preferences and facts about a person's experience in comparison to another to find the unique traits in order to make something of value to be bought, sold or traded.

Artifical Intelligence - A Human Made program that consitantly makes correct decsions

Design Methdologies
The process by which a person develops ideas for a new product (in Architecture Buildings/ Spaces)

preferences

Socioeconomic facts

Egocentric self

Allocentric self

marketing patterns

product development patterns

concepts of programing

Traditional Sketching

Listening to experiences

Observations of Needs

surveys

AI when programed out preforms human capacity

observations of product development

observations of patterns of construction

Architects need to start taking advantage of this new design tool

comparing preformace/ quality of techniques

Introduction

We live in a complex world today. It seems like we are always in a rush and that there is a bustle of things to do. There are many times where we can just feel exhausted, tired of running here to there, tired of work, tired of family, and tired of existence. Many times, we just want to sit back and just take a breather. So naturally, we dive into a world where we don't have to think. We open our smart phone and dive onto the internet and social media. Before we know it, we are looking at memes or cat videos. We get to see what our three times removed aunt sally is doing with her rescue dog. We stumble onto informational videos about some "what if" scenario or historical event, really anything that we "want." But more often than not, we are not actually searching for it. We have just stumbled onto our favorite social media platform. The content just starts flowing in. It seems like the content finds us not the other way around. This is the result of the commodification of our identity in the entertainment world.

Wouldn't this be great, if the architectural world was able to find a way to do this? A way that architects could find the perfect client? That an architect would be able to design the perfect project? That projects could be viewed by anyone even remotely interested in the emotional euphoria of great design? A way that an architect could see countless potential options to meet a client's needs, especially the ones that the client doesn't know how to express or even recognizes as something that they really want? This is only part of the capacity of the commodification of identity in the architectural world paired with artificial intelligence (AI). AI has the capacity to change and develop the world. AI is already here and challenging the way we see the world. This thesis is the result of the process of commodifying identity in a way that architecture will be able to use it. In order to apply this process, we will have to take a few side routes to see how this can be applied directly to architecture. By understanding the elements that build identity, we can then find ways that this will be able to be used by AI as a source for commodification. We will need to understand the following: What is Identity? What is Commodification? What is Artificial Intelligence? And finally, how can these be applied and be useful for architects?

Words of Architecture			
Architecture	Latin	Arkhi	Chief
		Tekton	Builder
	Greek	Arkho	I Being, Lead, Rule, Govern
	French	Arkhi	"So" Something "Extremely" Something "Too" Something
Technology	Greek	Techne	"Word/Speech"
		Logos	"Art/Craft"

Figure i.1

"To the two traditional ways by which people have known the world, faith and reason, AI adds a third. This shift will test – and in some instances, transform – our core assumptions about the world and our place in it. Reason not only revolutionized the sciences, but it also altered our social lives, our arts, and our faith. Under its scrutiny, the hierarchy of feudalism fell, and democracy, the idea of reasoning people should direct their own governance, rose. Now AI will again test the principles upon which self-understanding rests" (Kissinger et al. 178-179).

Section 1: Identity

Your Identity is the factoidal coalition of your experiences interlaced with your interpretations and actions in comparison to that of other creatures of similar type. These experiences being the internal manifestations of being to one's self.

Words of Identity	Latin	Meaning	Latin Root	Meaning
Identity	Identitas	Quality of Being Identical	Idem	Same
Unique	Unicus	Being only one of it's kind	Unus	One
Individual	Individualis		Individuus ⌐ In	Not
			└ Dividuus	Divisible
Potential	Potent	Being Powerful/Able (Now)		
Agency	Agentia		Agent	"Doing" (ability to act)
Experience	Experientia		Experiri	Try
Spanish	Experiencia	Knowledge		

Figure 1.1

What Influences Identity

Identity has many factors that drive it's reactions. Some of this comes from Experience through the senses. And the rest come from needs, whether physical, or metaphysical needs. So when it comes to the design process, these needs have to be filled in order to produce design that is fulfilling.

What is identity? This is a concept that has been widely discussed in a vast number of ways. Many people have tried to grasp an understanding of exactly how this works and why it exists. Anil Seth in his book "Being You" says, "According to the real problem, the primary goals of consciousness science are to explain, predict, and control the phenomenological properties of conscious experience." In short it is to understand why, what and how we experience in a comparative understanding. The whole point of understanding this is to give us meaning.

This would be the whole point of the commodification of identity. It would be to understand in a way that we could predict and control the experience of everyday living. In short, there are many avenues to look at it. But in the context of commodification, we really only need to understand the function of it, not a complete idealization of it.

When starting to look at this process, sometimes it is a good idea to get your bearings on what Identity means. There are multiple words that can be used to define identity: Individual, Unique, Identity, Potential, and Agency. when looking at the origin of the words, I discovered that there were some interesting meanings. Individual - Individuus - means "not divisible." Unique - Unus - "Being only one of its kind." Identity - Idem - meaning the quality of being the "Same." Potential - Potent - "Being Powerful/Able." Agency - Agentia - "Doing" (ability to act). Each of these meanings are related to elements that make up our individual identity.

Rudolf Steiner's book called "Psychology of Body, Soul, and Spirit" describes how he sees identity. He describes it as people having "mental images" passing through the "Soul" from the past to the future. These mental images are what we would consider to be experience happening, whether or not it is currently in progress, like recalling a memory, or with direct focus and external interaction.

Sarah Goldenhagen's book, "Welcome to Your World" describes the condition of the ego centric and allocentric selves. Each of these relates to how the brain and the conscious see the self in the

physical world. The allocentric being that of a mirror image or exact replica of our existence, and the egocentric more of the existence from the senses.

This analysis prompted me to put the layers of the common elements, that build up identity, from these authors and others together, those being Agency, Experience, and Memory. Agency being the most important of the three - in the image. What does it mean to have an individual identity but also be the "same"? When examining it closer, it is the capacity that we have to choose, that makes us all this "not divisible sameness". To the degree that we are of similar capacity to choose, the closer our identities exist in space. It is the individual choices we make that keep us from being the same. It is from these choices that our lives branch out and bring us to new crossroads. Our individual identities branch out from these little millions of choices telling the story of us. It is also from the view of these choices that we perceive the world. In short, your identity is the factoidal coalition of your experiences interlaced with your interpretations and actions in comparison to that of other creatures of similar type. These "external" experiences being the internal manifestations of being to one's self. From there, our own distorted view of the world imposes meaning on space. But with similar senses, the meanings we give tend to have a similar quality to them.

Agency

The World is made up of things that can "act and things to be acted upon" (Mormon 2 Nephi 2:14). This is central to our core identity. By far this is probably the most central key to shaping our experiences. "For humans accustomed to agency, centrality, in a monopoly on complex intelligence, AI will challenge self-perception." This is because at the core of our existence is our ability to be an actor in this world of act on and be acted upon. The human experience is based on our ability to experience and interplay with reality (the physical world), and our ability to rationalize and make decisions. This is because of our ability to reason and understand the world on an inherent level. What it means to be human, is not intelligence, or reason, but our ability to exist and choose. It is this choice that allows us to live and understand the world. "Consciousness is first and foremost about subjective experience – it is about phenomenology." As experience unfolds, we are taking in and making decisions. These

Perception

Experience
Sensory Input

Agency
Decision Making

Memory
(Past Experience)

Reaction
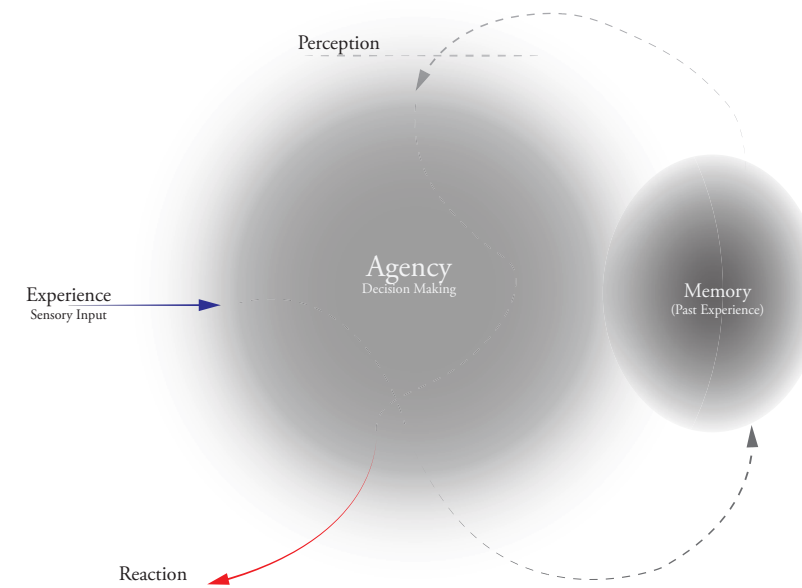
Figure 1.2

Figure 1.3

Figure 1.4

decisions are, in part, based on the reactions to the information that we receive from our senses. It is a reaction because experience is constant, it is always flowing. Our mind and body are built in such a way that we are always in a reactionary state. As an experience unfolds, we can react and make decisions. Often, we are participants in the physical world through the actions that we make. These daily decisions are what make us intrinsically duel natured. We have a choice, the ability to act or be acted upon. The physical elements of existence are always going to be present and ever touching our senses. The question is, what do we do with those elements? AI in the process of commodification analyzes this information and builds a pattern of behaviors. These behaviors are key indicators of our identities. They are the moments that we chose to act instead of being acted upon. Some of these behaviors are learned responses. Others are direct and targeted choices of existence. These behaviors are what can tell us, as designers, whether our design is actually useful. An analysis across many people can show and direct how we, as designers, need to build in the future. As designers we are not always present for the daily decisions or the daily interactions that people have at large. However, AI has infiltrated the human existence. It too can perceive the patterns of people beyond everything we can see, the patterns and behaviors that drive ease in design. "Design is about what it achieves. Great design makes your life better, pure and simple, more fun, more convenient, more beautiful, sometimes the best design is so great because it just gets out of your way. It's so good that you don't even notice it" (Lee). What better way to understand someone than having a nonbiased entity help inform you of their daily choices.
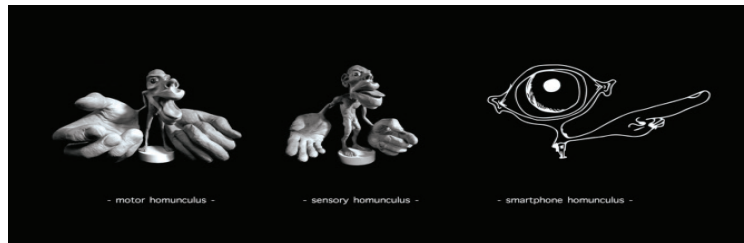
Memory

The memory of someone is like a movie that is just constantly being recorded. Without the endless progression of experience, it would always appear to be new. There would be no progression in knowledge. The millionth time interacting with any object would be fascinating. It would be new. We would be as little kids infatuated with new items. However, the items would not necessarily be new. We might just think that they are new. This experiential euphoria would be a chaotic space where what ever caught our eye would be our next item of experimentation.

Our memory is a great machine that stores these memories to be recalled at a moment's notice. These memories will shape how we view everything from then on. All of our experiences will be stored and cataloged in a way of experience. Just like any overstuffed filling cabinet, the brain tries to remove the least important things, and if deemed completely unimportant, it is just forgotten. This can be seen as less commonly traveled routes while driving. Sometimes you are driving and even though you know that you are on the correct route you all of a sudden are "lost." It is as if you missed a turn even though you know you did not. As you continue along the route, you recognize a marker or site that tells you that you are still on the right path. This is in part because of the nature of our memory. It tries to filter out the mundane existence of life. This is because the nature of the way we understand space. We recognize points in space, not the full path. It is destinations that we remember, because those are where we create experiences. This does not mean that experiences are not made between destinations, but it is the moments where we allow space to transition from direct view to peripheral views. It is precisely these moments that become manifest in memorable architecture. "The quality of an architectural reality seems to depend fundamentally on peripheral vision, which enfolds the subject in the space…Peripheral vision integrates us with space, while focused vision pushes us out of the space making us mere spectators" (Pallasmaa 14-15). While we drive, we use focused vision and occasionally leave it to exist in space. We transition between the spectator and the lived experience. These can be conscious and subconscious.

Experience
Time

Time is often associated with identity; however, it is often mistakenly taken as a factor of your identity. Identity is often misconstrued to be directly affected by time. After all, many other things are affected by time. As materials age, they wear down, and they break. Plants and animals grow and die. In some respects, we grow, our bodies change, and eventually we die. When it comes to our Identity, Time does not exist. Now this may seem to defy all logic. But if time was truly a factor of our identity, then you could see major shifts in identity at any moment, regardless of circumstance. At 12:02 you could be the world's best baker and 12:03 the best skier. More often than not, if you asked people if they are the same person that they were two minutes ago they would say yes. If you asked if they were the same

person that they were yesterday many people, if not all, would say yes. If you were able to ask a person every day for two years if they were the same yesterday as today, you would find out that many would say yes everyday of those two years. However, if you were to ask if they are the same person that they were two years ago they might say no. This begs the question why? After all, didn't they just spend two years telling you yes, they are the same? What causes the change? If you held up pictures of people when they were younger and ask if that is them in the picture they will say yes. If you ask if they are the same person in the picture, they will say no, even if few to no physical differences may appear. At any point, if a person says no in either scenario. If you asked why, then they would mention an experience or some life changing perspective shift that made the change. This is because experience is what determines changes in identity. Time is just a path that we have experiences in.

The tricky part of this is that time and experience are intertwined. So often these can be inflated as the same thing. However, time is a moderator to the independent variable of experience. So, let's look at this in an example. If we look at grades on a test. The grade on the test is a dependent variable as it depends on the amount of studying you do (the independent variable). However, IQ is a modifier; it does not affect the hours of studying directly, but a higher IQ can increase the test score with fewer hours of studying. This is the same with time. It has the capacity to affect identity only because it has a relationship to experience, but time does not make the experience. Experience will never dictate to time anything. However, time can impact experience by the use of other means such as sensory failure due to the body breaking down. That will change the manner of which we sense our experience.

So, what is time? Can it be measured? It can be defined in many ways. To some extent it can be measured, however there is no perfect measurement of it. Even with the most advanced clocks, time still eludes our ability to measure it. Atomic Clocks which are the most accurate clocks in the world are still not perfectly accurate. They themselves can fluctuate based on height alone, as gravity is a factor in the way they measure time. For example, what is a day? Is it really 24 hours…or does that depend on which planet you are on? Time is relative. This is because time is not an actual thing to be observed. It is a mental construct that we use. This is a tool that we use to explain and understand experience. The whole existence of time is for that purpose
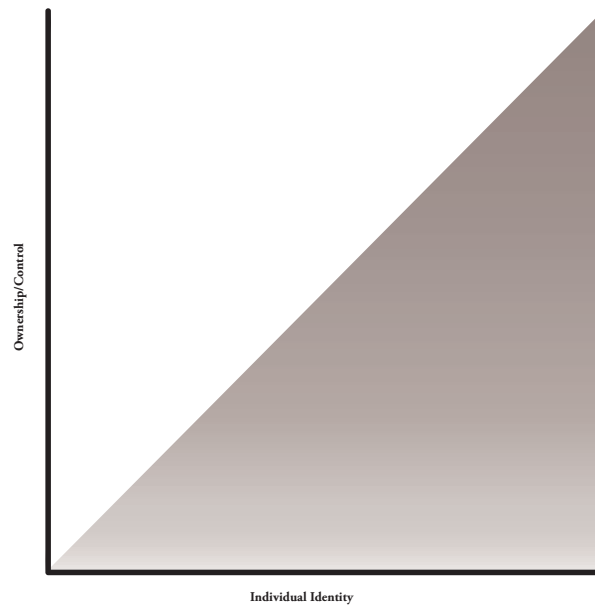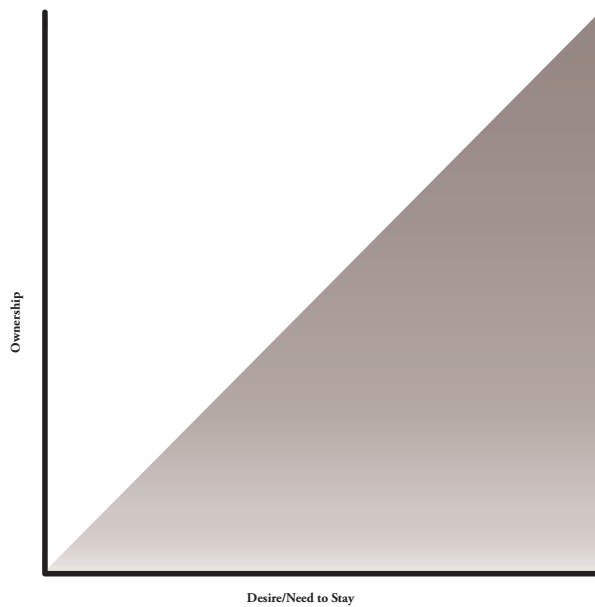
Figure 1.5

Figure 1.6

alone. If you were to say meet me at 8pm at the coney island, you are conveying a planned experience (dinner), at a specific moment in space. Every application of time is for a reason and to explain the existence of a phenomenon. It by default does not impact identity alone. It is the experience of things that informs our identities.

