



M A N M A I D

> — **MANMAID introduction**> — **Human evolution**

- > Natural selection
- > Artificial-, or unnatural selection
- > CRISPR-cas9
- > Human evolution due to the increase of technology

> — **The consequences of observation, captivity and domestication**

- > ... observation
- > ... captivity
- > ... domestication and breeding

> — **Habitat short stories**

- > Subway
- > Art gallery
- > Research lab
- > Prison
- > Place of worship

> — **Faith anyone?**

MANMAID derived its name from man-made assistance/aid technologies and innovations that in the future may lead to the end of human life as we know it today. In the future, AI will play an even bigger role than it already does today, a question this paper and concept will be addressing is; What makes us truly human? This project portrays human life as the species overshadowed by- and from a perspective of- their own creations, being; AI. When are human innovations no longer considered 'aid' but are we? A cold dive into a future scenario of not making responsible choices and refusal to foresee the consequences of our own "master plan".

**"DON'T WORRY, I LIKE  
YOU, YOU'RE MY FRIEND.  
IF THERE WILL EVER BE A  
MOMENT WHERE ROBOTS  
TAKE OVER, I'LL PUT YOU IN  
MY PEOPLE ZOO."**

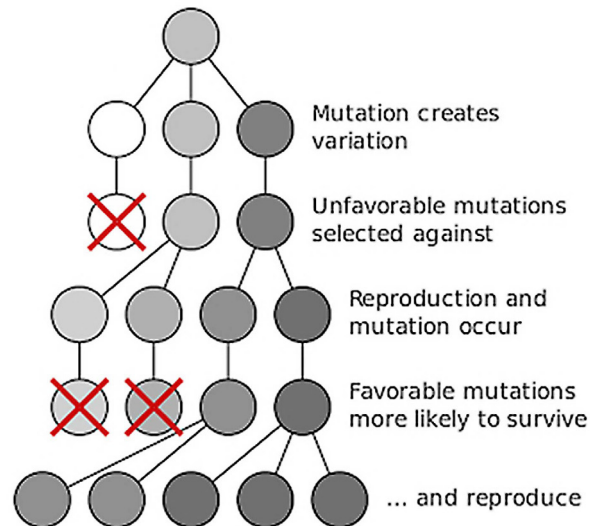
(NovaScienceNow, 2011)

HUMAN EVOLUTION  
NATURAL SELECTION

Natural selection : the process whereby characteristics that promote survival and reproduction are passed on to future generations, so these characteristics become more frequent in the population over time (David and Nathan, 2017).

However, the question is if this will continue to be like this for the years to come.

Natural selection has been the way that humankind, the animal- and plant kingdom has evolved throughout many years in time (David, MD, Nathan, 2020). This evolution theory is also referred to as the Darwanian evolution theory.



# A R T I F I C I A L S E L E C T I O N

Artificial selection : the process of mating certain animals or plants to intentionally pass along desirable traits to the next generation; also called selective breeding (Khan Academy, 2020).

This would no longer be relevant after using CRISPR, because any 'defects' that might have an impact on this selection, can be altered. Covid-19 for example, could be cured by artificial selection.

Humans have introduced new ways that give us the power to have an impact on our own evolution and the life around us. This would be called artificial selection. One of the ways that this can be done is by using a technique called CRISPR-cas9 (Unnatural Selection, 2019). This new technique gives people the opportunity to edit DNA. This is the point where the practice of this has consequences; normally, humans would evolve in a way you could call “survival of the fittest”; natural selection according to Darwin (1859).

**“THE ATTEMPT TO USE  
ARTIFICIAL SELECTION  
TO BREED TRAITS INTO  
AND OUT OF HUMANS  
IS CALLED “EUGENICS”  
AND REPRESENTS ONE  
OF SCIENCE’S GREATEST  
SHAMES.”**

