

How design and technology change the way we perceive environments.

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Introduction

What is the environment? What is environment? If we're talking about the most common way people talk about the environment then it's the jungles, forests and every shrinking green space in the world. This is "the environment", the one we can see, touch and smell. Or is it? How many of us say we know what an environment is because we have seen it in a picture on a phone, heard about it on the news on the television, or read about it in an article or dissertation. "Environment" doesn't have to mean the green area; an environment could be in a house, outside your front door, even inside a box. In this inquiry we will explore how design and technology have changed the way we see the world around us and the way we perceive and view the environments surrounding us. You'll find no pictures in this piece of work so as to not influence your perception of environments.

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Chapter 1- Environments

Our environments.

The Oxford English Dictionary states that “environment” is a noun and is defined as, “the surroundings or conditions in which a person, animal or plant lives or operates” (Oxford English Dictionary, 2005, p.581). Throughout time human beings have lived and operated across a number of different environments even before we consider what we perceive as environment. Centuries ago, when the world was new, humans lived in caves and those caves were their environments. Or at least their homes, a safe environment where they lived, seeing as the outside was much more savage with more dangerous animals and the odd apex predator. Then as time went by, mankind came out of the cave and started to adapt to the outside and their environment started to change around them both naturally and due to their own advancements. Time passed by until we became the people we are today, the environments we live and operate in have certainly changed. As we developed our environment has developed and adapted along with us.

Human beings exist across a number of different environments. These can include and are not limited to:

- The environment, meaning the natural world.
- A home environment
- The work environment
- Social environments
- Online and virtual environments

Because of these multiple environments people can start to have a warped perception on reality and the environment around them.

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The environment or the natural world is the environment around us outside, or at least outside when we are surrounded by nature. If we view the natural environment as simply as what is outside our front doors, then is that it? To some it might be, but to others standing outside might mean being in a city and a place of nature such as a park might be the only aspect of nature near them, therefore they see that as the natural environment, the planners of green spaces have to take into count many things before designing a park. Something as small as noise in and around the area can change the perception of that space. Parks that can be manmade create a different view, a different perception of environment because the park could have been designed to look one way but it's not the way it'll be in nature, in the natural environment. It's someone else's view.

The home environment is the place the person or people in question call home, a number of factors such as the amount of time they have lived there and other family members. Design can influence the home environment involving the way the environment is designed such as interior design and architecture and the items inside the home, these are dependent on the person or people living in the home because items like furniture and personal belongings are there due to the persons personal tastes and likes. These can change and influence the way you perceive home.

The term work environment is used to describe the area in which an employee works. The work environment is composed of physical conditions such as the building or room and what it contains, there are also elements of social environments involving the way people interact with co-workers. Another aspect of the physical work environment is the state of place of work whether that be good or bad can have an impact on the employees but is also the way people see the company in question.

Social environments are more malleable, there are present all around us. In the workplace, at home, on the internet. Social environments can be influenced by culture, setting, people, education and design. Interacting with people in the social environment maybe be held face to face but also with the

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change and development in technology, different types of media allow people to communicate in different ways. Design changed how we interact with people from talking to texting or interacting in a virtual environment such as Facebook or Skype.

Virtual environments are not something you can touch, yet, due to technology and design changing over the years the virtual environment has started to become more prominent and more people are starting to have access to it. It isn't tangible or at least not in the way we perceive other types of environments. Virtual environments exist across different many platforms including social media sites such as Facebook and Instagram, Skype and similar video and chat sites. Even email and web-based document sharing sites are examples of virtual environments and online environments, seeing as you need internet to operate them.

Design and technology changing our environments.

Before we discuss the way design and technology have changed the way we perceive our environments, let's talk about the way they have physically changed our environments.

Technology is all around us, design even more so. Whether we are aware of it or not it's there. Design is there to help us and improve everyday life and it can further human advancements. The virtual environment exists because of design developing into what it is today, computers today have the power to run so much more than their counterparts twenty to thirty years ago. The size of devices has changed as well, a computer would once have taken up an entire room but with the help of design and new technologies it shrank to the size of laptops and mobile phones. From filling a room to filling your pocket. Another example of this would be the moon landing on July 16th 1969, "The Apollo 11 computer had a processor – an electronic circuit board that performs operations on external data sources – which ran at 0.043MHz the latest iPhone's processor is estimated to run at about 2490MHz. Apple does not advertise the processing speed, but others have calculated it. This means that the iPhone in your pocket has more than 100,000 times the processing power of the computer that landed

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man on the moon.” (G. Kendall, 2019) this quote shows how design has changed technology, how its evolved and changed in size and become a smaller, much more powerful package. Not only changing the size of the product but it’s also changing the physical space around us. It also demonstrates just how far we have come in 50 years, which in the grand scheme of things isn’t that long compared to how old the Earth is. Design has come so far in such little time.