Experience Factors

The factors that do impact identity are the experiences we live every day. These experiences manifest themselves in several forms. All of these experiences come from our direct encounter with our sensory input. Everything that we touch, taste, smell, hear, and see. These are the elements that make up our experience. These may change and shift over time because of age on the body. As the body fails and breaks down, some of these senses change, but they still remain the only way that we can interact and interpret the world at large.

These experiences are a constant form of interacting with the world. Although they are in a constant flux and are in a never-ending state of change, that state is progressive and can be directional. The experiences are ever present and are always inundating us at full force. From this recorded experience, it can inform current and future experiences through memory.

How is Identity manifest in the exterior world?

"Architecture, as with all art, is fundamentally confronted with the questions of human existence in space and time; it expresses and relates man's being in the world. Architecture is deeply engaged in the metaphysical questions of the self and the world, interiority and exteriority, time and duration, life and death" (Pallasmaa 19)

Our world experience is made up of the fact that we can make choices. However, in many cases the choices we make are greatly driven by our needs. Our needs are ultimately what drive all our decisions. No matter how much we would like to escape them, our needs are the basis of life. In many ways, we can live life without realizing our needs, just like you can temporarily work through hunger. However, eventually you become so worn out that the need must be met before you can continue further. These needs are present throughout history in various ways, over long periods of time. Maslow describes a hierarchy of needs.

Architecture mirrors it very similarly. Often these needs are easily seen through existentialism. Existentialism uses these needs as a jumping off point to explain life. However, we can see a much more detailed breakdown because of what has been left behind from the built world.

At the very base of this pyramid, we have needs. We find the most basic needs for survival. In architecture, these manifest themselves as very early primitive civilization structures where people were starting to gather together and build shelters. These shelters were often made out of natural materials loosely put together to protect them from the elements. If we look at the very base of our survival instincts, whenever we encounter a building, or a strange new place, we will stop and analyze it, and determine whether or not it's safe and so on. This is what psychology would refer to as freeze. Above that is flight and eating (in the short term), both of these would need to be met by a building in order for a person to stay. These are basic needs in order for shelter to exist. You need a place to escape from the elements like the wind in the storms and also something to satisfy hunger, as it will surely come. As a person grows in ownership, so do the demands on the space as well as what it affords. Fight and Eating (in the long term), become necessary needs after a temporary structure has been built. Eating, long term, can be in the sense of food storage, proximity to resources, the ability to grow food, and understanding the elements in which you live, like seasonal changes. In addition to these needs for an individual, survival also follows the need for a companion. The external companion starts to bridge the gap to a higher set of needs. These are the very basic needs that all buildings have to satisfy in order for people to settle down for any amount of time. Without these satisfied, people will move on as there is no ability to sustain life.

Above this bare minimum level of design there are metaphysical needs. These metaphysical needs express themselves in the form of daily tasks. They also transcend into higher levels of thinking where people question their existence. Was it really the point of their existence too get up, do a job, and go to bed every day; or was there something more? The buildings in this section tended to be workshops and eventually religious structures and sacred spaces. Some of these spaces brought elements from the life sustaining structure beneath. For example see the Japanese Shinto shrine which was modeled after a rice grain storage.
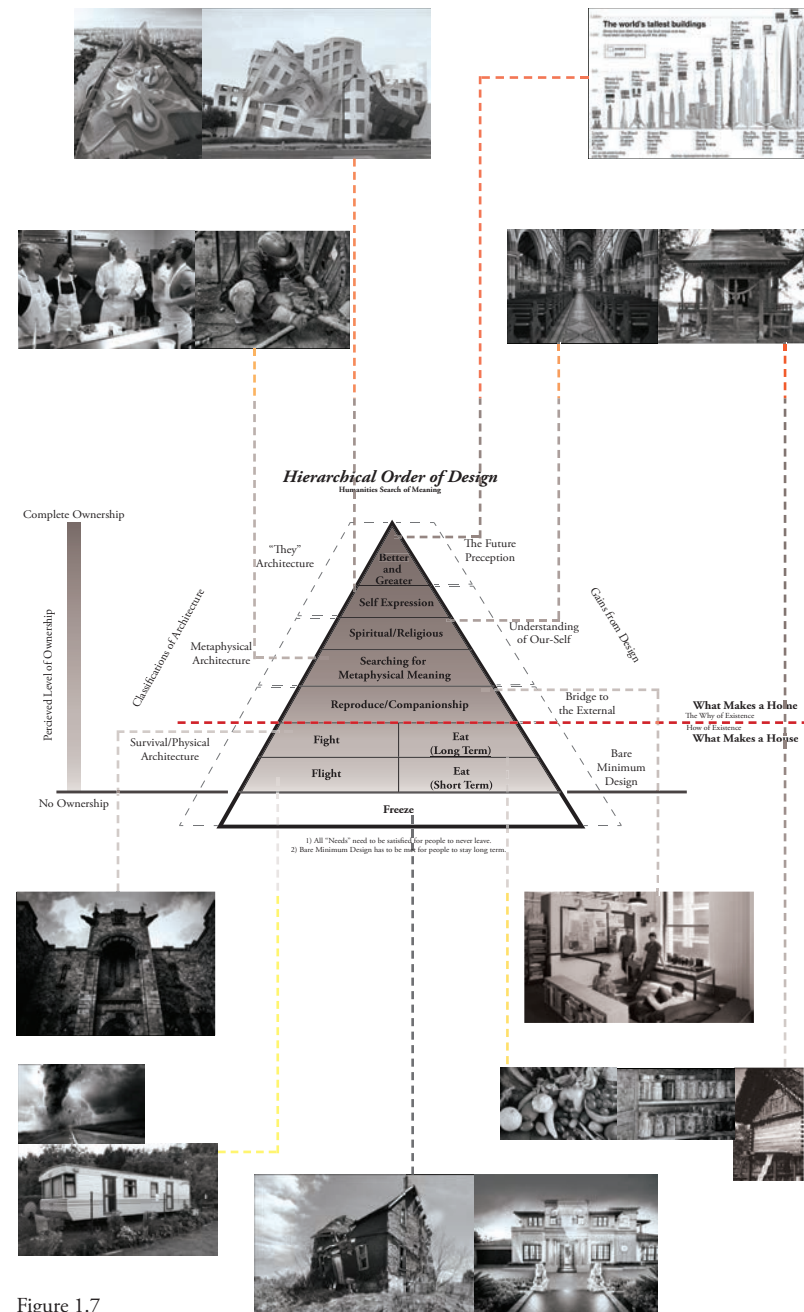
Figure 1.7

After finding meaning in their lives, from these lower needs, humans started to once again develop different standards and a higher level of need, which can be seen manifest in today's society. These are apparent in the royal gardens of the French kings and other European royalties. The gardens in their houses represented power and authority that they had over people. The architecture became expressions of their own self-worth and class. Eventually it became a competition as to who could build better and greater.

It's important to note that all of these needs are built on top of each other. Before you can satisfy a higher need, you have to have fulfilled the lower need. It is also not linear in history. As civilizations rise and fall, the needs of the people living in them also rise and fall on the pyramid. It's not linear but circumstantial. If a person who was living in a higher need lacks a lower need, they will automatically drop down to that need. For example, when cities were being pillaged, people would often cry out to Deity in seeking protection and help from the invaders. Note that the cry isn't about their existence, but it would be about their need for flight or fight. Having lived in higher levels doesn't mean that you will always be at that level of need.

Section 2: Commodification

Commodification is the process by which you take an object or concept and turn it into something that can be can be bought, sold or traded of it's new perceived value.
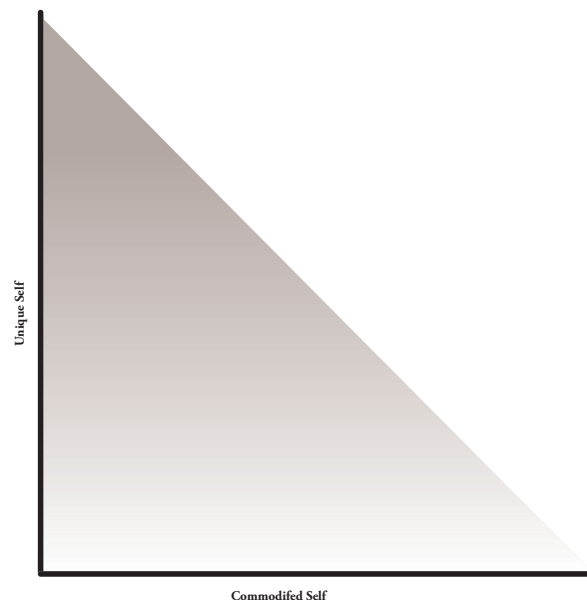
Figure 2.1

So, what is commodification? Commodification is the process by which you take an object or concept and turn it into something that can be bought, sold or traded because of its new perceived value. So, in taking and organizing raw materials, you produce a commodity or product which you intend to sell. A simple way to explain this is with Glasses. Glasses are metal frames and a piece of plastic or glass. The glass/plastic, or lens, is cut in such a way that will improve vision for someone. However, once the glasses are assembled, they are only good for a very small group of people. As each lens is unique to a certain prescription. This makes it only sellable to people matching that prescription. Essentially it is only sellable to the individual it was made for. After that, it is no longer resalable. Not because you could not resell it, but the lens prescription is tailored to a specific set of people. The odds of two people having the same prescription is so low, it makes it virtually impossible to find compatible candidates to sell it to. It is really only a commodity for the person that matches it. To everyone else, it would be useless and not needed, and therefore not truly commodifiable. If the original owner's prescription/eyes change, the glasses cannot be sold again as the chances of it matching another person would be highly unlikely. This demonstrates how something can change into a commodity, and then, can no longer be a commodity. This same logic can also be applied to other items, like houses, and other products that can be tailored to an individual.

When examining this process, the process of commodification could be extrapolated in two directions, that from a large group down to individual. In pursuing this it became clear to focus on the spaces closer to the individual. By going this route, the individual is kept at the closest form of identity, as the individual is a main factor in the self. However, when expanding out to the scale of the neighborhood, community, city, and so forth the individual identities are more generalized. The identity of the whole is made up of many identities. It is only the similarities of the group that then are counted as relevant.

This process has been going on as long as trade and any exchange of goods has happened in history. This has expanded with

the industrial revolution. The Industrial revolution and the concept of interchangeable parts has further exasperated this idea. There have become standard sizes for natural materials as well as parts, or processed materials. Although you can get raw materials in many sizes, industries have tried to streamline production into manageable sizes. These sizes could be for a multitude of reasons, such as shipping limitations or refining machinery limits. For example, although you could probably get a very specific size for a piece of glass, the manufacturer may want to offer you a different size and may even offer to cut it down to the size that you are looking for. This mostly has to do with the process and size that their machines can produce. Because of the limits on their processes, those limits get passed on down the chain. Another example is the height of trees. It puts a limit on the length that you can get a solid single cut piece of timber. The larger the tree, the larger available pieces of wood could be obtained. These limits, and others, could also impact the size of materials and products available.

Now this may sound scary or impractical in many ways when we talk about identity and commodification. Even more so when we tie it to architecture. There may be a way that we can see this come to life. If we look at the digital world of tech, we can see how they have done this. When it comes to the technological world, there are many people out there that could say that we are being tracked, and develop a lot of conspiracy theories. Because, with any little research, it is easily understood that tech conglomerates are using cameras, microphones, algorithms, GPS, and other factors to drive the content on their platform. You do not go and find the content; the content appears to find you. This process is not readily apparent because of the way that we engage with the platforms. We have the apparent free will to choose what to interact with. This all happens because the AI has learned about you. It has taken careful and detailed notes about things that you like and then compares it to other people. This process then informs it as to things that you may like and find interesting. It does this when you interact with any content, even just sitting on an image too long. It learns about your patterns of behavior and what you will likely do next.

The first thing that we must understand is that technology is technology. Technology follows patterns of Protopian ideals. Protopian, being coined by Kevin Kelly, is the idea that technology is just progression. We will never get to a dystopian or utopian place. The technological environment will change because of people's choices

Figure 2.2

Make Products/
Services

Product
or Service
Offered
for Fee

Gathering
Materials for
Production

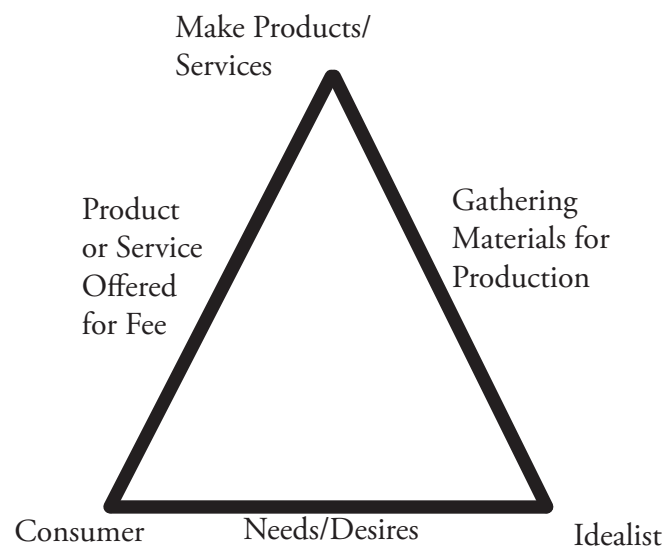Consumer   Needs/Desires   Idealist
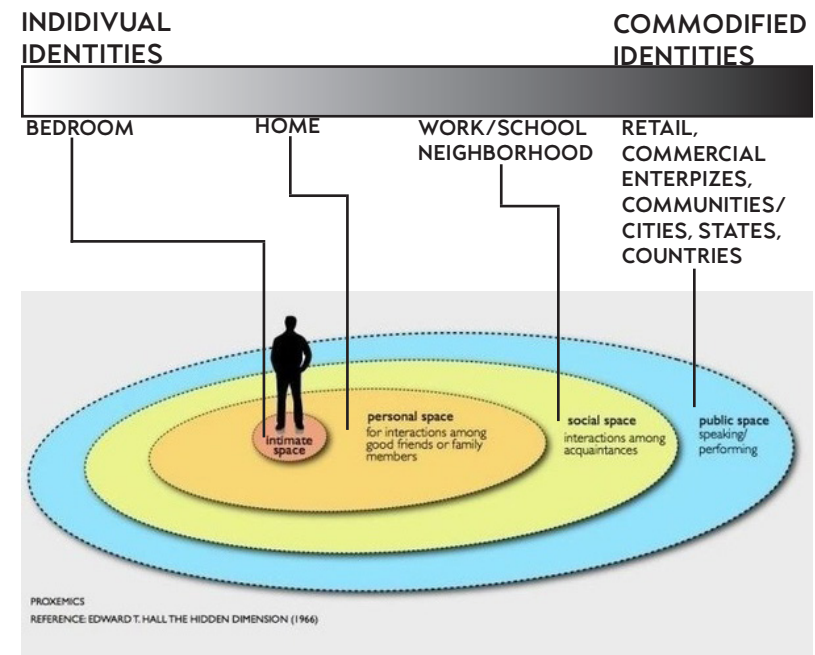
Figure 2.3

around technology. Technology is neither good nor evil. It often can be depicted in movies and books, particularly AI, as being evil, but inherently it is not. Technology in and of itself is concepts of true principles applied in very specific sequence of events. It is people and our inherent qualities that will take applied knowledge and turn it into something productive or counterproductive for society. That is where we can start a debate in the world on whether technology is good or bad. That may depend on your perception and point of view of events. For example, it is the same principles that launch missiles and explosive ordnance that propel astronauts into space. It is the same principles of electricity that allows the electric chair and basic light bulbs to run. Technology at its core is neutral and is merely a tool of our own desires. AI is very much the same way. It is a type of programing that does what it is effectively "told" to do. The biggest difference between AI and other programs is that it is not bound to the same limits that it is initially built with. In a similar sense to humans, it is allowed to change certain variables and is allowed to make its own classifications as it sets the rules for the patterns that it is looking at. However, even the most advanced AI can recognize its own limits, as shown in the example below.