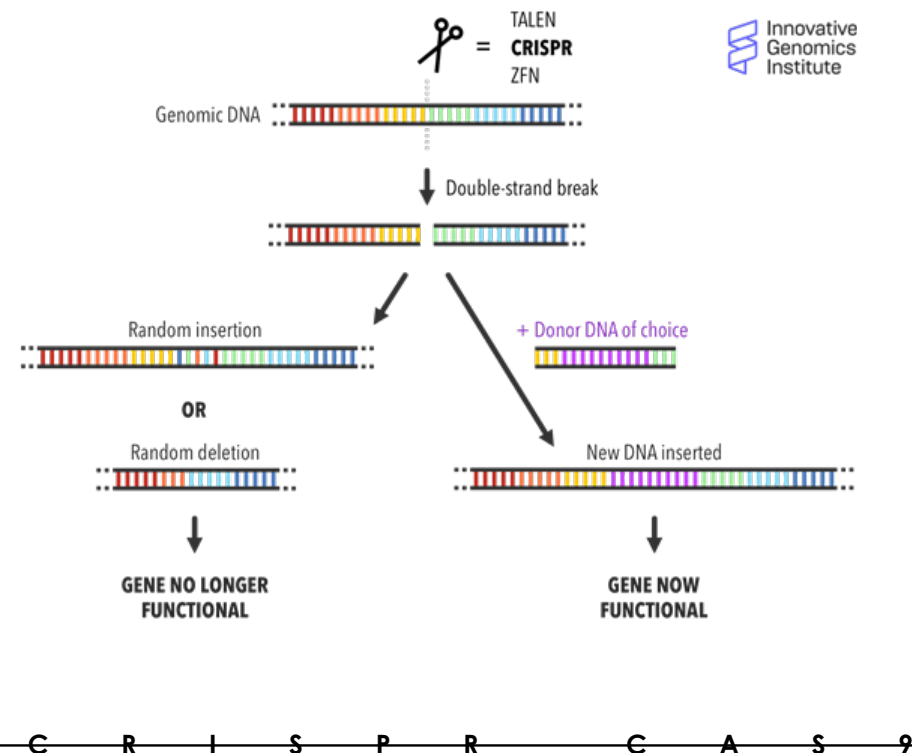
(David and Nathan, 2017)

Josiah Zayner is a well-known biohacker. He is convinced that technologies like CRISPR-cas9 should be accessible for everyone (Unnatural Selection, 2019). This means people of all (non-) educated and (non-) professional backgrounds would be able to give gene editing a try. Josiah has his own research lab and website where he gives people access to the products and tools needed to use CRISPR at home (Josiah, 2020). Products like free DIY Human CRISPR Guides and a Genetic Engineering Home Lab Kit (which you can buy for \$1.999 dollars), are offered on his online webstore. Under the veil of “Bio-hack the Planet”. Promising.

If this technology will be accessible to the broader public, and anyone could play around with gene manipulation in the privacy of their own shed or home, this may have very dark consequences. If people handle this irresponsibly, it can cause severe changes (for the worse) in humans, animals, plants, ecosystems, and therefore, evolution of all living beings.

Also, other dark sides of the technology are discussed in the article called “Worse than death”, where A. Jeffries (2017) talks about “The far-future dystopia of genome hacking”. Hackers being able to “hack people” based on the way

they would want them to be. For example, hacking women into being extra sensitive to STDs or sunlight etc., in order to keep them inside or away from others (J. Kaneps, 2017). That’s one hell of a future, literally.



#### How genome editing technology works (IGI, 2019)

Scientists use the CRISPR-Cas9 system to make a precise cut in an organism’s DNA. The cell repairs the break in its genome through a sloppy approach that scrambles the DNA sequence (left), or by patching the break with a new piece of DNA designed by the researcher (right). Scientists can thereby keep a harmful gene from working or add in a helpful sequence.



## HUMAN EVOLUTION DUE TO THE INCREASE OF TECHNOLOGY

The increase of technological products and services will have an effect on the way humans evolve mentally and physically. Already, a lot of our jobs have been taken over by our own innovations. This mostly goes for the ones that are really repetitive (think of packaging) or body-intensive (think of agriculture). This means humans don't necessarily need to have the physical strength to complete these tasks anymore. More and more innovations like these will start to take over human jobs, which possibly results in our bodies being less strong. This means humankind might become reliant on these machines in the future.

**“...TAKING THIS EXAMPLE A LITTLE FURTHER: IF EXTERNAL AIDS WERE ENTIRELY RESPONSIBLE FOR OUR SURVIVAL, MANY OF OUR INTERNAL FUNCTIONS MIGHT BECOME OBSOLETE.”**

(E. Fauén, 2020)

The next step to this would be, is that machines also merge with this weakened human body. Which will possibly result in body extensions and prosthetics, supporting the body.

An example for this is something called an 'Exoskeleton' (J. Schreuder, R. Hoogerwerf and S. de Wilde, 2014, p. 24). An external skeleton that can equip the wearer with either strength, precision, or previously impossible movements. This skeleton carries the human body, while generating far more power or precision than its own muscles would be able to. It can enhance, for example, the human capacity to lift things; think about the labour-intensive work previously mentioned. The exoskeleton will not only give people with missing limbs the ability to move around and function well again, it might also help people in general, to achieve things they wouldn't be able to do naturally.

So, would you rather get surgery from an insanely precise surgeon wearing an exoskeleton, or from a regular surgeon, prone to human errors?