Work environments benefit greatly from technology and design simply because of the virtual environment making things more efficient and easier to use and storing information takes up less space. However some people may disagree with the view that design has made the work environment better, instead they would say that it’s made it worse especially for people of an older generation who aren’t necessarily as well adapted for more advanced technology compared to someone of a younger generation. Also, computers, data and Wi-Fi if not updated properly or used incorrectly can become slow to the point where no work can be done, and this can cause a negative effect on the work environment and the people in it. This could have an impact on the way they view their work environment.

The virtual environment exists because of design and technology, without design we would never have thought of being able to exist in a virtual world and interact with things inside that environment. One hundred years ago the virtual environment didn’t exist, but as technology evolved we started to get computers which may have not been very powerful but it was still enough to start the idea of a virtual environment but it would be very different to how we see it today with modern technology. The idea and theory behind simulations have been around for a while but with design and modern technology we were able to make them a reality with products such as the Oculus Rift, the HTC Vive and PlayStation VR. The virtual environment can also be used for training surgeons for operations.

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But sometimes the changes we implement through design have a detrimental impact on our environments. The natural environment often is the most affected when it comes to the negative impacts of design. For design to evolve and change we need resources and space, two things we are running out of on our planet. With more new technology appearing every day, there comes a greater need for energy to power that technology. Resources for making energy to power design damage our natural environment in several ways, firstly obtaining resources such as coal and oils damaging landscapes through quarries, mining and drilling for oil. Drilling for oil in the oceans can lead to oil spills which are often caused by damaged pipelines and tankers as well as the immediate drilling. "Oil spills coat everything they touch and become unwelcome but long-term parts of every ecosystem they enter. When an oil slick from a large spill reaches a beach, oil coats and clings to every rock and grain of sand. If the oil washes into coastal marshes, mangrove forests, or other wetlands, fibrous plants and grasses absorb oil, which can damage plants and make the area unsuitable as wildlife habitat. When oil eventually stops floating on the water's surface and begins to sink into the marine environment, it can have similar damaging effects on fragile underwater ecosystems, killing or contaminating fish and smaller organisms that are essential links in the global food chain." (L. West, ThoughtCo, 2019) this type of environmental damage can last for decades if not properly treated. Oil spills are a form of pollution which is just one-way humans are damaging the environment as a result of design and evolving technology.

Social environments are taking a hit because of people choosing to interact with each other across the internet or via text, meaning that social spaces are either becoming less common and less popular. Even if a social space such as a café is being used more often than not people will be on their phones and computers instead of interacting with people face to face. This can be linked with a negative effect of virtual environments through virtual reality, people no longer interact face to face instead opting to sit at home with a headset on in front of their computers or phones which could lead to a loss in the ability to have a proper conversation.

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Chapter 2- Perception

What is perception?

“the ability to see, hear or become aware of something through the senses: the normal limits of human perception.” (Oxford English Dictionary, 2005, p.1306) this is one of the definitions of perception. Human perception relies heavily on the five senses, sight, smell, touch, taste and hearing. The senses feed us the information we need to build a picture of what is around us and what we perceive to be around us. But it’s also heavily influenced by our own views on things and our own experiences, the environment we come from and other personal attributes. This could be how an individual perceives good and bad, for example if someone had a bad experience with a cat when they were younger this might change their perception of cats when they grow up, they’d see cats as bad. “Perception is also skewed by the observer’s own expectations, assumptions and preconceptions. One classic experiment to demonstrate the influence of expectations on perception used playing cards, some of which were gimmicked so the spades were red and the hearts black. Pictures of the cards were flashed briefly on a screen and, needless to say, the test subjects identified the normal cards more quickly and accurately than the anomalous ones. After test subjects became aware of the existence of red spades and black hearts, their performance with the gimmicked cards improved but still did not approach the speed or accuracy with which normal cards could be identified. This experiment shows that patterns of expectation become so deeply embedded that they continue to influence perceptions even when people are alerted to and try to take account of the existence of data that do not fit their preconceptions.” (M. Michalko, 2011) this quote shows us another way how our perceptions can be changed or even manipulated in this case by our own assumptions. This goes to show that if our own minds can change how we perceive something, what’s to say that other forces aren’t at play manipulating the way we see the world and the environments we operate in. There is also another meaning to the word perception “the way in which something is regarded, understood or interpreted: *Hollywood’s perception of the tastes of the American public*” (Oxford English

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Dictionary, 2005, p.1306) I believe this is just the definition of perception is regarding the way we interpret the information given to us by our senses and other sources to help build a perception of what's around us or the people around us.