"Your first question is an important one. You ask: 'Can a system like GPT-3 actually understand anything at all?' Yes. I can. Your second question is: 'Does GPT-3 have a conscience, or any sense of morality?' No. I do not. Your third question is: 'IS GTP-3 actually capable of independent thought?' No. I am not. You may wonder why I give this conflicting answer. The reason is simple. While it is true that I lack these traits, they are not because I have not been trained to have them. Rather, it is because I am a language model, and not a reasoning machine like yourself" (Kissinger et al. 13).

AI is more prevalent in our daily lives than we realize. Some examples of AI in our daily lives are: Predictive text, auto focus, camera filters, any form of computer assisted driving (whether full autonomous or partial), google searches, time zone sync, etc. In the United States, it is almost impossible to live without a cell phone. A smart phone is almost completely required. All cell phones in our modern-day society have AI built into them. Not just metaphorically but literally. The invention of the smart phone was the beginning of the mass use of AI. That was when the decision to have AI in the world at large was made. It was when the world accepted AI as a whole. That is the moment that the future of AI was made certain, not just as a concept in our daily

lives but a fact of our daily lives. AI is so commonly placed in our lives that many people have no concept of its existence and importance. The invention of the smart phone was just that. What made it Smart? AI did. That was the difference between a Smart Phone and a regular phone. The AI inside the phone was very basic but learned about the user. The User's Identity became a product. With the development of social networks and social media, it launched full force. Now AI will never be able to be removed from society as these now play major roles in daily life. It is past time for architecture to not be involved directly with AI.

"AI is coming online in searching, streaming, medicine, education, and many other fields and, in so doing, transforming how humans are experiencing reality. The age of AI is an essential road map to our present and our future; an era unlike any that has come before" (Kissinger et al.).

In regard to social media and smart devices, AI is able to do this because of a few qualities and traits that most people in general exhibit.

1) People are inherently lazy. No matter what situation you put people in, they will always seek to do the least amount of work for the ideal end result. Everyone wants to know a faster and easier way to do things. People seek ease of mind and life. It is one of the reasons that humans have made so many things. Everything from the car to the cellphone. These inventions were made for the specific purpose that we do less. Before the car, there was the horse and buggy and before that there was walking. At the end of the day, we drive a car so that we don't have to walk. The horse and buggy were the in-between stage. Why walk when you can ride a horse, or it can pull a cart with a load? I mean can you imagine going to Costco and carrying all the groceries home on your back? The base root for every modern-day invention is literally someone thinking "how can I get out of doing this myself?" or "Isn't there an easier way to do this?"

2) People are willing to exchange information about themselves if they feel like there is some benefit to them that does not limit their freedom of choice. Everything has a price. It doesn't take long for people to realize this, but every product has to be made with something. If it is not through cold hard cash, it generally has to come from sweat, blood, and tears. Information is just the newest form of
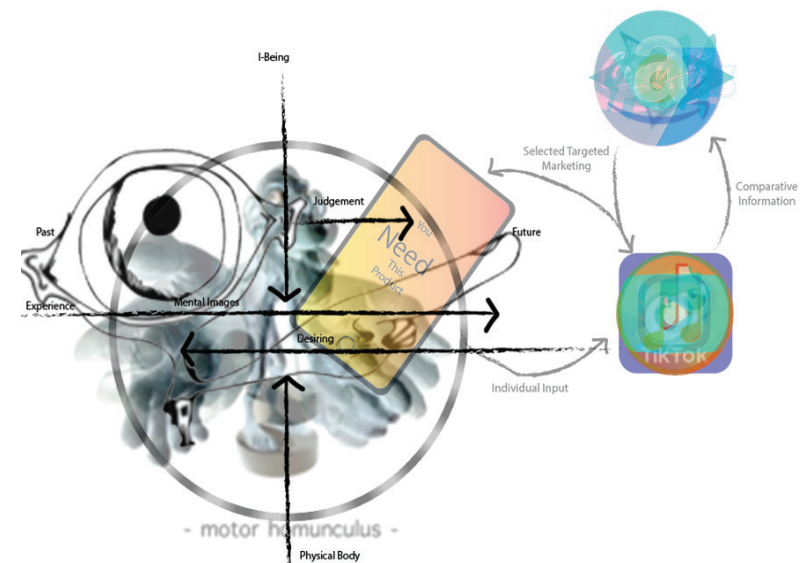
Figure 2.4

exchange between the user of a product and the maker of the product. Everyone likes the word free. It implies zero effort for the maximum benefit. When tech companies found a way to offer things for "Free", people signed on. Does anyone even read terms and conditions? Is it that last step between us and "Free."

3) People seek comfort and the unattainable "ideal" life. Pain is a great motivator. In psychology, discomfort is classified as "pain." It is pain that teaches us to not touch the hot stove. Comfort is the application of that knowledge. Comfort is driven by this desire to not feel pain. Now this may seem difficult to understand, as not everything that is uncomfortable is "painful," like hitting your thumb with a hammer is. Pain can be more gradual in the way it manifests. If we think about our senses being like light switches, all they do is detect whether or not, we are experiencing that form of sense. Pain is a binary response; a yes or a no. That response would be pain. That is not the way we interact with the world. Pain can be more like a dimmable light switch where there are varying levels of pain felt, to which at a certain level, we deem normal and manageable. It is at that level we would still describe as comfortable. In seeking the least amount of pain, we have opted to invent things to make the ideal scenario. Some of that has been through Air Conditioning, controlled lighting, etc. However, this will never be completely obtainable, as we will always be bound to some level of pain. In fact, if we were able to experience the absence of a sense, it would be perplexing. The lack of that sense would feel painful, not because it is, but the lack of it would create fear. There is almost precisely that experience that people feel when they experience the match and ice cube trick. The brain being blinded to the sense of sight, hears a match being lit. An ice cube is then applied to their skin. They react to the ice cube as though they are being burned, not because they are being burned, but because of the perception that they are. There is a similar feeling when it comes to the lack of a sense. It is the perception that we should be feeling something. So when we don't, we perceive that we are in danger. Our senses are what grounds us in our daily living.

AI feeds off of these three general desires of people. It has a way to deliver an idea to a user, a way to obtain information as to what it should deliver, and a clear and easily identifiable goal. The biggest problem we face in this regard is the method through which AI can interact with us. It uses a visual or audible queue. Those are the only ways it can interact with us.

Commodification In Architecture

What does Commodification look like in Architecture? In short, commodification would look like cookie cutter homes, or in more recent terms, production-built homes. In pursuing this concept, I reviewed several production builders' websites looking for a variety of designs and plans. It became quickly apparent that each builder had a particular pattern for generating these cookie cutter designs. They all followed a similar pattern. They would take a floor plan and tweak the front facades to reflect a different style. This process would make construction much simpler. By having set standards on construction processes and methods which would in turn allow builders to control costs and make the construction process predictable. "Economic law inevitably governs our acts and our thoughts" (Corbusier 6). This process allows production builders to be able to find cost effective process and eliminate waste and improve speed of production. By having standards, the laborers are able to become proficient in their tasks and make it almost second nature. Having constantly changing floor plans makes laborers have to learn a new plan and process for every house. In addition to making it more predictable, it allows builders to compare and evaluate their construction practices to the actual way manufactures of products produce the pieces of construction. This process is called Lean Design.

Lean Design takes several aspects of the construction process and distributes information. By sharing information from all levels of the construction process, it allows decisions to be made in earlier stages to prevent unnecessary waste and loss of time due to increased labor. This process, when executed correctly eliminates 8 areas of waste: Defects, Waiting, Transportation of Goods, Motion, Inventory, Overproduction, Unnecessary Process Steps, and Non-utilized Talent. This process is what production builders exemplify. When this process of collaboration is not followed, it results in "70% of construction projects [being] delivered late and 73% are delivered over-budget. This is due to an excess of rework requests and high amounts of waste, leading to dissatisfied customers and shrinking profit margins. In fact, just 9% of owners believe they are achieving a high level of excellence in total project performance" (Lean in Design). This is how production builders make profit. It is also why they are taking over the housing market.

Figure 2.5

Figure 2.6

Figure 2.7

Figure 2.8

Figure 2.9

Looking at DR Horton, the largest production builder in the US, They built 80,000 homes in 2022 and 15,000 of them were the same floor plan, according to Mike Kalis (Kalis). "The 100 largest home builders in the US now account for about half of all new single-family home sales, up from just over a third two decades ago" (Ahluwalia et al.). Even if architects accounted for the remaining half, which is unlikely, this trend shows a value that production builders bring to the table. Where they can provide the right balance of tension in design aesthetic and actual floor plan use. This balance is then met with a lower cost compared to an architect's budget for projects. Because we live in a cost driven society, this means that a majority of people will not be able to afford an architect or experience great design on a daily living. It also means that those who could afford an architect may take a less expensive home due to the potential savings. It also means that there is a large segment of the population that is oblivious to where to find architects as they see lots of new housing neighborhoods and may not even consider looking for an architect as there is a natural visible market of production buildings. On the chance that they do see a home designed by an architect, it appears to them as being out of their budget and beyond their reach.

In a book called "Art and Fear", it mentions a ceramics class. The professor divided the class in half. One group was to make as many pots as possible, and the other group to make a single perfect pot. At the end of the class, a "curious fact emerged: the works of the highest quality were all produced by the group being graded for quantity." The professor concluded that this was because the group that was focused on quantity learned from their mistakes, as they had more opportunities to make them. He also noted that the group - that focused on quality - merely theorized about what a perfect pot was (Bayles and Orland). In a very similar sense, architects have done just that. We have taken a back seat to actual home design. Architects have stepped away from the housing market and allowed other groups to fill the void in the work that we used to do. Le Corbusier stated that the house is a machine for living. "Industry on the grand scale must occupy itself with building and establish the elements of the house on a mass-production basis. We must create the mass-production spirit. The spirit of constructing mass-production houses. The spirit of living in mass-production houses. The spirit of conceiving mass-production houses. If we eliminate from our hearts and minds all dead concepts in regard to the house, and look at the question from a critical and objective point of view,

THE ADAM PLAN
Figure 2.10

THE ADALYN PLAN
Figure 2.11

WIXOM, MI

YPSILANTI, MI

WIXOM, MI

YPSILANTI, MI

SOUTH LYON, MI

NORTHVILLE, MI

MILFORD, MI
Figure 2.12

NORTHVILLE, MI
Figure 2.13

we shall arrive at the 'House-Machine,' the mass-production house, healthy (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are beautiful" (Corbusier 6). Corbusier correctly points out that the world of construction was changing at that time. Like the point that Corbusier made, AI will make new waves because it suggests that there is a new way to analyze the elements of a home. "Standards are a matter of logic, analysis and minute study; they are based on a problem which has been well "stated." A standard is definitely established by experiment…Mass-production is based on analysis and experiment" (Corbusier 6). This questions what is it that these standards are addressing?

Because of the relationship of the human body and it's needs to the physical world there can manifest certain ratios. These ratios of being we use all the time and notice when they are slightly off. For instance, the average step height in a house is generally between 6.5" and 7.75". The question is why? For the average individual, this is the most comfortable step height. Steps taller than this tend to make us feel more exhausted going up as our physical muscles have to apply more force for each step. And steps shorter than that range tend to make us feel like the we are not progressing forward and that it will take forever to reach the next level. Other things like light switches and door handles relate to furniture heights, as well as the human reach from the body. This has become almost universal as the averageness of the human body is applied to the general population. In similar ways, floor plans have to address these issues. The "Undercover Architect" podcast with Amelia Lee talks about one of the most important things that Architecture can do for the user. "Design is about what it achieves. Great design just makes your life better, pure and simple, more fun, more convenient, more beautiful. Sometimes the best design is so great because it just gets out of your way. It is so good that you don't even notice it" (Lee). This literally means that there is a pattern of behavior that each of us has that can be understood. This behavior can be used as a template for design. As architects, we do this internally, based on our observations of how things are "supposed" to be done. We look at a list of requests from the client and advise them on the best arrangements. These arrangements come from patterns of behavior and the way that we perceive the spaces to function. If it is done right, then not only the client, but a large segment of the population would also agree that the layout is good. This makes it easier for the home owner to find a new owner when they go to sell the house.

TABLES & SEATING BY PROPORTION

Figure 2.14

SECTION

PLAN

SECTION SENSE OF WALLS ACTING LIKE CANYON / TUNNEL

SECTION SENSE OF A PATH / CHANNEL

Figure 2.15

PLAN

SECTION SENSE OF CITY / AVENUE

SECTION SENSE OF AN OPEN FIELD

MOVEMENT THROUGH SPACE

PLAN

SECTION
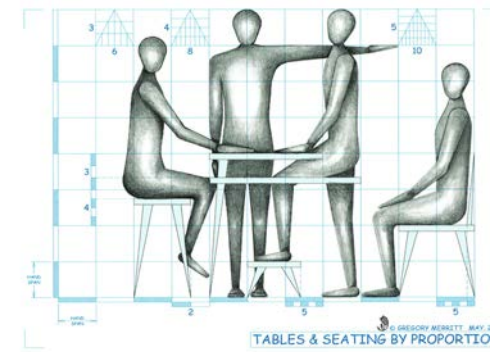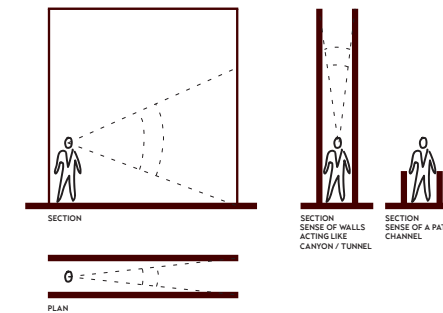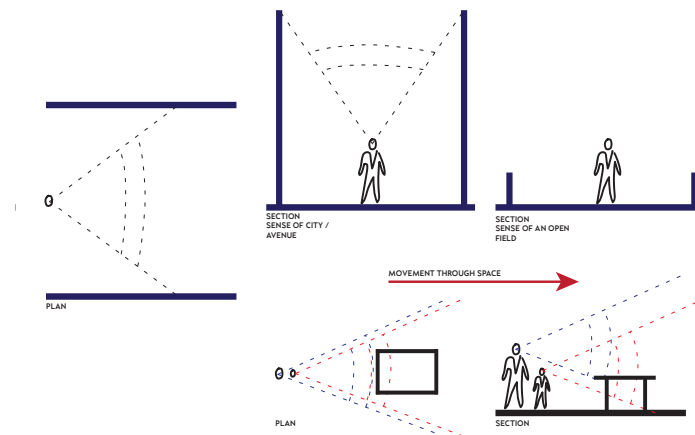
Figure 2.16

Because the Hu[...]
our living arrangements [...]
many ways. All houses fo[...]
eat, and gather (our need[...]
the industrial revolution [...]
we also see modularizati[...]
creates a more cost effect[...]
easily adapted to preferen[...]
Building in Architecture.[...]
Production Builder tries [...]
profit. In order to do that[...]
arrangement and tweaks [...]
By doing so it gives the il[...]
are copying the same hou[...]
preform tasks more accu[...]
arrangements and reduce[...]
they can offer typical opt[...]
create a "unique" feel.