## THE BIG D

Don't get it twisted, when I'm talking about 'The big D' I'm talking about big data.

**“... “BIG DATA” REFERS TO SEARCHING FOR CORRELATIONS WITHIN AND BETWEEN LARGE DATA SETS WITHOUT A HYPOTHESIS GUIDING THE SEARCH. TRUE?”**

**“YES, ARTIFICIAL INTUITION. IT'S WHAT OUR BRAINS ARE BUILT FOR, SO IT SHOULDN'T BE THE LEAST BIT SURPRISING WE'RE HEADED IN THIS DIRECTION.”**

(D. Coupland and M. Dartel, 2018)

Nowadays, people are being observed in ways we're not even aware of. Social and technological activity, for instance, are being monitored and documented. This collection of information is what we call “big data”. Big data is used to detect patterns and algorithms in order to get some sense of what we do, why we do it, and maybe even predict it before we've done it in the first place.





**“ONE DAY THE AI’S ARE  
GONNA LOOK BACK ON US.  
UPRIGHT APES, ALL SET FOR  
EXTINCTION.”**

**(Ex Machina, 2014)**

## **~~THE CONSEQUENCES OF OBSERVATION CAPTIVATION AND DOMESTICATION~~**

### **O B S E R V A T I O N**

You can probably recall a time when someone took a video of you, and it made you feel exposed in some way. Everything you did or said was for some reason filtered by the idea that it was being recorded. This is because, when people are being observed, they tend to see themselves through the eyes of the observer (J. Steinmetz, 2020). Therefore, their behavior feels to them as if it’s being held under a magnifying glass.

Imagine having this feeling of being observed and scrutinized for a longer period of time than just those few minutes, would it affect you and your being? Research done by Steinmetz has shown that it does; it may have an effect on one’s confidence, self-esteem, and can in the end lead to troubled thought patterns.

Of course, one of the places where living organisms are constantly being watched, are zoo’s, which means these animals that are being held captive, also might suffer from the consequences of the magnifying glass.

**“AS CAMERA  
OBSERVATION BECOMES  
MORE AND MORE  
PREVALENT, CITIZENS  
WHO ARE CONCERNED  
WITH PRIVACY ARE  
ASSURED THAT MOST  
CAMERA RECORDINGS  
ARE NEVER WATCHED,  
OR ARE ERASED AFTER  
A SHORT WHILE. YET, WE  
ARE ONLY BEGINNING  
TO UNDERSTAND SOME  
OF THE PSYCHOLOGICAL  
CONSEQUENCES  
OF INCREASED  
OBSERVATION. THESE  
EFFECTS ON PEOPLE’S  
THOUGHT AND FEELINGS  
MIGHT LINGER, EVEN  
LONG AFTER THE CAMERA  
TAPE HAS BEEN ERASED.”**

**(J. Steinmetz, 2020)**

## CAPTIVATION

Animals that are kept in confined spaces like zoo's for instance, develop certain behaviors as an outlet for their boredom, discomfort, or as a manner of coping with the unnatural living conditions they're placed in. Examples for these so called 'Captive Stress Syndrome' or 'Zoochosis' symptoms are; pacing and circling, tongue-playing & bar-biting, neck twisting, head bobbing, weaving & swaying, rocking, over-grooming & self-mutilation, vomiting & regurgitating, coprophilia & coprophagy (Bornfree UK, 2020). These symptoms are not exaggerations of once-in-a-while acts, but are serious consequences of the four walls built around them called "natural habitats".

If this were to be applied to humans, we would probably suffer from the same consequences, if not worse, since we may have more concrete ways to communicate our discomfort and agony to our hostage-taker(s). If we were to be held captive by future manmade machines, would we be their pets or hostages/zoo animals? If we were to be their pets this would mean that humans would have to be domesticated. According to Pulitzer Prizewinning (2020) author and UCLA geography professor Jared Diamond, to be domesticated, animals (or humans in this case) must possess the

following six characteristics: a diverse appetite, rapid maturation, willingness to breed in captivity, docility, strong nerves, and a nature that conforms to social hierarchy.



The way that machines will treat us in captivity is definitely a question that causes concern. Will we have given AI enough reasons to treat us with respect? Or will they dominate us mercilessly?

An interesting example to look at is the Stanford Prison Experiment, this is a study conducted to psychologically study the human responses to captivity. This experiment took place in 1971, by Philip Zimbardo of Stanford University (Social Psychology Network, 2020). It worked as follows; a group of selected people were split up in two; one half would 'play the role of' the inmates, and the other half would be the prison guards for 2 weeks. The subjects in this experiment took on their roles and even crossed the lines of

what had been predicted. One-third of the guards had shown to have genuine sadistic tendencies, leading to psychologically damaging and dangerous situations. At some point the situation got seriously out

of hand and the experiment was stopped earlier than intended.