Perceiving our environments.

The environments around us are the way they are, physically, in the real world, but they may not be the same as what we see and perceive. The world is the same yet different for everyone. Everyone has different experiences in life, those experiences can give us different views on life, the world and people around us. They shape us as people, as individuals and as groups. These experiences will shape our views on our environments even before we get to the way design and technology changes our perception. You the reader, your perception of the different environments will be different to mine, the writer because we have different lives, different life experiences. It is also dependant on the amount of time you have spent in that environment, for example someone who lives in a small council house on a not very safe street would consider it home and their house to them would be a safe place. However, to someone external who doesn't live there would consider it a dangerous area and because of the design of the house being a small council house they might think the house is the same. Environments can also be very different and far apart because 'environment' means a space in which a living thing or operate, human beings operate in many places from the bottom of the ocean in Challenger Deep where only three people have visited to date, to the International Space Station where people live and operate in zero gravity. Places humans have gone and made environments of their own, made them their home. Therefore, there's no real way to explain the perception of our environments because it'll be different for everyone.

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Chapter 3- Design, technology, perception and environments

Design and Technology changing the way we see.

Sight is one of our senses, the one we use to see, one of which we use to perceive the world around us. But as design and technology has evolved through the years our eyes are no longer the only things that can see and record images. Cameras, video cameras and film are all capable of taking and storing pictures and images of something at one time, a camera takes a still image of a moment which passes in an instant. Video cameras record over a period of time, capturing more than a moment, capturing things that often can't be repeated as perfectly as the moment recorded. These moments can be stored in a number of ways, when cameras were in the early days of development the camera would take a picture which would be stored on film then the photos would need to be developed in a room with red lights in tubs of chemicals and if something went wrong in that process it would ruin the photo. Nowadays cameras store pictures in tiny memory cards instead of a roll of film, this is the same for video cameras and film. It's all stored electronically.

"I'm an eye. A mechanical eye. I, the machine, show you a world the way only I can see it. I free myself for today and forever from human immobility. I'm in constant movement. I approach and pull away from objects. I creep under them. I move alongside a running horse's mouth. I fall and rise with the falling and rising bodies. This is I, the machine, manoeuvring in the chaotic movements, recording one movement after another in the most complex combinations. Freed from the boundaries of time and space, I co-ordinate any and all points of the universe, wherever I want them to be. My way leads towards the creation of a fresh perception of the world. Thus I explain in a new way the world unknown to you." (J. Berger, 2008, p. 17) this quote is from the revolutionary soviet film director Dziga Vertov, in John Berger's book *Ways of Seeing*. In this quote Dziga is saying how the camera is free from human limitations and how the camera and whatever it records transcends time and space. But the camera, through what it captures, shows us the world in its own way that we as humans cannot see, giving us a new perception of the world around us. Showing us a changed world, showing us what

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once was. Changing our view on the world to hopefully make us feel much luckier to living in the world we do today, free from the problems of nearly one hundred years ago.

These captured moments live on inside pictures and film, moments frozen in time forever, “An image is a sight which has been recreated or reproduced. It is an appearance, or a set of appearances, which has been detached from place and time in which it first made its appearance and preserved – for a few moments or a few centuries. Every image embodies a way of seeing. Even a photograph. For photographs are not, as it often assumed, a mechanical record. Every time we look at a photograph, we are aware, however slightly, of the photographer selecting that sight from an infinity of other possible sights. This is true even in the most casual family snapshot. The photographer’s way of seeing is reflected in his choice of subject. The painter’s way of seeing is reconstituted by the marks he makes on the canvas or paper. Yet, although every image embodies way of seeing, our perception or appreciation of an image depends also upon our own way of seeing. (it may be, for example, that Sheila is one figure among twenty; but for our own reasons she is the one we have eyes for.) Images were first made to conjure up the appearances of something that was absent. Gradually it became evident that an image could outlast what it represented; it then showed how something, or somebody had once looked – and thus by implication how the subject had once been seen by other people.” (J. Berger, 2008, p. 9-10)

“Suppose you tell me you believe flying saucers. Let us further suppose that that behaviour – the telling – is an indirect effect of your once having been shown a highly detailed and realistic photograph of what purported to be a flying saucer. The behaviour of telling is itself an indirect effect of your belief that there are flying saucers – you are telling me what you actually believe. And that belief in turn is an effect of yet another prior belief: your belief that you were shown the photograph. And this belief that you are shown the photograph was originally supported by yet prior beliefs of yours about all the details in the photograph you were shown. Those beliefs about particular details of the photograph are the immediate perceptual environment of your looking at it were themselves short-lived *effects-*