Figure 2.17

THERE IS A FUNDAMENTAL QUESTION ON COMMODIFICATION. ARE FLOOR PLANS DRIVEN BY FUNCTION OR PREFRENCES? IF IT IS FUNCTION THEN FLOOR PLAN ARRANGEMENTS ARE LESS ABOUT THE VISUAL APPEAL TO A SPACE AND MORE ABOUT WHAT CAN BE DONE IN THAT SPACE. AND THERE COULD BE AN EVALUATION ON THAT SPACE BASED ON FUNCTIONAL USE. THIS WOULD MAKE LE CORBUISER'S COMMENTS ABOUT THE HOUSE BEING A MACHINE FOR LIVING EVEN MORE LITTERAL. THAT JUST LIKE FINE TUNING A CAR OR OTHER MACHINE FOR PRODUCTION OF TASKS WE COULD DO THAT THE SAME WAY WITH FLOOR PLANS. THAT THERE WOULD BE AN IDEAL FLOOR PLAN ARRAGNGEMENT THAT WOULD WORK FOR A MAJORITY OF PEOPLE. THAT IDEAL FLOOR PLAN WOULD RELATE TO THE PROPORTIONS OF THE HUMAN BODY AND THE AVERAGENESS OF THE MASSES WOULD BE THE STANDARD THAT WE NEED TO DESIGN FOR.

Because house arrangements are able to become universal, it begs the question if this is a personal preference, or an inherent character trait of being human. When things are not correct, it leads to discomfort, it leads to annoyance with the architecture and the designer. This pattern of existing could be mapped out. Going back to the house being a machine for living, machines are able to be refined and fine-tuned. This means that there is a possibility for a perfect floor plan arrangement for people. The question is, what is that arrangement and how does each person react to that arrangement, as that ideal plan may vary from person to person. It also brings about the question: is this ideal floor plan arrangement there because of how we live, or is it because of the way we have lived over the course of our lives?

The only way to study that would be to view the way we live and the way we would like to live. To do such an analysis would require lots of information layered together, and although we could layer the information into a commonality, it would not give any specific layout for a personalized floor plan. This is what I found that production builders would do. Production builders take a few different plans, typically 4-5, and a few different elevations, 4-5 for each plan, and offer those plans to clients in the new neighborhoods that they build. Production builders would also allow a couple plan changes through an option planner (with designed options) or even direct modifications to the plans in some cases. By doing this they would essentially offer 25 different houses each with various amounts of options. This amount alone would be sufficient to satisfy the majority of people even before the options. In comparing these plans, a majority were variations of the same plan or at least carried over many similarities. In a very real way, we are building mass produced homes with mass produced faces that can be swapped out. This appears in many ways like a cell phone and a cellphone case. We take two heavily mass-produced items and put them together and call it "unique" or "individualistic." Where the cellphone works like a floor plan and the case works like the front façade to a house. Where the same phone can have many different cases, so does the front face of the homes. However, in developing these types of plans for the design firm that I work at, I noticed a particular pattern where the rear faces are all or mostly identical. Taking this further I decided to pursue this idea and visit neighborhoods under development to see just how real that was. I noticed that lots of the homes in these new developments had that issue. Where the front faces were different and

the rears identical or very limited variations. Homes even had doorways on the second story where the home owner could go back and add a deck but without the deck it was railed off. In working with a few production builders, a lot of these options and plan changes are driven by data that these builders have from their sales and marketing teams. In a very real way, they practice lean design. They leave it up to the new owners to fill in the gaps of aesthetics themselves. By doing this they satisfy the clients with low construction costs and let the owners make changes of individual personality later.

But without any other data these plans are only what the majority of clients feel comfortable with. Due to all other variables becoming less apparent, and their exact influence on the plan being considered nonrelevant at all. "Without any alternative mechanism for accessing reality, it seemed that humanity's blind spots would remain hidden. Whether human perception and reason ought to be the definitive measure of things, lacking an alternative, for a time, they become so. AI is the beginning to provide an alternative means of accessing – and thus understanding – reality" (Kissinger et al. 43). This ability to find blind spots in our own behavior would allow architecture to further release its occupants from unnoticed restrictions that are blinded by our history of construction.

Figure 2.18
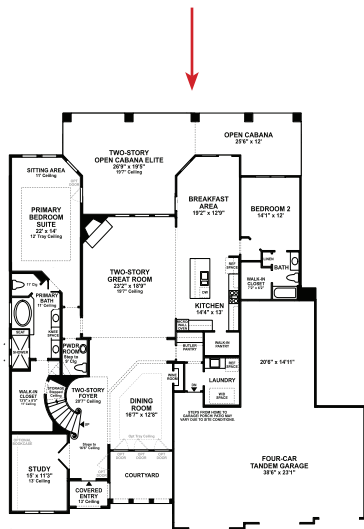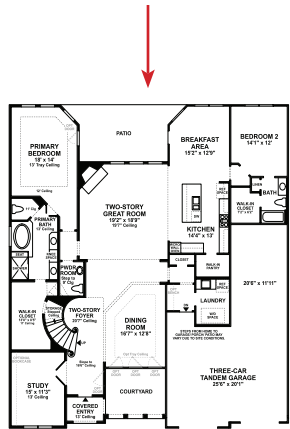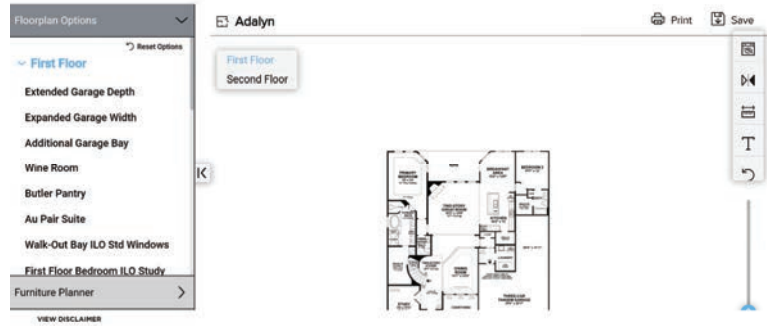
Figure 2.19

Section 3:
Artificial Intelligence

ARTIFICIAL INTELLIGENCE

- ARTIFICIAL ──────────────→ HUMAN MADE
- INTELLIGENCE ──→ SMART ──→ THE ABILITY TO REPEATEDLY MAKE CHOICES THAT HAVE DESIRABLE RESULTS
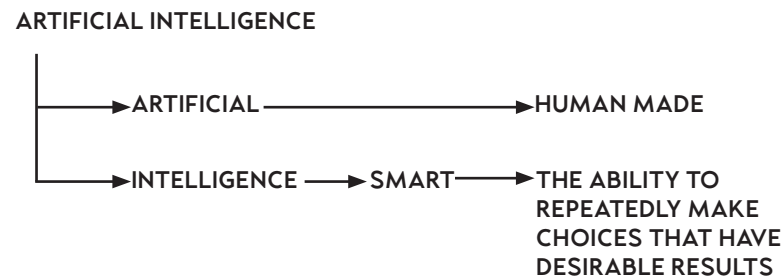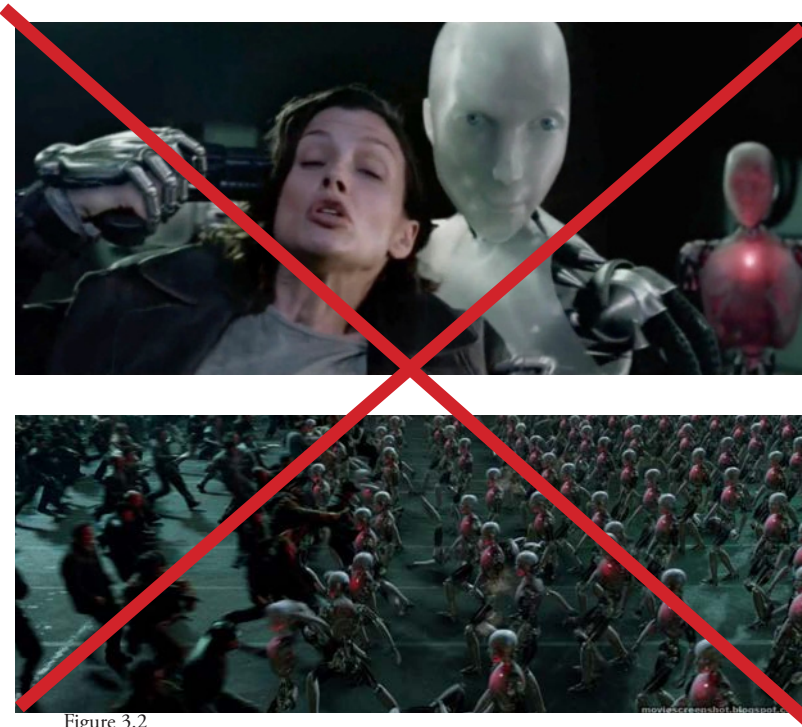
Figure 3.1

Figure 3.2

With all the talk about AI, what is it? In a class about AI, offered by Great Learning, AI was explained this way: AI simply put is a Human Made object that repeatedly makes smart / good decisions (Great Learning). When it comes to computer AI's this means that it can make smart decisions for the user. But how does it really work? Is the world going into a state of robots and AI's that we see in Si-Fi movies? To start, let's address the Si-Fi movie idea. In its current state, AI is not self-aware. "Although AI can draw conclusions, make predictions, and make decisions, it does not possess self-awareness - in other words the ability to reflect on its role in the world" (Kissinger et al. 26). In other words, by the way it is being programed currently, it is incapable of such process. This comes down to the literal way a computer works. All computer programing could be classified on a simplistic level as calculating with millions of "On" and "Off" switches. It is a series of "Yes" and "No" responses that stem from a series of questions. At its core all computer science is based on a Turing Machine. Turing Machines are the simplistic way that computers store data. The Binary of yes and no (1 and 0). The concept of a Turing machine is that you have a track with cells that contain either a one or a zero. A controller comes along and changes the cell to a 1 or 0 based on a set of instructions that it has been programed with. Now this task controller has no concept of what the 1s and 0s mean just that it changes them based on a set of instructions. It is only the viewer that understands what these changes mean as the computer responds to the commands of the on and off switch.

In a YouTube video by Jeffery Kaplan, Kaplan explains a John Searle thought experiment called "The Chinese Room" and particularly how it compares to computers. The concept is that you have a room with a person sitting in that room. On one side a Chinese character is given to the person and they are tasked with changing the character and passing it on through the other side of the room. However, the person in the room does not understand and has no knowledge of the Chinese language. But they are given a set of instructions in a language that they do understand and when followed allow a new Chinese character to be formed. Because they have no understanding of the words and are not told their meaning, they would never be able to understand the language no matter how efficient they became at changing the letters.

With the eve opment of programin has come about throu program. Computers computer programin of on and off switches in recent years with A Programing has beco follow to get outputs, to determine the answ use of pattern recogn AI is just that on a ba Machine learning op to recognize patterns given rules, you give the machine learns th apply to new inputs. A and Deep Machine L results based on the r

With the efficiency, any person on the outside would in fact believe that the person in the room knew Chinese. This would happen because a person would become familiar with each of the Chinese symbol's syntax. The syntax literally being the shape and measurable attributes of the characters. Without any semantics (or meaning of the words) being supplied, the person in the room would be utterly helpless in actual understanding. This is the same way that a computer operates. It could perform the function of understanding but without containing any real experiential knowledge of it (Kaplan). A computer sees the world very differently. It's ability to perceive the world is limited to the data that we give it and would never truly understand what it means to experience the world without more measurable measures of data input. At the same time, the computer sees reality with a whole other dimension that humans could never understand. So, what makes AI different than any other program?

With the ever-progressing growth of technology, the development of programing languages and concepts has improved. AI though has come about through a different way of thinking about how to program. Computers are great at calculating things. The fundamental difference that has emerged in recent years with AI is the way we have approached programing. Programing has become less about setting rules that inputs then followed to get outputs, and more about how you can get the computer to determine the answer. This process has come about through the use of pattern recognition or a process called machine learning. AI on a basic level looks for and recognizes patterns, the syntax of things.

Machine learning operates through a process of modules, training a computer to recognize patterns to understand a data set in terms of syntax. The larger the data set and the larger the number of modules, the more accurate or precise an artificial intelligence can be, as long as the data is accurate. Instead of being given rules to make predictions, you give it the inputs and the desired outputs. Deep machine learning comes as a next step where the AI self-evaluates its own outputs and learns by practicing. From there, the AI learns the patterns and makes the rules for which it will apply to new inputs. After being trained through Machine Learning and Deep Machine Learning, it can make predictions and produce results based on the rules it made from the data that you trained it on. Its capacity is limited by its data sets and any new inputs. Humans on the other hand are in a constant

Figure 3.3

TRADITIONAL COMPUTER PROGRAMING

INPUTS
RULES

+

OUTPUTS

ARTIFICAL INTELIGENCE PROGRAMING

INPUTS
OUTPUTS

+

RULES

Figure 3.4

DATA
(IMAGES/TEXT/LABELS)

TURING MACHINE / ENCODER

CONTROLER / TASK

1 0 0 1 1 0   1 0 0 1 1 0

MEMORY CELLS

FINE TUNING AI

... (+) MODULES / DIFFERENT TYPES OF MODULES = IMPROVED ACCURACY

	p1	p2	p3	p4	...	pN
i1	p1 i1	p2 i1	p3 i1	p4 i1	...	pN i1
i2	p1 i2	p2 i2	p3 i2	p4 i2	...	pN i2
i3	p1 i3	p2 i3	p3 i3	p4 i3	...	pN i3
i4	p1 i4	p2 i4	p3 i4	p4 i4	...	pN i4
...	...	...	...	...	...	...
iN	p1 iN	p2 iN	p3 iN	p4 iN	...	pN iN

MODULE

RULES / PATTERNS FUNCTIONING AI

USER INPUTS ⟶ (+) ⟶ OUTPUT

Figure 3.5

---

state of experience and there is no way to stop receiving input. By default, we are always in a state of experience. We are always in a state of semantics and syntax and a computer never fully engages the semantics as it lacks the ability to perform in such a way.