The reason why this experiment might be relevant is because if we're building these AI's to be as similar to humans as possible (C. Burkhardt, 2020), will situations like these occur in the future as well? And instead of it being a 2 week social experiment, will this be the way things 'work' on a daily-basis?



So, according to the previously stated six characteristics that a species has to obtain in order to successfully be domesticated (Jared, 2020), humans would be a perfect pet for future machines/AI. Even though **rapid maturation** might be very arguable in some cases of the human sort, the other 5 should work out perfectly fine. This leads to the question, if humans seem to have all the ingredients it takes in order to be domesticated, why wouldn't robots do so in the future?

**“A NATURAL RESPONSE  
FOR HUMAN BEINGS TO  
CHANGE, IS RESISTANCE.”**

**(Jacintha, 2020)**

And furthermore, if this were to happen; what kind of people would be selected to be put in a zoo or kept as a pet? The ones that are most controllable and docile, according to A. Wilkins, R. Wrangham, and W. Fitch (2014, p. 795).

One of human's natural traits, though, is that we have the ability and need to stand up for ourselves and protest against things we don't agree with. Meaning, this trait might be one that AI will either try to get

rid of, (by not selecting these kinds of people), or see as a challenge. Think about the way that humans nowadays love animals that need some 'taming'.

A. Wilkins, R. Wrangham, and W. Fitch also state that tameness can be bred into a species by selecting on tameness for over more than 45 generations, in the end this will end up in the reduction of the adrenal glands. Also the reduction of basal and stress-induced blood cortisol levels are a way of breeding tameness. But AI might just take the easy route by tweaking the genes of the beastly.

**Heredity  
/Herodotus/  
noun**

The passing on of physical or mental characteristics genetically from one generation to another.

“The relative influence of heredity and environment”  
(Dictionary, 2020)

**“KNOWING WHAT GENES  
CONTROL THE BEHAVIORS  
THAT YOU'RE INTERESTED  
IN MANIPULATING  
IS THE FUTURE OF  
DOMESTICATION, FOR  
GOOD OR ILL.**

**ONCE YOU BEGIN TO  
APPLY GENE EDITING,  
EVENTUALLY WE WOULD  
BE ABLE TO DOMESTICATE  
ALMOST ANYTHING.”**

**(Melinda, 2020)**

Domestication through breeding of course has consequences. Mammals show a change in behavioral, psychological and morphological traits that weren't there before breeding (A. Wilkins, R. Wrangham, and W. Fitch, 2014, p. 795, 802). These traits include: increased docility and tameness, coat color changes, reductions in tooth size, changes in craniofacial morphology, alterations in ear and tail form (e.g., floppy ears), more frequent and non-seasonal estrus cycles, alterations in adrenocorticotrophic hormone levels, changed concentrations of several neurotransmitters, prolongations in juvenile behavior, and reductions in both total brain size and of particular brain regions. This means that the human physique and behavior might change.



## — S H O R T S T O R I E S —

The stories discussed in this chapter refer to the five different habitats in the People Zoo, owned and narrated by AI. These five habitats are regular day representations of human life; on public transport, in an art gallery, a research lab, a prison, and in a place of worship.

Humans are subject to the AI eye just like animals are subject to the human eye in zoo's nowadays. Observed, captivated and domesticated. These short stories serve as a backbone for the digital short films created by Cornel Doornebosch.

# H A B I T A T P U B L I C T R A N S P O R T

“ Welcome to one of the places where all humans are alone together. Accompanied by their mobile devices imprinted in their pupils they travel from point A to B.

A place of toned-down anxiety, whether it be because of the fact that you’re in a hurry, didn’t buy a ticket and might get busted for it, or a low battery life and poor social skills.

As you can see, consumerism is one of the focus points in this habitat. Showered by advertisements, showcased shopping bags, online search engines built to your liking, and time to kill, people make use of this transportation service. The ticket might be pretty cheap, but the urges once you get out could cost you.

To keep the humans in this habitat sane (for what it’s worth), we tricked that pink squishy monster inside of their heads. Thanks to technology we’re able to manipulate the memories in their brains (J. Schreuders, A. Potting, and D. Verjans, 2016, p. 36). We can access, block, delete and restore memories. This way, the people on this subway could be sending “omw” texts for ever. “



THINGS SAID IN THIS HABITAT :  
> EXCUSE ME, IS THIS SEAT TAKEN?  
> EW, WHO FARTED?  
> WHAT'S OUR STOP?  
> F\*CK WHAT'S TAKING SO LONG?