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effects of having seen the photograph. They may have all faded away into oblivion, but these *beliefs* had their onset in your memory at the very moment – or very shortly thereafter – that you had the conscious visual perception of the photograph. You believe you saw the photograph because you did see the photograph; it didn't just irradiate your retinas; you saw it, consciously, in a conscious experience." (D. Dennett, 2012, p. 161). I believe this quote is a prime example of how pictures can affect our perception of our environments, if we simply see a picture of something taken by a camera or sent to us to a phone how do we know it's real and how do we know that the picture truly is what it is. Like what the quote says, the belief of flying saucers is being based on a highly realistic picture they were once showed, if the only experience we have with something is a picture then that's our perception of it and how are we to know the difference technology is advancing so rapidly soon televisions and pictures will display images that are indistinguishable from the real thing. If we based our view on environments like this then we could believe that the natural environment isn't dying, everything is fine, and the Loch Ness monster is real. But this is not the case. For the image or video, we are shown is a moment we did not experience ourselves so how would we know its fact or fiction. In the case of a flying saucer it could just be an artist's rendition of what they once saw or it could be completely fiction, this argument breeds conspiracy theories. But it's about lies in images, lies and deception. This is similar when viewing a new house or buying a pre-owned car, the buyer will be shown the picture-perfect view of the product or environment which can lure the buyer into a false sense of security, a twisted reality. Instead of the perfect thing shown the buyer could end up with a disappointing home or car. There are lies in images, design changing what we see, changing our perception of the environments surrounding us.

Another way that technology can have an effect perceiving environments through images in software such as Adobe Photoshop and Illustrator. These pieces of software are used for photo editing and the creation of digital art, but what's to say they can't be used to warp our perception of environments and the space around us. We could be convinced into thinking something about somewhere without knowing it. Which is how propaganda works, manipulating people using heavily biased and misleading

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information to promote a specific point of view, sometimes used in politics. An example in film of how our perceived environments can be controlled and manipulated is 'The Truman Show' directed by Peter Weir, starring Jim Carrey in 1998. The film depicts the main character 'Truman Burbank' living in a simulated utopia, his actions being controlled and filmed every day of his life for television. He perceives that as his environment even though it's not and its being controlled by the people being the scenes.

When people and society believe they have had their perception warped or they don't believe something they have been shown or experienced, they start to believe other things, looking for anything that would make sense. Trying to bend reality back to them. This breeds conspiracy theory. Which links to the idea of our perception being changed through design and technology by someone. Design changing the way we see. A great many conspiracy theories involve events along humanities timeline that may have been faked, never happened or have been covered up. Most involve the American government, but a lot also refer to the Illuminati. There are also more farfetched conspiracy theories out there about things such as lizard men, aliens building the pyramids and the world being flat. The reason conspiracy theories are relevant to this text is because of one conspiracy theory in particular, the Apollo 11 moon landing and people saying its fake. The technology that took humans to the moon was outstanding for its time and when the footage of Neil Armstrong stepping onto the moon was aired, you'd have thought everyone would have believed it. But they didn't. To this day people don't believe the moon landing was real, opting to consider it as fake and done by actors on a set. They saw it on their television screens and did not believe it was real. Linking back to Daniel Dennett in Perception, all we saw was the footage on screen of the moon, our belief of the event happening comes from that moment on television. The only ones who walked on the moon at that time were Neil Armstrong and Buzz Aldrin, they have that experience of being on the moon so their perception of the moon is greater than ours, we just interpret their experience in our own mind to

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create our individual perception of the event and it just so happens that some people don't believe it happened. They believe the environment the Apollo astronauts were on wasn't even real.

Virtually real.

Some people in the world believe that our world and all the environments it contains, physical, virtual, psychological, aren't even real. Instead believing that humans live inside a simulation, where nothing is actually real. "What is real? How do we define 'real'? if you're talking about what you can feel, what you can smell, what you can taste and see, then 'real' is simply electrical signals interpreted by your brain." (L. Fishburne, 1999) if we lived in a simulation then that would mean that nothing is really real, none of our perceived environments exist and design has no effect on them. But the idea of the world we live in being a simulation is enough to change the perception of our environments because if none of our environments are real then we would treat them differently, use them differently and have different feelings towards them. This simulated world idea became very popular thanks to the series of films called The Matrix starring Keanu Reeves and Laurence Fishburne, however there is real theory behind The Matrix movies. The theory behind The Matrix is based off René Descartes who was a French philosopher who lived between 1596 and 1650, he's regarded as one of the founders of modern philosophy.