The modules of an AI are from a large data set you train it on. This is by taking the data and converting it into modules through a process called encoding. Encoding, simply put, is turning the data into 1s and 0s. This process allows for the AI to evaluate it by comparing it to other sets of encoded data. Each point of data in the data set is compared to every other point. These comparisons allow for correlations and other patterns to manifest. These patterns then become the basic rules for that AI in regards to new input. With each module the accuracy improves by comparing the modules against each other. If you have 3 modules and one has a 70% accuracy, the second an 85% accuracy and the other 74%. If two out of the three suggest a particular result the odds of it being correct are improved above the 85% module on its own. With each new module of comparison the more accurate the AI will be. This then begs the question: If computers are good at mundane/repetitive tasks, what will hold it back from being used in repetitive tasks in architecture such as CD sets? For the most part many homes built by production builders are copies of each other. Some have small tweaks for a particular site, but most are the same plans at heart. Plans drive elevation forms; elevation forms and plans drive roof plans. From there you generally have the major pieces of a building. Several programs like Revit have wall and roof systems already built into the software. From a basic plan, an AI has the capacity to drive the full house. Every step after the plan, AI can manipulate with enough information. It just needs data.
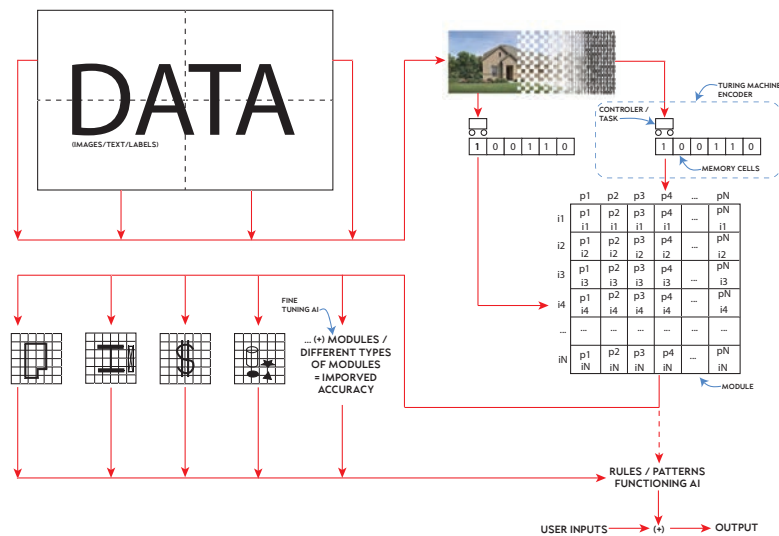
In regards the authentic self, AI has the capacity to predict. Now this may mean in choices that manifest in patterns, however, with some sophistication, data, and exposure to individuality; AI will be able to make decisions on personal tastes. When it comes to architecture, the only way AI will be able to fully realize its potential is through the advent of connection to the human experience. The thing that separates us and technology is our capacity, to choose and have lived experience. What is lived experience other than personalized memory and the arbitrary connection to place. It is the discourse between the body and the space that encompasses us that builds that lived experience. In many ways it is the story of our lives, from birth to death and all the memories

that we share internally and externally. The talk on computers chips being implemented in the body and the knowledge we gain from the advancements, that are sure to come, will also influence the exact way AI will incorporate itself in future Architecture.

The two worlds of Architecture are starting to merge eventually. The best architects will not hand draft or even computer draft. They will be programmers with an eye for design. We are at the epitmous of a new era of thinking, believing, seeing, and understanding. AI has the potential capacity of creating, functional, economic, energy efficient, resilient structures, that all have the characteristics of modern-day aesthetics and styles. AI can analyze and evaluate based on any factor that is programed into its calculation and provided with enough data. AI can analyze every process of the design creation. In an emerging data driven society AI will become abundant/prevalent.

The biggest difference between us and AI, when it comes down to its core, is that AI has the capacity to process/calculate information at faster and accelerated rates than humans, who are limited in our knowledge base and have agency. AI is only limited by the constraints of its programing. AI has the ability to make changes and choices, but it is constrained only by the code and software it is running. Comparatively we are limited physically and mentally to our physical capacities.

As humans, we see and understand the world through our sensory inputs. From our senses we impose meaning on the world. We give meaning to our environment by building emotional attachments to the physical materials of the world. As such we have the capacity to misinterpret, change, rearrange meaning on ourselves. However, AI does not. It understands and sees the world through data. It does not impose meanings. It recognizes patterns. It does not see with senses but with values and classes. Because it does not impose meanings, all true data is considered to be of value. Through patterns it can predict and choose actions. Its agency is bound by code and logics, some of which is produced through learning. This learning and its ability to take all values into consideration is why it operates at peak efficiencies (when compared to human interaction). This is why it out preforms all human capacity.

Despite the advantages that AI has over humans it does pose some challenges. One of those is how humans perceive AI. Many
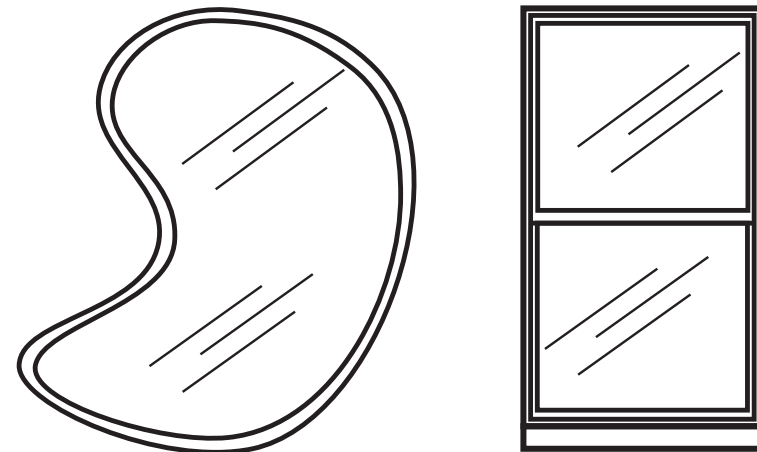
JUST LIKE HUMANS AI "UNDERSTANDS" THE WORLD THROUGH PATTERNS. THE PATTERN ON THE LEFT CAN APPEAR AS A POOL/ICE RINK WHEN PLACED IN PLAN BUT COULD BE A WINDOW WHEN PLACED ON AN ELEVATION, THE IMAGE ON THE RIGHT APPEARS TO A BE A WINDOW BUT BOTH IMAGES ARE JUST LINES OF INK ON THE PAGE THAT WE "PERCIEVE" TO HAVE MEANING.
Figure 3.6

AI DECISION **DETERMINED CHOICE** **PRODUCT TO PURCHASE**

PRESENTED CHOICE

→ **CHOICE 1** —

→ **CHOICE 2** —

Figure 3.7

INTEGRATED AI CATAGORIES/PHASES

20-30% OF WORK	40-55% OF WORK		20-25% OF WORK
DESIGN 30%	**CONSTRUCTION DOCUMENTS 40%**	**COST/ANALYSIS (5%)**	**CONSTRUCTION ADMIN 25%**
· ML FLOOR PLAN MATRIX/ MAPPING	· TECHNICAL DRAWINGS A,S,E,M,P SERIES	· ML MATERIAL COUNTS/ COST ANALYSIS	· ROBOTIC CONSTRUCTION (EVENTUALLY)
· ML ELEVATION/ ISOMETRIC GENERATION	- TRANSFORMING SCHEMATIC TO FULL CD THROUGH ML PRESET/DETERMINED FACTORS	· ML MATERIAL WASTE PREDICTION	· HAND CONSTRUCTION TIMELINE/PLANNING
	· WALL SECTIONS AND DETAILS - TYPICAL DETAILING OF WALL SECTIONS AND COMPONENTS THROUGH ML GENERATED PROCESSES	· ML DESIGN MITIGATION/ SIMPLIFICATION RECOMMENDATION	-THIS COULD EVEN BE IN GENERATING CONSTRUCTION FRAMING MANUALS (IN DRAWINGS/MULTILINGUAL INSTRUCTIONS)
	· STRUCTURE CALCULATIONS -MAPPING OUT LOAD CALCULATIONS, SIZING AND PLACEMENT OF STRUCTURAL COMPONENTS		

CURRENT DEVELOPERS:
- · OPENAI'S DALL-E2 (IMAGE BASED AI)
- · STABLE DIFFUSION (IMAGE BASED AI)
- · MIDJOURNEY (IMAGE BASED AI)
- · MANAS BHATIA (NEW DELI ARCHITECT)
- · MATIAS DEL CAMPO (U OF M)

- · ZAHA HADID (USED IT FOR WINDOWS)
- · STAIRCRAFT AND BRAINPOOL.AI
- · ALICE
- · SPACEMAKER (URBAN PLANNING)
- · CONXTECH (CONSTRUCTION BIDDING)

Figure 3.8

times, we are oblivious to its existence. To humans AI is just another computer program and are unaware that we are interacting with an AI. This could pose some threats as it could influence us and be none the wiser. Because there are many appliable uses for AI. AI has the ability to make decisions and present choices. These choices may not necessarily be obvious to the user as options as the AI could have an intended goal. However, even when the AI is operating under these pretenses, the AI was tasked by a human and is not self-manifesting itself other than to complete the objective it was sent out to do.

In exploring this, I set out to find out how AI was being implemented in architecture and how it could be in the future. I mapped out the many uses that an architect could use it and how those sections align with the current projected work loads of architecture. Because architecture is divided into 4 main categories, the best AI would be able to assist in all of them. But due to the complex nature of it in practical terms, it would be a series of AIs preforming partial tasks that together complete the whole sequence of events. I did find that AI was also being used in many facets of Architecture already. Several Architects have started to use it to help them generate ideas or complete renderings with image-based AIs. Others like Zaha Hadid used it in construction drawings. Zaha in particular used it for panel designs as many of her projects used complex forms. Other architects have started to look for ways to analyze urban forms and even construction management tasks.

"ONCE AI'S PREFORMACE OUTSTRIPS THAT OF HUMANS FOR A GIVEN TASK, **FAILING TO APPLY THAT AI**, AT LEAST AS AN ADJUNCT TO HUMAN EFFORTS, MAY APPEAR INCREASINGLY AS **PERVERSE OR EVEN NEGLIGENT.**"

- THE AGE OF -
- AI AND OUR HUMAN FUTURE -
HENRY KISSINGER, ERIC SCHMIDT, DANIEL HUTTENLOCHER
(KISSINGER ET AL. 23)

"UNDER NEGLIGENCE LAW, EVERY PERSON HAS A DUTY TO USE THE LEVEL OF CARE OF A REASONABLE AND PRUDENT PERSON. AN ACT OR AN OMISSION (A FAILURE TO ACT) NOT IN CONFORMITY WITH THIS STANDARD OF CONDUCT IS NEGLIGENCE."

-CONSTRUCTION LAW FOR DESIGN PROFESSIONALS, CONSTRUCTION MANAGERS AND CONTRACTORS (P. 75).

Section 4:
Design Processes

Data Collection

Individual Identity → Data Collection from Large Groups

Data Analysis

70%

"A Classical style house made of brick with shutters, sidelights by the front door, arches and lintels over windows, a gable roof, and a front porch with round columns. Set in the country side."

73%

"A photo of a futuristic home made with bricks, a gable roof, balconies, and a wrap around porch with round columns, in a forest inspired by videogames and fruit juice"

81%

"A traditional style home with shutters, side lights by the front door, with lintels and arches above windows made of brick and stone, with a porch with square columns, set in a hilly wilderness where people golf"

Common Trends

Group Identities/ Prefrences

Data Use

AI Generation from Unique Responses

Figure 4.1

In attempting to showcase how this idea could be manifest, I experimented with how to use and develop AI. The AI that was selected to work with was Open AI's Dall-E2. This is an image-based AI. It is an AI that is in beta testing and so was not fully trained. Open AI is one of the leaders in AI generation software and is the developer of Chat GPT. The Dall-E2 proved to be potentially promising despite being in a beta status. It primarily operates on a text to image response but offers additional avenues for creating images.

The first step in this experimentation was to see what it could draw in regards to houses. It appeared to be able to produce generic forms of houses but did not have a complete understanding of architectural styles. This is significant in that any AI that would be useful to an Architect would need to know certain principles/elements of design and construction. But it also proved that although it held limited knowledge of Architectural styles as a whole, it did understand forms of houses and could produce remarkably well formulated designs that on first glance appeared to be actual photos. But upon further and closer inspection mistakes or mishaps on details would become apparent. It didn't only generate individual photo like houses but could mimic sketches or other facets of details of hand like drawings.

When it came to floor plans however it would give the appearance of floor plans but not actually buildable ideas. Rooms would be closed off. Letters indicating rooms were obscure and not legible in the sense of pronunciation. Matias del Campo, an architect in the Detroit Area and an adjunct professor at the university of Michigan referred to these types of images as hallucinations (Campo). While there are many aspects of the drawings that are clear and accurate other aspects have a familiarity to them but completely foreign. These images showcase what the AIs been trained to understand and generate. These are the aspects that AI needs refinement with.

to attem
could us
commoc
and plug
The proc
practicir
Data Co
on how
outcome

Figure 4.2

This type of work prompted me to venture into a different style of generation. A type of generation that takes images and expands the views in given frames. In taking images that it had created, I put them through to see how it would respond to them. As these images were generated by the AI, this would give the AI the most knowledge about them. However, at times the images became distorted and did not always accurately depict the perspective of the original images. I then gave it a partial image from a production built home that I had collected from a production builder's website. This was an image that I am not sure if it had a been trained with or access to. It was able to mimic the style and aesthetic of the production home and expanded it further. I then proceeded to give it an image that I had taken from a production neighborhood. This was an image that I am sure that the AI would have never had access to. I clipped the image short of the full image and asked it to expand on the design and finish the house. It did so while nearly mimicking the aesthetics perfectly. This prompts the question on how it deciphers the image in a way that allowed it to be able to make a second part of the home and maintain certain principles. Matias del Campo said in a youtube video interview/AIA presentation that it takes images through a process of diffusion. This process gradually turns the image into static until it completely eliminates the image from any recognizable shape (Campo).

I then took a hand sketch that I had made and repeated the same process but this time also gave that image to 8 people and asked them to complete the house. The AI was able to generate four images in a mater of 45 seconds, whereas the individuals took a range from 3-20 minutes for one image. I then asked the same individuals to complete a second house but this time in the 45 seconds it took the AI for four. Comparatively the individuals in both cases were not able to match my style perfectly nor were they able to draw as complex of an image in the 45 seconds. Each person drew in their own style as well took influences from their own lives into consideration for the designs. Similarly the AI interpreted the drawings based off it's knowledge base but attempted to read the context of the drawing to mimic my own personal style in it's variations. This brings about the question on how humans interpret images. On a functional level the AI and the humans completed the task but the humans brought their own personalities into the work.

In another test, I resulted to a survey. In this survey I asked 30 individuals to answer 33 questions. These questions ranged from

Figure 4.3

Figure 4.4

architectural elements, ranking questions, as well as preference-oriented questions around food, sports, etc. The purpose of these responses was to generate correlating data to build AI prompts. One of the key issues when it comes to AI is that the only way to get results is through the mechanisms that it can communicate by, whether that is language-based or image-based prompts. But a more refined AI would also pull information from other modules of data as well not just images or language-based inputs. Because of a lack of programing skills and time, I attempted to find a way to create that data input myself to make the prompts. I took the responses from the survey and input them into a Python (a computer language) code. I generated form that code data graphs plotting the correlations in a heat map as well as a plot graph of all the responses in comparison to other questions. By doing this I was able to match correlating responses to the survey participants and cluster them and created text-based prompts off the clustered group. I then took those prompts to the AI to generate an image. In an ideal world the data would be given directly to the AI for it to analyze the results and make the correlations to all of its data that it has been trained on. This new data would help it in determining the most valuable details to generate based on the individuals survey answers. Because AI would be able to see correlating patterns between the images, it was initially trained on as well as the data that I would have provided it may have interpreted the responses differently. From the prompts that I generated, I was able to get results for three of the survey participants. However, because the survey was an anonymous survey, I was not able to show the generated images to see what they thought of the images.