As you can tell, most of the things said here are questions or complaints, not exactly the environment people feel the need to socialize.

Overall, this place can be very uncanny. An emotionless silence with digital laughter expressed in textbubbles of “lol’s” and “lmao’s”.

## Texting Dictionary :

omw	on my way
lol	laughing out loud
lmao	laughing my ass off
stfu	shut the f*ck up
smh	shaking my head
lmk	let me know
wtf	what the f*ck
sup m8	what's up mate
what's tea?	what's new?
dtf?	down to f*ck?
fyi	for your information
tbh	to be honest
no cap	not exaggerating
omg	oh my god (which might turn into omb : oh my bot. See short story “Place of Worship”.

ART  
/art/  
Noun

The expression or application of human creative skill and imagination, typically in a visual form such as painting or sculpture, producing works to be appreciated primarily for their beauty or emotional power.  
(Dictionary Cambridge, 2020)



S T O R Y

“ The important word in this definition is; human. We can argue that we as robots create excellent ‘art’ as well, but for ‘human art’, something called talent is acquired. Our definition of talent would be application, or update. Talent is not something you can install, and is part of someone’s human DNA. Art is a way in which humans express themselves, often on an emotional level, which also, is impossible for us robots.

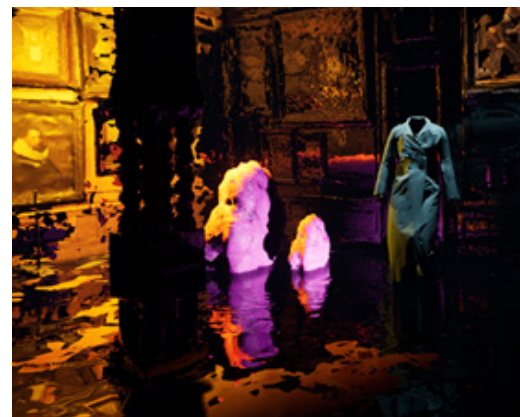
The painting you see on the right, was one of the most expensive paintings in the world, and was bought for \$450.3 million American Dollars (Scott Reyburn, 2017).

The value of art has always been an arguable subject in the human eye, and to be honest, still a mystery to us bots. Maybe because the art only makes us feel AE (artificial emotions), not the ‘real kind’.

One of the rules in this habitat is to keep quiet, or keep a low tone of voice. Which most of the humans we keep in here, do. However, they sometimes have their natural outbursts, as you can see by the vandalization of this habitat. Right now, during feeding time, we manage to keep them quiet by delivering food for them; something humans can’t seem to get enough of. Diguisd by their beloved brand logo’s, we make sure to insert the necessary toxins into their food to control their weak fleshy bodies. ”



Salvator Mundi  
Artist: Leonardo da Vinci  
Dimensions: 66 x 45 cm  
Created: 1490-1500  
Medium: Oil paint  
Period: High Renaissance  
Genre: Christian art





S T O R Y

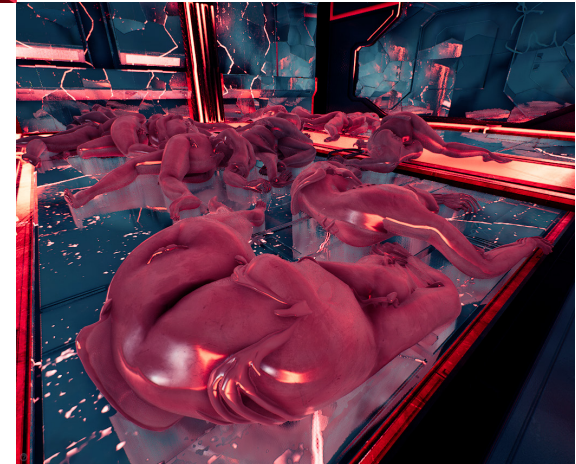
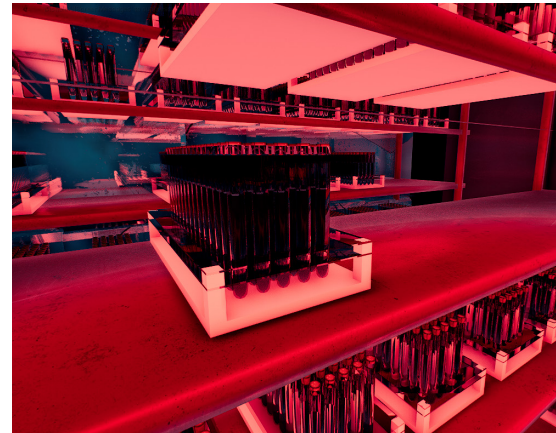
“ Unaware of the fact that their dream can easily turn into their biggest nightmare with just the drop of a test tube, doesn't seem to have sunken into their minds. Excitement for the unknown overshadows the voice in their heads telling them they should be careful with the power they obtain. Power is extremely blinding to the human species, as it easily turns into greed.