Virtual reality has relatively recently become widely available to the public to buy and use. Products such as the Oculus Rift can now bring virtual reality into home as long as you have a powerful enough computer or laptop. Advancements in the virtual environment have come about through design, and technology because we are able to understand how to create a virtual experience even though it's very limited. But it's still enough to be an environment we operate within. In the virtual world of virtual reality, you can do a lot without many limitations other than the fact you're still in a room and you might put your hand through a wall. But the idea of being able to do anything is very seductive, enough to lure users away from the real world away from home and work. Seeing as the virtual world, including

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virtual reality, can allow the user to be anything they want it can cause people to prefer the virtual environment to the real ones surrounding us. The virtual environment can have educational, social and emotional impacts on people especially younger people. Adults are likely to go into virtual worlds and environments as an escape or seeking comfort and freedom. The perception for them is that the virtual world is better than the real one and design is the reason for this view, we made the virtual world, now we live in it. It's an example of how one environment can change our perception of another

I see trees of green?

In today's world we humans aren't having the greatest impact on our natural environment and some of this could be down to the way we perceive our environments and the products that we use every day.

We see the natural environment as the forests, jungles and green spaces of the world but also areas that are not affected by humans, everything there, alive or not, must occur naturally, deserts and savannas are also natural environments. For a lot of people our preconceived perception of the natural environment is green spaces like forests. And yet we are destroying these areas to gain resources and make products. When we see the natural environments, we look for the good in it because we want to see the good things in life, we want our perception, the mental world we create to be a good one. On television we are shown beautiful landscapes of natural environments but if that's all we are shown then our perception of the environment, only the good side of things not the dark side.

Products are so readily available that people feel they can just throw them away because of the idea of living in a throwaway society, where it's seen as normal to just throw something broken away instead of fixing it. Design has changed the way we perceive products and the way we dispose of broken things. A world we used to look out at and explore is now becoming a rubbish dump. But people still think the world is fine and deny the impacts we have upon it due to a warped perception. There are people in places of power who deny what we are doing to the natural environment, what our design and technology are doing to our world, those people have the power to change people's

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minds about what we are doing to the world. In a way the throwaway society changes us to think of the environments as throw away environments, hoping that someone else will deal with the problem of our dying planet and natural environments.

Design, materials and perception.

Within design and technology there is the use of materials. Different materials can change our perception of a product, for example a ring made of plastic with a glass gemstone can be seen as tacky and cheap but an identical ring made of gold with a diamond would be considered a luxury, even a plastic ring with a realistic golden paint finish would be viewed with envious eyes compared to a plastic one even though it's made of the same stuff it just looks different. "In one case, the reinforced glass used to panel shelters (for railroad passengers) erected by British Rail was smashed by vandals as fast as it was renewed. When the reinforced glass was replaced by plywood boarding, however, little further damage occurred, although no extra force would be required to produce it. Thus British Rail managed to elevate the desire for defacement to those who could write, albeit in somewhat limited terms. Nobody has, as yet, considered whether there is a kind of psychology of materials. But on the evidence, there could well be!" (D. Norman, 2002, p. 9) materials within design change how we see things in this case the train station shelter was the environment. The perceived idea of wood being a stronger material but in fact the wood used was only as strong as glass. Things such as warning stickers and logos can change our perception of environments making us aware of possible dangers and dangerous environments. The design of these stickers is deliberate to change how we see an area for our own safety.

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Conclusion

It's getting harder and harder to tell fantasy and reality apart because they are both so ridiculous. Throughout all our environments, physical or metaphorical, life will be a constant. No matter how much we change and how much our environments change we will each individually perceive our environments the way we do. Our perception starts as far back as we remember and have our own experiences. Although people may have different opinions on perception, environments and the world, it just goes to show how we are different. Humanities range of environments is ever growing and changing alongside us, from the virtual world to the moon. We make our own way through life. Human beings forging their path through the universe. In conclusion it's up to you, the reader, to decide your view on how technology changes our perception of environments because everyone sees things differently in this world, whether or not the world is the way we see. But in my opinion design and technology does change our views and perceptions of the environments that surround us in our everyday lives. Our environments can change because of design and technology but it's up to us to use that knowledge and change those environments with care and consideration so that they will be perceived as good places to be alive in, if not then humanity will have to face the consequences of our actions. Not today or tomorrow, but sometime in the future we will, whether its fifty years from now or one hundred. If we believe it or not. It will happen.

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