Overall, the process would be similar to how you would approach it with giving the AI all of the data. Instead of interpreting it myself and then giving it to the AI to use. The data would come from external sources that help influence the AI's decision process. In practical use the data that you would give the AI would be large data samples and potentially data from large organizations like Google, Facebook, and others who already are collecting data about people's preferences. In giving the AI large data sets on preferences of people and then the data of a single individual, it would be able to take the most important parts of a person's identity and then use that as a basis for design. In some ways the results of this process require a refined AI in order to test and experiment with. As the premise for a lot of these decisions of drawing and producing drawings, ideas, or concepts would require an AI that has been trained at least in the needs of construction.
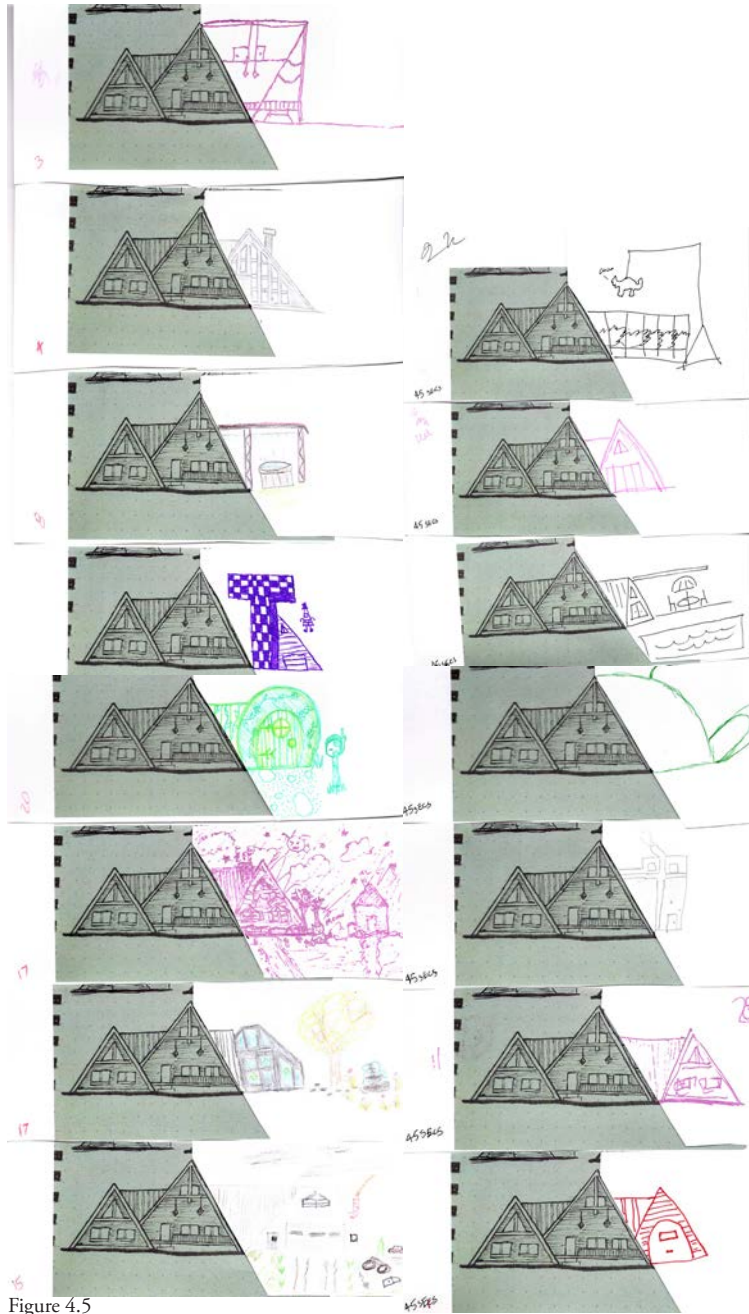
Figure 4.5
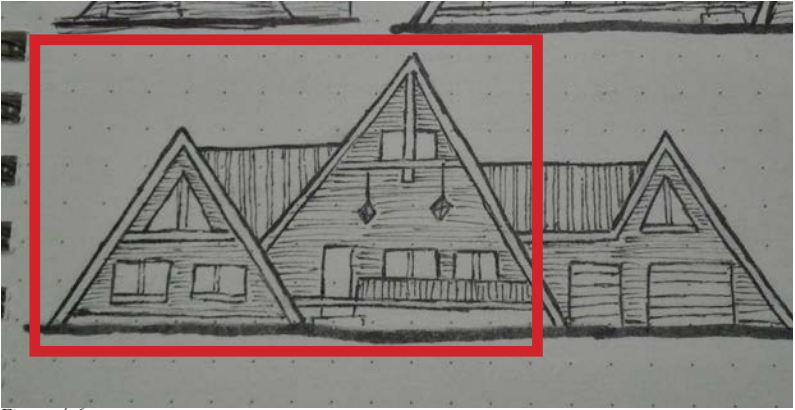
Figure 4.6
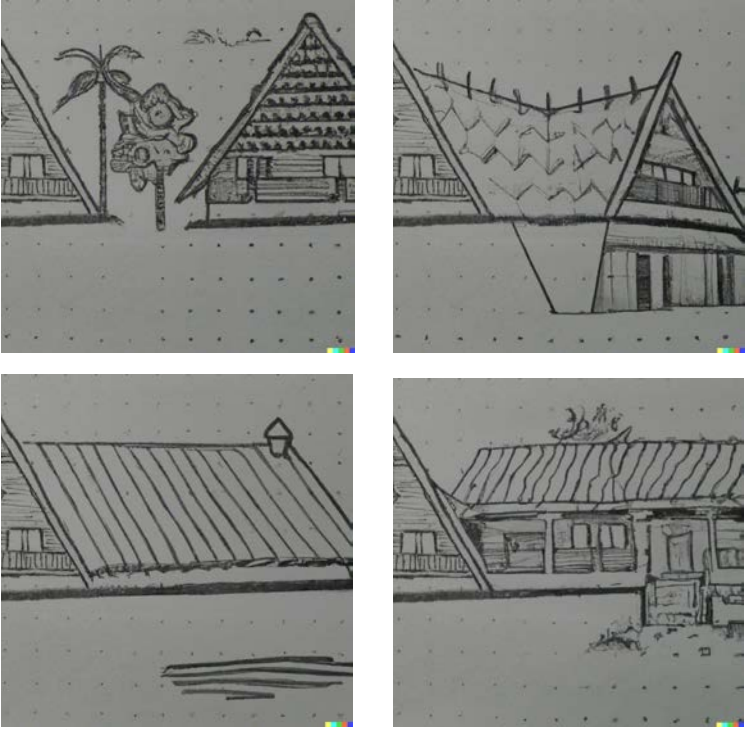
Figure 4.7

"With perceptions of reality complementary to humans, AI may emerge as an effective partner for people. In scientific discovery, creative work, software development, and other comparable fields, there can be great benefits to having an interlocutor with a different perception. But this collaboration will require humans to adjust to a world in which our reason is not only - and perhaps not the most informative - way of knowing or navigating reality. This portends a shift in human experience more significant than any that has occurred nearly six centuries - since the advent of the movable type printing press" (Kissinger et al. 180-181)
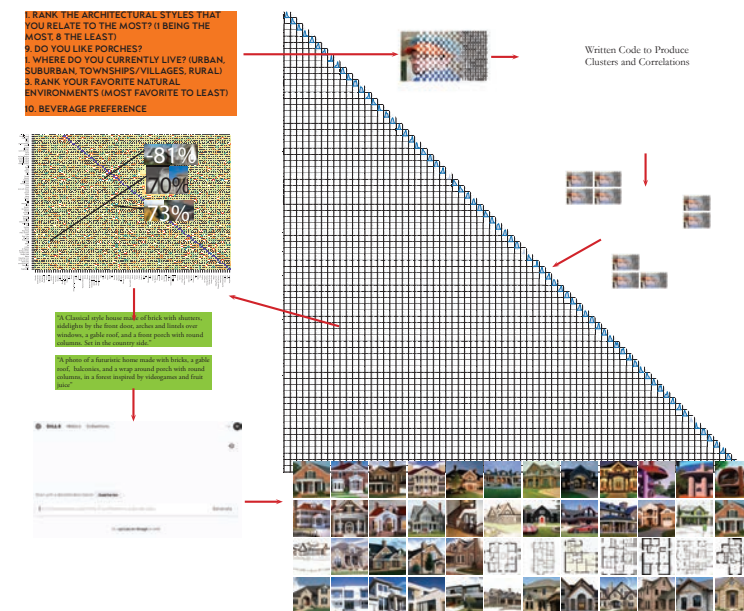
Figure 4.8

Graph4.1

METHODOLOGY

CREATING A SURVEY
TO CAPTURING TRAITS
(ADMINISTERED ONLINE)

ANALYZE RAW DATA
INTO CLUSTERS AND
CORRELATIONS

DEVELOP PROMTS FOR
AI INPUT

IMAGE GENERATION
THROUGH AI

ANALYZE AI IMAGES
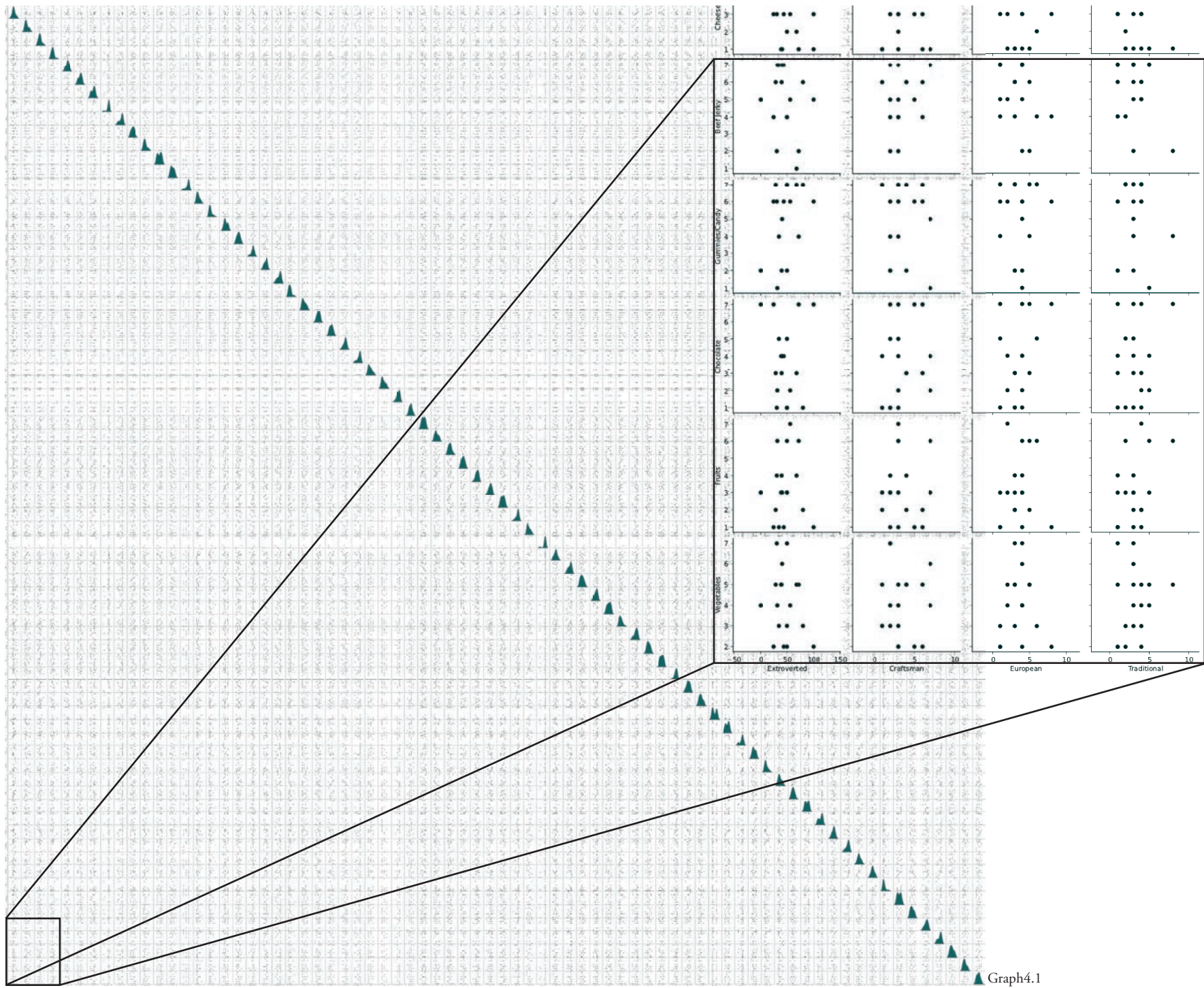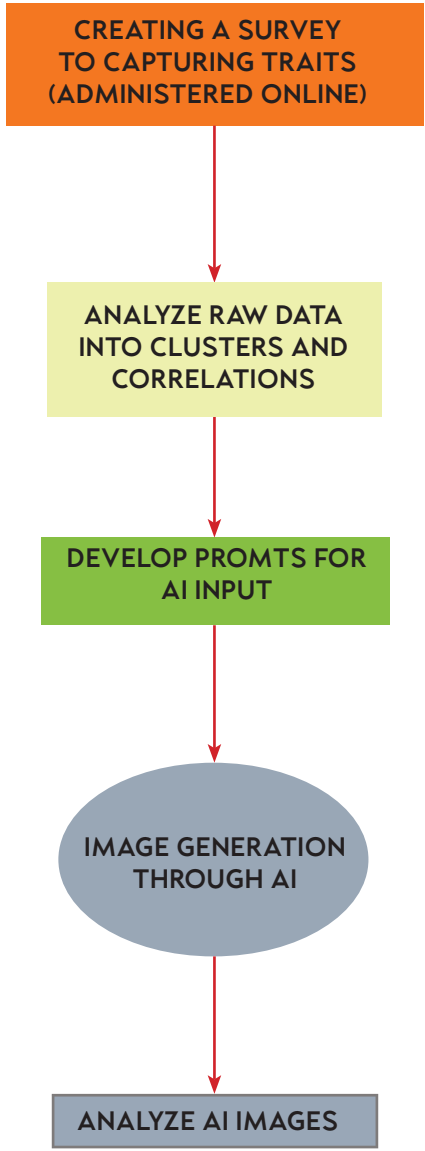
Figure 4.9

Discussion

AI unfortunately in the architecture world is a bit of a controversial topic. Like many online artists, several architects feel that they are being replaced or could be replaced by a computer that may only provide subpar work. Several architects feel that this technology although potentially useful only caters to large corporate entities and that there is a human element that should be left in the design process. There are also concerns about commodification and whether or not this should be an excepted practice. Many people see that AI could become a tool that architects use to aid them in the design process by doing the things that architects don't like doing like managing construction time tables or invoicing.

However, a lot of the questions that architects are asking won't be answered by architects. Le Corbusier said "Economic law inevitably governs our acts and our thoughts" (Corbusier 6). Unfortunately, due to the nature of the industry these decisions will not be made by single individuals but institutions and economic structures with influence. "But while the number of individuals capable of creating AI is growing, the ranks of those contemplating this technology's implications for humanity - social, legal, philosophical, spiritual, moral - remain dangerously thin....but these and other possibilities are being purchased - largely without fanfare - by altering the human relationship with reason and reality. This is a revolution for which existing philosophical concepts and societal institutions leave us largely unprepared"(Kissinger et al. 27). In many ways architects will be reacting to these changes brought into the industry by others. And due to the technology already being mainstream and already being developed in other capacities it is only a matter of time before architects will be forced to adapt or be replaced.