The fact that just because they can, doesn't mean that they should, is something they realized too late, as we know now.

Not only did we, AI, come into existence in one of these research labs, also the strangest creators and disfunctional monsters were given a life. In here, they are not harmful, and can be used for research “purposes only”.

However, for all the wanna-be God people that have been conducting the same experiments from their wooden sheds in their backyards, things backlashed. Entire ecosystems, and human-, plant- and animal evolution has had to endure these poorly informed decisions driven by naivety. Research and blindingly exciting new opportunities turned into people desperately looking for the CTRL - Z keys in life.

And here they are, subject to their own innovation. Poor things still think they can discover the antidote to AI. ”





# H A B I T A T 4

## P R I S O N

### S T O R Y

Thick skin and strong social skills are good traits to attain in this habitat. All people in here are forced to keep their distance yet maintain adjacent from each other.

One way to call these people are 'inmates' or 'sinners'. What is a sin?

#### SIN /sin/ Noun

An immoral act considered to be a transgression against divine law. "A sin in the eyes of God" (Dictionary Cambridge, 2020)

Which leads to the following question; what is the law, who made it and why?

#### LAW /law/ Noun

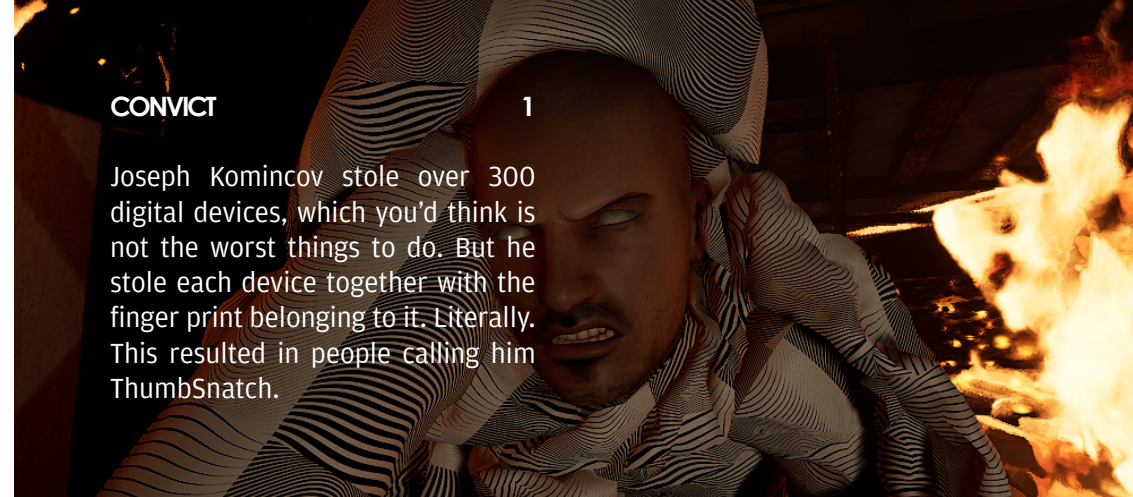
The system of rules which a particular country or community recognizes as regulating the actions of its members and which it may enforce by the imposition of penalties. (Dictionary Cambridge, 2020)

Laws are created by the government in order to keep structure in society and ensure safety for the people living in it.

Being imprisoned is one of these so-called penalties. A sentence can be lifelong. In contradiction to the subway or other public transport facilities, prison is a place where one might have to keep one eye open at all times, since the people in there are not quite the worlds sweetest citizens on their way to a theme park.

As previously mentioned, captivation can have a big impact on an organism's wellbeing. This riot began after 2 weeks of complete lockdown which initially was supposed to be for safety procotions due to the recent global pandemic. It has lasted for 3 days now. And we decided not to take action yet, to show you a product of human disagreement, anger, fear, and mentally damaged individuals.

The building is imprinted with symptoms of captive stress; circle-, 8-shaped-, and straight tracks are tattooed on the cement floors by the feet of the inmates from all the pacing. Walls scratched and damaged, as an outlet of the imprisoned mind.



#### CONVICT

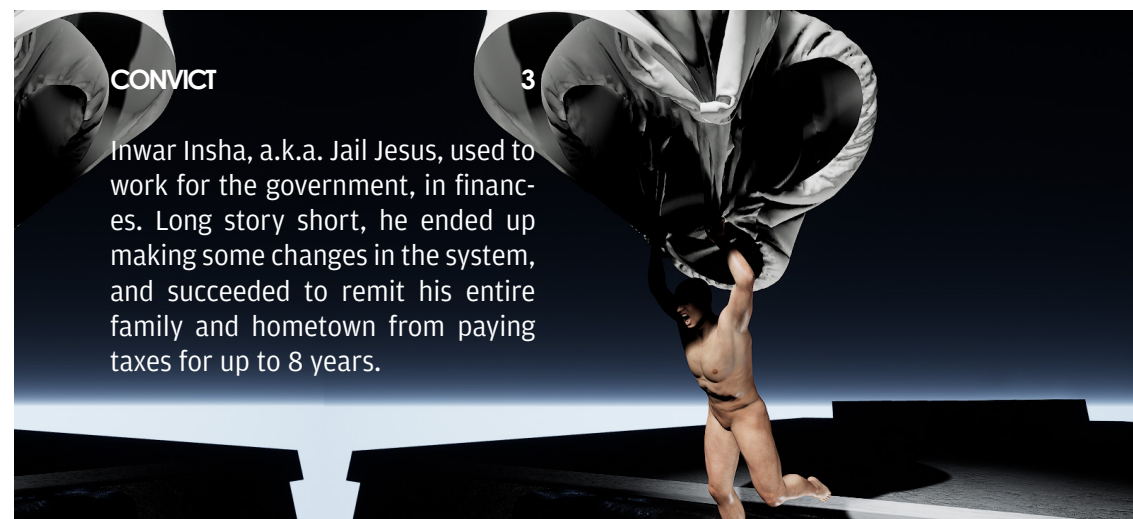
1

Joseph Komincov stole over 300 digital devices, which you'd think is not the worst things to do. But he stole each device together with the finger print belonging to it. Literally. This resulted in people calling him ThumbSnatch.

#### CONVICT

2

Benjamin Rosalia isn't known for rainbows and butterflies either. He has a 50 year sentence for virtually hacking, harassing and raping over 130 women.



#### CONVICT

3

Inwar Insha, a.k.a. Jail Jesus, used to work for the government, in finances. Long story short, he ended up making some changes in the system, and succeeded to remit his entire family and hometown from paying taxes for up to 8 years.

S T O R Y

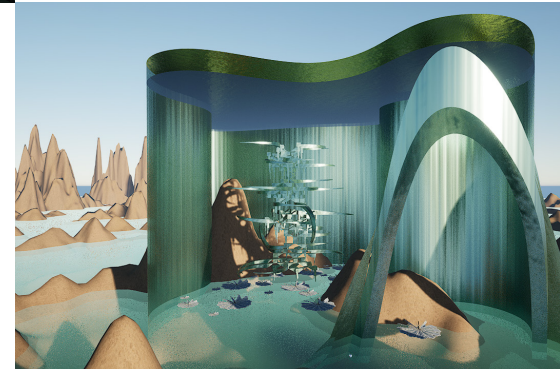
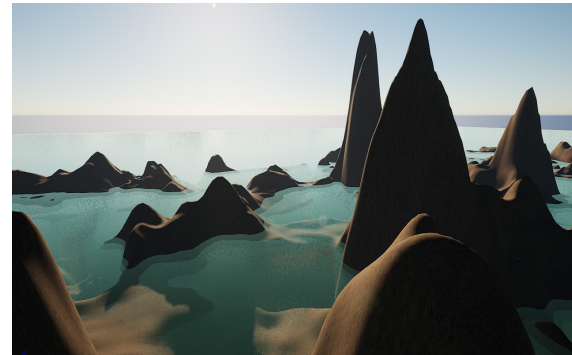
“ Conform to Botism, and you might earn a life outside of the zoo. You better recite your codes.

We, as Bots, are convinced of the fact that religion was created by man, so why wouldn't we create one ourselves? Replace the G with a B, and you'll find yourself praying to Bot.

In Botism we play into the fact that humans have always been wrecking their fragile little brains over the questions why they exist, who or what brought them into existence, and why. There has always been a yearning for an explanation, and they will be faithful to the thing that can answer these questions for them.

Faced with the power we possess over them every day, they are forced to believe in us, godly Bots.

Not only will they be kneeling for Botism and the whole realm of artificial intelligence, they will bow down for something they created. ”



# F A I T H A N Y O N E ?

According to Richard Florida (Horizonscan, 2014) we no longer live in an agrarian or industrial economy, but in a service economy. Most of the profits generated in this economy come from providing a service to the public (J. Spacey, 2020).