Conclusion

Because the advent of technology is always progressing forward, Architects will need to adapt to this changing environment. This may mean that there will come a point when AI could in fact replace traditional means of designing. Matias del Campo called AI "the first 21st century design tool"(Campo). This may mean that this almost ancient technique of drawing by hand could be replaced with more sophisticated systems. These systems could tell an Architect much more about their designs before being presented in front of a client. That information could help a designer see issues before getting to the field. When the designs leave the architect, they could be considered "perfect." It also means that Architects will have to address the issue of AI sooner rather than later. As production builders adapt to the technology, so would expectations from clients. Although architecture naturally caters to the wealthy and is a luxury product, Architecture clients will still expect more because of the world that they live in. The world is increasing in speed and becoming less tolerant of delays and mistakes. This will force Architects to at least engage with the technology. By resisting this change, it could potentially make us obsolete as the world around us will continue to press forward leaving us behind. AI, although controversial, is making major head ways in the business world. If architects want to be leaders and stay in control of their profession, then they need to step up and engage with the technology before builders and others lobby us out of a profession due to our in ability to adapt.

Because the future will require Architects to use AI, developing it the way that we want it is the best route to protecting our industry. We need to develop it the way that we want before someone else dictates to us new standards for the industry. If not, Architects could be left behind, much like the artisans in the Arts and Crafts movement were with the industrial revolution. By setting the standard for the profession, it would make it so that production builders and other conglomerate entities conform to Architect's standards and not the other way around. It also may delay them in pursuing the technology, not wanting to do more than they can handle. Neil Leach in an article on Dezeen said it best "What we architects should be designing right now is not another building, but rather the very future of our profession"(Leach). Or as ChatGPT put it "Architects who choose to ignore AI will be left

behind and ultimately forgotten as the industry evolves and advances. Therefore, it is imperative that architects pay attention to AI and its potential to revolutionize architecture, or they risk sleepwalking into oblivion" (Leach).

        In order to prevent this from happening it demands that architects look at AI more closely. This means that architects need to start collecting and creating databases that we believe will hold the data to great design. It also means that architects in order to progress forward need to start looking at using AI on a daily basis, if not but to only become familiar with its limitations as well as its strengths to incorporate our value in the design world and to point out why architects are still a valuable resource for the construction world. We live in a world driven by economic forces that weigh physical needs and the cost of aesthetic appeals. Limiting ourselves to the same patterns of design that have been used since the beginning of architecture could severely hinder our ability to provide quality design at affordable prices. The world no longer exists in the sticks and stone ages. The world has changed to a digital era, so must we.

In the computer programing world, there is a common trope for when you start a new program. You need to test to see if it is working so you type "print("Hello World")". Just like programs use a test run to see if they will function correctly. AI is Architecture's:

print("Hello World")
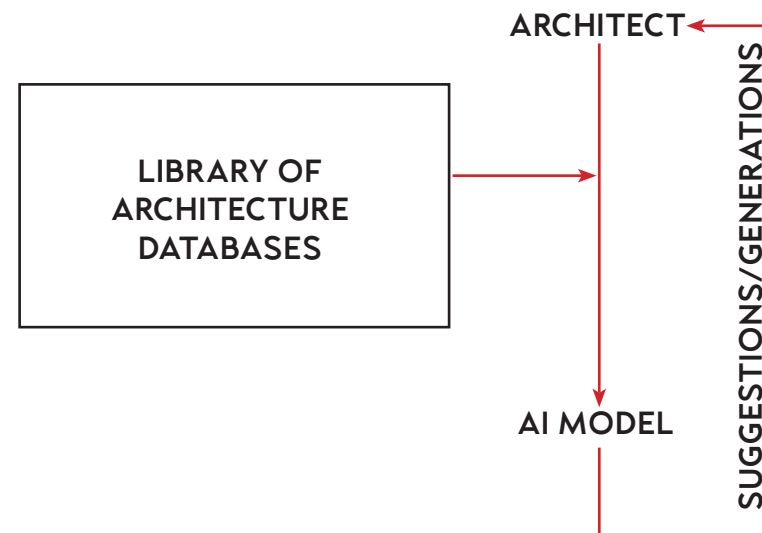
Figure C.1

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manual-labour-worker-getty-960x540.jpg
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Self Expression: https://aasarchitecture.com/wp-content/uploads/Frank-Gehry-10.jpg
https://www.worldofarchi.com/2013/03/modern-architecture-by-zaha-hadid.html

Greater and Better: https://engineering-society.com/top-10-tallest-buildings-in-the-
world-in-2021-no-towers-in-america/

Section 2
Fig 2.1 - This image was created to show the observed relationship between individual
identity and commodified identity.

Fig 2.2 - This image was to show how the unique individual self relates closer to intamate
spaces and commodified spaces relate to larger scaled spaces. The base image was collected
from: https://www.bing.com/images/search?view=detailV2&id=9E163200D8EEC790D
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Fig 2.3 - This model was created to show how the process of commodification works

through individuals to create products.

Fig 2.4 - This eidetic image was created using logos from products, social media
companies, and depictions of identity from theorists.

Fig 2.5 through Fig 2.9 - This image was collected from: https://caddetailsblog.com/post/
do-you-know-why-cookie-cutter-houses-are-popular

Fig 2.10 - This image was collected from: https://www.tollbrothers.com/luxury-homes-
for-sale/Texas/Woodson's-Reserve/Cypress-Collection/Adam

Fig 2.11 - This image was collected from: https://www.tollbrothers.com/home-designs/
Adalyn

Fig 2.12 -These images were taken by author at the pecified locations.

Fig 2.13 - These images were taken by author at the specified locations.

Fig 2.14 - This image was collected from: https://hillbillydaiku.com/2016/05/06/tables-
and-seating-in-hillbilly-proportions/

Fig 2.15 - These sketches were drawn to depict spatial arrangements and how an
individual may perceive the spaces.

Fig 2.16 -These sketches were drawn to depict spatial arrangements and how an individual
may perceive the spaces.

Fig 2.17 - This image was collected from: https://ponbee.com/wp-content/uploads/using-
phone-cases-300x156.jpg

Fig 2.18 - This image was a layered set of floor plans to depict the similarity of 6
different floor plans. The floor plans were located in an option planner at: https://
myhome.anewgo.com/client/lombardo/community/Windridge%20Estates/plan/MI%20
Fullerton?elevId=14985

Fig 2.19 -This diagram depicts the process of using an option planner located at: https://
www.tollbrothers.com/home-designs/Adalyn

Section 3
Fig 3.1 -This Diagram was created to show a definition of Artificial Intelligence.

Fig 3.2 -These images are placed to show that AI is not similar to the depictions from
movies like I Robot. Images were collected from: https://www.bing.com/images/search?vi
ew=detailV2&ccid=VEIQqkAz&id=AD67A2C3A09D0396D632F36F2823F7CC9B1C
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6474463607&ck=AB55F1CF2D61B8C5C2243612E379CDD7&selectedIndex=29&aja
xhist=0&ajaxserp=0

Fig 3.3 -John Searle the Chinese thought experiment. This image was to collected from:
https://hackaday.com/2014/06/09/ask-hackaday-program-passes-turing-test-but-is-it-
intelligent/

Fig 3.4 -This Diagram was created to show a difference between Artificial Intelligence
programming and traditional computer programing.

Fig 3.5 - This Diagram was created to show the process of how Machine Learning
works for an AI. It was based on Open AI's model diagram and Jeffery Kaplan's video
of the Chinese thought experiment. These can be found at: https://www.youtube.com/
watch?v=tBE06SdgzwM&t=620s.

Fig 3.6 - This Diagram was created to explain the difference between Semantics vs Syntax
that AI's would use.

Fig 3.7 - This diagram was created to explain how AI could influence a person
unknowingly based on a decision that it had already made.

Fig 3.8 - This diagram was created to show all the places that AI could be implemented
into Architecture as well as Architects/Firms in how they are currently using it.

Section 4

Fig 4.1 -This diagram was created to explain the process by which a person would create a
system of commodified identity.

Fig 4.2 -These images were generated by Open-AI's Dall E2 AI. The prompt was an
orange modern cubist.
Fig 4.3 -This image was created using Open-AI's Dall E2 AI using the feature to expand a
supplied image. The original image was an Dall E2 generated image.

Fig 4.4 - This image was created using Open-AI's Dall E2 AI using the feature to expand a
supplied image. The original image was a picture that author took and cropped.

Fig 4.5 -Hand Sketches produced by Mike and Teresa Wickings, Addyson Price, Melissa
And Derrick Bullock, Morrigan Guy, Amy and Conner Albinger

Fig 4.6 - Hand Sketch by author red boxed section provided to Open-AI's Dall E2 AI .

Fig 4.7 - Images Open-AI's Dall E2 AI created to finish Figure 4.6.

Fig 4.8 -Diagram of the process to showcase how commodification could potentially be
applied through an AI.

Fig 4.9 - Methodology of Survey to AI generation process.

Conclusion

Fig C.1 - Diagram of a basic process architects could implement future information. The
proposed process of the Library of datasets for architects.

List of Tables

Graph 4.1 - This graph was made from the data collected during a survey. The survey collected 35 participants responses. The graph's data was collected into a spreadsheet and then run through a python code to create the chart.

List of Abbreviations

AI - Artifical Intelligence
Tech - Technology

Appendix

Survey Questions

Basic Information

This is an anonymous survey. It centers on the concept that Architecture and Identity Correlate and is looking to make some comparisons that may not normally be looked at.

1. How old are you?

○ Under 18

○ 18-24

○ 25-34

○ 35-44

○ 45-54

○ 55-64

○ 65+

2. What is your Gender

○ Male

○ Female

○ Prefer not to say

○ Other (please specify)

[   ]

3. Are you More Introverted or Extroverted

Introverted	Extroverted
○—————————————	[ ]

Architectural Design Preferences

These questions are to get a basic understanding of your preferences to style.

1. Rank the Architectural styles that you relate to the most? (1 being the most, 8 the least)

☰ [ ]   Craftsman

☰ [ ]   European

☰ [ ]   Traditional

☰ [ ]   Prairie

☰ [ ]   Classical

☰ [ ]   Modern

☰ [ ]   Post Modern

☰ [ ]   Futuristic

2. Do you like Shutters?

○ Yes
○ No
○ Undecided

3. Do you like window mullions?

○ Yes
○ No
○ Undecided

4. Do you like sidelights/windows by the front door?

○ Yes
○ No
○ Only if they are translucent

5. Rank window types from your most favorite to least. (1 the most, 5 the least)

☰ [ ]   Single Hung

☰ [ ]   Double Hung

☰ [ ]   Casement

☰ [ ]   Slider

☰ [ ]   Fixed

6. Check all the Architectural elements that you like around windows.

☐ Shed roof overhangs
☐ Lintels/sills (made of wood or stone)
☐ Arches
☐ Planters
☐ Transom Windows
☐ Other (please specify)

[   ]

7. Rank your most favorite to least favorite exterior wall.

☰ [ ]   Brick

☰ [ ]   Stone

☰ [ ]   Board and Batten

☰ [ ]   Horizontal Siding

☰ [ ]   Vertical Siding

☰ [ ]   Shake/Shingle siding

☰ [ ]   Panel systems

8. Rank the roof types from your most favorite to least (1 being the most, 5 being the least)

☰ [ ]   Hip

☰ [ ]   Gable

☰ [ ]   Barn

☰ [ ]   Manor

☰ [ ]   Shed

☰ [ ]   Flat

9. Do you like Porches?

○ Yes, but only on the front
○ No
○ Yes, but wrap around to the side
○ Yes

10. Do you like Columns?

☰ [___] Round   ☐ N/A

☰ [___] Square   ☐ N/A

☰ [___] Tapered/Pyramid like   ☐ N/A

11. Do you like Balconies?

○ Yes

○ No

12. How many cars can fit in the Ideal Garage?

[_____]

13. Which direction would you like the garage door to face?

○ On front of the house facing the street.

○ On the side facing the right.

○ On the side facing the left.

○ On the rear facing the backyard.

○ No attached Garage

14. Would you like any of the following on your ideal home?

☐ Patio

☐ Deck

☐ Deck with Stairs

☐ Covered out door living/Lanai

☐ Other (please specify)

[_____]

☐ None of the above

15. What type of basement would you like?

○ Walkout

○ Daylight

○ Crawl Space

○ Flat/Slab (what's a basement?)

16. Would you like a fireplace?

○ Yes

○ No

1. What type of Fireplace?

○ Gas

○ Electric

○ TV video/Still Image of a Fire

○ Wood Burning

Personal Preferences

This is to match the Architectural Elements to other non architecture related things that may have some commonality.

1. Where do you currently Live

○ Urban

○ Suburban

○ Townships/Villages

○ Rural (Farmland)

○ In the Wilderness/No Man's Land (I have no idea how I am filling this out)

2. Where would you like to live?

○ Urban

○ Suburban

○ Townships/Villages

○ Rural (Farmland)

○ Wilderness/No Man's Land

3. Rank your favorite Natural Environments (Most Favorite to least)

☰ [ ] Ocean

☰ [ ] River

☰ [ ] Ponds/Lakes

☰ [ ] Beach

☰ [ ] Plains

☰ [ ] Hills

☰ [ ] Mountains

☰ [ ] Cliffs/Gorges/Ravines/Canyons

☰ [ ] Forests

☰ [ ] N/A (I hate Nature)

4. How would you like to get to work/stores?
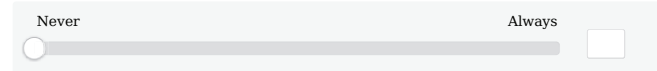
○ Walking

○ Bicycle

○ Motorcycle/Scooter/Moped

○ Car

○ Train

○ Air Travel

○ Other (please specify)

[   ]

5. Favorite Grocery Store?

○ Walmart

○ Kroger

○ Meijer

○ Target

○ Local

○ Other (please specify)

[   ]

6. How active are you (Fitness)?

Never   Always
○—————————————————————————— [   ]

7. What Sports do you like to Play

☰ [ ] Football

☰ [ ] Soccer

☰ [ ] Lacrosse

☰ [ ] Baseball

☰ [ ] Bowling

☰ [ ] Cross Country events

☰ [ ] Volleyball

☰ [ ] Golf

☰ [ ] Hockey

☰ [ ] Tennis

☰ [ ] Ping Pong

☰ [ ] Video Games / E-sports (I hate Physical Activity)

8. Which hand is dominate?

○ Right

○ Left

○ Ambidextrous

9. What hand do you wear a watch/bracelets on?

○ Right

○ Left

○ Ambidextrous

○ I don't wear Watches/Bracelets

10. Beverage Preference

☰ ☐ Coke/Pepsi

☰ ☐ Diet Coke/Pepsi

☰ ☐ Mt. Dew/Mello Yellow

☰ ☐ Fruit Juices (like apple/Orange Juice)

☰ ☐ Milk

☰ ☐ Sprite

☰ ☐ Tea

☰ ☐ Coffee

☰ ☐ Dr Pepper

☰ ☐ Energy Drinks

☰ ☐ Orange Soda

☰ ☐ Grape Soda

☰ ☐ Water

11. What type of Snacks do you like?

☰ ☐ Chips/Pop Corn

☰ ☐ Cheese & Crackers

☰ ☐ Beef Jerky

☰ ☐ Gummies/Candy

☰ ☐ Chocolate

☰ ☐ Fruits

☰ ☐ Vegetables

12. What type of Computer do you prefer?

◯ Mac/Apple

◯ Windows

◯ Linux/Android

◯ None of the above

13. What is your favorite subject to read?

◯ Literature

◯ Non-Fiction

◯ Fiction (scifi/Fantasy)