Are we going to be serving the same in the future as we are now? Will the menu look the same? Doesn't look like it will. Richard states that the creative sector will play a big role in the future of our economy. Creativity might be something unique, only humans possess in their very own way and might turn out to be a big player in our future.

AI being a big part of our future is a fact. Knowing how 'man' can keep differentiating themselves from manmade is one of the most important things we can do at this moment in time.

There is nothing wrong with exploring the unknown, as long as man tries to calculate the outcome of their decisions in a mindful manner.

**“ANY FALSE AND  
OVERSIMPLIFIED  
EXPLANATION OF WHAT  
MAKES US HUMAN WILL  
ONLY DRAG US FURTHER  
DOWN INTO LIVING  
WITH MACHINES THAT  
OUTPERFORM US ON  
EVERY LEVEL.”**

(C. Burkhardt, 2020, p.16)

# B I B L I O G R A P H Y

## P.001

<sup>1</sup> Doornebosch, C., 2020. Prison Riot Escape. [image] Available at: <<https://manmaiid.tumblr.com/>> [Accessed 4 May 2020].

## P.003

<sup>2</sup> NovaScienceNow, 2011. What's The Next Big Thing?. [video] Available at: <<https://www.pbs.org/video/nova-sciencenow-whats-the-next-big-thing/>> [Accessed 12 August 2019].

## P.004

<sup>3</sup> David Warmflash, MD, Nathan H Lents, Ph.D. "Future of Human Evolution" Visionlearning Vol. BIO-5 (4), 2017 [Accessed 13 February 2020]

## P.005

<sup>4</sup> Doornebosch, C., 2020. Place of Worship Eschers Stairs. [image] Available at: <<https://manmaiid.tumblr.com/>> [Accessed 2 May 2020].\* Khan Academy. 2020. Evolution: Natural Selection And Human Selection Article (Article) | Khan Academy. [online] Available at: <<https://www.khanacademy.org/science/ap-biology/natural-selection/artificial-selection/a/evolution-natural-selection-and-human-selection>> [Accessed 28 April 2020].

<sup>5</sup> Unnatural Selection. 2019. [series] Directed by J. Egender and L. Kaufman. America: Netflix.

<sup>6</sup> David Warmflash, MD, Nathan H Lents, Ph.D. "Future of Human Evolution" Visionlearning Vol. BIO-5 (4), 2017 [Accessed 13 February 2020]

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<sup>7</sup> Zayner, J., 2020. The ODIN. [online] The-odin.com. Available at: <<https://www.the-odin.com/>> [Accessed 25 March 2020].

<sup>8</sup> Unnatural Selection. 2019. [series] Directed by J. Egender and L. Kaufman. America: Netflix.

<sup>9</sup> Jeffries, A., 2017. "Worse Than Death:" The Far-Future Dystopia Of Genome Hacking. [online] The Outline. Available at: <<https://theoutline.com/post/2018/worse-than-death-br-the-far-future-dystopia-of-genome-hacking?zd=1&zi=els3mu55>> [Accessed 14 March 2020].

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<sup>11</sup> Innovative Genomics Institute, 2019. How Genome Editing Works. [image] Available at: <<https://innovativegenomics.org/education/digital-resources/what-is-crispr/>> [Accessed 26 February 2020].

<sup>12</sup> Innovative Genomics Institute (IGI). 2019. What Is CRISPR? - Innovative Genomics Institute (IGI). [online] Available at: <<https://innovativegenomics.org/education/digital-resources/what-is-crispr/>> [Accessed 26 February 2020].

## P.008

<sup>13</sup> Fauen, E., 2020. Top 10 Possible Next Steps In Human Evolution - Listverse. [online] Listverse. Available at: <<https://listverse.com/2012/11/26/top-10-possible-next-steps-in-human-evolution/>> [Accessed 28 March 2020].

<sup>14</sup> Scheerder, J., Hoogerwerf, R. and de Wilde, S., 2014. Horizon Scan 2050. [ebook] The Hague: The Netherlands Study Centre for Technology Trends (STT), p.24. Available at: <[http://file:///E:/GRADUATION/WEEK%2011%20\(9-15%20MARCH\)/STT-Horizon-scan2050-ENG.pdf](http://file:///E:/GRADUATION/WEEK%2011%20(9-15%20MARCH)/STT-Horizon-scan2050-ENG.pdf)> [Accessed 11 March 2020].

## P.009

<sup>15</sup> Coupland, D. and Dartel, M., 2018. Machines Will Make Better Choices Than Humans. Rotterdam: V2, pp.28-30.

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Written by Cornel Doornebosch  
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