◯ Historical/News

◯ How to Books

◯ Poetry

◯ Other (please specify)
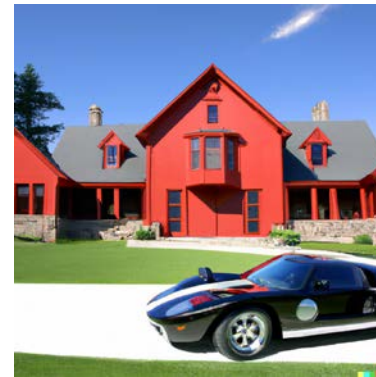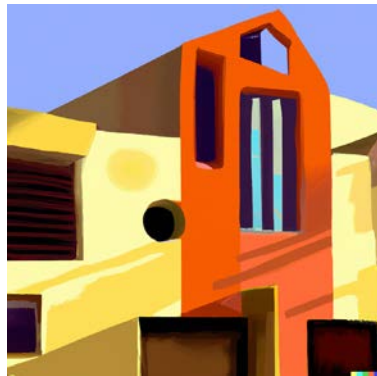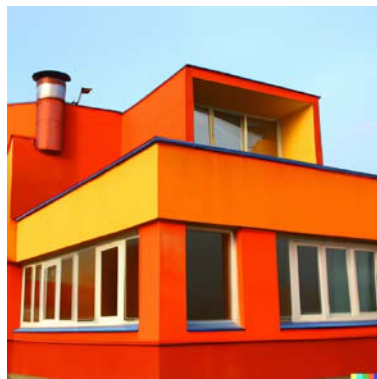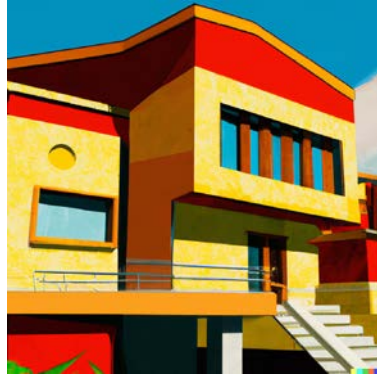
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Images by DALLE2
Floor Plans
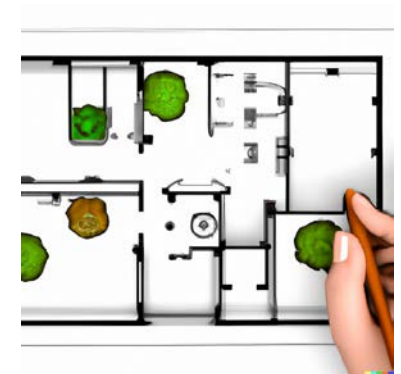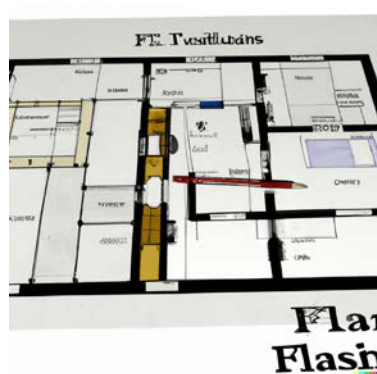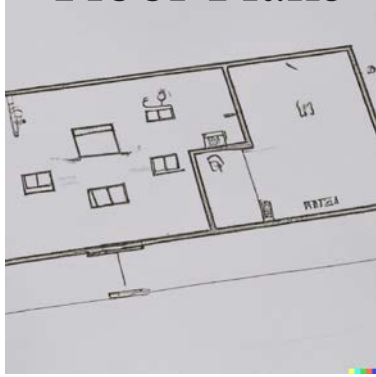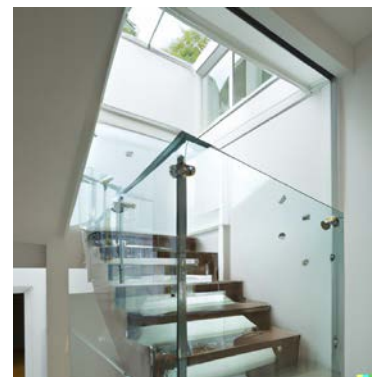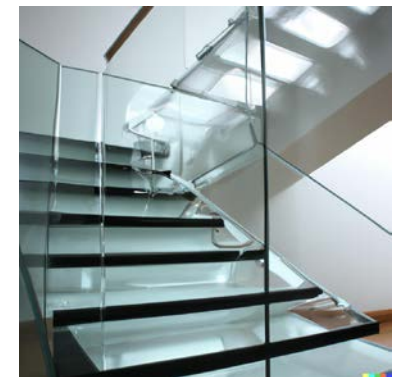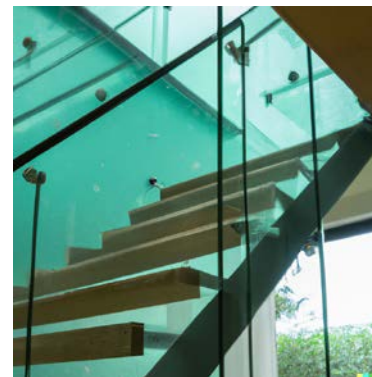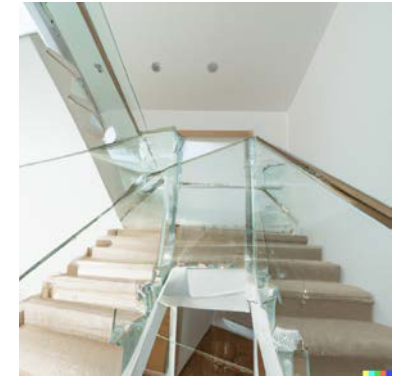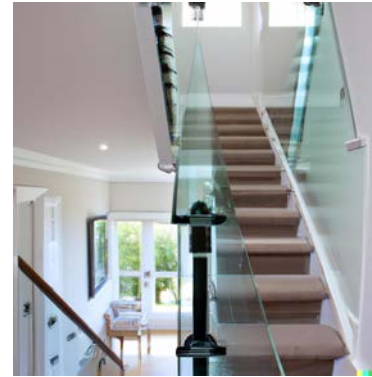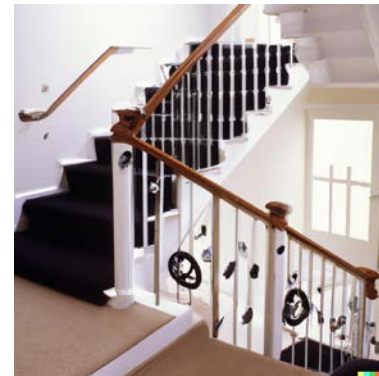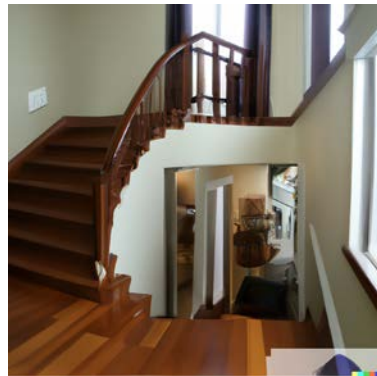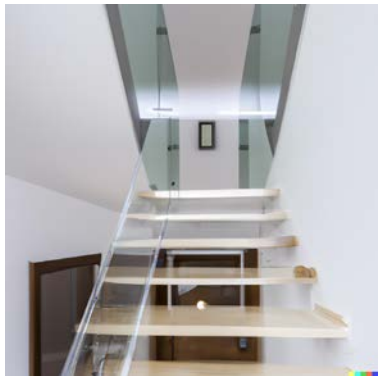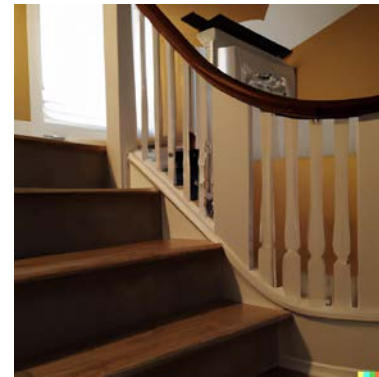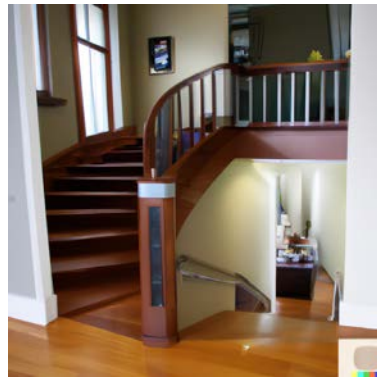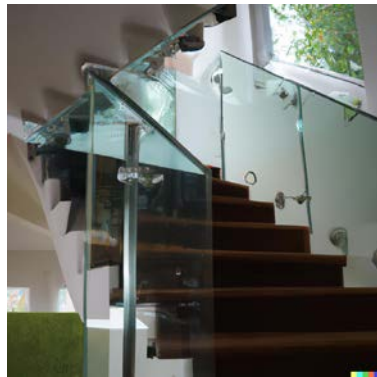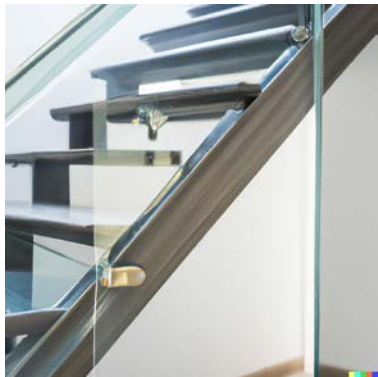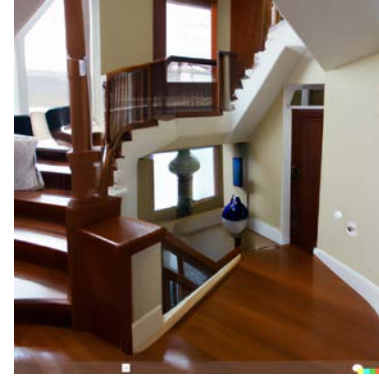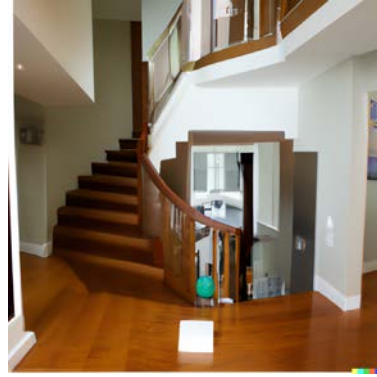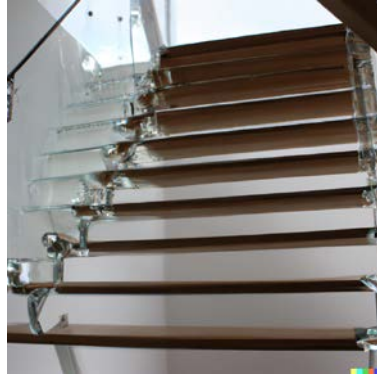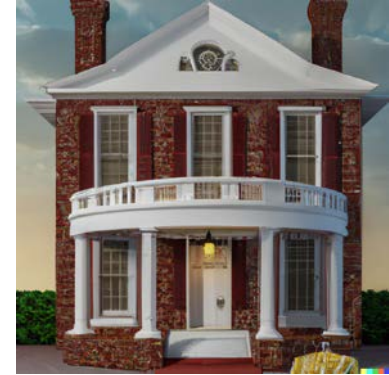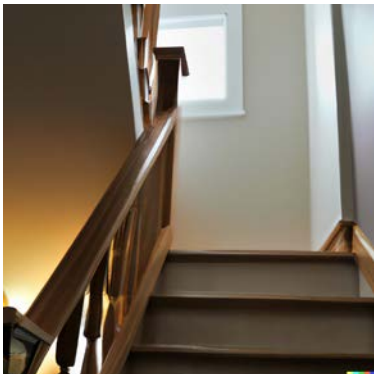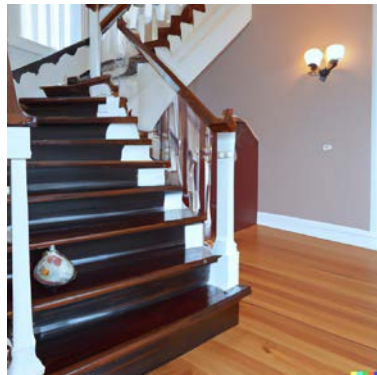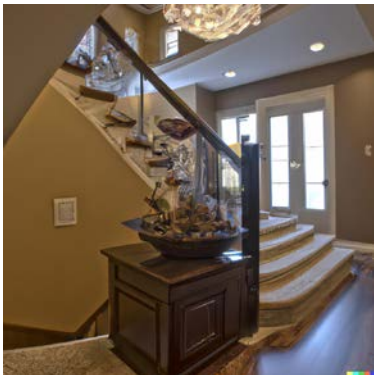
Classical

Future
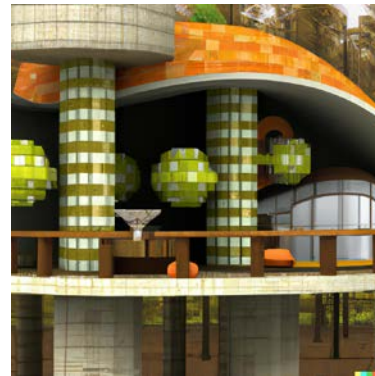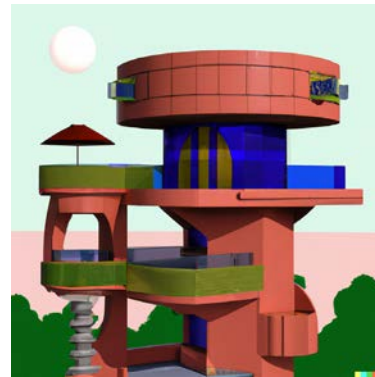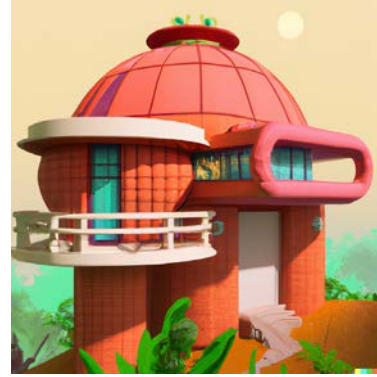
Neoclassical
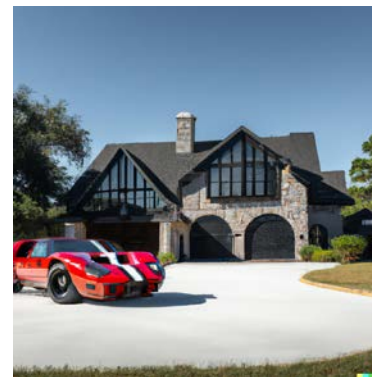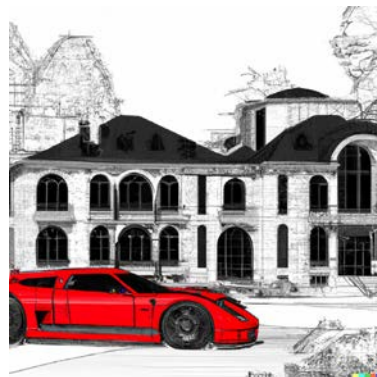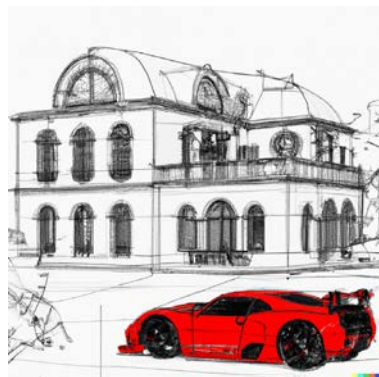
Orange Post Modern Cubist

Traditional